XP100 [illegible]
901931 STrength 7mm08
902072 STrength 35Rem

Report No. 901431

RESEARCH TEST & MEASUREMENT LAB WORK REQUEST

	AREA OF TESTING	
___ Developmental	___ Safety Related	___ Litigation
X Design Acceptance	___ Competitive Evaluation	___ Warehouse Audit
___ Pre-Pilot	X New Design	___ Cost Reduction
___ Pilot	___ Design Change	State ___
___ Production Acceptance	___ Plant Assistance	___ Other

FIREARM STAT'S	REPORT REQ'D.	
MODEL: XP-100	FORMAL ___	DATE REQUESTED: 7-12-90
CAL. or GAGE: 7mm-08	TEST RESULTS ONLY X	DATE NEEDED BY: ASAP
BARREL TYPE: ___		REQUESTED BY: E. MARTIN
PROOFED: YES ___ NO X		WORK ORDER NO: 4A115

TEST TYPE

X Strength Test	___ Ammunition Test	___ Dry Cycle Test	___ Photo/Video
___ Function Test	___ Environmental Test	___ Measurements	___ Other ___
___ Accuracy Test	___ Customer Complaint	___ Endurance Test	

EXPLAIN IN DETAIL THE REASON FOR THIS TEST: Please Develope Load And Test Barreled Action. With Plugged Bore And High Pressure Load This Is To Test New Barrel Configuration Advise As To Expected Completion Date

GUNS REQUIRED:

Supplied

NOTE: NO firearms or parts will be tested in the Labs unless they are accompanied by a Work Request, and both are delivered to the Labs by the designer or engineer. All Work Requests are to be filled out in detail. No Exceptions.

DATE COMPLETED: ___

TEST COMPLETED BY: ___

REPORT DATE: ___

TEST AND MEASUREMENT LAB TEST RESULTS

REQUESTER: E. Martin TESTER: C. Stephens DATE: 8/20/90
REPORT NO.: 901931 WORK ORDER NO.: 481158
WRITTEN BY: C. Stephens
TEST TYPE:

FIREARM STAT'S : MODEL: XP-100 CAL or GAUGE: 7MM08
BARREL TYPE: New PROOFED: YES X NO ___

REASON FOR TEST : To test new barrel configuration.

EQUIPMENT REQUIRED : Loading Room & Equipment, 4 XP100, 2 with current production barrels, 2 with new configuration barrels. P & V range and equipment. Measurement Lab and iron lung.

TEST PROCEDURE : A high pressure round was developed in the test lab. The four barrels were plugged with 4 175gr bullets. Each barrel was placed in the iron lung and shot with a high pressure round

TEST RESULTS : See attached sheets

REMINGTON ARMS COMPANY, INC.
Ilion Research Division

SUMMARY OF INTENTIONAL GUN ABUSE TEST

DATA

By C. Stephens
Date 20 July 90

FIREARM: Make Remington Model XP100
Grade _____ Gauge 7MM 08 Serial Number B759-3298
Origin _____
Test Number Assigned 901931
Comments Std. Barrel Barrel plugged with 4 bullets (175gr)

HISTORY: Condition New
Previous Rounds Fired 0
Headspace at Test —
Test Date 20 July 90

ABUSIVE LOAD USED: Powder Type 4227
Powder Weight 45gr
Case Make and Type Rem.
Total Bullet Weight 175gr
Total Shot Weight —
Estimated Pressure 500Kpsi 130Kpsi Shell

ADDITIONAL COMMENTS: Bolt Locked up

REMINGTON ARMS COMPANY, INC.
Ilion Research Division

SUMMARY OF INTENTIONAL GUN ABUSE TEST

DATA

By C. Stephens
Date 19 July 90

FIREARM:
Make Remington Model XP100
Grade _____ Gauge 7MM 08 Serial Number B7533471
Origin _____
Test Number Assigned 901931
Comments New Barrel Configuration.
Barrel plugged with 4 bullets (175gn)

HISTORY:
Condition New
Previous Rounds Fired 0
Headspace at Test —
Test Date 19 July 90

ABUSIVE LOAD USED:
Powder Type 4227
Powder Weight 45gn
Case Make and Type Rem.
Total Bullet Weight 175
Total Shot Weight —
Estimated Pressure 500Kpsi (130 Kpsi Shell)

ADDITIONAL COMMENTS:
Bolt Locked up.

REMINGTON ARMS COMPANY, INC.
Ilion Research Division

SUMMARY OF INTENTIONAL GUN ABUSE TEST

DATA

By C. Stephens
Date 19 July 90

FIREARM:
Make Remington Model XP100
Grade _____ Gauge 7MM08 Serial Number B7588470
Origin Plant
Test Number Assigned 901981
Comments Std. Barrel Barrel plugged with four bullets (175gr)

HISTORY:
Condition New
Previous Rounds Fired 0
Headspace at Test —
Test Date 19 July 90

ABUSIVE LOAD USED:
Powder Type 4227
Powder Weight 45gr
Case Make and Type Rem.
Total Bullet Weight 175gr
Total Shot Weight —
Estimated Pressure 500Kpsi (180Kpsi Shell)

ADDITIONAL COMMENTS:
Bolt Locked up.

REMINGTON ARMS COMPANY, INC.
Ilion Research Division

SUMMARY OF INTENTIONAL GUN ABUSE TEST

DATA

By C. Stephens
Date 18 July 90

FIREARM:
Make Remington Model XP100
Grade — Gauge 7mm-08 Serial Number B7592750
Origin
Test Number Assigned 901931
Comments New Barrel Configuration
Barrel plugged with 4 Bullets (175gn)

HISTORY:
Condition New
Previous Rounds Fired 0
Headspace at Test —
Test Date 18 July 90

ABUSIVE LOAD USED:
Powder Type 4227
Powder Weight 45gn
Case Make and Type Rem
Total Bullet Weight 175 gn
Total Shot Weight —
Estimated Pressure 500 Kpsi (Shell 130Kpsi)

ADDITIONAL COMMENTS:
Complete split of receiver right & left side.
Bolt Shroud completely gone.
Broke trigger connector rod.

TEST AND MEASUREMENT LAB TEST RESULTS

REQUESTER: E. Martin TESTER: C. Stephens DATE: 8/20/90
REPORT NO.: 90307a WORK ORDER NO.: 48115a
WRITTEN BY: C. Stephens
TEST TYPE: Test Results

FIREARM STAT'S : MODEL: XP100 CAL or GAUGE: 35 Rem
BARREL TYPE: New PROOFED: YES X NO ___

REASON FOR TEST : To test the new barrel configuration in 35 Rem. caliber.

EQUIPMENT REQUIRED : Loading Room & Equipment, 1 XP100 with new configuration barrel, P&V Range & Equipment, Measurement Lab & iron lung.

TEST PROCEDURE : A high pressure round was developed in the test lab. The new configuration barrel was plugged with 4 200gr. bullets, the was then placed in the iron lung and shot with the high pressure round.

TEST RESULTS : See attached sheet.

REMINGTON ARMS COMPANY, INC.
Ilion Research Division

SUMMARY OF INTENTIONAL GUN ABUSE TEST

DATA

By C. Stephens
Date 30 Aug. 90

FIREARM:
Make Remington Model XP100
Grade _____ Gauge 35 R Serial Number B7593450
Origin _____
Test Number Assigned 902078
Comments New Barrel configuration
Barrel plugged with 4~~0~~200gn bullets.

HISTORY:
Condition New
Previous Rounds Fired —
Headspace at Test —
Test Date 2~~0~~ Aug 90

ABUSIVE LOAD USED:
Powder Type 4227
Powder Weight 35gn
Case Make and Type Rem
Total Bullet Weight 300gn
Total Shot Weight —
Estimated Pressure 500Kpsi

ADDITIONAL COMMENTS:
Bolt locked up

BARBER - PRESALE R 0131091

XP100

890202A	Trig. Adj Screw lock
890202	Link Design change
893381	Nozzle Velocity
892221	Black Stock

BARBER - PRESALE R 0131091
R2532079
CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

xc: W.H. Coleman, II/File
T.C. Douglas
J.R. Snedeker
File

RESEARCH TEST AND MEASUREMENT REPORT

REPORT# 890202
W.O.# 481152
FEBRUARY 21, 1989

MODEL XP-100 LINK DESIGN CHANGE

Report# 890202 Work Order# 481152

MODEL XP-100 LINK DESIGN CHANGE

ABSTRACT:

Research and Development finds the Design Acceptance Evaluation of the Model XP-100 design change, which increases the width of the slot in the front of the Link, to be acceptable.
The evaluation consisted of dry cycle and live fire endurance testing on ten XP-100 pistols.

Prepared by: D.R. Thomas
Date Prepared: February 21, 1989

proofed and cleared by:

J.R. Snedeker
Staff Engineer

7 March '89

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

3/15/89

Report# 890202 Work Order# 481152

MODEL XP-100 LINK DESIGN CHANGE

TO: J.R. Snedeker
FROM: D.R.Thomas

INTRODUCTION:

In February of 1989 the Research Test Lab received a request to perform a Design Acceptance Evaluation on a design change to the XP-100 Link. The change consisted of adding to the width of the slot in the front of the Link. The test consisted of dry cycle and live fire endurance of 35 Remington and 7MM BR calibers.

SCOPE OF THE TEST:

To determine if the additional slot width affects Sear engagement during use of the firearm.

TEST RESULTS:

The Model XP-100 Link design change was found to be acceptable in both phases of the Design Acceptance Evaluation.

Report# 890202 Work Order# 481152

MODEL XP-100 LINK DESIGN CHANGE

REPORT TEXT:

DRY CYCLE:
Sear engagement measurements varied within an .008 inch band throughout the dry cycle test in both the control group and the test group. At no time throughout the test did sear engagement fall below the min. limit of .015 inch in any of the guns.

LIVE FIRE:
Sear engagement measurements varied within a .005 inch band throughout 2000 rounds of endurance shooting in both the control group and the test group. At no time throughout the test did sear engagement fall below the min. limit of .015 inches in any of the guns.

TEST PROCEDURE:

GENERAL:
All sear engagement measurements were performed on the Deltronic DH30 optical comparator located in building 52-3 West.

DRY CYCLE:
A device was set up to cock and fire the XP-100 over an empty chamber. One control and one XP-100 with an experimental Link were used in the dry cycle phase. The sear engagement was measured before the dry cycle was started and at 500 cycle intervals up to 3000 cycles. Dry cycle testing continued from 3000 cycles to 10000 cycles, with sear engagement being measured every 1000 cycles.

LIVE FIRE:
Four control and four XP-100's with an experimental Link were used for the live fire endurance phase of the test. The control group and the experimental group each consisted of two 7MM BR caliber and two 35 REM caliber guns. Sear engagement was measured before shooting began and at 200 round intervals up to 1000 rounds. Endurance continued to 2000 rounds with measurements at 1500 and at 2000 rounds. All endurance shooting took place in the Research test lab shooting room located in building 52-1-A.

Report# 890202

Work Order# 481152

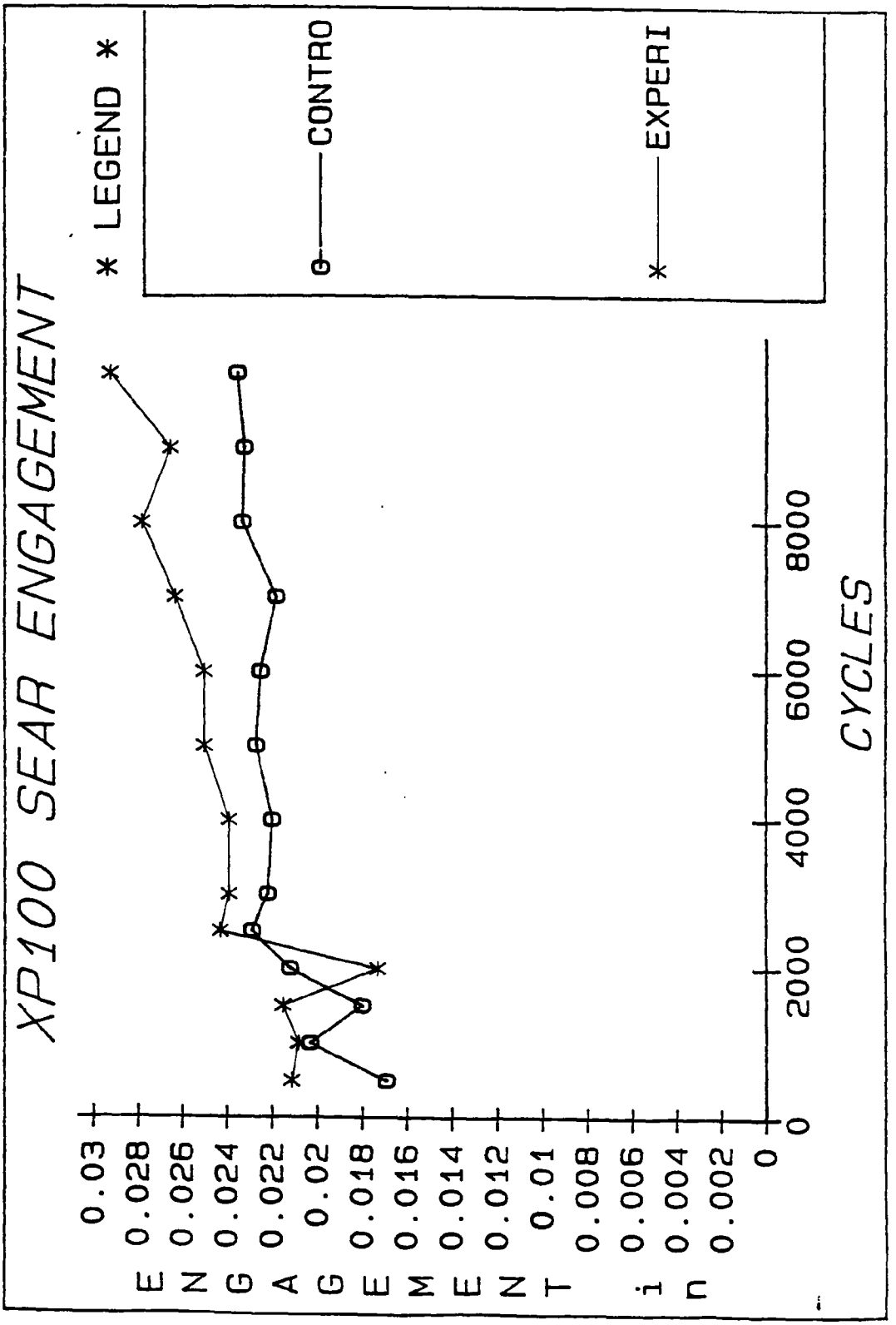
MODEL XP-100 LINK DESIGN CHANGE

APPENDIX

REPORT# 890202 DATA SHEET W.O.# 481152

XP100 DRY CYCLE

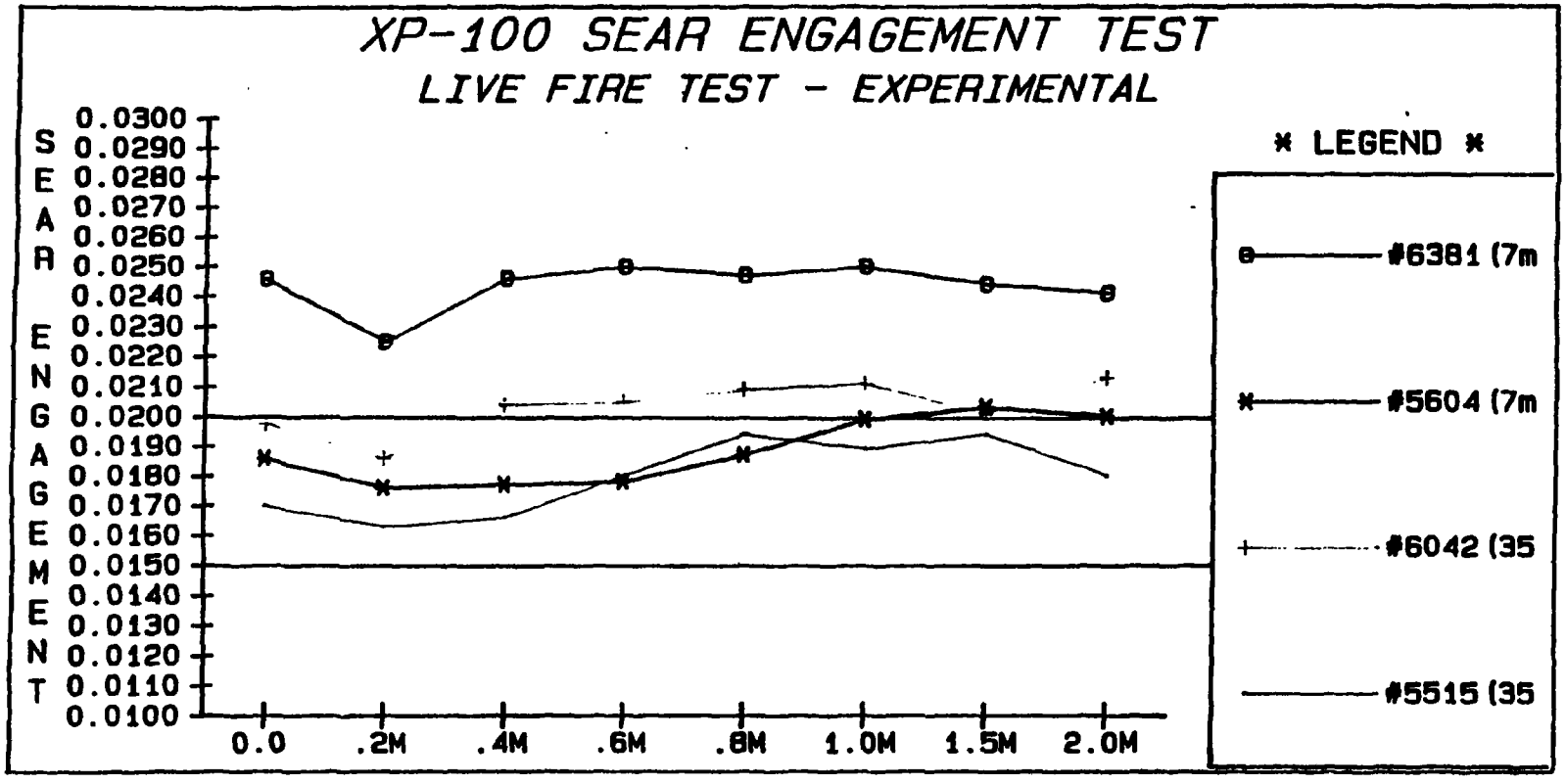
CYCLE LEVEL	SEAR ENGAGEMENT CONTROL 6604	EXPERIMENTAL 5583
500	0.0169	0.0211
1000	0.0203	0.0208
1500	0.018	0.0215
2000	0.0212	0.0173
2500	0.0229	0.0243
3000	0.0222	0.0239
4000	0.022	0.0239
5000	0.0227	0.025
6000	0.0225	0.025
7000	0.0218	0.0263
8000	0.0233	0.0278
9000	0.0232	0.0265
10000	0.0235	0.0292


XP100 SEAR ENGAGEMENT
* LEGEND *
CONTRO
EXPERI
ENGAGEMENT in
0.03
0.028
0.026
0.024
0.022
0.02
0.018
0.016
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
0
2000
4000
6000
8000
CYCLES

XP-100 SEAR ENGAGEMENT - LIVE FIRE TEST; RAW DATA TABLE

SERIAL NO.	ROUNDS							
	0.0	.2M	.4M	.6M	.8M	1.0M	1.5M	2.0M
(EXPERIMENTAL)								
#6381 (7mm)	0.0246	0.0225	0.0246	0.0250	0.0247	0.0250	0.0244	0.0241
#5604 (7mm)	0.0186	0.0176	0.0177	0.0178	0.0187	0.0199	0.0203	0.0200
#6042 (35REM)	0.0198	0.0186	0.0204	0.0205	0.0209	0.0211	0.0201	0.0213
#5515 (35REM)	0.0170	0.0163	0.0166	0.0180	0.0194	0.0189	0.0194	0.0180
(CONTROL)								
#6577 (7mm)	0.0194	0.0197	0.0206	0.0209	0.0208	0.0231	0.0220	0.0189
#6573 (7mm)	0.0212	0.0176	0.0194	0.0221	0.0200	0.0208	0.0220	0.0207
#5559 (35REM)	0.0184	0.0187	0.0187	0.0180	0.0194	0.0191	0.0190	0.0186
#5892 (35REM)	0.0186	0.0196	0.0206	0.0201	0.0216	0.0225	0.0208	0.0217

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON



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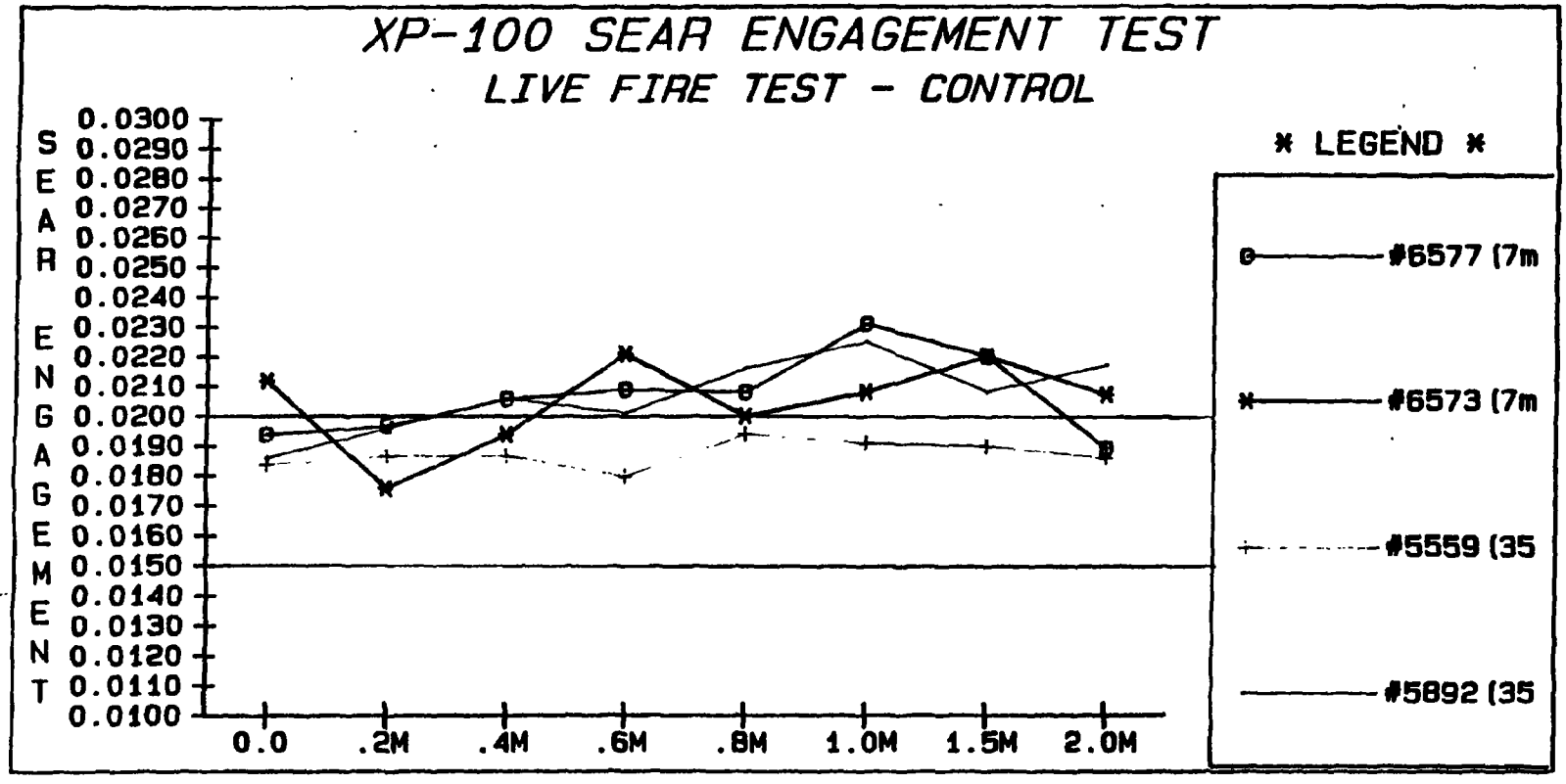
KINZER V. REMINGTON

R2532088



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KINZER V. REMINGTON

R2532089

TEST AND MEASUREMENT LAB - TEST REPORT

REQUESTER: F.E. Martin
REPORT NO. 890202A
WRITTEN BY: D.R. Thomas

DATE: 3/6/89
WORK ORDER:481152

TEST TYPE: Developmental

FIREARM STAT'S: MODEL: XP100 CAL: 35REM &7MMBR

REASON FOR TEST:
To evaluate three alternate designs of Trigger Adjusting Screw/ Lock Nut Assemblies.

EQUIPMENT REQUIRED:
15- XP100's

	CONTROL	DEFORMED NUT	EXPERIMENTAL
DRY CYCLE	6604 (7MM)	6172 (7MM)	5583 (7MM)
	6577 (7MM)	6161 (7MM)	6042 (35REM)
LIVE FIRE	6573 (7MM)	5605 (7MM)	5515(35REM)
	5559 (35REM)	5867 (35REM)	6381 (7MM)
	5892 (35REM)	2572 (35REM)	5604 (7MM)

12000 rounds each 7MMBR & R35R2
Dry Cycle and Shooting Rooms
Deltronic DH30 optical comparator located in building 52-3 West.

TEST PROCEDURE:

GENERAL:
All sear engagement measurements were performed on the Deltronic DH30 optical comparator located in building 52-3 West.

DRY CYCLE:
A device was set up to cock and fire the XP-100 over an empty chamber. One control and one XP-100 with an experimental Link were used in the dry cycle phase. The sear engagement was measured before the dry cycle was started and at 500 cycle intervals up to 3000 cycles. Dry cycle testing continued from 3000 cycles to 10000 cycles, with sear engagement being measured every 1000 cycles.

LIVE FIRE:
Four control and four XP-100's with an experimental Link were used for the live fire endurance phase of the test. The control group and the experimental group each consisted of two 7MM BR caliber and two 35 REM caliber guns. Sear engagement was measured before shooting began and at 200 round intervals up to 1000 rounds. Endurance continued to 2000 rounds with measurements at 1500 and at 2000 rounds. All endurance shooting took place in the Research test lab shooting room located in building 52-1-A.

TEST RESULTS:

DRY CYCLE:

Sear engagement measurements varied within an .008 inch band throughout the dry cycle test in both the control group and the test group. At no time throughout the test did sear engagement fall below the min. limit of .015 inch in any of the guns.

LIVE FIRE:

Sear engagement measurements varied within a .005 inch band throughout 2000 rounds of endurance shooting in both the control group and the test group. At no time throughout the test did sear engagement fall below the min. limit of .015 inches in any of the guns.

SEE ATTACHED DATA

XP-100 SEAR ENGAGEMENT - LIVE FIRE TEST; RAW DATA TABLE

SERIAL NO.	ROUNDS							
	0.0	.2M	.4M	.6M	.8M	1.0M	1.5M	2.0M
(DEFORMED NUT)								
#6161 (7mm)	0.0202	0.0189	0.0190	0.0214	0.0206	0.0215	0.0194	0.0209
#5605 (7mm)	0.0179	0.0182	0.0215	0.0233	0.0259	0.0270	0.0271	0.0297
#5867 (35REM)	0.0208	0.0212	0.0204	0.0224	0.0224	0.0219	0.0238	0.0235
#2572 (35REM)	0.0212	0.0202	0.0214	0.0236	0.0236	0.0246	0.0229	0.0235
(EXPERIMENTAL)								
#6381 (7mm)	0.0246	0.0225	0.0246	0.0250	0.0247	0.0250	0.0244	0.0241
#5604 (7mm)	0.0186	0.0176	0.0177	0.0178	0.0187	0.0199	0.0203	0.0200
#6042 (35REM)	0.0198	0.0186	0.0204	0.0205	0.0209	0.0211	0.0201	0.0213
#5515 (35REM)	0.0170	0.0163	0.0166	0.0180	0.0194	0.0189	0.0194	0.0180
(CONTROL)								
#6577 (7mm)	0.0194	0.0197	0.0206	0.0209	0.0208	0.0231	0.0220	0.0189
#6573 (7mm)	0.0212	0.0176	0.0194	0.0221	0.0200	0.0208	0.0220	0.0207
#5559 (35REM)	0.0184	0.0187	0.0187	0.0180	0.0194	0.0191	0.0190	0.0186
#5892 (35REM)	0.0186	0.0196	0.0206	0.0201	0.0216	0.0225	0.0208	0.0217

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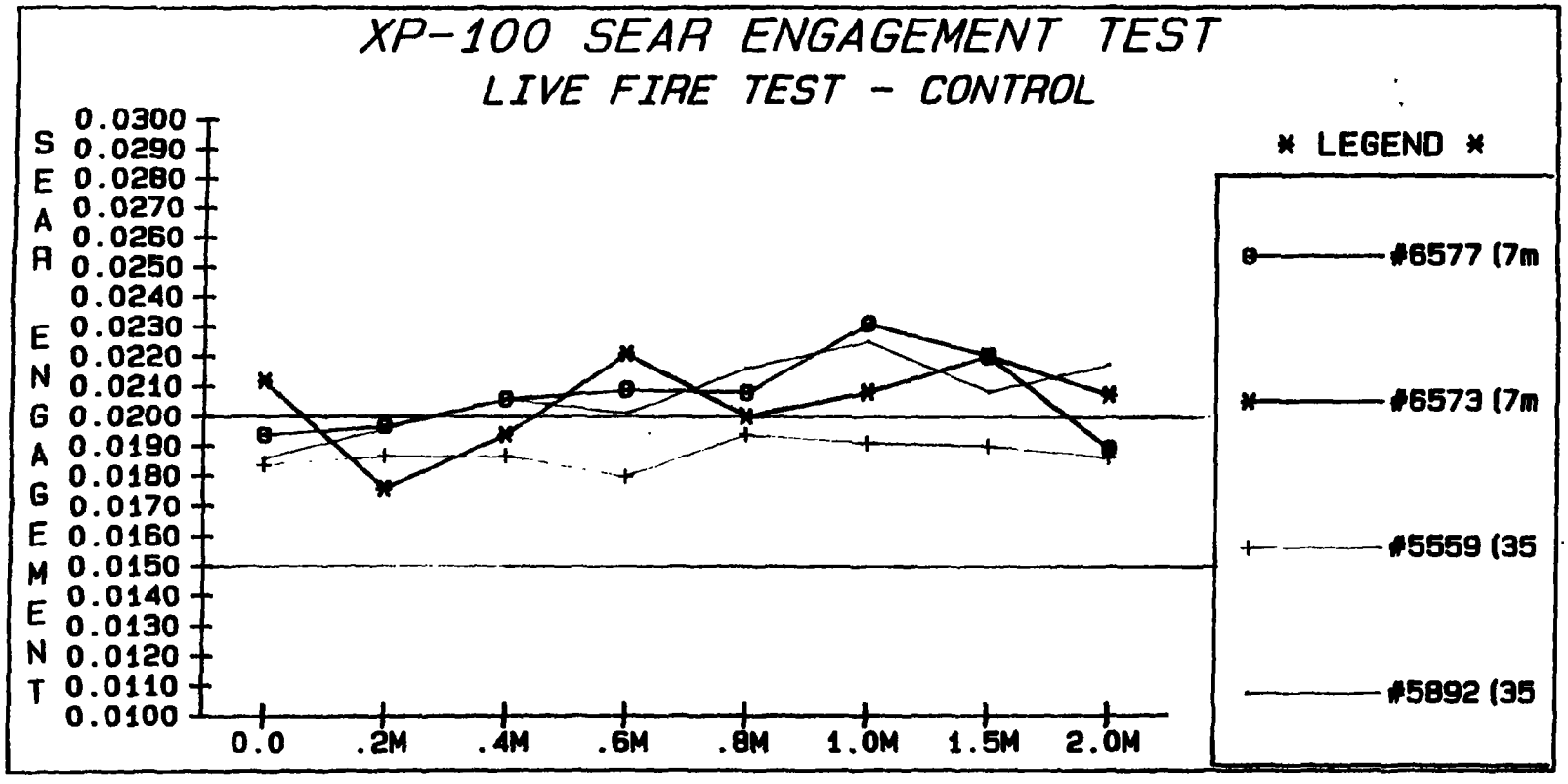
KINZER V. REMINGTON



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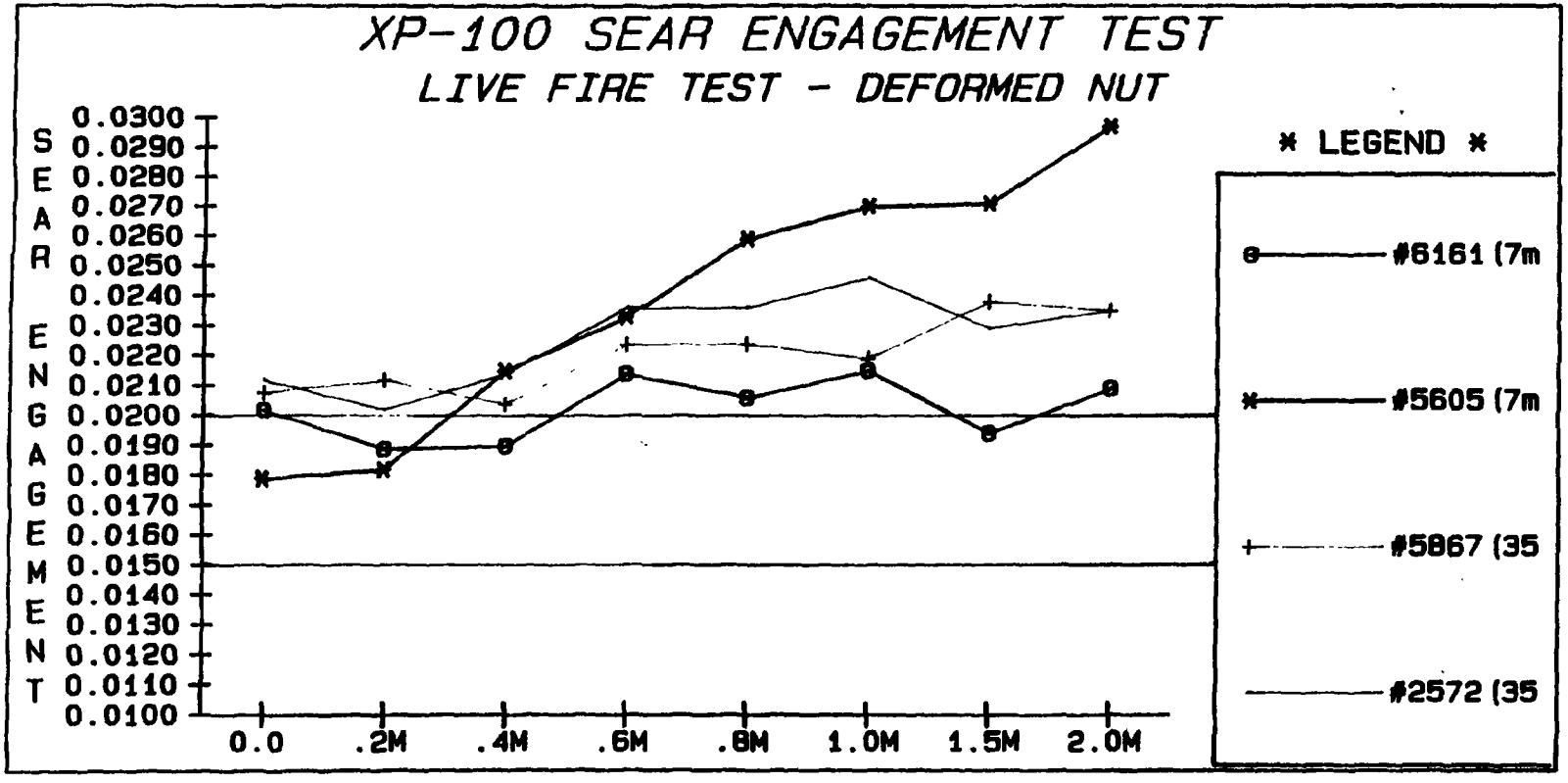
R2532093



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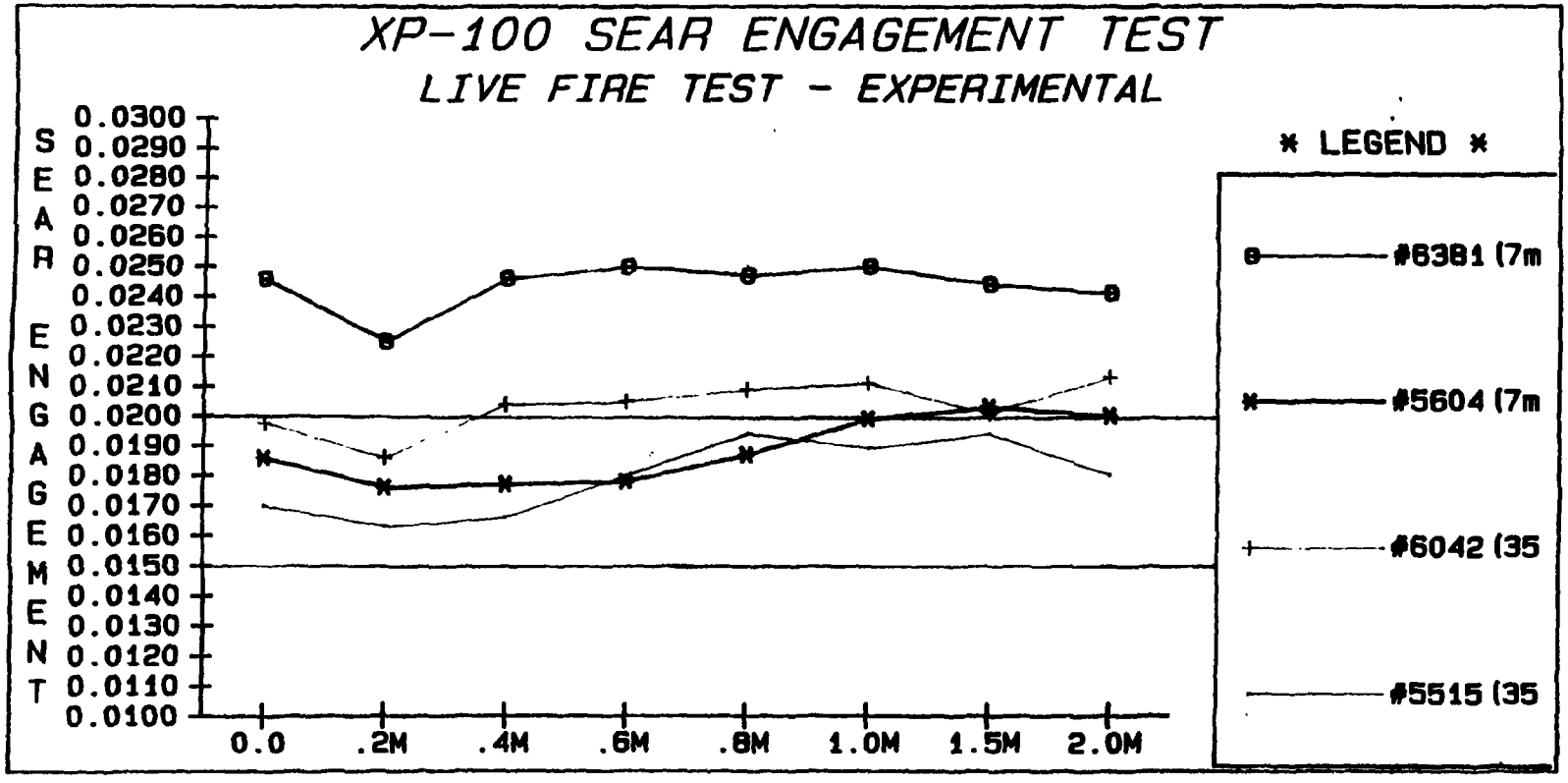
KINZER V. REMINGTON

R2532094



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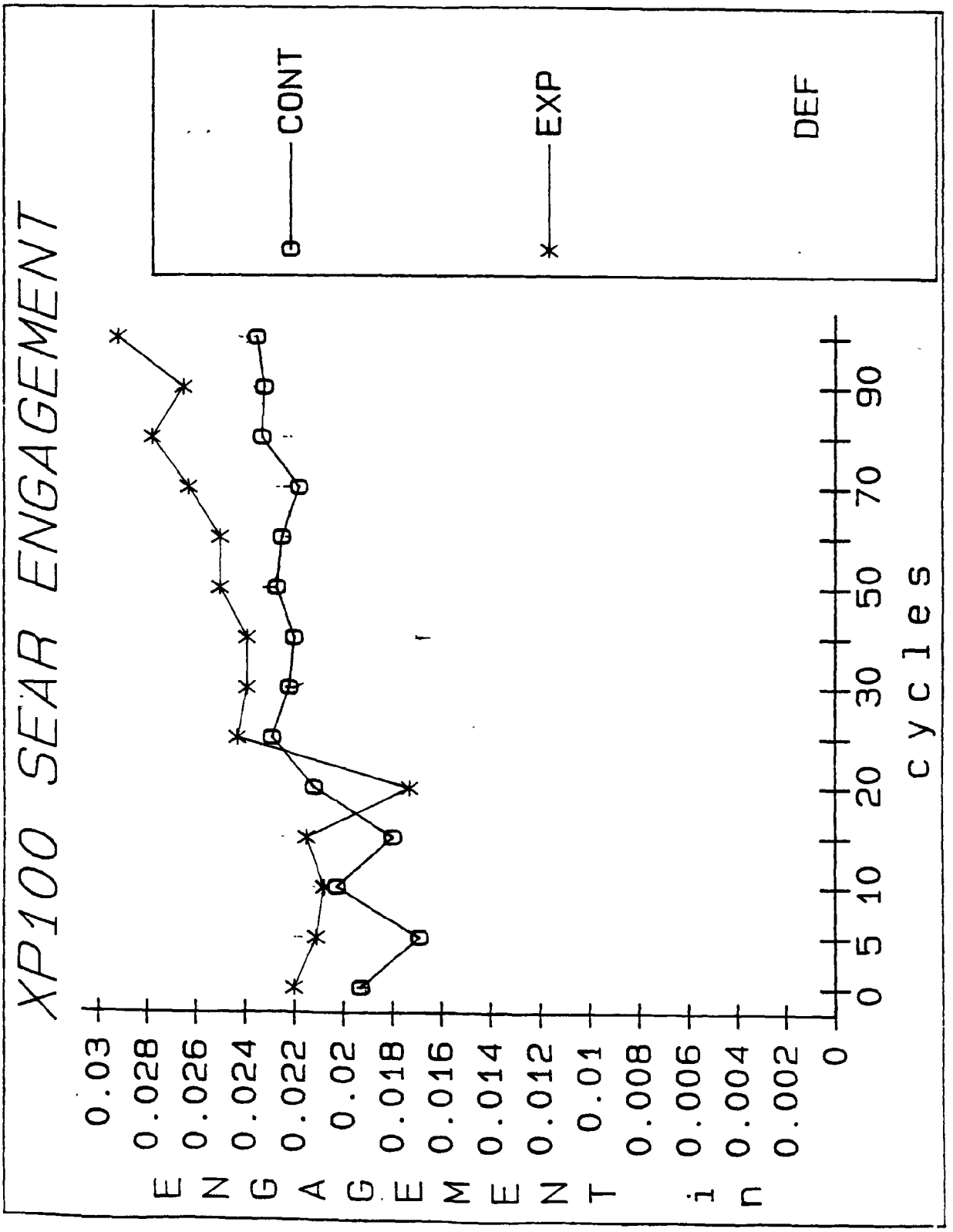
XP100 SEAR ENGAGEMENT
CONT
EXP
DEF
ENGAGEMENT in
0.03
0.028
0.026
0.024
0.022
0.02
0.018
0.016
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
0 5 10 20 30 50 70 90
cycles

REPORT# 890202 DATA SHEET W.O.# 481152

XP100 DRY CYCLE

CYCLES X 100	SEAR ENGAGEMENT CONT 6604	EXP 5583	DEF 6172
0	0.0193	0.022	0.0191
5	0.0169	0.0211	0.0217
10	0.0203	0.0208	0.0209
15	0.018	0.0215	0.0222
20	0.0212	0.0173	0.0234
25	0.0229	0.0243	0.0239
30	0.0222	0.0239	0.022
40	0.022	0.0239	0.0167
50	0.0227	0.025	0.0229
60	0.0225	0.025	0.022
70	0.0218	0.0263	0.0224
80	0.0233	0.0278	0.0221
90	0.0232	0.0265	0.0239
100	0.0235	0.0292	0.0239

Report No. 890202

RESEARCH TEST & MEASUREMENT LAB WORK REQUEST

	AREA OF TESTING	
___ Developmental	___ Safety Related	___ Litigation
X Design Acceptance	___ Competitive Evaluation	___ Warehouse Audit
___ Pre-Pilot	___ New Design	___ Cost Reduction
___ Pilot	X Design Change	Scale ___
___ Production Acceptance	___ Plant Assistance	___ Other

FIREARM STAT'S.	REPORT REQ'D.	
MODEL: XP-100	FORMAL X	DATE REQUESTED: 1-20-89
CAL. or GAGE: .35 Rem	TEST RESULTS ONLY ___	DATE NEEDED BY: A.S.A.P.
BARREL TYPE: ___		REQUESTED BY: F. MARTIN
PROOFED: YES X NO ___		WORK ORDER NO: ___

TEST TYPE

___ Strength Test	___ Ammunition Test	___ Dry Cycle Test	___ Photo/Video
X Function Test	___ Environmental Test	___ Measurements	___ Other ___
___ Accuracy Test	___ Customer Complaint	X Endurance Test	

EXPLAIN IN DETAIL THE REASON FOR THIS TEST: 3-5 Gun Sampces To Be Tested As Follows
1 Each Sample Dry Cycle (50,000 each)
3 Each Sample Shoot 2000 Rnds
To Test And Evacuate New Trig Adjusting Screw/Lock Nut Assembly
Measure Sear Engagement At Start Of Test And Every 500 Dry Cycles And Every 200 Rounds

GUNS REQUIRED:
To Be Supplied

NOTE: NO firearms or parts will be tested in the Labs unless they are accompanied by a Work Request, and both are delivered to the Labs by the designer or engineer. All Work Requests are to be filled out in detail. No Exceptions.

DATE COMPLETED: ___
TEST COMPLETED BY: ___
REPORT DATE: ___

XP 100 86R382

Derby acceptance

Bum Magic
Smokeless Powder

Report accepted
10/14/86

(18)

AUG. 21, 86

XP-100 35 REM DESIGN TEST

THESE XP100 35 REM BOLT ACTION 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 EXISTANT XP 100 PRODUCT LINE.

PROPOSED TEST AREA CONSIDERATION AS VIEWED FROM DESIGN.

I. HEADSPACE – MIN. AND MAX.
THE LAB GAGES ARE LOCATED IN CUSTOM SHOP (WAYNE CARLO) AND WERE LOANED TILL THEIR GAGES WERE READIED.

II. ACCURACY – FIRE TWO FIVE SHOT GROUP PER GUN, SCOPED, FROM A BENCH AT A 100 TARGET.
(X) ONE GROUP WITH R150
(X) ONE GROUP WITH R200.
DO NOT PUT TARGET ON COMPUTER – INSTEAD READ FIVE SHOT GROUP SIZE, BEST FOUR SHOTS IN GROUP, AND BEST THREE

3 SHOTS IN GROUP.

NOTE MALFUNCTION EXPERIENCED WHILE SHOOTING ACCURACY.

III. SELECT A BEST GROUPER AND A WORST GROUPER AND FIRE ACCURACY WITH WIN. AND FED. 35 REM CALIBER AMMOS

IV. STOCK JOINT ENDURANCE
FIRE ONE GUN TO A 1000 ROUND LEVEL WITH GUN FIXTURED IN JACK PLACED SOFT RECOIL REST. INSPECT STOCK JOINT EVERY 200 ROUNDS FOR GLUE BOND FAILURES. RECORD AND MARKER PEN INDICATE SEPERATION LENGTHS EXPERIENCED.

NOTE MALFUNCTIONS EXPERIENCED WHILE SHOOTING ACCURACY.

STOCK JOINT SEPERATION MAY FIRST OCCUR FRONT OR NEAR STOCK SCREW LOCATION INSIDE OF STOCK, ADJACENT TO RECOIL LUG.

FUTURE OR CONTINGENT TEST ACTIVITY MAY FOLLOW WITH THE FOLLOWING.

- BLACK EXPERIMENTAL ST801 (ST SUPERTUF ZYTEL STOCK MATERIAL.

- NYLON BODIED CALCIUM CLORIDE ETHAN ADHESIVE - SOLVENTS THIS MATERIAL IS NON-TOXIC WHILE PHENOLWELD ISPO

- IRONSIGHTS — FIT, POI/POA, ADJUS

- MAGNA PENTING —

RD 6681 Sheet ____ of ____

SPECIAL TEST REPORT

MODEL XP100 35 SHOOTER — DATE 8 08 86

Gun No.	Ga./ Cal.	Heavy Jack Rds.	Heavy Jack Type	Heavy Jack Results		Light Jack Rds.	Light Jack Type	Light Jack Results
6066	35	5	200	2.0	ACTION USED IN ENDURANCE ① ②, ③			
4009 ✓		5	↓	2.2	x stock used in endurance ③			
4311 ✓		↓	↓	1.5				
6018 ✓		↓		1.5				
5993 ✓				2.0				
0556 ✓				2.0				
3713 ✓				2.5	ACTION USED IN ENDURANCE ④, ③ ⑥			
6033 ✓				1.5				
2645 ✓				1.5				
3096 ✓				1.5				
0477 ✓				1.7				
0588 ✓				1.5	x stock used in Endurance ②			
3226 ✓				1.5				
6033 ✓				1.5				

SERIAL NUMBER	CALIBER	NOTES
B7510477	308 WIN. ✓	—
B7516103 ? (NOT HERE)	223 REM.	—
B7514311	308 WIN ✓	—
B7510556	223-REM	—
B7506033	NONE LISTED	—
B7514009	223 REM	—
B7513713	308 WIN ✓	—
B7509847 SCRAP-RETURNED	7MM-08 REM ✓	—
B7505993	221 REM	SIGHTS - SATISFACT.
B7513096	308 WIN ✓	—
B7506018	7MM BR REM ✓	—
B7513226	308 WIN ✓	—
B7512645	7MM-08 REM ✓	—
B7513226	308 WIN ✓	—
B7506066	7MM MS ✓	—
? 0588 — CUSTOM BARREL		

TOTAL COUNT = 15 GUNS

ABOVE XP100 INVENTORY IS SCHEDULED FOR RE-BARREL TO THAT OF 35 REM FOR DESIGN TEST, FIELD TEST, AND SPARES WAITER SAMPLES. THIS WILL TAKE PLACE IN THE REMINGTON-ILION CUSTOM GUN SHOP. THE GUN MAYBE LIGHT WEIGHT AND EXTRA SAMPLES WILL BE PREPARED SUCH THAT FALL OF 86 DEER SEASON CAN BE A TEST OF THIS AREA OF PRODUCT DESIGN. 6/6/86 AAH

June 6 '86

WORK ORDER - C0801-307-Y

P100 - ADDITIONAL CALIBERS
(35 REM).

(12) 700 CUS
[redacted] BARRELED ACTIONS
15?
ADAM HUGICIC (461)

* WILL BE OUT OF PLANT, JUNE 9 → 13, 86

35 REM CHAMBERS

FRONT SIGHT & SIGHT HOLES
FRONT & REAR
15"
700 CROWN

XP-100 ~~BR~~ 872151
883401 35RFM Lock Washer/Engagement Screw
852731 223 Accuracy ~~X~~ Trust

Report No. 883401

RESEARCH TEST & MEASUREMENT LAB WORK REQUEST

	AREA OF TESTING	
* Developmental	___ Safety Related	___ Litigation
___ Design Acceptance	___ Competitive Evaluation	___ Warehouse Audit
___ Pre-Pilot	___ New Design	* Cost Reduction
___ Pilot	___ Design Change	Stake ___
___ Production Acceptance	___ Plant Assistance	___ Other

FIREARM STAT'S.	REPORT REQ'D.	
MODEL: XP-100	FORMAL ___	DATE REQUESTED: 12-5-88
CAL. or GAGE: .35 REM	TEST RESULTS ONLY *	DATE NEEDED BY: 1-16-89
BARREL TYPE: ___		REQUESTED BY: RS MURPHY
PROOFED: YES * NO ___		WORK ORDER NO: 481152

TEST TYPE

___ Strength Test	___ Ammunition Test	___ Dry Cycle Test	___ Photo/Video
* Function Test	___ Environmental Test	___ Measurements	___ Other ___
___ Accuracy Test	___ Customer Complaint	___ Endurance Test	___

EXPLAIN IN DETAIL THE REASON FOR THIS TEST:

These XP's were assembled in Production. Please function these three guns to 500 rds in a jack. Shoot the 200 gr. bullet weight. Every 100 rounds please return the guns to production and comparator check (and record the sear engagement. The test is to verify that the lock washers installed to prevent movement of the engagement screw will work. NOTE: If the lock washers do not work, sear engagement may change and the gun may FSR or Fire on Closing!

GUNS REQUIRED: # B7525755 # B7525802 # B7525875

NOTE: NO firearms or parts will be tested in the Labs unless they are accompanied by a Work Request, and both are delivered to the Labs by the designer or engineer. All Work Requests are to be filled out in detail. No Exceptions.

DATE COMPLETED: 12/18/88

TEST COMPLETED BY: CS

REPORT DATE: 12/19/88

TEST AND MEASUREMENT LAB - TEST REPORT

REQUESTER:R. MURPHY TESTER:C. STEPHENS DATE:9 DEC 88
REPORT NO.:883401 WORK ORDER:481152
WRITTEN BY:C.STEPHENS

TEST TYPE:TEST RESULTS

FIREARM STAT'S: MODEL:XP100 CAL OR GAGE:35 REM
BARREL TYPE: PROOFED:YES

REASON FOR TEST:
TO VERIFY THAT INSTALLING LOCKWASHERS ON THE ENGAGEMENT SCREW WILL PREVENT MOVEMENT OF THE SCREW.

EQUIPMENT REQUIRED:
3 XP100 IN 35 REM,SHOOTING ROOM,COMPARATOR,PERSONAL

TEST PROCEDURE:
EACH GUN WAS SHOT 500 RDS. AT 100 RD. INTERVALS EACH GUN WAS TAKEN TO PRODUCTION AND THE SEAR ENGAGEMENT AND OVER TRAVEL CHECKED.

TEST RESULTS:
THE RESULTS SHOW THAT TWO GUNS SHOWED MOVEMENT WITHIN TWO HUNDRED ROUNDS ON SEAR ENGAGEMENT. BOTH GUNS REMAINED WITHIN SPECS. ALL THREE GUNS SHOT THE LAST THREE HUNDRED ROUNDS WITH NO MOVEMENT

43-706 20/20 BUFF

883401
8 Dec 88
C. Stephens

Trigger Adjustment LocKNut

	Serial No.	1 100rds Sear	1 100rds Over Travel	2 200rds Sear	2 200rds Over Travel	3 300rds Sear	3 300rds Over Travel	4 400rds Sear	4 400rds Over Travel	5 500rds Sear	5 500rds Over Travel	6
1	B7525802	Mean	Max	Mean	Max	Min	Max	Min	Max	Min	Max	
2												
3	B7525755	Max	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	
4												
5	B7525875	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	
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BARBER - PRESALE R 0131122

MODEL XP-100

Costs & Estimates

BARBER - PRESALE R 0131122
R2532110

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

Remington Rand
5018 R · IF FASTENER
INCLUDED PLEASE SPECIFY
REMTEX FOLDER
MADE IN U S A

LIMITED DISTRIBUTION

CC: J. E. Dickey, Jr. - Bapt.
F. E. Morgan - "
S. M. Alvis
D. E. Miller
File

Ilion, New York
February 20, 1963

E. H. Bleckwell
Gail Evans
H. K. Faulkner
H. M. Stoessel
G. M. Calhoun

XP-100 PISTOL & MODEL 600 RIFLE - SELLING PRICE

Information on pricing the XP-100 Pistol and Model 600 Rifle was reviewed at the February 12 Operations Committee. The review was based on the Plant's letter to Gail Evans of January 25 concerning this subject. The following memorandum summarizes the pricing recommendations of the Committee.

Status Prior to Meeting

The status of the rifle and pistol prior to the February 12 meeting was:

	Model 600 Rifle	XP-100 Pistol
Retail Selling Price	Not established (Project Basis - $85)	Not established (Project Basis - $75)
Planned Calibers	222, 308 & 30-30	221 Remington
Stock	Wood - Monte Carlo Shape (No checkering, grip cap, fore end tip, swivels or sling)	Nylon

Pricing Recommendations

Model 600 Rifle

The Sales Department suggests the rifle can be successfully marketed at $100 retail by adding Custom Checkering and changing the planned calibers from 222 and 30-30 to the new calibers 284 Winchester and 350 Remington Magnum, retaining the 308. They estimate the long term sales volume will be fifteen thousand (15,000) a year. The basis for their recommendations are:

- The retail price of the rifle must be increased above the $85 used in the project. Earnings at this price are inadequate, being about break-even for the 308 and 222 calibers and a $2.38 loss for the 30-30 caliber, on a full book cost basis. The earnings are poorer than originally projected due to lower estimated total plant volume, higher manufacturing cost for the 30-30 caliber and other small production cost increases.

- Since the price must be increased, the rifle will no longer compete price for price with the Winchester Model 94 and must compete with higher priced rifles. Consequently, features such as 30-30 Winchester to compete directly with the Winchester 94 may be dropped and other competitive features added for the higher price class.

  Sales proposes the competitive features be improved by adding Custom Checkering to the sides of the grip and fore end. This provides significantly more appeal at small increased cost.

  They also propose to substitute two new cartridge calibers, 284 Winchester and 350 Remington Magnum for the previously planned 222 Remington and 30-30 Winchester. Experience indicates a short barrel 222 Caliber rifle has no appeal. The 30-30 is obsoleted by cartridges with better ballistics. It is also hampered by additional project cost for design and tooling and by higher production cost than the rimless calibers. The additional project cost for 30-30 caliber has been estimated at $110,000 of which only $15,000 has been spent. Abandoning this caliber now will reduce project expenditures $95,000.

- The Model 600 rifle with its proposed features and $100 price should not materially affect Model 700 rifle sales. If it does, however, the cash operative earnings of approximately $25 compares favorably with the $27.40 cash operative earnings of the Model 700 ADL.

The Production, Research, and Treasurer's Departments agree with Sales' recommendations as proposed.

Table 1 attached summarizes the economics of the rifle as now proposed. The table also shows for comparison the economics of selling the originally planned calibers of 222 Remington, 308 Winchester and 30-30 Winchester at $100 retail.

XP-100 Pistol

The retail selling price of the pistol must also be raised over the $75 used in the project because of an estimated $3.68 full book loss at this price. The earnings are poorer than originally projected due to lower estimated total plant volume, the higher cost of the pistol packing case, and other small increased manufacturing costs. The simulated leather pistol case adds about $3.55 full book packaging cost.

The Sales Department feels the pistol can be marketed for $95 retail and support a long term volume of 5000 a year. They feel the pistol must be priced below the rifle to maintain our marketing integrity. A visual comparison of the rifle and the pistol indicates to the Sales Department that the pistol should sell for a lower price.

The other departments question if the pistol cannot retail for $100. They suggest the pistol will appeal to a limited market whose size will be unaffected by small differences in price. They also point out the full book manufacturing cost of the pistol at $100 is only $1 less than the rifle, and does not justify a $5 lower retail ($2.60 net selling) price.

The pistol price was left unresolved and will be determined by further discussion of the Committee at Bridgeport. Table 2 attached summarizes the economics of selling the pistol for $95 and for $100.

L. D. Cox

L. D. Cox

LDC:I
Attachments

TABLE 1

MODEL 600 RIFLE

OPERATIVE EARNINGS AND RETURN ON INVESTMENT AT PROPOSED $100 RETAIL SELLING PRICE

Costs Include Custom Checkering

	At The Selling Price & With The Calibers Unanimously Proposed By All Departments	At The Selling Price Unanimously Proposed By All Departments & With The Original Calibers For Which The Rifle Was To Be Designed		
Retail Selling Price	$100.00	$100.00		
Net Selling Price	53.82	53.82		
Calibers	Rimless Only 284 Win.* 308 Win. 350 Rem. Mag.*	Rimless 222 Rem. 308 Rem.	Rimmed 30-30	Total 222 Rem. 30-30 Win. 308 Win.
Estimated Third Year Volume	15,000	9,000	6,000	15,000
FULL BOOK COST DATA				
Unit Cost of Goods	$ 46.73	$46.73	$49.43	$47.82
Unit Operative Earnings	7.09	7.09	4.39	6.00
% of Net Selling	13%	13%	8%	11%
OUT OF POCKET COST DATA				
Unit Cost of Goods	$ 28.60	$28.60	$30.10	$29.20
Unit Operative Earnings	25.22	25.22	23.72	24.62
Total Operative Earnings	$378 M	$227 M	$142 M	$369 M
Net Earning After Franchise Tax, All Other Expense, and Federal Tax	164 M	98 M	61 M	159 M
Investment				
Permanent Investment	$ 88 M	$ 88 M	—	$ 88 M
Working Capital	433 M	261 M	179 M	440 M
Total Capital Required	$521 M	$349 M	$179 M	$528 M
% Return on Total Capital	31%	28%	34%	30%

* Costs and earnings for calibers assumed the same as the prototype models displayed, with the addition of Custom Checkering. Any need for stainless steel Barrel or Recoil Pad would presumably have added cost offset by increased selling price.

TABLE 2.

XP-100 PISTOL

OPERATIVE EARNINGS AND RETURN ON INVESTMENT AT $95 AND $100 RETAIL SELLING PRICE

Retail Selling Price	$ 95.00	$100.00
Net Selling Price	51.13	53.82
Calibers	221 Rem.	221 Rem.
Estimated Third Year Volume	5000	5000
FULL BOOK COST DATA		
Unit Cost of Goods	$ 45.39	$ 45.73
Unit Operative Earnings	5.74	8.09
% of Net Selling	11%	15%
OUT OF POCKET COST DATA		
Unit Cost of Goods	$ 29.10	$ 29.10
Unit Operative Earnings	22.03	24.72
Total Operative Earnings	$110 M	$124 M
Net Earnings After Franchise Tax, All Other Expense and Federal Tax.	$ 48 M	$ 54 M
Investment		
Permanent Investment	$ 85 M	$ 85 M
Working Capital	144 M	146 M
Total Capital Required	$229 M	$231 M
% Return on Total Capital	21%	23%

LIMITED DISTRIBUTION

cc: E. H. Bleckwell
G. M. Calhoun
H. M. Stoessel
H. K. Faulkner
F. E. Morgan
S. M. Alvis
D. E. Miller
File

This seems to assume that if cal 30-30 not marketed there would be no pick up of the 30-30 volume added to cal 308 + 222

SMA

Ilion, New York
January 25, 1963

GAIL EVANS
DIRECTOR OF SALES

SUBJECT: XP-100 PISTOL AND M-600 RIFLE
INFORMATION FOR PRICING DECISIONS

The attached information has been assembled to assist in pricing the XP-100 pistol and Model 600 rifle. It is based on January, 1963 estimates of project expenditures and product costs prepared by Research and the Plant, and reflects the cost increases for pistol packaging, the 30-30 caliber rifle and other minor increases since the original project was prepared a year ago. It is assembled so you can judge on the two bases normally used for these decisions:

- Percent return on Total Capital Required and Total Sales Required to Recover Project Expenditures, based on out-of-pocket costs - Table 1 and Figures 1 through 4.

- Operative Earnings and Operative Earnings as percent of Net Selling, based on full book costs - Table 2.

The economics for the rifle and pistol are inter-related. We have tried to define the limiting condition of this inter-relationship by developing information for pricing based on:

- Selling price for the pistol and the rifle, presuming both are marketed, with the rifle in calibers 308, 222, and 30-30.

- Selling price for the rifle presuming 30-30 caliber is not marketed.

- Selling price for the pistol presuming rifle is not marketed at all.

Supplementary details are covered in the attached discussion.

If it is decided not to market the rifle in caliber 30-30, an early decision can save about $95,000 Operations and Research costs. Only about $15,000 will have been committed out of the estimated $110,000 total cost to bring in this caliber, if the decision can be reached within the next month or so.

We will try to answer any questions you may have concerning the attached information. I will include a discussion of this for your consideration on the suggested agenda of the February Operations Committee meeting.

D. E. Miller
Works Manager

L. D. Cox

Per L. D. Cox

LDC:ms

DISCUSSION

XP-100 PISTOL AND MODEL 600 RIFLE INFORMATION FOR PRICING DECISIONS

Revised Estimate of Project AD-XP-700 Economics - Table 1.

Table 1 shows the effect on the project economics of the higher costs for the .30-30 caliber rifle, for the new pistol case, and for other minor manufacturing cost increases since the original project estimate a year ago. The estimated cost of the pistol case, and its outer wrap and casing materials is approximately $3.10 compared to $.34 used in the project estimate.

The estimated Project Expenditure has increased from $672,000 to $738,000, primarily for more Operation and Research charges to bring in the caliber 30-30 rifle. The increased Project Expenditure can be handled without an additional part since it will be within the permissible 10% overrun.

The allocation of permanent investment for the pistol is $6,000 higher and for the rifle $13,000 lower that a year ago. The same basis has been used to allocate the investment. Any equipment used exclusively by the rifle or pistol is allocated 100% to the user. Any equipment used by both is allocated 50% to each since the equipment would be required to produce each, independent of its volume. Though less total equipment is being purchased, more of it is being used for the pistol than was estimated a year ago.

Only about $15,000 of the estimated $110,000 has been spent toward the 30-30 caliber. If it is decided not to bring out this caliber, an early decision will save in the range of $95,000.

Effect of Selling Price on Profit Margin for Rifle and Pistol - Table 2.

This information is based on full book cost and is equivalent to that in the monthly Operative Earnings statement on which individual model performance is judged. The Unit Operative Earnings are essentially independent of changes in the rifle or pistol volume. The burden factors applied to the model costs are dependent on total plant volume (359,000 units) and the effect of a change in pistol or rifle volume is negligible.

Effect of Selling Price and Volume on Payout and Percent Return on Total Capital Required - Figures 1 through 4.

Figures 1 and 2 - For the Pistol and Rifle, Respectively, Based on Marketing Both, With Rifle in Calibers 308, 222, and 30-30 Per Project.

These two figures are essentially straight forward. The volume of sales to recover their Operations and Research charges have been indicated as a measure of the time before the project begins earning a return.

Pricing the Model 600 faces the problem of cutting into Model 700 ADL sales with the latter's higher profit margin. The operative earnings of the Model 700 ADL based on out-of-pocket costs are about $27.40. The operative earnings of the Model 600 rifle on an out-of-pocket cost basis are:

Retail Selling Price	Operative Earnings (Based On Out-of-Pocket Costs)
$ 85	$ 16.
$ 95	$ 21.
$105	$ 26.
$115	$ 31.

Figure 3 - For The Rifle, Based on Marketing the Pistol and Rifle, With Rifle in Calibers 308 and 222 only.

This information indicates the effect of abandoning the caliber 30-30. The project expenditures are the same as in Figure 2 except the Operation and Research charges for the rifle assume only $15,000 expended for the caliber 30-30 before abandoning it.

As an illustration, the project is based on selling 9,000 a year caliber 308 and 222 and 6,000 a year caliber 30-30. If the Model 600 is priced at $95.00 retail, the percent return on total capital required from Figure 2 would be 27%. If it is assumed the caliber 30-30 is not marketed and only 9,000 caliber 308 and 222 would be sold, Figure 3 indicates the percent return on total capital required would be 25%.

Figure 4 - For The Pistol, Based on Marketing the Pistol Only.

In view of the pricing problem on the Model 600, this information shows the effect of not marketing the Model 600. The Permanent

Investment includes all the new equipment used for the pistol if the rifle is not marketed. Any equipment purchased for the rifle which could be profitably used for other models has not been charged against the pistol. The Operations and Research charges to be recovered include those for the pistol and those already spent for the caliber 308, 222 and 30-30 rifle.

The tabulation below is based on Figure 4 and shows the volume and selling price relationship for the pistol to earn 20% return on the total capital required if the rifle is not marketed.

XP-100 PISTOL VOLUME	RETAIL SELLING PRICE FOR 20% RETURN ON TOTAL CAPITAL REQUIRED
3,000	$130.00
5,000	$107.50
10,000	$ 91.50

BARBER - PRESALE R 0131133

PROJECT AD-XP-700-2
XP-100 PISTOL AND M-600 RIFLE
COMPARISON OF ORIGINAL & CURRENT THIRD YEAR ECONOMICS BASED ON PROJECT SELLING PRICES
OUT OF POCKET COST BASIS

6 | 183.0
30.50 82
9 | 2630.
29.22

	Original Project				Present Estimate At Project Selling Prices			
	XP-100 Pistol	M-600 Rifle 308 222	M-600 Rifle 30-30*	Total	XP-100 Pistol	M-600 Rifle 308 222	M-600 Rifle 30-30	Total
Quantity	3,000	15,000		18,000	3,000	9,000	6,000	18,000
Retail Selling Price	$75.00	$85.00			$75.00	$85.00	$85.00	
Net Selling Price	$40.37	$45.74			$40.37	$45.74	$45.74	
Net Sales	$ 121M	$ 686M		$ 807M	$ 121M	$ 412M	$ 274M	$ 807M
Cost Of Goods	73M	408M		481M	90M	263M	183M	$ 536M
Operative Earnings	$ 48M	$ 278M		$ 326M	$ 31M	$ 149M	$ 91M	$ 271M
Net Earnings	$ 22M**	$ 125M**		$ 147M**	$ 13M	$ 68M	$ 41M	$ 122M
Investment								
Permanent (Allocated)	$ 79M	$ 101M		$ 180M	$ 85M	$ 88M	$ -	$ 173M
Working Capital	82M	399M		481M	83M	249M	170M	502M
Total Capital Required	$ 161M	$ 500M		$ 661M	$ 168M	$ 337M	$ 170M	$ 675M
Percent Return On Total Capital Required	14%	25%		22%	8%	20%	24%	18%
Operations & Research Costs	$ 215M			$ 215M	$ 222M			$ 222M
308 & 222		$ 228M		$ 228M		$ 233M		233M
30-30		49M		49M			110M	110M
Total Project Cost (Permanent Investment and Operations and Research Costs)	$ 294M	$ 378M		$ 672M	$ 307M	$ 321M	$ 110M	$ 738M

* Production cost assumed same as .308 and .222

** Adjusted for 6% All Other Expense Rate Instead of 8% In Effect When Original Project Was Prepared.

Table 1.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131133 R2532121

BARBER - PRESALE R 0131134

PROJECT AD-XP-700-2
EFFECT OF SELLING PRICE ON PROFIT MARGIN OF
XP-100 PISTOL AND MODEL 600 RIFLE
FULL BOOK COST BASIS
UNIT COST DATA PER M&S ESTIMATES OF JANUARY 16, 1963

	XP-100 PISTOL			
Retail Selling Price	$75.00 *	$85.00	$95.00	$105.00
Net Selling Price	40.37	45.74	51.13	56.51
Cost of Goods				
Full Factory	39.00	39.00	39.00	39.00
Selling & Adm.	3.84	4.35	4.86	5.37
Research	1.21	1.37	1.53	1.70
Total	$44.05	$44.72	$45.39	$ 46.07
Unit Operative Earnings	(3.68)	1.02	5.74	10.44
% Of Net Selling	(9%)	2%	11%	18%

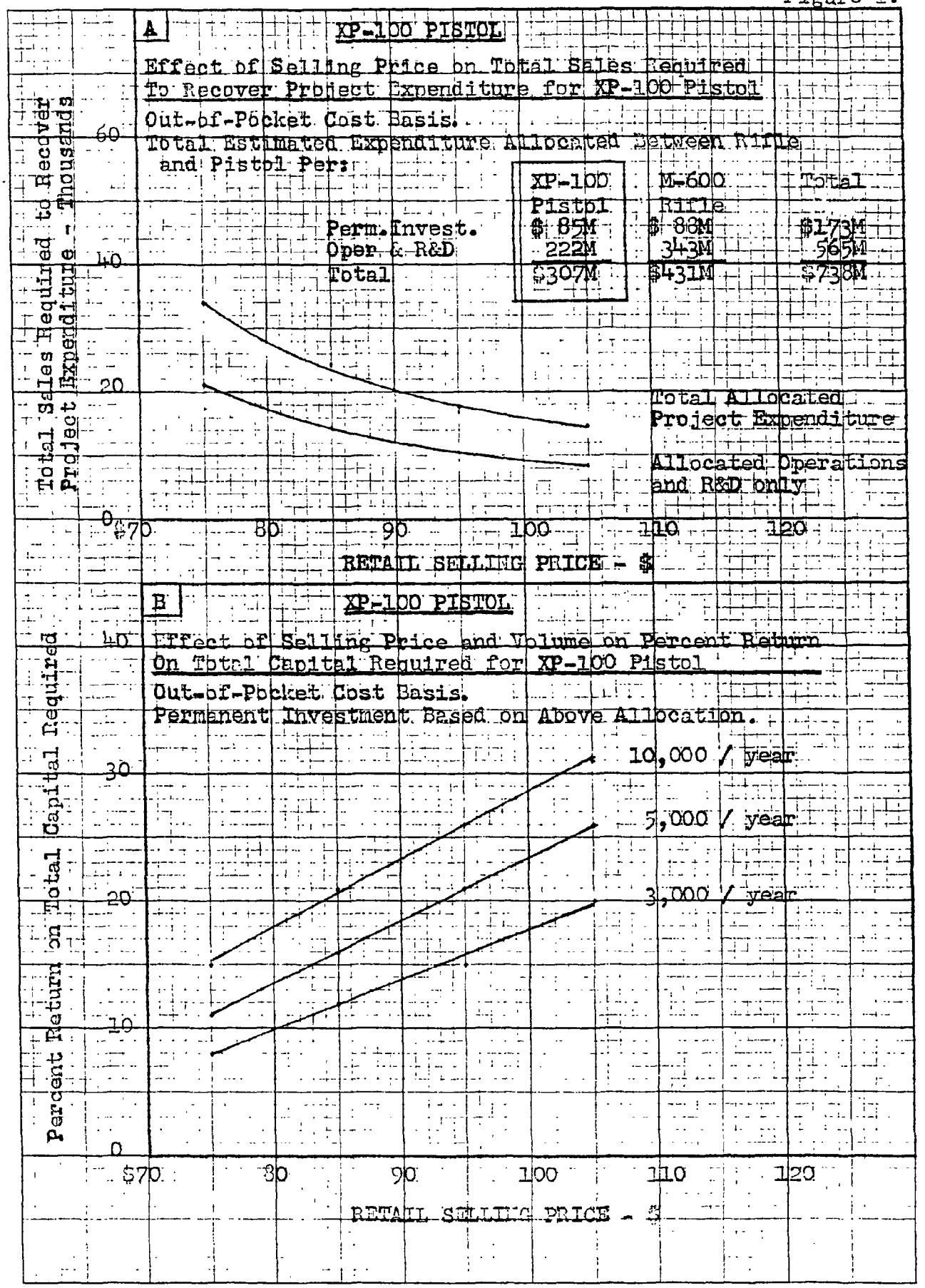
	MODEL 600 RIFLE							
Retail Selling Price	$85.00 *		$95.00		$105.00		$115.00	
Net Selling Price	45.74		51.13		56.51		61.90	
Caliber	308 222	30-30	308 222	30-30	308 222	30-30	308 222	30-30
Cost of Goods								
Full Factory	$39.70	$42.40	$39.70	$42.40	$39.70	$42.40	$39.70	$42.40
Selling & Adm.	4.35	4.35	4.86	4.86	5.37	5.37	5.88	5.88
Research	1.37	1.37	1.53	1.53	1.70	1.70	1.86	1.86
Total	$45.42	$48.12	$46.09	$48.79	$46.77	$49.47	$47.44	$50.14
Unit Operative Earnings	.32	(2.38)	5.04	2.34	9.74	7.04	14.46	11.76
% Of Net Selling	-	(5%)	10%	5%	17%	12%	23%	19%

* Retail selling price used in Project.

Table 2.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON
BARBER - PRESALE R 0131134
R2532122

Figure 1.



K+E 10 X 10 TO THE INCH 359-5DG KEUFFEL & ESSER CO. MADE IN U.S.A.

Figure 2.

A

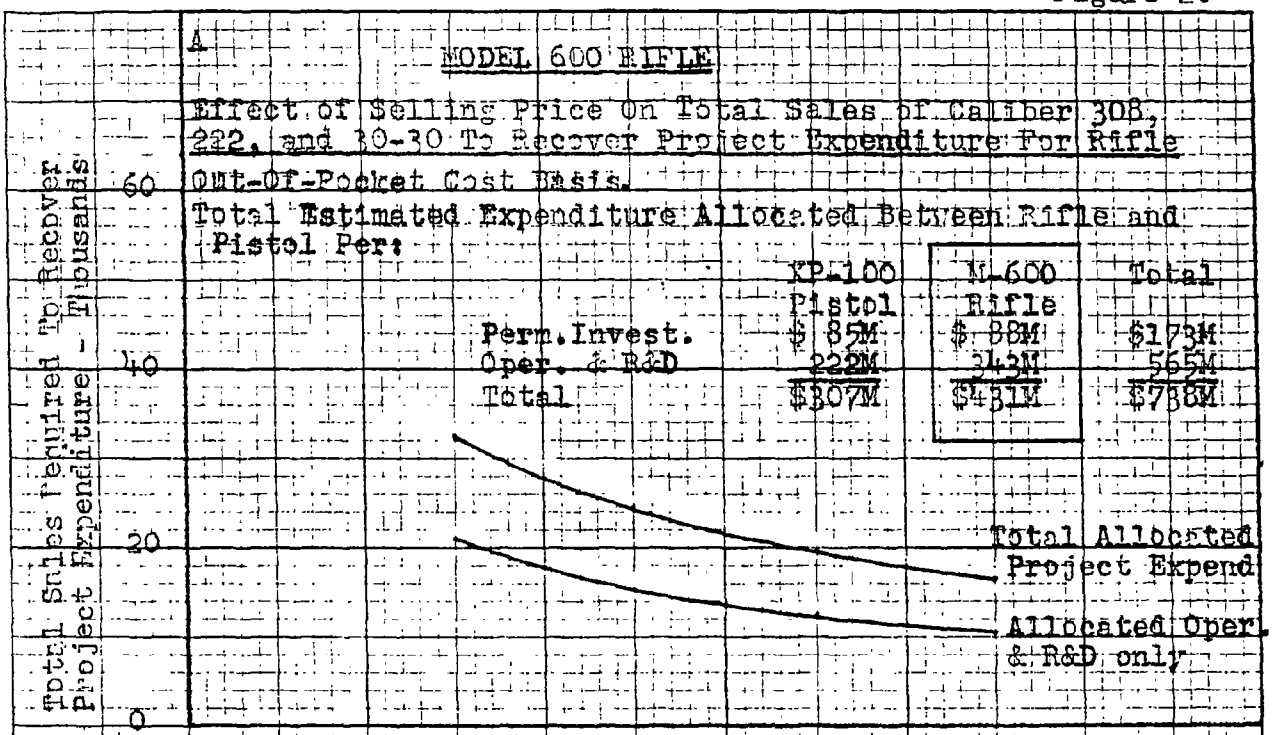
MODEL 600 RIFLE

Effect of Selling Price On Total Sales of Caliber 308, 222, and 30-30 To Recover Project Expenditure For Rifle

Out-Of-Pocket Cost Basis.

Total Estimated Expenditure Allocated Between Rifle and Pistol Per:

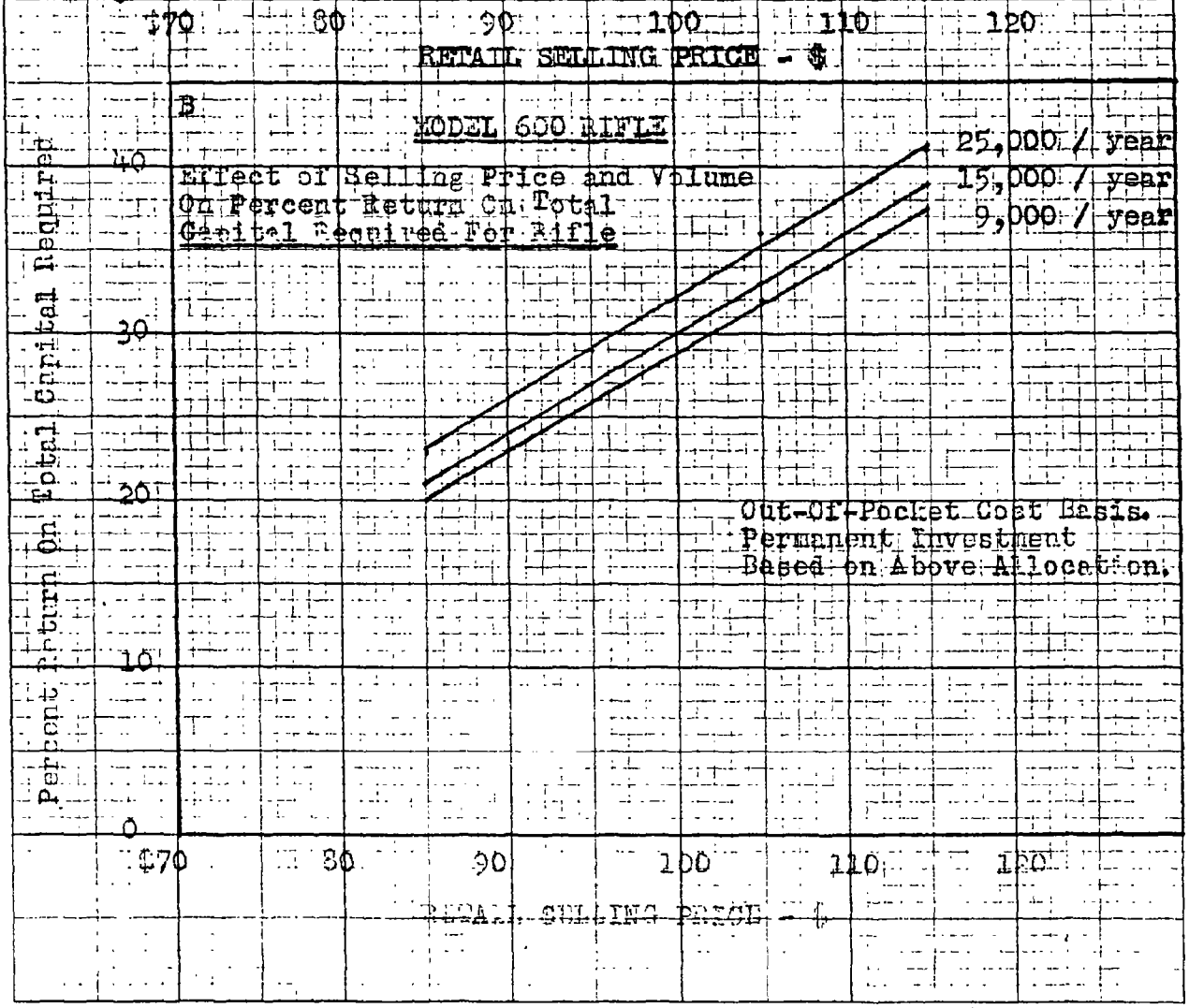
	XP-100 Pistol	M-600 Rifle	Total
Perm. Invest.	$ 85M	$ 88M	$173M
Oper. & R&D	222M	343M	565M
Total	$307M	$431M	$738M



B

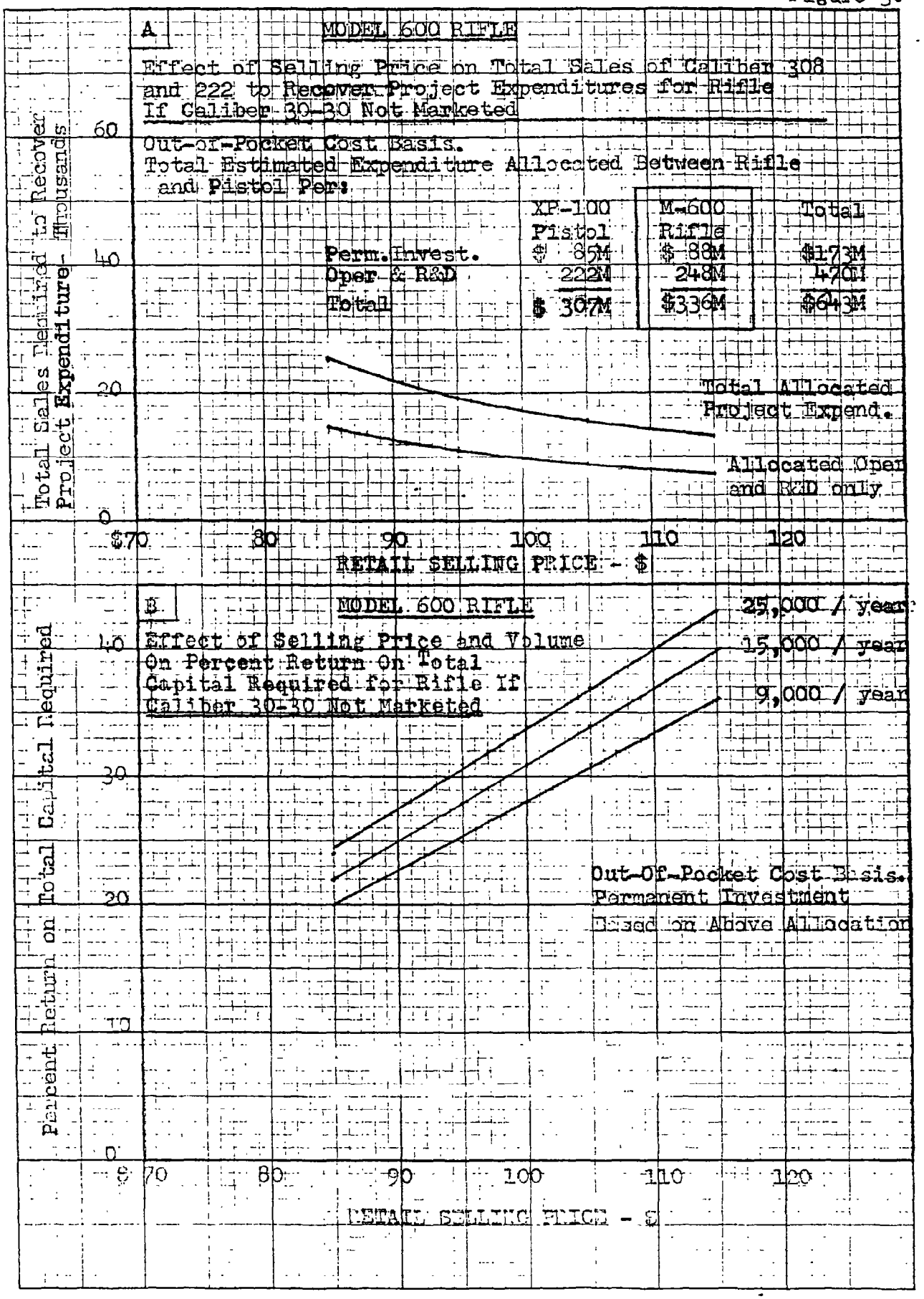
MODEL 600 RIFLE

Effect of Selling Price and Volume On Percent Return On Total Capital Required For Rifle



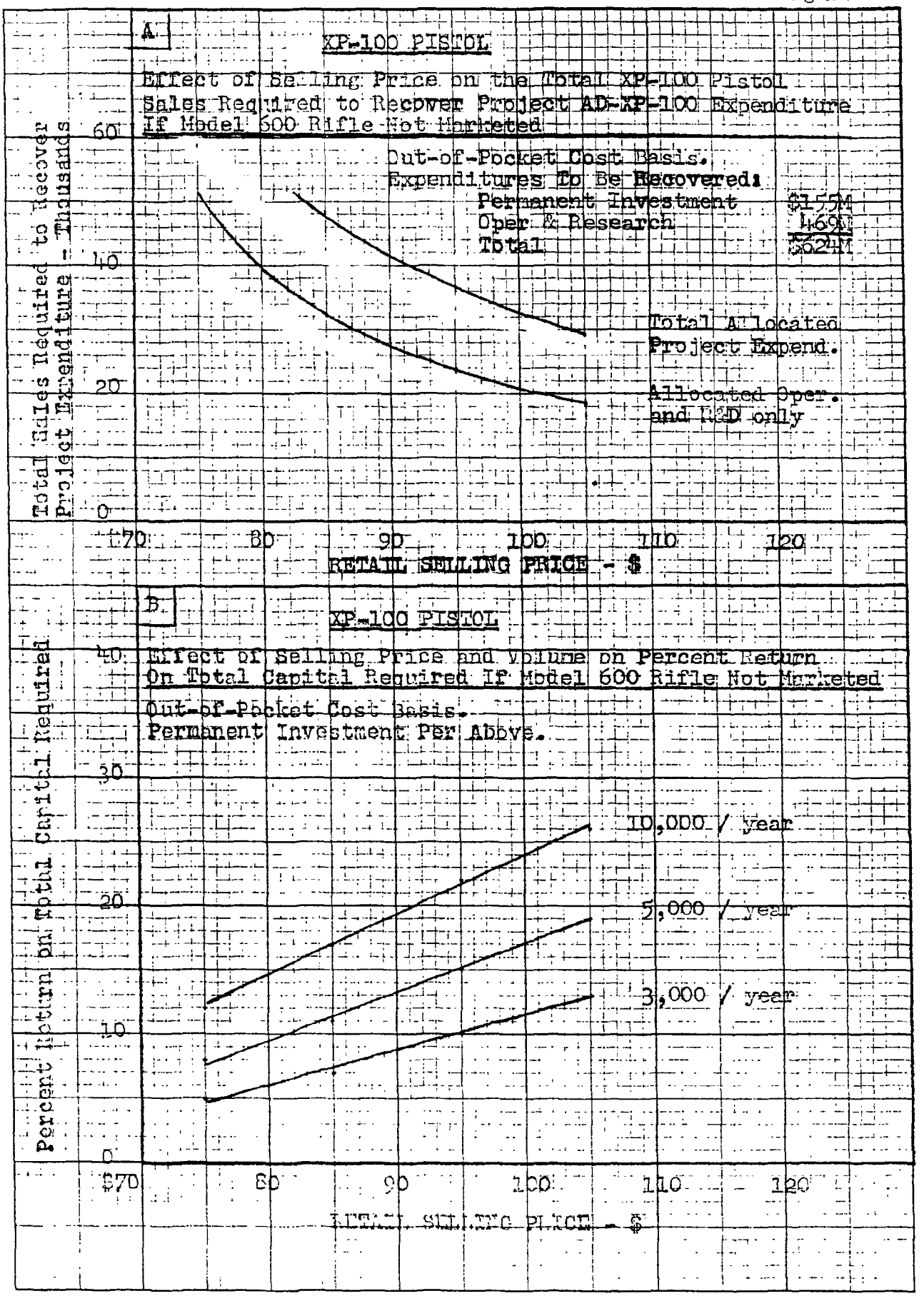
K&E 10 X 10 TO THE INCH 359-5DG KEUFFEL & ESSER CO. MADE IN U.S.A.

Figure 3.



K+E 10 X 10 TO THE INCH 359-5DG KEUFFEL & ESSER CO. MADE IN U.S.A.

Figure 4.



K+E 10 X 10 TO THE INCH 359-5DG KEUFFEL & ESSER CO. MADE IN U.S.A.

Remington Arms
Ilion, N.Y.

Attention of Mr. Schroder Date March 21, 1962

Gentlemen: We propose to furnish the following, subject to the conditions on the reverse side hereof:

1 - 4 Cavity injection mold to produce trigger guard $11,400.00

(Price includes adjustment for fit)

Terms - same as last
25% with order
25% - 1/2 finished
25% - on Delivery
25% - Approval of Samples

We can make shipment after receipt of your order.

Terms F.O.B. our plant.

The conditions and statements on the reverse side of this sheet are to be considered as express covenants and undertakings included as of the essence of any contract accepted by us based upon your order submitted to us in pursuance of and in accordance with this proposal

[illegible] proposal on your order

J. G. TILP, INC.

By

PROPOSAL

2033

J. G. TILP, INC.

MOLDS

Compression · Injection · Transfer

MILLTOWN ROAD, UNION, N.J.

Phone MUrdock 6-7307

Remington Arms
Ilion, New York

Attention of Mr. Schrader

Date March 21, 1962

Gentlemen: We propose to furnish the following, subject to the conditions on the reverse side hereof:

1- 2 Cavity injection mold to produce fore-end tip spacer $1,700.00

Terms - same as last
25% - with order
25% - 1/2 finished
25% - on delivery
25% - Approval of Samples

We can make shipment end of June after receipt of your order.

Terms F.O.B. our plant.

The conditions and statements on the reverse side of this sheet are to be considered as express covenants and undertakings included as of the essence of any contract accepted by us based upon your order submitted to us in pursuance of and in accordance with this proposal.

Please refer to our [illegible] the serial number of this proposal on your order.

J. G. TILP, INC.

By

PROPOSAL

No. [illegible]

J. G. TILP, Inc.

[illegible]

[illegible]

[illegible]

Attention of Mr. [illegible] Date March 21, 1962

Gentlemen: We propose to furnish the following, subject to the conditions on the reverse side hereof:

1 - 4 Cavity injection mold to produce curved grip diameter (Watson Stillman Split Bar) $1,900.00

Terms - Same as last
25% - with order
25% - 1/2 Finished
25% - On Delivery
25% - Approval of Samples

We can make shipment End of June after receipt of your order.

Terms ..... F.O.B. our plant.

The conditions and statements on the reverse side of this sheet are to be considered as express covenants and undertakings included as of the essence of any contract accepted by us based upon your order submitted to us in pursuance of and in accordance with this proposal.

Please refer to and include the serial number of this proposal on your order.

J. G. TILP, INC.

By Karl Oehner

COMPANY CONFIDENTIAL

cc: M. R. Warden
H. K. Faulkner
G. M. Calhoun
Gail Evans
D. E. Miller
S. M. Alvis

January 31, 1962

R. H. COLEMAN
ASSISTANT GENERAL MANAGER

XP-700 PISTOL - PRICING INFORMATION

The following information is supplied in response to your request for additional data to use in pricing the new XP-700 pistol. The marketing information on competitive hand guns, their features and selling prices, that you also asked for is being prepared by the Sales Department.

Table 1A attached tabulates the total number of pistols that would have to be sold at different selling prices to recover both the total project expenditure and also the operations and R&D charges only for the XP-700 pistol. The latter is of interest since these costs must be recovered before any return can be realized. This information is plotted in Figure 1A. For purposes of the analysis, the permanent investment in the project for equipment to be used by both the XC-13 rifle and XP-700 pistol was split equally between them. This is reasonable to do because the investment would be made in behalf of each to get into production, independent of volume. R&D and operations charges were allocated to the rifle and pistol on the basis of the expense for each.

Table 1B indicates the effect of selling price and average annual volume on the return on the total capital required for the pistol, total capital required being the sum of permanent investment and working capital. The permanent investment for the pistol was allocated to it as described above. The working capital was based on that required for the pistol in the project, adjusted for various pistol volumes and selling prices. The project was based on $75 selling price, with first year volume of 5,000 and third year volume of 3,000. The indicated third year return for the pistol is 13.2%. The low return on the pistol is being offset by that on the rifle, based on the combined third year return in the project of 21.8%. An analysis of the third year return for both the rifle and pistol is tabulated in Table 2 for comparison.

Please advise if there is any additional information we can supply.

REMINGTON ARMS COMPANY, INC.

D. E. Miller
Works Manager

By L. D. Cox
L. D. Cox
Modernization Coordinator

LDC:ms

Table 1.

1A. XP-700 PISTOL

EFFECT OF SELLING PRICE ON TOTAL SALES REQUIRED TO RECOVER TOTAL PROJECT EXPENDITURE

Cash Basis
Total Project Expenditure From Project AD-XP-700 Allocated Between Rifle and Pistol Per:

	XC-13 RIFLE $	XP-700 PISTOL $	TOTAL $
Perm. Invest.	101200	79100	180300
Oper. & R&D	276800	214600	491400
Total	378000	293700	671700

Retail Selling Price	$ 75.-	$ 85.-	$ 95.-	$105.-
Net Selling Price	40.37	45.74	51.11	56.52
Factory Cost	23.49	23.49	23.49	23.49
Cash In-Flow*	8.43	10.79	13.15	15.53
Total Sales Required To Recover:				
Total Project Expenditure**	38,000	29,800	24,400	20,700
Operations and R&D Costs	28,700	22,400	18,400	15,600

1B. XP-700 PISTOL

EFFECT OF SELLING PRICE AND VOLUME ON PERCENT RETURN ON TOTAL CAPITAL REQUIRED

Cash Basis
Permanent Investment From Project AD-XP700 Allocated Between Rifle and Pistol Per Above:
Working Capital Based On Project AD-XP700, Adjusted For Various Volumes & Selling Prices

Retail Selling Price	$ 75.-	$ 85.-	$ 95.-	$105.-
Percent Return On Total Capital Required At Average Annual Sales Volume of:				
3000/year	13.2%	17.2%	21.1%	24.8%
5000/year	17.1%	22.0%	26.7%	31.2%
10000/year	21.6%	27.4%	32.9%	38.1%

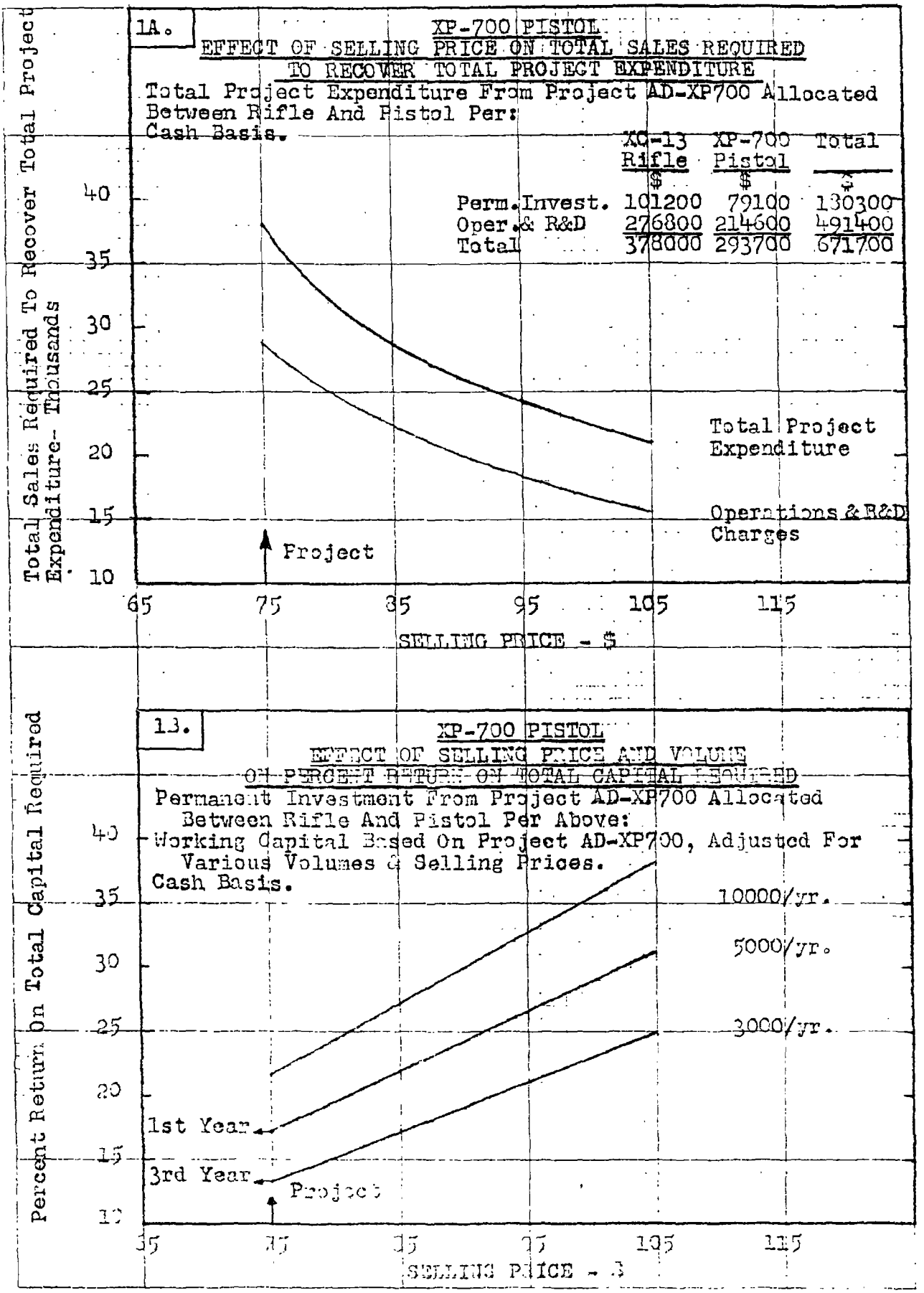
*Net Earnings Plus Depreciation Accrual For New Equipment.
**Provides For Recovery of $27,600 For Vendor Tooling Not Normally Included In Project Expenditure.

Table 2.

XP-700 PISTOL AND XC-13 RIFLE
COMPARISON OF THIRD YEAR ECONOMICS
ALL DATA BASED ON PROJECT AD-XP700,
CASH BASIS.

	XP-700 PISTOL	XC-13 RIFLE	TOTAL
QUANTITY	3000	15000	-
NET SALES	$121,100	$686,100	$807,200
Less Cost of Goods Sold	72,700	407,800	480,500
OPERATIVE EARNINGS	48,400	278,300	326,700
NET EARNINGS AFTER FEDERAL TAX AND ALL OTHER EXPENSES	21,300	123,000	144,300
INVESTMENT			
Permanent Investment	79,100	101,200	180,300
Working Capital	82,300	398,700	481,000
TOTAL CAPITAL REQUIRED	$161,400	$499,900	$661,300
RETURN ON TOTAL CAPITAL REQUIRED (POSITION A)	13.2%	24.6%	21.8%

Figure 1


1A.
XP-700 PISTOL
EFFECT OF SELLING PRICE ON TOTAL SALES REQUIRED
TO RECOVER TOTAL PROJECT EXPENDITURE
Total Project Expenditure From Project AD-XP700 Allocated
Between Rifle And Pistol Per:
Cash Basis.
XC-13 Rifle $
XP-700 Pistol $
Total $
Perm. Invest. 101200 79100 130300
Oper. & R&D 276800 214600 491400
Total 378000 293700 671700
Total Project Expenditure
Operations & R&D Charges
Project
Total Sales Required To Recover Total Project Expenditure- Thousands
40
35
30
25
20
15
10
65
75
85
95
105
115
SELLING PRICE - $
1B.
XP-700 PISTOL
EFFECT OF SELLING PRICE AND VOLUME
ON PERCENT RETURN ON TOTAL CAPITAL REQUIRED
Permanent Investment From Project AD-XP700 Allocated
Between Rifle And Pistol Per Above:
Working Capital Based On Project AD-XP700, Adjusted For
Various Volumes & Selling Prices.
Cash Basis.
10000/yr.
5000/yr.
3000/yr.
1st Year
3rd Year
Project
Percent Return On Total Capital Required
40
35
30
25
20
15
10
105
115
SELLING PRICE - $

COMPANY CONFIDENTIAL

cc: M. R. Warden
H. K. Faulkner
G. M. Calhoun
Gail Evans
D. E. Miller
S. M. Alvis

January 31, 1962

R. H. COLEMAN
ASSISTANT GENERAL MANAGER

XP-700 PISTOL - PRICING INFORMATION

The following information is supplied in response to your request for additional data to use in pricing the new XP-700 pistol. The marketing information on competitive hand guns, their features and selling prices, that you also asked for is being prepared by the Sales Department.

Table 1A attached tabulates the total number of pistols that would have to be sold at different selling prices to recover both the total project expenditure and also the operations and R&D charges only for the XP-700 pistol. The latter is of interest since these costs must be recovered before any return can be realized. This information is plotted in Figure 1A. For purposes of the analysis, the permanent investment in the project for equipment to be used by both the XC-13 rifle and XP-700 pistol was split equally between them. This is reasonable to do because the investment would be made in behalf of each to get into production, independent of volume. R&D and operations charges were allocated to the rifle and pistol on the basis of the expense for each.

Table 1B indicates the effect of selling price and average annual volume on the return on the total capital required for the pistol, total capital required being the sum of permanent investment and working capital. The permanent investment for the pistol was allocated to it as described above. The working capital was based on that required for the pistol in the project, adjusted for various pistol volumes and selling prices. The project was based on $75 selling price, with first year volume of 5,000 and third year volume of 3,000. The indicated third year return for the pistol is 13.2%. The low return on the pistol is being offset by that on the rifle, based on the combined third year return in the project of 21.8%. An analysis of the third year return for both the rifle and pistol is tabulated in Table 2 for comparison.

Please advise if there is any additional information we can supply.

REMINGTON ARMS COMPANY, INC.

D. E. Miller
Works Manager

By _____
L. D. Cox
Modernization Coordinator

LDC:ms

Table 1.

1A. XP-700 PISTOL

EFFECT OF SELLING PRICE ON TOTAL SALES REQUIRED TO RECOVER TOTAL PROJECT EXPENDITURE

Cash Basis
Total Project Expenditure From Project AD-XP-700 Allocated Between Rifle and Pistol Per:

	XC-13 RIFLE $	XP-700 PISTOL $	TOTAL $
Perm. Invest.	101200	79100	180300
Oper. & R&D	276800	214600	491400
Total	378000	293700	671700

Retail Selling Price	$ 75.-	$ 85.-	$ 95.-	$105.-
Net Selling Price	40.37	45.74	51.11	56.52
Factory Cost	23.49	23.49	23.49	23.49
Cash In-Flow*	8.43	10.79	13.15	15.53
Total Sales Required To Recover:				
Total Project Expenditure**	38,000	29,800	24,400	20,700
Operations and R&D Costs	28,700	22,400	18,400	15,600

1B. XP-700 PISTOL

EFFECT OF SELLING PRICE AND VOLUME ON PERCENT RETURN ON TOTAL CAPITAL REQUIRED

Cash Basis
Permanent Investment From Project AD-XP700 Allocated Between Rifle and Pistol Per Above:
Working Capital Based On Project AD-XP700, Adjusted For Various Volumes & Selling Prices

Retail Selling Price	$ 75.-	$ 85.-	$ 95.-	$105.-
Percent Return On Total Capital Required At Average Annual Sales Volume of:				
3000/year	13.2%	17.2%	21.1%	24.8%
5000/year	17.1%	22.0%	26.7%	31.2%
10000/year	21.6%	27.4%	32.9%	38.1%

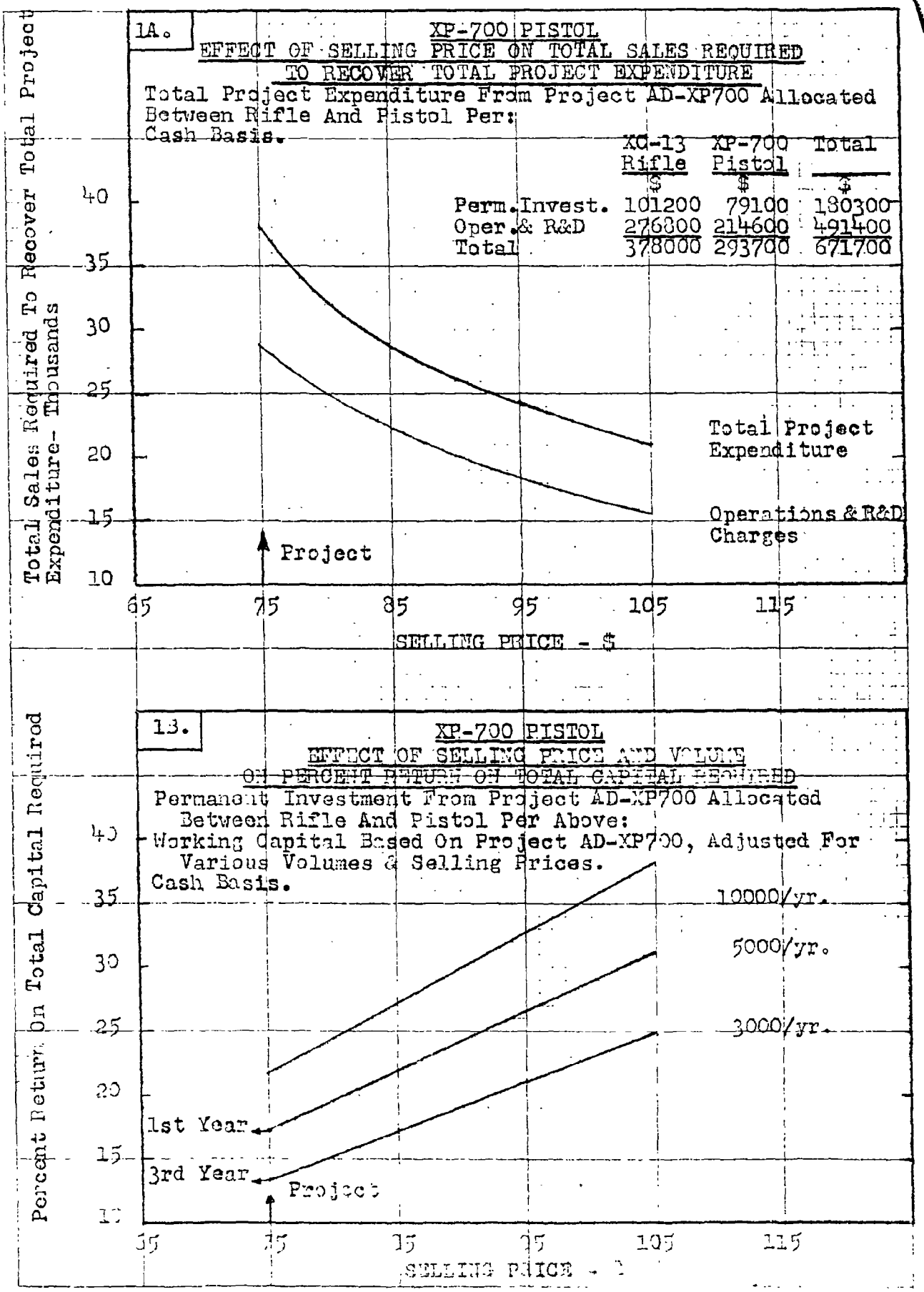
*Net Earnings Plus Depreciation Accrual For New Equipment.
**Provides For Recovery of $27,600 For Vendor Tooling Not Normally Included In Project Expenditure.

Table 2.

XP-700 PISTOL AND XC-13 RIFLE
COMPARISON OF THIRD YEAR ECONOMICS
ALL DATA BASED ON PROJECT AD-XP700,
CASH BASIS.

	XP-700 PISTOL	XC-13 RIFLE	TOTAL
QUANTITY	3000	15000	-
NET SALES	$121,100	$686,100	$807,200
Less Cost of Goods Sold	72,700	407,800	480,500
OPERATIVE EARNINGS	48,400	278,300	326,700
NET EARNINGS AFTER FEDERAL TAX AND ALL OTHER EXPENSES	21,300	123,000	144,300
INVESTMENT			
Permanent Investment	79,100	101,200	180,300
Working Capital	82,300	398,700	481,000
TOTAL CAPITAL REQUIRED	$161,400	$499,900	$661,300
RETURN ON TOTAL CAPITAL REQUIRED (POSITION A)	13.2%	24.6%	21.8%

Figure 1


1A.
XP-700 PISTOL
EFFECT OF SELLING PRICE ON TOTAL SALES REQUIRED
TO RECOVER TOTAL PROJECT EXPENDITURE
Total Project Expenditure From Project AD-XP700 Allocated
Between Rifle And Pistol Per:
Cash Basis.
XC-13 Rifle $
XP-700 Pistol $
Total $
Perm. Invest. 101200 79100 180300
Oper. & R&D 276800 214600 491400
Total 378000 293700 671700
Total Sales Required To Recover Total Project Expenditure- Thousands
40
35
30
25
20
15
10
Total Project Expenditure
Operations & R&D Charges
Project
65
75
85
95
105
115
SELLING PRICE - $
1B.
XP-700 PISTOL
EFFECT OF SELLING PRICE AND VOLUME
ON PERCENT RETURN ON TOTAL CAPITAL REQUIRED
Permanent Investment From Project AD-XP700 Allocated
Between Rifle And Pistol Per Above:
Working Capital Based On Project AD-XP700, Adjusted For
Various Volumes & Selling Prices.
Cash Basis.
Percent Return On Total Capital Required
40
35
30
25
20
15
10
10000/yr.
5000/yr.
3000/yr.
1st Year
3rd Year
Project
105
115

G-46-A

ENGINEERING COMPUTATION SHEET

NOV 2 6 1961 DEC 2 8 1961

Title of Proj. or Study: M/XP-700 Pistol and XC-13 Rifle

Proj. or Study No.

Subject: Receiver

Works

Computer: L. Schaefer

Date: Nov. 8, 1961

Oper. No.	Operation Name	Design	Build	Remarks
28.	Drill scope screw holes, etc. (Continued)			
	4. Drill gas escape hole			M/XP-700/XC-13
	1/8" drill			Hall. 9-21/72
	Plug gage - go .124 dia.			H.U. 8-18-000-X-21
	5. Drill front and rear guard screw hole			M/XC-13 only
	2 Spindle - multiple head		500.00	New
	Plug gage - Front .216/.217			H.U. 6-8-064-W
	Plug gage - Rear (size ?)	8.00	25.00	New
34.	Form mill ejection parts crosswise	M/XP700 - XC13		Quantity 2½ Rise and Fall.
	Fixture (Alterations)	25.00	75.00	H.U. 6-50-605
	Cutter - Interlocking form	40.00	125.00	New
	Arbor - Standard	—	—	Standard
	Dial base gage	280.00	500.00	New.
	1. Swing dial - Pos. 1.930			
	2. Dial check .435 depth			
	Plug gage - 2.650/2.630	15.00	45.00	New
36.	Profile inside edge ejection port - Top and side			
	[Removed operation and Special machine requirement entirely 12-28-61 L.C.S.]			
		318.00	1270.00	

SAVE TIME—USE THE STANDARDS

ENGINEERING COMPUTATION SHEET

Sheet No. 5 of 12

DEC 28 1961

Title of Proj. or Study: w/ XP700 Pistol & XC13 Rifle

Proj. or Study No.

Subject: Receiver

Works

Computer: L. C. Schafer

Date: Nov. 14-61

Oper. No.	Operation Name	Design	Build	Remarks.
40.	Profile magazine distinct	XC13 only.		360° profiler
	1/4" end mills	–	–	A.U. Stan. 700
	Fixtures (4) New clamps	40.00	200.00	Alter E-51498.
	Template	–	–	A.U. B-51521
	Plug gage - .545/.535	–	–	A.U. B-80007-T
	Plug gage - 2.944/2.936	–	–	A.U. A-51294-1
	Base gage - position	12.00	40.00	Alter D-50221
	Base gage - Centrality	–	–	A.U. D-50716
44.	Profile magazine recess and burr.	XC13 only.		360° profiler
	13/32" end mills	–	–	A.U. w/ 700
	Template (w/ 721)	–	–	E-51498-1
	Fixture (4)	–	–	See oper. 40
	Plug gage - new 2.944/2.936	–	–	A.U. C-54525
	Base gage - Concentricity	–	–	A.U. D-50716
	Base gage - Depth	–	–	A.U. D-84543
	Base gage - Position	–	–	A.U. D-50221
48.	Hand mill finger clearance top of ejection port.	w/ XP-700 - XC13		Nichols handi
	End mill - .375 dia.	–	5.00	Standard
	Fixture	150.00	500.00	New
	Gage position sideclose Arbor and plug ga. [Reinstated 12-28-61 L.C.S.]	15.00	50.00	New
		217.00	795.00	

ENGINEERING DU PONT COMPUTATION SHEET

NOV 1-8 1961

SHEET NO. IV-1 IV

TITLE OF PROJ. OR STUDY: Mk XP700 Pistol XC13 Pistol

PROJ. OR STUDY NO.

DEC 28 1961

SUBJECT: Receiver

WORKS:

COMPUTER: L. C. Schaffer DATE: Nov. 15-61 19

Oper. No.	Operation Name	Design	Build	Remarks
188	Finish polish and Chamfer Mill. Top Series.	XP700	XC13	
19V	Finish polish radius two sides on top. M.U. 700 Series oper. 188	XP700	XC13	
196	Vibrator Polish M.U. 700 Series oper 188-1	XP-700	XC13	
200	Remove Chips M.U. 700 Series			
204	Hand tap barrel hole M.U. 700 Series Oper. 195	XP-700	XC13	
	Total page 12	—	—	
	" " 11	60.00	260.00	
	" " 10	12.30.00	81.90.00	
	" " 9	980.00	2930.00	
	" " 8	1570.00	4550.00	
	" " 7	261.00	3445.00	
	" " 6	1805.00	5245.00	
	" " 5	217.00	795.00	
	" " 4	318.00	1270.00	✓
	" " 3	350.00	1000.00	
	" " 2	170.00	560.00	
	" " 1	110.00	360.00	
	Total Both models	7074.00	28,605.00	✓
	Total XC13 only	6530.00	22,440.00	✓
	Total XP700 only	693.1.00	27,600.00	✓

Ilion, New York
December 28, 1961

G. M. CALHOUN
BRIDGEPORT

MODELS XP-700 and XC-13
PISTOL - RIFLE COMBINATION

This is with regard to the high spot estimate as discussed with H.K. Faulkner during his visit and also with you by telephone today.

Am enclosing the spread sheets which were prepared by Roberts and DeReus and which also show summaries. I am also enclosing another spread sheet showing comparison of mold cost by models. In addition I have asked John Roberts to prepare a summary of total expenditures for various significant projects in recent years.

In connection with the XP-700 - XC-13 estimate, there are several significant items for which you desired additional information. For example, the total for standard machines and equipment amounts to some $165,900. This has been made up on basis of what the engineers think would be needed in the light of present and expected machine loads, and also anticipating some needed replacements. At the same time will place the Plant in better position from standpoint of efficiency needed to gain desired lower product cost. For example, there is I believe in the range of some $85,500 in proposed new Eqpt ~~change~~ for wood stock. The present equipment is considered to be in generally worn out condition, and it is considered unwise to attempt to retool for another model. In addition it would be not nearly as efficient as proposed equipment which includes a number of ideas gained from Plant study of machines incidental to the M14 investigation.

It is understood that should this equipment be purchased it would also benefit the proposed M/700 production job. It may then very well include some write-off and perhaps might logically come out of the machine depreciation fund.

The estimate for machines and equipment also includes provision for a new Mattison grinder in amount of some $30,000 which would be used for 3 operations. Because of the continued undesirable experience of the salt bleed-out in powder metal, the designers

have favored this part being machined from bar stock until the problem is overcome. However, V.G. DeReus points out that we still have to grind the sear block for the pistol, hence would have need of a new grinder. Believe that we have disposed of some of the old Mattison grinders and at present with the proposed additional models and operations there would result question of design capacity.

V.G. DeReus also points out that this is still a high spot estimate and Methods & Standards had not yet had opportunity to fully check out all capacities for the different operations. Hence it is entirely possible that there would be some adjustments. The machinery and equipment total also includes some $16,000 to take care of hi-line checkering on the wood stock.

S. M. Alvis
Ilion Research Division

SMA:T

Remington Arms Company, Inc.
Ilion Research Division

Avg. 11,000

Tot. 31,100

COMPARATIVE TOTAL PROJECT EXPENDITURES

Nylon 66	$ 654,691	(Includes $89,700 Vendor Tools)
Nylon 76 (Est.)	343,400	
*M/700 (Est.)	149,200	(Includes $28,200 Vendor Tools)
M/552-572	1,126,891	
M/58	639,474	
N-11 - N-12	332,700	
Est. XP-700 & XC-13	699,100	(Includes $53,100 Vendor Tools)
M/68 (Est.)	831,300	(Includes $48,000 Vendor Tools)

*Expect to require an addition in range of $35,000 for changes made since project was written.

SMA:T
12-28-61

P. E. & C. ESTIMATE

~~E.J. Lock~~ KP Kelly
RA Morris

TO: H. J. Hackman

XP-722

ESTIMATED BY: [illegible] - V G DeKing

MODEL Bolt Action CF Pistol PROJECT NO. _____ DATE 6/9/61

PROJECT TITLE High spot estimate for 222 caliber pistol based on using M/722 Receiver machinery and Equipment for machining misc components.

	HOURS	RATE	TOTAL
PROCESS ENGINEERING & TRIAL RUN			20 000
TOOL DESIGN FIXTURES - GAGES			24 000
TOOLING FIXTURES - GAGES		Nylon	31 000
			108 000
TOOL DESIGN — PERISHABLE TOOLS			2000
TOOL DESIGN REVISIONS			7500
PERISHABLE TOOLING		Powder metal	9000
			3000
TOOL REVISIONS		Nylon 15%	4600
		1500 hr + 30%	40000
TOOL REVISIONS - PERISHABLE		1:7%	1400
TESTING			2000
ADMINISTRATION			500
~~VENDOR TOOLING COSTS (DIES ETC.)~~ Std Rem			67 000
Rem mach			25 000
VENDOR TOOLING NOT REMINGTON PROPERTY			22 500
SUB TOTAL			362 500
CONTINGENCIES			36 500
			399 000
			29 000
			428 000

COMMENTS Pilot Operations 5,000
Mach Chgo Additions 2,000
Rem Adj. 20,000
Component Chgs 2000

A-4300

bcc: E. S. McCawley
Remington

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
WILMINGTON 98, DELAWARE

ADVERTISING DEPARTMENT

June 13, 1963

Mr. Pierre F. Hartshorne
249 El Conejo
Los Alamos
New Mexico

Dear Mr. Hartshorne:

Thank you very much for your letter and your observations on the new Remington pistol, as described in the May-June 1963 issue of DU PONT MAGAZINE.

We believe your comments will be of particular interest to Remington's headquarters people, so we have taken the liberty to forward it to Mr. E. S. McCawley, public relations manager at Remington's Bridgeport, Conn. location. No doubt you will hear from him soon.

Meanwhile, we are delighted to count you among our readers and we hope that you will feel free to write us at any time.

Sincerely yours,

Jack D. Hunter
Associate Editor
DU PONT MAGAZINE

JDH/jz

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

249 El Conejo
Los Alamos, New Mexico
7 June, 1963

Editor
DuPont Magazine
Wilmington 98, Delaware

Dear Sir:

May I take exception to a statement printed as part of the article entitled "Power-Packing Pistol" which appeared on pages 18 through 20 of the May-June, 1963 issue of the DuPont Magazine (Vol. 57 No. 3)?

I quote lines 27 through 31 of the left column of page 20, "Because this material maintains its dimensional stability under all conditions (it cannot warp or change shape), the barrel bedding is absolutely uniform, a factor insuring greater accuracy."

On 25 May, 1963, I made two trips totalling some one hundred and thirty miles to end up in possession of Remington Model XP-100 pistol serial number 1411. On 26 May, 1963, I fired 19 rounds of factory cartridges. On inspection of the weapon before firing, I noted a clearance of approximately 1/64 inch between the bottom of the barrel and the groove of the fore stock at the tip. I checked the tightness of the two screws which serve to fasten the action to the stock and found them to be about what I expected... no need to force them... they appeared to be tight enough. After firing approximately ten of the nineteen rounds, I noted that the barrel to fore stock clearance had opened up to nearly one quarter of an inch. This did not appear to me to be an assembly including a part which " cannot warp or change shape..".

Furthermore, the bonding between the black tip and the white line of the fore stock had parted for from 3/16 to 1/4 inch on the right hand side, from the top line of the stock downwards.

It is entirely possible that our low humidity which has averaged something between 26 and 30 percent relative humidity the past month has had something to do with the trouble I have noted. I should add that the fore stock now moves easily up to contact with the barrel under light hand pressure (applied to it by everyone who inspects the piece), but the "at rest" position of the Zytel stock is away from the barrel far enough to cause an immediately noticeable gap of nearly 1/4 inch. I can not blame our 7,200 foot altitude for the failure of the highly advertised material.

I have been earning my living with plastics and elastomers for some fifteen years; and I have been studying firearms for twice that time. This letter will be made a part of the file on #1411, and a copy sent to Mr. W. E. Leek at Remington along with other remarks.

Thanking you for your attention, may I remain

Very truly yours,

Pierre F. Hartshorne

249 El Conejo
Los Alamos, New Mexico
7 June, 1963

Mr. W. E. Leek
Manager - Firearms Design & Development
Ilion Research Division
Remington Arms Company, Incorporated
Ilion, New York

Dear Sir:

Firstly, may I thank you for your letter of 21 May, 1963, received on 25 May, 1963. That receipt date has some significance. I read the letter between trips to the shop of a gunsmith friend. This trip series ended, as related in the accompanying letter, in my possession of Model XP-100 pistol serial number 1411.

I am 43 years old, was torpedoed 21 years ago today and married 16 years ago today, and should know better. However, I could not pass up the beast. I have shown it and talked about it to about a dozen people since the acquisition of the piece. The comment is varied as one would expect. That stock trouble does nothing for the weapon.

Now, Sir, may I take exception to your remark about the velocity one might expect to get out of a .222 Remington case fired in a 10½ inch tube? A rifle load fired from such a tube might actually drop from 3,200 to 2,000 feet per second at the muzzle, something like 89 feet per second per inch * of tube amputated.... study of various reports published in the RIFLEMAN would indicate that something more like 30 to 40 feet per second per inch of tube would be more believeable. However, I had no intention of using rifle loads in a short tube... and so stated. Surely, the ballisticians at Remington could do better than that... have alook at your competitor's .256 cartridge in that "awful" looking revolver-turned-into-a-single-shot.

Incidentally, I found the noise much less than that of the .22 MRF cartridge fired in a Smith & Wesson revolver fitted with an 8-3/8 inch barrel. Recoil was hardly noticeable in the XP-100.

The matter of sight radius is, of course, always open to debate. I can only state that over fifteen people who have discussed the XP-100 with me, not all of them with weapon in hand, have all been disappointed with the "stock" system as presented. (How do you fasten a decent rear sight to the rear receiver ring with only one screw?)

The rear sight on #1411 is definitely cocked as viewed from above. Either its front or rear screw is not properly aligned over the bore... perhaps they are both off. I am not going to disassembl the pistol or use home brewed ammunition in it until I have completed the first of my reports. I had to use almost half of the available left windage adjustment to hit my tin can at a hundred yards from hand rest. (Oh that target shown in the DuPont magazine... you should be ashamed.)

$* \quad \frac{3200 - 2000}{24 - 10.5} = .89$

I intend investigating your statement about the studs which project from the barrel to "... support the sights directly...". Could it be that one of these is out of line to cause the misalignment of the rear sight?

I did not mention to the gentleman in charge of the DuPont Magazine the fact that I detect an apparent movement of the nylon rib which makes it look rather sway-backed between support locations. This apparent movement of the rib will be followed, measured, and reported upon at a later date.

If the rib is designed to float, I am wondering how the sights are expected to "stand still". I can see how this could be managed if the sight bases are, indeed, directly supported by the studs, and the rib has been made with enough clearance around the studs to give as the barrel warms... I am also well aware of the fact that the XP-100 will usually not be fired rapidly enough not to get hot... I fired three rounds in about thirty seconds and found relatively little heating of the slender tube.

I now wish to make at least one commendatory statement. That action is a little jewel. The bolt stop is a trifle hard to get to, but should present no problem to the shooter properly equipped to clean and service fine arms. It is a mystery to me how you people get the trigger pulls you do with those stamped-out parts... not exactly like a Hammerli or Browning shotgun. An aside is my question to a gunsmith friend, "Can you see that action fitted with about two feet of stiff barrel, chambered for .222 Remington, and dropped into a bull-pup stock?". Gordon's replay, with his slow grin was, "I wasn't going to say it; but I was thinking about it."

Sir, you asked for it, and you will get it. I propose keeping a careful record on #1411. A weapon to do the job seems to be in demand; but I am not certain the XP-100 is the answer... I have also just started using your .22 Rem-Jet in a Smith & Wesson revolver, so there will be something to compare. What is the trouble with your staff? Couldn't one of the engineers manage the rolling block into something really good? I had a .50 once, and still regret letting it get away from me. You may have seen an article about the conversion of a coupld of the rolling block pistols to handguns chambered for the .30 M-1 carbine round.

Enough for this time. Thanking you for your kind attention, may I remain

Very truly yours,

Pierre F. Hartshorne

Pierre F. Hartshorne

P. S. You may yet wish to offer twice my money back for #1411; but if you never heard from any of us who pay for your products, you would all be making roller skates.

249 El Conejo
Los Alamos, New Mexico
7 June, 1963

Editor
DuPont Magazine
Wilmington 98, Delaware

Dear Sir:

May I take exception to a statement printed as part of the article entitled "Power-Packing Pistol" which appeared on pages 18 through 20 of the May-June, 1963 issue of the DuPont Magazine (Vol. 57 No. 3)?

I quote lines 27 through 31 of the left column of page 20, "Because this material maintains its dimensional stability under all conditions (it cannot warp or change shape), the barrel bedding is absolutely uniform, a factor insuring greater accuracy."

On 25 May, 1963, I made two trips totalling some one hundred and thirty miles to end up in possession of Remington Model XP-100 pistol serial number 1411. On 26 May, 1963, I fired 19 rounds of factory cartridges. On inspection of the weapon before firing, I noted a clearance of approximately 1/64 inch between the bottom of the barrel and the groove of the fore stock at the tip. I checked the tightness of the two screws which serve to fasten the action to the stock and found them to be about what I expected... no need to force them... they appeared to be tight enough. After firing approximately ten of the nineteen rounds, I noted that the barrel to fore stock clearance had opened up to nearly one quarter of an inch. This did not appear to me to be an assembly including a part which " cannot warp or change shape..".

Furthermore, the bonding between the black tip and the white line of the fore stock had parted for from 3/16 to 1/4 inch on the right hand side, from the top line of the stock downwards.

It is entirely possible that our low humidity which has averaged something between 26 and 30 percent relative humidity the past month has had something to do with the trouble I have noted. I should add that the fore stock now moves easily up to contact with the barrel under light hand pressure (applied to it by everyone who inspects the piece), but the "at rest" position of the Zytel stock is away from the barrel far enough to cause an immediately noticeable gap of nearly 1/4 inch. I can not blame our 7,200 foot altitude for the failure of the highly advertised material.

I have been earning my living with plastics and elastomers for some fifteen years; and I have been studying firearms for twice that time. This letter will be made a part of the file on #1411, and a copy sent to Mr. W. E. Leek at Remington along with other remarks.

Thanking you for your attention, may I remain

Very truly yours,

Pierre F. Hartshorne

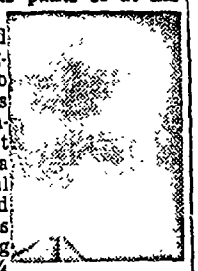
GUNS and SHOOTING

XP-100 ade

By COL. CHARLES ASKINS, Ret.

WE USED to call them horse pistols, a term which implied that the handgun was carried on the horse. In a holster which fitted on the pommel of the saddle, and contained a shooting iron which would weigh three pounds and was about 14 inches in length.

This style was in vogue a hundred years ago. Since then the pistol has sort of shrunk in size and weight, and been reduced to a handy dimension which a man could carry in his pants or at his belt.



ASKINS

It has remained for the Remington Arms Co. to reverse this trend. The company has just brought out a throwback, a real honest - to - god horse pistol. It is 17 inches long and weighs 3¾ lbs. Many rifles don't tip the scales at such poundage and the linear dimension is bare inches short of rifle length. The first reaction is to wonder why the designers left off the buttstock.

For this pistol is more rifle than handgun. It fires a rifle cartridge in a standard bolt action lockup, the .222 rifle round altered only to the extent of a 1-10-inch shorter case and adapted to a turning bolt which is an exact copy, somewhat in miniature, of the standard Remington rifle action.

It takes a lot of guts to build a single-shot pistol these days. For what good is it? The cops cannot shoot robbers with it nor vice versa. It isn't worth a tinker for robbing banks nor yet guarding the family castle. The TV and cinema hoss opera stars can't abide a one-shooter. And serious target marksmen would have a helluva time trying to load it during the rapid-fire stanzas of their competitive course of fire.

It comes down to what we call the plinker shooter. He is a gent who goes out of a Saturday afternoon and thumps tincans, bottles, floating corks, knotholes, and shiny flat rocks. He burns up a lot of hulls and he does not mind because he is careful to select a gun and a caliber which is cheap to shoot. Like the .22. Ammo for the new Remington—called the .221 Fireball—will cost about 15 cents per blast. An afternoon at this kind of fun could be costly!

* * *

IT COMES then to using the new hoss pistol on small game. For this it should be okay. The .221 cartridge, a gold-dust twin to the .222, will kill small stuff like crows, hawks, rabbits, foxes and coyotes. The .222 is remarkably effective on this vermin and certainly the .221 should measure up quite as well.

Getting the pistol into the field and transporting it after arrival will be something of a chore. It is so big the company provides a suitcase as a carry-device. This is all right in the car but a mite cumbersome in the field. The 17 inches overall dimension makes it something of a problem from a belt holster, too. That almost four pounds of weight on the pants belt could grow to be a burden. A knapsack or the Trapper Nelson packboard may be the final answer.

The new pistol is made of Nylon 66 plastic. The barrel is 10½ inches long, with the before mentioned bolt action. The sights are the conventional patridge, with crude adjustments in the rear for elevation and deflection. The balance, despite the great weight, is extraordinarily good. The stock is set well forward and is right at the balance point. This permits quite a steady hold. The pistol has been tapped for scope mounts and quite obviously it is intended for use with the new breed of pistol scope. With this in mind the gun will perform better when shot two-handed from some manner of rest.

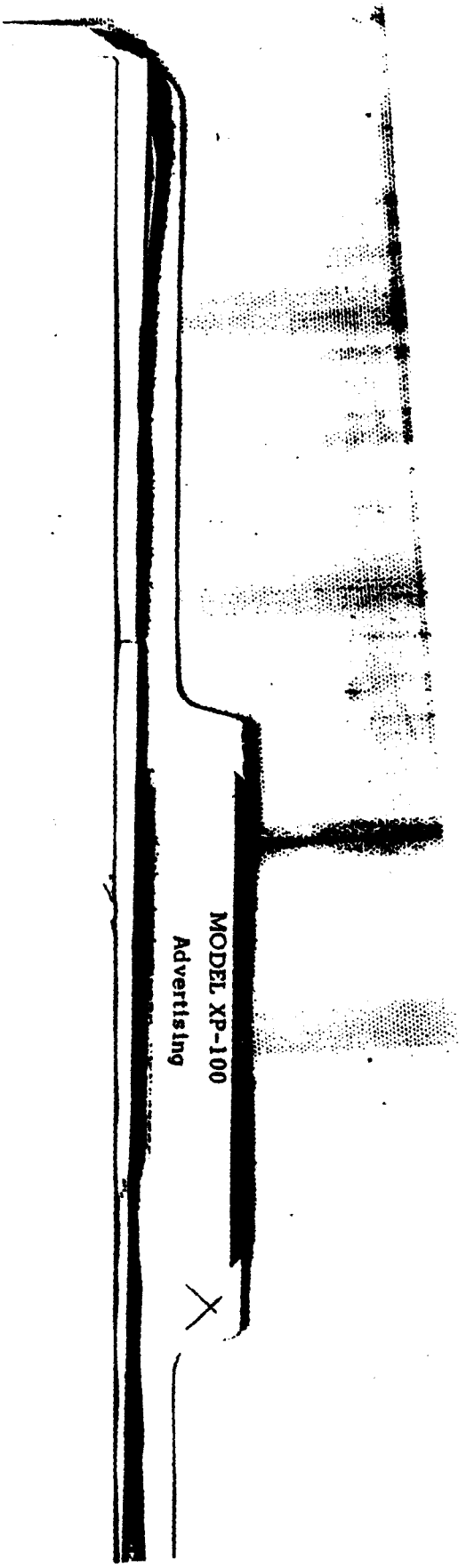
* * *

THE .221 FIREBALL is unique in that it was built around the cartridge and not the other way around. That is to say, the pistol was designed first, and then a cartridge worked up for it. There is a bit of recent history here which serves to point up its reason for being on the scene at all. It goes back to a race between those arch rivals, the Remington and Winchester companies.

Three years ago Winchester came along with a new cartridge, the .22 rimfire magnum, a souped-up number which had 1550 feet per second velocity from a handgun. This was some stepping and the load attracted a lot of attention. Within months Remington, not to be outdone, broke the .22 Rem-Jet, a hotrock which was claimed to go 2450 fps, from a rifle. In a pistol it did 1860 feet per second, and on either account was in advance of Winchester. A year later Winchester sprung the .256 magnum, a load for either rifle or handgun, and kicking along at 2350 fps.

Now comes the .221 Fireball, a going-hell-for-leather 2650 feet per second. This puts Remington in the lead, at least for the moment. Of course the cartridge is not really a handgun load at all and to shoot it the so-called pistol looks like a rifle sans the stock. But we're ahead in the speed race anyway, eh Doc?

The comments and opinions in this article are those of the author and do not necessarily reflect those of the DOD.



CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

The Hot XP-100

GUN WORLD'S TEST RANGE

And New .221 Fire Ball

SINCE members of our staff first saw the XP-100 back at Bridgeport, Connecticut, in November, we've been bugging Ted McCawley of Remington to get us one for testing purposes.

Problem in the beginning was the fact that there was only one, but through a weekly harassing action, we finally had an XP-100 shipped to us air mail, and McCawley was able to breathe a sigh of relief.

The novel handgun arrived in great shape, then we began matching deadlines against dates, wondering when the boxes of the new .221 Remington *Fire Ball* ammo would arrive, and whether we would be able to work in a gun test before this issue had to be off to the printer.

When we were about to give up, the ammunition arrived; four full boxes. We immediately gathered the group and headed for the Pasadena Police Range, where Duke Roberts holds sway.

There probably never has been a new, unusual design in firearms presented for public approval — or disapproval — that has not created its share of ulcers, waile the manufacturers nervously waited to learn what the buyer's opinion would be.

Remington Arms, which has not produced a handgun in something like half a century, is taking this type of gamble with corporate eyes wide open in introducing the XP-100.

This new and unlikely handgun is described as a bolt action, single shot, center fire pistol, and is designed specifically to handle the equally new .221 *Fire Ball*.

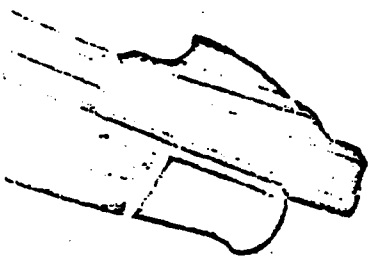
The company's researchers are correct, of course, when they state that in recent years, an increasing number of shooters have become interested in long range varmint and small game hunting with handguns. A variety of cartridges with jacketed bullets for high velocities and flat trajectories have been introduced for this type of shooting, not to mention specially designed telescopic sights.

The optics of these scopes and the ballistic potential of the cartridges have been proven, the Remington folks insist, then add that because of inherent characteristics in the designs of conventional handguns, few shooters can hold well enough to take maximum advantage at long ranges.

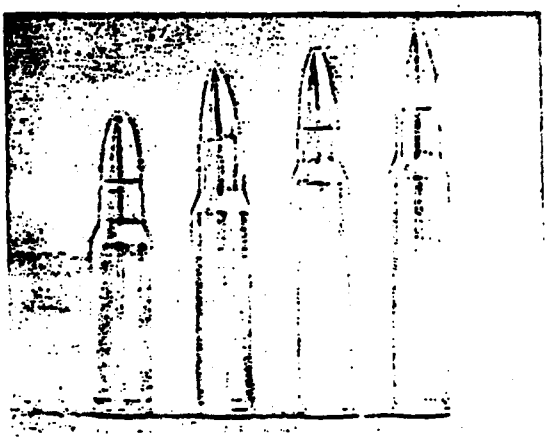
There are handgunners who will argue that point, naturally, but the new XP-100, which was long a closely guarded secret, is meant to fill this supposed gap.

The grip and stock of this gun are of one-piece molded *Zytel*, a new structural nylon. The action is patterned frankly after Remington's bolt action center fire rifles, while the stock obviously is derived from the plastic-stocked .22 rimfire rifles in the company's line. But there is where similarity ends; the rest looks like something straight out of the Space Age.

Wayne Leek, who designed the gun — improving his own shooting along the way, he insists — says that the *Zytel* material maintains dimensional stability under all conditions, and cannot warp or change shape. Result is uniform barrel bedding for accuracy. The



From left: New .221 Remington long range handgun cartridge is compared with .222; Remington .223 designed for military use; .222 magnum. Shown actual size.



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Duke Roberts squeezes one off, using Bushnell's Phantom handgun scope, while Jack Lewis checks hits through the new Balscope Zoom 60. Latter will focus from ten yards to infinity with only a flick of the dial set in the top of the tube. Another thumb dial can regulate the image 10 to 60 power. It's manufactured by Bausch and Lomb.

grip is contoured to fit the shooter's hand and is equally adapted to either right or left-handed use. We also found that it fits well with a two-handed hold.

A ventilated rib is used on the barrel to improve the sighting plane, while a blade front sight — again familiarly found on the *Nylon 66* — and a rifle-type rear sight with adjustments for windage and elevation are incorporated. The receiver is drilled and tapped for scope blocks.

Overall length of this Buck Rogers dream is 16¾ inches, and weight is 3¾ pounds. Barrel length is 10½ inches. The gun has decorative checkering, white spacers and diamond inlays in stock and grip. There's also a cavity in the fore end that permits weights to suit your own tastes in balance.

Sounds weird, doesn't it? When writers saw it in November, there was a good deal of speculation concerning potential success. This led to our doing some research on other guns that were ahead of — or behind — their time: the difference is not always apparent.

For example, as long ago as sixty-three years, Winchester tried a .22 bolt action, single-shot handgun. Admittedly, this, the Model 1900, didn't have any of the refinements of the XP-100. It is thought that the New Haven tribe made only twenty-five of these on an experimental basis, dropping the entire project, when it was decided it had little commercial appeal.

The frame of this particular handgun was of brass, which was nickel-plated, while grips were of burled walnut. Today, there are only five known specimens in existence, and three of these are in the Winchester Museum. As collector items, these guns are valued at more than $400 each.

More recently — about five years ago — Whitney Arms of Hartford, Connecticut, came out with an accurate .22 *Autoloader*, holding ten rounds of long rifle 22s. Although more than adequate for the price, it never became a huge commercial winner. Experts, if there really are any in gun marketing, blame this upon the acutely modernistic design, claiming that gun buyers were not yet educated toward such streamlining.

But the XP-100 has a built-in advantage; it is not just a gimmick gun. It was developed for a particular purpose: Long range hunting with a centerfire cartridge.

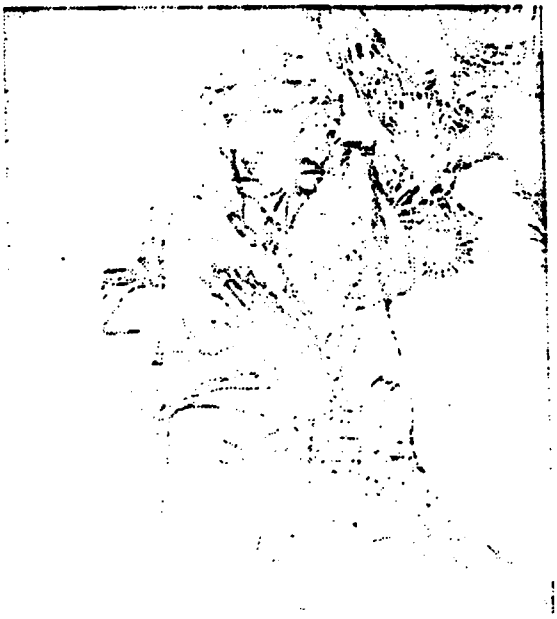
When the group gathered at the Pasadena range, roll call found staffers Ray Rich, Dan Cotterman, Jack Lewis and Duke Roberts on hand to evaluate the new gun. Looking on, and eventually shooting, were Jack Miller, who is range supervisor for the Pasadena Parks Department, and Jack Preston, one of his assistants.

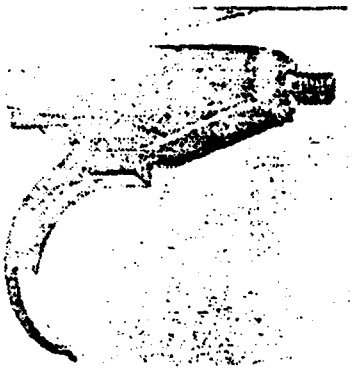
Everyone who had not previously seen the new handgun was immediately intrigued with the novel design. At first, the weight seemed to frighten them, but there is enough aft poundage so that the gun balances well in the hand . . . Not that it doesn't become almost immediately noticeable when shooting off-hand. That three-plus pounds begins to weigh heavily in a matter of seconds.

To the gun, we had attached Bushnell's *Phantom* scope with their new mounts designed specifically for the XP-100. For a warmup, we tried a few rounds through the chronograph and found that velocities hit along at an average of 2650 feet per second.

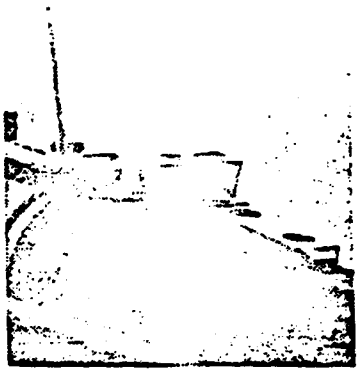
This is precisely the velocities claimed by the manufacturer, which was a pleasant surprise. In the past, nearly all ammo makers have tended to puff up

Jerry Mills holds aloft the bobcat which he shot with his first round out of the new Remington XP-100. The cat was downed at approximately sixty yards shortly after dawn.

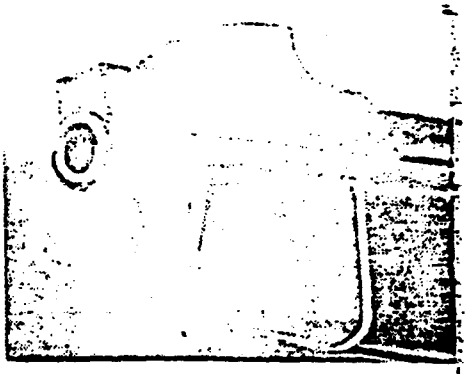




With the stock removed, the trigger adjustment screw is revealed. It appears to be pre-set at factory, then "glued" into place for a light pull.



Adjustment of rear sight is accomplished with this Allen wrench packed with the gun. Mount at rear of sight was installed for Bushnell Phantom.



Similarity of XP-100 front sight, fore end to that of Remington's Nylon 66 .22 rimfire rifle is beyond coincidence. Rib is added feature.

their ballistics figures. However, this trend seems to be changing with more realistic figures resulting. We take partial credit for this, since we have been among the publications that have frequently discounted these velocity claims through actual field testing of suspect loads.

Next, we took our battered old plate of quarter-inch boiler plate out to fifteen yards, and fired one of the *Fire Ball* rounds through it. It cut a neat plug about the size of a .38 case out of the metal. At twenty-five yards, then fifty yards, the gun did exactly the same.

Finally, at seventy-five yards, the bullet failed to get completely through the heavy plate. However, it pushed a blister into the metal that was cracked all the way around on the rear side. A hard tap with the end of a screw driver would have pushed it out.

Digging around in the sand backstop, we managed to come up with a pair of the spent bullets, which no longer resembled anything like their original form. They had been turned completely inside out, the metal flattening out to turn back over the copper jacket.

Some of the statistics on the .221 *Fire Ball* no doubt will prove of interest to those who are looking for a hotter load. This round has a 50-grain jacketed bullet, and the speed is close to that developed in the much publicized .22 Hornet handloads launched from a rifle. Muzzle energy is 780 foot pounds at the muzzle. Even out at three hundred yards, the bullet still is moving at 1460 feet per second, although energy drops to 235 pounds at that range.

For the handloading buffs who'll be checking this one closely, the approximate case length is 1.395 inches, or about twenty-five percent shorter than the .222, which has this same basic case. The *Fire Ball* is about nine percent longer than the Remington .22 *Jet*, according to Cotterman, who'll be reloading this one for our next issue. He judges case capacity should be 21-22 grains of ball powder.

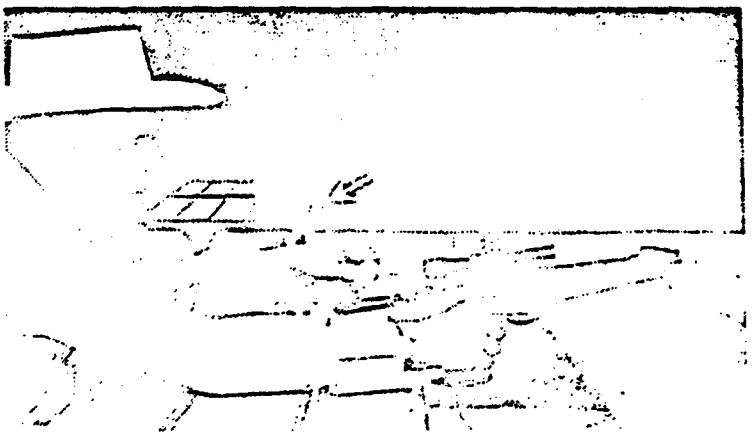
After the plate puncturing exercises, we turned our attention to the matter of accuracy. Since this wasn't meant to be a target gun for offhand shooting, we set up half a dozen yellow-shaded clay pigeons at seventy-five yards, then drew up a table and began to plink away, shooting from the sitting, braced position. The scope had not been bore-sighted and required fifteen minutes of adjustment before the bullets began to shatter the targets. We had selected the clay birds, incidentally, since they seemed to approximate the size of a bobcat's head.

Most of us hit some and missed some, but the full potential of the gun proved itself in the hands of Duke Roberts, who sat down at the bench, rested the XP-100 in a two-hand hold, then began to knock off targets one after the other. Then to prove himself, he began to chop up the lesser pieces that still showed yellow against the sand. At seventy-five yards, yet!

This, of course, is fine on a range under controlled circumstances, but what about varmint shooting for which the gun was designed?

We turned the gun over to Jerry Mills immediately after the range work and he made for his favored

GUN WORLD Editor Jack Lewis pulls the bolt to the rear to eject the fired case with a crisp, positive action. Handgun is well balanced for weight, packs big punch at distances as evidenced by holes in quarter-inch boiler plate at lower right. Hole which did not completely perforate the metal was fired with Fire Ball at 75 yards.



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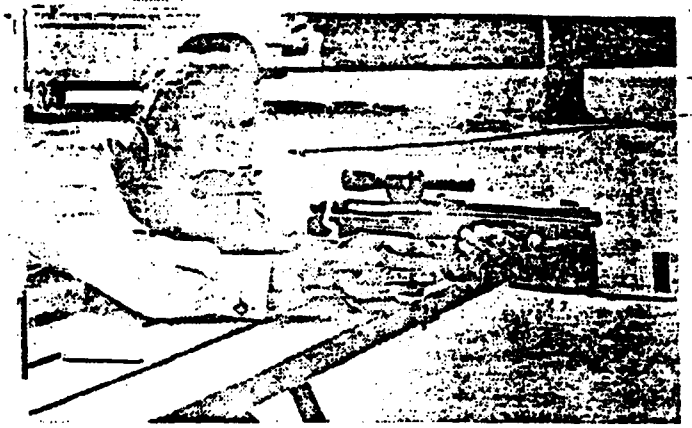


GUN WORLD Publisher Rich sights in with fore and only balanced in palm, holding loosely. Photo at right shows the recoil of the XP-100 upon firing. Note that the muzzle is elevated, but the gun seems to rock back on its butt.

corner of the country, where the states of California, Arizona and Nevada merge.

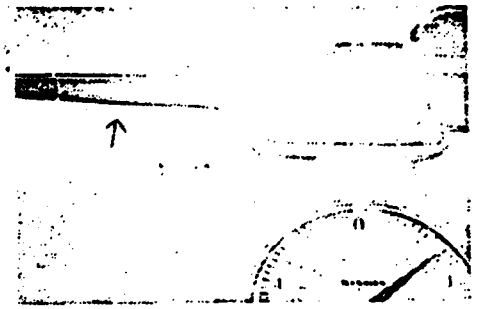
Mills began calling early in the morning, at about seven o'clock and reported that it only took about fifteen minutes to lure in a bobcat.

With the handgun braced against his knees, he spotted the animal at about sixty yards out, lined up the scope and squeezed off the first round. That was all it took. The bullet hit the cat on the point of the chin, shattering the entire bone structure of chin and jaw, then went on to sever the spinal column.

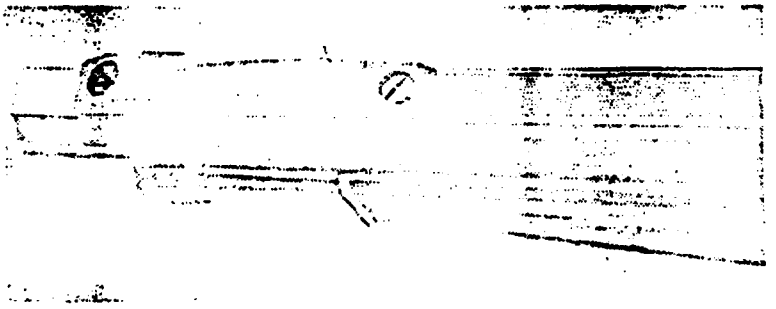
In range tests, Jack Miller had commented that the grip of the gun seemed to fit his hand as well as any standardized stocks: he has a large hand. Mills' hand is smaller, but he also felt that holding was excellent. All of which means that some gains have been made toward the sought "universal" grip. At the opposite extreme, Roberts complained that the back of the grip seemed to cut into his palm, making it uncomfortable for a tight hold.

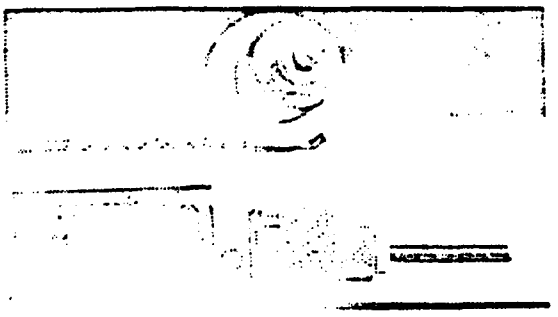
One comment made by all hands it that with the gun balanced as it is, there is comparatively little

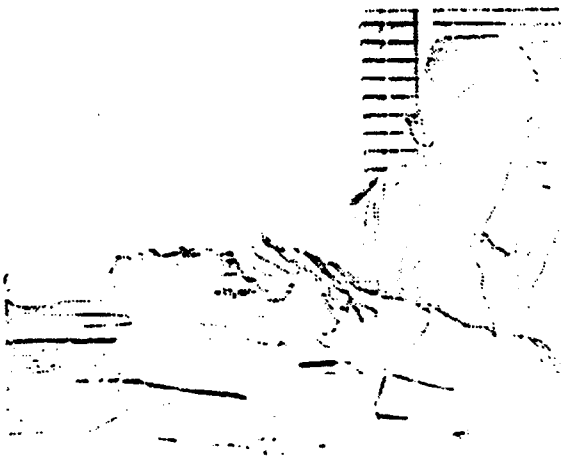
When plastic stock of handgun was removed and weighed, it was found to scale in at exactly 11¼ ozs. Note holes for insertion of lead weights.



The ventilated rib, which runs full length of the XP-100's barrel, has both sights mounted upon it. The rifle type sights give one a feeling of confidence in the arm's potential for distance shooting even without scope. Rib is matted to discourage light glare. Scope rides above rear sight.







Above: Reloading dies for the .221 Fire Ball already are in production by RCBS, although cartridge isn't yet released. Right: Dan Cotterman checks out this new round, comparing characteristics for next month's reload test.

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recoil; what there is, comes softly and doesn't slam around the shooting hand.

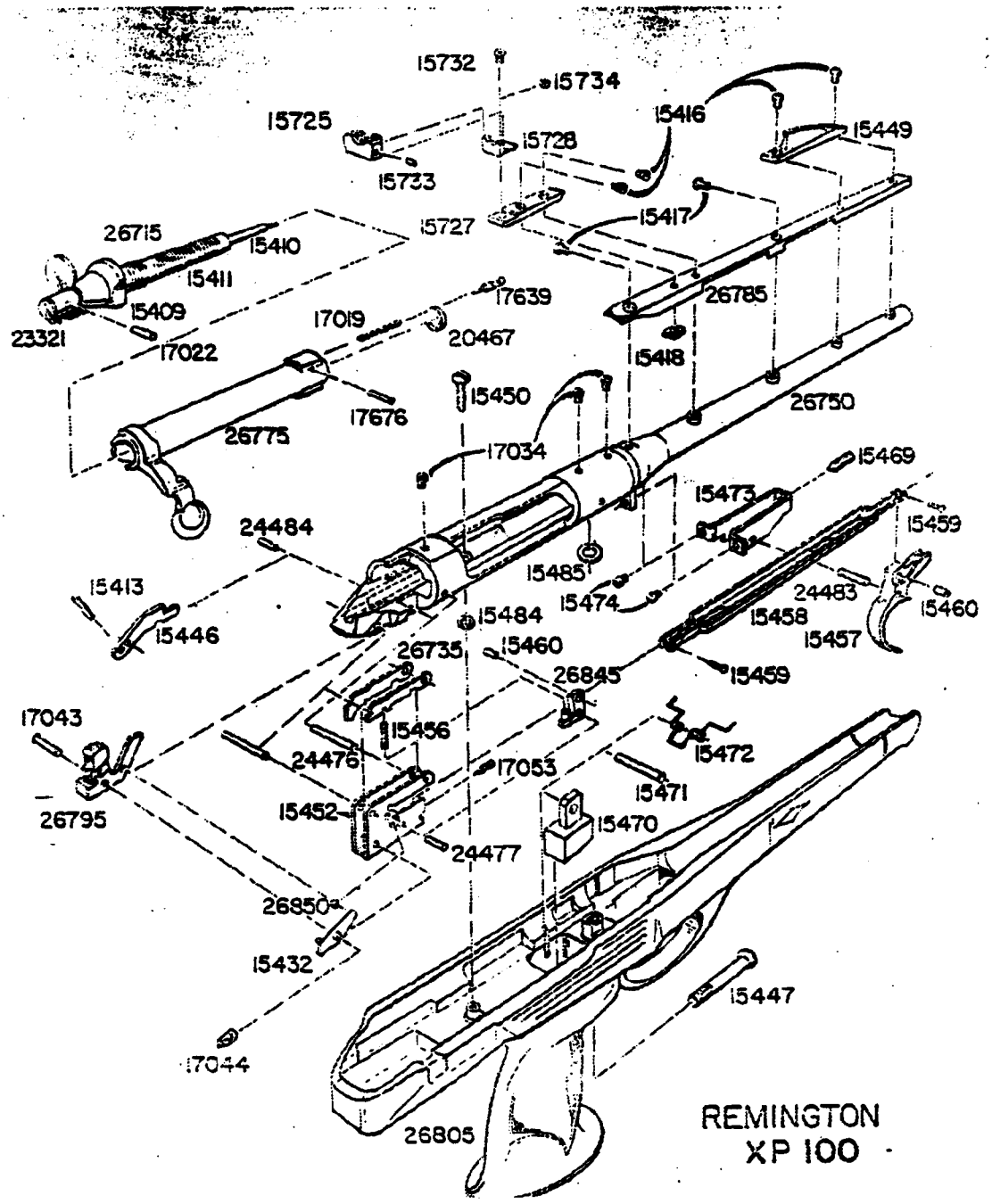
Loading is speedy for a single-shot, since one has only to drop the cartridge ahead of the bolt and the forward motion of the latter guides it along a machined route and into the chamber.

The range testers felt that, while the trigger pull on the gun was excellent, it might be a trifle too light. Mills, at the opposite extreme, appreciated the light touch required to send the firing pin forward. He feels it has a definite advantage in varmint shooting, where the animal is not going to linger.

What does all this mean?

For years, buyers have been prejudiced against the use of plastic in firearms, but in recent years, the breakthrough apparently has been made on this emotional barrier, and sales are up. This could have a major effect in making the XP-100 a popular handgun, and its accuracy is certain to help.

Meanwhile, in our next issue, Jerry Mills will be doing more serious varmint hunting with this one, and Dan Cotterman will be investigating the reload facets. Be sure to watch for this progress report. ●



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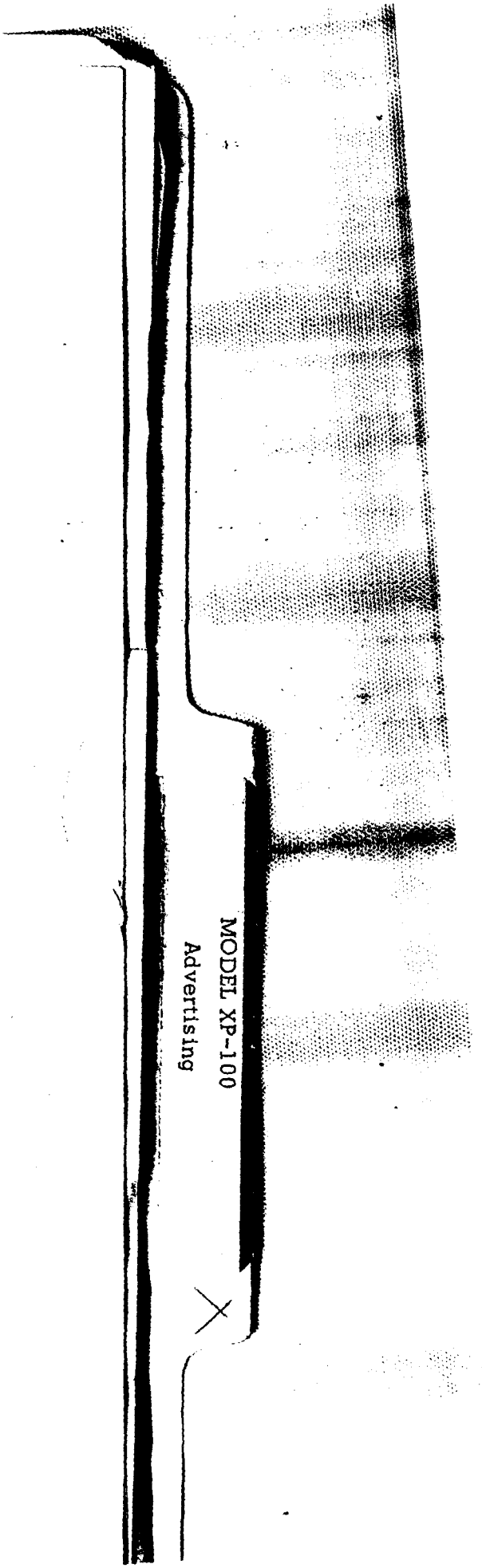

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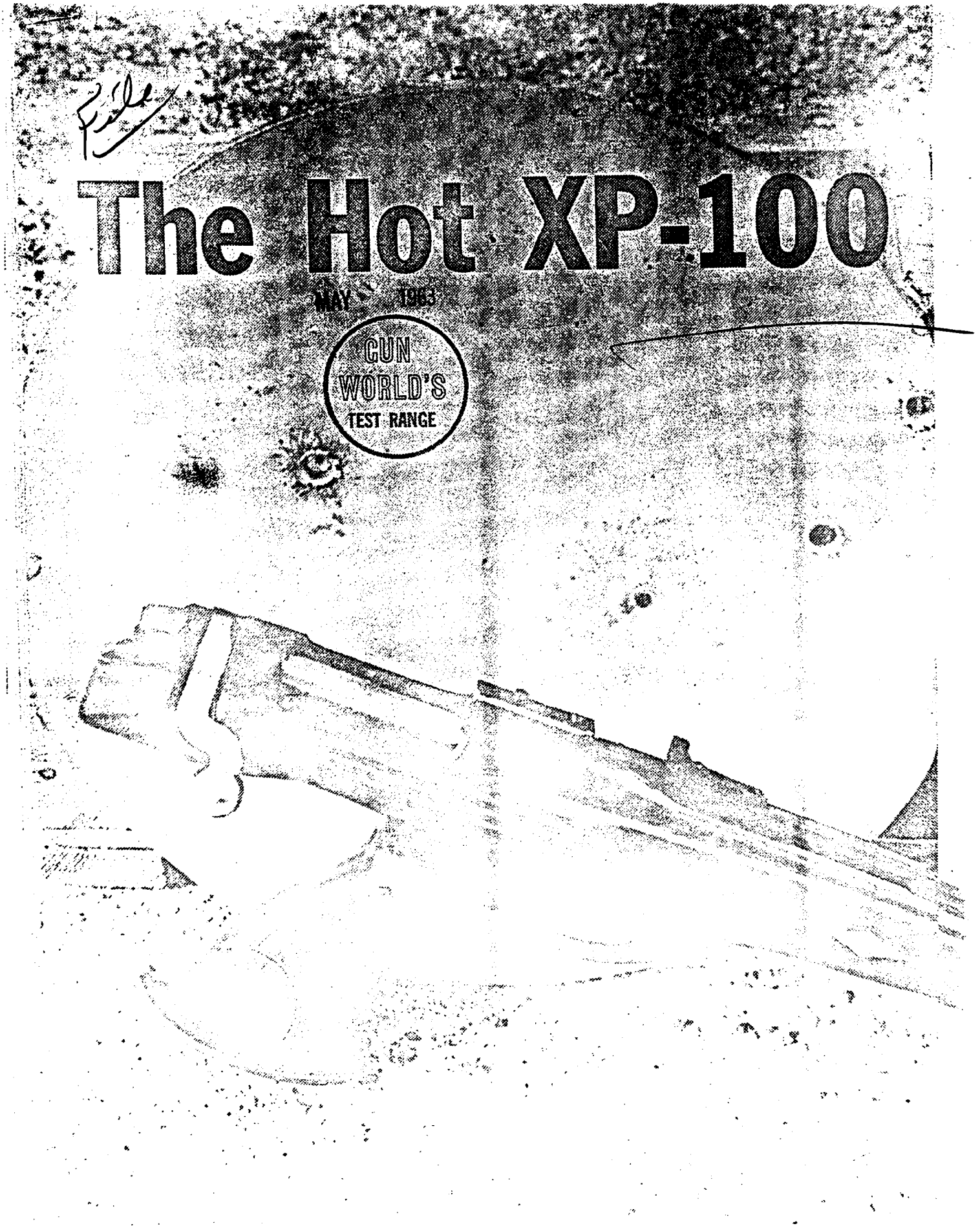
File

The Hot XP-100

MAY 1963

GUN WORLD'S TEST RANGE



And New .221 Fire Ball

SINCE members of our staff first saw the XP-100 back at Bridgeport, Connecticut, in November, we've been bugging Ted McCawley of Remington to get us one for testing purposes.

Problem in the beginning was the fact that there was only one, but through a weekly harassing action, we finally had an XP-100 shipped to us air mail, and McCawley was able to breathe a sigh of relief.

The novel handgun arrived in great shape, then we began matching deadlines against dates, wondering when the boxes of the new .221 Remington *Fire Ball* ammo would arrive, and whether we would be able to work in a gun test before this issue had to be off to the printer.

When we were about to give up, the ammunition arrived; four full boxes. We immediately gathered the group and headed for the Pasadena Police Range, where Duke Roberts holds sway.

There probably never has been a new, unusual design in firearms presented for public approval — or disapproval — that has not created its share of ulcers, while the manufacturers nervously waited to learn what the buyer's opinion would be.

Remington Arms, which has not produced a handgun in something like half a century, is taking this type of gamble with corporate eyes wide open in introducing the XP-100.

This new and unlikely handgun is described as a bolt action, single shot, center fire pistol, and is designed specifically to handle the equally new .221 *Fire Ball.*

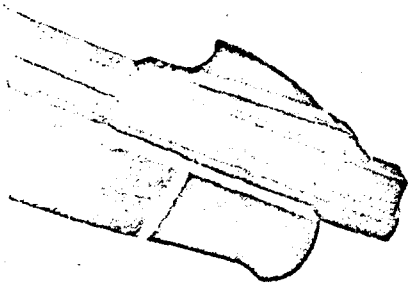
The company's researchers are correct, of course, when they state that in recent years, an increasing number of shooters have become interested in long range varmint and small game hunting with handguns. A variety of cartridges with jacketed bullets for high velocities and flat trajectories have been introduced for this type of shooting, not to mention specially designed telescopic sights.

The optics of these scopes and the ballistic potential of the cartridges have been proven, the Remington folks insist, then add that because of inherent characteristics in the designs of conventional handguns, few shooters can hold well enough to take maximum advantage at long ranges.

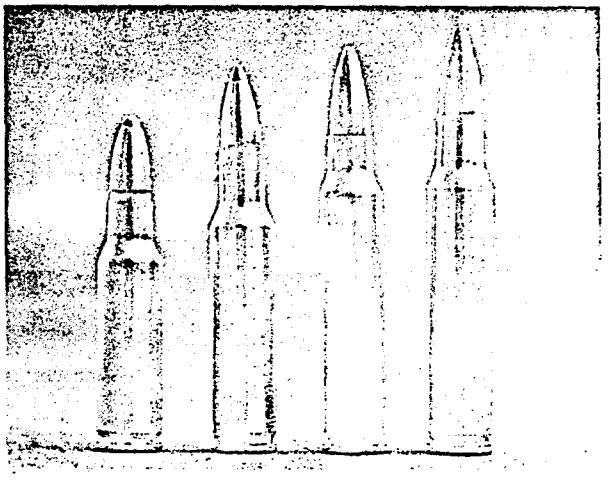
There are handgunners who will argue that point, naturally, but the new XP-100, which was long a closely guarded secret, is meant to fill this supposed gap.

The grip and stock of this gun are of one-piece molded *Zytel,* a new structural nylon. The action is patterned frankly after Remington's bolt action center fire rifles, while the stock obviously is derived from the plastic-stocked .22 rimfire rifles in the company's line. But there is where similarity ends; the rest looks like something straight out of the Space Age.

Wayne Leek, who designed the gun — improving his own shooting along the way, he insists — says that the *Zytel* material maintains dimensional stability under all conditions, and cannot warp or change shape. Result is uniform barrel bedding for accuracy. The



From left: New .221 Remington long range handgun cartridge is compared with .222; Remington .223 designed for military use; .222 magnum. Shown actual size.



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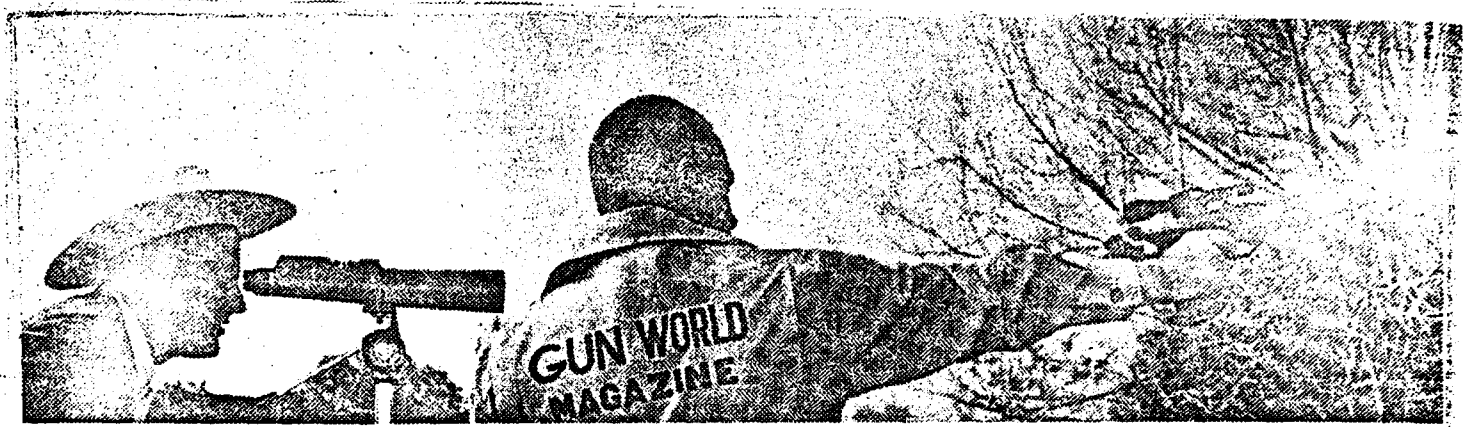


Duke Roberts squeezes one off, using Bushnell's Phantom handgun scope, while Jack Lewis checks hits through the new Balscope Zoom 60. Latter will focus from ten yards to infinity with only a flick of the dial set in the top of the tube. Another thumb dial can regulate the image 10 to 60 power. It's manufactured by Bausch and Lomb.

grip is contoured to fit the shooter's hand and is equally adapted to either right or left-handed use. We also found that it fits well with a two-handed hold.

A ventilated rib is used on the barrel to improve the sighting plane, while a blade front sight — again familiarly found on the *Nylon 66* — and a rifle-type rear sight with adjustments for windage and elevation are incorporated. The receiver is drilled and tapped for scope blocks.

Overall length of this Buck Rogers dream is 16¾ inches, and weight is 3¾ pounds. Barrel length is 10½ inches. The gun has decorative checkering, white spacers and diamond inlays in stock and grip. There's also a cavity in the fore end that permits weights to suit your own tastes in balance.

Sounds weird, doesn't it? When writers saw it in November, there was a good deal of speculation concerning potential success. This led to our doing some research on other guns that were ahead of — or behind — their time; the difference is not always apparent.

For example, as long ago as sixty-three years, Winchester tried a .22 bolt action, single-shot handgun. Admittedly, this, the Model 1900, didn't have any of the refinements of the XP-100. It is thought that the New Haven tribe made only twenty-five of these on an experimental basis, dropping the entire project, when it was decided it had little commercial appeal.

The frame of this particular handgun was of brass, which was nickel-plated, while grips were of burled walnut. Today, there are only five known specimens in existence, and three of these are in the Winchester Museum. As collector items, these guns are valued at more than $400 each.

More recently — about five years ago — Whitney Arms of Hartford, Connecticut, came out with an accurate .22 *Autoloader*, holding ten rounds of long rifle 22s. Although more than adequate for the price, it never became a huge commercial winner. Experts, if there really are any in gun marketing, blame this upon the acutely modernistic design, claiming that gun buyers were not yet educated toward such streamlining.

But the XP-100 has a built-in advantage; it is not just a gimmick gun. It was developed for a particular purpose: Long range hunting with a centerfire cartridge.

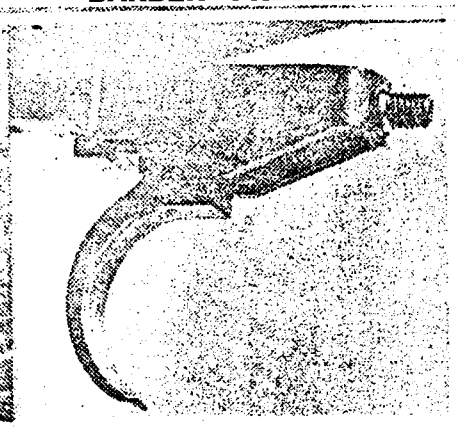
When the group gathered at the Pasadena range, roll call found staffers Ray Rich, Dan Cotterman, Jack Lewis and Duke Roberts on hand to evaluate the new gun. Looking on, and eventually shooting, were Jack Miller, who is range supervisor for the Pasadena Parks Department, and Jack Preston, one of his assistants.

Everyone who had not previously seen the new handgun was immediately intrigued with the novel design. At first, the weight seemed to frighten them, but there is enough aft poundage so that the gun balances well in the hand . . . Not that it doesn't become almost immediately noticeable when shooting off-hand. That three-plus pounds begins to weigh heavily in a matter of seconds.

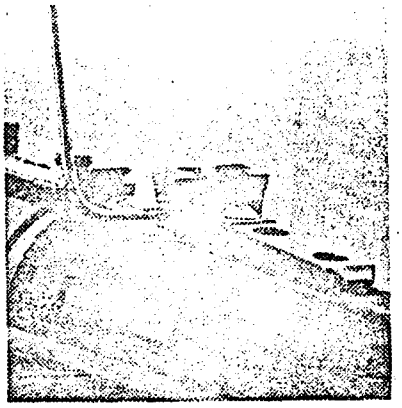
To the gun, we had attached Bushnell's *Phantom* scope with their new mounts designed specifically for the XP-100. For a warmup, we tried a few rounds through the chronograph and found that velocities hit along at an average of 2650 feet per second.

This is precisely the velocities claimed by the manufacturer, which was a pleasant surprise. In the past, nearly all ammo makers have tended to puff up

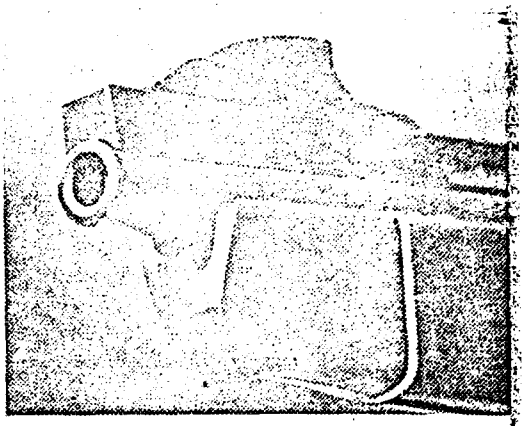
Jerry Mills holds aloft the bobcat which he shot with his first round out of the new Remington XP-100. The cat was downed at approximately sixty yards shortly after dawn.



With the stock removed, the trigger adjustment screw is revealed. It appears to be pre-set at factory, then "glued" into place for a light pull.



Adjustment of rear sight is accomplished with this Allen wrench packed with the gun. Mount at rear of sight was installed for Bushnell Phantom.



Similarity of XP-100 front sight, fore end to that of Remington's Nylon 66 .22 rimfire rifle is beyond coincidence. Rib is added feature.

their ballistics figures. However, this trend seems to be changing with more realistic figures resulting. We take partial credit for this, since we have been among the publications that have frequently discounted these velocity claims through actual field testing of suspect loads.

Next, we took our battered old plate of quarter-inch boiler plate out to fifteen yards, and fired one of the *Fire Ball* rounds through it. It cut a neat plug about the size of a .38 case out of the metal. At twenty-five yards, then fifty yards, the gun did exactly the same.

Finally, at seventy-five yards, the bullet failed to get completely through the heavy plate. However, it pushed a blister into the metal that was cracked all the way around on the rear side. A hard tap with the end of a screw driver would have pushed it out.

Digging around in the sand backstop, we managed to come up with a pair of the spent bullets, which no longer resembled anything like their original form. They had been turned completely inside out, the metal flattening out to turn back over the copper jacket.

Some of the statistics on the .221 *Fire Ball* no doubt will prove of interest to those who are looking for a hotter load. This round has a 50-grain jacketed bullet, and the speed is close to that developed in the much publicized .22 Hornet handloads launched from a rifle. Muzzle energy is 780 foot pounds at the muzzle. Even out at three hundred yards, the bullet still is moving at 1460 feet per second, although energy drops to 235 pounds at that range.

For the handloading buffs who'll be checking this one closely, the approximate case length is 1.395 inches, or about twenty-five percent shorter than the .222, which has this same basic case. The *Fire Ball* is about nine percent longer than the Remington .22 *Jet*, according to Cotterman, who'll be reloading this one for our next issue. He judges case capacity should be 21-22 grains of ball powder.

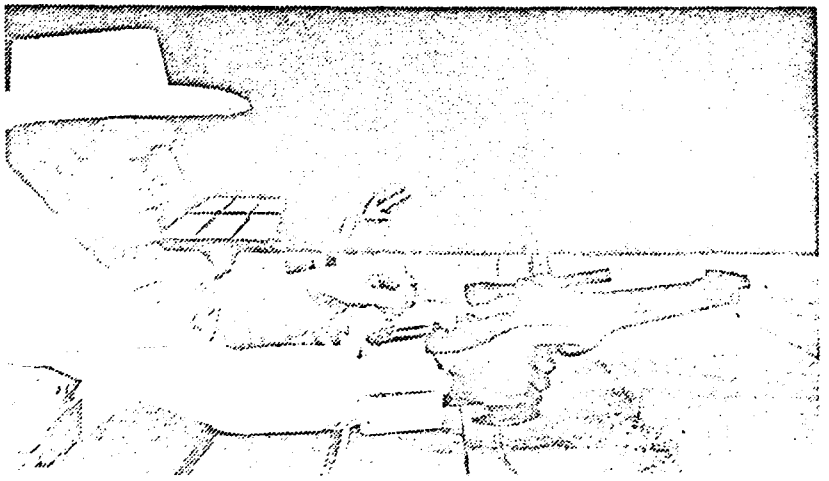
After the plate puncturing exercises, we turned our attention to the matter of accuracy. Since this wasn't meant to be a target gun for offhand shooting, we set up half a dozen yellow-shaded clay pigeons at seventy-five yards, then drew up a table and began to plink away, shooting from the sitting, braced position. The scope had not been bore-sighted and required fifteen minutes of adjustment before the bullets began to shatter the targets. We had selected the clay birds, incidentally, since they seemed to approximate the size of a bobcat's head.

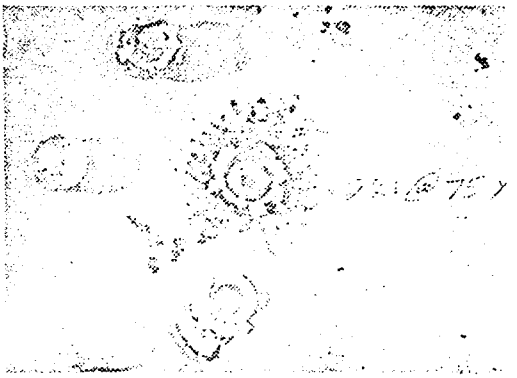
Most of us hit some and missed some, but the full potential of the gun proved itself in the hands of Duke Roberts, who sat down at the bench, rested the XP-100 in a two-hand hold, then began to knock off targets one after the other. Then to prove himself, he began to chop up the lesser pieces that still showed yellow against the sand. At seventy-five yards, yet!

This, of course, is fine on a range under controlled circumstances, but what about varmint shooting for which the gun was designed?

We turned the gun over to Jerry Mills immediately after the range work and he made for his favored

GUN WORLD Editor Jack Lewis pulls the bolt to the rear to eject the fired case with a crisp, positive action. Handgun is well balanced for weight, packs big punch at distances as evidenced by holes in quarter-inch boiler plate at lower right. Hole which did not completely perforate the metal was fired with Fire Ball at 75 yards.





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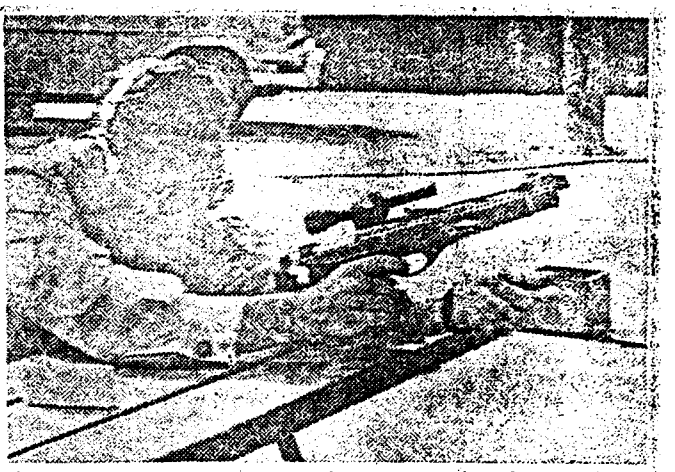


GUN WORLD Publisher Rich sights in with fore end only balanced in palm, holding loosely. Photo at right shows the recoil of the XP-100 upon firing. Note that the muzzle is elevated, but the gun seems to rock back on its butt.

corner of the country, where the states of California, Arizona and Nevada merge.

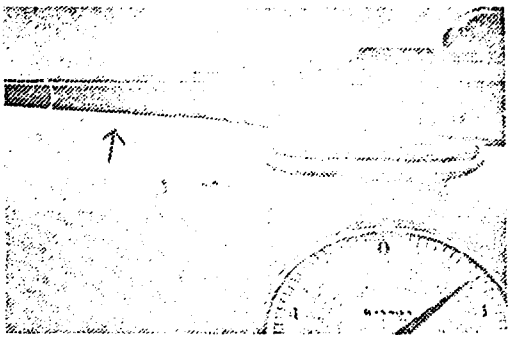
Mills began calling early in the morning, at about seven o'clock and reported that it only took about fifteen minutes to lure in a bobcat.

With the handgun braced against his knees, he spotted the animal at about sixty yards out, lined up the scope and squeezed off the first round. That was all it took. The bullet hit the cat on the point of the chin, shattering the entire bone structure of chin and jaw, then went on to sever the spinal column.

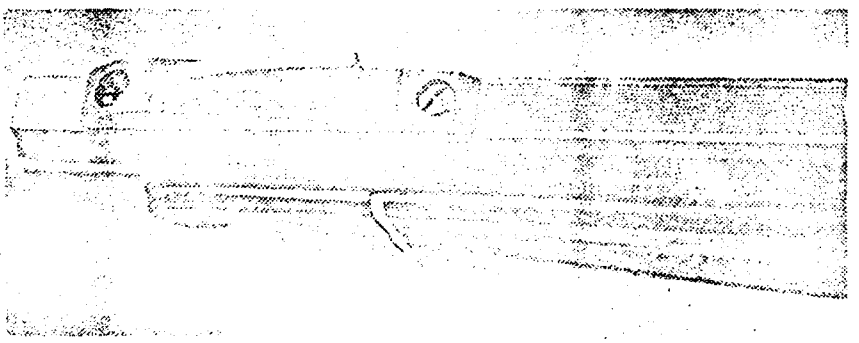
In range tests, Jack Miller had commented that the grip of the gun seemed to fit his hand as well as any standardized stocks; he has a large hand. Mills' hand is smaller, but he also felt that holding was excellent. All of which means that some gains have been made toward the sought "universal" grip. At the opposite extreme, Roberts complained that the back of the grip seemed to cut into his palm, making it uncomfortable for a tight hold.

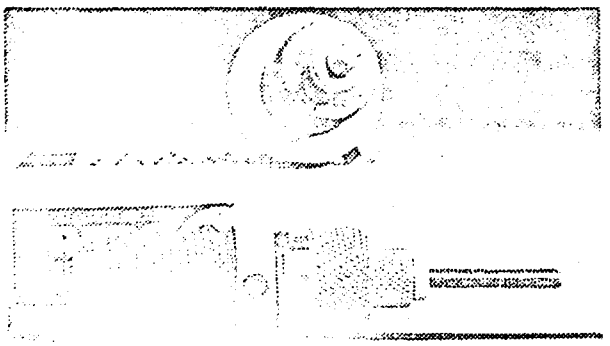
One comment made by all hands it that with the gun balanced as it is, there is comparatively little

When plastic stock of handgun was removed and weighed, it was found to scale in at exactly 11 ¼ ozs. Note holes for insertion of lead weights.



The ventilated rib, which runs full length of the XP-100's barrel, has both sights mounted upon it. The rifle type sights give one a feeling of confidence in the arm's potential for distance shooting even without scope. Rib is matted to discourage light glare. Scope rides above rear sight.





Above: Reloading dies for the .221 Fire Ball already are in production by RCBS, although cartridge isn't yet released. Right: Dan Cotterman checks out this new round, comparing characteristics for next month's reload test.

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KINZER V. REMINGTON

recoil; what there is, comes softly and doesn't slam around the shooting hand.

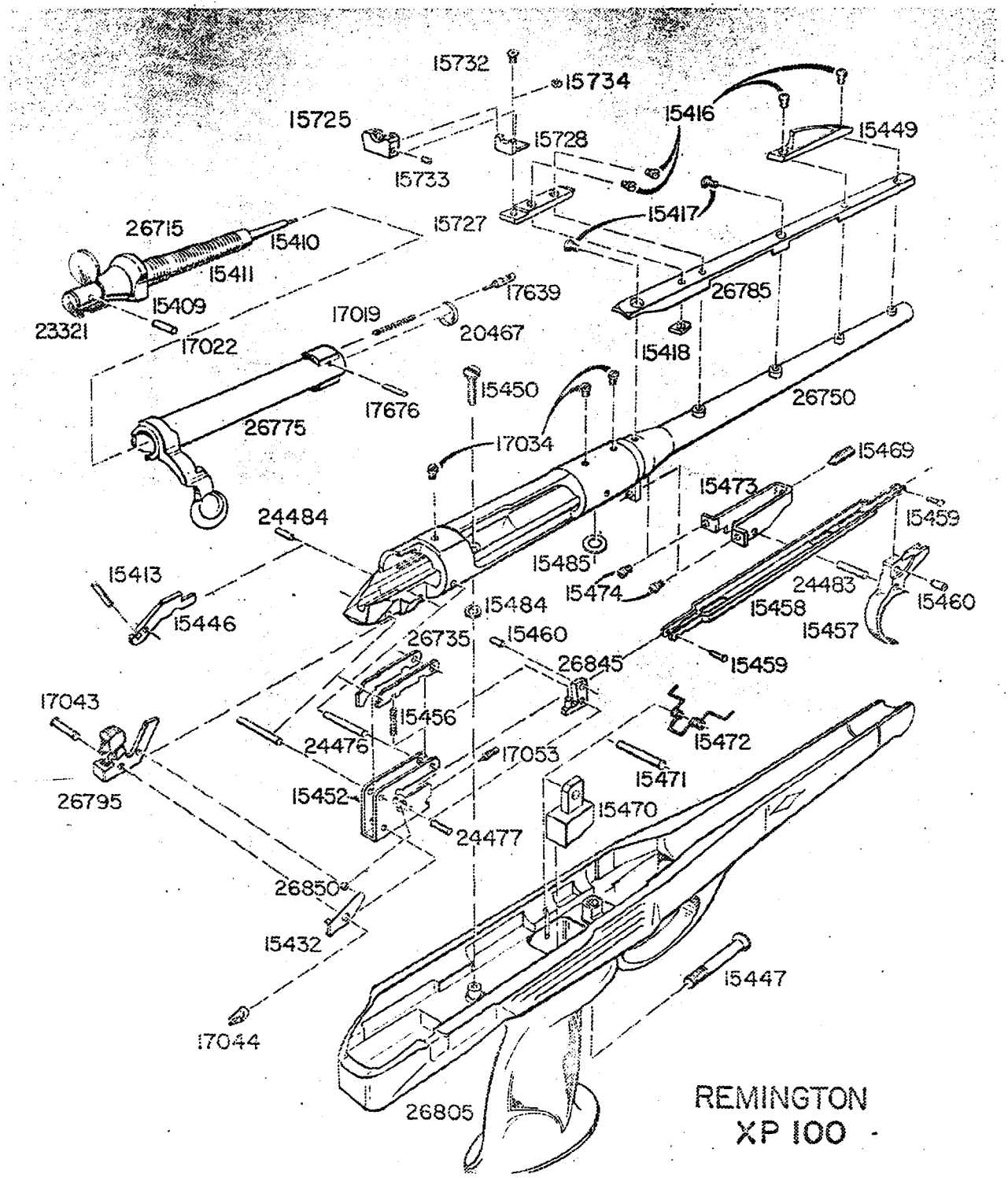
Loading is speedy for a single-shot, since one has only to drop the cartridge ahead of the bolt and the forward motion of the latter guides it along a machined route and into the chamber.

The range testers felt that, while the trigger pull on the gun was excellent, it might be a trifle too light. Mills, at the opposite extreme, appreciated the light touch required to send the firing pin forward. He feels it has a definite advantage in varmint shooting, where the animal is not going to linger.

What does all this mean?

For years, buyers have been prejudiced against the use of plastic in firearms, but in recent years, the breakthrough apparently has been made on this emotional barrier, and sales are up. This could have a major effect in making the XP-100 a popular handgun, and its accuracy is certain to help.

Meanwhile, in our next issue, Jerry Mills will be doing more serious varmint hunting with this one, and Dan Cotterman will be investigating the reload facets. Be sure to watch for this progress report. ●



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R2532164

November 7, 1967

Mr. Larry Miller
17320 N.W. 31 Ave.
Miami, Florida 33054

Dear Larry:

Thank you for your interesting and detailed letter, which reached the individual who had a little bit to do with development of the XP-100. Like you, I have been an ardent pistol shooter for many years and thought it would be fun to have a pistol of super accuracy and power that could be used for varmint shooting. The XP-100 and its counterpart the 221 cartridge was the result.

I wouldn't say that Mr. Page's comment was quite true and where he got his information I do not know, but I will admit however that the sale of the XP-100 is not as high as one would expect most rifles and pistols to be. On the other hand, when we introduced this model we did not design it for anything but varmint and target shooting, and this target shooting generally would be from the bench. Therefore, it was recognized that sales would be rather limited. It did strike the fancy of a great number of shooting enthusiasts, however, and made the cover of five magazines around the world.

Also, its accuracy leaves little to be desired. Les Bowman, who fired 5,000 hand loads, is a world reknowned writer and big game outfitter from Cody, Wyoming, as you may or may not know. He finally achieved a group from the bench of 5 shots at 100 yards in .430" extreme spread, which is superb even for a fine rifle. I have obtained some offhand groups at 50 yards that could be covered with a 50¢ piece. Occasionally, however, I lose control and even though four are within that size circle, pull the fifth one.

Practically every big game animal, legally or otherwise, in the United States and Canada and Alaska have been killed by the XP-100. One individual even uses the XP to knock off Brahma bulls now and again on his ranch, when they get out of control and need to be put away. He carries it in a special saddle hung on the side of a jeep.

Now to answer some of your questions in their order.

1. A carbine designed for the 221 cartridge has been made but the velocities of the small cartridge would not come up to the velocities obtained by shooting a 222, 222 Magnum or 223 in the same barrel length. The original XP-100 was made up on the 222 and as a result there was a tremendous loss in velocity and a huge blast at the muzzle because the cartridge and load was designed to work more efficiently in a long barrel. This necessitated redesign with result that the 221, being of smaller capacity with a little faster burning powder, was more efficient in the short barrel than the 222. Some individuals who have not given careful thought in this area, rechambered their 221 Fireball for the 222 and have lost velocity and ruined their gun. The reverse of course is true as previously mentioned, that the 221 being designed to perform more efficiently in a short barrel will not do as well in a long barrel; hence, the 222 would be more efficient.

2. Repeating mechanisms certainly have been considered. The gun was not designed in the first place for rapid firing. Accuracy, strength and high velocity were of course the main objectives. One individual not associated with Remington designed a rotary box magazine to fit on top of the receiver surrounding the telescope. The mechanism fed very well and I believe it was 6 shots. However, I don't believe it would be acceptable as the top heavy portion was objectionable. If you would observe the design of the pistol carefully it would be noted that it would be relatively impossible to feed from under the gun in the conventional manner as the grip is in the way. The grip not being large enough to accommodate a magazine to hold the 221 shell properly, would not allow such a feeding system. The other alternative would be to feed from the side, either right or left. Actually the gun is plenty strong enough even with one set of lugs, and feeding could be accomplished in this manner. It was felt, however, that such a feeding system would not enhance the sales of the pistol, but it can be hoped that suggestions from customers such as yourself may be influential.

3. Chambering this pistol for the 22/250 would even be worse than chambering it for the 222. The 22/250 has difficulty in burning rather efficiently even in a 26" barrel. Therefore, there would be a huge muzzle blast, and a very uncomfortable one indeed with the resulting low velocities. Recoil would be a little bit difficult for

3. the ordinary individual to handle also, as the design of the grip is such that the upward recoil moment is less than those experienced in most handguns. I doubt very much that the velocity of the 22/250 would reach 2650 ft/sec. in the 10" barrel.

4. Publicity has been rather restricted on this item, being of low volume and advertising so expensive it is a little difficult to justify the high expenditures. Another item to consider is the fact that sales personnel must be specialists in what they are selling. Remington has not been in the pistol business for many years and we have very few people in our company and in the sales department who are professional handgun shooters. Most of them are expert with shotgun and quite proficient with rifle. I know of only two at the most who are proficient with the handgun. You can readily see that it is difficult for a salesman to push a product that he cannot handle.

5. Remington does care, and that is why I don't think you will find the item will be dropped, at least in the near future. If it does sell, has consistent sales, and we must remember that there are only a certain few people in the gun shooting fraternity who are interested in this type of shooting.

6. There has been some experimental work, naturally, with other calibers for this handgun. A 6mm was tried and has been used by some of the gunsmiths around the country, using the lightweight 6mm on a 222 cartridge. The accuracy is superb and the range is very great, recoil is still within reasonable limits. It is questionable, however, whether the volume for this combination would justify tooling and advertising in this caliber. I believe there has also been some experimental work, not by Remington but by others, in rebarreling it for a 177 caliber based on a 221 cartridge. This seems like an interesting combination, but would also meet the same objections as far as dollars and cents are concerned.

No, I don't think you have degraded the average gun minded students of America. It's fellows like yourself who keep the gun business moving ahead with bigger, better and greater things. Without the gun enthusiasts we might as well fold up shop and go into some other business.

I wish you the best of luck in your endeavors at school, and hope you find your retirement, which is certainly many years away, as a gunsmith is a profitable and enjoyable one. Best regards and thanks again for your fine letter.

Sincerely yours,

W. E. Leek,
Manager - Firearms Research & Design
Ilion Research Division

WEL:T

October 24, 1967

17320 N.W. 31 AVE
MIAMI, FLA. 33054

REMINGTON ARMS COMPANY, INC.
BRIDGEPORT, CONN. 06602

DEAR SIRS:

I DOUBT IF THIS COULD REACH WAYNE LEEK, HOWEVER, ALL THINGS ARE POSSIBLE. AS CAN BE SEEN FROM THIS PAPER-AND-PEN-INFORMAL LETTER THIS IS JUST A COMMUNICATION FROM AN AVERAGE, GUN MINDED, STUDENT ABOUT TO ENTER THE DEVASTING WORLD OF COLLEGE.

I AM A GUN COLLECTOR BY HEREDITY AND PERSONAL PLEASURE. I LOVE TO SEE A WELL DESIGNED GUN, ALTHOUGH I OWN NO REAL WORTHY GUNS HOWEVER, I KNOW THAT I WILL EVENTUALLY BE SOMETHING, SO THAT I CAN INDULGE IN THESE WORLDLY PLEASURES OF GUN COLLECTING. HOWEVER THE REAL WORTH OF A GUN COMES FROM THE PURPOSE IT IS DESIGNED FOR, SHOOTING!

ABOUT A YEAR AGO I DECIDED WHAT MY FIRST + MOST MEMORABLE GUN OF MY COLLECTION THE REMINGTON XP-100.

2

I FEEL IN LOVE WITH THIS BEAUTIFULLY FUNCTIONAL WEAPON, BECAUSE HANDGUNS ARE ESPECIALLY IN WITH ME AND BECAUSE OF ITS SUPER ACCURACY. I CONSIDER MYSELF A FAIRLY GOOD SHOT WITH A .38 CALIBER REVOLVER (POLICE SPECIAL, SMITH AND WESSON) AND I KNEW THAT SOMEDAY I WOULD BE THE MOST ENVIED VARMINT HUNTER ANYWHERE AROUND.

BUT AS IS ALWAYS THE CASE WITH LOVE AT FIRST SIGHT, A FLAW WAS SOON FOUND IN MY BEAUTY. IT CAME IN THE FORM OF AN ARTICLE "NO, FLOWERS, PLEASE" BY WARREN PAGE IN THE JULY ISSUE OF FIELD AND STREAM THIS YEAR. AS I UNDERSTAND IT, BECAUSE OF THE SALES, OR RATHER THE LACK OF SALES, THE XP-100 MIGHT BE DROPPED AND ITS FABULOUS .221 FIREBALL WILL "GO THE BOBSLED ROUTE". NOW I AM A PRACTICAL PERSON AND NOT A TRUE LOVER OF AESTHETIC BEAUTY IN GUNS. I WANTED THE XP FOR ITS ACCURACY AND CHALLENGE. I DON'T WANT AN UNFIRABLE PIECE OF MACHINERY, NO MATTER HOW GOOD LOOKING!

IT SEEMS TO ME THAT A MAN WITH SUCH A CREATIVE MIND AS MR. LEEK'S COULD SAVE THIS DYING RACE OF GUNS. I SHOULD LIKE TO POSE SOME QUESTIONS AND AS I

3

PLAN TO BE AN AEROSPACE ENGINEER FOREMOST AND GUNSMITH IN MY RETIRED YEARS, I HAVE NOT THE SLIGHTEST IDEA WHAT PRINCIPLES ARE INVOLVED IN RECHAMBERING, BOLT PRESSURE, ETC. IN OTHER WORDS, I AM STUPIDLY TRYING TO SUGGEST SOMETHING WHICH MAY BE TOTALLY ASININE TO AN INVENTOR LIKE MR. LEEK. HOWEVER, THE EFFORT IS HERE AND I HOPE IT IS TAKEN TO HEART AT REMINGTON, ENOUGH SO AS TO TELL ME WHAT YOU THINK.

1. WOULD THE DEVELOPMENT OF A CARBINE RIFLE USING THE .221 BE POSSIBLE? IT MIGHT REVIVE THE SHELL AS THE .22/250 HAS REVIVED. (THEN AGAIN IT MIGHT ALSO FLUNK)
2. COULD A FEEDING MECHANISM BE DEVISED SO AS TO MAKE THE XP-100 A 4 OR 5 SHOT REPEATER?
3. WHAT ABOUT A HANDGUN OF THE SAME FORM BUT CHAMBERED FOR A .22/250? WOULD IT BE AS ACCURATE? HOW DOES THE MUZZLE VELOCITY OF THE .22/250 COMPARE WITH THE .221'S 2,650 ft/sec?
4. WHAT ABOUT PUBLICITY? I ONLY READ ONE ARTICLE OF IT IN POPULAR SCIENCE, OR SOME SUCH, BACK IN 1963(?).
5. OR MAYBE I AM ALL WET AND

4

DEAR OLD REMINGTON DOESN'T GIVE A D__D.
WHAT SAY YOU BRILLIANT PEOPLE?
I SERIOUSLY THINK IT COULD BE A BIGGER AND BETTER SMASH THAN EVER BEFORE, IF ONLY YOU CAN DECIDE WHAT IS RIGHT TO DO.
6. LASTLY, I WOULD LIKE TO KNOW WHAT OTHER BRILLANT CONTRIBUTIONS REMINGTON HAS MADE IN THE AREA OF ACCURATE HAND GUNS?

WELL, AS I HAVE BEEN RATHER RATHER VERBOS I WILL CLOSE WISHING YOU WOULD REPLY IN SOME WAY, SHAPE OR FORM AND I HOPE I HAVENT DEGRADED THE AVERAGE, GUNMINDED STUDENTS OF AMERICA.

SINCERELY YOURS,

Larry Miller

THAT'S LARRY MILLER

RUGGED... DEPENDABLE made with Du Pont ZYTEL® NYLON resin

Remington XP-100 is a new, highly rugged, dependable, accurate handgun which is chambered for the 221 Remington "Fire Ball". Excellent downrange ballistics of this cartridge compare favorably with many rifle-cartridge combinations. The stock and grip of Du Pont ZYTEL help achieve three desirable selling points: the handgun is exceptionally light in weight; the lightweight parts do not warp, maintaining functional accuracy in use under all sorts of conditions; and the gun is beautiful—with simulated wood grain, white spacers and diamond inlays molded of ZYTEL. ■ This is another example of products made rugged, dependable and good-looking with ZYTEL nylon—one of Du Pont's heavy-duty engineering materials. Products made with ZYTEL are worth looking for—worth telling your customers about.

Better Things for Better Living . . . through Chemistry DU PONT

As advertised in Hardware Age—July 21, 1966; Hardware Retailer—July, 1966

P.O. 6 1669 CODE NO. 17764 (2693) PRINTED IN U.S.A.

G-88

File Copy

DON'T SAY IT—WRITE IT

To F. E. MORGAN

Date October 28, 1965

From W. E. LEEK

File XP-100 Adv

Dear Pete:

On my trip through the western area this summer I made it a point to stop in the various gun shops along the way to inquire about the performance of Remington products, and was astounded to find that a great number of these dealers had not yet seen an XP-100 Pistol and had commented that even the Remington salesmen did not carry one for a sample.

I may be a bit old fashioned as a salesman but was trained with the idea in mind that to sell something it is a good idea to have a sample to show. And I couldn't help remembering a remark made by Mr. Coleman some months ago commenting about the poor sales performance of the XP-100 and asking me what could be done about improving its acceptance.

At any rate, all of this is out of my category, Pete, and thought perhaps would be best if you knew what was going on. Thanks for your attention.

Wayne

W. E. Leek
Ilion Research Division

WEL:T
Attach.

THERE IS A SAFE WAY; DO IT THAT WAY

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

cc: J. D. Mitchell
Wayne Leek - Ilion
E. S. McCawley

File

October 8, 1964

Mr. Alfred J. Goerg
Goerg Enterprises
3009 So. Laurel Street
Port Angeles, Washington

Dear Mr. Goerg:

Thanks for your letter of October 5 to our Mr. J. D. Mitchell. That conversion of the XP-100 to a 6 m/m Rem. sounds like quite a gun ... it must be, to down a black bear with one shot. We're looking forward to reading your story in Guns and Hunting magazine.

If there's one area that Remington is not big, it's in the handgun field. We have one handgun in our entire line. On this basis, chances are we will not be advertising in PIONEERING HANDGUN HUNTING at this time as our budget for the XP-100 is quite limited.

The designer of the XP-100 and .221 Fire Ball cartridge is Mr. Wayne Leek and he is at our Ilion, New York plant. I'm sure if you dropped him a line, he would be more than happy to answer any questions you may have.

Thanks again for writing to us and here's wishing you good shooting in the coming hunting seasons.

Sincerely,

S. R. Hutchinson - Manager
Advertising - Firearms

SRH/ecc

BARBER - PRESALE R 0131187

G-88

DON'T SAY IT—WRITE IT

To F. E. MORGAN

Date April 14, 1965

From S. M. ALVIS

I guess we will have to get Ted and Wayne to try to stimulate some of the writers who seem to have forgotten about the XP-100. We had real good coverage a year or so ago but it seemed to have been abandoned now. For example, in the June issue of GUN World there are two articles on high power pistols, neither of which makes mention or comparison to the XP-100, although one article entitled "Caribou with the Hawkeye" (Ruger) includes reference to game killed with what appears to be a single shot pistol in Caliber 257 which was converted from a Remington rolling block action.

Perhaps in order to stir up interest we will have to make some technical changes, or added caliber or the like, in order to provide some copy for the writers to use.

SMA:T

cc: ~~W. E. Leek~~
E. S. McCawley

TO BE SAFE; FIRST THINK YOU MIGHT NOT BE

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON
BARBER - PRESALE R 0131187
R2532175

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER-- PRESALE R 0131188

G-88

File

DON'T SAY IT—WRITE IT

TO F. E. MORGAN

DATE April 14, 1965

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I guess we will have to get Ted and Wayne to try to stimulate some of the writers who seem to have forgotten about the XP-100. We had real good coverage a year or so ago but it seemed to have been abandoned now. For example, in the June issue of GUN World there are two articles on high power pistols, neither of which makes mention or comparison to the XP-100, although one article entitled "Caribou with the Hawkeye" (Ruger) includes reference to game killed with what appears to be a single shot pistol in Caliber 257 which was converted from a Remington rolling block action.

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SMA:T

cc: W. E. Leek
E. S. McCawley

TO BE SAFE; FIRST THINK YOU MIGHT NOT BE

BARBER - PRESALE R 0131188
R2532176

☐ FOR ENCLOSURE

DATE 8/19/64

TO: G. M. CALHOUN

FROM: Jane McDonnell

Please Discuss With	For Approval	For Attention	For Information	Note and Forward To File	Note and Return To Sender	Forwarded Per Your Request

Thought you might be interested in reading this.

From Popular Mechanics
August 1964

BARBER - PRESALE R 0131190

Test Firing the XP-100

By Ken Warner

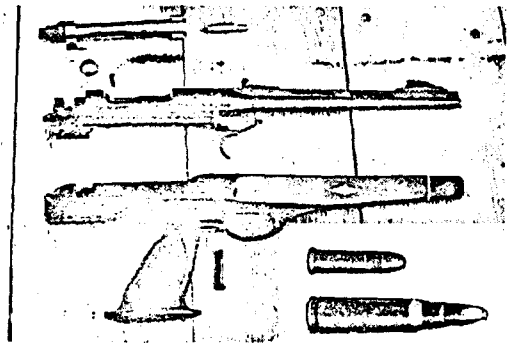
A MODERNISTIC SAWED-off varmint rifle, the Remington XP-100 is a single-shot, bolt-action handgun that packs more long-range wallop and accuracy and flat trajectory than any other handgun built.

Weighing 3¾ pounds, and 16¾ inches long, the XP-100 shoots a 50-grain .221 bullet at 2650-f.p.s. muzzle velocity. With a Bushnell 1.3X telescopic sight, I shot six groups at 100 yards, and stayed under three inches for five shots.

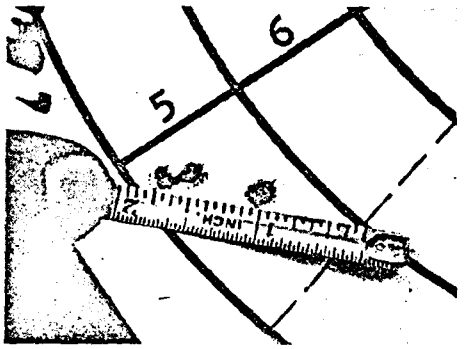
Major difficulty was getting the hang of controlling a 3¾ pound gun that will give the accuracy of a rifle. The least little twitch is embarrassing. But this was mastered with practice, and then I easily blasted quart oil cans at 100 yards as well as gallon cans at 150 and 175 yards. I shot a Florida buzzard, the first varmint target, at about 140 yards.

Though it's not as easy to hold as a rifle, it would take an excellent varmint rifle to match the XP-100's accuracy—an unusual quality in any handgun.

ONE-PIECE stock permits precision barrel bedding. Inset: large .221-cal. cartridge and .22 long rifle



THREE SHOTS fired from bench-rest at 100 yards measure just under ¾ inch from center to center



CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON
BARBER - PRESALE R 0131190
R2532178

BARBER - PRESALE R 0131191

design in action

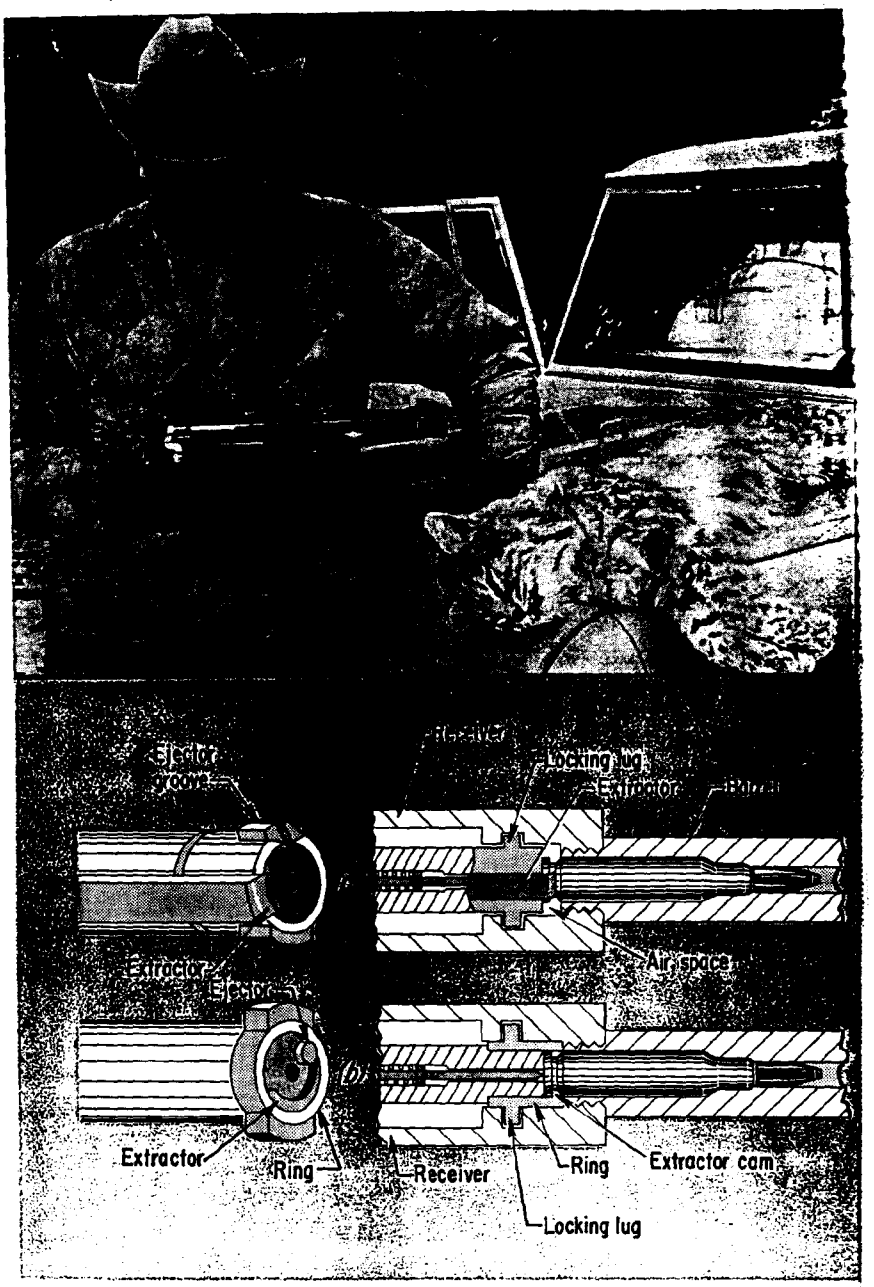
Scoped Bolt-Action Pistol Wipes Out Varmints

For many varmint-hunting aficionados the scoped handgun is replacing the rifle as the ultimate sporting way to shoot game. As far as accuracy is concerned, however, the optical qualities of telescopes and the ballistic capabilities of modern rifle cartridges far outclass ordinary pistols. Remington's solution to the problem is their new XP-100—a .221, single-shot, scope-toting firearm that combines some characteristics of rifles and pistols.

Outer-space shape of the DuPont Zytel structural-nylon stock is both functional and comfortable, aiding the shooter in holding accurately on target. Precision molding assures that bedding (mating of barrel surface with stock groove) is absolutely uniform. Uneven bedding is a major cause of "wild-shooting" guns.

The bolt surrounds the cartridge base—the place where dangerous case rupture is most apt to occur—with a ring of steel. The Fireball cartridge, originally developed as a high-velocity varmint cartridge for rifles, generates high chamber pressures. In former bolt designs, *a*, the lip of the extractor extended around the flat face of the bolt to grip the fired case and pull it from the chamber. In the XP-100 bolt, *b*, a spiral land cams onto the cartridge rim as the bolt is closed.

Designed by Remington Arms Company Inc., Bridgeport, Conn. Photos courtesy of Les Bowman, LB Ranch, Cody, Wyo.



CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON
BARBER - PRESALE R 0131191 R2532179

File

cc: E.G. Larson
E.S. McCawley

April 22, 1963

Mr. Elmer Keith
Shooting Editor
GUNS & AMMO Magazine
Salmon, Idaho

File
M/XP-100
adv

Dear Elmer:

Thank you for your fine letter concerning the Model XP-100 Pistol. I agree with you that it will shoot a tighter group than any living man can hold it without a shoulder stock, and certainly was in hope that some of the finer pistol shots in the country would test their abilities and this pistol to see what could be accomplished. We have seen 5-shot groups at 100 yds. that would not cover a half inch. These of course were machine rest groups, and those fired by hand with a scope and bench support were in the neighborhood of about 5/8". I believe that Les Bowman had a little better luck than that and is getting around 1/2".

In some respects I guess you could call this a "hoss pistol". I noticed in one of the articles of Charles Askins that he calls it a hoss pistol, so perhaps I will be branded from now on as being "Hoss Leek"; however, I don't mind as long as the pistol sells well and everyone likes it. We are getting orders by the thousands, surprising as it may seem. Of course, people like yourself from out in the western section of the country I don't believe would be surprised in hearing such a magnitude of orders. For example, I had a call from a fellow in one of the Finger Lake areas the other day who had to travel all the way to Vermont in order to purchase one of these pistols.

I am glad that Bushnell's combination scope and mount worked successfully for you and that you did not have to alter the mount to get good groups. I was trying out the pistol not too long ago with some of the Remington factory ammunition and had a lucky shot at an army steel helmet at 300 yds. Believe it or not, the helmet was penetrated with a varmint bullet although the bullet opened up after making its first entry and then splattered around inside the helmet on the second contact. These helmets are so hard that it is impossible to file them or cut them with a hacksaw so you can imagine the effect of the impact load at that range.

Tom Frye's address is 2001 Plaza Drive, Billings, Montana. This will probably eliminate any letters being returned that have been sent to him.

I hadn't realized that Charlie Askins was hunting polar bear and that is probably why I have not heard from him. I expect that his hunt in Africa was quite successful. I hope by this time he has had the opportunity to try the XP-100 offhand. I have a lot of respect for his offhand shooting ability and hope that he won't let me down in this area.

I still haven't had any luck at bettering my scores at 50 yds. over the couple 98s I had but probably this summer when it gets a little warmer I might break a possible. I'll send a copy of this letter to Earl Larson concerning the proposed new 41 Magnum that you discussed with him at the NRA show and he can carry on the investigation from his end. Sorry that I missed seeing you at the show, Elmer, but work was a little too pressing here and I sent one of my designers, Charles Morse, to cover the show for me. The information that we got back concerning this show, from several sources, indicated the XP-100 pistol to be the most outstanding item of interest.

Thanks again for your fine letter and your excellent work in shooting our guns for us. Am looking forward to seeing you next summer and hope that you and Mrs. Keith are in the best of health.

Regards,

W. E. Leek
Manager- Firearms Design & Development
Ilion Research Division

WEL:T

GUNS & AMMO MAGAZINE • ELMER KEITH SHOOTING EDITOR | SALMON, IDAHO

April 10th-63

Mr. Wayne Leek,
Chief Designer-Firearms,
Remington Arms Co Inc.,
Ilion Research Div.
Ilion, N.Y.

Dear Wayne:

We been shooting the litte 221 Fireball. Man that gun and load will group closer than any living man can hold it in my opinion without a shoulder stock. Bushnell sent me a scope and couple mounts that work fine. It is the most accurate hand gun I have seen to date.

All who have shot it here are enthusiastic about its accuracy, but I fear it will become a poachers gun deluxe for use on deer with head shots out a car window.Its a big clumsy awkward gun to pack and best laid in car seat in its case but it is a honey for jack rabbits out a car window and think a lot of boys will want it for that purpose. be good on prairie dogs as well and hawks etc.

Bushneel sent me a second mount but gun has worked perfect with firstvone so never changed. Its the ideal remedy for wild ouse cats that you see along the roads hunting our game birds and works splendid on them. They just flatten out and wiggle their tail a time or two that is all.One horned owl took ut in the gizzard and that was that. he never even clicked his bill as they usually do beforethey die.

Will send it back to you in its case soon as we use up rest of the ammunition Ted McCawley sent out.Oneneds a dead rest at both ends to bring out the best in this gun. Found my partner Jack Nancolas does very well resting it in crook of his left arm, and I can lay down on my back and rest it between knees with back and head rest and hold it pretty good also tried it from bench rest with blanket pad under butt and V rest for tip forestock and surely does shoot and very flat to 300 yds.I dont know how to classify it either as a hand rifle or a hoss pistol but it surely is not a belt gnn. Think a lot of people will ave fun with it even though its a far cry from a practical belt gun.

Wish you would check with Earl Larson on a proposed new 41 magnum I took up with him at the NRA show as like to get hat load out for police use instead of the inadequate 38 Spl and belive it will sell if we can get the loads that it needs 200 to 210 Keith bullet soft point jacked over bearing surface at 1400 to 1500 feet with 35,000 or less pressure and also a swaged alloy bullet at 1100 feet my design and same vel as your good super accurate old 38-44 Rem. Lit of peace officers want such a gun and load and if we can get the big oitfits to use it would save a lot of officers li es every year. Lost Tom Fryes st address and lettrs come back. Charlie Askins now hunging polar bear, Best

Elmer

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

3-11-64

MODEL XP-100 - ADVERTISING

Remington discontinued the manufacture of handguns in 1935 after having been a predominant producer since the company was founded in 1816. Within the past few years there has been a considerable revival of interest in handguns among sportsmen, with emphasis on target shooting.

Remington rifles have been successful in match competition so it was only natural that the designers and engineers at the Ilion Works developed a new match type of handgun. The new Model XP-100 Pistol with the Caliber 221 Fireball cartridge offers an entirely new type of design not presently available in any other competitive model. The design corresponds generally to the so-called "Free" pistols as used in international match competitions, but in addition to its use as a target arm the XP-100 offers great utility to the trappers and also those handling cattle and sheep on the open ranges. It will also open up an entirely new field of varmint hunting for woodchuck, fox, coyote and similar animals, for the pistol shooters.

The de~~velopm~~ent of this new firearm was preceded by several years of intensive development work including field tests made by eminent national handgun specialists. The Remington handgun story really begins with a flintlock pistol. No one has ever been able to establish the exact date, but the first one must have been completed almost a century and a half ago, or at the start of the Remington business. The late Crawford Loomis had in his collection a sales record for a pistol dated in the year 1835. However, the Remington handgun business did not really flourish until the start of manufacture for the first model of the

Remington-Beals pocket revolver in 1857. It was designed by Fordyce Beals, who first came to Ilion in the year 1846 and in connection with the Remington-Jenks carbine rifle contract.

The newest Remington XP-100 bears little resemblance to the small Remington Double Derringer pistol which was the last to be produced in Ilion during 1935, after establishing a record of longevity from having been manufactured continuously over a period of some 70 years. This little pocket pistol became world famous, and strangely enough refused to "die", when about 10 years ago a European maker copied the design and sales have continued through imports.

Ilion Research Division
January 21, 1963

MODEL XP-100 PISTOL - FEATURES

1. Varmint Accuracy
   - A. Hunting - Target Pistol
   - B. Single Shot - Auto Ejection
   - C. Rifle Sights - Adjustable Rear

2. Long Range
   - A. 50/300 Yards
   - B. 10 1/2" Barrel - Vent Rib (Matted)
   - C. Receiver Sight or Scope Fittings

3. Highest Pistol Velocity - Flat Shooting (Trajectory)
   - A. .221 Fireball Caliber
   - B. 50 grain Bullet
   - C. 2650 ft./second (check this)

4. Grip Balance - Weight
   - A. Central position
   - B. Right or Left Hand
   - C. Form Fit - Checker - Diamond Inlay (White)
   - D. 3 3/4 lbs. (wt.)
   - E. Adjustable Balance (Muzzle Weight Adjustments - Cavities in Fore-end)

5. Strongest Pistol Action (Endurance - Function - Maintenance)

   A. Fast Lock Time - 2.6 milliseconds

   B. Bolt Action - Rifle Type

   C. Solid Frame - Barrel to Receiver

   D. Cylindrical Receiver Bedding

   E. Fire Control - Adj. Trigger Pull

   F. Sealed Pull Wt. - 1 1/2 to 2 3/4 lbs.

   G. Safety - 2 position stops, FIRE - ON SAFE

   H. Structure Nylon Stock (Grained)

   J. Metal Finish - Gun Metal
      - Bright Steel Bolt

   K. Bolt - Detachable - Close Fitting

   L. Simple Takedown (Infrequent need)

6. Accessory - Pistol Case

   A. Form Fit - Matching Color Design

   B. Compatible Material (Plastic)

   C. Zipper Closure (One Stroke)

   D. Ammo. Cavity

   E Sight adj. wrench??

JFF:T
1-21-63

BARBER - PRESALE R 0131199

G-88

DON'T SAY IT—WRITE IT

cc: ~~S.M. Alvis~~
R.P. Kelly

TO S. R. HUTCHINSON

DATE Jan. 21, 1963

FROM W. E. LEEK

Attached is an outline of the special features for the Model XP-100 Pistol. This is in reference to your request and the outline indicates the priority of the listed features.

W. E. Leek, Chief Designer
Firearms Design Section

By _____
J. F. Finnegan

JFF:T
Attach.

THERE IS A SAFE WAY; DO IT THAT WAY

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131199
R2532187

BARBER - PRESALE R 0131200

GS8—Rem.

DON'T SAY IT—WRITE IT

TO Wayne Leck UW XP-100 ✓ DATE 8-28

FROM Kay Osland ads

Dear Wayne:

I thought you'd be interested in reading this. I've had it quite awhile & have used it to a big advantage.

Not necessary to return. This Bob Matheuson is part owner of Central Gun & Supply Lincoln, Neb. — Key Dealer

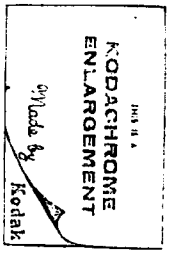
Regards
Kay

THE BEST BARGAIN IS A USED SAFETY RULE

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131200 R2532188

Sparrow shot at 110 yds.
.221 Rem. Fireball - K-8 scope.



May 26, 1963

Mr. K.D. Oslund
431 So. 41st St.
Lincoln, Nebraska

Dear Kay:

Just thought I would jot down for your information, what our results have been on field testing the XP 100. We have shot it extensively with several different scopes mounted on it and using a variety of handloads including different makes and weights of bullets and several different powders. I thought perhaps a few of the things we have found out about the pistol would help you answer a lot of dealers questions who have not had the opportunity to "wring" one out.

First of all, some of the comments about the pistol by a few of the professional writers bears comment. One prominent writer in particular wrote a very poor article on it as he didn't even mount a scope on it but shot it as a pistol with the factory sights. The XP-100 used in our tests is the one purchased by Roy Kerth and Roy and I both feel that as it was designed as a varmint pistol, it should be used as one. That is, with a good scope sight and utilizing a rest. This is the only way a varmint rifle is used so why not a pistol. We have found minute of angle groups at 100 yards almost ridiculously easy if the gun is properly used.

We have used three different scopes on the gun, the first being the Bushnell Phantom in the Bushnell mount. Although this is a fine little scope for this gun for target work, the high mounting above the bore and the almost complete lack of magnification caused us to discard this scope for varmint use. The next scope tried was a Nickel 2 power scope with fine horizontal crosshair and a slender tapered pointed post. We altered a Redfield base for the 722 by milling of the back end and drilling and counterboring the rear mounting screw in the proper position for the action. The Nickel scope in Redfield split rings gave us the low mount position we desired. This was the set-up we used on a day's varmint shooting in the vicinity of Amherst, Nebraska. First blood for the gun was drawn by myself when I shot a medium sized badger at about 70 yards. The 50 grain factory load performed beautifully on this size animal, the hit being a chest shot and the exit hole was 2½ to 3 inches in diameter.

The next varmints shot were a large amount of prairee dogs. We attempted to keep a count but as we progressed with the shooting we became so interested in what the pistol would do that we failed to keep count. However, we expended 247 rounds of assorted ammo and there weren't too many misses. Most of the prairee dogs were small pups, just large enought to leave the mound as the towns we shot are hunted a lot and the old dogs are spooky. With the 2 power Nickel scope, we found hits on the pups were "gravy" shots out to about 125 yards. From there on out to a little better than 200 yards hits were still quite consistent although the low magnification of the scope was a handicap as was the post. This

field trip convinced us that our suspicions formed with the Bushnell and Nickel scopes on target shooting were well founded, that is, the existing pistol scopes on the market do not have enough power for the potential of this pistol. As the recoil is mild, we have now mounted a 2½ to 8 power Optex varialble rifle scope on the gun. This scope was chosen as it seemed to have a little more eye relief than other more popular makes and the eye relief was not as critical. Your firm should try to convince some good scope makers like Redfield or Leupold to design a higher powered scope for the XP-100, preferably about a 3 to 7 power variable.

I should put in a word about the method we have arrived at as being the best for resting the gun when varmint shooting. We have tried all methods such as sitting down, using a two handed hold and resting the elbows on raised knees. Have also used a rifle type bench rest with sand bag supporting the forearms and also supporting the forearm of the pistol. The method we have found best for all types of shooting involves the rounded end of the butt. I don't know if whoever at the Remington plant designed the stock intended the round portion of the bottom of the grip to be used for shooting or if it was designed that way to complement the lines of the gun but he sure hit the nail on the head. If a sandbag is placed on a solid surface such as the top of a fence post or even the hood of the car, we place the butt of the gun on the sandbag and press down slightly forming the sand around the bottom of the butt. In this way, to change your sighting, the rounded end swivels on the sandbag just like a ball and socket joint and the whole rig can be held and sighted as steady as a rifle. This is a good tip you should pass on as it makes all the difference in the world between small groups and just so-so groups.

We did manage to pot a few full grown prairee dogs in one town and found only one shortcoming which was in the factory ammo. The jackets are either a little too stiff or too thick for this type thin skinned varmint. As mentioned above, they performed good on the heavier muscled badger but expansion was not too good on prairee dogs and jack-rabbits and we got quite a few ricochets even after the bullets had passed through the animal. You might pass this along to the home plant for what it is worth. Bullets tried in handloads ranged through all makes from the 37 gr. Sisk bullet desigened for the Kay-Chuck through the 60 grain Hornady. The Sisk bullets were too lightly constructed for Fireball ballistics and the best results obtained both for accuracy and performance on varmints were the 45 gr. Hornady, 45 gr. Sierra Varnet bullet, 50 gr. Hornady SX, 50 gr. Sierra Semi-Pointed 52 Gr. Speer HP, 53 Gr. Sierra HPBR and the 55 gr. Hornady SX. All of these bullets have good expansion with a minimum of ricochets. We arrived at handloads by using the Powley Computor and tried 4227 and 4198. 4227 seems to give the best results and the range of the charge with this powder was from 14.7 gr. to 15.8 gr. depending on the bullet used. We started as 14.0 gr. and went as high as 17.5 gr. with a 50 gr. bullet, at which point we blew the primer. I noticed some people have tried 2400 but as this is a scaled down version of the .222 and this powder is poison in the triple deuce, we gave it a wide berth.

One bit of humor about our varmint bushing trip was the reaction of the natives around Amherst. We are known as the durned foos who

drive all the way from Lincoln to shoot prairee dogs at those "gawd-awful" distances with those "gawd-awful" rifles. At noon Roy and I went into town for lunch at the local suds emporium along with "Swede" Riesland, a service buddy of mine who lives there and you should have heard their reaction when "Swede" told them about the long shots we had been making with a pistol. Now they really think we are crazy but sure like the idea of thinning out thier prairee dogs.

In short summation Kay, I am completely "sold" on the XP-100 and it again bears out my convicton that the best in shooting irons comes from Ilion. As soon as the family budget will stand a little bending, one of them will join the rest of my Remingtons in my own gun cabinet. The only thing I think they should do to the gun is name it "The Sniper" XP-100 is fine for a model number but a fine gun like this deserves a name.

If any of your dealers have any questions about the gun or it's capabilities, refer them to me for a good recommendation.

Sincerely yours,

Robert W. Mathewson

Robert W. Mathewson
530 So. 48th St.
Lincoln, Nebraska

F. Have

1 - J. Thompson - File
2 - Thelma - outside file

September 27, 1963

Mr. R. F. Vigue
145 Water Street
Waterville, Maine

Dear Mr. Vigue:

Mr. Alvis has asked me to answer your interesting letter pertaining to the combination of scopes and XP-100 Pistols when used at long ranges.

The XP-100 is very accurate up to approximately 500 yds., after which the velocity drops off considerably and larger dispersion of the target might result. However, I can relate to you some of my experiences and those of others which I hope will enlighten you as to what we have found in using this pistol at long ranges.

Hunting-wise, kills have been made up to 300 yds. on jackrabbits, coyotes and prairie dogs. There have been immediate kills on larger game such as mule deer, Brama bulls, bobcats, etc. at around 100 yds.. As far as penetration is concerned we have penetrated an army steel helmet with a varmint bullet, 55 grains in weight, at 300 yds.. The best group size seen between 300 and 400 yds. was 5 shots in 12". However, one of my shooters and I put on a demonstration for some military personnel at the Aberdeen Proving Ground wherein we were able to hit consecutively 5 man size bobbing targets at a quarter mile. That is using the Pistol with a 1.3 power Bushnell scope and a bench rest. Several lucky shots with open sights and offhand also produced hits at one quarter mile, but these were necessarily controlled by good judgment, trajectory, flipping gun, etc..

There have been reports from various shooters of 5-shot groups under one half inch at 100 yards, and I think there are two who have claimed groups at .430" and .470" extreme spread at this range.

At the present time I believe Redfield is the only company making a long eye relief high power telescope for pistol shooting. I believe it is a converted rifle scope for long eye relief. Certainly more power in the scope itself will provide better accuracy at the long ranges, if you so desire to experiment with this combination.

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KINZER V. REMINGTON

The best groups that we have fired here at Remington are in the range of one half inch at 100 yds. with factory ammunition. Those that I mentioned previously were with hand loads and hand made bullets. We are quite proud of the fact that our factory bullets are shooting with such wonderful performance.

We plan to conduct further experiments in accuracy at long ranges at a later date when our new range facilities are in order, and I will be glad to correspond with you later on as to the results. If we can be of further help, please advise.

Very truly yours,

Wayne E. Leek

W. E. Leek
Manager - Firearms Design & Development
Ilion Research Division

WEL:T

September 23, 1963

Mr. R. F. Vigue
145 Water Street
Waterville, Maine

Dear Mr. Vigue:

We were interested in receiving your letter of September 16th regarding the Model XP-100 Pistol. However, was concerned to note that you apparently had planned to enclose the "only file copy of article published regards experiments along similar lines---". Perhaps this will not be necessary for us to supply you more information, but thought well to let you know of your apparent omission.

I am arranging to turn your letter over to W. E. Leek, our Firearms Design Manager, who directed this development work and is well acquainted with it. Actually, believe that a great deal of work has already been done along lines that you describe and a number of articles already published in magazines. However, undoubtedly there is more that can be done.

Very truly yours,

S. M. Alvis, Manager
Ilion Research Division

SMA:T

R. F. Vigue
145 Water Street
Waterville, Maine

September 16, 1963

Remington Arms Company, Inc.
Ilion, New York

Gentlemen:

Have recently aquired XP-100 Ser. 4640 w/Bushnell Phantom 1.5X scope, with the express purpose of conducting experimental research in long-range shooting.

Would greatly appreciate information as to the experience of other shooters using the XP-100 at long ranges; this may save some time and money, otherwise will have to start at scratch; it may also serve as a means of comparing results with other shooters. Have reason to feel that the XP-100 equipped with high-power scope may develope data of an interesting nature at extra-long rifle range.

Am enclosing my only file copy of article published regards experiments along similar lines; please return the magazine as soon as possible.

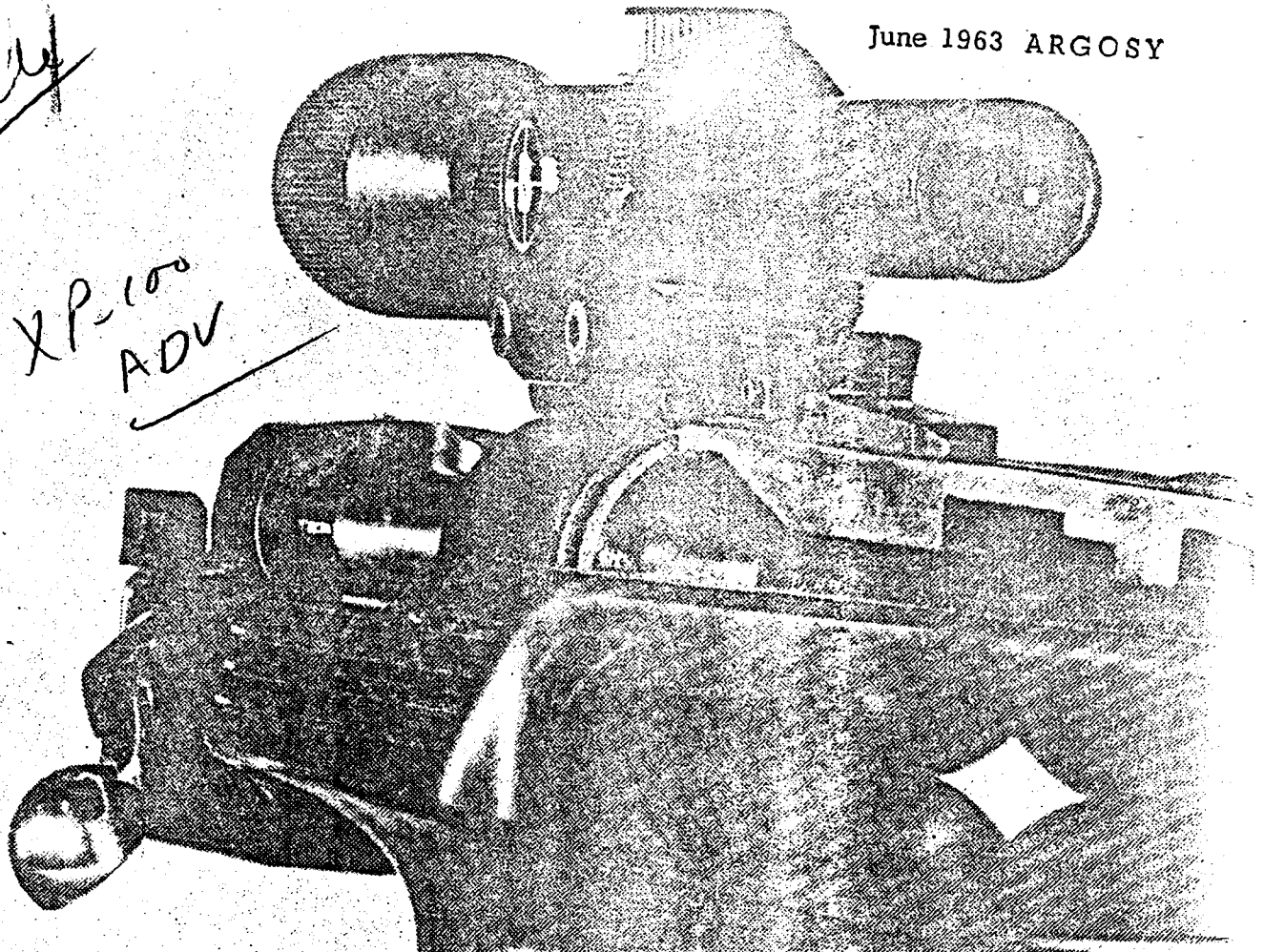
Very truly yours,
R. F. Vigue
R. F. Vigue

Not Encl.

BARBER - PRESALE R 0131210

Fully

XP-100 ADV



If you think that rifles are the only weapon fo

It was a beautiful sunrise. The big crimson ball crept up behind icicle-shaped segments of larger, cold, blue-gray clouds edged in hues ranging from chilly lemon to bright, gold-tinged ocher—all with but faint promise of warmth for our shivering bodies. ☐ We were woodchuck hunting and the frosty dew on the close-cropped, tawny-splashed meadow grass gave us tiny winks as if sympathizing with our sorry predicament. ☐ Standing there that Saturday morning, quivering like spanked pups, we were surrounded by one of the best woodchuck-hunting areas I have known. The natural terrain was contoured to form perfect backstops for our high-velocity bullets in almost all directions. It was milk-making country, and the dairymen, who had known us for several years, were friendly because they knew we were careful in placing our shots, and they welcomed our efforts in keeping down the varmint population. ☐ The evening before, we had driven the hundred or so miles to our ground-hog stronghold, intending to sleep com-

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KINZER V. REMINGTON

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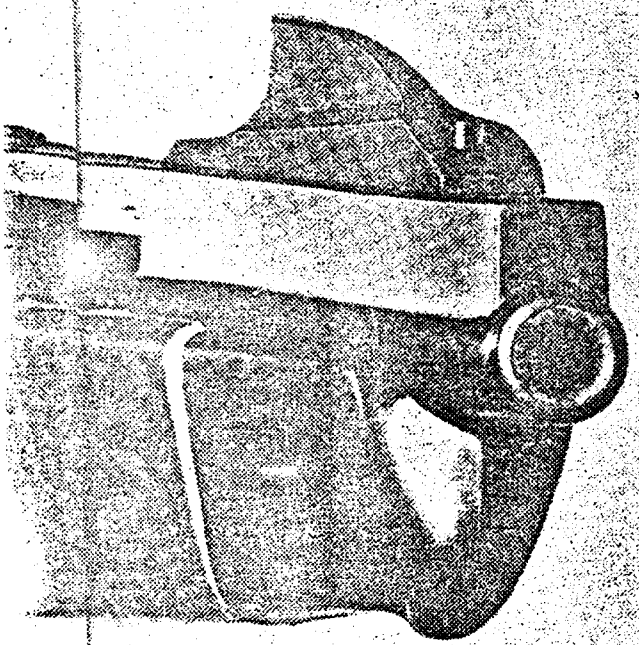
BARBER - PRESALE R 0131211



◀ *New Remington pistol for .221 Fire Ball cartridge has Bushnell Phantom scope.*

XP-100

to use for varmint hunting, take another look...at the new Remington...

fortably snuggled down in one of the hay barns. Our clothing was nothing more than thin summer chinos. One of the those sharp, early-autumn cold snaps caught us flat-footed, and we were sorely disillusioned about the warming qualities of baled hay in a well ventilated barn. After a night that seemed to last forever, we were greeted by the steely-eyed dawn. ☐ The point I want to make is that varmint hunters as a breed will go to great lengths following the sport—first, acquiring suitable arms and then doing painstaking detective work to locate game fields, all involving much time and effort, and sometimes including traveling great distances. Guns may be anything from standard production models to very elaborate custom-made jobs incorporating carefully thought-out ideas of the individual. ☐ Long-range shooting with specialized handguns is the latest development in varmint hunting. This phase has grown tremendously during the past few years and Remington Arms Company has just announced a red-hot new gun-cartridge combination, the Model XP-100 pistol and the .221 Remington Fire Ball cartridge, a team specifically designed for long-range work. ☐ Modern varmint hunting probably began with the development of the .22 Hornet cartridge in about 1930 by a group of dedicated woodchuck hunters. It caught the attention of ammunition sachems and was first produced by Winchester in 1932. It was considered excellent for use up to about 200 yards. ☐ At the time of the above-mentioned chilly outing, popular varmint medicine included such car- *(Continued on page* 111

BY PETE KUHLHOFF / Photographed by James Pickands, II

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BARBER - PRESALE R 0131211 R2532199

BARBER - PRESALE R 0131212

XP-100 *Continued from page 59*

tridges as the .22 Hornet, .218 Bee, .220 Swift, .250-3000, .270, .30-06, the strictly hand-loaded Lovell cartridges, the 2-R Donaldson, .22 Varminter and other wildcats. My particular battery on the outing consisted of a .218 Mashburn Bee, which Mashburn had built for me, using a Winchester high-wall, single-shot action with Sukalle barrel, and a Winchester Model 70 of .220 Swift caliber. Both rifles were equipped with target-type scope sights, the M-Bee with a 15-power Lyman Super-Targetspot and the Swift with a Unertl of 24-power. I used the beefed-up Bee for shots up to around 150 yards, and the Swift for longer shots.

Those were good, accurate varmint rifles, but I must admit that successful shots at much over 200 yards were few and far between. For distances up to slightly over 100 yards, we often fired from off-hand or from prone position with a sling, as circumstance permitted. A woodchuck is a small target, and at longer ranges, we looked for good rest positions, usually over stone walls with the rifle snugged cozily on a kapok-stuffed bag or pillow.

Things have changed in the varmint-hunting field. We have newer popular cartridges developed especially for long-distance shooting, and more and more sportsmen have become interested in rifles of calibers giving very flat trajectory and in making a hobby of shooting very small groups on extremely distant targets, as well as in precise placement of shot while hunting big game and varmint.

As I mentioned, our very latest phase of precise long-range shooting is with the handgun and small-caliber cartridges engineered especially for varmint hunting. This sport is catching on like wildfire. The reason? These handgun-cartridge combos are amazingly accurate and furnish a real challenge for the shooting buff.

The first in this category was the .22 Remington Jet Centerfire Magnum cartridge announced in April, 1960, and the Smith and Wesson Model 53 revolver. At about the same time, Winchester-Western had developed the .256 Winchester Magnum cartridge. It proved too hot for handguns in current production, and Bill Ruger, of Sturm, Ruger and Company, developed the very excellent Ruger Hawkeye single-shot pistol and introduced it to shooters last year. In the past, I have given you a rundown on these sizzling numbers.

The introduction of the XP-100 marks the reentry of Remington into the handgun field. Remington handguns have been produced in great numbers throughout the years. It is said that the very first ones were of flintlock ignition, dating back to 1835 or earlier. I never have seen an example of a Remington flintlock pistol, and such guns have not been completely authenticated. The first Remington handgun made as a standard assembly-line design is the First Model Beals Pocket revolver, five-shot and of percussion ignition. Many thousand percussion pistols were manufactured from 1857 to 1888, although models factory-converted to take fixed cartridges were advertised as early as 1866. An outstanding percussion model is the .44-caliber, six-shot, New Army Model Revolver, 1863-1875, with more than 140,000 produced. This pistol is fairly well known to the enthusiasts who go in for shooting cap-and-ball revolvers.

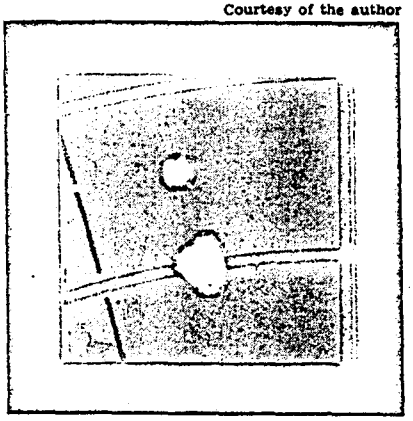
Remington cartridge handguns were made from about 1861 until 1934, with specialized single-shot target pistols produced as early as 1869. The target pistols, built with the famous Remington rolling-block action were of .22, .25 and .32 rimfire, and .32 and .44 centerfire calibers.

The new Model XP-100 has the characteristics of a target pistol. It truly is a product of the space age, and it has that look. At first glimpse, its modern design is a little startling. Although engineered for those who like long-range varmint and small-game hunting with the handgun, I believe it will see a lot of service as a target arm. In fact, the consensus among shooters who have experimented with the Remington .22 Jet and the .221 Fire Ball, and the .256 Winchester Magnum is that eventually, we will have standard target courses for guns handling these high-intensity cartridges, possibly including 50- 75- and 100-yard matches.

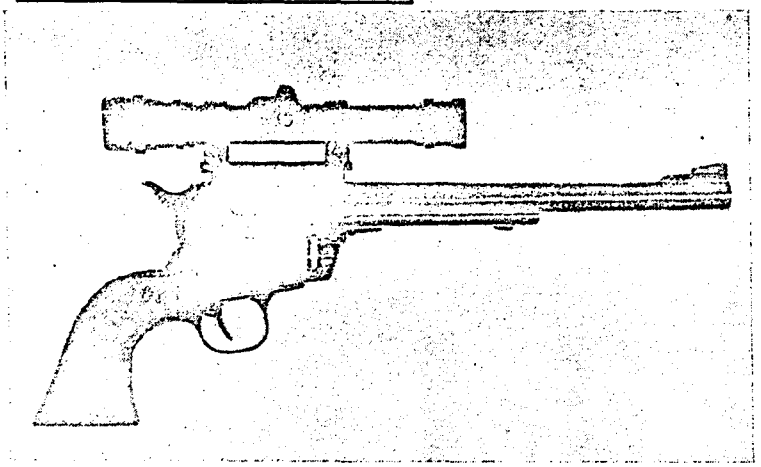
Take a look at the photograph of this new pistol (page 58). The chances are that it is entirely different from any other pistol you have seen. It certainly is no vest-pocket model. Over-all length is 16¾ inches. The barrel measures 10½ inches and the sighting plane is approximately 6¾ inches between the iron sights. A ventilated rib is installed on the barrel to improve the sighting plane. The open rifle-type rear sight, with square notch, is adjustable for windage and elevation. The front sight is 1/10-inch blade-on-ramp. The receiver is factory-drilled and tapped for scope-sight blocks.

The action of the XP-100 is similar to that used on Remington bolt-action centerfire rifles, with the well known ring of solid steel enclosing the cartridge head for utmost strength in cartridge support. To load, the bolt is brought to the rear position, then the cartridge is dropped onto the loading platform or incline in the receiver. Moving the bolt forward chambers the cartridge, and lowering the bolt

Courtesy of the author



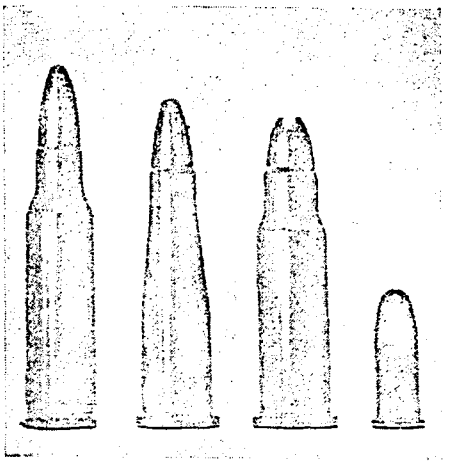
◀*Group was shot at sixty yards by the author using .221 Remington Fire Ball cartridge and the brand-new XP-100.*



James Pickands, II

▲*Ruger Hawkeye pistol is being adapted for .221 Remington Fire Ball cartridge. The scope is the Jaeger-Nickel Supra.*

Hot handgun cartridges (actual size), from left: .221 Remington Fire Ball, .22 Remington Jet Magnum, .256 Winchester Magnum, .22 Short rimfire. ▼



James Pickands, II

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handle-locks the action closed. A rotating safety is located near the junction of the bolt and bolt handle for easy and fast thumb operation. Fired cases are automatically extracted and ejected when the bolt is opened.

The grip and stock of the new gun are made with one piece of molded Du Pont Zytel structural nylon in Mohawk Brown color. You probably know that this material is very tough and maintains its dimensional stability under practically all conditions. This means that it does not warp or change shape and assures uniform metal-to-stock bedding—an important element in maintaining constant point-of-bullet impact and unvarying accuracy. The grip has fine checkering, and the stock is fancied up a bit with white-diamond inlays, contrasting black forearm tip with white spacer, and black trigger guard.

The XP-100 weighs 3¾ pounds, balances at the point of middle-finger rest just back of the trigger guard, and the grip fits either left or right hand like a glove. For shooters who prefer more weight toward the muzzle, five cavities are provided inside the forearm, under the barrel, for adding weights. Each cavity will hold a .38-caliber, metal-case, 130-grain bullet, nose down. Thus, up to just under 1½ ounces can be added to move the point of balance forward.

Of utmost importance in accurate shooting is a good trigger pull. The pull on the new gun which I have been shooting is excellent—clean and crisp, with letoff requiring a pressure of two pounds two ounces, and with a little very soft rearward movement after the break.

For my money, a scope sight is a must for use on any of the handguns chambered for the .221 Fire Ball and .22 Jet Remington cartridges and the .256 Winchester Magnum. Scopes I have used quite a bit with such guns are the Jaeger-Nickel Supra, with 1.5 magnification, and the Bushnell Phantom, with 1.3 magnification.

The first element most of us think of in a telescope sight is magnification. Other things being equal, it is evident that the more the target is magnified, the more accurately it will be possible to aim upon it. So, in case you have never fired a handgun with scope sight, here is the poop. Unfortunately, other things are not equal. First, any gain in magnification is at the expense of illumination and extent of field of view. Remember, magnification of the target also magnifies any wobble or movement of the scope-gun unit, making it almost impossible to successfully shoot a handgun with high-power scope. In addition, the necessary long-eye relief (distance from the eye to the scope) of a pistol scope, six to twenty-one inches with the Phantom and ten to twenty inches with the Supra, presents real optical problems.

The important advantage of the scope on a handgun is in the ease of sighting. With open sights, the eye has to line up three elements at different distances—the rear sight, the front sight and the target. The eye can focus only at one distance at a time, so, with the open sights, it rapidly focuses from one to the other in an effort to align them—a very difficult task for all but very young eyes. On the other hand, in a scope, an image of the target is focused exactly upon the reticle (crosshair) and the relation of the reticle and target remain fixed on one plane independent of the shooter's eye and is easy to see. With metallic sights, besides the focusing problem, the position of the eye is critical, while with the scope, it is necessary only that the eye remain within the area of the exit pupil. So, if the exit pupil is very small, nothing is gained with regard to eye position. With a large exit pupil, the position of the shooter's eye may vary considerably without interfering with the accuracy of aim. A large exit pupil is desirable. But it can be obtained only with low magnification or a large objective lens—and the latter is impractical on a pistol scope.

Dave Bushnell had scope blocks ready when the first examples of the XP-100 were available. So I mounted a Phantom on the new pistol and got busy shooting.

My original intention was to shoot at a distance of 100 yards, but due to lousy snow conditions, I leveled at a more convenient sixty yards. All my target shooting was done from sandbag rest.

The first five-shot group just about spoiled me. It measures under ⅜ of an inch, center to center of bullet holes farthest apart (see the actual size reproduction on page 113). The first three shots printed in one hole, the fourth was a little high and the fifth went home into the original hole. The four shots of the group measure about 5/32 of in inch. *This is good rifle accuracy!* And that is just what the XP-100 gives at reasonable ranges.

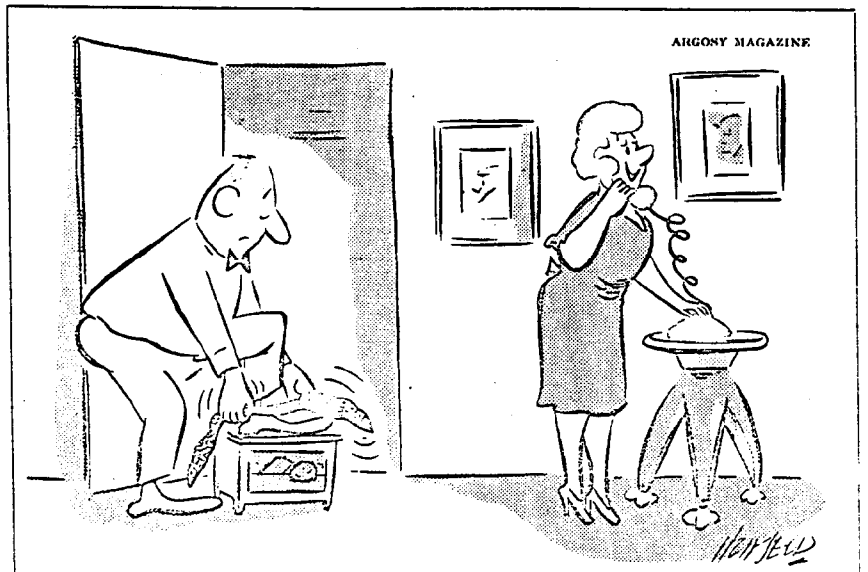
My largest five-shot group at the sixty-yard mark measures ⅞ of an inch—ten-shot groups no doubt would run slightly larger. I know for a fact that the others, with a lot more shooting, have done better than I. For instance, at the Remington gallery in Ilion, New York, groups made at 100 yards have measured as little as ½-inch. And one chap, located in the West, has tightened them to as small as two inches at 200 yards. These extremely tight groups cannot be expected as a rule of thumb, but it is proven that they are possible. I would judge that my average groups, maybe smaller, are about what can be anticipated.

Being anxious to try the Fire Ball on varmint, I began to look around. My eye hit on a couple of crows on a patch of thin snow, snooping around. I spotted the black rascals from a window and sneaked out the back way with the XP-100 in one hand and a Fire Ball cartridge in the other. Shielded by some evergreen trees, I finally found a rest on one of the limbs, put the crosshair on the black spot and squeezed the trigger. The hit was almost dead center and feathers flew. Results indicated good bullet expansion. The distance was at least eighty yards.

In appearance, the Fire Ball is a shortened .222 Remington cartridge and its exterior ballistic figures are impressive. Muzzle velocity of the fifty-grain soft-point bullet is 2,650 feet per second in the 10½-inch barrel of the XP-100 pistol, with muzzle energy at 780 foot pounds. Velocity at 150 yards is 1,900 feet per second, and away out at 300 yards, the velocity still is about the same as that of the hottest .22 Long Rifle bullet at the muzzle of a rifle barrel. Mid-range trajectory for 150 yards is under two inches—so, with the sights adjusted to place the bullet on the point of aim at 150 yards, it will strike only 1.9 inches high at seventy-five yards. For the hunter who figures that most of his shots will be taken at 100 yards or under, the gun may be sighted to hit the point of aim at fifty yards. This will put the bullet only about a half-inch low (0.6 inch) at 100 yards. This means point-blank shooting up to slightly over 100 yards, and a matter of sighting three inches high on the target at 150 yards, eight inches high at 200 yards and sixteen inches high at 250 yards.

Mid-range trajectory figures in inches for the .221 Fire Ball are: 50 yards—0.2; 100 yards—0.8; 150 yards—1.9; 200 yards—3.9; 250 yards—6.9; 300 yards—11.3.

These figures are almost identical to those of the .22 Hornet cartridge when fired from a twenty-four inch rifle barrel. The flat trajectory curve of the bullet in flight, plus the superb accuracy given by the XP-100 pistol, furnishes a fascinating challenge for any shooter. • • •



"John has used that necktie you gave him practically every day, Mother."

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

bcc: E. S. McCawley
J. D. Hunter

July 29, 1963

Mr. Pierre F. Hartshorne
249 El Conejo
Los Alamos, New Mexico

Dear Mr. Hartshorne:

Thank you for your reply concerning the Model XP-100 Pistol, Serial No. 1411. I think the best approach to the answering of your letter would be to take each paragraph in its proper sequence.

In the third paragraph of your letter you mentioned the reduction of muzzle velocity in the barrel when using a standard 222 Remington case. Actually, there is more variation in velocity up or down affected by the bore bullet fit than there would be in one or two inches of barrel length. In some instances if you followed the actual curves of the 222 cartridge you would find that the velocity would drop somewhere in the neighborhood of between 2000 fps and 2300 fps, and depending upon the type of bullet you use, its dimensions and the bore dimensions, this velocity could vary considerably. So the actual measurement would have to be made with the proper combinations and all we can do to answer your question is to speak of the averages of what we might expect. Several of our customers have had the same idea as you, one including a friend, Charles Askins, a famous sports writer, all of whom have been very disappointed in making this alteration. You probably remember that I had mentioned that the 221 had been designed specifically for the short 10 1/2" barrel.

In your fifth paragraph you mention the sight radius and ask the question how to fasten the rear sight to the rear receiver ring with only one screw. Not being in the sight business we are in hopes that some of the sight manufacturers will realize the need for providing more versatile sights for potential customers and they probably will produce such a combination for this pistol. One combination which I have proposed is a continuous rib device that mounts on top of the present rib and extends clear back over the receiver breech ring. An adjustable micrometer type open sight then can be designed to mount on this rib and any sight radius can be accomplished. For those who shoot better with a short sight radius one could use such a sight with a radius shorter than the one we

have on the present gun. Others who like a long sight radius could extend the bar and sleeve back and beyond the rear receiver breech ring. I am sure that in the near future you will find such devices will be encouraged and possibly manufactured by sight manufacturers and then all of the individuals and their peculiarities can be accommodated.

In your next paragraph you seem to question the authenticity of the target that was shown in the Du Pont Magazine. I am not ashamed of that target; I thought it was a pretty good one. However, there have been some that were exceptionally better. Les Bowman, for example, has fired five shots at 100 yds. under .460". Another shooter has commented that he has several groups under .5". We have had some in the factory here - machine rest groups - well under one half inch. Our standards with this pistol are well within the limits of our varmint rifles and in many cases will outshoot the varmint rifle at 100 yds. The reason we did not show some of these real tight groups in the Du Pont magazine is that we felt we should show an average group rather than a very excellent tight group. I can't imagine your problem with misalignment of the rear sight. Perhaps you are right and I hesitate to comment without actually seeing your pistol. If the studs are not in alignment the rib would be very much out of line. I feel that perhaps there might be some incorrect mounting of the rear sight. You are right that of course this pistol cannot be fired rapidly but does get quite hot in the event of continued shooting of 20 to 40 rounds.

In explaining the function of the rib you will find that the rib contains elongated holes or recesses that float around the stud. Under compression of approximately .005" the sights will rest directly upon the top of these studs. You are probably well aware of the creep effect of any of the plastic materials when under continuous load; therefore, you can imagine that if the rib is .005" thicker than the height of the stud that upon screwing a sight or rib screws down on the stud a creep effect will take place and the stud will eventually support the sight or the screw directly. Any expansion or contraction of the barrel can then take place without interference of the nylon rib because of the elongated slot.

I trust by this time you have had time to make a fair comparison between the 221 and the Rem Jet in the Smith & Wesson and others. I would be interested in your reaction.

The "Bull Pup" would probably be a hot one and the idea has presented itself many times over the years. I doubt that this would sell in volume but certainly would be interesting for some.

Thanks, Mr. Hartshorne, for your fine letter. Have fun shooting your XP-100.

Very truly yours

W. E. Leek, Mgr. Firearms Design & Devel.
Ilion Research Division

WEL:B

W

cc: G. M. Calhoun
J. W. Phipps

May 21, 1963

Mr. Pierre F. Hartshorne
249 El Conejo
Los Alamos, New Mexico

Dear Mr. Hartshorne:

We were exceedingly pleased to get your interesting letter pertaining to the new XP-100 Pistol. Your questions show considerable thought and are most natural, and we expected them from several of our friends and shooting enthusiasts.

The first question you were concerned with was the use of the .221 cartridge instead of the .222. Actually the first model that was made up was chambered for the .222. The results of shooting tests revealed exactly what we had anticipated; low velocity and lots of noise. The original .222 was designed so that the powder would be efficiently burned in a barrel approximately 24" in length. Therefore, one would expect that inefficiency and noise would develop in utilizing this cartridge in a short barrel. As a result an entirely new cartridge with different burning characteristics was necessary to be developed for the new pistol.

This involved a considerable amount of investigation in internal ballistics and numerous powders and volumes were used before the most efficient one was determined. The results of course speak for themselves. With the 50 grain bullet the .221 cartridge has a velocity at the muzzle of approx. 2650 fps, and with hand loads and lighter weight bullets over 3000 fps have been obtained. If you purchased one of these pistols and had it rechambered to a .222 length which can easily be done, I am sure you will be very disappointed. The velocity would drop to around 2000 fps, and it would be considerably noisier than you would be willing to accept.

As far as sight range is concerned, there are a great number of shooters who do better in sighting with a short sight range; others who are more stable in their require a longer sight range. We of course compromised in putting the sight in its present position; however, if you will observe the tapping of the receiver for scope mounts and also for receiver sights, this gun can be readily adapted to whatever sights the sight manufacturers may create. We are actually not in the sight business except to provide basic sights for all of our guns. But in the specialty department we leave these items up to other manufacturers.

The studs which project from the barrel to support the rib are welded onto the barrel with such rapidity that they do not effect the internal dimensions of the bore. They are very rugged and support the sights directly on the studs and not through the rib itself. This is essential to fine accuracy.

The rib is designed in such a manner as to float, and neither expansion nor contraction of the rib effects the point of impact of the barrel.

The nylon "Zytel" material used in the stock is the best that we can obtain and have found it to be ideally suited for this model. I am attaching to this letter a parts list for the Models 722, 700 ADL and BDL, as you requested. We appreciate your fine comments pertaining to our products and after you have had the opportunity to shoot one of these XP-100 Pistols, would certainly welcome hearing from you again.

Very truly yours,

W. E. Leek

W. E. Leek
Manager - Firearms Design & Development
Ilion Research Division

WEL:T
Encl.

Orig Hartshorne letter returned to Phipps

BARBER - PRESALE R 0131218

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington DUPONT

Please send copy to Jack Phipps

CC: G. M. CALHOUN

Bridgeport, Connecticut
May 9, 1963

TO: WAYNE LEEK

FROM: J. W. PHIPPS

As you can see, the attached letter has been marked for your answer by Doc Calhoun. I am sure that you have ready answers for all of the questions.

In the third paragraph there appears to be some contradiction, in that, Mr. Hartshorne seems to realize that a special load had to be made for the XP-100. It certainly makes more sense to have a completely new cartridge instead of a special load for an existing cartridge.

Jack

JOHN W. PHIPPS,
Associate Patent Attorney.

JWP/BH
Attached

40.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131218

JWP
Wayne Pall
for info

249 El Conejo
Los Alamos, New Mexico
3 May, 1963

RECEIVED
MAY 6 1963
G. M. CALHOUN

REMINGTON ARMS CO. INC.
RECEIVED
MAY 7 1963
PATENT DEPT.

Development Department
Remington Arms Company, Incorporated
Bridgeport 2, Connecticut

Gentlemen:

In 1941, when I graduated from M.I.T., I tried to get a job with Remington. DuPont did offer me a position in one of the explosives plants; but Uncle Sam needed some fine second lieutenants, and off I went. As an aside, I have finally reached the exalted rank of lieutenant Colonel in the Artillery Reserve. I have thought it might have been too bad that I never did worm my way into some arms development operation.

Herewith a tracing from your advertisement in the May, 1963 issue of the RIFLEMAN. You will note that part of it is dotted in... the outline of the XP-100. I believe that I am aware of the general trend to "sell" new weapons and cartridges. I have been studying the things for about thirty years, and have owned and used almost two hundred different arms, both long and short.

The basic idea of the XP-100 appeals to me a great deal. I have wished that the rolling block Remington was more available for a long time. Well, gentlemen, why in the name of all that is holy did you chamber for the .221 instead of the .222? That bolt should safely hold any .222 ammo. Now we have another load to fool with. I do realize that powders for the .222 in a short tubed weapon would require some experimenting... as must those for the .222 shortened to .221. My sketch shows a suggested heavy tube, compared with that pencil you now have, and decent placement of the sights. I have talked with a lot of men about the XP-100. That front sight and rib, combined with that rear sight will "unsell" some people. It is fine to use the modernistic sights on weapons for the .22 long rifle trade, but I vote stroggly for a usable sight radius when it is powwible. And, it is downright foolish to bore four or five holes in any barrel, let alone such a slender tube, for the mounting of a die cast rib.

Well, that is part of it. I will probably sell of an old favorite to pay for an XP-100; and then go on the pay through the nose to have a decent barrel set on it chambered for the .222 which I use and of which I am most fond. Too bad you send prototypes out to the guys who write the tripe in the magazines... naturally, they will have little to say against anything by the recognized makers. I can not judge the Zytel stock. I am in the plastics section of the laboratory, and appreciate that molds cost a lot of money, and can not readily be altered in most cases. The basic idea of a plastic stock is sound from an engineering standpoint.

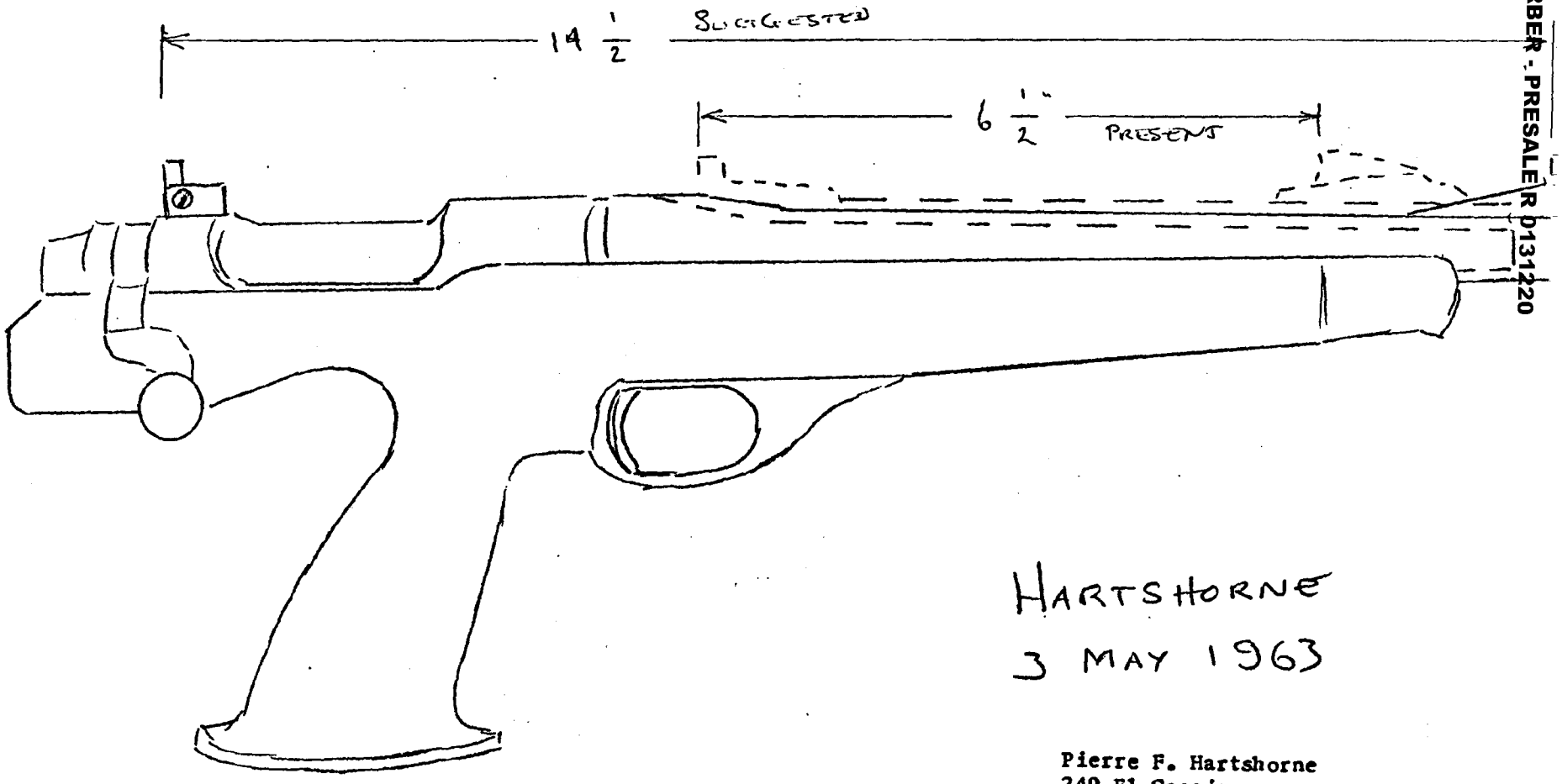
While I am writing, I would like to request that you send me a parts list with prices for the 722, 700 ADL and the 700 BDL. I do a bit of work on my arsenal, and would appreciate having the information for the maintainance of my Remingtons. I trust that this will not merit a form letter... like the one I recently received from Winchester... and they can go to blazes... I am changing over from the M70 to other rifles as fast as I can manage to do so.

Thanking you for your kind attention, may I remain Very truly yours

BARBER - PRESALE R 0131220

XP-111

Heavier, slightly longer plain tube chambered for the .222 and fitted with sights set farther apart... Patridge type. Suggest testing something like the low Micro pistol sight on the rear end. Tap receiver for rings to suit a real handgun sight like the Nickel... those Bushnell's are oke for "cheapies", but not for a Smith & Wesson or an XP-111



HARTSHORNE
3 MAY 1963

Pierre F. Hartshorne
249 El Conejo
Los Alamos, New Mexico

REMINGTON ARMS CO. INC.
RECEIVED
MAY 7 1963
PATENT DEPT.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131220
R2532208

6/14/63

-To-

Wayne Seelk
Ilion

-From- E. S. McCAWLEY

Would appreciate your answering this one with a copy to me and to Jack Hunter —
Thanks

ESM.

BARBER - PRESALE R 0131221

A-4300

bcc: E. S. McCawley
Remington

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
WILMINGTON 98, DELAWARE

ADVERTISING DEPARTMENT

June 13, 1963

Mr. Pierre F. Hartshorne
249 El Conejo
Los Alamos
New Mexico

Dear Mr. Hartshorne:

Thank you very much for your letter and your observations on the new Remington pistol, as described in the May-June 1963 issue of DU PONT MAGAZINE.

We believe your comments will be of particular interest to Remington's headquarters people, so we have taken the liberty to forward it to Mr. E. S. McCawley, public relations manager at Remington's Bridgeport, Conn. location. No doubt you will hear from him soon.

Meanwhile, we are delighted to count you among our readers and we hope that you will feel free to write us at any time.

Sincerely yours,

Jack D. Hunter
Associate Editor
DU PONT MAGAZINE

JDH/jz

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

249 El Conejo
Los Alamos, New Mexico
7 June, 1963

Editor
DuPont Magazine
Wilmington 98, Delaware

Dear Sir:

May I take exception to a statement printed as part of the article entitled "Power-Packing Pistol" which appeared on pages 18 through 20 of the May-June, 1963 issue of the DuPont Magazine (Vol. 57 No. 3)?

I quote lines 27 through 31 of the left column of page 20, "Because this material maintains its dimensional stability under all conditions (it cannot warp or change shape), the barrel bedding is absolutely uniform, a factor insuring greater accuracy."

On 25 May, 1963, I made two trips totalling some one hundred and thirty miles to end up in possession of Remington Model XP-100 pistol serial number 1411. On 26 May, 1963, I fired 19 rounds of factory cartridges. On inspection of the weapon before firing, I noted a clearance of approximately 1/64 inch between the bottom of the barrel and the groove of the fore stock at the tip. I checked the tightness of the two screws which serve to fasten the action to the stock and found them to be about what I expected... no need to force them... they appeared to be tight enough. After firing approximately ten of the nineteen rounds, I noted that the barrel to fore stock clearance had opened up to nearly one quarter of an inch. This did not appear to me to be an assembly including a part which " cannot warp or change shape..".

Furthermore, the bonding between the black tip and the white line of the fore stock had parted for from 3/16 to 1/4 inch on the right hand side, from the top line of the stock downwards.

It is entirely possible that our low humidity which has averaged something between 26 and 30 percent relative humidity the past month has had something to do with the trouble I have noted. I should add that the fore stock now moves easily up to contact with the barrel under light hand pressure (applied to it by everyone who inspects the piece), but the "at rest" position of the Zytel stock is away from the barrel far enough to cause an immediately noticeable gap of nearly 1/4 inch. I can not blame our 7,200 foot altitude for the failure of the highly advertised material.

I have been earning my living with plastics and elastomers for some fifteen years; and I have been studying firearms for twice that time. This letter will be made a part of the file on #1411, and a copy sent to Mr. W. E. Leek at Remington along with other remarks.

Thanking you for your attention, may I remain

Very truly yours,

Pierre F. Hartshorne

249 El Conejo
Los Alamos, New Mexico
7 June, 1963

Mr. W. E. Leek
Manager - Firearms Design & Development
Ilion Research Division
Remington Arms Company, Incorporated
Ilion, New York

Dear Sir:

Firstly, may I thank you for your letter of 21 May, 1963, received on 25 May, 1963. That receipt date has some significance. I read the letter between trips to the shop of a gunsmith friend. This trip series ended, as related in the accompanying letter, in my possession of Model XP-100 pistol serial number 1411.

I am 43 years old, was torpedoed 21 years ago today and married 16 years ago today, and should know better. However, I could not pass up the beast. I have shown it and talked about it to about a dozen people since the acquisition of the piece. The comment is varied as one would expect. That stock trouble does nothing for the weapon.

Now, Sir, may I take exception to your remark about the velocity one might expect to get out of a .222 Remington case fired in a 10½ inch tube? A rifle load fired from such a tube might actually drop from 3,200 to 2,000 feet per second at the muzzle, something like 89 feet per second per inch * of tube amputated.... study of various reports published in the RIFLEMAN would indicate that something more like 30 to 40 feet per second per inch of tube would be more believeable. However, I had no intention of using rifle loads in a short tube... and so stated. Surely, the ballisticians at Remington could do better than that... have alook at your competitor's .256 cartridge in that "awful" looking revolver-turned-into-a-single-shot.

Incidentally, I found the noise much less than that of the .22 MRF cartridge fired in a Smith & Wesson revolver fitted with an 8-3/8 inch barrel. Recoil was hardly noticeable in the XP-100.

The matter of sight radius is, of course, always open to debate. I can only state that over fifteen people who have discussed the XP-100 with me, not all of them with weapon in hand, have all been disappointed with the "stock" system as presented. (How do you fasten a decent rear sight to the rear receiver ring with only one screw?)

The rear sight on #1411 is definitely cocked as viewed from above. Either its front or rear screw is not properly aligned over the bore... perhaps they are both off. I am not going to disassembl the pistol or use home brewed ammunition in it until I have completed the first of my reports. I had to use almost half of the available left windage adjustment to hit my tin can at a hundred yards from hand rest. (Oh that target shown in the DuPont magazine... you should be ashamed.)

$* \quad \frac{3200 - 2000}{24 - 10.5} = .89$

I intend investigating your statement about the studs which project from the barrel to "... support the sights directly...". Could it be that one of these is out of line to cause the misalignment of the rear sight?

I did not mention to the gentleman in charge of the DuPont Magazine the fact that I detect an apparent movement of the nylon rib which makes it look rather sway-backed between support locations. This apparent movement of the rib will be followed, measured, and reported upon at a later date.

If the rib is designed to float, I am wondering how the sights are expected to "stand still". I can see how this could be managed if the sight bases are, indeed, directly supported by the studs, and the rib has been made with enough clearance around the studs to give as the barrel warms... I am also well aware of the fact that the XP-100 will usually not be fired rapidly enough not to get hot... I fired three rounds in about thirty seconds and found relatively little heating of the slender tube.

I now wish to make at least one commendatory statement. That action is a little jewel. The bolt stop is a trifle hard to get to, but should present no problem to the shooter properly equipped to clean and service fine arms. It is a mystery to me how you people get the trigger pulls you do with those stamped-out parts... not exactly like a Hammerli or Browning shotgun. An aside is my question to a gunsmith friend, "Can you see that action fitted with about two feet of stiff barrel, chambered for .222 Remington, and dropped into a bull-pup stock?". Gordon's replay, with his slow grin was, "I wasn't going to say it; but I was thinking about it."

Sir, you asked for it, and you will get it. I propose keeping a careful record on #1411. A weapon to do the job seems to be in demand; but I am not certain the XP-100 is the answer... I have also just started using your .22 Rem-Jet in a Smith & Wesson revolver, so there will be something to compare. What is the trouble with your staff? Couldn't one of the engineers manage the rolling block into something really good? I had a .50 once, and still regret letting it get away from me. You may have seen an article about the conversion of a coupld of the rolling block pistols to handguns chambered for the .30 M-1 carbine round.

Enough for this time. Thanking you for your kind attention, may I remain

Very truly yours,

Pierre F. Hartshorne

Pierre F. Hartshorne

P. S. You may yet wish to offer twice my money back for #1411; but if you never heard from any of us who pay for your products, you would all be making roller skates.

R

249 El Conejo
Los Alamos, New Mexico
7 June, 1963

Editor
DuPont Magazine
Wilmington 98, Delaware

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Thanking you for your attention, may I remain

Very truly yours,

Pierre F. Hartshorne

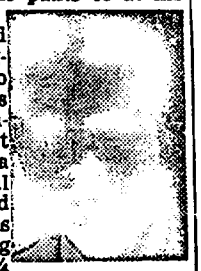
GUNS and SHOOTING

XP-100
ade

By COL. CHARLES ASKINS, Ret.

WE USED to call them horse pistols, a term which implied that the handgun was carried on the horse. In a holster which fitted on the pommel of the saddle, and contained a shooting iron which would weigh three pounds and was about 14 inches in length.

This style was in vogue a hundred years ago. Since then the pistol has sort of shrunk in size and weight, and been reduced to a handy dimension which a man could carry in his pants or at his belt.


ASKINS

It has remained for the Remington Arms Co. to reverse this trend. The company has just brought out a throwback, a real honest - to - god horse pistol. It is 17 inches long and weighs 3¾ lbs. Many rifles don't tip the scales at such poundage and the linear dimension is bare inches short of rifle length. The first reaction is to wonder why the designers left off the buttstock.

For this pistol is more rifle than handgun. It fires a rifle cartridge in a standard bolt action lockup, the .222 rifle round altered only to the extent of a 1-10-inch shorter case and adapted to a turning bolt which is an exact copy, somewhat in miniature, of the standard Remington rifle action.

It takes a lot of guts to build a single-shot pistol these days. For what good is it? The cops cannot shoot robbers with it nor vice versa. It isn't worth a tinker for robbing banks nor yet guarding the family castle. The TV and cinema hoss opera stars can't abide a one-shooter. And serious target marksmen would have a helluva time trying to load it during the rapid-fire stanzas of their competitive course of fire.

It comes down to what we call the plinker shooter. He is a gent who goes out of a Saturday afternoon and thumps tincans, bottles, floating corks, knotholes, and shiny flat rocks. He burns up a lot of hulls and he does not mind because he is careful to select a gun and a caliber which is cheap to shoot. Like the .22. Ammo for the new Remington—called the .221 Fireball—will cost about 15 cents per blast. An afternoon at this kind of fun could be costly!

* * *

IT COMES then to using the new hoss pistol on small game. For this it should be okay. The .221 cartridge, a gold-dust twin to the .222, will kill small stuff like crows, hawks, rabbits, foxes and coyotes. The .222 is remarkably effective on this vermin and certainly the .221 should measure up quite as well.

Getting the pistol into the field and transporting it after arrival will be something of a chore. It is so big the company provides a suitcase as a carry-device. This is all right in the car but a mite cumbersome in the field. The 17 inches overall dimension makes it something of a problem from a belt holster, too. That almost four pounds of weight on the pants belt could grow to be a burden. A knapsack or the Trapper Nelson packboard may be the final answer.

The new pistol is made of Nylon 66 plastic. The barrel is 10½ inches long, with the before mentioned bolt action. The sights are the conventional patridge, with crude adjustments in the rear for elevation and deflection. The balance, despite the great weight, is extraordinarily good. The stock is set well forward and is right at the balance point. This permits quite a steady hold. The pistol has been tapped for scope mounts and quite obviously it is intended for use with the new breed of pistol scope. With this in mind the gun will perform better when shot two-handed from some manner of rest.

* * *

THE .221 FIREBALL is unique in that it was built around the cartridge and not the other way around. That is to say, the pistol was designed first, and then a cartridge worked up for it. There is a bit of recent history here which serves to point up its reason for being on the scene at all. It goes back to a race between those arch rivals, the Remington and Winchester companies.

Three years ago Winchester came along with a new cartridge, the .22 rimfire magnum, a souped-up number which had 1550 feet per second velocity from a handgun. This was some stepping and the load attracted a lot of attention. Within months Remington, not to be outdone, broke the .22 Rem-Jet, a hotrock which was claimed to go 2450 fps, from a rifle. In a pistol it did 1860 feet per second, and on either account was in advance of Winchester. A year later Winchester sprung the .256 magnum, a load for either rifle or handgun, and kicking along at 2350 fps.

Now comes the .221 Fireball, a going-hell-for-leather 2650 feet per second. This puts Remington in the lead, at least for the moment. Of course the cartridge is not really a handgun load at all and to shoot it the so-called pistol looks like a rifle sans the stock. But we're ahead in the speed race anyway, eh Doc?

The comments and opinions in this article are those of the author and do not necessarily reflect those of the DOD.

File

PACIFIC GUN SIGHT COMPANY

Box 4495
Lincoln 4, Nebraska
INgersoll 6-1993

April 10, 1963

XP-100
abo

Remington Arms Co., Inc.
Illion
New York

Attn: Mr. W.E. ~~Leek~~ W
~~Chief~~ Designer-Firearms

Dear Mr. Leek:

While I was away we received a very generous supply of .221 cases. Thank you very much. The prints and the cases will enable us to put the dies into production. I am sure that you have come up with a real fine item in this new .221 Fireball . Congradulations! All the comments seem to be favorable. I had the privilege of firing the weapon at Williams Gunsight last week. The accuracy is a joy to behold.

Thank you again for the cases. Please let me know if I can be of help to you in any way.

Sincerely,

Loren A. Johnson

Loren A. Johnson
Sales Manager

LAJ:js

MEMBER
NATIONAL RELOADING MANUFACTURERS ASSOCIATION

Remington DU PONT

REMINGTON ARMS COMPANY, INC.

PETERS DU PONT

MANUFACTURERS OF
SPORTING FIREARMS, AMMUNITION
TRAPS TARGETS
POWER TOOLS

SPORTING FIREARMS
ILION, N. Y.
AMMUNITION, BRIDGEPORT, CONN.
POWER TOOLS, PARK FOREST, ILL.

BRIDGEPORT 2, CONNECTICUT

PETERS CARTRIDGE DIVISION
BRIDGEPORT, CONN.
TRAPS AND TARGETS, FINDLAY, OHIO
CABLE — HARTLEY, BRIDGEPORT
— ALL CODES —

March 6, 1963

XP-100 adv.

F

ANNOUNCING

NEW 221 REMINGTON "FIREBALL" CENTER FIRE CARTRIDGE

50 GRAIN SOFT POINT

FASTEST PISTOL CARTRIDGE IN THE WORLD

TO OUR WHOLESALERS

Gentlemen:

We are proud to announce the great new 221 Remington "Fireball" cartridge which has been designed specifically for use in Remington's all-new Model XP-100 long range bolt action pistol.

Recognizing the greatly increased popularity of varmint shooting, target shooting and hunting with hand guns, Remington's Research and Development group has come up with an amazing pistol-cartridge combination. The muzzle velocity of this cartridge at 2650 feet per second surpasses any other pistol size in existence. At 200 yards it is still traveling at an amazing 1800 feet per second. Its muzzle energy of 780 foot pounds is second only to the mighty 44 Remington Magnum.

We anticipate the demand for this outstanding new cartridge will be immediate and unusually heavy.

SPECIFICATIONS

Index No.	Bullet Type	Velocity-feet per second Muzzle	50 Yds.	100 Yds.	150 Yds.	200 Yds.	Muzzle Energy f.p.	Mid Range Trajectory 100 Yds.
5221	50 Gr. SP	2650	2420	2200	2000	1800	780	0.5

PRICES AND TERMS

Index No.	Wholesaler Carload Price Delivered Per M	Wholesaler Carload Price Delivered Per Box	Dealer Price Delivered Per M	Dealer Price Delivered Per Box	Retail Price Per M	Retail Price Per Box
5221	$91.00	$1.82	$113.00	$2.26	$150.00	$3.00

The terms and conditions outlined in our letter of January 2, 1963 will apply. The above dealer prices are Fair Trade prices in those states having Fair Trade laws in effect.

DELIVERY

This cartridge is available for immediate shipment.

ADVERTISING MATERIALS

Electrotypes in actual size will be furnished on request.

COMPONENTS

Bullets for this cartridge are available at once as Index Number B22710. Primed and unprimed cases will be available as soon as initial orders for loaded rounds are filled.

Your continued support of Remington and its products is sincerely appreciated. We know this new pistol cartridge will prove a real booster to your sales and ours. We suggest you place your order requirements promptly.

Very truly yours,

REMINGTON ARMS COMPANY, INC.

Gail Evans

Director of Sales
Arms, Ammunition, Traps & Targets

Gail Evans:lk

XP-100 abc

Ilion, New York
March 8, 1963

TOM FRYE
Billings, Montana

Dear Tom:

Thank you for your note and your very fine pictures. You have a beautiful home and I hope sometime to have the opportunity to see it.

I received the 230 rifle, scope and ammunition in satisfactory condition. We think we have a combination in 244 that will be superior so are conducting a test for comparison. We will keep you advised.

Am sending you some powder as requested; also a spare XP-100 stock and sling for your experimentation. I am very much afraid that the pistol, scope and scope mount combination is not going to work out too well among the sports writers because the mount that was shipped with the scopes from Dave Bushnell's factory does not provide a two point bedding surface. The radius in the mount is larger than the radius on the receiver; therefore, rocks back and forth while shooting on a centerline contact. I pointed this out to Al Akin, the designer for Dave's mounts and scopes, and now have him convinced that the full length mount we have been using with the two point contact is desirable and actually absolutely necessary for good shooting.

Have just received word that Jack O'Connor's pistol is shooting 3" groups with his combination and doesn't think too much of it. I am sure the fault lies with the mount, as all of these pistols that left the factory to the sports writers would shoot 1 3/4" and under at 100 yds. I also received word from Warren Page, who seemed to think the pistol was quite accurate, that his groups were about 1 3/4" at 50 yds. Apparently he doesn't know much about accurate pistol shooting because with the correct mount this should shoot groups about half this size, and I will so advise him. If you have a chance perhaps you can drop a hint to Les Bowman to check on it.

Please keep in touch.

M-42180

W. E. Leek,
Chief Designer - Firearms
Ilion Research Division

WEL:T

Remington DUPONT

REMINGTON ARMS COMPANY, INC.

PETERS DUPONT

MANUFACTURERS OF
SPORTING FIREARMS, AMMUNITION
TRAPS TARGETS
POWER TOOLS

ARMS AND CARTRIDGE POWERED TOOLS
ILION, N. Y.
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BRIDGEPORT 2, CONNECTICUT

PETERS CARTRIDGE DIVISION
BRIDGEPORT, CONN.
TRAPS AND TARGETS, FINDLAY, OHIO
CABLE—HARTLEY, BRIDGEPORT
—ALL CODES—

March 6, 1963

ANNOUNCING...

THE REMINGTON MODEL XP-100

THE NEWEST, MOST SENSATIONAL, SUPER-ACCURATE

LONG RANGE PISTOL

IN THE WORLD

To Our Wholesalers

Gentlemen:

Remington proudly presents the newest, most sensational, super-accurate long range pistol in the world today -

THE MODEL XP-100

destined to become this year's best seller in handguns...to give you and your dealers newer and greater sales opportunities...more profits.

NEW FROM BUTT TO MUZZLE - Includes many extras...ventilated rib...internal fore-end cavities for variable weights...expensive indestructible stock and grip is precision built of DuPont "Zytel" nylon to insure uniform barrel bedding for greater accuracy.

SCIENTIFICALLY BALANCED - with minimum whip, jump and recoil ...universal grip fits either left or right handed shooters.

PHENOMENAL BALLISTICS - Chambered for the 'hot' new 221 Remington "Fire Ball" center fire cartridge, the Model XP-100 shoots farther and flatter than any handgun ever made.

WORLD'S STRONGEST BOLT ACTION - Same as featured on the famous Remington center fire rifles.

LOADED WITH EYE CATCHING SALES APPEAL - The Model XP-100 is handsomely styled...furnished complete with high quality, heavy duty zippered carrying case, with room for scope.

SPECIFICATIONS

Model XP-100 - chambered for 221 Remington "Fire Ball"

Action	-	Bolt Action single shot center fire
Caliber	-	221 Remington "Fire Ball"
Stock	-	DuPont "Zytel" nylon, checkered grip, white diamond inlays, white line spacers
Color	-	Mohawk Brown
Sights	-	Blade front, with adjustable rear sight
Safety	-	Rotating thumb type safety
Receiver	-	Drilled and tapped for scope blocks
Barrel	-	Length 10-1/2" with ventilated rib
Weight	-	3-3/4 lbs. (Shipping weight with zipper case 7 lbs.)

AVAILABILITY

The new Remington Model XP-100 is immediately available in limited quantities for salesmen's samples - and for stock in limited quantities shortly thereafter.

PRICES AND TERMS

	Net to Wholesaler			
	Less Tax	Tax Included	Dealer	Retail
MODEL XP-100 (Ordering Number - #5470)	$56.25	$61.88	$75.00	$99.95

The net prices are shown both with and without the U.S. Excise Tax of 10%. Dealer and retail prices include this tax. Terms and conditions as stated in our letter of January 7, 1963 will apply. The above dealer and retail prices have been established as minimum Fair Trade prices in all states having Fair Trade laws in effect.

ADVERTISING MATERIAL

An attractive 4-color catalog page on the Model XP-100 will be ready shortly and a quantity will be sent to you.

Electrotypes of this new model will be furnished promptly on request at no charge in sizes - 2-5/8" and 3-1/4".

Reflecting the finest engineering know-how of America's oldest gun maker, the Model XP-100 is another 'winner' in the Remington line of firearms. Particularly adapted for varmint shooting and long range pistol shooting for fun, the Model XP-100 is the hand gunners' dream come true...and opens new fields of shooting enjoyment.

Sincerely,

Gail Evans

Director of Sales
Arms, Ammunition, Traps & Targets

Gail Evans/mgm

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

WHOLESALER STOCK ORDER FORM

TO: ORDER DEPARTMENT
REMINGTON ARMS COMPANY, INC.,
BRIDGEPORT 2, CONNECTICUT

Date_____

PLEASE SHIP AND BILL AT REGULAR PRICE WITH SPRING DATING TERMS, TO

_____
(Wholesaler's Name)

_____
(Street Address)

_____
(City) (State)

Attention of_____
(Name of Firearms Buyer)

****

(Quantity)_____MODEL XP-100 -- LONG RANGE PISTOL. CHAMBERED FOR 221 REMINGTON "FIRE BALL"

****

SPECIAL INSTRUCTIONS, IF ANY_____

_____

_____

_____

_____

_____

_____
(Buyer's signature)

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131236

WHOLESALER SALESMEN'S SAMPLING ORDER FORM

TO: ORDER DEPARTMENT
REMINGTON ARMS COMPANY, INC.,
BRIDGEPORT 2, CONNECTICUT

Date_____

PLEASE SHIP PREPAID SALESMEN'S SAMPLES LISTED BELOW. BILL AT REGULAR PRICE WITH SPRING DATING TERMS TO:

_____
(Wholesaler's Name) (Street Address) (City) (State)

Quan.	Model	Salesmen's Name and Address:
_____	XP-100	_____
_____	XP-100	_____
_____	XP-100	_____
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(Buyer's signature)

BARBER - PRESALE R 0131236
R2532224

WEF
for
m XP-100
adv. file

safety and fire protection supervisor George L. Smith, covers a 5,000,312 injury-free record extending from November 15, 1943 to February 2.

Complimenting the thirty-two employees was works manager Harry M. Pierce, Jr., and inspection and control unit chief supervisor J. Earl Williamson, who said: "We are all proud of the record . . . and I am pleased to accept this (plaque) for all of you."

(Continued on Page 2)

Plant foremen Joe Ugolik, Don Schlump and Tony Dreyer admire new model 1100 shotgun at annual dinner meeting held February 6. Some 315 representatives from the four departments heard a review of 1962 plant operation (see story on Page 3).

NEW LONG-RANGE PISTOL OPENS ERA OF SUPER-ACCURATE HANDGUNNING

What's the greatest range at which you've ever accurately fired a handgun? 25 yards? 50 yards? 75 yards? Even 100 yards? Well, now there's a Remington handgun and a new Remington cartridge that can easily double, or even triple, the range at which you can accurately place shot after shot after shot.

It's the new model XP-100 long-range pistol and a new 221 Remington "Fire Ball" cartridge that makes such excellent marksmanship possible — and which gives handgunners a combination gun-and-cartridge such as their hands have never held before.

The XP-100 is a bolt action, single shot, center fire pistol made for varmints, hunting and target shooting.

The grip and stock of the gun are made with one piece of molded Du Pont "Zytel" structural nylon. Because this wonder material maintains its dimensional stability under all conditions — it cannot warp or change shape — barrel bedding is absolutely uniform insuring greater accuracy. The grip is contoured to fit the shooter's hand and is equally adapted to either right or left-handed use.

The action is similar to that used on Remington bolt action center fire rifles. Because it completely encases the cartridge head in a ring of solid steel, the bolt is the world's strongest. Fired cases are automatically extracted and ejected when the bolt is opened.

A ventilated rib is used on the barrel to improve the sighting plane. A distinctive blade front sight and a rifle-type rear sight, adjustable for windage and elevation, are also used. The receiver is drilled and tapped for easy mounting of scope blocks. Barrel length is 10½ inches and overall length is 16¾ inches. A rotating thumb safety is conveniently located near the bolt handle.

Handsomely styled, the XP-100 has decorative, custom-style checkering, white spacers and diamond inlays in the stock and grip. Internal fore-end cavities permit the addition of weights to suit personal shooting preferences.

Scientifically balanced to give minimum whip, jump and recoil, the XP-100 is the "comfort king" of pistols to shoot.

The 221 Remington "Fire Ball" cartridge has a 50 grain jacketed bullet and is the hottest varmint handgun load on the market today. Its accuracy in

(Continued on Page 2)

World map is appropriate background for export sales attractive Gail Roberto, shown holding new model XP-100 long-range pistol. New handgun, chambered for the new 221 Remington "Fire Ball" cartridge, has muzzle velocity of 2650 feet-per-second, gives the shooting world a new standard of accuracy and power, enables hand-gunners to hit targets other guns and loads can't even reach.

Millhofer Made General Sales Manager Toronto; Others Get New Posts

Jack E. Millhofer has been appointed general sales manager for Remington Arms of Canada Limited, according to a recent announcement by C. Howard Reinhard, vice president.

Educated in the United States at the University of Buffalo and United States Merchant Marine Academy, Millhofer served in the Navy during World War II and saw service in the Atlantic, Mediterranean and Pacific theaters. He moved to Canada in 1949 and joined the sales department of the Ford Motor Company, resigning in 1955 to become a field representative, arms and ammunition division of Remington Arms.

In 1958 Millhofer was appointed sales manager of that division as well as being responsible for sales of powder actuated tools. An active sportsman, he is interested in trap and skeet shooting, hunting, fishing and water fowl conservation.

When announcing Millhofer's appointment Reinhard said, "Jack is one of the original employees to join Remington Arms of Canada and is well

(Continued on Page 4)

by C. Howard Reinhar
president, there are two
that influenced the deci
manufacture plastic sh
Canada: "We want to mak
available to Canadian s
at the lowest possible pri
extend the company's lon
policy to manufacture ad
products in Canada.

"In 1959," Reinhar
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22-caliber automatic rif
lowed by the introductio
famous model 870 Win
pump action repeating sh

Further commenting c
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Canadian production, R
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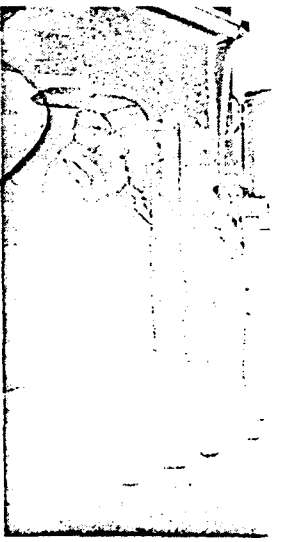
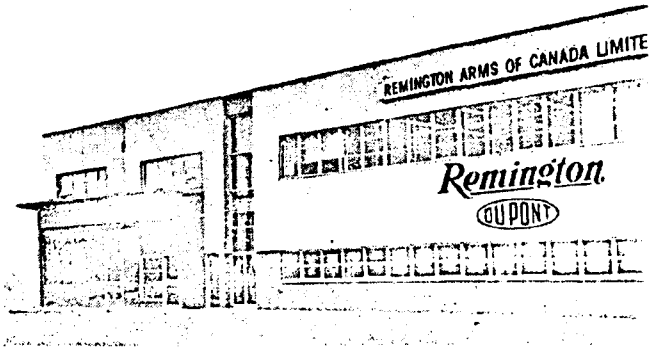


Loading the first carloc
Canada is Jack Peer, l
Millhofer, general sales
and Ed Cipcer, Toronto



Remington plant in Toronto, Canada, shown above, is w
label are made. Plant produces arms, ammunition, chain

3-1-63 — Remington Reporter

"OVEREATING"

ulty eating habits started in childhood often are the of overweight adults in life. All too many mothers, the best of intentions, coax small fry into eating more they want to eat. The ıy, fat baby who remain ›y as he grows into pre- l and first grade years be- less attractive as an in- ıal. And the habit of eating calories than necessary is to remain the rest of his The parent should not be ıe to decide whether the should lose weight, how he l lose it, or whether he continue to remain ingly plump." The doctor be consulted.

ıty of physical activity is l for the child to burn up ılories, and it often is that the overweight ıter plays less and walks an the lean one. The most ant factor in helping the child to reduce is to han- situation naturally. Don't ı point of telling the child on a reducing diet. Just the meals naturally and natter of course. Avoid the child about his diet. only make him rebellious ›re inclined to snack on

CLASSIFIED

ALE—Draw-tite trailer hitch for ımbler station wagon. Price: $5. -2986.

Remington Blood k Visit Set For iday, April 5

Equipment Engineering; Joseph Pistey, Tool & Gage.

20 years — Joseph Parent, Machine Shop; Max Schwartz, Research Experimental Shop; John Zver, Shot Shell Paper; Paul Deininger, Treasurer's; Irene Teachman, Purchasing; Frederick Nelson, Power House.

15 years — Daniel Grasso, Machine Accounting.

10 years — Hans Abrahamsen, Shot Shell Maintenance; William Phillip; Shoe Shell Maintenance; Harold Johnson, Jr., Shot Shell Maintenance; Walter Langhorst, Field Sales.

5 years — Eleanor Yassak, Advertising & Sales Promotion; Joseph Carter, Shot Shell Maintenance; Richard Zwicharowski, Shot Shell Maintenance.

CHEMICAL RECORD

(Continued from Page 1)

The employees included in the group are: Ann Adamchak, Keith Denne, Frank O'Brien, Walter Parkola, Fred Hewitt, Walter Grom, David Klittnick, William Hogan, Leo Wescounes, James Flaherty, John Newton.

John Nemergut, Mary Mazzadra, John Palmer, Herbert Williams, Arnold Hilton, Herman Hattersley, George Seibel, Elmer Pollard, Bert Nevers, Francis Stevens, Robert Marson, Tharpe Jones, James Gorman.

Also, Harry Jerwick, Matthew Charney, Robert Dennis, Tony Salvo, Bob Yeager, Mike Hrinak, Florence Chrimes, Minnie Scinto, Veronica Vatert, John Misencik, Alexander Miklos, George Stancin.

XP-100 PISTOL

(Continued from Page 1)

the XP-100 is outstanding. Muzzle velocity is 2650 feet per second and muzzle energy is 780 foot pounds.

planning the future season. Mike Fedak, interdepartmental golf chairman, has called a meeting for March 7 at 7 p.m. at the Lordship clubhouse.

Mike is asking all interested golfers to attend the meeting. "We plan some changes for the coming season," Mike says, "and we'd like everyone's help in making plans."

never bothered any gun.

But if you're setting your guns away for any extended period, it's best to hang them horizontally or stand them on the muzzles. In these positions, any surplus oil will not leach down into the stock. And, further, it by-passes the problem of crud flowing down into the "mechanistics."

EXPORT SALES' GALS DISPLAY NEW PRODUCTS

Quartet of attractive gals from export sales office displays four new products designed to bring more shooting satisfaction to shooters all over the world. Gail Roberto holds new model XP-100 long-range pistol, Pauline Schultz shows new low-base plastic shotgun shells, while Jackie Bruno (left) swing new model 1100 shotgun and Edna Rosado shoulders new-for-1963 version of model 870 pump shotgun.

cc: ~~Wayne Leek~~

Bridgeport, Connecticut
November 1, 1962

TO: JOHN FINNEGAN - ILION

FROM: F. E. MORGAN

Get Folders w/ adv

I am returning the proof of the XP-100 instruction folder - and accordingly, Jack Williams has given you his verbal approval for same.

As far as I can determine, the manual is satisfactory from Sales standpoint.

I am also attaching copy of letter received from John Phipps regarding adequate details on re-assembly of barrel and action to the stock.

Would you please look into this and see if you can spell it out in more detail.

FEM/mgm

RD-69 REV. 3-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington

cc: W. E. Leek, Ilion
F. Finnegan, "

Bridgeport, Connecticut,
November 1, 1962.

TO: F. E. MORGAN

FROM: JOHN W. PHIPPS

SUBJECT: INSTRUCTION FOLDER - MODEL XP-100

In checking the pistol we received in the Patent Department for all patentable features, we disassembled the barrel and action from the stock. There was some difficulty experienced in reassembling these parts and we borrowed the draft of the instruction folder from you to find out just how you put it back together.

The folder is lacking in detail on how to reassemble the barrel and action to the stock. Unless we were experiencing an unusual difficulty due to interference between the trigger balance and the trigger link, it appears that the instructions on reassembling should be amplified.

JWP/MLH
41.00

JOHN W. PHIPPS,
Associate Patent Attorney.

P.S. The folder is returned herewith.
JWP

RECEIVED
NOV - 1 1962
OFFICE - F. E. MORGAN

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131242

Look through a Bushnell you can see the difference!

Hunting is the most dramatic sport in the world — ask any hunter! Weeks of planning and anticipation . . . practice sessions . . . evenings devoted to arms and ammunition . . . hours — sometimes days — afield — they all lead up to one fleeting, decisive moment. • Aim and fire — that's it! • At that moment, human skill must be backed by accurate, reliable equipment—anything less won't do the job! • That's why Bushnell Riflescopes are built with more than their share of know-how, precision and ruggedness — to come through when you need it most! Bushnell backs this dependability with THREE strong assurances **1.** You can see the difference between a ScopeChief and other riflescopes. **2.** Bushnell dealers are authorized to let you field-test a ScopeChief for 30 days at Bushnell's risk. **3.** Bushnell ScopeChief Riflescopes are guaranteed a full 20 years against optical and mechanical defects. • It takes a superior product to offer you this complete assurance.

BUSHNELL RIFLESCOPES ARE SUPERIOR because they feature the SEVEN ADVANTAGES wanted most in a fine scope—

1. **BRIGHTER, CLEARER IMAGE**—A new high in clarity . . . depth . . . needle-sharp definition . . . has been attained by designing an entirely new optical system. You'll marvel at the amazing luminosity. All lenses are coated with Bushnell's superior, low-reflection, hard coating. You can see the difference!
2. **MAXIMUM FIELD OF VIEW**—The ScopeChief's exceptionally wide field is not achieved at the expense of clarity . . . picture is clear and sharp, edge-to-edge.
3. **MORE PRECISE RETICLE ADJUSTMENTS**—Micron-atic adjustments —provide hair-splitting accuracy! Unlike inflexible "click" systems, any fraction of a minute can be dialed. Point of impact can be easily returned to exact "zero" after adjusting for windage or elevation . . . so precise, that NEITHER ADJUSTMENT AFFECTS THE OTHER.
4. **SLEEK, STREAMLINED APPEARANCE**—The ScopeChief's modern, compact lines please the eye. No protruding parts to catch clothing, branches, or interfere with smooth operation. You will always be proud of your ScopeChief. A worthy companion for the finest rifle.
5. **ABILITY TO WITHSTAND ROUGHEST USE**—Exhaustive shock and vibration tests, more rugged than any encountered in the field, must be passed by each ScopeChief. Incredibly tough, heavily-anodized aluminum alloy, one-piece tube-turret construction, and cushioned lenses, assure maximum shock resistance and durability.
   Flared ends can be unscrewed without loss of nitrogen, permitting use of more rigid, less expensive, solid-ring mounts.
6. **NITROGEN-FILLED, WATER AND FOG-PROOF**—No scope is better protected against adverse weather. ½" sunshade on front lens; ¼" on rear, prevents glare, protects lenses. Nitrogen-filling, exclusive X-Cello sealing and newly developed gasketing keep out moisture and dust. It's impossible to fog this scope!
7. **LOW, ATTRACTIVE PRICE**—Compare the ScopeChief with any scope at any price! You'll agree, it's your best dollar value.

3 power, $42.50 2½ power, $39.50

4 power, $49.50

6 power, $59.50

8 power or 10 power With newest Quick Set Range Focus, $69.50

SCOPECHIEF SPECIFICATIONS

Magnification	2.3x	3x	4x	6x	8x	10x
Overall Length	10⅝"	10⅝"	11⅜"	13⅝"	14⅛"	14⅝"
Weight	8 oz.	8 oz.	9 oz.	10 oz.	11 oz.	12 oz.
Eyepiece Diameter	1.4"	1.4"	1.4"	1.4"	1.4"	1.4"
Exit Pupil	8mm	6.8mm	8mm	7mm	5.25mm	4.2mm
Objective Lens	.807"	.807"	1.26"	1.65"	1.65"	1.65"
Objective Diameter	1"	1"	1.5"	1.94"	1.94"	1.94"
Eye Relief	3"-5"	3"-5"	3"-4½"	3"-4"	3"-4"	3"-4"
Field at 100 Yds.	43'	40'	33'	20'	17'	13'

All ScopeChiefs are produced to Bushnell patents and specifications in Japan's finest optical laboratories for maximum economy.

SCOPECHIEF RETICLES AND ACCESSORIES

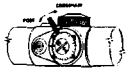
Crosshair or Post & Crosshair, standard.
Dot or Rangefinder, $10. extra. Specify Dot size.
COMMAND POST, $10. extra, in 2½x, 3x, 4x and 6x ScopeChiefs
ScopeChiefs take any standard 1" mount.
Saddle leather lens caps (specify power of scope) $2.00
Neoprene caps, with glass lens (specify power of scope) $2.95.

WATCH FOR EXCITING ANNOUNCEMENT OF NEW RIFLESCOPE ACCESSORY

BUSHNELL offers the most important extra feature of all time . . . the COMMAND POST

CROSSHAIRS or POST, both at fingertip command in one scope!

Only the Bushnell ScopeChief equipped with COMMAND POST lets you choose the proper reticle for the job at hand—
Fine CROSSHAIRS for well-lighted open country . . . long-range shots . . . and all small game.
Or, within a split second . . .
A tapered POST for early morning and twilight shots . . . in timber or brush where crosshairs fade away . . . running game at close range.



A Quick Action Lever alongside windage adjustment snaps the tapered post into accurate alignment at the intersection of the permanent crosshairs . . . zeroed in without further adjustment. Another flip of the lever and COMMAND POST disappears, leaving crosshairs completely unobstructed!

COMMAND POST only $10 extra in 2½x, 3x, 4x and 6x ScopeChiefs.

Bushnell Variable Riflescopes without Command Post

3x-9x Variable Riflescopes with 1-minute dot 79.50
3x-9x Variable Riflescopes with Rangefinder Reticle 79.50
3x-9x Variable Riflescope with standard crosshairs 69.50

Other quality Bushnell products:

Spotting Scopes • Binoculars • Telescopes
Microscopes • Photo-Optics • Sunglasses

Bushnell

ALL-PURPOSE 3x-9x RIFLESCOPE with exclusive COMMAND POST

PROVED THE MOST EFFECTIVE RETICLE FOR SHOOTING UNDER DIFFICULT LIGHTING CONDITIONS.

Here is the only variable that meets every shooting situation by offering these exclusive features:

NEW SELF-ADJUSTING COMMAND POST . . . in an instant you can flip from extra fine crosshairs for long range precision shooting, to the Command Post to help you bag that buck in the brush at dawn or dusk. No matter how many times the Command Post lever is actuated, the Command Post will always remain centered to the vertical crosshair within 1/10th the diameter of a human hair.

BENCH-REST ACCURACY . . . the Command Post maintains alignment with precision five times that of the rifle. Well beyond the needs of an Olympic marksman: providing a safety margin for any situation. Alignment accuracy is closer than 1/5th of an inch at 100 yards. (Top notch rifle accuracy is about one inch at 100 yards.)

MORE THAN DOUBLE THE VIEWING AREA OF POPULAR VARIABLES . . . the field of view of the "All-Purpose" at the 4x setting is greater than the field of view of the 2.5x setting of other popular variables. Because of this wide field of view it is perfect for shots on running game, or in brush where success of shot depends on greater viewing area.

DOUBLES AS A SCANNING SCOPE . . . with extra wide field of view and choice of higher powers, the "All-Purpose" riflescope doubles for scanning, when binoculars are not available, or taking time to switch means losing your game.

Other superiorities are: precision double internal adjustments; a full 42mm clear aperture for maximum resolving power and light gathering ability; nitrogen processed, neoprene sealed, water and fog-proof; plus the seven superiorities of the regular Bushnell ScopeChief line.

3x-9x All-Purpose Riflescope **79.50**

3x-9x VARIABLE SPECIFICATIONS

Magnification	3x	4x	5x	6x	7x	8x	9x
Field at 100 Yards	39'	37'	29'	23'	20'	18'	16'
Exit Pupil	14.0mm	10.5mm	8.4mm	7.0mm	6.0mm	5.2mm	4.7mm
Relative Brightness	196	110	71	49	36	27	22

Eye Relief, 3"-4"; Over-all Length, 12"; Weight, 13 oz.; Tube Diameter, 1"; Eyepiece Diameter, 1.53"; Objective Diameter, 1.94"; Objective Lens, 42mm. Bushnell Mounts or high 1" rings on other scope mounts should be used for mounting. Other reticles available on special order. Prices on request.

All Bushnell Riflescopes are triple-tested for optical and mechanical perfection by the U. S. Optical Laboratory—a Bushnell affiliate.

BARBER - PRESALE R 0131242
R2532230

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131243

being factory drilled and tapped specifically for Bushnell's special Screw-down Hawkeye Base for the Phantom.

One Scope for Many Guns

Phantom Mount Clips are available for most S & W and Colt revolvers; Ruger center fire models, including the new .256 Hawkeye (for Hawkeye specify Clip type or Screw-down Mount); .22 rifles with grooved receivers; Model 94 Winchester.

(Specify make and model when ordering.)

Phantom with crosshairs, **$24.50**

Phantom, complete with Mount and Recoil Anchor (specify gun), **$29.50**

Additional Mount clips for your other guns, **$5.00** each
(Scope Recoil Anchor included)

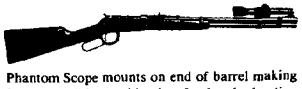
Saddle Leather Holster for scoped handguns (illustrated), specify tan or black, **$9.95** each

Deluxe Saddle Leather Holster for scoped handguns, with detachable shoulder strap, tan only, **$17.95** each

SPECIFICATIONS FOR 1.3x PHANTOM SCOPE

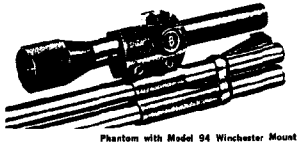
Magnification	1.3x	Objective Diameter	.750"
Weight (including mount)	6 oz.	Objective Lens Dia.	15 mm
Length	7.5"	Exit Pupil	11.5 mm
Eyepiece Diameter	1.2"	Field at 100 yards	17'
Eye Relief	6" to 21"		

NOW YOU CAN SCOPE A MODEL 94 WINCHESTER!



Phantom Scope mounts on end of barrel making fastest possible combination for brush shooting or close range on running game. You retain same large unrestricted field of view of naked eye, but add advantage of scope's single sighting plane. Ingenious new mount requires no drilling or tapping, sets well forward of top ejection actions. Phantom, with mount, only **$29.50**.

Once you try it you'll never hunt without it. At dealers now.



Phantom with Model 94 Winchester Mount

* *". . . just what we've needed for years. A high class, precision scope for the better .22 rifles." . . . unsurpassed resolution!"*

Presenting the new Bushnell

ScopeChief 22

the royalty of .22 riflescopes, with exclusive† one-piece turret/mount
only $19.95

Lovely, slim and sleek the ScopeChief 22 is a scope designed for the shooter's shooter . . . the man satisfied with nothing less than "the finest in sight."

The ScopeChief 22 is not only perfect when new, but built to such exacting engineering tolerances, the same top performance is assured through year after year of use in the field.

Ultra fine, precision micrometer windage and elevation adjustments assure unfailing accuracy for the most critical sighting, since fractions of a minute can be dialed. Unusually large objective and eyepiece lenses give greater brightness, allow fast, easy positioning of the eye.

Reticle mechanism designed so that under normal shooting conditions crosshairs always appear centered.

A full 30.5 foot field of view, rapier sharp from edge to edge, makes it easy to follow running game, or reach out and take game you'd miss with ordinary sights. Lenses have deep sunshades to prevent glare; are coated with Bushnell's superior low reflection, hard coating for highest luminosity. Sealed to keep out moisture and fog. 30-day trial exchange privilege; 20-year guarantee, covering both workmanship and parts, if not damaged by abuse or negligence.

Exclusive† non-removable one-piece turret/mount slides onto grooved receiver. Secures with rigidity never before possible. Scope will never loosen in this mount.

SCOPECHIEF 22 SPECIFICATIONS

Magnification	4x
Overall Length	10¼"
Weight	6.5 oz.
Eyepiece Diameter	1.06"
Eye Relief	2.6"
Objective Diameter	1.05"
Objective Lens	.78"
Exit Pupil	5mm
Field at 100 Yards	30.5'
Tube Diameter	¾"

- **30-Day Trial Exchange Privilege**
- **20-year parts and service guarantee, unless damaged by abuse or negligence**

*** Field tested and enthusiastically approved by the experts. Now available at your Bushnell dealer.**

Prices and specifications subject to change without notice.

†Lens produced to Bushnell specifications in Japan's finest optical factories for maximum economy

Banner Riflescopes by Bushnell

A rugged, durable, economy-priced companion line to the famous ScopeChief, and backed by the Bushnell reputation for extra quality. Trial exchange privilege; triple-tested and guaranteed, both workmanship and parts, for five years, if not damaged by abuse or negligence, by the U.S. Optical Laboratory, a Bushnell affiliate.

. . . a full-size, standard 1-inch steel tube!

New 4x Banner Riflescope

only $37.50

The brand new model of the popular, economy-priced 4x Banner has all the features you expect in riflescopes costing much more. A new turret design, with large precision engraved dials, increases the accuracy of this tough, rugged riflescope.

From start to finish, the new Banner Riflescope has been crafted with the precision and inner quality you naturally expect in a Bushnell instrument. Here is a scope with the ability to withstand the roughest use. A Parkerized full-size, standard 1-inch steel tube, with exclusive Bushnell satin finish, assures you rugged, durable service.

Precise reticle adjustments of the new Banner have large, easy-to-read dials, and provide extreme accuracy. Unlike inflexible "click" systems, fractions of a minute can be dialed. Dial can easily be repositioned to exact "zero" after adjusting for windage or elevation. Available with crosshairs, or post and crosshair. Electronic computing and designing of the optical system produces a picture that is crystal clear and needle-sharp from edge to edge. All lenses are coated with Bushnell's superior, low-reflection, hard coating for highest luminosity, even under adverse shooting conditions. Neoprene sealed to keep out moisture and fog.

4x BANNER SPECIFICATIONS

Magnification	4x	Objective Diameter	1.50"
Overall Length	11.75"	Objective Lens	1.26"
Weight	9 oz.	Exit Pupil	8mm (.315")
Eyepiece Diameter	1.42"	Field at 100 Yards	30'
Eye Relief	3.5" - 5"	Tube Diameter	1"

Also available: 2.5x Banner Riflescope (Crosshairs only) $29.50

- Lightweight ¾" tube
- Precision adjustments
- Large objective lens

NEW .22 Riflescope 4x BANNER 22

(Complete with mount to fit grooved receivers) **$14.95**

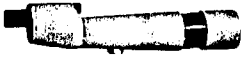
At last! An inexpensive .22 riflescope with wide field, optical brilliance, sharpness, lightweight aluminum alloy tube; plus a sturdy mount for grooved receivers.

High quality achromatic lenses, and an optical design created with the precision of more costly scopes, gives you the utmost in resolving power. A bright field of view, crisp and sharp all the way across, makes it easy to follow running game.

Precise micrometer screw type windage and elevation adjustments, with easy-to-read dials, assure precision sighting since fractions of a minute can be dialed. Objective and eyepiece lenses, larger than usually found in this type scope, give greater brightness, allow easy positioning of the eye. Lenses have deep sunshades to eliminate reflections, are coated with Bushnell's superior, low-reflection, hardcoating for highest luminosity. Sealed to keep out dust and moisture.

BANNER 22 SPECIFICATIONS (Crosshair reticle only)

Magnification	4x	Objective Diameter	1.05"
Overall Length	10¼"	Objective Lens	.78"
Weight with Mount	7 oz.	Exit Pupil	5 mm
Eyepiece Diameter	1.06"	Field at 100 Yards	29.5'
Eye Relief	2.3"	Tube Diameter	¾"



SPACEMASTER 60mm Spotting or All-Purpose Scope, $95.00

For any use requiring highest resolution, brightness, and contrast, from nature study to the stars (with camera adapter is precision telephoto lens). Achromatic, coated optics, fingertip focusing, interchangeable eyepieces, retractable sunshade, tripod boss, protective caps, choice of one eyepiece.

Weight 39 oz., Max. Height 3-5/16", Overall length 15¼", Neutral gray.

45° SPACEMASTER, for competitive marksman $99.50

Eyepieces (either model)
15x, 20x, 25x, 40x, 60x — ea. $22.50
Hard Leather Carrying Case $19.50

SPACEMASTER SPECIFICATIONS (both models)

Eyepiece Mag.	Field at 1000 Yds.	Diam. of Exit Pupil
15x	158 ft.	4 mm
20x	124 ft.	3 mm
25x	105 ft.	2.4 mm
40x	61 ft.	1.5 mm
60x	32 ft.	1 mm

Minimum focus 24 ft.

SENTRY 50mm Prismatic Spotting Scope, $54.50

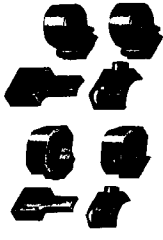
(Illustrated on Cover)

Terrific value for pistol or rifle shooter. Finest hard-coated, high resolution optics . . . extremely compact . . . retractable sunshade . . . tripod socket. Great spacesaver for field use . . . weighs only 24 oz.; barely 13" long, with protective caps. Neutral brown crystal finish, 20x eyepiece included.

Extra Eyepieces —
12x, 16x, 32x, 48x, $19.50 ea.
Shooter's Tripod—
(Illustrated on cover) $16.95

BUSHNELL RIFLESCOPE MOUNTS

Complete with windage adjustment



1"—LOK-BAND rings with QUICK-MOUNT bases, $12.50 set

1"—STANDARD split rings with QUICK-MOUNT bases, $12.50 set

BUSHNELL Mounts fit these rifles:

#817 Mauser FN, Higgins 51, Marlin 455, Husqvarna and Browning (except small ring actions)

#818 Mauser 98

#820 Remington 721, 722, 725 (long & short), Weatherby Mark V

#823 Remington 740, 760 and 742

#831 Winchester 70 (except .300 & 375 H & H)

#833 Winchester 88, 100

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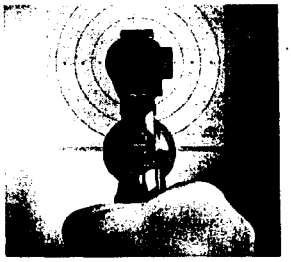
R2532231

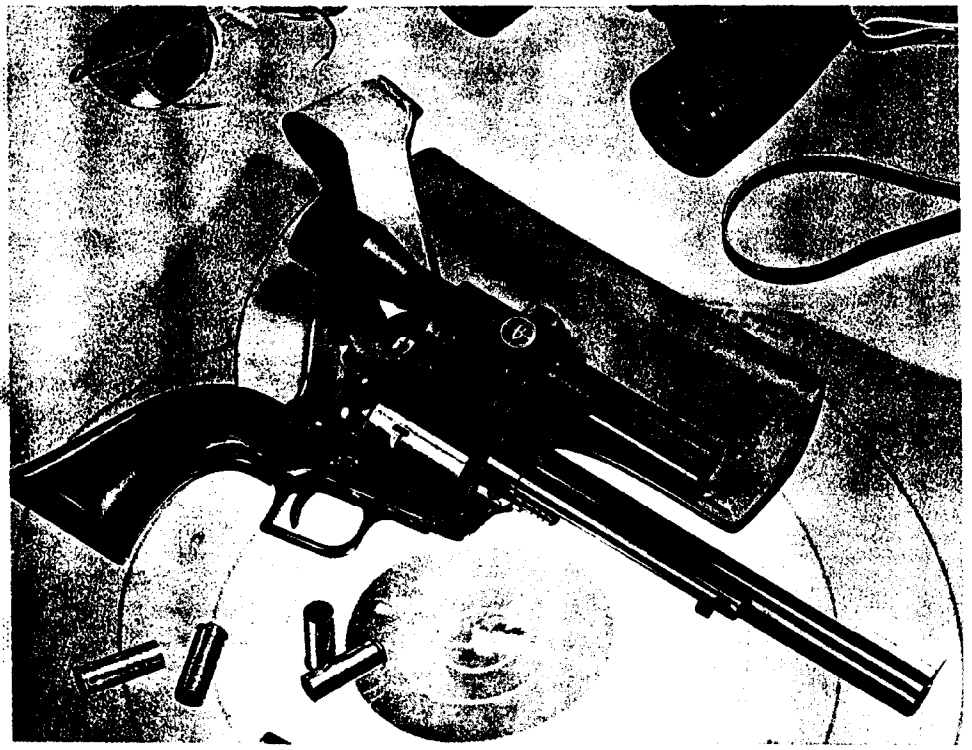
WHAT DID THE EXPERTS SAY?*

"Unquestionably, the Phantom increases potential of any revolver" "...doubles normal shooting range" "...puts iron sights to shame when it comes to accuracy..."

WITH IRON SIGHTS



WITH THE PHANTOM



THE NEW 1.3x BUSHNELL PHANTOM

only $29.50
complete with mount

The handgun is without question the most difficult firearm to master. Since distance between sights is so short, small sighting errors cause dismal failure at the target. This problem of keeping both front and rear sights in exact alignment, with the target a fuzzy blur in the background, has kept many shooters with years of experience shooting low scores.

Phantom Eliminates Sighting Problems

The Phantom increases clarity of sight picture and permits extremely accurate holding on the target, because the crosshair and target are on the same plane. The single sighting plane plus micrometer reticle adjustments give precision not possible with iron sights. Target remains sharp and clear even with poor lighting.

The Phantom, designed specifically for handguns, has an eye relief of 6" thru 21" which takes you easily from "two hand" varmint to "arm's length" target position. All optics are hard coated; weighs only 6 ounces, including mount.

Mounts in Seconds

An exclusivet system makes it possible to mount the Phantom yourself. In seconds! No drilling or tapping, iron sights remain.

Ideal on new Hawkeye

Strum, Ruger & Co. found the Bushnell Phantom on new .256 Hawkeye an ideal hunting combination. All new Hawkeyes are

- **30-Day Trial Exchange Privilege**
- **20-year parts and service guarantee, unless damaged by abuse or negligence**

SIMPLE

Mount clip requires no drilling or tapping.

SNAP

Snap mount quickly and firmly into position.

SLIDE

Slide scope smoothly onto mount. Iron sights remain.

SECURE

Only two screws to tighten. That's all.

SIGHT

Sight-in by aligning crosshairs with iron sights.

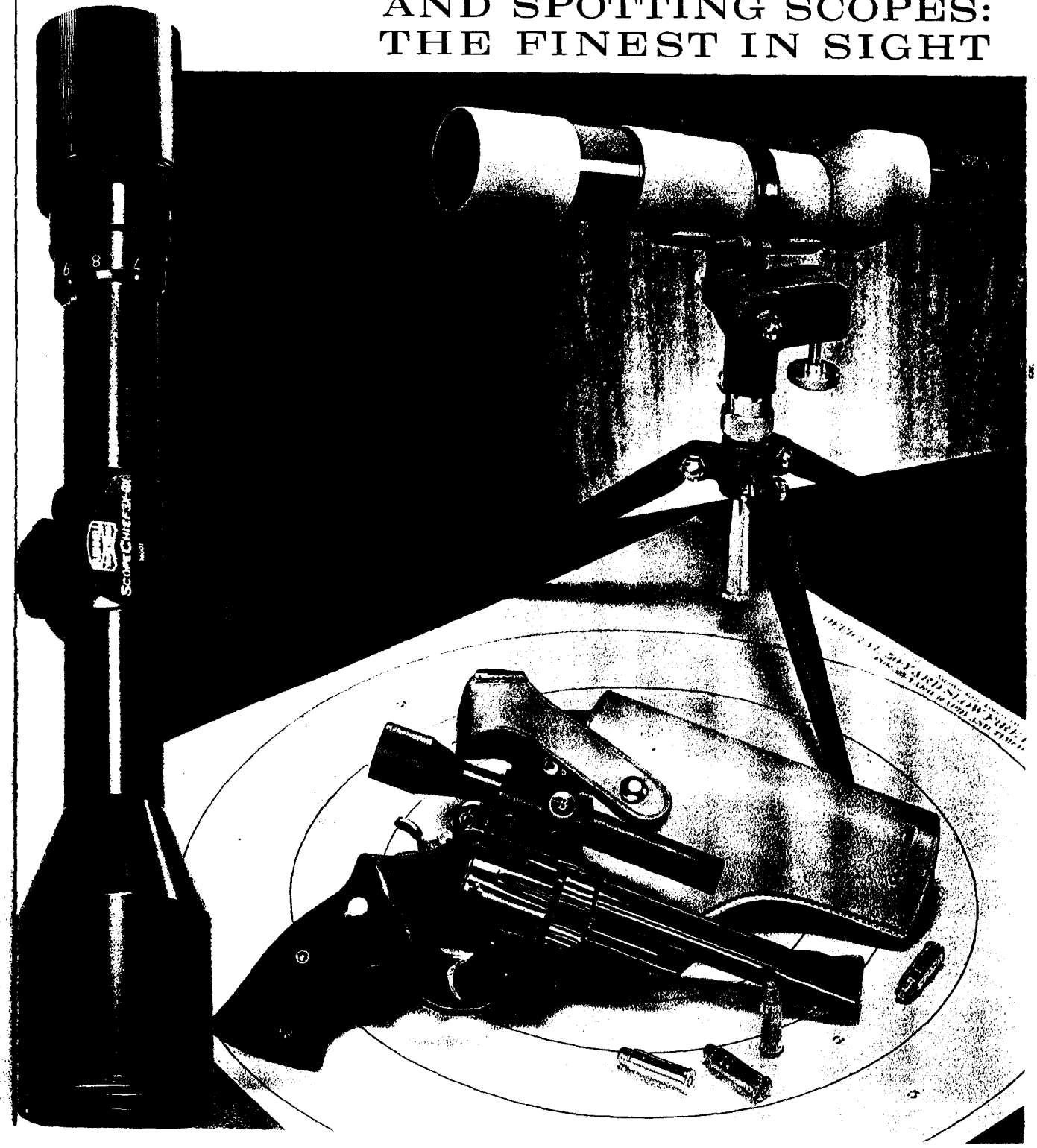
SHOOT

Shoot quickly, accurately. Greatly reduces sighting errors.

Printed in U.S.A.

Bushnell

A COMPLETE SHOOTER'S LINE OF RIFLE, PISTOL AND SPOTTING SCOPES: THE FINEST IN SIGHT



BARBER - PRESALE R 0131246

MODEL XP-100

Costs & Estimates

BARBER - PRESALE R 0131246
R2532234

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KINZER V. REMINGTON

Remington Rand
NO. 5018 R • IF FASTENERS
INCLUDED PLEASE SPECIFY
REMTEX FOLDER
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CC: J. E. Dickey, Jr. - Bapt.
F. E. Morgan - "
S. M. Alvis
D. E. Miller
File

Ilion, New York
February 20, 1963

E. H. Bleckwell
Gail Evans
H. K. Faulkner
H. M. Stoessel
G. M. Calhoun

XP-100 PISTOL & MODEL 600 RIFLE - SELLING PRICE

Information on pricing the XP-100 Pistol and Model 600 Rifle was reviewed at the February 12 Operations Committee. The review was based on the Plant's letter to Gail Evans of January 25 concerning this subject. The following memorandum summarizes the pricing recommendations of the Committee.

Status Prior to Meeting

The status of the rifle and pistol prior to the February 12 meeting was:

	Model 600 Rifle	XP-100 Pistol
Retail Selling Price	Not established (Project Basis - $85)	Not established (Project Basis - $75)
Planned Calibers	222, 308 & 30-30	221 Remington
Stock	Wood - Monte Carlo Shape (No checkering, grip cap, fore end tip, swivels or sling)	Nylon

Pricing Recommendations

Model 600 Rifle

The Sales Department suggests the rifle can be successfully marketed at $100 retail by adding Custom Checkering and changing the planned calibers from 222 and 30-30 to the new calibers 284 Winchester and 350 Remington Magnum, retaining the 308. They estimate the long term sales volume will be fifteen thousand (15,000) a year. The basis for their recommendations are:

- The retail price of the rifle must be increased above the $85 used in the project. Earnings at this price are inadequate, being about break-even for the 308 and 222 calibers and a $2.38 loss for the 30-30 caliber, on a full book cost basis. The earnings are poorer than originally projected due to lower estimated total plant volume, higher manufacturing cost for the 30-30 caliber and other small production cost increases.

- Since the price must be increased, the rifle will no longer compete price for price with the Winchester Model 94 and must compete with higher priced rifles. Consequently, features such as 30-30 Winchester to compete directly with the Winchester 94 may be dropped and other competitive features added for the higher price class.

  Sales proposes the competitive features be improved by adding Custom Checkering to the sides of the grip and fore end. This provides significantly more appeal at small increased cost.

  They also propose to substitute two new cartridge calibers, 284 Winchester and 350 Remington Magnum for the previously planned 222 Remington and 30-30 Winchester. Experience indicates a short barrel 222 Caliber rifle has no appeal. The 30-30 is obsoleted by cartridges with better ballistics. It is also hampered by additional project cost for design and tooling and by higher production cost than the rimless calibers. The additional project cost for 30-30 caliber has been estimated at $110,000 of which only $15,000 has been spent. Abandoning this caliber now will reduce project expenditures $95,000.

- The Model 600 rifle with its proposed features and $100 price should not materially affect Model 700 rifle sales. If it does, however, the cash operative earnings of approximately $25 compares favorably with the $27.40 cash operative earnings of the Model 700 ADL.

The Production, Research, and Treasurer's Departments agree with Sales' recommendations as proposed.

Table 1 attached summarizes the economics of the rifle as now proposed. The table also shows for comparison the economics of selling the originally planned calibers of 222 Remington, 308 Winchester and 30-30 Winchester at $100 retail.

XP-100 Pistol

The retail selling price of the pistol must also be raised over the $75 used in the project because of an estimated $3.68 full book loss at this price. The earnings are poorer than originally projected due to lower estimated total plant volume, the higher cost of the pistol packing case, and other small increased manufacturing costs. The simulated leather pistol case adds about $3.55 full book packaging cost.

The Sales Department feels the pistol can be marketed for $95 retail and support a long term volume of 5000 a year. They feel the pistol must be priced below the rifle to maintain our marketing integrity. A visual comparison of the rifle and the pistol indicates to the Sales Department that the pistol should sell for a lower price.

The other departments question if the pistol cannot retail for $100. They suggest the pistol will appeal to a limited market whose size will be unaffected by small differences in price. They also point out the full book manufacturing cost of the pistol at $100 is only $1 less than the rifle, and does not justify a $5 lower retail ($2.60 net selling) price.

The pistol price was left unresolved and will be determined by further discussion of the Committee at Bridgeport. Table 2 attached summarizes the economics of selling the pistol for $95 and for $100.

L. D. Cox

L. D. Cox

LDC:I
Attachments

TABLE 1

MODEL 600 RIFLE

OPERATIVE EARNINGS AND RETURN ON INVESTMENT AT PROPOSED $100 RETAIL SELLING PRICE

Costs Include Custom Checkering

	At The Selling Price & With The Calibers Unanimously Proposed By All Departments	At The Selling Price Unanimously Proposed By All Departments & With The Original Calibers For Which The Rifle Was To Be Designed		
Retail Selling Price	$100.00	$100.00		
Net Selling Price	53.82	53.82		
Calibers	Rimless Only 284 Win.* 308 Win. 350 Rem. Mag.*	Rimless 222 Rem. 308 Rem.	Rimmed 30-30	Total 222 Rem. 30-30 Win. 308 Win.
Estimated Third Year Volume	15,000	9,000	6,000	15,000
FULL BOOK COST DATA				
Unit Cost of Goods	$ 46.73	$46.73	$49.43	$47.82
Unit Operative Earnings	7.09	7.09	4.39	6.00
% of Net Selling	13%	13%	8%	11%
OUT OF POCKET COST DATA				
Unit Cost of Goods	$ 28.60	$28.60	$30.10	$29.20
Unit Operative Earnings	25.22	25.22	23.72	24.62
Total Operative Earnings	$378 M	$227 M	$142 M	$369 M
Net Earning After Franchise Tax, All Other Expense, and Federal Tax	164 M	98 M	61 M	159 M
Investment				
Permanent Investment	$ 88 M	$ 88 M	—	$ 88 M
Working Capital	433 M	261 M	179 M	440 M
Total Capital Required	$521 M	$349 M	$179 M	$528 M
% Return on Total Capital	31%	28%	34%	30%

* Costs and earnings for calibers assumed the same as the prototype models displayed, with the addition of Custom Checkering. Any need for stainless steel Barrel or Recoil Pad would presumably have added cost offset by increased selling price.

TABLE 2.

XP-100 PISTOL

OPERATIVE EARNINGS AND RETURN ON INVESTMENT AT $95 AND $100 RETAIL SELLING PRICE

Retail Selling Price	$ 95.00	$100.00
Net Selling Price	51.13	53.82
Calibers	221 Rem.	221 Rem.
Estimated Third Year Volume	5000	5000
FULL BOOK COST DATA		
Unit Cost of Goods	$ 45.39	$ 45.73
Unit Operative Earnings	5.74	8.09
% of Net Selling	11%	15%
OUT OF POCKET COST DATA		
Unit Cost of Goods	$ 29.10	$ 29.10
Unit Operative Earnings	22.03	24.72
Total Operative Earnings	$110 M	$124 M
Net Earnings After Franchise Tax, All Other Expense and Federal Tax.	$ 48 M	$ 54 M
Investment		
Permanent Investment	$ 85 M	$ 85 M
Working Capital	144 M	146 M
Total Capital Required	$229 M	$231 M
% Return on Total Capital	21%	23%

Pete

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D. E. Miller
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This seems to assume that if we added the 30-30 we would be not marketed the 30-30 volume pick up of added to ear 308 + 222

SMA

Costs

Ilion, New York
January 25, 1963

GAIL EVANS
DIRECTOR OF SALES

SUBJECT: XP-100 PISTOL AND M-600 RIFLE
INFORMATION FOR PRICING DECISIONS

The attached information has been assembled to assist in pricing the XP-100 pistol and Model 600 rifle. It is based on January, 1963 estimates of project expenditures and product costs prepared by Research and the Plant, and reflects the cost increases for pistol packaging, the 30-30 caliber rifle and other minor increases since the original project was prepared a year ago. It is assembled so you can judge on the two bases normally used for these decisions:

- Percent return on Total Capital Required and Total Sales Required to Recover Project Expenditures, based on out-of-pocket costs - Table 1 and Figures 1 through 4.

- Operative Earnings and Operative Earnings as percent of Net Selling, based on full book costs - Table 2.

The economics for the rifle and pistol are inter-related. We have tried to define the limiting condition of this inter-relationship by developing information for pricing based on:

- Selling price for the pistol and the rifle, presuming both are marketed, with the rifle in calibers 308, 222, and 30-30.

- Selling price for the rifle presuming 30-30 caliber is not marketed.

- Selling price for the pistol presuming rifle is not marketed at all.

Supplementary details are covered in the attached discussion.

If it is decided not to market the rifle in caliber 30-30, an early decision can save about $95,000 Operations and Research costs. Only about $15,000 will have been committed out of the estimated $110,000 total cost to bring in this caliber, if the decision can be reached within the next month or so.

We will try to answer any questions you may have concerning the attached information. I will include a discussion of this for your consideration on the suggested agenda of the February Operations Committee meeting.

D. E. Miller
Works Manager

L. D. Cox

Per L. D. Cox

LDC:ms

DISCUSSION

XP-100 PISTOL AND MODEL 600 RIFLE INFORMATION FOR PRICING DECISIONS

Revised Estimate of Project AD-XP-700 Economics - Table 1.

Table 1 shows the effect on the project economics of the higher costs for the .30-30 caliber rifle, for the new pistol case, and for other minor manufacturing cost increases since the original project estimate a year ago. The estimated cost of the pistol case, and its outer wrap and casing materials is approximately $3.10 compared to $.34 used in the project estimate.

738,000
672,000
66,000

The estimated Project Expenditure has increased from $672,000 to $738,000, primarily for more Operation and Research charges to bring in the caliber 30-30 rifle. The increased Project Expenditure can be handled without an additional part since it will be within the permissible 10% overrun.

The allocation of permanent investment for the pistol is $6,000 higher and for the rifle $13,000 lower that a year ago. The same basis has been used to allocate the investment. Any equipment used exclusively by the rifle or pistol is allocated 100% to the user. Any equipment used by both is allocated 50% to each since the equipment would be required to produce each, independent of its volume. Though less total equipment is being purchased, more of it is being used for the pistol than was estimated a year ago.

Only about $15,000 of the estimated $110,000 has been spent toward the 30-30 caliber. If it is decided not to bring out this caliber, an early decision will save in the range of $95,000.

Effect of Selling Price on Profit Margin for Rifle and Pistol - Table 2.

This information is based on full book cost and is equivalent to that in the monthly Operative Earnings statement on which individual model performance is judged. The Unit Operative Earnings are essentially independent of changes in the rifle or pistol volume. The burden factors applied to the model costs are dependent on total plant volume (359,000 units) and the effect of a change in pistol or rifle volume is negligible.

Effect of Selling Price and Volume on Payout and Percent Return on Total Capital Required - Figures 1 through 4.

Figures 1 and 2 - For the Pistol and Rifle, Respectively, Based on Marketing Both, With Rifle in Calibers 308, 222, and 30-30 Per Project.

These two figures are essentially straight forward. The volume of sales to recover their Operations and Research charges have been indicated as a measure of the time before the project begins earning a return.

Pricing the Model 600 faces the problem of cutting into Model 700 ADL sales with the latter's higher profit margin. The operative earnings of the Model 700 ADL based on out-of-pocket costs are about $27.40. The operative earnings of the Model 600 rifle on an out-of-pocket cost basis are:

Retail Selling Price	Operative Earnings (Based On Out-of-Pocket Costs)
$ 85	$ 16.
$ 95	$ 21.
$105	$ 26.
$115	$ 31.

Figure 3 - For The Rifle, Based on Marketing the Pistol and Rifle, With Rifle in Calibers 308 and 222 only.

This information indicates the effect of abandoning the caliber 30-30. The project expenditures are the same as in Figure 2 except the Operation and Research charges for the rifle assume only $15,000 expended for the caliber 30-30 before abandoning it.

As an illustration, the project is based on selling 9,000 a year caliber 308 and 222 and 6,000 a year caliber 30-30. If the Model 600 is priced at $95.00 retail, the percent return on total capital required from Figure 2 would be 27%. If it is assumed the caliber 30-30 is not marketed and only 9,000 caliber 308 and 222 would be sold, Figure 3 indicates the percent return on total capital required would be 25%.

Figure 4 - For The Pistol, Based on Marketing the Pistol Only.

In view of the pricing problem on the Model 600, this information shows the effect of not marketing the Model 600. The Permanent

Investment includes all the new equipment used for the pistol if the rifle is not marketed. Any equipment purchased for the rifle which could be profitably used for other models has not been charged against the pistol. The Operations and Research charges to be recovered include those for the pistol and those already spent for the caliber 308, 222 and 30-30 rifle.

The tabulation below is based on Figure 4 and shows the volume and selling price relationship for the pistol to earn 20% return on the total capital required if the rifle is not marketed.

XP-100 PISTOL VOLUME	RETAIL SELLING PRICE FOR 20% RETURN ON TOTAL CAPITAL REQUIRED
3,000	$130.00
5,000	$107.50
10,000	$ 91.50

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PROJECT AD-XP-700-2
XP-100 PISTOL AND M-600 RIFLE
COMPARISON OF ORIGINAL & CURRENT THIRD YEAR ECONOMICS BASED ON PROJECT SELLING PRICES
OUT OF POCKET COST BASIS

6 | 183.0 / 30.50 82
9 | 2630. / 29.22

	Original Project				Present Estimate At Project Selling Prices			
	XP-100 Pistol	M-600 Rifle 308 222	M-600 Rifle 30-30*	Total	XP-100 Pistol	M-600 Rifle 308 222	M-600 Rifle 30-30	Total
Quantity	3,000	15,000		18,000	3,000	9,000	6,000	18,000
Retail Selling Price	$75.00	$85.00			$75.00	$85.00	$85.00	
Net Selling Price	$40.37	$45.74			$40.37	$45.74	$45.74	
Net Sales	$ 121M	$ 686M		$ 807M	$ 121M	$ 412M	$ 274M	$ 807M
Cost Of Goods	73M	408M		481M	90M	263M	183M	$ 536M
Operative Earnings	$ 48M	$ 278M		$ 326M	$ 31M	$ 149M	$ 91M	$ 271M
Net Earnings	$ 22M**	$ 125M**		$ 147M**	$ 13M	$ 68M	$ 41M	$ 122M
Investment								
Permanent (Allocated)	$ 79M	$ 101M		$ 180M	$ 85M	$ 88M	$ -	$ 173M
Working Capital	82M	399M		481M	83M	249M	170M	502M
Total Capital Required	$ 161M	$ 500M		$ 661M	$ 168M	$ 337M	$ 170M	$ 675M
Percent Return On Total Capital Required	14%	25%		22%	8%	20%	24%	18%
Operations & Research Costs	$ 215M			$ 215M	$ 222M			$ 222M
308 & 222		$ 228M		$ 228M		$ 233M		233M
30-30		49M		49M			110M	110M
Total Project Cost (Permanent Investment and Operations and Research Costs)	$ 294M	$ 378M		$ 672M	$ 307M	$ 321M	$ 110M	$ 738M

Table 1.

* Production cost assumed same as .308 and .222
** Adjusted for 6% All Other Expense Rate Instead of 8% In Effect When Original Project Was Prepared.

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R2532245

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PROJECT AD-XP-700-2
EFFECT OF SELLING PRICE ON PROFIT MARGIN OF
XP-100 PISTOL AND MODEL 600 RIFLE
FULL BOOK COST BASIS
UNIT COST DATA PER M&S ESTIMATES OF JANUARY 16, 1963

	XP-100 PISTOL			
Retail Selling Price	$75.00 *	$85.00	$95.00	$105.00
Net Selling Price	40.37	45.74	51.13	56.51
Cost of Goods				
Full Factory	39.00	39.00	39.00	39.00
Selling & Adm.	3.84	4.35	4.86	5.37
Research	1.21	1.37	1.53	1.70
Total	$44.05	$44.72	$45.39	$ 46.07
Unit Operative Earnings	(3.68)	1.02	5.74	10.44
% Of Net Selling	(9%)	2%	11%	18%

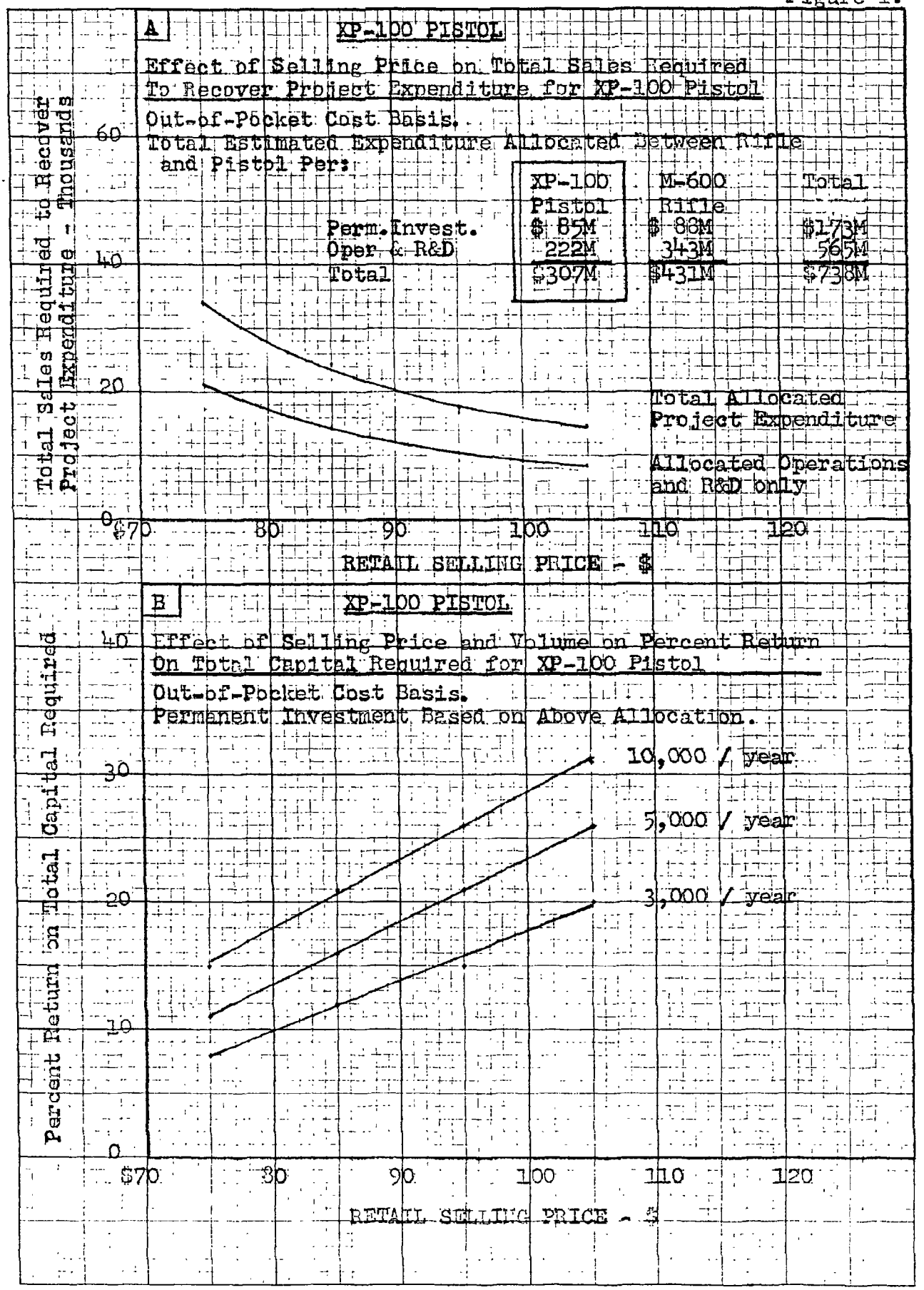
	MODEL 600 RIFLE							
Retail Selling Price	$85.00 *		$95.00		$105.00		$115.00	
Net Selling Price	45.74		51.13		56.51		61.90	
Caliber	308 222	30-30	308 222	30-30	308 222	30-30	308 222	30-30
Cost of Goods								
Full Factory	$39.70	$42.40	$39.70	$42.40	$39.70	$42.40	$39.70	$42.40
Selling & Adm.	4.35	4.35	4.86	4.86	5.37	5.37	5.88	5.88
Research	1.37	1.37	1.53	1.53	1.70	1.70	1.86	1.86
Total	$45.42	$48.12	$46.09	$48.79	$46.77	$49.47	$47.44	$50.14
Unit Operative Earnings	.32	(2.38)	5.04	2.34	9.74	7.04	14.46	11.76
% Of Net Selling	-	(5%)	10%	5%	17%	12%	23%	19%

* Retail selling price used in Project.

Table 2.

BARBER - PRESALE R 0131258
R2532246

Figure 1.



K+E 10 X 10 TO THE INCH 359-5DG KEUFFEL & ESSER CO. MADE IN U.S.A.

Figure 2.

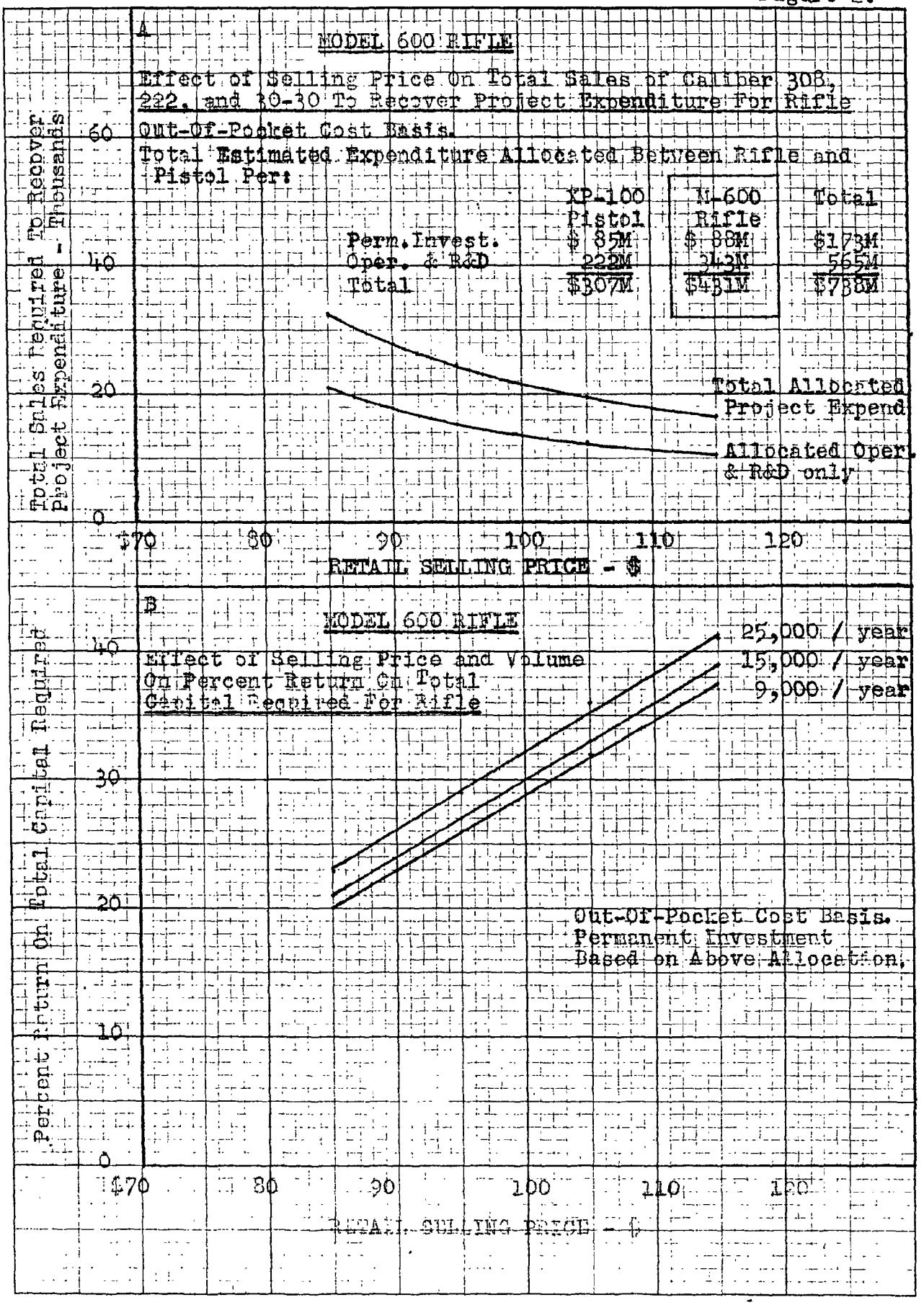
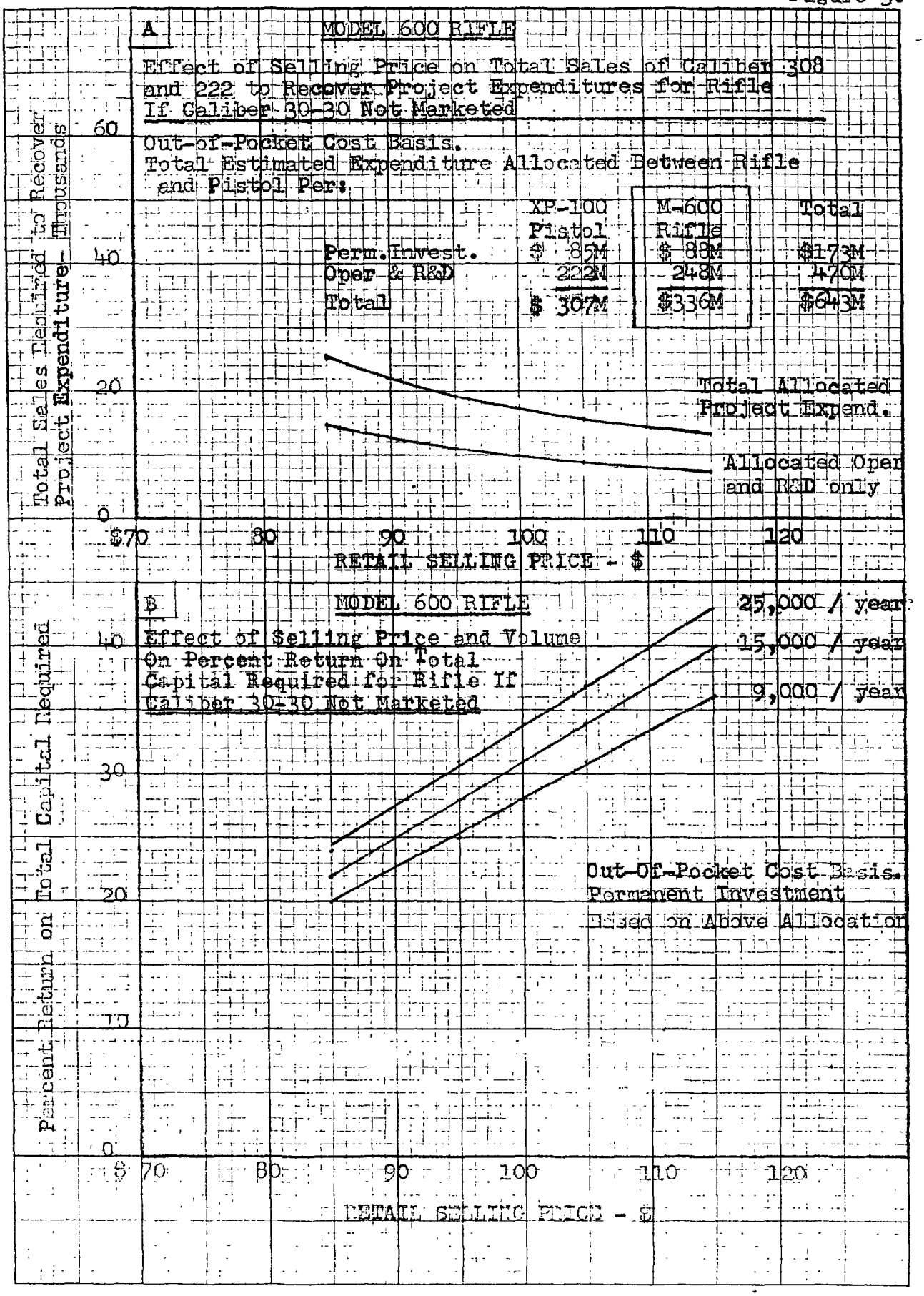
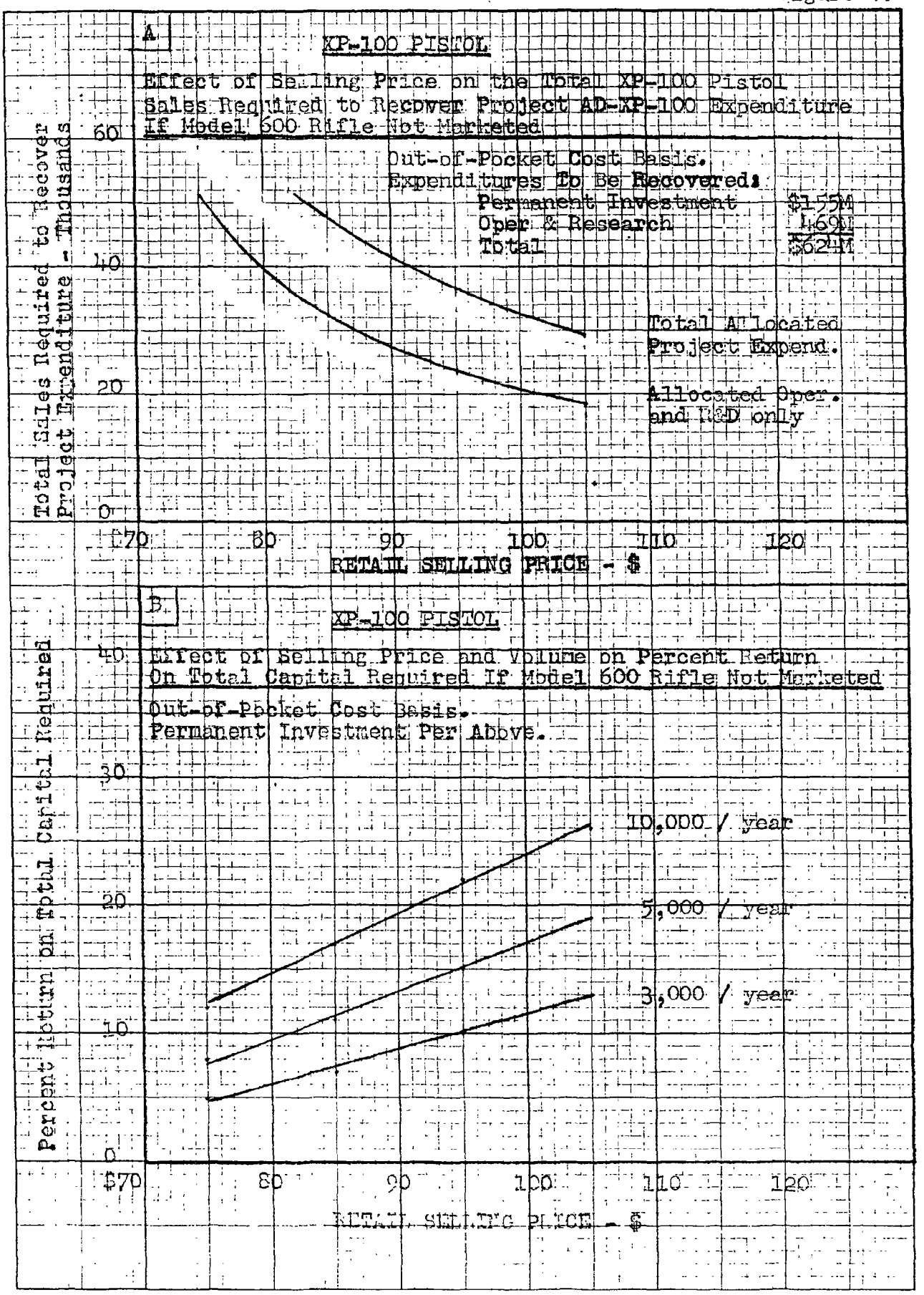

A
MODEL 600 RIFLE
Effect of Selling Price On Total Sales of Caliber 308, 222, and 30-30 To Recover Project Expenditure For Rifle
Out-Of-Pocket Cost Basis.
Total Estimated Expenditure Allocated Between Rifle and Pistol Per:
XP-100 Pistol
M-600 Rifle
Total
Perm. Invest. $ 85M $ 88M $173M
Oper. & R&D 222M 343M 565M
Total $307M $431M $738M
Total Allocated Project Expend
Allocated Oper. & R&D only
Total Sales Required To Recover Project Expenditure - Thousands
60
40
20
0
$70
80
90
100
110
120
RETAIL SELLING PRICE - $
B
MODEL 600 RIFLE
Effect of Selling Price and Volume On Percent Return On Total Capital Required For Rifle
25,000 / year
15,000 / year
9,000 / year
Out-Of-Pocket Cost Basis.
Permanent Investment Based on Above Allocation.
Percent Return On Total Capital Required
40
30
20
10
0
$70
80
90
100
110
120
RETAIL SELLING PRICE - $

Figure 3.



K+E 10 X 10 TO THE INCH 359-5DG KEUFFEL & ESSER CO. MADE IN U.S.A.

Figure 4.



K+E 10 X 10 TO THE INCH 359-5DG KEUFFEL & ESSER CO. MADE IN U.S.A.

PROPOSAL

J. G. TILP, INC.

MOLDS

COMPRESSION · INJECTION · TRANSFER

Remington Arms
Ilion, N.Y.

Attention of Mr. Schroeder Date March 21, 1962

Gentlemen: We propose to furnish the following, subject to the conditions on the reverse side hereof:

1 - 4 Cavity Injection mold to produce trigger guard	$11,400.00
(Price includes adjustment for fit)	

Terms - same as last
25% with order
25% - 1/2 finished
25% - on Delivery
25% - Approval of Samples

We can make shipment after receipt of your order.

Terms F.O.B. our plant.

The conditions and statements on the reverse side of this sheet are to be considered as express covenants and undertakings included as of the essence of any contract accepted by us based upon your order submitted to us in pursuance of and in accordance with this proposal

Please [illegible] this proposal on your order

J. G. TILP, INC.

By

PROPOSAL

2033

J. G. TILP, INC.

MOLDS

Compression · Injection · Transfer

MILLTOWN ROAD, UNION, N. J.

Phone MUrdock 6-7307

Remington Arms
Ilion, New York

Attention of Mr. Schrader

Date March 21, 1962

Gentlemen: *We propose to furnish the following, subject to the conditions on* the reverse side hereof:

1- 2 Cavity injection mold to produce fore-and tip spacer $1,700.00

Terms - same as last
25% - with order
25% - 1/2 finished
25% - on delivery
25% - Approval of Samples

We can make shipment end of June after receipt of your order.

Terms .. F.O.B. our plant.

The conditions and statements on the reverse side of this sheet are to be considered as express covenants and undertakings included as of the essence of any contract accepted by us based upon your order submitted to us in pursuance of and in accordance with this proposal.

Please refer to and insert the serial number of this proposal on your order.

J. G. TILP, INC.

By

PROPOSAL

No. [illegible]

J. G. TILP, INC.

MOLDS

[illegible] ROAD, UNION, N.J.

Phone MUrdock [illegible]

[illegible]

Attention of Mr. [illegible] Date March 21, 1960

Gentlemen: We propose to furnish the following, subject to the conditions on the reverse side hereof:

1 - 4 Cavity Injection mold to produce curved grip diamond $1,900.00
(Watson Stillman Split Bar)

Terms - Same as last
25% - with order
25% - 1/2 Finished
25% - On Delivery
25% - Approval of Samples

We can make shipment End of June after receipt of your order.

Terms..... F.O.B. our plant.

The conditions and statements on the reverse side of this sheet are to be considered as express covenants and undertakings included as of the essence of any contract accepted by us based upon your order submitted to us in pursuance of and in accordance with this proposal.

Please refer to and include the serial number of this proposal on your order.

J. G. TILP, INC.

By Karl Oehner

COMPANY CONFIDENTIAL

cc: M. R. Warden
H. K. Faulkner
G. M. Calhoun
Gail Evans
D. E. Miller
S. M. Alvis

January 31, 1962

R. H. COLEMAN
ASSISTANT GENERAL MANAGER

XP-700 PISTOL - PRICING INFORMATION

The following information is supplied in response to your request for additional data to use in pricing the new XP-700 pistol. The marketing information on competitive hand guns, their features and selling prices, that you also asked for is being prepared by the Sales Department.

Table 1A attached tabulates the total number of pistols that would have to be sold at different selling prices to recover both the total project expenditure and also the operations and R&D charges only for the XP-700 pistol. The latter is of interest since these costs must be recovered before any return can be realized. This information is plotted in Figure 1A. For purposes of the analysis, the permanent investment in the project for equipment to be used by both the XC-13 rifle and XP-700 pistol was split equally between them. This is reasonable to do because the investment would be made in behalf of each to get into production, independent of volume. R&D and operations charges were allocated to the rifle and pistol on the basis of the expense for each.

Table 1B indicates the effect of selling price and average annual volume on the return on the total capital required for the pistol, total capital required being the sum of permanent investment and working capital. The permanent investment for the pistol was allocated to it as described above. The working capital was based on that required for the pistol in the project, adjusted for various pistol volumes and selling prices. The project was based on $75 selling price, with first year volume of 5,000 and third year volume of 3,000. The indicated third year return for the pistol is 13.2%. The low return on the pistol is being offset by that on the rifle, based on the combined third year return in the project of 21.8%. An analysis of the third year return for both the rifle and pistol is tabulated in Table 2 for comparison.

Please advise if there is any additional information we can supply.

REMINGTON ARMS COMPANY, INC.

D. E. Miller
Works Manager

By L. D. Cox
L. D. Cox
Modernization Coordinator

LDC:ms

Table 1.

1A. XP-700 PISTOL

EFFECT OF SELLING PRICE ON TOTAL SALES REQUIRED TO RECOVER TOTAL PROJECT EXPENDITURE

Cash Basis
Total Project Expenditure From Project AD-XP-700 Allocated Between Rifle and Pistol Per:

	XC-13 RIFLE $	XP-700 PISTOL $	TOTAL $
Perm. Invest.	101200	79100	180300
Oper. & R&D	276800	214600	491400
Total	378000	293700	671700

Retail Selling Price	$ 75.-	$ 85.-	$ 95.-	$105.-
Net Selling Price	40.37	45.74	51.11	56.52
Factory Cost	23.49	23.49	23.49	23.49
Cash In-Flow*	8.43	10.79	13.15	15.53
Total Sales Required To Recover:				
Total Project Expenditure**	38,000	29,800	24,400	20,700
Operations and R&D Costs	28,700	22,400	18,400	15,600

1B. XP-700 PISTOL

EFFECT OF SELLING PRICE AND VOLUME ON PERCENT RETURN ON TOTAL CAPITAL REQUIRED

Cash Basis
Permanent Investment From Project AD-XP700 Allocated Between Rifle and Pistol Per Above:
Working Capital Based On Project AD-XP700, Adjusted For Various Volumes & Selling Prices

Retail Selling Price	$ 75.-	$ 85.-	$ 95.-	$105.-
Percent Return On Total Capital Required At Average Annual Sales Volume of:				
3000/year	13.2%	17.2%	21.1%	24.8%
5000/year	17.1%	22.0%	26.7%	31.2%
10000/year	21.6%	27.4%	32.9%	38.1%

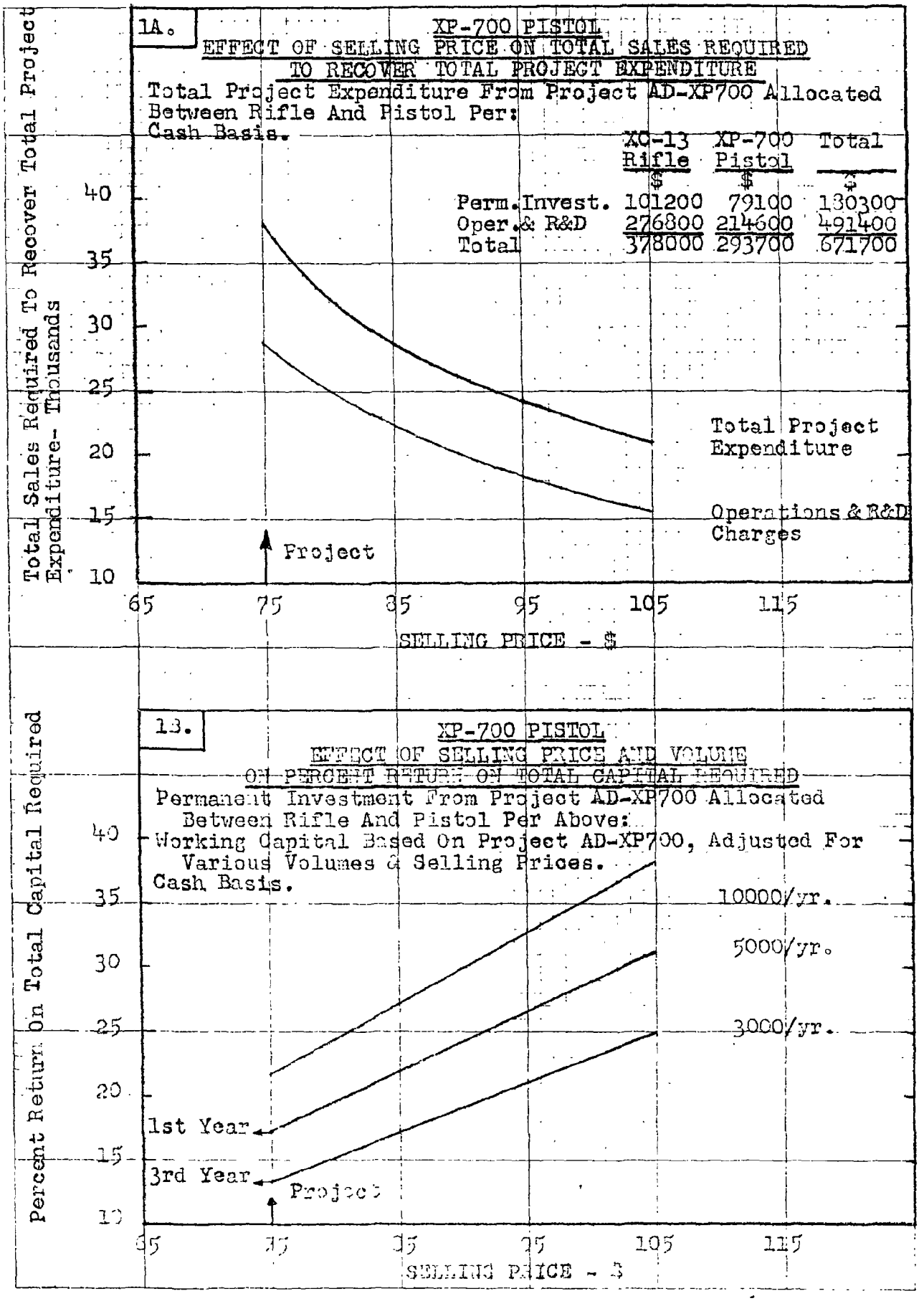
*Net Earnings Plus Depreciation Accrual For New Equipment.
**Provides For Recovery of $27,600 For Vendor Tooling Not Normally Included In Project Expenditure.

Table 2.

XP-700 PISTOL AND XC-13 RIFLE
COMPARISON OF THIRD YEAR ECONOMICS
ALL DATA BASED ON PROJECT AD-XP700,
CASH BASIS.

	XP-700 PISTOL	XC-13 RIFLE	TOTAL
QUANTITY	3000	15000	-
NET SALES	$121,100	$686,100	$807,200
Less Cost of Goods Sold	72,700	407,800	480,500
OPERATIVE EARNINGS	48,400	278,300	326,700
NET EARNINGS AFTER FEDERAL TAX AND ALL OTHER EXPENSES	21,300	123,000	144,300
INVESTMENT			
Permanent Investment	79,100	101,200	180,300
Working Capital	82,300	398,700	481,000
TOTAL CAPITAL REQUIRED	$161,400	$499,900	$661,300
RETURN ON TOTAL CAPITAL REQUIRED (POSITION A)	13.2%	24.6%	21.8%

Figure 1


1A.
XP-700 PISTOL
EFFECT OF SELLING PRICE ON TOTAL SALES REQUIRED
TO RECOVER TOTAL PROJECT EXPENDITURE
Total Project Expenditure From Project AD-XP700 Allocated
Between Rifle And Pistol Per:
Cash Basis.
XC-13 Rifle $
XP-700 Pistol $
Total $
Perm. Invest. 101200 79100 180300
Oper. & R&D 276800 214600 491400
Total 378000 293700 671700
Total Sales Required To Recover Total Project Expenditure- Thousands
40
35
30
25
20
15
10
Total Project Expenditure
Operations & R&D Charges
Project
65
75
85
95
105
115
SELLING PRICE - $
1B.
XP-700 PISTOL
EFFECT OF SELLING PRICE AND VOLUME
ON PERCENT RETURN ON TOTAL CAPITAL REQUIRED
Permanent Investment From Project AD-XP700 Allocated
Between Rifle And Pistol Per Above:
Working Capital Based On Project AD-XP700, Adjusted For
Various Volumes & Selling Prices.
Cash Basis.
Percent Return On Total Capital Required
40
35
30
25
20
15
10
10000/yr.
5000/yr.
3000/yr.
1st Year
3rd Year
Project
65
75
85
95
105
115
SELLING PRICE - $

COMPANY CONFIDENTIAL

cc: M. R. Warden
H. K. Faulkner
G. M. Calhoun
Gail Evans
D. E. Miller
S. M. Alvis

January 31, 1962

R. H. COLEMAN
ASSISTANT GENERAL MANAGER

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The following information is supplied in response to your request for additional data to use in pricing the new XP-700 pistol. The marketing information on competitive hand guns, their features and selling prices, that you also asked for is being prepared by the Sales Department.

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Table 1B indicates the effect of selling price and average annual volume on the return on the total capital required for the pistol, total capital required being the sum of permanent investment and working capital. The permanent investment for the pistol was allocated to it as described above. The working capital was based on that required for the pistol in the project, adjusted for various pistol volumes and selling prices. The project was based on $75 selling price, with first year volume of 5,000 and third year volume of 3,000. The indicated third year return for the pistol is 13.2%. The low return on the pistol is being offset by that on the rifle, based on the combined third year return in the project of 21.8%. An analysis of the third year return for both the rifle and pistol is tabulated in Table 2 for comparison.

Please advise if there is any additional information we can supply.

REMINGTON ARMS COMPANY, INC.

D. E. Miller
Works Manager

By L. D. Cox
L. D. Cox
Modernization Coordinator

LDC:ms

Table 1.

1A. XP-700 PISTOL

EFFECT OF SELLING PRICE ON TOTAL SALES REQUIRED TO RECOVER TOTAL PROJECT EXPENDITURE

Cash Basis
Total Project Expenditure From Project AD-XP-700 Allocated Between Rifle and Pistol Per:

	XC-13 RIFLE $	XP-700 PISTOL $	TOTAL $
Perm. Invest.	101200	79100	180300
Oper. & R&D	276800	214600	491400
Total	378000	293700	671700

Retail Selling Price	$ 75.-	$ 85.-	$ 95.-	$105.-
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1B. XP-700 PISTOL

EFFECT OF SELLING PRICE AND VOLUME ON PERCENT RETURN ON TOTAL CAPITAL REQUIRED

Cash Basis
Permanent Investment From Project AD-XP700 Allocated Between Rifle and Pistol Per Above:
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Retail Selling Price	$ 75.-	$ 85.-	$ 95.-	$105.-
Percent Return On Total Capital Required At Average Annual Sales Volume of:				
3000/year	13.2%	17.2%	21.1%	24.8%
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**Provides For Recovery of $27,600 For Vendor Tooling Not Normally Included In Project Expenditure.

Table 2.

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COMPARISON OF THIRD YEAR ECONOMICS
ALL DATA BASED ON PROJECT AD-XP700,
CASH BASIS.

	XP-700 PISTOL	XC-13 RIFLE	TOTAL
QUANTITY	3000	15000	-
NET SALES	$121,100	$686,100	$807,200
Less Cost of Goods Sold	72,700	407,800	480,500
OPERATIVE EARNINGS	48,400	278,300	326,700
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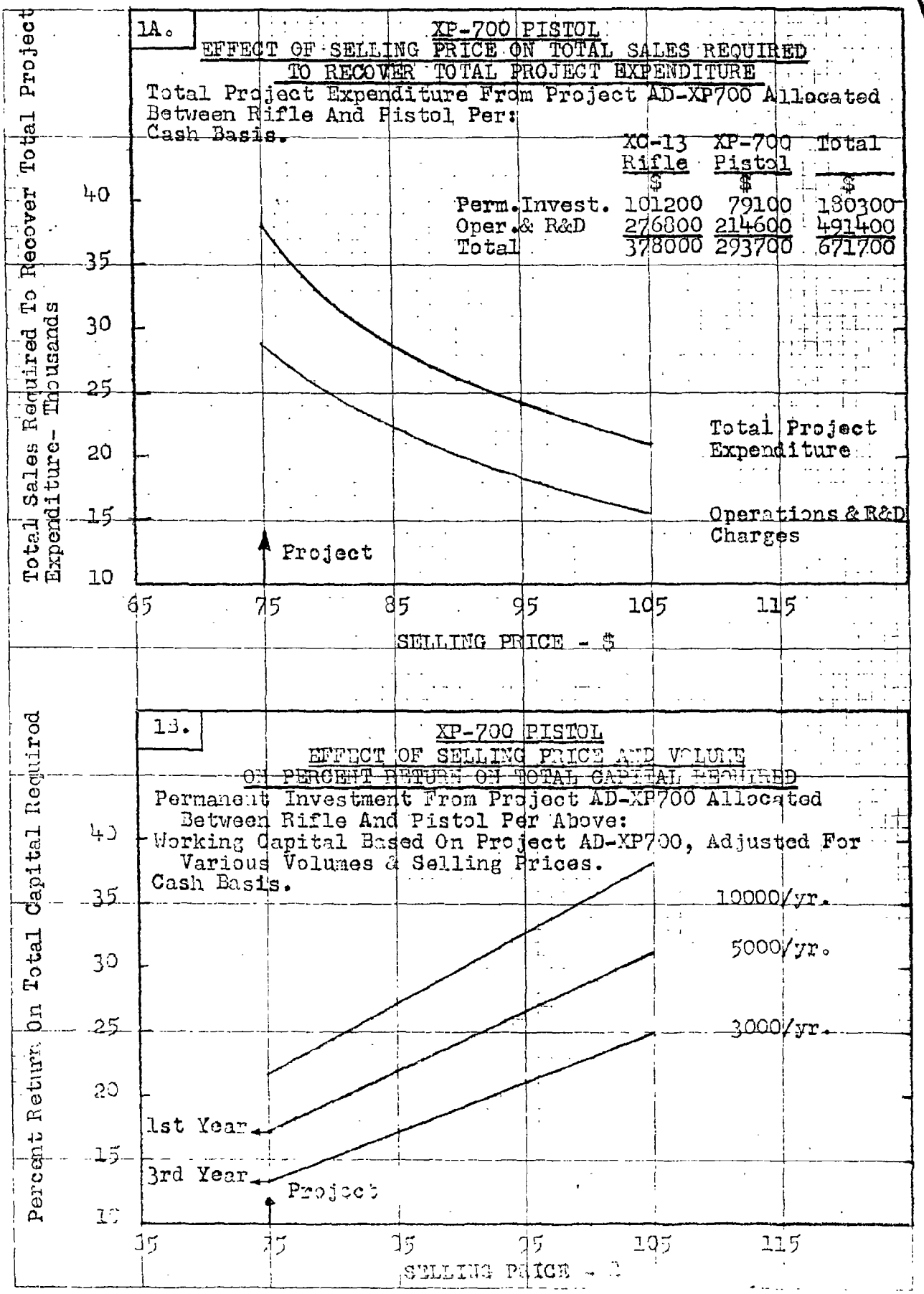
Figure 1


1A.
XP-700 PISTOL
EFFECT OF SELLING PRICE ON TOTAL SALES REQUIRED
TO RECOVER TOTAL PROJECT EXPENDITURE
Total Project Expenditure From Project AD-XP700 Allocated
Between Rifle And Pistol Per:
Cash Basis.
XC-13 Rifle $
XP-700 Pistol $
Total $
Perm. Invest. 101200 79100 180300
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Total Project Expenditure
Operations & R&D Charges
Project
Total Sales Required To Recover Total Project Expenditure- Thousands
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SELLING PRICE - $
1B.
XP-700 PISTOL
EFFECT OF SELLING PRICE AND VOLUME
ON PERCENT RETURN ON TOTAL CAPITAL REQUIRED
Permanent Investment From Project AD-XP700 Allocated
Between Rifle And Pistol Per Above:
Working Capital Based On Project AD-XP700, Adjusted For
Various Volumes & Selling Prices.
Cash Basis.
10000/yr.
5000/yr.
3000/yr.
1st Year
3rd Year
Project
Percent Return On Total Capital Required
40
35
30
25
20
15
105
115

G-46-A

ENGINEERING COMPUTATION SHEET

~~NOV 1 6 1961~~ SHEET No. 4 of 4

DEC 28 1961

TITLE OF PROJ. OR STUDY: m/xP-700 Pistol and XC-13 Rifle

PROJ. OR STUDY NO.

SUBJECT: Receiver

WORK BY

COMPUTER: L.C.S. DATE: Nov. 8, 1961

Oper. No.	Operation Name	Design	Build	Remarks
28.	Drill scope screw holes, etc. (Continued)			
	4. Drill gas escape hole			m/xP-700/XC-13
	1/8" drill			H.U. 7.21/7.22
	Plug gage - go .124 dia.			H.U. 8.50002-2
	5. Drill front and rear guard screw hole			m/xC-13 only
	2 Spindle-multiple head		500.00	New
	Plug gage - Front .216/.212			H.U. 8.50604-W
	Plug gage - Rear (Size ?)	10.00	25.00	New
34.	Form mill ejection port - Crosswise	m/xP700 - XC13		Quantity 2/2 Rifle and Pistol
	Fixture - (Alterations)	25.00	75.00	H.U. E-50605
	Cutter - Interlocking form	40.00	125.00	New
	Arbor - Standard	-	-	Standard
	Dial base gage	280.00	500.00	New
	1. Swing dial - Pos. 1.930			
	2. Dial check .435 depth			
	Plug gage - 2.650/2.630	15.00	45.00	New
36.	Profile inside edge ejection port - Top and side			
	[Removed operation and Special machine requirement entirely 12-28-61 L.C.S.]			
		318.00	1270.00	

SAVE TIME—USE THE STANDARDS

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

ENGINEERING COMPUTATION SHEET

Sheet No. 5 of 17

Title of Proj. or Study: w/ XP700 Pistol - XC13 Rifle

Proj. or Study No.

Subject: Receiver

Works

Computer: L. C. Schafer

Date: Nov. 14, 61

Oper. No.	Operation Name	Design	Build	Remarks.
40.	Profile magazine slot	XC13 only.		360° profiler
	1/4" end mills	–	–	A.U. Stan. 700
	Fixtures (4) New clamps	40.00	200.00	Alter E-51498.
	Template	–	–	A.U. B-51521
	Plug gage - .545/.535	–	–	A.U. - B-80007-1
	Plug gage - 2.944/2.936	–	–	A.U. - A-51294-1
	Base gage - position	12.00	40.00	Alter D-50221
	Base gage - Centrality	–	–	A.U. D-50716
44.	Profile magazine recess and burr	XC13 only.		360° profiler
	13/32" end mills	–	–	A.U. w/ 700
	Template (w/ 700)	–	–	E-51498-1
	Fixture (4)	–	–	See oper. 40
	Plug gage - Ten 2.944/2.936	–	–	A.U. C-54525
	Base gage - Concentricity	–	–	A.U. D-50716
	Base gage - Depth	–	–	A.U. D-84543
	Base gage - Position	–	–	A.U. D-50221
48.	Hand mill finger clearance top of ejection port	w/ XP-700 - XC13		Nichols handi
	End mill - .375 dia.	–	5.00	Standard
	Fixture	150.00	500.00	New
	Gage position side-close Arbor and plug ga. [Reinstated 12-28-61 L.C.S.]	15.00	50.00	New
		217.00	795.00	

ENGINEERING DU PONT COMPUTATION SHEET

NOV 17 1961

SHEET NO. IV-1/IV

TITLE OF PROJ. OR STUDY: M/ XP700 Pistol XC13 Rifle

PROJ. OR STUDY NO. DEC 28 1961

SUBJECT: Receiver

WORK #

COMPUTER: L. C. Stuart DATE: Nov. 15-61 19

Oper. No.	Operation Name	Design	Build	Remarks
188	Finish polish and Chamfer H.U. 700 Series.	XP700	XC13	
19v	Finish polish radius two sides on top H.U. 700 Series oper. 188	XP700	XC13	
196	Vibrator Polish H.U. 700 Series oper 188-1	XP-700	XC13	
200	Remove Chips H.U. 700 Series			
204	Hand tap barrel hole H.U. 700 Series Oper. 195	XP-700	XC13	
	Total page 12	—	—	
	" " 11	60.00	260.00	
	" " 10	12.30.00	8190.00	
	" " 9	980.00	2930.00	
	" " 8	1570.00	4550.00	
	" " 7	261.00	3445.00	
	" " 6	1805.00	5245.00	
	" " 5	217.00	795.00	
	" " 4	318.00	1270.00	✓
	" " 3	350.00	1000.00	
	" " 2	170.00	560.00	
	" " 1	110.00	360.00	
	Total Both models	7074.00	28,605.00	✓
	Total XC13 only	6530.00	22,440.00	✓
	Total XP700 only	6931.00	27,600.00	✓

Ilion, New York
December 28, 1961

G. M. CALHOUN
BRIDGEPORT

MODELS XP-700 and XC-13
PISTOL - RIFLE COMBINATION

This is with regard to the high spot estimate as discussed with H.K. Faulkner during his visit and also with you by telephone today.

Am enclosing the spread sheets which were prepared by Roberts and DeReus and which also show summaries. I am also enclosing another spread sheet showing comparison of mold cost by models. In addition I have asked John Roberts to prepare a summary of total expenditures for various significant projects in recent years.

In connection with the XP-700 - XC-13 estimate, there are several significant items for which you desired additional information. For example, the total for standard machines and equipment amounts to some $165,900. This has been made up on basis of what the engineers think would be needed in the light of present and expected machine loads, and also anticipating some needed replacements. At the same time will place the Plant in better position from standpoint of efficiency needed to gain desired lower product cost. For example, there is I believe in the range of some $85,500 in proposed new Eqpt. ~~change~~ for wood stock. The present equipment is considered to be in generally worn out condition, and it is considered unwise to attempt to retool for another model. In addition it would be not nearly as efficient as proposed equipment which includes a number of ideas gained from Plant study of machines incidental to the M14 investigation.

It is understood that should this equipment be purchased it would also benefit the proposed M/700 production job. It may then very well include some write-off and perhaps might logically come out of the machine depreciation fund.

The estimate for machines and equipment also includes provision for a new Mattison grinder in amount of some $30,000 which would be used for 3 operations. Because of the continued undesirable experience of the salt bleed-out in powder metal, the designers

BARBER - PRESALE R 0131278

have favored this part being machined from bar stock until the problem is overcome. However, V.G. DeReus points out that we still have to grind the sear block for the pistol, hence would have need of a new grinder. Believe that we have disposed of some of the old Mathison grinders and at present with the proposed additional models and operations there would result question of ~~design~~ capacity.

V.G. DeReus also points out that this is still a high spot estimate and Methods & Standards had not yet had opportunity to fully check out all capacities for the different operations. Hence it is entirely possible that there would be some adjustments. The machinery and equipment total also includes some $16,000 to take care of hi-line checkering on the wood stock.

S. M. Alvis
Ilion Research Division

SMA:T

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131278 R2532266

Remington Arms Company, Inc.
Ilion Research Division

Allow 11,000
Test - 31,100

COMPARATIVE TOTAL PROJECT EXPENDITURES

Nylon 66	$ 654,691	(Includes $89,700 Vendor Tools)
Nylon 76 (Est.)	343,400	
*M/700 (Est.)	149,200	(Includes $28,200 Vendor Tools)
M/552-572	1,126,891	
M/58	639,474	
N-11 - N-12	332,700	
Est. XP-700 & XC-13	699,100	(Includes $53,100 Vendor Tools)
M/68 (Est.)	831,300	(Includes $48,000 Vendor Tools)

*Expect to require an addition in range of $35,000 for changes made since project was written.

SMA:T
12-28-61

P. E. & C. ESTIMATE

~~[illegible]~~ RP Kelly
W E Leete RA Morris

TO: H. S. Hackman

XP-722

ESTIMATED BY: [illegible] - V Gale Kelly

MODEL Bolt Action CF Pistol PROJECT NO. DATE 6/9/61

PROJECT TITLE High spot estimate for 222 caliber pistol based on using M/722 Receiver machinery and equipment for machining misc components.

	HOURS	RATE	TOTAL
PROCESS ENGINEERING & TRIAL RUN			20 000
TOOL DESIGN FIXTURES - GAGES			24 000
TOOLING FIXTURES - GAGES		Nylon	31 000
			108 000
TOOL DESIGN — PERISHABLE TOOLS			2000
TOOL DESIGN REVISIONS			7500
PERISHABLE TOOLING		Powder metal	9000
			3000
TOOL REVISIONS		Nylon 15%	4600
		1500 hr + 30%	40000
TOOL REVISIONS - PERISHABLE		15%	1400
TESTING			2000
ADMINISTRATION			500
~~VENDOR TOOLING COSTS (DIES ETC.)~~ Std			67 000
Rem mach			25 000
VENDOR TOOLING NOT REMINGTON PROPERTY			22500
SUB TOTAL			362500
CONTINGENCIES			36500
			399000
			29000
			428000

COMMENTS
Pilot Operations 5,000
Mach Chg + Additions 2,000
Pilot Bldg 20,000
Component Chg 2000

MODEL XP-100

Patents & Markings

CC: W. E. Leek
F. E. Morgan

Bridgeport, Connecticut
January 20, 1964

S. M. ALVIS, ILION

The Design Application on the XP-100 has now issued in Canada. In order to prevent losing this patent, we must now mark on XP-100's going into Canada as follows, "Rd. 1963".

In other cases such as this we have put this marking on a piece of tape applied to the gun. I would suggest that this same procedure be used on the XP-100's.

J. W. Phipps
BH

JOHN W. PHIPPS,
Associate Patent Attorney.

JWP/BH

40.8 and D-1472 Canada

cc: G.M. Calhoun
R.A. Williamson-C.B. Putney
H. J. Hackman
W.A. Brown - Bpt.
W.E. Leek
~~G.W. Stephen~~ - File

Ilion, New York
October 23, 1963

F. E. MORGAN
Bridgeport

MARKINGS - SERIAL NUMBERS ON BOLTS - Models XP-100, 600, 700, 40X

Quite some time ago we received through G.M. Calhoun a Bridgeport Suggestion No. 3315 P proposing improvement for marking serial numbers on bolts. As you may know, these are presently marked with electric pencil and are considered necessary for matching with the action after heading. The present marking is probably done "free hand" and therefore no "thing of beauty", but is more or less concealed unless the bolt is removed from the rifle.

Nick Niles submitted the suggestion as an improvement befitting the quality of our product. There seem to be no technical questions involved; however, we proceeded to "carry the ball" in order to arrive at an answer. R&D people along with several in Plant Engineering are of opinion that this might be done without any added cost. However, we now have a formal estimate from the Ilion Plant Methods & Standards which indicates a full book cost of some $.03 per gun, or $1,640/year based on No. 4 Sales Forecast of 54,674 guns. We do not have any way of justifying this.

It seems more appropriate for you to take a look at this on next trip and handle directly with Ilion Plant if appears to be the thing to do. I am enclosing the file for your use.

S. M. Alvis
Ilion Research Division

SMA:T
Encl.

BARBER - PRESALE R 0131284

G88—Rem.

DON'T SAY IT—WRITE IT

TO WAYNE LEEK, ILION

DATE APRIL 29, 1963

FROM JOHN W. PHIPPS

HERE IS THE ASSIGNMENT COPY FOR THE DESIGN OF THE XP-100 PISTOL. PLEASE HAVE THIS SIGNED AND EXECUTED AND RETURNED TO ME AS SOON AS POSSIBLE.

Notarized 5/7/63 (G Eastham)
& returned to Phipps

THE BEST BARGAIN IS A USED SAFETY RULE

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131284 R2532272

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington DU PONT

cc: G. M. Calhoun

Bridgeport, Connecticut,
March 29, 1963.

TO: WAYNE E. LEEK, Ilion

FROM: JOHN W. PHIPPS

SUBJECT: DESIGN PATENT APPLICATION
Docket No. 1472
XP-100 PISTOL

I am sending you an application for the Design of the XP-100 Pistol.

Would you please sign where indicated and obtain the signature of the other two inventors, Howard L. Chambers and Andrew Slaboc. As you can see, signatures are needed on Page 2 which is headed "Specification and Claims" and again on Page 3, headed "Oath".

Please be sure and have the signatures notarized on Page 3 where indicated.

I would appreciate your attending to this as soon as possible so that we may file the application.

Jack

JOHN W. PHIPPS,
Associate Patent Attorney.

JWP/MLH
Encls.

D-1472

copies made for Finance for Technical Info

Ilion, New York
March 29, 1963

J. W. PHIPPS
Bridgeport

MODEL XP-100
INVENTIONS REPORT DATA

Rib

The nylon rib is so designed that it will float on projected studs welded to the barrel. The height of the rib is approximately .005" above the height of the studs. The rib is screwed to the studs. To prevent creepage from taking place in the nylon under load the nylon would then be compressed .005", and after that point is reached the nylon would not be subjected to further load, thus eliminating creep. In the meantime, with elongated slots designed into the nylon rib, as expansion and contraction takes place the rib will not change shape nor deform but will float on the studs.

The sights, although apparently mounted on top of the rib, rest directly on top of the studs. Therefore, in this area the nylon is not under constant load and the sighting would take place directly through the studs on the barrel.

Inertia Weight (See attachment)

Inertia weight was installed in the fire control mechanism to counterbalance the additional weight from the linkage which was necessary to connect the forward trigger to the fire control. This inertia weight functions only when the gun is dropped, and reduces the chances of accidental firing.

Grip

The grip of the stock is so designed that it will accommodate a left or right hand shooter. The contour is shaped so that the bottom saddle of the grip will support the heel and lower section of the hand. Grooves at the top of the grip on both right and left sides are the same but will support both the forefinger and the thumb. This support overlaps the top of the thumb and forefinger, which allows the shooter to balance the stock by supporting it on the upper top section of this part of his hand.

All of these elements are necessary for proper firing of the pistol and greatly reduces the effect of flinching.

Sights

The front sight is basically the N-66 sight. The rear sight is constructed of 3 basic parts and 4 screws. Two screws hold the base in position on the pistol, a third holds the eyepiece in position, but through an elongated slot which allows for adjustment for linkage. The side screw is for elevation.

Nylon Detent Safety

The basic problem in the M/721 safety mechanism was that through usage the hardened steel ball would wear a groove into the soft steel housing and reduce the spring load on the ball detent. After considerable use the safety would not function too easily. In the XP-100 the steel ball was replaced with a nylon ball. Being softer it does not wear a groove into the soft steel housing and after several thousand cycles has proved to be satisfactory and allows a constant tension of the spring over this extended usage. By the nature of nylon against metal it also provides a more silent functioning safety, which is most desirable when hunting.

W. E. Leek
Chief Designer - Firearms
Ilion Research Division

WEL:T
Attach.

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Inertia Weight

Expand on detent & trigger

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Grip Continued

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BARBER - PRESALE R 0131290

Nylon Detent Safety Continued

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WELeek:T

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131290 R2532278

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

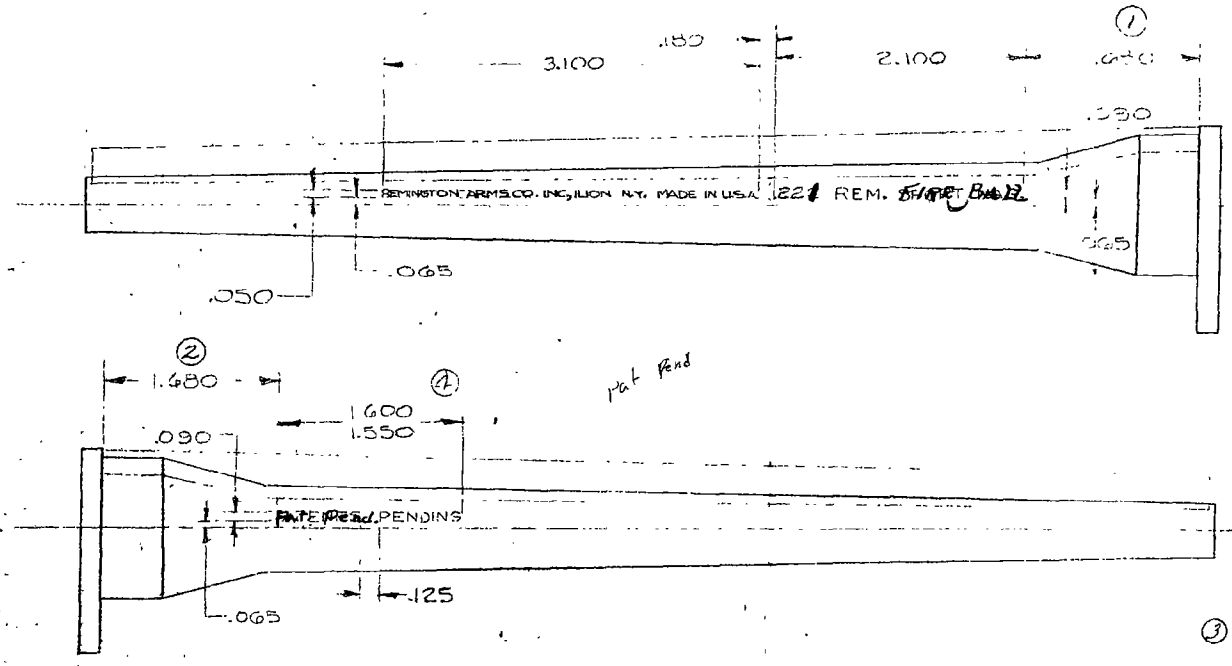
BARBER - PRESALE R 0131291

B-15486

DO NOT SCALE THIS DRAWING WORK TO FIGURES
UNLESS OTHERWISE NOTED TOLERANCES
ON DECIMAL DIMENSIONS ARE ± .005
& ON FRACTIONAL DIMENSIONS ± 1/64
& ON ANGULAR DIMENSIONS ± 00°-30'
FINISHES ARE DESIGNATED BY ROOT MEAN SQUARE (R.M.S.) MICRO-INCH ROUGHNESS VALUES AND ARE THE MAXIMUM ROUGHNESS ACCEPTABLE UNLESS OTHERWISE SPECIFIED FINISH ROUGHNESS TO BE 125 OR BETTER

ALTERATIONS

LET	WAS	REFERENCE	BY	DA
1	1.480	4570	HC	3-15
2	1.480	4570	HC	3-19
3	XP-700	4570	HC	3-19
4	ADDED	4570	HC	3-19



NOTE:
DIMENSIONS ARE TO OUTSIDE EDGE OF IMPRESSION

APPROVED FOR MARKING

FOR SALES:

FOR Legal:

XP-100	BARREL MARKING		
MODEL	PART USE	QUAN.	SEE
DES'D BY DATE	DRAWN BY DATE HC 1-11-61	CHECK BY DATE	APPR. BY DATE WL 2/27/63
TITLE BARREL MARKING			
NUMBER B-15486	SCALE FULL	SUPERSEDES—REFERENCE	
	REMINGTON ARMS CO. INC. RESEARCH & DEV. DEPT.		

TPR-1 REV.2

R2532279

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington
DU PONT

cc: Gail Evans
G. M. Calhoun
W. E. Leek, Ilion

Bridgeport, Connecticut,
April 16, 1962.

File Patents

TO: S. M. ALVIS, Ilion

FROM: JOHN W. PHIPPS

SUBJECT: MODEL XP-100 PISTOL - BARREL MARKING

Drawing No. B-15486 attached to your letter of April 5, 1962, to J. H. Lewis, Jr., has been reviewed.

The proposed barrel marking shown in the print as revised April 4, 1962, is approved.

John W. Phipps

JWP/MLH
40.8

JOHN W. PHIPPS,
Associate Patent Attorney.

cc: Gail Evans
G.M. Calhoun
~~W.E. Leek~~ - File

Ilion, New York
April 5, 1962

J. H. LEWIS, JR.
BRIDGEPORT

MODEL XP-100 PISTOL - BARREL MARKING

Attached hereto is one print of Dwg. B-15486 dated 1/11/61 as revised 4/5/62. This drawing shows the cartridge designation which we understand has been proposed by the Sales Department and we already have the approval of Gail Evans.

Would appreciate having approval of your office in order to release this drawing to the Plant.

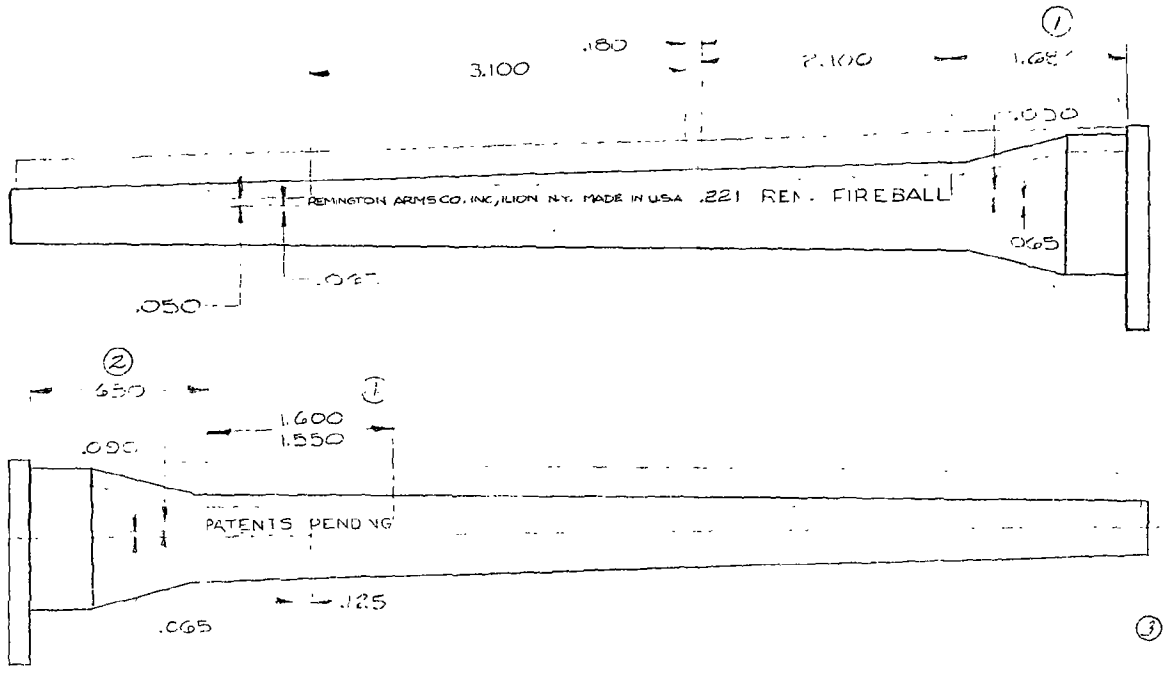
S. M. Alvis
Ilion Research Division

SMA:T
Attach.

BARBER - PRESALE R-0131294

UNLESS OTHERWISE NOTED, TOLLRANCES
ON DECIMAL DIMENSIONS ARE ± .005
& ON FRACTIONAL DIMENSIONS ± 1/64
& ON ANGULAR DIMENSIONS ± 00°-30'
FINISHES ARE DESIGNATED BY ROOT MEAN SQUARE (R.M.S.) MICRO-INCH ROUGHNESS VALUES AND ARE THE MAXIMUM ROUGHNESS ACCEPTABLE UNLESS OTHERWISE SPECIFIED FINISH ROUGHNESS TO BE 125 V OR BETTER

LET	WAS	REFERENCE	BY	DATE
1	1.480	4570	H.L.	3-19-62
2	1.480	4570	H.L.	3-19-62
3	XP-700	4570	H.L.	3-19-62
4	ADDED	4570	H.L.	3-19-62
5	222 REM SHORT MAG.	4636	H.L.	3-5-62



NOTE.
DIMENSIONS ARE TO OUTSIDE EDGE OF IMPRESSION

3

MODEL	PART USE	QUAN	SEE
XP-700	BARREL MARKING		

DES'D BY DATE	DRAWN BY DATE	CHECK BY DATE	APPR BY DATE
	H.L. 1-11-61		WL 2/27/62

TIT BARREL MARKING

NUMBER	SCALE	SUPERSEDES—REFERENCE
B-15486	FULL	

REMINGTON ARMS CO. INC.
RESEARCH & DEV. DEPT

RE-2

B-15486

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131294 R2532282

Ilion, New York
March 19, 1962

G. M. CALHOUN (2)
BRIDGEPORT

JOHN L. BOUDREAU PISTOL

The following is a high spot estimate of cost for the facilities and manufacturing of the 22 Caliber autoloading pistol based on adapting a design from the inventor's sample. It is understood that there is an alternate design for adapting center fire calibers; however, details were not available to be included in this estimate.

Std. Labor	$ 5.25	Std. Material	$ 6.81
Labor Variance	1.31	Material Variance	.34
Burden 280%	14.70		$ 7.15
	$21.26		
		$ 28.41	
Plant Overhead		7.10	
Inventory Adjustment		.36	
Factory Cost (Hi-Spot)		$ 35.87	

For 30% Profit Retail Selling $115.00 (Estimate)

Estimated Project Expenditures

Design	$ 50,000	
Model Making	30,000	
Design Testing	8,000	
Development - P.M.	2,000	
Eng. - Folders, C.of O., Stds.	4,000	
Process Eng. & Trial Gun	21,000	
Pilot Lot Testing	2,000	
Tooling	300,000	(Includes vendor tooling - approx. $50,000)
Production Aids	5,000	
Machine Alterations	5,000	
Pilot Lot Mfg.	8,000	
Machine Rearrangement	5,000	
Component Obsolescence	1,000	
Provision for Advancing Wages & Material Costs	59,000	
TOTAL	$ 500,000	

The sample Boudreau pistol is what might be described as a definitive model and there were no drawings available. The basic features are described in letter report of December 13, 1961 to you from J.H. Lewis, Jr., and we are attaching hereto copy of preliminary report of W.E. Leek dated December 20, 1961.

There appears to be no relationship between any of the parts in this pistol as regards to interchangeability between parts or operations presently available at Ilion. This will necessarily impose a greater burden from standpoint of cost to integrate into our line.

In appraising the design it was necessary to assume feasibility of redesigning each of the various parts or assemblies in such a way as to be compatible with practical manufacturing methods. Otherwise the estimate would have been completely out of line and prohibitive in cost. The estimated total expenditures were developed based on comparisons with projects involving component parts of similar complexities. It is considered to be conservative and subject to adjustments of plus 25% or minus 10%. The total expenditures do not include estimated cost for any machinery. It was necessary that we avoid this since subject to so many different variations depending upon available capacities and the like. At the same time Plant personnel was not available on such short notice to assist because of priority work on the new shotgun.

The estimated manufacturing cost should also be considered as conservative and subject to the same degree of adjustment factors as described for project cost. It was calculated on the basis of cost comparisons with parts of similar complexities and number of operations on which we have available current cost information. It also assumes a reasonable degree of simplification being possible.

It was noted from Mr. Lewis' report that the inventor mentioned having quotes for die castings at 80¢ each, with an estimated die cost of about $18,000. It is assumed that this refers to the three basic frame parts that go to make up a single assembly. The average unit piece price for these parts would not be too far off at 80¢ each, or $2.40 material cost for a set of three pieces. However, based upon our actual cost experience for vendor tooling, it would seem that the mold cost is low and would have to be increased by about at least a factor of 3. The cost of these die castings would of course be only for the blanks and require subsequent finishing operations, as we now do for the rim fire rifle receivers and die cast trigger plates.

There is another matter which concerns us with regard to proposed die casting of these frames. The experience at Ilion continues

BARBER - PRESALE R 0131297

to be with respect to die casting quality. Just at present plans are being made to abandon the die cast front sights on the Nylon 66 Rifle because of porosity. I believe that our trigger plates and die cast receivers are still for the most part finished with a black enamel because of the porosity problem. The acceptability of this type of finish for a pistol frame will need to be considered.

It is my opinion that the indicated cost of this hand gun would be out of line to be competitive, and since would have to be completely redesigned to adapt for manufacture, it is questionable as to whether or not the price being asked by the inventor could be justified. It would also require perhaps a longer time for development and permit "starting from scratch".

Historically, Remington's experience with outside designs has not been good, even during periods of low labor cost. They have always required a considerable number of refinements to be made ready for manufacture, and I believe in practically all cases it has been necessary to engage the personal services of the inventor to work with or as a designer as the development proceeds towards the manufactured product. This usually adds further expense and creates additional problems from standpoint of integrating into an existing design and manufacturing structure. I think it would be a mistake to try to develop a completely different design into our firearms line unless there is sufficient merit and had adequate potential to justify an entirely separate program, not only of design but of manufacture.

It was good for all of us to review this pistol; however, it is my opinion and shared by others here at Ilion that it would not offer a profit potential in its present form. And may involve very serious problems in attempt to redesign for manufacture.

S. M. Alvis
Ilion Research Division

SMA:T
Attach.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131297

Ilion, New York
March 19, 1962

G. M. CALHOUN (2)
BRIDGEPORT

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BARBER - PRESALE R 0131299

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CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131299

BARBER - PRESALE R 0131300

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S. M. Alvis
Ilion Research Division

SMA:T
Attach.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131300

Thanks

(1) File 3/14

(2) S.M. Alvis

Ilion, New York
December 20, 1961

J. H. LEWIS, JR.
BRIDGEPORT

NEW AUTOMATIC PISTOL DESIGN
John L. Boudreau

I read with interest your letter and report of December 13th concerning Mr. Boudreau's design, and must admit his demonstration and mechanism were very intriguing. Of course, we will have to agree that the system used to prevent muzzle jump was in accord with what we have been experimenting and discussing with G.M. Calhoun, S.M. Alvis and you for quite some time. Specifically, I am referring to the underwater fish gun which you no doubt remember.

You will recall several years ago we were investigating an underwater gun and we discovered that none of the existing types (which included pneumatic, spring, rubber bands and cartridge power) would fire a spear accurately beyond approximately 5 feet under water. It did not take long to discover the difficulty because the movement problem flipped the spear, the water being such a barrier for resistance to the movement of the object to cause immediate deflection of the spear at right angles.

Our first model was a 514 bolt action version 22 rim fire cartridge design and the upward moment problem was quite apparent until we redesigned the grip section and allowed the recoil forces to move rearwardly in the same plane with the resistance of the shooting arm. The results with this principle were astounding as we were able to get 5 shots in a 6" circle at 30 ft. under water using a drill rod spear.

This same principle to a certain extent was used on the Nylon 66 Rifle with higher sight mountings with respect to center line of the bore designed in this rifle, with result that less muzzle jump will be noted. In recent discussion with Tom Frye, who broke the world's record with the Nylon 66 Rifle, he remarked how quickly he could return the sights on the target after the first shot was fired. This is because of the fact there is much less jump and requires less sighting adjustment in rapid fire shooting.

This principle has also been used to some extent on various military weapons; Armalite being a good example, and also recent design of the LMR demonstrates this principle. It has been noted that Mr. Boudreau refers to this principle in several of his patent claims

BARBER - PRESALE R 0131302

The rotary box feed is not new but in this particular case I think is quite novel, and allows him in his design to camouflage the styling in such a manner that the pistol has a rather conventional look but permits him to interject some of his ideas without interference to appearance. It is my personal feeling that the idea as presented is not new but if Remington is interested in promoting this design and wants to accept it, the basic expenditure of $35,000 is not excessive, providing our production department can produce to his design specifications, and since we have found here that it would cost approximately that much money to develop a new rifle or pistol as a basic design, exclusive of additional funds for processing, tooling, etc.. I am not in a position to comment on royalty or royalty rate fees.

With Remington's apparent increasing interest in development and manufacture of handguns it behooves us to consider all of the good aspects of this design as well as others which might affect development. Consideration should be given to initiating a program of investigation for the development of a 22 caliber rim fire semi-automatic pistol based on the Nylon 66 mechanism with molded stock and receiver combination. I do not know whether a principle such as Mr. Boudreau's or that used in the underwater gun could be adapted or used in the Nylon 66; however, this muzzle jump is very important in pistol shooting and should be considered, particularly when the design involves heavier calibers.

W. E. Leek
Firearms Design Section

WEL:T

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131302 R2532290

c/ Messrs. Alvis
Leek

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington
DUPONT

Bridgeport, Connecticut,
December 13, 1961

MR. G. M. CALHOUN,

Subject: VISIT of JOHN L. BOUDREAU

Re: NEW AUTOMATIC PISTOL DESIGN

This letter reports a visit on December 12, 1961, by John L. Boudreau, who exhibited a model of a 22 caliber auto-loading pistol. The design was shown briefly to Wayne Leek and Sam Alvis.

Mr. Boudreau is the inventor of Patent No. 2,899,767, copy attached, covering an earlier version of this same pistol, as well as one other patent for a pistol magazine designed to function with either Short or Long Rifle cases. He signed our usual disclosure agreement.

Both of the pistol designs have in common the low placed barrel, top mounted magazine and grip at a much more pronounced angle to the frame than usual. The result is a natural pointing weapon with high sight line and with all recoil forces exerted against a locked wrist and in line with the arm. Motion pictures showing firing with 22 caliber, 9 mm Luger, and 45 ACP ammunition show less muzzle jump and disturbance on firing than accompanies firing of the 22 Ruger pistol. A 22 caliber version with 10 shot magazine weighs 20 oz. A 45 or 9 mm complete with loaded 15 round magazine is calculated to weigh 27 ounces, and a sub-machine gun with 12 inch barrel, loaded 30 round magazine and folding shoulder stock, is calculated to weigh 3 pounds.

The original design is illustrated and briefly described on Page 38 of "Guns" magazine, March 1958, in an article entitled "Gun of the Month".

The current design differs from that of the patent principally in the provision of a cylindrical, top mounted 10 round rotary magazine, in the provision of a straight line motion, short stroke striker or "Speed Lock" and in a generally more finished attractive appearance.

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington

DU PONT

MR. G. M. CALL. .,

December 13, 1961

The centerfire pistol also utilizes a top mounted rotary box magazine but of the same length as the barrel and with cartridges disposed in a spiral arrangement. The centerfire pistols utilize a fixed breech with a "blow forward" barrel utilizing an integral gas piston working in a cylinder in the frame to assist the "blow forward" action.

The sub-machine gun is an elongated version of the centerfire pistol, with both barrel and rotary box magazine stretched out to accommodate 30 rounds in the magazine, and is provided with a folding shoulder stock.

At least two other patent applications are pending, relating to the rotary box magazine and to the "blow forward" centerfire pistol.

Mr. Boudreau is a recognized expert as a pistolsmith, and used to do many "accuracy" jobs. As a pistol shooter he is classified as a "Life Master" and was 9th in National tryouts for the '48 Olympics. He is the designer of Ruger's best target pistol. He has been working on this design since about 1948.

The 22 pistol model has three principal aluminum frame components which were all machined but which are adaptable to die casting. Mr. Boudreau has quotes for the die castings @ 80¢ each, with an estimated die cost of about $18,000. With some modification, it looks like the frame could be adapted to Nylon construction. Although the mechanism was not disassembled, such parts as could be inspected were not of complicated form, and the design could probably be readily manufactured.

Mr. Boudreau hopes to sell this design for a fixed fee adequate to cover his development and patent expense with a royalty on sales and a guaranteed minimum. For negotiating purposes, he mentioned a fixed fee of $35,000, a minimum royalty of $5,000 per year, and a royalty rate of 5%. If his rotary magazine design were used on a rifle, he would expect a royalty of 2% on the price of the magazine alone.

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington

DU PONT

December 13, 1961

MR. G. M. CALHOUN,

Mr. Boudreau's address is:

655 Short Beach Road,
Stratford, Connecticut.

He can be reached through an "in-law's" phone - DR 8-1181, where messages may be left for him.

Your recommendations are requested.

My own feeling is that these designs merit serious consideration if we are interested in getting into the pistol business, for they are new and different and offer a degree of accuracy, particularly for the relatively inexperienced pistol shot, which cannot be achieved by any other means.

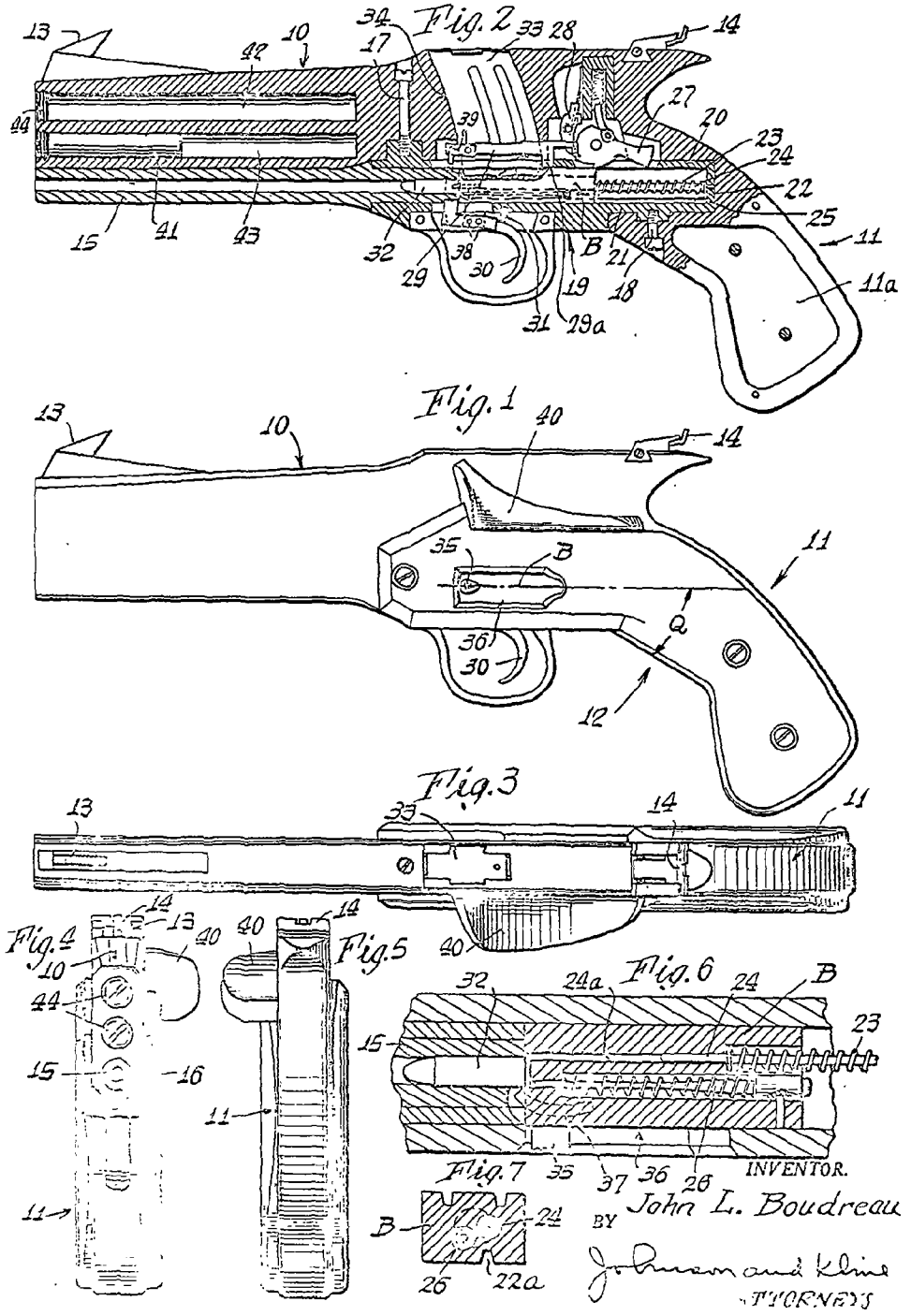
JHL'RMM

JOHN H. LEWIS, Jr.,
Patent Attorney

Aug. 18, 1959 J. L. BOUDREAU 2,899,767

PISTOL WITH GRIP FORMING AN ANGLE OF 31° WITH FRAME

Filed Feb. 29, 1956 2 Sheets-Sheet 1

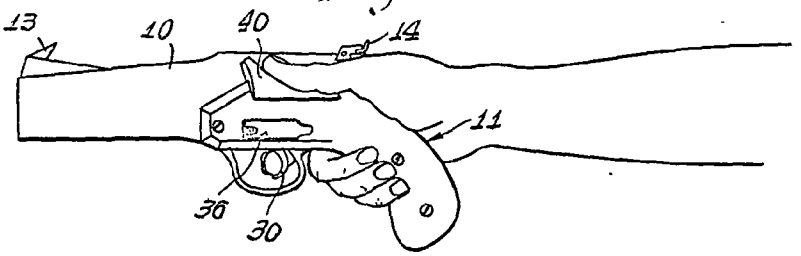


Aug. 18, 1959 J. L. BOUDREAU 2,899,767

PISTOL WITH GRIP FORMING AN ANGLE OF 31° WITH FRAME

Filed Feb. 29, 1956 2 Sheets-Sheet 2

Fig. 8



INVENTOR.
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ATTORNEYS

United States Patent Office

2,899,767

Patented Aug. 18, 1959

1

2,899,767

PISTOL WITH GRIP FORMING AN ANGLE OF 31° WITH FRAME

John L. Boudreau, Stratford, Conn.

Application February 29, 1956, Serial No. 568,521

8 Claims. (Cl. 42—75)

The present invention relates to an improved pistol design, and more specifically to a construction and arrangement which facilitates the shooting and aiming of the pistol, particularly where a plurality of shots are to be fired in succession.

Heretofore, pistols of the automatic or semi-automatic type have been constructed with the barrel disposed at the top of the frame and a grip depending from the frame at the rear thereof and forming an angle of approximately 55° to the axis of the frame. With this construction the barrel is disposed entirely above the grip and it has been found necessary in sighting and firing the pistol to slightly cock the wrist upwardly. When the pistol is fired in this position the recoil provides a rearward force spaced above the wrist which causes the hand and pistol held therein to rotate upwardly and rearwardly about the wrist, resulting in the lifting of the muzzle. It is, therefore, necessary to return the muzzle to position to aim before firing the next shot. This is time-consuming and certainly a handicap in certain types of target shooting.

In order to reduce the muzzle lifting tendency of the pistol, it has been proposed to make the pistol as heavy as possible and to provide muzzle brakes so as to resist movement to recoil. In some target pistols, for example, weights have been added to hang from the barrel to achieve this result. The weight of such a pistol when held at arm's length in shooting soon fatigues the shooter and renders it more difficult for him to control the pistol during shooting.

The present invention overcomes these difficulties by providing a lightweight pistol so constructed and arranged that it minimizes any tendency for the muzzle to lift and facilitates the handling and shooting of the pistol, particularly where a plurality of shots are fired in succession. This is accomplished by providing a lightweight frame having a depending grip at the rear end thereof having a gripping portion which forms an angle to the axis which is preferably 31°, but it may vary within 10° either side depending upon the type of pistol and the person using it, and by placing the barrel along the lower part of the frame so that the axis of the barrel when extended will pass through the grip intermediate the ends thereof. With this construction it is not necessary to cock the wrist during firing so that a comfortable position is maintained and at the same time the recoil will be along a line passing through the palm of the hand and in line with the forearm of the shooter, thus minimizing any tendency of the recoil to cause rotation of the wrist and lift the muzzle. Since the tendency to lift the muzzle is substantially reduced, the frame and pistol can be made of relatively lightweight material so that the shooter is not fatigued by holding it at extended position and rapid fire can be achieved without the necessity of bringing the muzzle back on the target as was heretofore the case.

A feature of the invention resides in the fact that the magazine is located above the barrel and disposed in the frame of the pistol rendering it more accessible than heretofore when the magazine was included in the grip.

Other features and advantages of the invention will be apparent from the specification and claims when considered in connection with the drawings in which:

Figure 1 is a side elevational view of the pistol.

Fig. 2 is a longitudinal sectional view taken through Fig. 1.

Fig. 3 is a top view of Fig. 1.

Fig. 4 is a front view of Fig. 1.

Fig. 5 is a rear view of Fig. 1.

Fig. 6 is an enlarged detailed sectional view through the breechblock.

Fig. 7 is a transverse sectional view through the breechblock.

Fig. 8 is a view of the pistol held in aiming position.

As shown in the drawings, the present invention comprises an elongate frame 10 having at the rear end thereof a depending grip 11. As illustrated in Fig. 1, the gripping portion 12 of the grip forms an angle with the longitudinal axis of the grip which permits the pistol to be gripped and sighted on a target by means of sights 13, 14, without the necessity of cocking the wrist as is clear from Fig. 8. The angle of the portion 12 is indicated by the inner surface thereof and forms an angle Q with the longitudinal axis of the frame which is preferably 31°. However, this can under some circumstances be varied between 21° and 41°.

Disposed along the undersurface of the frame is the barrel 15 which can be secured to the frame in any suitable manner. As shown, the barrel is disposed in a groove 16 in the frame and is connected to the forward end of the firing mechanism which is secured to the frame by screws 17, 18 or any other suitable means. Any suitable firing mechanism may be employed. As herein illustrated it comprises a housing 19, preferably of steel having lower and upper walls 20, 21 provided with guiding surfaces for slidably receiving a longitudinally movable breechblock B. A key 22 mounted in the keyway 22*a* of the block B maintains it against lateral movement. The breechblock is normally urged to its forward firing position by spring 23 carried by a pin 24 having one end secured to the end 25 of the housing and the other end slidable in a bore 24*a* in the breechblock. The breechblock also carries a firing pin 26 in position to be struck by the spring actuated hammer 27 when the sear 28 is released by the trigger link 29 upon movement of the trigger 30 against the spring 31.

Cartridges 32 may be supplied to the firing chamber in any suitable manner. Preferably they are fed from a magazine carried by the frame and located above the barrel. While the magazine may be of the tubular type carried by the frame in spaced relation to the barrel, it is herein illustrated as a clip 33 removably mounted in a slot 34 opening at the top of the frame and held therein by any suitable means (not shown). Cartridges are fed downwardly into the firing chamber by the usual spring pressed plate (not shown) when the breechblock moves to the rear when the shot is fired. In order to move the breechblock to permit loading of the first cartridge, the breechblock has a fingerpiece 35 projecting laterally through a slot 36 in the side of the pistol. By manually moving the breechblock rearwardly, the space under the magazine is cleared to permit a cartridge to drop into position to be moved by the breechblock under the action of spring 23 into firing position. Also, it will be noticed that movement of the breechblock to the rear will cock the hammer if it is not in cocked position. When the trigger is pulled, the link 29 will move the end of sear forwardly releasing the hammer 27 which will move under the action of its spring and strike the firing pin 26 resulting in the firing of the cartridge. The firing of

the cartridge causes the breechblock to be forced rearwardly against the spring 23 and move the hammer to cocked position. The disconnect cam 29a on the trigger link prevents release of the sear until the trigger has been returned to normal position.

As shown in Fig. 6 the breechblock has an extractor link 37 which engages the rim of the cartridge and as the breechblock moves rearwardly causes the spent cartridge case to be withdrawn or remove a live cartridge in the barrel as desired. When the block has moved a sufficient distance to withdraw the casing, the casing will engage the end of pin 24 which becomes the ejector means to cause the casing to be ejected, upon continued movement of the block through the aperture or slot 36 so that a new cartridge can be fed from the clip and into position to be fired.

It will be noted from Fig. 2 that the extension of the axis of the barrel passes through the grip between the ends thereof and, as indicated in Fig. 8, is located above the three gripping fingers and passes through the palm of the hand and is in line with the forearm. I have found that with the barrel mounted on the frame and the frame elements so arranged as to provide the angular relationship between the grip and frame the tendency for the muzzle to lift is greatly reduced and hence it is unnecessary to make the gun heavy to counteract the tendency toward muzzle lifting. For this reason the frame and grip can be made from magnesium, aluminum, wood, plastic or other lightweight materials or combinations thereof resulting in an overall saving of approximately one-half of the weight normally found in pistols of this type.

A feature of the invention resides in the provision of an adjustable mounting for the trigger whereby its position with respect to the grip can be adjusted to conform to different finger reaches. This is accomplished, as shown in Fig. 2, by providing a plurality of mounting holes 38 in the trigger and similar adjusting apertures 39 connecting the trigger to the trigger link.

If desired, a thumb rest 40 can be positioned on the side of the frame. While this may be adjustably mounted it is herein illustrated as being fixed to the frame.

The pistol of the present invention is normally so balanced and arranged that there is no substantial tendency for the muzzle to lift during the firing. However, under some circumstances it might be desired to provide weights for the barrel. This can be accomplished by inserting one or more weights 41 in the frame-lightening bores 42, 43 formed in the frame. Preferably, this is done by removing one or both of the threaded closure plugs 44 and replacing it with the weight having a threaded end adapted to be threaded into the bore. Also, weights can be placed in the hollow 11a of the grip, if necessary, to secure proper balance of the pistol.

It will be seen that the present invention provides a lightweight pistol which has increased accuracy due to the substantial elimination of any tendency for the muzzle to lift, is more comfortable to grip and fire since the wrist is in a substantially uncocked position and, due to its light weight, can be more easily handled and does not tire the shooter. Further, it can be fired more quickly and accurately when a plurality of shots are to be in succession since it is unnecessary to return the muzzle to the target because of the elimination of the muzzle lift. While the present invention is extremely effective for target shooting, it is also highly desirable for use in all types of pistols.

Variations and modifications may be made within the scope of the claims and portions of the improvements may be used without others.

I claim:

1. A pistol comprising a lightweight, elongate frame having a trigger, a grip depending from the frame at the rear thereof with the gripping surface of the grip adjacent the trigger forming an angle of between 21° to 41° with the longitudinal axis of the frame, a barrel carried by the lower part of the frame and disposed above the trigger, and a breechblock carrying a firing pin and recoil means mounted on the frame in line with said barrel, said barrel and breechblock being disposed on an axis passing through the grip intermediate the ends thereof, said axis being adapted to be located immediately above the bottom three fingers and passing through the palm of the hand grasping the grip and in line with the forearm.

2. A pistol comprising a frame having a trigger, a grip depending from the rear portion of the frame and having the gripping surface of the grip adjacent the trigger forming an angle of 31° with the longitudinal axis of the frame, a barrel carried by the lower part of the frame and disposed above the trigger and located on an axis passing through the grip intermediate the ends thereof, said axis being adapted to be located immediately above the bottom three fingers and passing through the palm of the hand grasping the grip and in line with the forearm, and means on the frame forwardly of the grip and above the barrel for top loading cartridges to the barrel to be fired therethrough.

3. A pistol comprising a frame having a trigger, a grip depending from the rear portion of the frame and having the gripping surface of the grip adjacent the trigger forming an angle of between 21° to 41° with the longitudinal axis of the frame, a barrel carried by the lower part of the frame and disposed above the trigger and located on an axis passing through the grip intermediate the ends thereof, said axis being adapted to be located immediately above the bottom three fingers and passing through the palm of the hand grasping the grip and in line with the forearm, and a magazine carried by the frame forwardly of the grip and above the barrel to carry and supply a plurality of cartridges to the barrel to be fired therethrough.

4. The invention as defined in claim 3 wherein said magazine comprises a cartridge clip removably mounted in an opening in the top of the frame.

5. A pistol comprising a frame having a trigger, a grip depending from the rear portion of the frame and having the gripping surface of the grip adjacent the trigger forming an angle of between 21° to 41° with the longitudinal axis of the frame, a barrel carried by the lower part of the frame and disposed above the trigger and located on an axis passing through the grip intermediate the ends thereof, said axis being adapted to be located immediately above the bottom three fingers and passing through the palm of the hand grasping the grip and in line with the forearm, a magazine carried by the frame forwardly of the grip and above the barrel to carry and supply a plurality of cartridges to the barrel to be fired therethrough, and an aperture on the side of the frame through which a spent cartridge case may be ejected.

6. A pistol comprising a lightweight, elongate frame having a trigger, a grip depending therefrom at the rear thereof with the gripping surface of the grip adjacent the trigger forming an angle of 31° with the longitudinal axis of the frame, a barrel carried by the lower part of the frame and disposed above the trigger, a breechblock carrying a firing pin and recoil means mounted on the frame in line with said barrel, said barrel and breechblock being disposed on an axis passing through the grip intermediate the ends thereof and located immediately above the bottom three fingers and passing through the palm of the hand grasping the grip and in line with the forearm, a cartridge clip removably mounted in the frame above the firing mechanism and adapted to automatically feed cartridges to said mechanism, and an ejection opening on the side of the pistol to pass the spent cartridge case after the cartridge has been fired.

7. A pistol comprising a frame having a trigger, a grip depending from the rear portion of the frame and having the gripping surface of the grip adjacent the trig-

ger forming an angle of between 21° to 41° with the longitudinal axis of the frame, and a barrel carried by the lower part of the frame, said frame being substantially as long as the barrel and of a height substantially greater than the diameter of the barrel, the upper end of the grip being disposed above the barrel and the barrel being disposed above the trigger and on an axis passing through the grip intermediate the ends thereof, and located immediately above the bottom three fingers and passing through the palm of the hand grasping the grip and in line with the forearm.

8. A pistol comprising a frame having a trigger, a grip depending from the rear portion of the frame and having the gripping surface of the grip adjacent the trigger forming an angle of 31° with the longitudinal axis of the frame, and a barrel carried by the lower part of the frame, said frame being substantially as long as the barrel and of a height substantially greater than the diameter of the barrel, the upper end of the grip being disposed above the barrel and the barrel being disposed above the trigger and on an axis passing through the grip intermediate the ends thereof, and located immediately above the bottom three fingers and passing through

the palm of the hand grasping the grip and in line with the forearm.

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CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

11162

Boudreau Pistol

Hi-Spot Estimate

Std. Labor	$ 5.55	Std. Matl	$ 6.81
Labor Var 25%	1.31	Matl Var 5%	.34
Burden 280%	14.70		
	21.56		7.15
		28.41	
Prod OH. 25%		7.10	
Inv Adj 1%		.36	
Factory Cost (Hi-Spot)		$ 35.87	

For 30% Profit Retail Selling $ 115 Est

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131312

11 x 16½ — 12 columns
With description column

V.G. DeReus
File

Remington Arms Company, Inc.
DETAIL ESTIMATE OF EXPENDITURES
Project No. - Ilion Works

	Authorized	Exp'd to	Requested this Part II	Vendor's tooling	Total Indicated Cost	Contingency
Development						
Investigation					—	
Design					50000	
Model Making					30000	
Design Testing					8000	
Models for Test					—	
Development - P.M.					5000	
Eng.-Folders, C. of O., Stds.					4000	
Product Engineering						
Process Eng. & Trial Run					21000	
Pilot Lot Testing					2000	
Expediting					—	
Tooling					30000	(Includes Vendors' Tooling approx. $5000)
Design						
Fixtures & Gauges						
Molds						
Perishable Tools						
Tool Revisions						
Special Machines					?	
Construction						
Operation						
Tooling					?	
Std. Machines & Equipment						
Production Aids					5000	
Construction						
Operations						
Pilot Operations						
Mach. Alterations					5000	
Pilot Lot Mfg.					8000	
Mach. Rearrangement					5000	
Comp. Obsolescence					1000	
Provision for Advancing Wages and Material Costs					59000	
GRAND TOTAL					500000	

BARBER - PRESALE R 0131312
R2532300

BOUDREAU PISTOL

PARTS LIST ACCORDING TO ASSEMBLY BUILDUP

		L	M
49	Striker retractor	—	12
50	Striker	—	10
51	Slideable ignition unit positioning spring	—	2
52	Slideable ignition unit positioning rod	—	3
53	Sear (spring-type)	4	2
54	Sear slotted cross pivot	—	4
55	Sear lever crosspin	—	1
56	Sear lever	—	4
57	Sear positioning crosspin	—	1
58	Slideable ignition unit locking piece	12	
59	Cocking lever	15	
60	Recoil spring guide fixture	8	
61	Recoil spring guide	8	
62	Recoil spring	4	
63	Grips	28	
64	Grip screw bushing	10	
65	Grip screw (allen)	15	
66	Rear frame screw (allen)	5	
67	Front lug expansion spiral	10	
68	Front lug screw (allen) tapered	—	6
69	Front lug split nut tapered	—	6
70	Front lug crosspin	—	1
71	Magazine shell	10	40
72	Magazine slideable stop	—	4
73	Magazine slideable stop cr (soldered)	—	1
74	Magazine main shaft	—	15
75	Magazine carrier (fluted)	—	2
76	Magazine carrier crosspin	—	2
77	Magazine follower	—	1
78	Magazine follower attachin	—	1
79	Magazine spring	—	1
80	Magazine cover	—	10
81	Magazine cover crosspin (al		3

THE ABOVE PARTS LIST CONTAINS APPR

44 SCREW MACHINE PARTS. 2.68 6.47

Final Assembly (572) .85

Test & Pack (XP100) .13 .09 .34

Sub-assemblies (XP100 Set) 1.50

5.75 6.81

3/16/cv
Kelly
Lenk
Alvi
Ishot

[illegible]DREAU PISTOL

PARTS LIST ACCORDING TO ASSEMBLY BILLS:

		L	M			L	M
1	Middle frame	48	60	25	Trigger return spring	—	2
2	Barrel	25	20	26	Trigger return spring crosspin	—	2
3	Barrel crosspin	—	2	27	Trigger pivot—grooved	—	3
4	Ejector	—	5	28	Trigger stop pin	—	2
5	Ejector crosspin	—	2	29	Adapter — third finger	———	
6	Front frame	30	30	30	Adapter screw (allen)	———	
7	Front sight	4	2	31	Rear Sight windage screw	—	4
8	Front sight crosspin			32	Rear Sight windage screw crosspin	—	1
9	Front frame screw flange	—	8	33	Rear Sight elevation screw	—	4
10	Front frame screw (allen)	—	2	34	Rear Sight leaf	—	20
11	Magazine catch spring	—	2	35	Rear Sight locking screw (allen-tapered)	—	6
12	Magazine catch ball	—	2	36	Rear Sight split nut tapered	—	6
13	Magazine catch plate	—	10	37	Rear Sight threaded half	—	10
14	Rear frame screw flange	—	8	38	Breech block	40	15
15	Rear frame	100	50	39	Firing pin spring	—	2
16	Rear frame buffer	—	8	40	Firing pin	—	4
17	Rear frame buffer crosspin	—	2	41	Recoil firing pin plate	—	4
18	Safety	—	20	42	Recoil firing pin plate crosspin	—	1
19	Safety detent spring	—	1	43	Extractor spring	—	1
20	Safety detent	—	1	44	Extractor plunger	—	2
21	Trigger	6	9	45	Extractor	1	1
22	Automatic disconnector spring	—	2	46	Slideable ignition unit	—	20
23	Automatic disconnector plunger	—	2	47	Striker spring guide (hollow)	—	5
24	Automatic disconnector crosspin	—	2	48	Striker spring	—	2

[illegible] PISTOL

SALES HIGHLIGHTS

Sights in firm relation with barrel; 9 and 3/4 inches radius or 7 inches rapid fire radius; two leafs.

New rear sight; no springs; cannot shoot loose; positive adjustments with simple construction.

Natural grip angle; sights always in view; wrist movement locked out.

No muzzle jump--speeds recovery; straight line recoil

Solid three piece frame assembly; die cast aluminum.

One piece stock, easily assembled, wood or plastic.

Rotary magazine; ease of loading; no cold weather jamming.

Non-lifting barrel; bullet is not delivered from vertically moving barrel.

Speed lock; improves ignition time.

Novel magazine catch; self-centering magazine will rise into sight line in event of feed jam.

1/3 less weight, yet proper balance and low center of gravity.

Self-contained ignition mechanism easily assembled.

Simple, positive hold open catch and safety.

Rotary tremors of arm are around axis of barrel.

Sear design permits crisp trigger let off.

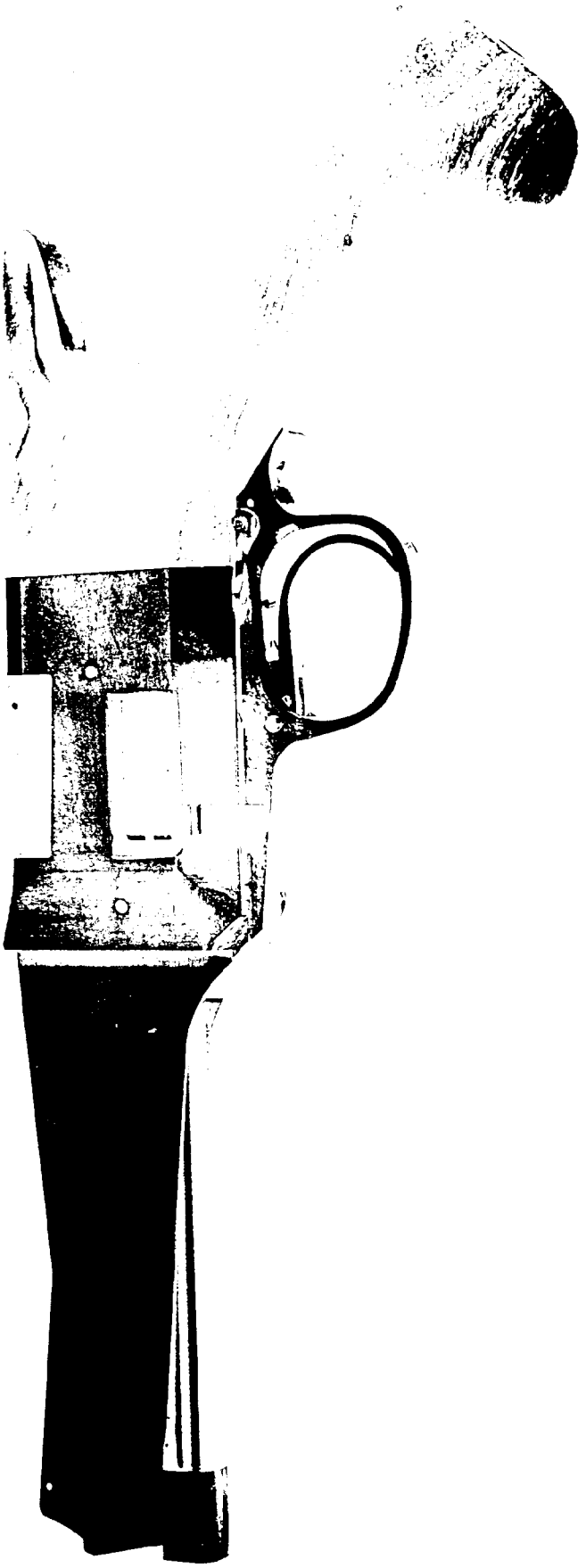
Ignition mechanism design prohibits machinegunning of weapon.

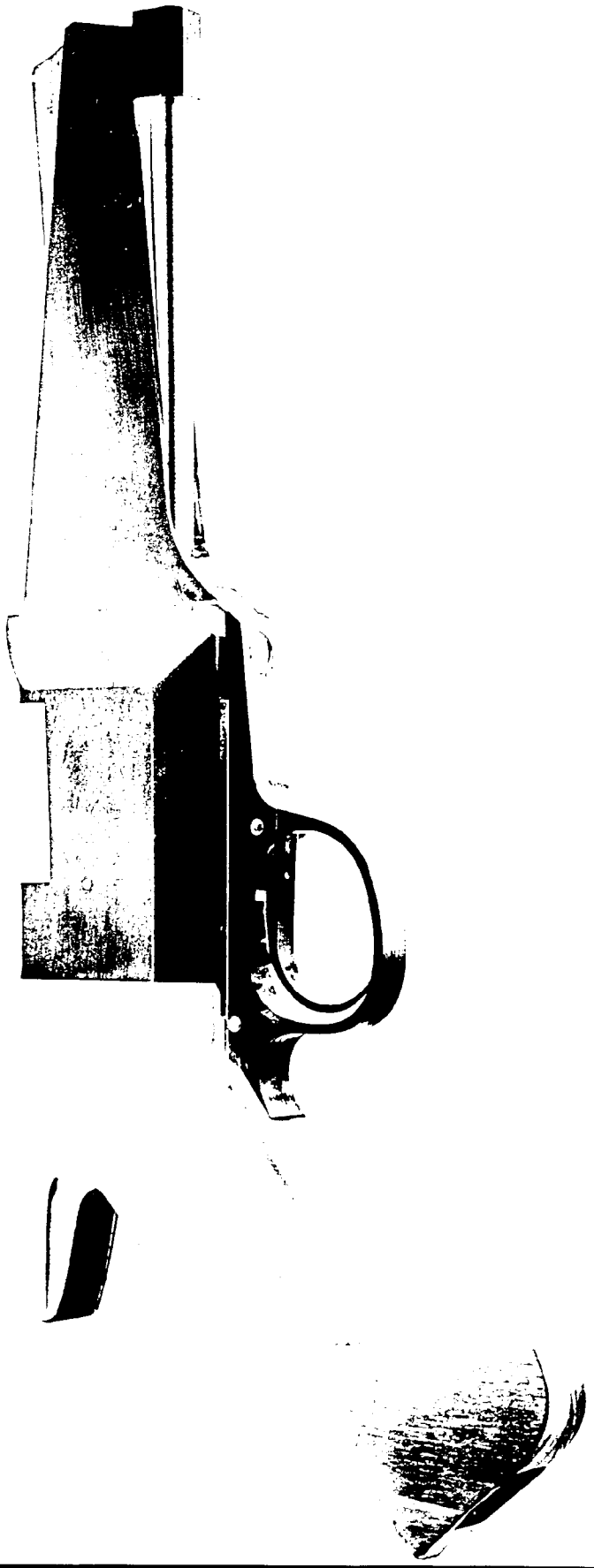
Striker design permits retraction of firing pin after ignition.

Low sight line relative to hand gives less canting motion.

Sear is slideable within breech block and is cushioned against shock by spring-loaded plunger.

Trigger engaging sear either moves sear or not; no problem of returning sear to full engagement if pull is not completed.





SECRET

SUGGESTED MODIFICATIONS

Magazine detent plate should either be threaded or crosspinned to prevent backing out.

Ejector crosspin hole should be moved about 1/8 of an inch to rear to prevent breakout into magazine well.

Rear sight width at expansion joint should be reduced to 7/16 of an inch to enable grips to be removed without having to remove sight each time.

Front sight blade width at sighting notch should be increased to 6/8 of an inch for better silhouette outline.

Recoil spring should have seven or eight turns added for proper tensioning and bushing now used could be eliminated.

All takedown allen screws should be standardized for one key to eliminate various sizes now used.

Positioning rod spring should be one instead of three short springs and this unit should be permanently assembled to prevent possible loss of spring or rod.

Forward surfaces of grip sides could be undercut with a corresponding undercutting of frame edges to give a tighter grip assembly.

Trigger face should be checkered to prevent slipping.

Magazine should have serrations on each side to assist in its removal.

A right hand slot should be provided in breech bolt for cocking lever to enable left handed shooters to more easily cock weapon.

Firing pin recoil plate should be threaded as well as crosspinned to prevent any forward or backward movement after cartridge headspace cut is established.

Grip surfaces should be checkered for better hold.

BOUDREAU PISTOL

SUGGESTED MODIFICATIONS

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4 Rear sight blade width at sighting notch should be increased to 6/8 of an inch for better silhouette outline.

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10 Magazine should have serrations on each side to assist in its removal.

11 A right hand slot should be provided in breech bolt for cocking lever to enable left handed shooters to more easily cock weapon.

12 Firing pin recoil plate should be threaded as well as crosspined to prevent any forward or backward movement after cartridge headspace cut is established.

13 Grip surfaces should be checkered for better hold.

UDREAU PISTOL

LOADING PROCEDURES & GENERAL INFORMATION

TO LOAD: Lock breech open and place ten rounds in magazine; place magazine in weapon with loading assist lever always to rear. Hold back cocking lever and release hold open catch. Let breech block slam forward feeding shell into chamber.

Breech does not stay open on last shot; visually inspect firing chamber and magazine to insure weapon is empty.

Safety catch is operative when turned down to the vertical; gun cannot fire.

Weapon cannot fire out of battery more than 1/32 of an inch if the three short springs are in the striker guide and the positioning rod is in place. In manufacture these parts could be made integral eliminating danger of losing one or more parts out of striker guide.

Cartridges being fed automatically to chamber leave only the slightest mark on the lead projectile---not more than normally incurred in manufacture of cartridges.

Cleaning of breech block face and corresponding frame member is indicated at about every 1,000 rounds or when misfires occur. Grease and carbon build-up start increase in head space.

Magazine has required no cleaning in 3,000 rounds of firing.

Weapon will fire a ten-shot magazine as fast as one can pull the trigger. Fanning has not been attempted. All shell cases have been examined and no unusual signs of swelling have been observed. Excellent groups have been obtained using hard grip, straight arm and head low on shoulder firing as fast as the trigger can be pulled.

If an ejection failure occurs, feed is usually complete! Examine chamber after clearing empty case, or else following shell will be a feed failure due to live round already in chamber. Lift magazine and manually close breech block on live round.

3,014 rounds have been fired through this weapon to date. 1,075 rounds have been fired with the new spring-type sear without a failure. I would like to request a record, or good estimate, of total rounds fired and types of failures encountered to assist in my engineering records.

BOUDREAU PISTOL

PISTOL GENERAL INFORMATION & CAUTIONS

General Information:

1 If magazine becomes difficult to insert, check that ball detent plate has not backed out. If it has, press in with thumb. Plate backs out when action is slammed without magazine in place because it is neither threaded nor crosspinned.

2 Magazine is held together by soft aluminum pin in one side of front cover. To disassemble it will have to be drilled out. Patent drawings can be provided for details of this assembly if required.

3 Windage zero for rear sight is about 1/32 of an inch to the right using edge of frame as index point with edge of sight. Due to machining error in front and rear frame members this condition exists.

4 Use no oil on parts; slightly grease-coat exposed steel surfaces to prevent body acids from causing rust. EXCEPTION--coat end of sear with gunslick where it engages striker bent.

Cautions:

1 The following parts have soft soldered joints, use reasonable care that joints are not broken:

a--magazine lips (Note-- do not drop magazine)
b--magazine loading assist lever--do not wind up and let fly back on empty magazine or joint will be broken at main shaft
c--safety handle--do not force when breech block is held to rear by this catch; relieve tension of breech block before disengaging handle by pulling back on cocking lever--then let breech slam home

2 Be sure positioning rod is 5/8 out of retractor or gun will fire out of battery; three small springs within guide determine proper positioning of rod.

3 Remeber when removing slideable ignition unit from frame that it is always cocked and if the sear is inadvertently tripped, it will fly apart unless controlled. Be careful of eyes.

4 Grips are in two halves, glued together. Be careful of this joint.

5 Do not use hi-speed ammunition. It may jar magazine lip joint apart.

6 Always remove rear sight before attempting to remove grips.

7 No force is required to assemble or disassemble the parts of this weapon. If parts fail to engage, review assembly procedure.

PISTOL GENERAL INFORMATION & CAUTIONS

Cautions:

8 Presentation case will not close if weapon has breech block locked op
Hinges will be damaged if forced.

9 Weapon has been designed around REMINGTON ammunition and functions excellently with it. Certain tolerances may have to be opened to acc other brands.

RD-49 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington DUPONT

F. E. Morgan
W. H. Foster
J. D. Mitchell

Bridgeport, Conn.
March 2, 1962

Send copies to S. M. Alvis, F. E. Morgan, W. H. Foster, J. D. Mitchell. 3/9

(1) Wayne
(2) File Design

XP-100

TO: GAIL EVANS

FROM: J. E. DICKEY

SUBJECT: MODEL DESIGNATIONS - PISTOL AND RIFLE

Reference is made to S. M. Alvis' memorandum to you of February 27, regarding model designations for the XP-700 Pistol and the XC-13 Light Rifle.

It is recognized that we have currently established the 800 Series for shotguns, the 700 Series for center fire rifles, the 500 Series for rim fire rifles, and the 400 Series for powder actuated industrial tools. Admittedly, there are deviations from this principle with the Sportsman 58, the proposed Model 68, and the Nylon series of rim fire rifles. After careful consideration and discussion with F.E. Morgan and W.H. Foster, it is our recommendation that the Light Rifle be designated as Model 600. It is our opinion that with the new Model 700 in its class, we should not detract from the 700 mental image by putting a less expensive rifle in that series of numbers.

Our recommendation for the XP-700 is XP-100. Recognizing the number 700 is already established with our Model 700 rifle, it is believed ill-advised to reuse the number even though it has a different letter prefix. To our knowledge, there is no current use of the 100 Series and we propose that it be used for pistol type firearms.

If this meets with your approval, we suggest that S.M. Alvis be advised accordingly.

JED:M

J.E.D.

RECEIVED
MAR 8 1962
J. E. DICKEY

RECEIVED
MAR 6 1962
OFFICE-GAIL EVANS

Howard C. Please review with me

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington DU PONT

c/ MR. G. M. CALHOUN

Bridgeport, Connecticut,

January 22, 1962

MR. S. M. ALVIS,

Thank you for your Speedimemo, dated 1/19/62, forwarding copies of the drawings showing barrel and receiver markings for the XP-700 pistol.

We expect to file a design patent application to cover the outside appearance but have deferred doing anything on it until Wayne could provide photographs of a finished pistol in a nylon stock.

We also think it likely that we will file an application to cover the inertia gimmick to prevent drop firing.

Although not essential, we believe it would be desirable to plan to mark the barrel on the other side "Patent Pending".

JHL'RMM

JOHN H. LEWIS, Jr. By RMM
Patent Attorney

cc: H.L. Chambers
~~W.E. Leek~~
File
In Turn

Ilion, New York
January 24, 1962

V. G. DE REUS

MODEL XP-700
Caliber 222 Rem. Short Magnum - Chamber Drawing

Attached is copy of DWG. LA-503 as chambered for the XP-700 pistol barrel. Although this caliber has not been established by Bridgeport, it would seem satisfactory to proceed with any preliminary work that might otherwise be delayed awaiting final clearances.

Additional copies of the drawing may be obtained from Howard Chambers, and the Design Group has advised that reamer tooling for making of the model barrels will be available to Production. This was made by altering the regular 222 reamers. It is very likely a similar idea may be used for preparing the gauges.

S. M. Alvis
Ilion Research Division

SMA:T

c/ Messrs. ~~Alvis~~
Leek
Nash

RD-49 REV 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington

File XP-700

Bridgeport, Connecticut,
January 3, 1962

MR. G. M. CALHOUN,

Subject: BOUDREAU Pistol

This memorandum reports follow-up phone calls by Mr. Boudreau on December 21, 1961 and January 3, 1962. He will call again about January 9th.

I told Mr. Boudreau there were some Remington people who were quite interested in his design and others who had little if any interest. I suggested to him that, after certain exploratory talks had been concluded, it would be desirable for him to come back with his models, and his movies showing comparative results, for further discussion and for demonstrations with live ammunition.

We discussed very generally his efforts to interest other manufacturers. Apparently Ruger is very much interested but too involved right now with commitments relative to their 44 Magnum Carbine to undertake anything else. He does not appear to have had any reaction to his approach to others, which I am sure included High Standard. I believe it likely he will stand hitched for a week or so more, and he agreed to let me know if anything else develops.

I am very favorably impressed with the novelty and utility of his design. If we are going to give any serious consideration to entering the pistol business this is a design which cannot be ignored.

The existing patent is not of extremely broad scope, and its illustration is of one of the very early design models, so that consideration of the patent alone may not leave a favorable impression. The appearance of the present model is greatly improved and even this suffers from the fact that Mr. Boudreau's shop facilities are not such as to permit him to achieve all of the refinements in appearance which he would like to have. The patent claims all carry a limitation with respect to the angle between the grip and the long axis of the barrel. This is not such a serious limitation as at first appears for, if the barrel is mounted low enough to produce a straight line recoil, the grip must necessarily be in the range of angles claimed, to permit a practicable location of the trigger. The claims would probably be difficult to avoid without sacrificing some of the desirable characteristics.

RD-49 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington

January 3, 1962

MR. G. M. CALHOUN,

I understand that you prefer not to take any further action until you have discussed the matter further with Sam, Wayne and myself. Since we know Mr. Boudreau is actively contacting other manufacturers, and since I expect him to check back with me next week, I urge you to do what you can to expedite consideration.

As a matter of interest in this connection, I was approached by Pete Pasky of the Sportsman's Den, who is familiar with the Boudreau design, has fired it and witnessed many of the tests. He is extremely enthusiastic, and emphatic in urging that Remington seize on this opportunity and put these pistol designs on the market.

JHL

JOHN H. LEWIS, Jr.,
Patent Attorney

JHL'RMM

BARBER - PRESALE R 0131328

G-88

DON'T SAY IT—WRITE IT

TO J. H. LEWIS, JR., PATENT DIVISION DATE June 8, 1961

FROM ~~S. M.~~ ALVIS, ILION RESEARCH

JWA

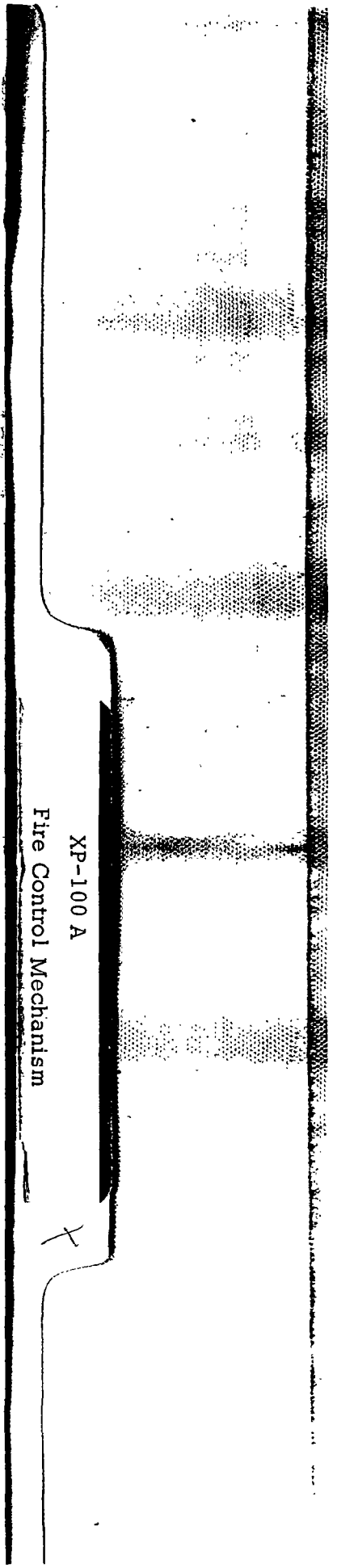
We are preparing a project for the XP-722 Single Shot Bolt Action Pistol.

Will you please supply the patent statement for this project, per our telephone conversation today, with N. Denton.

fmb

THERE IS A SAFE WAY; DO IT THAT WAY

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON
BARBER - PRESALE R 0131328
R2532316


XP-100 A
Fire Control Mechanism

Ilion, New York
April 17, 1962

W. E. LEEK

XP-700A FIRE CONTROL MECHANISM

Design requirements for the XP-700A indicated that the fire control should be designed so as to provide semi-automatic or three shot burst, full-automatic fire. A fire rate selector was to be provided on the exterior of the gun. The fire control mechanism was to be developed so that the three shot, controlled burst mechanism could be removed, leaving only the components required for semi-automatic fire.

It is the opinion of the author that any mechanism used to provide full automatic cycle firing should incorporate safety features to eliminate, as far as humanly possible, any chance of the gun being out of control of the operator. In order to accomplish this, the trigger mechanism must provide a fire control lock-out to insure that the gun cannot be fired, under any conditions, unless the trigger has been moved to the "fire" position.

Sheet A, "XP-700A Fire Control Cycle", shows the firing mechanism operation of the semi-automatic fire control. Figure A-1 shows the relative position of the parts when the gun is cocked and ready to fire. Figure A-2 shows how the relative component part positions change when the trigger

has been pulled. Trigger finger pressure rotates the trigger around Pivot A, thus moving Pivot F and the disconnector forward. The sear, in turn, is rotated about Pivot B, thus allowing the hammer block portion of the sear to clear the hammer notch. Figure A-3 shows that the hammer, under load from the hammer spring, has been rotated about Pivot C to strike the firing pin.

Initial rearward motion of the slide, as shown in Figure A-3, rotates the Disconnector downward about Pivot F, and allows the Sear to rotate in a counter-clockwise direction under load from the sear spring. As the slide progresses rearward, contact is made with the hammer, and it is rotated counter-clockwise until engaged by the sear as shown in Figure A-4.

After completion of its rearward stroke, the slide moves forward under load from the action spring. As the slide approaches its locked up (forward) position, the surface previously used to cam and hold the disconnector downward moves ahead of the cam surface as shown in Figure 5-A. On release of the trigger, Figure 5-B, the disconnector pivots upward under load from the trigger spring, and the trigger rotates counter-clockwise to its normal position.

At this point the cycle for one round is completed, and the gun can be fired again only by pulling the trigger. It should be noted at this point that the sear cannot move relative to the disconnector once the disconnector has rotated upward about Pivot E on release of the trigger. The disconnector pin, being an integral part of the sear, is now engaged in the lower portion

BARBER - PRESALE R 0131332

of the disconnector cam slot, and the two parts are locked together. Design of these two components must provide for this locking action to insure safe operation with the three shot - controlled burst mechanism.

It is the opinion of the author that the most satisfactory method of developing a combination semiautomatic and 3-shot-controlled burst fire control mechanism is to develop, first of all, a semiautomatic mechanism as previously explained. This should be designed to accommodate the addition of a separate mechanism providing the three shot-controlled burst feature.

During the normal cycle of operation of a gas operated - semi-automatic weapon, energy from the gas system is transmitted directly to the slide. The slide, in turn, transmits this energy, as needed, to the various parts of the action. All motion, other than recoil induced, is therefore transmitted to the gun by the slide. It is for this reason that the logical place from which to draw energy for the operation of the automatic firing mechanism is the slide. It is also the final remaining part to have motion following the "locking up" of the bolt. This feature permits firing AFTER the action is locked closed.

It has now been determined that energy should be transmitted, by means of some device, to at least one component of the semi-automatic firing mechanism to fire the second and third rounds. Examination of the previously explained kinematic chain for semiautomatic fire showed that

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BARBER - PRESALE R 0131332 R2532320

this energy could be transmitted to the trigger-disconnector combination, the sear, or the hammer. If the second and third rounds were fired by actuating the disconnector-trigger assembly, an erratic impulse would undoubtedly be felt by the trigger finger. Since this would be less than desirable, the first possibility has been eliminated.

The next part to be considered for receiving actuation energy is the hammer. If it were tripped directly by the 3-shot mechanism, a secondary sear system would have to be provided to operate only during controlled burst cycles. This would necessitate the design of two separate sear systems, one for controlled bursts and one for semiautomatic fire. The necessity for additional required parts therefore eliminates this idea.

The remaining part left to be actuated by the slide is the sear. Use of the sear in this manner eliminates the need for development of a secondary hammer locking device and minimizes the chances of firing impulses being transmitted to the trigger finger. It also allows the sear-disconnector lock arrangement to function as previously described. Under these conditions, firing can always be stopped at any time by release of the trigger.

Let us consider then that energy from the slide shall be transmitted through the automatic firing mechanism to actuate the sear, this in turn releasing the hammer and firing the gun. Energy transmission from a mass having planar motion to one requiring rotary motion can be accomplished quite easily by the use of a cylindrical, rotating member. Using a device of this type, impulse is transmitted directly to the cylindrical member, and

in turn through a cam surface to the rotary component. A device of this type has been selected to accomplish the controlled burst feature.

Figure B-1, Sheet B illustrates this type of device. The position of the cam wheel shown by solid lines represents the condition when the gun is locked up and ready to fire. The sear is actuated by the disconnector-trigger assembly to fire the first round. As the slide moves rearward, the cam wheel is indexed 30° clockwise, placing the upper and lower cams in positions shown by the dashed lines. On return of the slide to its forward position, the upper cam is struck, thus causing the wheel to again rotate 30° in a clockwise direction. This rotation causes the lower cam to contact the sear and impart clockwise motion. The sear then releases the hammer and the gun is fired for the second time. The above cycle is repeated once, three rounds having been fired on its completion. As the slide moves rearward after firing the third round, cam #5 is rotated to the upper position. The slide, on completion of its forward stroke, contacts this cam and the wheel is again rotated 30°. Figure B-2 represents the relative thicknesses of the six cams, and shows that cams 2 and 5 contact the slide but not the sear, consequently, when cam 5 is struck by the slide, cam 2 bypasses the sear without making contact, and the gun is not fired. To initiate another three shot burst, the trigger must be released and again pulled.

It should be noted here that one complete 3-shot cycle requires only 180° rotation of the cam wheel.

BARBER - PRESALE R 0131335

As indicated by Figure B-1, four of the six cams are spring loaded about their own pivot. This has been done to provide escape if the sear is locked by the disconnector prior to the upper cam being struck by the slide. Should this occur, the cam contacting the sear would rotate in a counter-clockwise direction about its own pivot and overpass the slide cam surface.

As previously explained, proper function of the cam wheel requires that it be rotated 30° in a clockwise direction during the rearward slide stroke. This indexes the cam wheel so as to insure contact with the slide during completion of its forward stroke.

Indexing of the cam wheel can be accomplished by use of a mechanism as shown in Figure B-3. The ratchet wheel is concentric and integral with the cam wheel. Rotation of this wheel is caused by a pawl and pawl arm, the latter pivoting about the ratchet wheel center. The pawl arm is rotated in a clockwise direction by a series of links making contact with and receiving energy from the slide during its rearward stroke.

To render the controlled burst mechanism inactive, the pawl arm connector link needs merely to be rotated clockwise to the position shown in dashed lines. The slide will then pass over the pawl arm connecting link. Under these conditions the cam wheel will remain in the position as shown in Figure B-1, and the mechanism will remain inactive.

Sheet "C" shows the assembled controlled burst mechanism. It should be noted that the stabilizing lock, shown on the right side of the cam wheel, is used only to position and fix the cam wheel in each of its twelve positions. It has no functional purpose other than that.

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KINZER V. REMINGTON

BARBER - PRESALE R 0131335 R2532323

BARBER - PRESALE R 0131336

XP-700A FIRE CONTROL MECHANISM April 17, 1963

The design discussed in this report should be considered in principle only, and not as a final, developed, approach. Many of the mechanisms covered can be simplified and improved. This design is intended only to effect a possible approach to the solution of a complex mechanisms problem. I have attempted to develop into the machine the principles of safe operation and 100% control of the weapon by the operator. Should these ideals be lessened, extreme simplification could result.

Howard L. Chambers, Research Engineer
Firearms Design & Development Section

HLC:B

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KINZER V. REMINGTON

BARBER - PRESALE R 0131336 R2532324

BARBER - PRESALE R 0131337

MODEL XP-100

Testing

Remington Rand
CATALOG NO. 5018 R • IF FASTENERS
ARE TO BE INCLUDED PLEASE SPECIFY.
REMTEX FOLDER
MADE IN U.S.A.

BARBER - PRESALE R 0131337
R2532325

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

December 9, 1963

Headquarters
Space Systems Division
Air Force Systems Command
United States Air Force
Air Force Unit Post Office
Los Angeles 45, California

Attn: Kent B. Joscelyn
Captain, U.S.A.F.
Assistant Staff Judge Advocate

Ref: SSJ/2077

TEST

The Model XP-100 Pistol has arrived in good condition.

Thank you for your help in these early tests. The information supplied is useful in planning and directing our design efforts.

S. M. Alvis, Manager
Ilion Research Division

By_____
C. W. Stephan
Sr. Research Engineer

CWS:T

BARBER - PRESALE R 0131339

HEADQUARTERS
SPACE SYSTEMS DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
Air Force Unit Post Office, Los Angeles, California 90045

REPLY TO ATTN OF: SSJ/2077

SUBJECT:

29 November 1963

TO: S. M. Alvis, Manager
Ilion Research Division
Remington Arms Company, Inc
Ilion, New York

Dear Mr. Alvis:

I have on this date mailed the Model XP-100 Pistol to you by insured mail. If it does not arrive within a reasonable period of time, please advise me so that I may initiate tracer action.

I delayed the return approximately ten days from the receipt of your letter in order to complete firing tests with ~~for~~ the remaining ammunition. Your initial supply was expended in September. I purchased approximately 180 rounds to complete the firing program I had laid out. As soon as time allows, I will tabulate the results of this schedule and forward them to you. I have had approximately fifty people fire the weapon over a known ~~normal~~ distance range and have recorded the results. At the same time I had the same individuals fire a standard 22 Pistol and 45 Automatic as a control.

I believe the results may be of some interest to you as well as the comments of the individuals involved. I would like to thank you for giving me the opportunity to participate in the testing of this weapon and hope that I may be of some assistance to you in the future.

Sincerely yours,

Kent B. Joscelyn

KENT B. JOSCELYN
Captain, USAF
Assistant Staff Judge Advocate

Serial #2744
RECEIVED 12-6 - TO GOOGIN FOR MUSEUM,

CHECKED 12-5

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131339 R2532327

Thelma Tickle for 11/30

(3)

November 12, 1963

Headquarters
Space Systems Division
Air Force Systems Command
United States Air Force
Air Force Unit Post Office
Los Angeles 45, California

Attn: Kent B. Joscelyn
1st Lt., USAF
Asst. Staff Judge Advocate

Ref: SSQOL-1/Lt. Joscelyn/2077

If you have completed your tests and evaluation on the Model XP-100 Pistol would appreciate your arranging for its return. This is necessary because of rigid requirements for control on this type of weapon.

Very truly yours,

S. M. Alvis, Manager
Ilion Research Division

SMA:T

Tickle for 9/15

Tickle for 11/1/63

July 31, 1963

Kent B. Joscelyn
1st Lt. USAF
Asst. Staff Judge Advocate

Dear Lt. Joscelyn:

Thank you for your very interesting Letter regarding tests with the XP-100.

Our stenographic help is out on vacation, so if you will indulge with us, am simply sending along copy of memo from our Mr. Leek, which you will find of interest and pertaining to your suggestions.

Very truly yours,

S. M. Alvis, Manager
Ilion Research Division

G-88

DON'T SAY IT—WRITE IT

TO S. M. ALVIS

DATE July 26, 1963

FROM W. E. LEEK

This is with regard to a letter from Lt. Josclyn.

In paragraph 3 Lt. Josclyn claims that he can only keep 10 shots in a 1" circle at 25 yds. from a bench rest support. I cannot remember whether we furnished a scope for this pistol, but with an attached scope I would expect he should get about a .7 group at 100 yds., so in this respect, Sam, I rather question his ability to shoot, at least from a bench position.

In paragraph 4, I expected this kind of comment, especially from the so-called pistol experts. I feel that it is impossible to fit the individuals in this group. They are probably even more demanding in their fits of stocks than the trap shooter is with the trap stocks on the M/1100. That is why Herter's and some of the other stock makers provide stocks with adjustable grips. In the early development of the XP-100, adjustable grips were considered, but they did complicate the stock design and it was decided that if we were quite careful we felt we could fit the average hand. I believe we have done this because of the 5,000 or so guns that have been shipped, with about 3,000 sold, our complaints in this area have been rather nil. However, I do not want to quarrel with the Lieutenant because he can probably outshoot me offhand, and therefore must know what he is talking about.

I feel that this pistol was probably designed more for the varmint shooter than the offhand shooter, being a little heavy for the latter type of shooting. But must say this, and I think will get a lot of shooters to admit, that it is one of the easiest handguns to shoot offhand that most of them have used. However, these fanciful offhand shooters work on their grips with wax and plastic built-up supports until they get what they want, and then they have some custom stock maker convert them over to fit their hand, the same as an expert will do in getting the mouthpiece of his trombone fitted perfectly to his lips.

In paragraph 5, his information percentage-wise is probably quite accurate. This may be due to the fact that he has more familiarity with the guns they have been shooting than with the XP-100 and we must admit there must be some fallacy as far as they are concerned in this grip and stock design. I feel that possibly in the future it would be well for us to consider a stock design for the XP-100 which would provide adjustment for the grip and maybe we can consider this as justified for future improvement.

In paragraph 7 he has indicated that the novices seem to shoot quite well and easily with the new grip; and therefore perhaps we do have something that should be used in future design and then provide enough variability and adaptability into the stock to accommodate the experts.

The Lieutenant's report appears to be a very excellent one and I think we should commend him on his thorough investigation and I believe it is an impartial one. I would like for him to know that we might consider a variable stock design in the future and we will keep his letter on record.

THERE IS A SAFE WAY; DO IT THAT WAY

HEADQUARTERS
SPACE SYSTEMS DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
Air Force Unit Post Office, Los Angeles 45, California

REPLY TO ATTN OF: SSQOL-1/Lt Joscelyn

SUBJECT : XP-100

TO: S. M. Alvis, Manager
Ilion Research Division
Remington Arms Company
Ilion, New York

1 I must apologize for not writing more promptly and advising that I have received the XP-100. The weapon arrived while I was on temporary duty at another station. Upon my return I took it with me for an extended leave and have just returned from that vacation period.

2 I am impressed with the design, workmanship and basic accuracy of the weapon. The ballistic characteristics of the 221 cartridge are even more impressive. I have had the opportunity to fire at several types of game, ranging from ground squirrels thru a coy dog. In each instance one shot was sufficient for a kill.

3 Last weekend was the first opportunity to test the weapon under controlled conditions at a known distance range. I was able to keep 10 shots within a one inch circle at 25yds, of course this was from a rest. I blame myself for this wide a dispersion as five of the shots were touching. The basic action is excellent and the trigger pull better than 90% of the match weapons I have fired.

4 Unfortunately the weapon possesses a basic weakness which greatly reduces its general usefullness. The grip which supposedly fits any hand actually does not fit anyone that I can find. Our team of 12 men ranges in size from 5ft2 thru 6ft3 with hand sizes spaced accordingly. None of us were able to comfortably fire the weapon with a one handed grip--those with small hands could use two hands but many of us could not get a comfortable two handed grip due to the flare at the bottom.

5 The best evidence of this was the wide disparity in scores between a rest position and offhand. All of us dropped a minimum of 21% and the average was neared 29%. This should be compared with a drop of 8% for the 22 rimfire, 13% for the 38sp and 14% for the 45acp. I am confident that a redesign of the stock would greatly improve offhand accuracy.

DCASPP 62-10182

6 Most of the difficulty seems to lie in three areas. First the stock narrows as the grip rises. This is the exact opposite of the human hand configuration. The distance from the heel of your hand to fingertip increases as the measurement moves from the little finger to the second finger. Normally the bulk of your grip lies between the second and third fingers and the palm of the hand. We are taught to grasp the weapon in such a manner so that the trigger guard rests on the second finger and the third finger is wedged tightly beneath the second finger. If this grip is used on the XP-100, there is not enough stock for a firm grip.

Secondly, when the stock is grasped, it appears that there is a vertical ridge at the rear of the stock which forces the heal of the hand to be placed on the side of the grip rather than directly to the rear. This side grip does not allow the recoil to be transmitted directly to the rear, thus the weapon tends to twist when fired.

Thirdly, the forward portion of the grip is so smooth that it rapidly tends to become too slippery to hold. Checkering of the forestrap would eliminate this and greatly improve the grip.

7 It is very difficult to describe this in simple terms, it is my intention to try to find a better method of indicating these areas of difficulty. I also intend to fire the gun more extensively and at the same time try to increase the number of individuals who have fired the weapon. It is interesting to note that most experienced pistol shooters instantly complain about the grip while the novice grasps the weapon low on the stock and instantly approves of the design. Unfortunately the low grip does not allow good control of the recoil and places the center of gravity so high that movement is excessive.

8 I do not mean to sound too critical because I am greatly impressed by the weapon but feel I would be doing a disservice if I did not make fair comment. I am particularly interested in any further development of this weapon or cartridge. I would like to see the weapon in a cal 32 or larger for target work. Several of the OSI agents who fire with us would like the 221 cartridge in a machine pistol or submachine gun.

9 Thank you for your attention, I look forward to any comments you or your staff might have. If you wish comments on any particular facet please advise.

Kent B. Joscelyn

Kent B. Joscelyn
1st Lt, USAF
Asst Staff Judge Advocate

Tucker 8/12/63

June 10, 1963

Headquarters
Space Systems Division
Air Force Systems Command
United States Air Force
Air Force Unit Post Office
Los Angeles 45, California

Attn: Kent B. Joscelyn
1st Lt., USAF
Asst. Staff Judge Advocate

Ref: SSQOL-1/Lt Joscelyn/2077

In accordance with the instructions and address as shown in your letter of June 8th, we have today shipped to you one of the new Model XP-100 Pistols. For information purposes, this was shipped on our order M-42195, and with an insured value of $100.

We shall be looking forward with interest to hearing from you after you have had opportunity to use this new pistol.

Sincerely yours,

S. M. Alvis, Manager
Ilion Research Division

SMA:T

Merkler 9/17/63

HEADQUARTERS
SPACE SYSTEMS DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
Air Force Unit Post Office, Los Angeles 45, California

REPLY TO ATTN OF: SSQOL-1/Lt Joscelyn/2077

SUBJECT: Shipment of firearms

TO: S.M.Alvis, Manager 8JUN63
Ilion Research Division
Remington Arms Company
Ilion, New York

I deeply regret the delay in answering your letter of 15 MAY 63. I was placed on temporary duty at another station and did not receive your letter until my return on this date.

I have also received the Bushnell scope and several hundred rounds of ammunition. I particularly appreciate the ammo as it is not available in this area.

I have checked the applicable California laws and have formed the opinion that they do not apply to a shipment to a Federal address. I would suggest that the weapon be shipped via parcel post to my military address. In the past we have received match grade weapons from other companies in this manner.

The address is as follows:

1st Lt Kent B. Joscelyn
SSD Marksmanship Unit
Hq SSD-SSQOL-1
AF Unit Post Office
Los Angeles 45, Calif.

M-42195

I was interested in your comment as th the adaptability of the XP 100 as a target weapon. I have already heard some comment that it would be ideal for centerfire slowfire. This of cousse would require cal 32 or larger. Has the weapon been chambered for any other calibre?

I am of course quite anxious for an opportunity to work with this weapon. I am surprised at the amount of interest shown by some of the shooters who are aware that I will have the XP-100. The striking design certainly has aroused attention.

Again may I thank you for this opportunity.

Kent B. Joscelyn

Kent B. Joscelyn
1st Lt, USAF
Asst Staff Judge Advocate

BARBER - PRESALE R 0131347

SSD - SSQOL-1
AF UNIT POST OFFICE
LOS ANGELES 45 CALIF

UNITED STATES AIR FORCE
OFFICIAL BUSINESS

POSTAGE AND FEES PAID

LOS ANGELES JUN 8 PM 1963 CALIF.

AIRPORT MAIL FACILITY

AIR MAIL

S.M. Alvis, Manager
Ilion Research Division
Remington Arms Company Inc
Ilion, New York

AIR MAIL

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131347 R2532335

BARBER - PRESALE R 0131348

G-88

DON'T SAY IT—WRITE IT

To Kent B. Joscelyn

From S. M. Alvis

Date May 15, 1963

1-[illegible]
2-Tickler
5/21

Dear Lt. Joscelyn:

Since dictating the attached letter we have been alerted as to necessity of our covering for restrictions as regards to shipment of this pistol. I believe that the State of California imposes certain regulations, and also understand that we are responsible to make certain as to compliance for shipment.

From your mailing address I am not certain that this is located on a Government post, but would appreciate your advising by return mail as to particulars in order that we properly conform with all regulations.

S. M. Alvis, Manager
Ilion Research Division
Remington Arms Company, Inc.

SMA:T

THERE IS A SAFE WAY; DO IT THAT WAY

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131348
R2532336

Copy - Burdett

1 - Wayne
2 - SMA Thelma
Tickler
5/21/63

May 14, 1963

Kent B. Joscelyn, 1st Lt., USAF
7331 Earldom
Playa del Rey, California

Dear Lt. Joscelyn:

Our Mr. Wayne Leek has discussed with us your letter of April 26th in regard to your interest in the new Remington XP-100 Pistol. Within the next few days we hope to be able to ship you one of the standard models. At the same time we are arranging to have the Bushnell Company ship you direct one of their Phantom scopes and mounts for use in your testing.

Because of the unusual demand for this new item you probably will have difficulty in obtaining ammunition, so will also arrange to send you several hundred rounds of Caliber .221 cartridges.

After you have had an opportunity to evaluate this new arm, we would be very pleased to receive your comments before returning the pistol. Although specifically designed for use as a varmint pistol, we were aware of the inherent potential for use as a match weapon, and for this reason have contemplated further work in the way of adapting for free pistol Olympic competition. Your suggestions and comments in this connection will of course be appreciated and reviewed with interest by our design people.

Thank you again for writing to Mr. Leek, who is presently involved in another mission, but hopes to be able to communicate with you at a later date.

Sincerely yours,

S. M. Alvis, Manager
Ilion Research Division

SMA:T

Will see if Burdett might do the ammo.

Sam
I would like to discuss this with you at your convenience

5/14/63
ordered copies
Send direct
Jim Cobb

HEADQUARTERS
SPACE SYSTEMS DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
Air Force Unit Post Office, Los Angeles 45, California

26 April 1963
7331 Earldom
Playa del Rey,
California

Wayne E. Leek
Manager Arms Design
Remington Arms Co
Ilion, New York

Dear Mr. Leek:

I recently received a letter from my father with an enclosure describing the new Remington XP 100. He commented that you are responsible for the current development of this Pistol, including a continuing test program of this and other weapons. He suggested that I drop you a line indicating my interest in such a program in the hope that I might be able to participate.

I write this letter with some misgivings for often I fear that Dad tends to impose upon the good graces of his friends and I am equally sure that he paints too glowing a picture of his offspring.

Because I am deeply interested, I have thrown caution to the winds assuming that such a test program does exist and that my participation might be of some value to you.

I would comment that I do have considerable technical experience in the firearms area. My BS degree was in Physics (major in the Mechanical Eng field) and while my graduate degree is in Law, it actually reflects advanced training in the field of criminalistics with considerable emphasis in the firearms identification and ballistics area. Additionally over a long period of time my personal interests have led me to sustained experimentation in the handloading and gunsmithing fields.

My present active duty tour with the USAF has helped to broaden this experience in a unique manner. While I perform primary duty as a Judge Advocate my particular skills have resulted in the additional assigment as Project Officer for the SSD Marksmanship Unit. This entails the management of the Competetive Marksmanship Program at this installation.

Needless to say this assignment constantly brings me in contact with the top shooters in the USAF. This contact provides and unending source of new ideas for gun design and an excellent sounding board for new marketable products.

I would enjoy an opportunity to participate in a development program primarily for the satisfaction of putting my "two cents" in and the personal pleasure which comes from watching the creation of any new idea. I believe that I have had sufficient training and experience to comment both quantatatively and qualatatively on a particular problem in a manner which would be of value to you.

May I thank you for your courtesy in giving this matter your attention.

Sincerely yours,

Kent B. Joscelyn
1st Lt, USAF

RD-69-B

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington DUPONT PETERS DUPONT

"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"

Ilion, New York
April 19, 1963

W. E. LEEK

TEST REPORT - REDFIELD VARIABLE POWER PISTOL SCOPE

The purpose of this test was to evaluate the Redfield variable power pistol scope and mount. The scope was mounted on a Model XP-100. Shooting and overall evaluation were accomplished by two different individuals; namely, Andrew Slaboc and the author.

All testing was done on Remington's 100 yard indoor range. Ammunition used was Remington 50 gr., .221 factory loads.

Test results and overall evaluation were as follows:

1. Assembly easily installed on receiver; however, rear sight had to be removed to provide clearance for scope.

2. Field of vision exceptionally clear.

3. Cross hairs and dot very good for shooting from rest. For offhand shooting, cross hairs could be slightly heavier.

4. No point of impact change during prolonged shooting. Assembly stability very good.

5. Point of impact identical for both shooters at 100 yds.

6. Group sizes: 16 shots in 2.3 inches
   6 shots in 1.9 inches

7. Overall evaluation: Very good.

H. L. Chambers
Firearms Design & Development

HLC:T

REDFIELD SCOPES • MOUNTS • SIGHTS

Redfield Gun Sight Co., 1315 South Clarkson, Denver 10, Colorado
Telephone 733-2473 • Area Code 303 • Western Union DENVER-FAX (FJS)

March 11, 1963

Thelma please tickle for June 1, 1963 W

Mr. W. E. Leek, Chief Designer - Firearms
Remington Arms Company, Inc.
Ilion, New York

Dear Mr. Leek:

Your letter of February 7 to Ed Hilliard has been referred to me for answering since Ed is out of the country and will be gone about sixty days.

Under separate cover we have shipped you a 2-7 Variable engraved with your name, at no charge. This should take care of your problem on mounting a Variable on the M/721 with a Quick Switch mount. After you have had a chance to put this scope to use, we would certainly appreciate any comments you might have on it.

In Ed's absence if I can be of any help to you, please let me know.

Yours very truly,

REDFIELD GUN SIGHT CO.

Victor Tarantino

vb

Victor Tarantino

April 22, 1963

Redfield Gun Sight Company
1315 South Clarkson
Denver 10, Colorado

Attn: Mr. Victor Tarantino

Gentlemen:

We have just completed the Redfield Variable Power pistol scope which you sent to be mounted and tested on the Model XP-100 Pistol. The results were very satisfactory. Of course with this long scope we had to remove the rear sight to clear the forward portion of the scope. The field of vision was exceptionally clear and the crosshairs and dot were very good for shooting from a rest. We detected no point of impact shift nor did we expect any because the manner in which you have designed the mount and the scope are exceptionally good.

Group sizes using 50 grain .221 factory loads indicated 16 shots in a 2.3" group at 100 yds. and smaller groups resulted of course in a much smaller group size.

I think the variable power feature is an exceptionally good one and will provide the shooter with a combination that can be used for varmint hunting as well as for target shooting.

I expect by this time you are experimenting with a smaller size scope which will give the same results. If so, and you wish us to test, please advise.

Very truly yours,

W. E. Leek
Manager - Firearms Design & Development
Ilion Research Division

WEL:T

① H. E. Luckey
② File

1.P-100
TESTING

Ilion, New York
June 10, 1963

E. G. LARSON
Bridgeport

I am enclosing herewith a box of fired cases received from L. O. Young, who is not entirely satisfied with the performance of his 221 Fireball.

I have measured the cases dimensionally and the chamber seems OK (no check possible on the throat). The heading of the fired cases are on the factory min., as marked. Wayne and I feel there is something in the ammo you will be able to pinpoint and can answer to our friend's satisfaction.

C. H. Morse
Firearms Design & Development
Ilion Research Division

CHM:T
Encl.

June 4, 1963

Remington Arms Company
Firearms Division
Ilion, New York

Attention: Mr. Wayne Leek

Gentlemen:

On May 12th, 1963, I purchased your .221 Fireball XP100 Serial No. 1655 and have fired 46 rounds through it. I am sending twenty of the fired brass, most of which show a bulge approximately one-fourth inch above the base which is evidently caused by either excessive head space or a sloppy chamber. The fired brass also showed evidence of tool marks in the chamber. I would also appreciate knowing why all primers have been flattened.

I own a .22 calibre Model No. 572 Field Master and a .222 Remington Magnum Model #722A, both of which are fine weapons and many of my friends use Remington products.

The XP100 Serial No. 1655 as evidenced by the twenty emptry brass which I am sending you, is in my opinion, far below the usual Remington standards.

Your comments and/or instructions regarding this matter will be greatly appreciated.

I am enclosing for your convenience a stamped self-addressed envelope for returning the twenty fired .221 Fireball brass.

Very truly yours

L.O. Young

L.O. Young, Jr.,
23211 Gay Avenue
Cleveland (Euclid) 23, Ohio

File

For your info - this is an extremely dangerous situation - Hardly has been advised. A candidate was taken + now found in Warehouse. Add this at that we should have the only one. Testing

Ilion, New York
February 21, 1963

W. E. LEEK

The purpose of this letter is to inform you of the extremely hazardous condition found when checking over a production Model XP-100.

On February 18, 1963 John Finnegan and I were instructed by you to withdraw from the warehouse one XP-100. This gun was to be used as a standard in determining whether or not our present packaging system afforded the gun sufficient protection. The gun was to be inspected by me prior to commencing the test and following each test phase.

Initial inspection of the gun showed the following:

1. The gun had a tendency to follow down on closing of the bolt. If the action were closed with extreme care, the "follow down" occasionally would not occur. A very slight blow on the rear of the firing pin head, however, would cause the sear to release the firing pin and fire the gun.

2. The safety could not be operated by hand. In order to rotate the safety to the "On Safe" position, the safety lever had to be hammered rearward.

3. On removing the stock, it was found that the trigger had a tendency to bind in the trigger housing. The housing was opened to allow free trigger motion, but the "follow down" and "jar offs" still persisted. The sear block-sear engagement was increased to minimize the aforestated tendencies, and the test was run.

On completion of the test, the gun was completely disassembled and critical fire control parts were inspected. This inspection showed the following:

1. Sear block-sear contact radius on sear block - .453 inches. OK

2. Sear height - .341 inches at widest point. Sear contact area appeared to be angled upward at contact point with sear block.

   Sear block pivot hole in sear housing - OK.

4. Receiver - distance from centerline to fire control holes - OK.

5. Firing pin head - dimension from centerline to bottom of sear contact area - .4355. OK.

The old sear housing assembly was replaced with a new one. The sear in the new assembly was inspected to insure that it was flat over its entire sear block contact area and that the contact line was sharp. All follow down or jar off characteristics previously experienced were eliminated, and the gun was found to be completely safe.

Attached to this letter you will find two sketches illustrating how the condition of a sear at contact with the sear block influences the safety characteristics of the XP-100 fire control.

Figure 1 - illustrates the correct relative location of parts when the gun is cocked and ready to fire. The lower portion of Figure 1 represents the sear block showing all external forces in their correct positions and directions. Note that all forces acting on the sear block either tend to cause rotation in a counterclockwise direction or stabilize rotation, thus tending to keep the sear block under the sear. In order to rotate the sear block in a clockwise direction, thus releasing the sear, a force must be applied by the trigger link as shown by the dotted line.

The upper diagram shows that the safety, when rotated counter-clockwise, lifts the safety cam upward. This condition relieves the sear block of the load applied by the sear, thus the fire control is locked "on safe".

Figure 2 - illustrates the location of parts if the sear is not correctly shaped at the sear-sear block contact area. The sear in this diagram has been "dubbed" over at the sear block contact area.

Note that the sear and safety cam are allowed to rotate downward from their normal position. The firing pin head-sear contact surface has been markedly decreased. The safety cannot lift the safety cam properly since their contact will be direct rather than a cam action.

The lower diagram shows the forces applied to the sear block under these conditions. Note that the force applied by the sear tends to

rotate the sear block out from under the sear, hence causing an unstable condition. Due to the fact that the sear-sear block coverage is intentionally small on this gun, the condition of the sear at contact with the sear block cannot be overemphasized. The contact line on the sear must be sharp, as indicated on the part drawing number B-15455.

H. L. Chambers, Research Engr.
Firearms Design Section

HLC:T

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BY H.G. DATE 2/19/63 SUBJECT XP-100 FIRE CONTROL SHEET NO. ____ OF ____
CHKD. BY ____ DATE ____ SEAR - SEAR BLOCK OPERATION JOB NO. ____

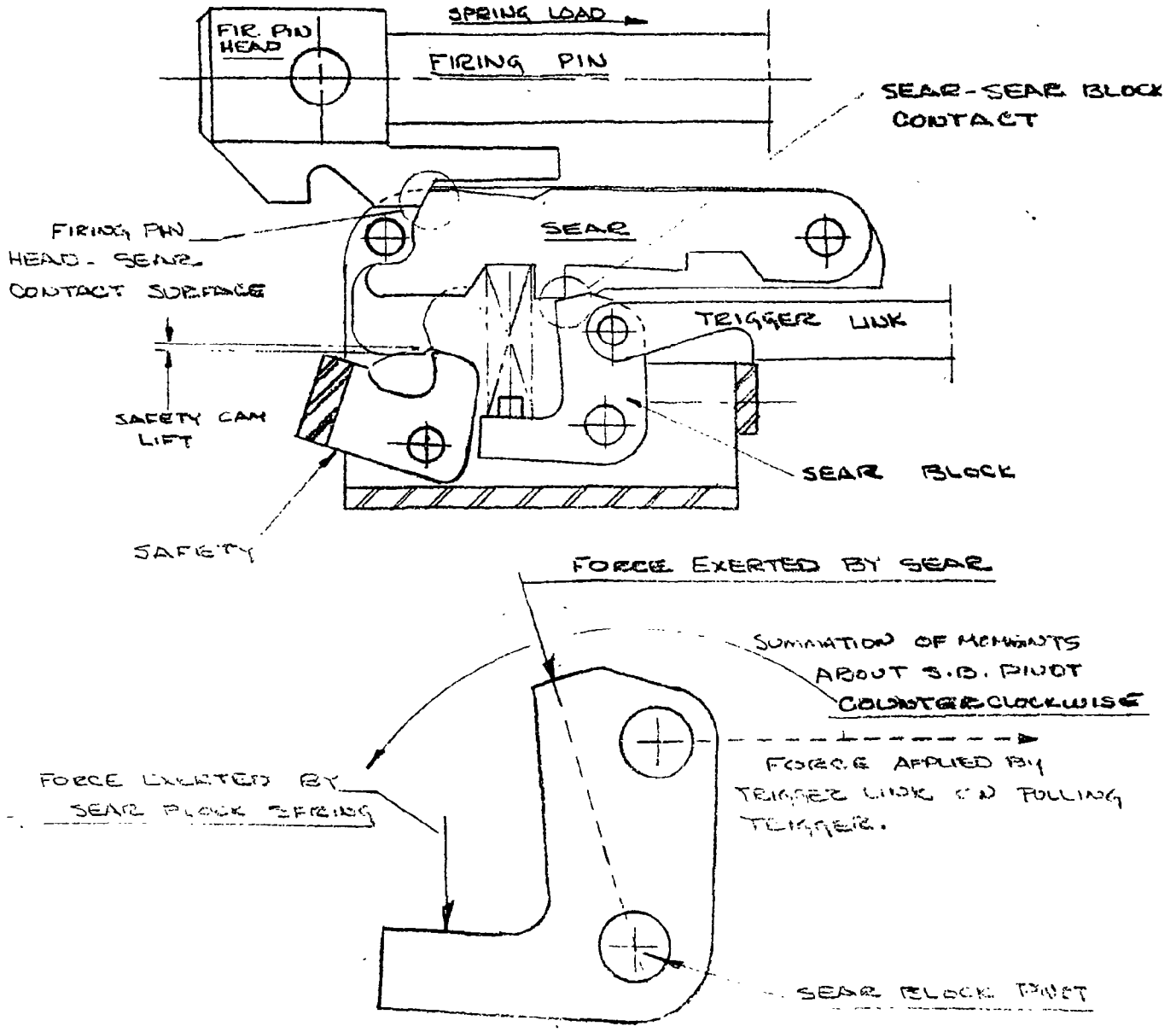
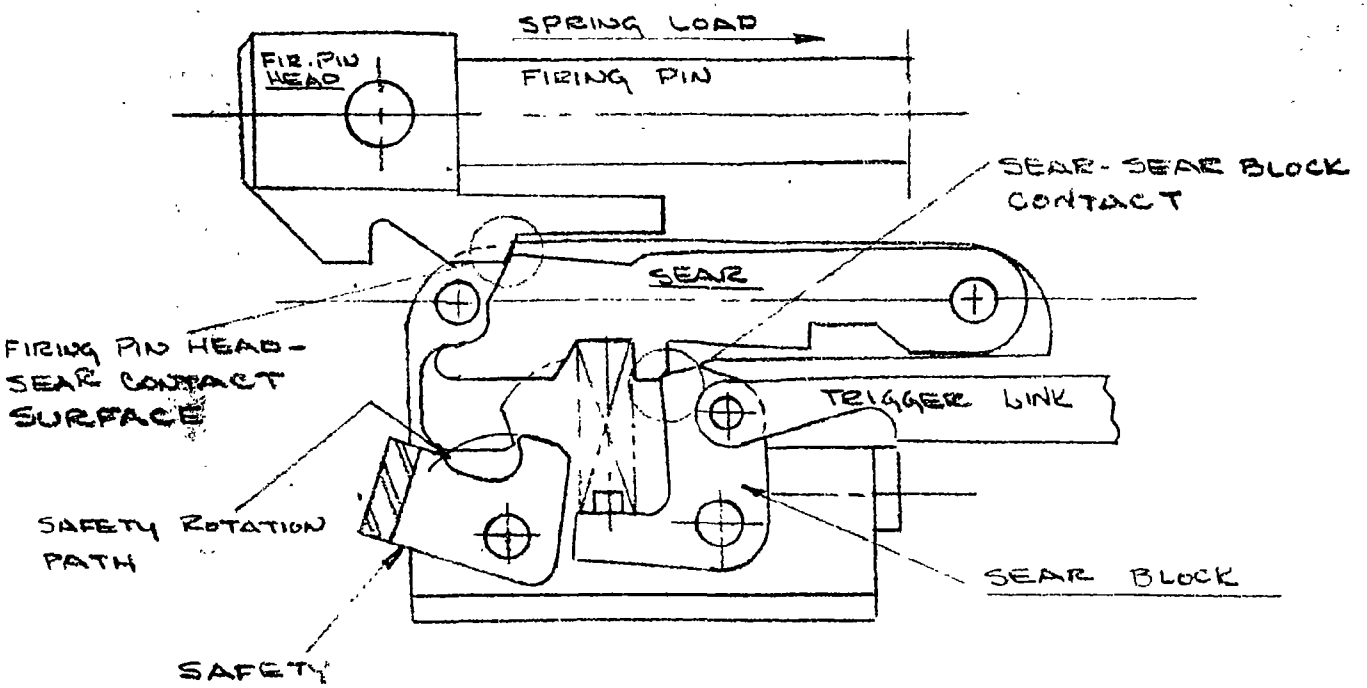


FIGURE 1

BY LLC DATE 2/20/63 SUBJECT XP-100 FIRE CONTROL SHEET NO. ____ OF ____
CHKD. BY ____ DATE ____ SEAR - SEAR BLOCK OPERATION JOB NO. ____



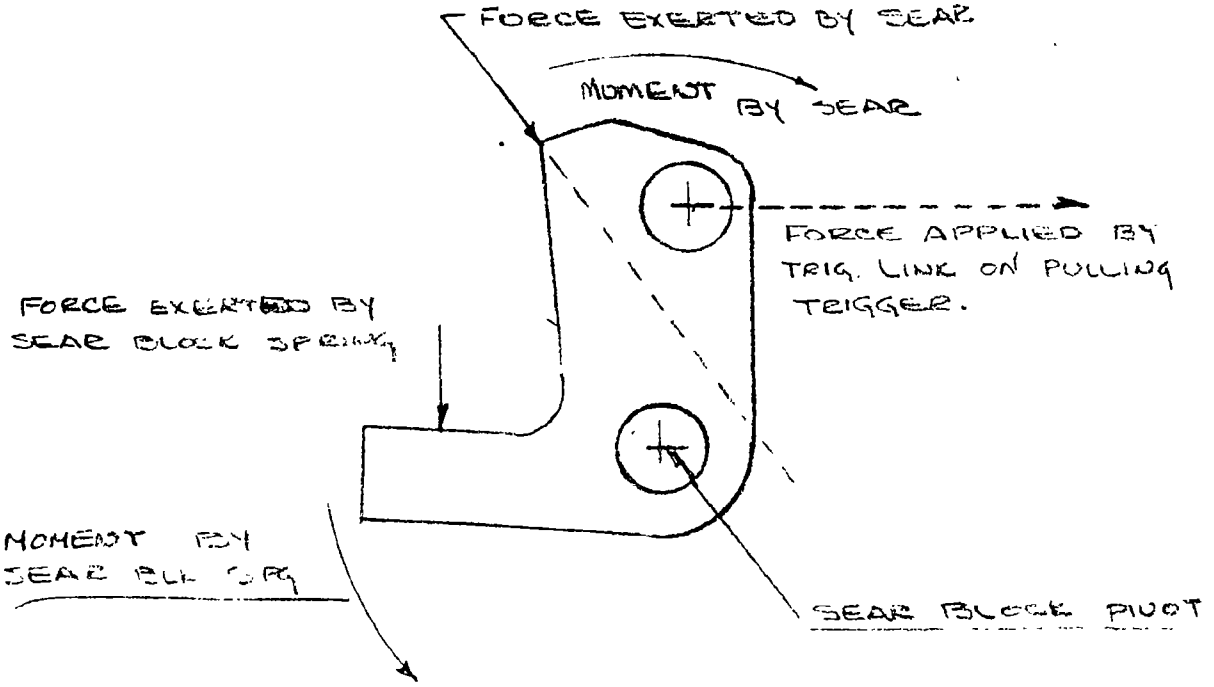


FIGURE 2

Sent copy for E.C.M

March 18, 1963

Warren Page
Shooting Editor
FIELD & STREAM
383 Madison Avenue
New York 17, New York

Testing

Dear Warren:

We have found the following loads to be most efficient in the Model XP-100 Pistol, all with 4227 powder:

Bullet		Velocity *
35 grain	16.6 gr.	2950 fps
50 "	15.8 "	2650
55 "	15.3 "	2560
60 "	15.0 "	2465

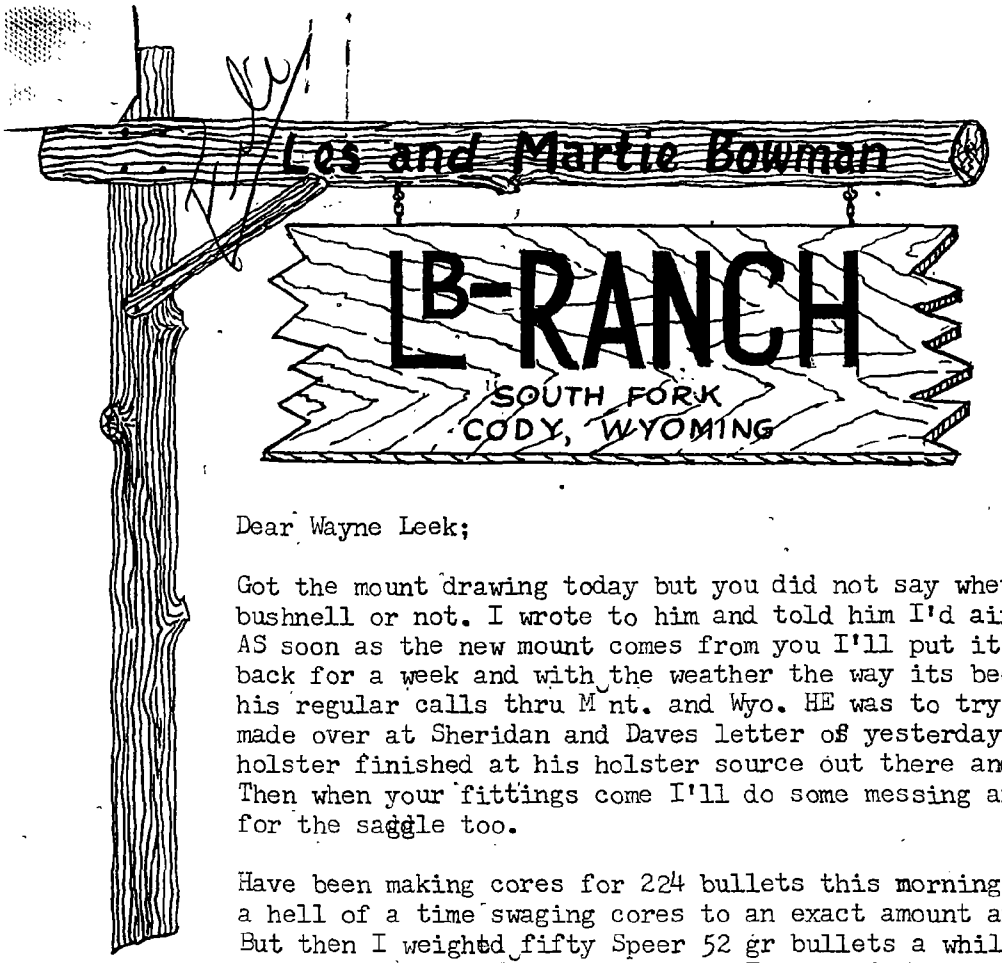
Sincerely yours,

W. E. Leek,
Chief Designer - Firearms
Ilion Research Division

*These are our Measurements Laboratory figures.

WEL:T

Return to WS Leek



XP-100 Testing

FEb.3,1963

Dear Wayne Leek;

Got the mount drawing today but you did not say whether you had sent one to Dave bushnell or not. I wrote to him and told him I'd airmail if not.Say will you? AS soon as the new mount comes from you I'll put it on Toms gun. He has not been back for a week and with the weather the way its been must have had trouble making his regular calls thru Mnt. and Wyo. HE was to try the holster that he was having made over at Sheridan and Daves letter of yesterday said that he would have the holster finished at his holster source out there and forward it to me right quick. Then when your fittings come I'll do some messing around.I want something good for the saddle too.

Have been making cores for 224 bullets this morning an d last evening.I have a hell of a time swaging cores to an exact amount and too many of them vary 01 gr. But then I weighed fifty Speer 52 gr bullets a while ago and they varied .02 up and .02 down .S just to check I weighed 50 of the ones I made last fall in B&A dies and that we have been using in the 221 and they ran max of .01 plus and .01 minus. They are actually 52.6 gr.In making these cores today I FEEL a lot that do not swage enough and have put them aside.Will reset the dies sometime and make 50 gr bullets from them. Or 51.5.

Yea,I would think that re sales you would be short of men in the field with ALL round know how. I had your Perk Perkins here ove on a spring bear hunt and he knew less about a rifle than most anyone I have ever seen. Shotguns was all.

For over a year and a half now I have been teaching Tom handloading.HE knew absolutely nothing about it before.Also have been teaching him what I know about bench rest stuff. I ordered a set of good handloading stuff for Tom and will help him set it all up some day in his basement.Now,he uses mine here. There is just about nothing that I don't have nere in this line.You'll have to stop by someday and see it all and talk awhile. I have a hell of a time planning enough room tho.14 presses,65 sets of dies,shotshell presses,swaging presses,2 chrono's and all the other stuff take room. Got two new benches finished now so they'll look well in photo's for storie illustrations.I really need 4 more benches but no room at present.Worse than when I was in the aviation business as an engineer. But I quit that end early and took over sales and liked that better.

RE the .230 baby mag Wayne,I am a small (relatively) bore man.I can't see why one has to use the same damn caliber to take an antelope or deer or sheep that he has to to take an elephant or buffalo or such.I use a 22 for cottantails, for why?cause it is plenty big. And on other game I like to fit the gun to the game.The onlt thing I'm finaky about is the bullet I use on game,and the place I place that bullet in the animal.

In 43 states the law says its illegal to use less than 23 caliber for game.

over

Hell,I could write a book on the damn gun and why its okay and sales reasons. I had in mind that the low recoil angle yet with the flat ,high vel game bullet and mabe bringing it out in a .270 caliber too on the same case with 130 bullet (we got 3000 with the 130 gr in a trial) would have appeal to certain elements with enough sales potential.

The case alone is a sales appeal.People are just cnnditioned to the belt as being the BEST.The fact it may cost more would only make it better in their mind. The fact that is is better would not have to enter it to make sales.

I just can't understand why someone like me will be so crazy as to fool with stuff like this that takes so much time.Just one damn .270 in the closet would take allt the game in N.A that I'd ever want.

Jack O'C wrote me last week about the small head .280 that Win has just brought out in the lever and 100. I have not seen one as yet but don't think I'd go for it.

Thats enough now Wayne.

Hope that they get one of these pistols out here to me soon to go ahead with.

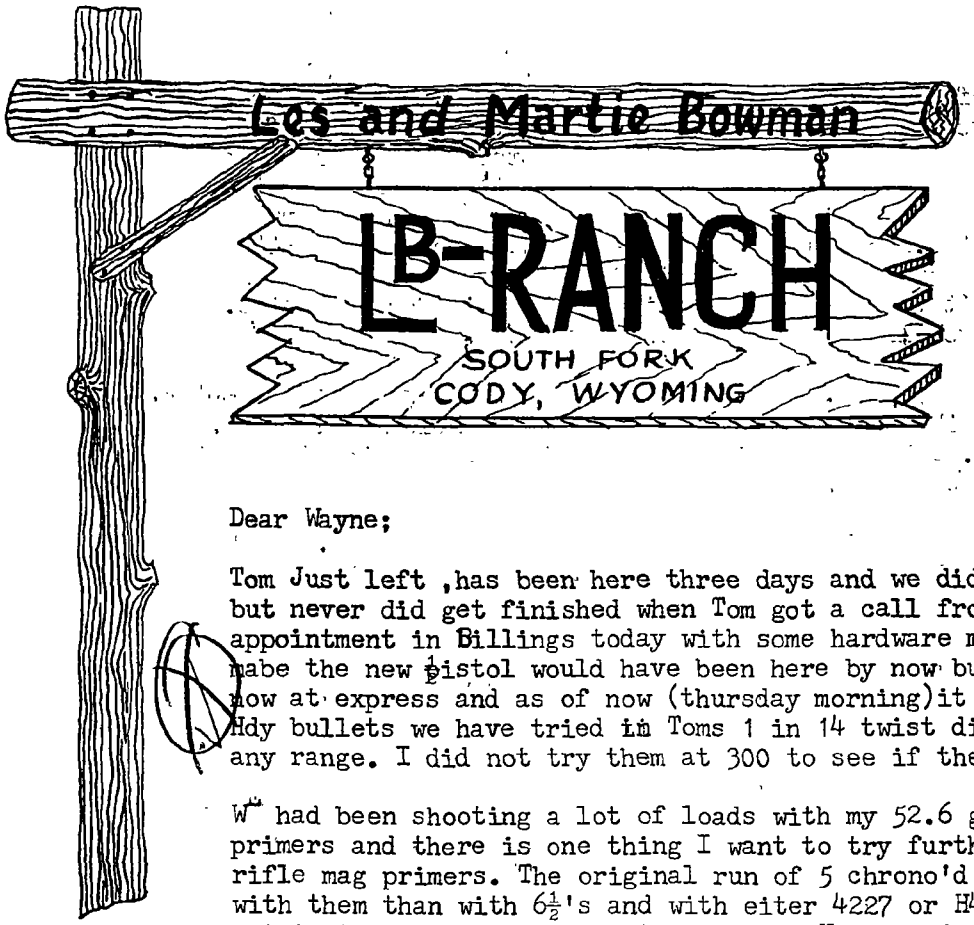
Best

Les

Les B

SAy,Wayne;; You have some barrels out with 1 in 14 and are to change.If you have one and mabe two of those barrels that you junk and can send them to me I'd like that.P.O. and I may want to play a bit and*I*he can rebore them easy.Mabe one to .230 and one to 6mm.I don't know.Just have an idea.

You don't know but I might just for the hell of it rechamber one to 222 case. Is the action okay for that or the mag???



FEb.6, 1963

Dear Wayne;

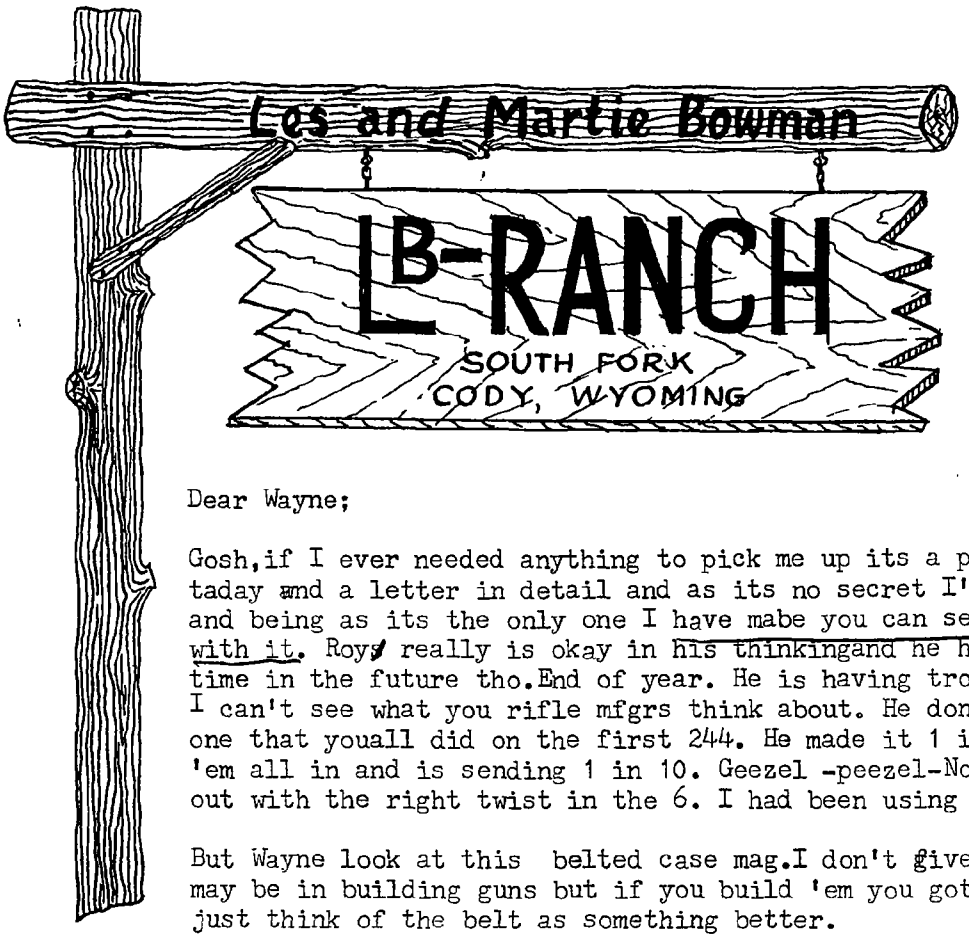
Tom Just left ,has been here three days and we did some shooting andchrono'ing but never did get finished when Tom got a call from his wife that he has an appointment in Billings today with some hardware men. Also we had thought that mabe the new pistol would have been here by now but I checked again just now at express and as of now (thursday morning)it has not arrived. The 60 gr Hdy bullets we have tried in Toms 1 in 14 twist did not give much accuracy at any range. I did not try them at 300 to see if they were keyholing.

W had been shooting a lot of loads with my 52.6 gr handmade bullets and various primers and there is one thing I want to try further and thats the CCI small rifle mag primers. The original run of 5 chrono'd loads were 40-50 FPS faster with them than with 6½'s and with eiter 4227 or H4227. Funny thing I did find out is that a change of setting in the Hollywood measure is necessary when I chqnge from one of those 42 powders to the other. I have a new Saeco powder measure coming and it should be here today.Besides the regular rifle drum it has a special deep-small drum for pistols only and as this one is small capacity too it may work like mad on here.

I can thro either of the 42 powders in the Hollywood to within .1 gr. But I have a hunch I can do better in the Saeco.The closeness of machining in it is far superior to any others and the small drum may help. The new Saeco press and its stubby dies are sure the berries for the 221.I seat in a small CH. I am going ahead with exhaustive primer tests to include accuracy-- vel.and all as soon as I have a gun. The mounts you sent came yeaterday and I put the steel one on Toms gun as he wanted it. IT is a good mount except for the weight. The Nickle scope with Jaeger rings fit it okay.But there was terrific parallax in that scope and I took it most all ou t.But we still can't make near the groups with it that we can with thePhantom and fine X hairs.

The Redfield still has not come but mabe will.Don't make much difference as it will be too bulky anyway. Tom had the new holster that he had made in Sheridan.Beautiful work but too damn bulky. So I'm now awaiting a holster from Dave Bushnell.I had sent him the stock to help in making it up but now he in forms me in a phone talk yesterday that he already has a new gun and will really rush the holster. Also will send the stock back and then I'll mess with the slings etc.

I blew up rabbits at fair close ranges with the regular bullets in the 221 so yesterday I was forming 600 more 52.6 gr ones in the B&A dies and I turned 15 of them around and made them solids on the front end.Loaded them and had Tom go out and shoot some rabbits in the head and also body to see how they worked. Fine. So now we have a rabbit load.Thats for cottantails. For Jacks we use the regular ones.Had ten twelve big Jacks photo'ing them yesterday.



Feb.10,1963

Dear Wayne;

Gosh,if I ever needed anything to pick me up its a phamphlet from Roy Weatherby taday and a letter in detail and as its no secret I'm send ing you the Phamphl et and being as its the only one I have mabe you can send it back when you are thru with it. Roys really is okay in his thinkingand he has something here. Its a long time in the future tho.End of year. He is having trouble with the 340 now.Damnit, I can't see what you rifle mfgrs think about. He done the same thing with that one that youall did on the first 244. He made it 1 in 12 and now he has called 'em all in and is sending 1 in 10. Geezel -peezel-Now after 7 years youall come out with the right twist in the 6. I had been using it then for 10 years.

But Wayne look at this belted case mag.I don't give a damn how expert youall may be in building guns but if you build 'em you gotta sell 'em. And the public just think of the belt as something better.

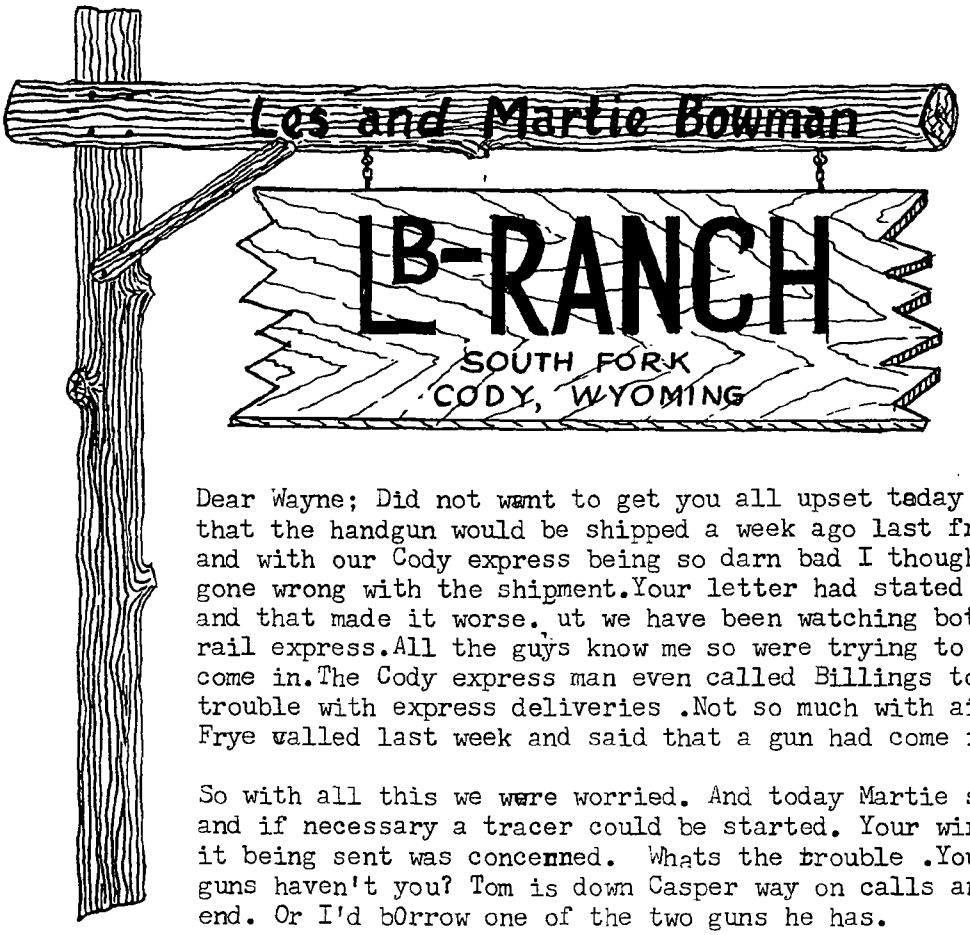
A year and a half ago I talked to Sheldon of Norma on the belted case .06 size xase head. He took three of my hand made cases and said he'd talk to Norma.Nothing further till today when a letter from him asked me if I could to be in Washington to talk to him and the norma engineers at the NRA meeting in March.Hell I can' t get there.Can't afford it for one thing.And there is nothing in it for me if I do. But by gosh Wayne the belt will go over. I mean on the smaller cases.

One thought here on Roys gun. Its still a 224. And that makes it impossible for the one gun guy that wants to shoot some varmints during 8 months of the year to shoot game with the same gun later. I just read an article in G&A on varmint shooting that bears me out. the writer said that one thing wrong with the varmint gus were that the shooter had to have another gun to shoo game. Well, with that .230 I sent you yesterday you don't.Its legal in every state a 6 mm is. And it will be a faster gun than Roys with the right bullets and a game gun with right bullets . But damnit don't make the old mistake with twist. Foresee it and avoid it.What the bench resters can do with Roys gun one must wait and see .But mabe plenty with the ammo. Roys to send me one soon as he can.

This belted .230 would also make a hell of a good low recoil .270 on the same case.

Thats all for now wayne except that you wrote a week ago last friday and said that a 221 had been shipped me by air express that day. Now, this ten days later there is still none here.Letters and pix and releases from Mc Cawley have been here but no gun .Whats foolin' who?? Ton Frye got one last week.

Best
Les B



Feb.12,1963

Dear Wayne; Did not want to get you all upset today but after getting your letter that the handgun would be shipped a week ago last friday and this being monday and with our Cody express being so darn bad I thought for sure something had gone wrong with the shipment.Your letter had stated that it was sent air Express and that made it worse. ut we have been watching both air express and regular rail express.All the guys know me so were trying to locate anything that might come in.The Cody express man even called Billings to check.We do have lots of trouble with express deliveries .Not so much with air express. Then too,Tom Frye called last week and said that a gun had come in for him that morning.

So with all this we were worried. And today Martie said I'd best phone or wire you and if necessary a tracer could be started. Your wire clears it now as far as it being sent was concerned. Whats the trouble .You have shipped most all the guns haven't you? Tom is down Casper way on calls andwon't be home till the week end. Or I'd bOrrow one of the two guns he has.

I got some 70 gr bullets in today just for the hell of it.They are by Hufnail in Vt and when I weighed them they show .5 gr either way . Also I got some 125 gr 6mm's and they varied the same amount. After making 300 more 224 bullets today that came out 52.6 gr I weighed 25 of them and they varied but .1 gr.I then weighed 25 Sierra BR OP bullets and found 3 that varied up to .3 gr So I guess that I am getting better in cutting cores an d in swaging them now. Thats an art I find.

I got a shipping notice yesterday from Bridgeport of some ammo (2# only) being sent from there.must be a couple boxes of 221's. Freights more than the ammo.I have 200 52.6 gr bullets all loaded here.And a batch of 20 each of loads of 4227 and H4227 with various primers.Will Chrono.

So,forget I wired.I'll just wait.

Best
Les

Les B

January 28, 1963

Mr. Les Bowman
LB Ranch
South Fork
Cody, Wyoming

XP-100 Tests

Dear Les:

I just returned from Chicago after having attended the Sports Show. While there I had a nice chat with Dave Bushnell and we discussed the pistol scope and mount problems. It has been agreed that we will furnish him a list of the sports writers to receive the XP-100 Pistol and he can ship his scope separately. In this manner we show no partiality.

Tom Frye certainly is an asset to Remington and I feel sure he is appreciated as much by Management as he is by me. As far as pistols are concerned Remington has very few experienced men, particularly in the Sales Department.

Yes, the scope idea is, I believe, necessary to put this pistol across -- expecially to reveal its remarkable accuracy.

My idea for the carrying of the XP-100 other than to use a holster is to use a sling attached to the fore end and bottom of the grip. I neglected to send you some fixtures for attaching the sling, so will forward these immediately. I thought you might try out some of your ideas if you had a spare stock and sling with attachments.

I am also forwarding to you some 38 Cal. bullets, an aluminum mount and drawing, in addition to the scope and steel mount you sent. These mounts appear to be satisfactory but I favor 75ST aluminum for lighter weight. We find some fairly good groups with the scope combination using factory ammunition. The large cross hairs impaired our sighting ability as they covered the target at 50 yards. I agree with you that finer cross hairs would be desirable and advised Dave Bushnell of our findings.

The .230 Mag. certainly sounds interesting and at 3600 should do a real job. I would be interested in more particulars!

Mr. Les Bowman -2- January 28, 1963

I have just been checking over some of your previous unanswered letters and have noticed that some of your questions need a reply. For example, your question concerning 4227 powder versus 2400. We have tried, I believe, all available powders including 2400 and have found 4227 to be the most ideal for this barrel length. With the 50 grain bullet we are using 15.8 grains of 4227.

As far as adjustment of the trigger pull is concerned, we have set up a factory specification of 1 1/2 to 2 3/4 lb. pull. Most of the pistols that we have tested as produced by the factory have revealed a trigger pull of approximately 2 lbs. With careful adjustment, of course, the 1 1/2 lb. pull could be reduced but might be on the dangerous side. The only adjustment we have provided is for creep and for over-travel of the trigger. This adjustment is in the rear of the fire control housing. The creep adjustment is located up front of the forward trigger housing, which is the adjustment for the sear block to eliminate creep.

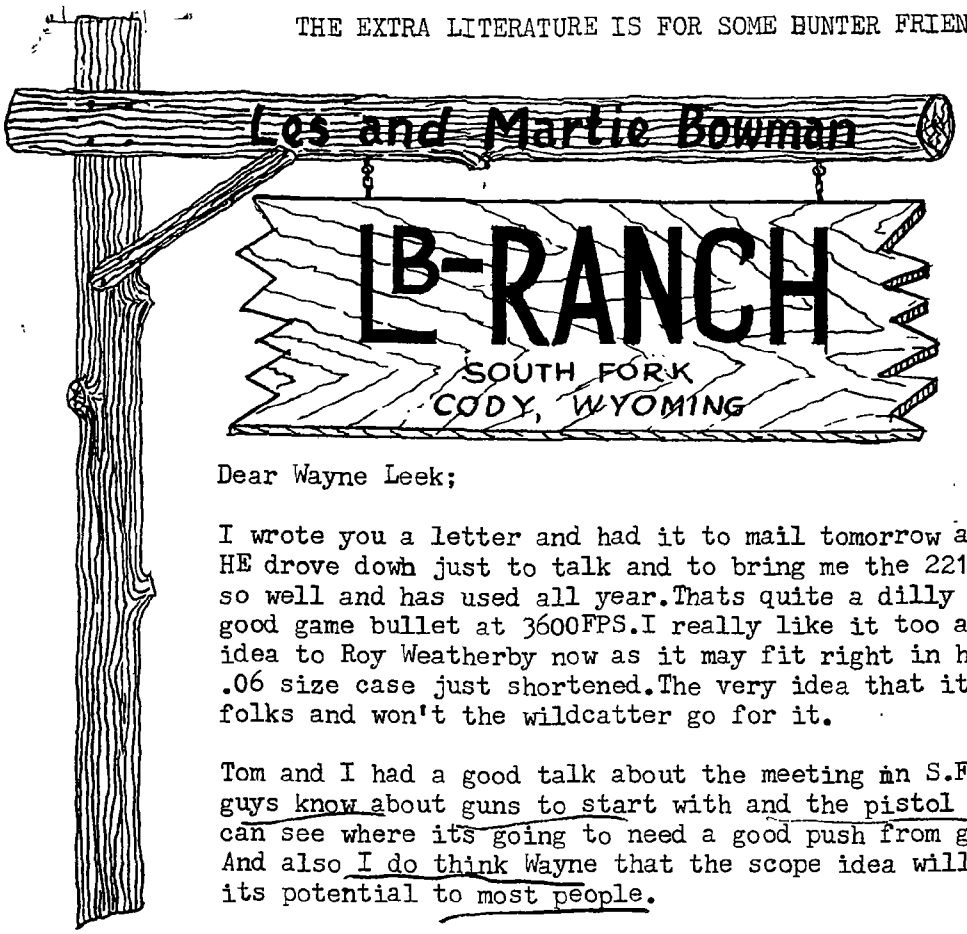
Thanks, Les, for all your help and good advice. If you need anything else, please let me know.

Regards,

W. E. Leek, Chief Designer
Firearms Design Section
Ilion Research Division

WEL:T

THE EXTRA LITERATURE IS FOR SOME HUNTER FRIEND



Jan.14,1963

Dear Wayne Leek;

I wrote you a letter and had it to mail tomorrow and then TOm came in unexpected. HE drove dowh just to talk and to bring me the 221 and my .230 Mag that he likes so well and has used all year.Thats quite a dilly of a deer gun what with its good game bullet at 3600FPS.I really like it too and I am trying to sell the idea to Roy Weatherby now as it may fit right in his line with that belted .06 size case just shortened.The very idea that its belted will appeal to many folks and won't the wildcatter go for it.

Tom and I had a good talk about the meeting in S.F. and how little the field guys know about guns to start with and the pistol in particular.And again,I can see where its going to need a good push from guys like Jack O'C and others. And also I do think Wayne that the scope idea will make the gun and bring out its potential to most people.

I have a hell of a good Golden eagle to photo with it now.I don't know whether the anti-eagle law has passed to become a law or not as yet But it hadn't when I shot this one as Martie called the game Comm to find out.

I'm gonna' mess around with a holster now a bit.In the shop here first and then have the saddle man in town make one if I get the idea okay.Whats your idea on this packing thing ?And what can I do do you think with the stock.It will be here maybe tomorrow.

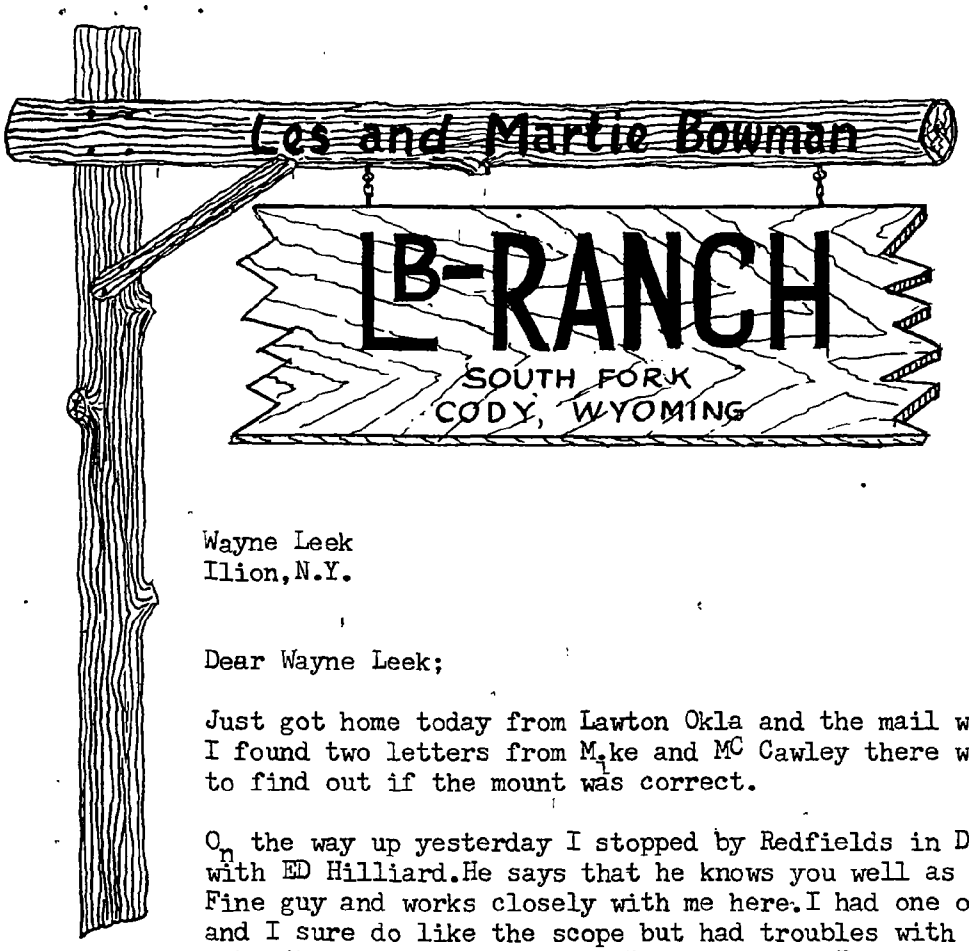
Hope that you have the dope on whether the mount is okay or not so I can have Dave Bushnell make a few .If your sales management okays it I'll have Dave send back a dozen or so scopes with the fine X hairs and mounts for them all on loan to the writers you send guns to and then they can shoot them without and then just put the scopes on and see what they will really do.

Have just made up a new loading bench and put the new Saeco Press and stubby dies on it and qqlso moved a small CH press to it to seat bullets with.A new Pacafic 3 gang press came yesterday and I put that on too.Then I ordered another little Lackmiller primer press for that bench.I just couldnot get along with out that one as I can really feel the primer looseness or tightness with my thumb tip.Best thing I have here.I use it especially on mags like the Wby.And on all experimenting like this 221.

Thats about all right now.Been 44 below for days so no shooting but its warmer now.Above zero anyway.And the cars start.

Les

Les B



DEc.27,1962

Wayne Leek
Ilion,N.Y.

Dear Wayne Leek;

Just got home today from Lawton Okla and the mail was stacked.Went thru it but tho I found two letters from Mike and MC Cawley there was none from you.Was anxious to find out if the mount was correct.

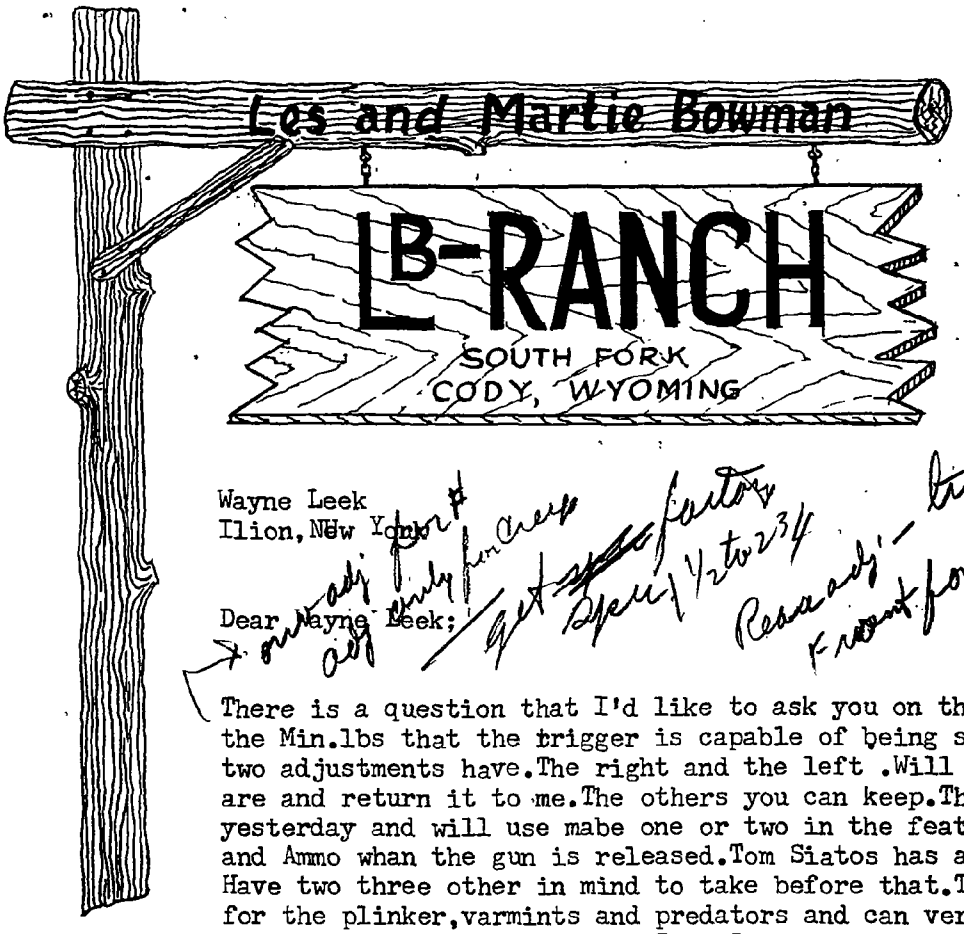
On the way up yesterday I stopped by Redfields in Denver and had a 3 hour talk with ED Hilliard.He says that he knows you well as he went to school with you. Fine guy and works closely with me here.I had one of the very first 3-9 variable s and I sure do like the scope but had troubles with 4 out of 19 we had here last fall.All different troubles.I'd telephone Ed and he'd have a new one up air mail the next morning and I'd send the defective one back.

He' sending me one of their newest right soon.Its exactly the same size as the regular 4X but is a variable 2-7.And that I predict will make a hell of a fine using scope like for us here.

I told him I was using a new handgun with a scope and he had a new NIckol scope there and loaned it to me so I have that here now.He also wanted me to try one of their low X rifle scopes that they have lengthened the eye relief out to arms length on as it has a hell of a wide field of view and will send me one right away.Has to assemble it.Also asked what kind of a mount I wanted and I said I'd send him a sketch with the actual measurements and he said he'd send it with the scope.So I'll have a lot to try.

Got a letter from Pete Brown today and he is wavy on the pistol.Says "its fine,, I guess" That he is still sort of sleeping on it.That when a handgun starts taking the place of a rifle ,with scope sights and everything,etc then it ceases to have the carrying qualities of the handgun and still falls short of the performance of a rifle in the hands of most shooters if not all shooters regardless of its potential accuracy. Says thats as far as he has got with his thinking and that with that statement of bewilderment that its now my turn.And to give him my thots in detail when I can.

Been blowing a lot (puncturing is the right word) of the $6\frac{1}{2}$ primers in the 222 mags that Tom and I both have and never the CCI's. Mike sent me 1000 each of the #92's and # 44's to compare.Will do as we were out here for the 221 loads. I had talked to Jack O'Connor on the phone at home and asked him to have CCI send and bill me for 1000 each of their primers both stad and magnum.But a letter from George Fairchild at CCI today say they have shipped 2000 each with their compliments and if there is any further things they can do to be helpful just to holler



DEc 16, 1962

Wayne Leek
Ilion, New York

Dear Wayne Leek;

There is a question that I'd like to ask you on the pistol.What is the max and t the Min.lbs that the trigger is capable of being set.Then what function do the two adjustments have.The right and the left .Will you mark on the print what they are and return it to me.The others you can keep.They are some that I just made y yesterday and will use mabe one or two in the feature that I'll write for Guns and Ammo whan the gun is released.Tom Siatos has asked that I do it.So I will. Have two three other in mind to take before that.The gun in my opinion is one for the plinker,varmints and predators and can very well be used by guys like my self and my friend near here Dick Loftsgarden the manager of the TE ranch.

Its going to have a following of NEW buyers if its just promoted right.The old dyed in the wool combat-quick draw-shoot'em-up type of pistol man will not like it at all.And I have already heard first hand from several that have seen it back east that it stinks or words to that effect.

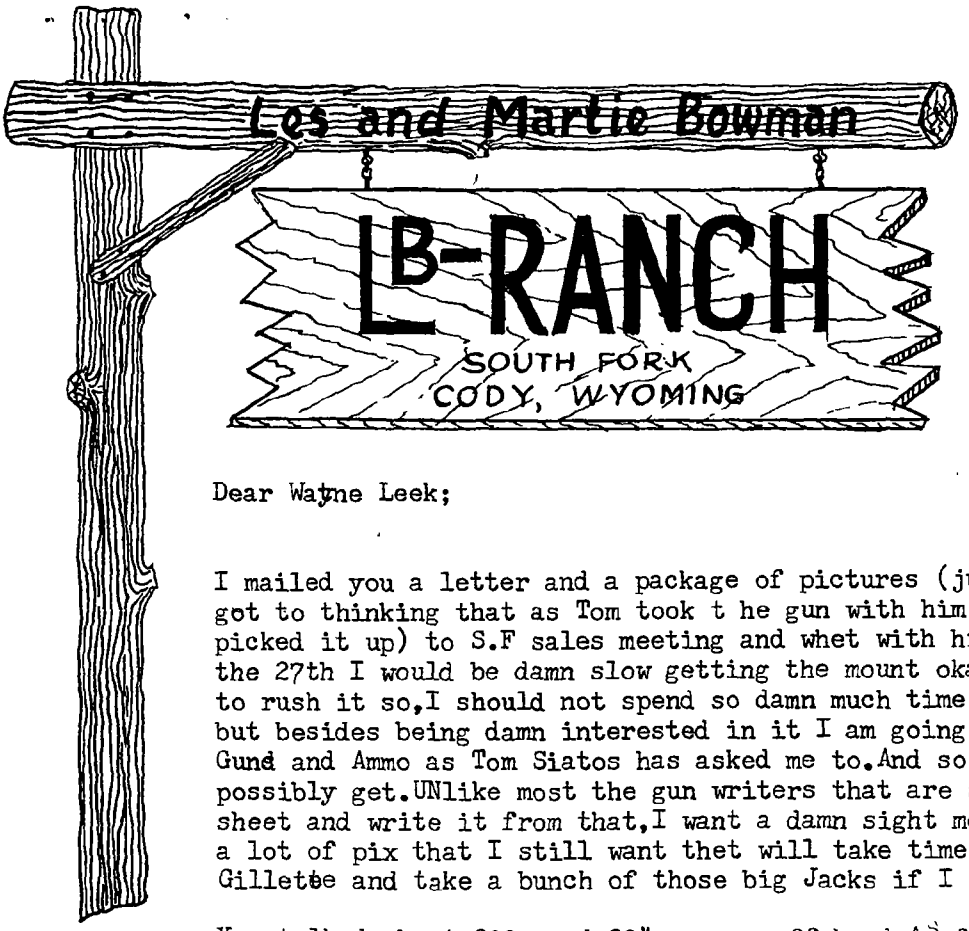
Its the first damn pistol except for the 22 woodsman that I use to shoot grouse for the pot,that I have ever seen that I want to own one.And I do have pistols h hanging up here with my guns but never use them.

Have fired and loaded for this one several hundred rounds.Its just accurate as can be.Have many 9/16" 50 yard -7/8" 100 yard and 1 3/4" 200 yard targets that we made off the sandbag rest.Thats rifle accuracy.But all with a scope.First thing I did was to put a makeshift mount and the little Bushnell Phanton on it. The X hairs were too coarse.But I telephoned Dave and he sent me a cell for the scope with a bit less than half as big X hairs and its really the thing.A bit more power,mabe 1 3/4 or even 2X later may be the thing .This one now is ***** 1.3 X.

I also asked Dave to make up a dove tail mount and send it thru.Gave him the measurments over the phone and then sent him a quick drawing.When the drawing came back I sent it on to Mike walker to check and it looks okay.I wanted to get it here in time to put it on this gun so that Tom Frye could takr it out to the S.F. sales meeting with him this morning but it did not get delivered in the mail yesterday tho its down at the P.O. Will be out tomorrow.

The gun as far as I am concerned is no good without the scope.I would turn one dow if I could not have it scoped but with this Phantom its really a gun. The right kind of a holster,one that'd hang from the belt with mabe a cross shoulder strap to take excess weight in a long haul,one that will hang from the right side of the saddle by the horn or in the jeep or pickup to keep it from getting banged up will make the gun

Over



Dec 17, 1962

Dear Wayne Leek;

I mailed you a letter and a package of pictures (just 5 X 7's) yesterday and then got to thinking that as Tom took t he gun with him yesterday (drove down and picked it up) to S.F sales meeting and whet with him gone now and me till after the 27th I would be damn slow getting the mount okayed after I got Dave Bushnell to rush it so,I should not spend so damn much time and money on this pistol thing but besides being damn interested in it I am going to write it up in a feature for Gund and Ammo as Tom Siatos has asked me to.And so I want all the dope that I can possibly get.UNlike most the gun writers that are satisfied to take your release sheet and write it from that,I want a damn sight more and it takes time.There are a lot of pix that I still want thet will take time to get too. Will go over to G Gillette and take a bunch of those big Jacks if I get a gun.

You talked about 200 yard 30" groups off hand.As far as I am concerned Wayne, I don't give awhoop about such shooting.But a rest on ANYTHING from leaning against a tree to the tope of a fense post to the car window or what have you or at least a prone and two had shoot,and then targets of down to 1 3/4" at

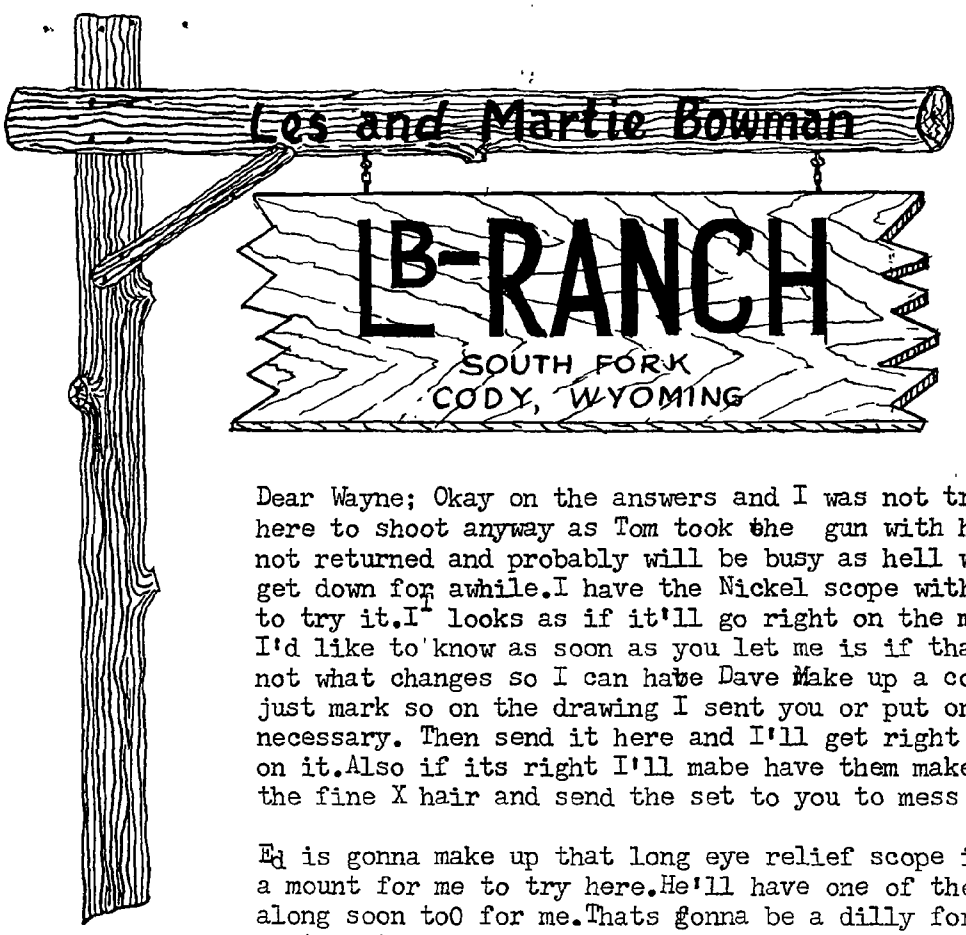
200 yards make me real happy.And we have a lot of 'em already.And that can't be done with open sights by anyone.

I jave put the new prototype mount on the gun.You can slip it off.Fits tight. The screws are with it.The scope is a std Phantom.The ones we have and are using are equiped with the finer X Hair.And I have asked Al Akin to make me up another cell with a real small one in it.The cells are easy to change in the scope Scope is very simple.But the X hair always stays centered in the tube. So see if there is enough adjustment all around when you try the scope.I had to do this all by measurment and I believe that all is correct except that I may have gotten the angle of the mount setting a bit wrong.You check that.Thats controlled as you know by the thickness of the fromt and rear.mount base thickness.

I believe that the mount(it weighs 4 OZ.) can be lightened some.You suggest how and mark it on this drawing . The guns heavy enough now at 4# 4 oz with scope. When you send the scope and mount back Wayne,will you include a handfull of jacketed pistol bullets that you try for forearm counterweights. I have none here and want to picture putting them in.

I have a set of loading dies for the gun now and they fit perfectly.Have a shell or case holder for the CH case trimming tool too.So all fixed up there.If you ever come up with a bunch of once fired cases send me a supply.I have not lost many of the ones Tom had to start with but did a few when I was handloading them without proper tools.Cocked the neck in sizing it.But that okay now with the proper tools.

AS I said yesterday I am using H4227 but planned to try 2400 too.Any other



Jan 6,1963

Dear Wayne; Okay on the answers and I was not trying to rush you.I have nothing here to shoot anyway as Tom took the gun with him out to S.F. and he has not returned and probably will be busy as hell when he gets home and not get down for awhile.I have the Nickel scope with Jaeger rings here and want to try it.It looks as if it'll go right on the mount I sent you .So what I'd like to know as soon as you let me is if that mount is okay and if not what changes so I can have Dave Make up a couple more .So if it is okay just mark so on the drawing I sent you or put on that what changes are necessary. Then send it here and I'll get right with Al Akin (daves engineer) on it.Also if its right I'll mabe have them make up a mount and a scope with the fine X hair and send the set to you to mess with.Or do you want it..?

Ed is gonna make up that long eye relief scope in low X and send it up with a mount for me to try here.He'll have one of the new variable rifle scopes along soon toO for me.Thats gonna be a dilly for hunting .The big ones are just that more liable to get banged up.

I can't shoot apistol nor a rifle off hand for sour apples nor ever could. But I can have fun with the pistol just the same Wayne.And there are a hell of a lot more like me.
Yes,I knew about the twist change.I have some bullets coming from Sisk in 30 gr and even 60 gr weight to mess with.So we'll see.I have a fine X hair Phantom here now that I can airmail you if you'd like to try it.. You say.

Yes,Mike sent some once fired cases for the 244-7mmmag and the 221.I have not looked to see how many but will.Enough for awhile anyway.I just made up a new bench 6' long,30" wide and 42" high today and will put the new Saeco press with its stubby dies and one other press on there and keep it for 221-222-222 mags alone.Then I will nothave to set up all the time. I'll put a little Lackmiller priming press on there too.Seperate scales and powder measure.

I have 14 presses so have plenty.And near 60 sizes of loading dies but never the ones I need it seems.Do you think that Dupont will put any 7828 on the market for sale?? Mike sent me some lbs last year to workup loads for the 7mm mag with and I'm near out.Its real good and for the .264 too.

Say,whats 7816 powder and where is it used? Available? Am using mostly H 4227 in the 221 .Whatall have you tried and whats okay.I'll not waste any of those experimental primers that Mike sent me in the 221 as we have good results with 6½'s and also the CCI's.I think Mike meant for me to try them only in the 222mag. CCI are shipping me a bunch of their primers including the small rifle mags.I have never used any yet. I like their 250's very much for the short case mags.

RD-69 REV. 6-58

File

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington DUPONT

Wayne Leck

1-8-63

To: F. E. Morgan

From: Lou Trapp

Subject: XP 100 field test

RECEIVED
JAN 11 1963
OFFICE - F. E. MORGAN

1- Well balanced

2- No difficulty in extraction or closing the bolt on factory loads. Some difficulty on handloading due to not have a re-sizing die. This was remedied after getting one

3- Trigger pull is excellent.

4- Accuracy is good. With a scope Excellent!

5- In order to bring out the inherent accuracy this gun is capable of producing - It is an absolute MUST to be shown with a scope. The 256 Ruger is being shown this way -

Pg-1-

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington DU PONT

1-8-63

(XP-100 test)

6- I rec'd 200 rounds for test. These were all fired at targets and game with fine results. Over 1000 rounds was fired by reloading.

Game killed.

2 Porcupine
2 Deer
70 Jackrabbits
1 Beaver

Targets

3/4" groups with scope at 100-yds
1/4" groups " " at 50-yds

4"-6" group with ironsights @ 100yd
2-2½" " " @ 50yd

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

RD-69 REV. 3-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington

DUPONT

1-8-63

(XP 100 Test)

Recommendations for Sales Features

A FUN GUN WITH

1. World's Strongest Handgun.
2. World's Fastest Handgun Cartridge
3. World's Finest Trigger
   - a Handgun with target rifle trigger.
4. World's Finest Handgun Accuracy
5. PLINKING AND VARMINT SHOOTING PLEASURE.

EMPHASIS - VELOCITY AND FEATURES ABOVE.

ANNOUNCE - 35 GRAIN @ 3000 fs.
50 " " 2650 fs.

THESE FIGURES ARE A MUST.
PLUS LAYOUTS SHOWING SCOPES.
AND ACTUAL 100-yd GROUPS.

Pg-3- END.

cc: L. M. Alvis, Wayne Leek 1/9/63

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington

DUPONT

RECEIVED
JAN - 9 1963
OFFICE - F. E. MORGAN

Cleveland, Ohio
January 7, 1963

TO: F. E. MORGAN

FROM: C. V. BRACHER

SUBJECT: XP100 'FIREBALL' FIELD TEST

Dear Pete:

With Curt Roney we fired about 100 shots at 50 and 100 yards. Accuracy was good. Would like to try this out with a telescope sight.

Nylon handle is good; however, the drooping zytel at the muzzle is not a good testimonial to plastic stocks. This should be reinforced so that the fore-end matches with the barrel better.

We found the trigger pull a little over one lb. which is nice and crisp but not safe. We found that by tapping the front end of the receiver with a plastic hammer the gun would fire. The gun will also fire when tapped briskly with a plastic hammer at the muzzle. In other words, if this gun were dropped with the safety off, it will fire.

The slippery carrying case is worthless without "D" type carrying handles. Either one of the following gun case makers in Cleveland may give you a fair price on handles:

Masta Company
2104 Superior Avenue
Cleveland 14, Ohio

Nelson's Case Manufacturing Company
10619 Superior Avenue
Cleveland 6, Ohio

The gun has been returned to Wayne Leek today.

Regards.

CVB:mdr

RD-69 REV. 1-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington DU PONT

1-8-63

To: F.E. Morgan

From: Tom Trapp

Subject: XP 100 field test

RECEIVED
JAN 11 1963
OFFICE - F. E. MORGAN

1- Well balanced

2- No difficulty in extraction or closing the bolt on factory loads. Some difficulty on handloads due to not have a re-sizing die. This was remedied after getting one

3- Trigger pull is excellent.

4- Accuracy is good. With a scope Excellent!

5- In order to bring out the inherent accuracy this gun is capable of producing - It is an absolute MUST to be shown with a scope. The 256 Ruger is being shown this way -

Pg-1-

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington DUPONT

1-8-63

(XP-100 test)

6- I rec'd 200 rounds for test. These were all fired at targets and game with fine results. Over 1000 rounds was fired by reloading.

Game killed.

2 Porcupine
2 Deer
70 Jackrabbits
1 Beaver

Targets

3/4" groups with scope at 100 yds
1/4" groups " " at 50 yds

4"-6" groups with ironsights @ 100 yd
2-2½ " " " @ 50 yd

Pr. -2-

RD-69 REV. 8-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington

DUPONT

1-8-63

(XP 100 test)

Recommendations for Sales Features

A FUN GUN WITH

1. World's Strongest Handgun.
2. World's Smallest Handgun Cartridge
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   - a Handgun with target rifle trigger
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ANNOUNCE - 35 GRAIN @ 3000 fs.
50 " " 2650 fs.

THESE FIGURES ARE A MUST.

PLUS LAYOUTS SHOWING SCOPES. AND ACTUAL 100-yd GROUPS.

Pg-3- END

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington

DUPONT

F.E. Mongo

RECEIVED
JAN 11 1963
OFFICE - F.E.M.

To: Wayne Leek
From: K.D. Oslund

XP100 Testing

Dear Wayne:-

Before making any suggestions on the XP100 I think it would be a nice thing to insert a piece of cardboard between the carrying case & shipping box - then opening up my box & using a knife to cut the seaming strip I cut slightly into the case. There is no doubt that dealers will open the box the same way - a piece of cardboard between the carrying case & the shipping box will eliminate this.

We've had some terrific weather [illegible] receiving the gun and ammo.

I'd suggest that the [illegible] be around the [illegible] of the [illegible]

Will "do" my way a lot [illegible] first joint for people. - SMA

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington

DUPONT

is slick & to me makes it hard to hold. I improved my groups as soon as I wound the grip with electricians friction tape -

I don't go along with the way the sights are adjusted = Also I feel ½" would be better:

The arm belt muzzle light and hard to hold without a wobble - I tried a piece of extended cold wire to the fore-end of the stock - it helped me a great deal -

Ejection, extraction + feeding OK,

I might add that in taping the extended barrel to the fore end it was of greater length than combined "bullet lengths would be -

Grip at base with contact of heel of hand seems the easiest.

Would suggest the trigger balance be held up by means to keep it in line with the slot of the trigger rod. If this does not line up exactly the cartridge force [illegible] [illegible] the hole - mechanism could be [illegible]

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington

DUPONT

Trigger pull excellent.
My folder on the XP-100 shows the bolt release in plain sight. which it is not.
Safety OK.

Regards,
Roy Calland

P.S. In the letter sent me - as soon as I completed test I was to return arm to you.
It is going out by express to you tomorrow.

As a suggestion Wayne only not give us a Target 22 cent pistol - using N66.?!!

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington DUPONT

F.E. Morgan

RECEIVED
JAN 11 1963
OFFICE - F. E. MC

To: Wayne Keck
From: K.D Oslund

XP100 Test.

Dear Wayne:

Before making any suggestions on the XP100 I think it would be a nice thing to insert a piece of cardboard between the carrying case & shipping box - I'm opening my box & using a knife to cut the seaming strip I cut slightly into the case. There is no doubt that dealers will open the box the same way - a piece of cardboard between the carrying case & the shipping box will eliminate this.

We've had some terrible weather since receiving the arm and ammo.

I'd suggest that the checkering be around the front of the grips - the nylon

I'll do my own carry a lap joint instead of butt joint for flaps. - SMA

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington DUPONT

is slick & to me makes it hard to hold. I improved my groups as soon as I mounted the grip with electricians friction tape -

I don't go along with the way the sights are adjusted - Also I feel ½" would be better.

The arm belt muzzle light and hard to hold without a wobble - I taped a piece of extruded lead wire to the fore-end of the stock - it helped me a great deal -

Ejection, extraction + feeding OK,

I might add that in taping the extruded lead wire to the fore end it was of greater length than combined "bullet lengths would be -

Grip at base with contact of heel of hand seems too large.

Would suggest the trigger balance be held in place by screw - to keep it in line with the slot of the trigger lock. If this is not lined up exactly the trigger force varies [illegible] given the balance mechanism could be best.

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington
DUPONT

Triggers pull excellent.
My folder on the XP-100 shows the bolt release in plain sight - which it is not.
Safety OK.

Regards,
Roy Orland

P.S.
On the letter sent me - as soon as I completed test I was to return arm to you. It is going out by express to you to-morrow.

As a suggestion Wayne why not give us a Target 22 auto pistol - using N66. ?!!

February 1, 1963

Les Bowman
LB Ranch
South Fork
Cody, Wyoming

Test

Dear Les:

Just received your letter of January 28th and wish to inform you that an XP-100 Pistol is being shipped to you by the plant, air express, and should arrive the first part of the week.

As far as trigger pull is concerned, I like about 1 1/2 lbs.. This can be accomplished by removing the counterbalance which when installed in the gun adds about one pound to the trigger pull. However, this item was installed for purposes of preventing accidental discharge if the pistol is dropped.

The lock time with the XP-100 is quite comparable to other match type pistols and revolvers, being in the neighborhood of 2.7 to 3 milliseconds. We have experimented with the aluminum firing pin, which has dropped the lock time by approximately 1/2 millisecond, but am a little hesitant to introduce it into the gun at this time because I believe erosion would hamper ignition if leaky primers were experienced from continuous hand loading of these shells. The lock time, however, is very fast and we feel that it is much better than you will find in most pistols and revolvers.

Powder loads are as follows:

35 gr.	16.6 gr. 4227
50 gr.	15.8 gr. "
55 gr.	15.3 gr. "
60 gr.	15.0 gr. "

The pistol being shipped to you today has the one turn in 12 inches, and a similar one is being sent to Tom Frye. I think you will find an improvement accuracy-wise with the 60 grain bullets.

You seem to have had considerable success with very fine killing shots on lots of game. My only experience has been in shooting jackrabbits with this pistol but hope to have the opportunity to try it out one of these days on larger game. We should also have a chance to try it out on some chuck this spring. Chuck hunting in this area is very good.

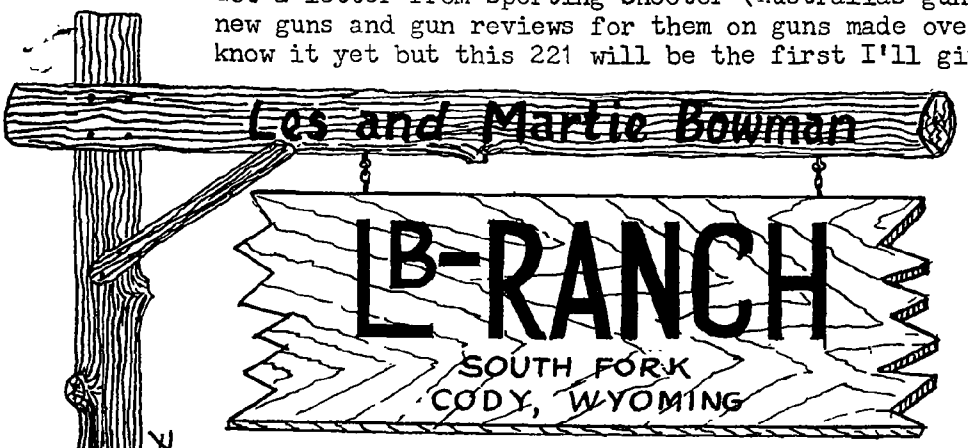
Please let me know your results, and if there is anything else you may need to help you with your testing, let me know.

Regards,

W. E. Leek
Chief Designer - Firearms
Ilion Research Division

WEL:T

Got a letter from Sporting Shooter (Australias gun mag) asking me towrite up new guns and gun reviews for them on guns made over here. Will do. They don't know it yet but this 221 will be the first I'll give 'em. Soon as you release it and I get the story to Guns and Ammo.



Jan 28, 1963

Wayne Leek
Ilion, N.Y.

Dear Wayne:

Have a question or two that I'd like answers to and will get them down while I think about it. Have never heard from you since I sent the mount to be checked some 5 weeks ago. But guess that you are just busy.

Whats the trigger pull inlbs that you think good for the 221? This one is set at $2\frac{1}{4}$ # and about the way I would like it. Mabe even a bit lighter. But then I use my rifle triggers at 2 3/4 #. Many guys can't use one that light. I have used them at $2\frac{1}{4}$ #.

What is the lock time do you figure? What is the lock time on a single action revolver?

What powder and load have you found best with 50 gr bullets? With 53 gr bullets? What with lighter bullets? Any heavier bullets tried?

I am anxious to see what accuracy we get here out of the 1 in 12 twist against the 1 in 14 that we have now. I made up some pix for tom of himself and gun holding a target with $\frac{1}{2}$" group made at 100 yards. Just one tho. Some are big. Mabe $1\frac{1}{2}$".

Your 50 gr bullet blows and is no good for deer. But boy, does it kill if in the brain area. Just blows it to a mess. A big buck too. Tom did that one. MIne was with the 53 gr HP bullet I make in B&A dies for my bench rest rifles. I like those bullets best in the gun. It broke a bucks spine, neck shot. Zowie. How dead can dead be. Have taken beaver, bob cats, coyotes, porcupine and rabbits with head shots but gosh don't shoot a rabbit with your 50 gr if you want it to eat. even a head shot blows it all to hell back to the hips. I hit one in the neck sideways and cut the head right off.

Have had no chance for prarie dogs or rock chucks as they are sure as hell not out in this weather. But it'll be fun come spring when they do come out. Got one big eagle just before the prohibiting bill was signed. That damn law is gonna' raise hell here with the antelope, deer and sheep and they kill a lot of each. If they had just passed a law prohibiting the SALE or BUYING or TRADING of eagle feathers it would have curbed the excess kill. But this one is just no good for this country.

Gotta' get some big ole' jack rabbits and pix of them. And at distance.

Nuff now.

Les
Les B

File

Ilion, New York
January 8, 1963

C. L. THREETON
Jacksonville, Florida

Dear Clay:

Thank you for your interesting letter concerning your test with the XP-100 Pistol. Some of your comments indicate questions that certainly need an answer and thus the reason for this letter.

I am assuming from your test report that you had excellent results in accuracy, long range and low trajectory. I would like to comment concerning the sights. You may not be aware that the appurtenances of a rifle or pistol are the most difficult of our design items and the sights are probably the most difficult of all. We experimented here several years ago with red lucite which provided a luminous appearance, and probably should have obtained a patent on this sight. However, our Patent Department indicated there was not enough patent novelty to be of use to Remington and therefore it was discarded. Since that time we have received notices of 2 or 3 patents from other firms. Actually, we were not too enthused about this material for sights but felt inasmuch as we had expended time and money investigating we should have protection. But it is doubtful we would ever have produced the item because we found during hunting that the glow of this material was so brilliant to the eye that during shooting game the eye would concentrate more on the sight than on the game. Many pistol shooters like real dull sights, especially in target shooting, even using lamp black to dull the shine of the sight.

As far as carrying is concerned, of course we are not experts at developing shoulder holsters or side holsters, and therefore cannot comment much on what the vendors will come up with as far as the carrying cases are concerned. However, we have tried a sling strap mounted with quick detachable links which seemed to work quite well. In this manner such a pistol can be carried with the strap over the shoulder and pistol under the opposite arm, or over the shoulder and across the back.

The objective set forth in the sight design was to provide a set of sights which would allow windage and elevation adjustment, would have a rugged appearance without a "stamped" look. This I think we have accomplished, and these sights

BARBER - PRESALE R 0131392

also provide the partridge type sight picture which is necessary in pistol shooting. If this was an ordinary pistol where it was necessary to adjust the sights elevationwise between 25' and 50', for example, a more versatile elevating device would be necessary. However, the pistol is such a flat shooter that the variation in elevation from point of impact at 25' to 100 yds. is so slight that none but the best of pistol shots pick up the difference. Therefore, I feel sure that with the majority of shooters, once the elevation and windage have been established at, say, 25 and 50 yds., they will never again have to adjust the sights. For the precision off-hand pistol shooter it will be necessary for him to have a micrometer adjusting sight providing 1/4" or 1/8" clicks so that he can move the group point of impact at will. We are experimenting with such a sight at the present time which can be readily attached to the XP-100, but it will be a rather expensive device and one I am afraid the majority of shooters will not wish to purchase.

Thank you again for your fine letter, and hope you have a lot of success in selling the XP-100 pistols.

W. E. Leck, Chief Designer
Firearms Design
Ilion Research Division

WEL:T

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131392

cc S. M. Alvis
Wayne Leek

Remington DUPONT

REMINGTON ARMS COMPANY, INC.

PETERS DUPONT

MANUFACTURERS OF
SPORTING FIREARMS, AMMUNITION
TRAPS TARGETS
POWER TOOLS

BRIDGEPORT 2, CONNECTICUT

ARMS AND CARTRIDGE POWERED TOOLS
ILION, N. Y.
AMMUNITION, BRIDGEPORT, CONN.
POWER TOOLS, PARK FOREST, ILL.

REMINGTON ARMS COMPANY, INC.
DISTRICT OFFICE
PRUDENTIAL BLDG., ROOM 1603
841 MIAMI ROAD
JACKSONVILLE 7, FLORIDA

PETERS CARTRIDGE DIVISION
BRIDGEPORT, CONN.
TRAPS AND TARGETS, FINDLAY, OHIO
CABLE—HARTLEY, BRIDGEPORT
—ALL CODES—

December 17, 1962

RECEIVED
DEC 19 1962
OFFICE - F. E. MORGAN

TO: F. E. MORGAN

FROM: C. L. THREETON

SUBJECT: CONFIDENTIAL XP100 "FIREBALL" FIELD TEST

Dear Pete:

The sample XP100-221 sent me has been field tested and returned to Wayne Leek at Ilion via Express, and insured for $500.00. Here is my report on the pistol.

SHOOTABILITY: Very good with either one hand or supported by both. Balance is excellent. Trigger is light and smooth like a target rifle and pistol.

ACCURACY: Necessary to "zero-in" and adjust at 25 yards. Should be sighted in before shipping to the consumer. IS ACCURATE.

OPERATION: Loading and unloading are smooth and easy. Recoil is not too strong. Not too much muzzle whip considering caliber.

APPERANCE: Good design

FUNCTIONING PERFECT:

SAFETY DESIGN: Good

SUGGESTED CHANGES:

1. Needs red lucite "glow" front sight for quick pick up, also will help in sighting on a dark target.
2. Case needs strap handle. Case is too hard to control in hands.
3. Poor arrangement for adjustment of windage and elevation of sights by use of the Allen head wrench device. Suggest the usual rear sight with windage and elevation clicks.

C. L. Threeton

cc L Mr Peters
Wayne Leek 12/18

Remington DUPONT

PETERS DUPONT

REMINGTON ARMS COMPANY, INC.

MANUFACTURERS OF
SPORTING FIREARMS, AMMUNITION
TRAPS TARGETS
POWER TOOLS

BRIDGEPORT 2, CONNECTICUT

ARMS AND CARTRIDGE POWERED, TOOLS
ILION, N. Y.
AMMUNITION, BRIDGEPORT, CONN.
POWER TOOLS, PARK FOREST, ILL.

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PETERS CARTRIDGE DIVISION
BRIDGEPORT, CONN.
TRAPS AND TARGETS, FINDLAY, OHIO
CABLE—HARTLEY, BRIDGEPORT
—ALL CODES—

Hoard
1 - Wayne
2 -

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C. L. Threeton

cc S. M. Allen
Wayne Luk 12/17

RD-69 · REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington

RECEIVED
DEC 17 1962
OFFICE - F. E. MORGAN

Dec. 11, 1962

To. F. E. Morgan

From. L. W. Johnson

Subject. Report of field firing test of XP100.

1- Operation of the gun was smooth. The safety was a bit too hard to operate

2- Trigger pull was excellent

3- Accuracy was excellent, A rest required for long range.

4. It does not hold well in one hand, either right or left, Due to grip design it cannot be balanced in the hand to line up with the forearm.

5. It does very well shooting from a rest. It is my opinion that it would be superb if equipped with a scope

6. Recoil is soft and quite light and there is a minimum of muzzle blast

7- It is difficult to carry and does not lay flat and secure on flat surfaces.

8. It is a powerful long range short gun and could be classed possibly as a modified single shot carbine

9. The fired cases can be easily hand loaded - no distortion from firing

L. W. Johnson

Ilion, New York
January 8, 1963

To: D. LEE BRAUN
Berkeley, California

From: W. E. LEEK

Dear Lee:

Just noticed in your letter of December 19th your concern about single shot shotguns, normal priced double, and low-priced over-and-under. We have certainly been aware of the fact that to have a complete line of guns and a complete gun company it is almost necessary to provide all types of firearms for our customers. Over the years I have suggested to Sales for their consideration several combinations of single shots, over-and-unders and double barrels, and always we have come up with the problem of low volume. Actually, if a new model does not tie in with an older or existing one, it requires a normal year volume of 25,000 units to break even on cost. We have for some time been working on a combination of single barrel and over-and-under shotgun with center fire rifle combinations. There is a possibility with this type of design that we may someday obtain a volume substantial enough to make future development realistic.

As we progress with further development of the M/1100 Shotgun other gauges are in the offing as you know, and I will need the utmost support from your area to put this over. I do believe, however, that most everyone in Sales and especially those at Bridgeport feel the same as you do, and that in the near future we will have something to look at for design and review which will make all of us very happy. I am certainly looking forward to shooting a 410 M/1100. How about you?

W. E. Leek, Chief Designer
Firearms Design
Ilion Research Division

WEL:T

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

RD-69 REV. 6-58

c.c. - Gail Evans
J.E. Dickey

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington DUPONT

Berkeley, California
December 19, 1962

TO: WAYNE ~~LEEK~~

FROM: D. LEE BRAUN

Dear Wayne:

Have just now gotten a chance to answer your nice letter of December 3. The Model 1100 is still shooting fine, the XP-100 performs fine except I am having a helluva time figuring what I am going to sell it for and why - but have no fear, I will figure out some tale, you can be sure.

I heard about the fine performance and acceptance the Model 1100 made at the presentation to the sports writers at Lordship. This is terrific and one of the best ways I know of to spend money to help us sell our products. I am for it.

I think the sales department has missed a tremendous sales feature by not including the steel plug with the Model 1100 and there should be a couple of M/870 plugs lying around that can be operated on to fit the occasion.

Wayne, Larry Dick and I can't give you much from our personal accuracy test performance because you know I can't hit that part of the bull with you-know-what in an accuracy performance test with a pistol; sometimes when I shoot a shotgun it looks as if I am in that shape with my spreader tube. But so be it; I get that way gracefully, I think.

If and when we ever decide there is enough sale for a single-shot shotgun and a normal-priced double barrel, and a low-priced over-and-under, always remember we're here to serve our company and day. I mention this as I can remember sitting with the Model 30 bolt action up until January 1, 1962. There were many among us who felt there was no sale for a bolt action rifle. Will ask that the vote be taken over and see what we come up with. If we ever make a 28-gauge 870 this might even surprise them too. But we in the field feel pretty good about the guy who is taking care of the sales and the rudder of the boat as far as sales are concerned. Also - whenever you want the 870 28-gauge tested let me know - .410 too!

Very kindest and best.

DLC

Manager - Western Region

c.c. - Gail Evans
J. E. Dickey
Wayne Leek

Berkeley, California
December 19, 1962

TO: F. E. MORGAN

FROM: D. LEE BRAUN and LARRY DICK

SUBJECT: FIELD TEST - XP100

Dear Pete:

We have now shot the field test for the XP100. The firearm worked perfectly as far as ejection, feeding and firing is concerned.

We feel this gun will sell initially because it's peculiar to the firearms industry to this point. It is a nice looking arm in a modern sort of way. It is perfectly balanced and the recoil is practically nothing. However, the muzzle blast is a bit excessive and will probably require ear plugs.

I feel sure the accuracy of this arm will leave nothing to be desired but if you were to go by Larry Dick's and the writer's performance on an accuracy basis, it would be better to hide in the closet at midnight because we couldn't prove anything, both of us being shotgun shooters and a bit unsteady at the pistol bit - and this includes bench rest shooting as well.

We both feel you should enlist Weaver, Bausch & Lomb and other scope people to use this gun in their advertising and promotion as it will make a dandy gun with the use of a scope.

We are not sure how the public will take to the single-shot feature. A repeating bolt action with a box fed cartridge arrangement would have been better, especially for moving varmits where a repeat shot is required quite often. Off of this particular subject, why couldn't we make a rim fire firearm like this and sell it as a free pistol for target shooting? It may be further developed as a repeat pistol for use in other matches ---this is just a thought.

We feel it is too heavy to be carried as a side arm,

2 - F.E. Morgan Dec. 19, 1962

We have no idea what the price of this gun will be, but we surely suggest that the sights be trained pretty low on this.

As far as our personal test is concerned, we have nothing we can give you except good operation and good performance. We enlist your suggestions as to how and what we sell this for upon announcement.

Yours very truly,

D. Lee Braun,
Manager - Western Region

I AM NEVER INFORMED OR INVITED

CC: ~~S. M. Alvis~~
A. D. Kerr
W. T. Scanlon
W. W. Fenton

Ilion, New York
January 7, 1963

G. G. D. ROCKWELL
BRIDGEPORT

MODEL XP-100 TEST SHIPMENTS

Fourteen (14) Model XP-100's are being shipped to you today for package evaluation. This shipments consists of:

1 - Five-pack via Express
1 - Five-pack via Truck
2 - Single-pack via Express
~~2 - Single-pack via Parcel Post~~

Please inspect cartons and RETURN GUNS UNOPENED to Ilion by same method of transportation. It is important that cartons, on return, be marked for attention of W. A. Best, at Ilion.

Your cooperation is appreciated.

D. E. MILLER
WORKS MANAGER

By H. J. Hackman
H. J. Hackman, Supt.
Prod. Eng. & Control Section

WABEST/eb

Ilion, New York
January 7, 1963

To: D. LEE BRAUN
Berkeley, California

From: W. E. LEEK

FIELD TEST - XP-100

Thank you for your fine letter and accurate appraisal of the XP-100. I feel that some of the items you mention need explanation; therefore, will take them one at a time.

Your comment on muzzle blast. Our first model was made up with the standard 222 Caliber cartridge with a longer barrel. This cartridge, utilizing a slower burning powder, gave us tremendous muzzle blast quite similar to that noticed with Remington Jet when fired in a Smith & Wesson revolver. We have changed the powder for the 221 Fireball so that it burns at a faster rate and therefore reduces muzzle blast, giving us higher velocity. I admit it is somewhat noisy but as far as competitive problems are concerned with blast, we have nothing to fear as compared to the Remington Jet in the Smith & Wesson revolver.

The high support of the grip well up under the barrel and receiver assembly reduces the moment of recoil and for that reason muzzle jump has been reduced and recoil is practically unnoticed.

As far as accuracy is concerned, this pistol, in machine rest groups is shooting as well as our rifles at 100 yards. I have actually had 5-shot groups under 1/2" at this distance. In shooting off-hand, of course, the groups will open up. I have been averaging around 89 at 50 yds. off-hand, and have been lucky to obtain two targets which were 98, four x's and one 9. I believe with more practice and a little more luck this may be improved.

I have found that off-hand shooting with scopes is very difficult, but for those who cannot shoot well, supporting the pistol on a rest with a scope makes an ideal combination. Your suggestion to enlist the advice and help from various scope and mount manufacturers is certainly very timely, and we will follow up on this.

Your comment concerning single shot versus box feed certainly needs some discussion. For example, most varmint hunters don't care for magazine fed rifles, and I feel that this will hold true for this pistol. This also holds true for target shooting when firing slow fire. And with a box magazine rapid fire would not be possible anyway. Another thing, hand loaders are not very happy with box fed magazine, and I feel sure that most shooters will revert to hand loading with this pistol.

The nice balance that is obtainable with the XP-100 is the reason for the grip to be forward under the receiver. With the grip in this position it is impossible to place a magazine box up through the grip. If a box magazine was inserted either on the right or left hand side of the receiver, one locking lug would have to be removed. Of course, we know that one lug would be adequate strength-wise; but when we must decide which is the best compromise in all designs, and felt it was better to leave this model a single shot.

As far as running shots are concerned, I have found that the bolt action would be too slow even though box fed and that the only ideal action with such a pistol would be semi-automatic. Confidentially, you might someday see something like this.

We have been experimenting with various methods of carrying this pistol. Not being adept at making holsters out of leather, we have reverted to sling straps. We have found that a sling strap similar to the Nylon-66, with quick detachable links fastened to the bottom of the grip and forward section of the fore end, make an ideal carrying device. In this manner the pistol can be carried with the strap over the shoulder and under the arm, or over the shoulder and across one's back. I suspect there will be numerous innovations and devices in development for this gun, and it will certainly excite the fancy of the manufacturers of holsters, slings, etc.

The accuracy with this pistol is so great that as far as can be determined we can claim it to be the most accurate, highest velocity and longest range pistol ever designed. And I firmly believe there will be a lot of slow fire records broken with the XP-100.

Thank you again for your fine report and test results.

Wayne E. Leek

WEL:T

RD-69 REV. 6-58

c.c. - Gail Evans
J. E. Dickey
Wayne Leek

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington
DUPONT

Berkeley, California
December 19, 1962

TO: F. E. MORGAN

FROM: D. LEE BRAUN and LARRY DICK

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Yours very truly,

D. Lee Braun

D. Lee Braun,
Manager - Western Region

This was the fellow who said couldn't sell guns in his Region alone!

Sdlt

Ilion, New York
January 7, 1963

To: K. D. OSLUND
Lincoln, Nebraska

From: W. E. LEEK

Dear Kay:

Thank you for your interesting and prompt report on the XP-100. Your results show keen interest and desire to provide an impartial test and opinion of this new pistol.

I will refer to your questions and suggestions as they appeared in your letter.

1. Extra cardboard in the package surrounding the carrying case.

   We noticed several of the returned cases had scratches lengthwise of the case but were unaware of the cause until we heard from you. Present plans are to use overlapping joints to eliminate this problem.

2. Checkering around the front of the grip

   This would be desirable, I suppose, for some shooters, and for others it would be unnecessary. It would be almost impossible to provide any more checkering around the grip on the curved surface as the checkering would prevent removal of the pistol halves from the molding die. I have had the best luck in shooting the XP-100 by supporting it more on the thumb and forefinger, with little or no gripping with the rest of the hand.

3. Sights

   Sights are one of our most difficult appurtenances to gun design. The XP-100 is such a flat shooter that it is unnecessary to re-adjust the sights between ranges of 50 to 200 yds. for the average shooter. If one is very adept at off-hand shooting and requires 1/8" or 1/4" minute click adjustments, then a more expensive micrometer adjusting sight is needed. It was necessary to design a sight that provided windate and elevation adjustment and still not have the affect of a "stamped part" appearance. Give this item (sights) some further consideration and I believe you will agree that we have a fine sight for the money. Consider these requirements:

3. a. Must have an expensive appearance --- no stampings.

   b. Provide windage and elevation adjustment.

   c. Reasonably low cost.

   d. Provide a partridge type rear sight picture.

   e. Not be too bulky and ungainly in appearance.

4. Muzzle Preponderance

   It is necessary for every rifle, pistol and shotgun to have some muzzle preponderance but not too much. Some shooters like more than others. A revolver has too much forward weight because of its peculiar design. Most target pistols are about right, but for some target shooters more weight is desired. We provided for an adjustment in the weight in the fore end of the stock where 38 cal. bullets can be inserted if necessary. Frankly, in our tests I found no improvement in my scores by adding weight. My average off-hand scores at 50 yds. is running around 89 with a couple 98's for good measure. One of my designers noted some improvement in adding two 38 cal. bullets.

   In this respect your guess and needs are as variable as others, and to provide versatile weight adjustment for everyone is very difficult. All we can do is compromise and hope to fit the majority.

5. We shouldn't have any difficulty with the trigger balance. For example, drop tests on concrete and even at -20°F. do not seem to affect this part. The front sight seems to be the most vulnerable part, with the nylon holding up exceptionally well. However, we will keep a close inspection on this part.

6. I agree that the picture of the "Bolt Release" appears to reveal the part as being in the rear of the gun. It is as you have found at the rear of the gun but slightly inside the receiver. According to the photographers, artists, etc. this was the best way to show the location, even though it is a general location. Any additional thoughts in this area would be appreciated.

7. Your suggestion concerning a N-66 - 22 cal. pistol is very timely especially since we are in the process of testing one. This information, of course, is

BARBER - PRESALE R 0131407

7. confidential and has not been discussed at any length outside our own Design Group. So would appreciate your treating it as such.

I trust I haven't been too verbose in discussing these items with you, but believed they needed some explanation.

Thanks again for your cooperation and suggestions.

Sincerely yours,

Wayne E. Leek

W. E. Leek, Chief Designer
Firearms Design Section

WEL:T

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131407

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington
DUPONT

1-3-63

To: Wayne Leek

From: Kay Ostlund

Dear Wayne,
I've pulled a "boo-boo" again - the letter I sent you regarding my findings on the XP100 should have been sent to Pete Morgan - Will you please forward it to Pete as I didn't make a copy -

Thanks,
Kay

Orig. of letter dated 12/30/62 sent to F.E. Morgan 1/9/63

Orig sent to F.E. Morgan 1/9/63

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL, CORRESPONDENCE

Remington DUPONT

12-30-62

To: Wayne Leek

From: K.D Oslund

XP100 Test.

Will "do" very well as a lap joint
Test good of hot joint for flaps. - SMA

Dear Wayne:-

Before making any suggestions on the XP100 I think it would be a nice thing to insert a piece of cardboard between the carrying case & shipping box - I'm opening my box & using a knife to cut the seaming strip I cut slightly into the case. There is no doubt that dealers will open the box the same way - a piece of cardboard between the carrying case & the shipping box will eliminate this.

We've had some terrible weather since receiving the arm and ammo.

I'd suggest that the checkering be around the front of the grip - the nylon

RD-49 REV. 6-56

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington

is slick & to me makes it hard to hold. I improved my groups as soon as I wound the grip with electricians friction tape.

I don't go along with the way the sights are adjusted. Also I feel ⅛" would be better.

The arm belt muzzle light and hard to hold without a wobble. I taped a piece of extruded lead wire to the fore-end of the stock. it helped me a great deal.

Ejection, extraction + feeding OK.

I might add that in taping the extruded lead wire to the fore end it was of greater length than combined "bullet lengths would be.

Grip at base with contact of heel of hand seems too large.

Would suggest the trigger balance be held in place by washers to keep it in line with the slot of the trigger link. If they do not line up easily + customer forces screws in assembling gun the balance mechanism could be hurt.

RD-69 REV. 6-56

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington

Trigger pull excellent.
My folder on the XP-100 shows the bolt release in plain sight. which it is not.
Safety OK,

Regards,
Roy Ackland

P.S. On the letter sent me. as soon as I completed test I was to return arm to you. It is going out by express to you to-morrow.

As a suggestion Wayne why not give us a Target 22 auto pistol - using N66.?!!

Ilion, New York
January 7, 1963

To: K. D. OSLUND
Lincoln, Nebraska

From: W. E. LEEK

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   We noticed several of the returned cases had scratches lengthwise of the case but were unaware of the cause until we heard from you. Present plans are to use overlapping joints to eliminate this problem.

2. Checkering around the front of the grip

   This would be desirable, I suppose, for some shooters, and for others it would be unnecessary. It would be almost impossible to provide any more checkering around the grip on the curved surface as the checkering would prevent removal of the pistol halves from the molding die. I have had the best luck in shooting the XP-100 by supporting it more on the thumb and forefinger, with little or no gripping with the rest of the hand.

3. Sights

   Sights are one of our most difficult appurtenances to gun design. The XP-100 is such a flat shooter that it is unnecessary to re-adjust the sights between ranges of 50 to 200 yds. for the average shooter. If one is very adept at off-hand shooting and requires 1/8" or 1/4" minute click adjustments, then a more expensive micrometer adjusting sight is needed. It was necessary to design a sight that provided windate and elevation adjustment and still not have the affect of a "stamped part" appearance. Give this item (sights) some further consideration and I believe you will agree that we have a fine sight for the money. Consider these requirements:

3. a. Must have an expensive appearance --- no stampings.

   b. Provide windage and elevation adjustment.

   c. Reasonably low cost.

   d. Provide a partridge type rear sight picture.

   e. Not be too bulky and ungainly in appearance.

4. Muzzle Preponderance

   It is necessary for every rifle, pistol and shotgun to have some muzzle preponderance but not too much. Some shooters like more than others. A revolver has too much forward weight because of its peculiar design. Most target pistols are about right, but for some target shooters more weight is desired. We provided for an adjustment in the weight in the fore end of the stock where 38 cal. bullets can be inserted if necessary. Frankly, in our tests I found no improvement in my scores by adding weight. My average off-hand scores at 50 yds. is running around 89 with a couple 98's for good measure. One of my designers noted some improvement in adding two 38 cal. bullets.

   In this respect your guess and needs are as variable as others, and to provide versatile weight adjustment for everyone is very difficult. All we can do is compromise and hope to fit the majority.

5. We shouldn't have any difficulty with the trigger balance. For example, drop tests on concrete and even at -20°F. do not seem to affect this part. The front sight seems to be the most vulnerable part, with the nylon holding up exceptionally well. However, we will keep a close inspection on this part.

6. I agree that the picture of the "Bolt Release" appears to reveal the part as being in the rear of the gun. It is as you have found at the rear of the gun but slightly inside the receiver. According to the photographers, artists, etc. this was the best way to show the location, even though it is a general location. Any additional thoughts in this area would be appreciated.

7. Your suggestion concerning a N-66 - 22 cal. pistol is very timely especially since we are in the process of testing one. This information, of course, is

BARBER - PRESALE R 0131414

7. confidential and has not been discussed at any length outside our own Design Group. So would appreciate your treating it as such.

I trust I haven't been too verbose in discussing these items with you, but believed they needed some explanation.

Thanks again for your cooperation and suggestions.

Sincerely yours,

Wayne E. Leek

W. E. Leek, Chief Designer
Firearms Design Section

WEL:T

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131414 R2532402

cc. S.M. Alig
Wayne Leek 12/13
pbc 12/17/62

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington
DUPONT

Jacksonville, Florida
December 11, 1962

RECEIVED
DEC 13 1962
OFFICE - F. E. MORGAN

TO: F. E. MORGAN

FROM: C. A. PITTS

SUBJECT: CONFIDENTIAL XP100 "FIREBALL" FIELD TEST

Dear Pete:

This is to advise that I have completed the tests of the Model XP100 "Fireball", Serial #1129 sent to me for this purpose.

The gun worked perfectly and was quite accurate up to 50, 75, and 100 yards. At longer distances it, no doubt, would have been equally as accurate if I had been a professional pistol shooter.

I beleive the gun has a lot of possibilities and will sell readily in areas where we have a demand for this particular type gun for varmints.

I did find that the gun you sent to me (which has now been returned to Wayne Leek as indicated in your letter of November 14) to be exceedingly light on the trigger pull. Actually, the trigger pull is so light that it is hard to squeeze off on each shot. This fact along would be a disadvantage for those who are accustomed to squeezing off on their targets. In other words, Pete, as in my examination, the trigger pull should be a little heavier on other models than the one you sent to me.

It would be hard for me to determine the ballistic characteristics of this gun by comparing them with the ballistics you recently sent to me along with a package of targets. I did notice that at 100 yards there was some drop and I would assume at longer distances there is quite a drop in the trajectory of the cartridge from this gun.

When we are ready to announce this model it is suggested that all members of our field force in the Southern Region be equipped with a sample.

Very truly yours,

Charlie

CAP/jcj

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington DUPONT

Jacksonville, Florida
December 11, 1962

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Very truly yours,

CAP/jej

cc S. M. Alyo
Wayne Luk 12/17

REMINGTON ARMS COMPANY, INC.
INTER-DEPARTMENTAL CORRESPONDENCE

Remington
DUPONT

RECEIVED
DEC 1 71962
OFFICE - F. E. MORGAN

Dec 11, 1962

To. F. E. Morgan
From. L. W. Johnson
Subject. Report of field firing test of XP100.

1- Operation of the gun was smooth. The safety was a bit too hard to operate
2- Trigger pull was ex ellent
3- Accuracy was excellent, A rest required for long rang.
4. It does not hold well in one hand, either right or left. Due to grip design it cannot be balanced in the hand to line up with the forearm.
5. It does very well shooting from a rest. It is my opinion that it would be superb if equipped with a scope
6. Recoil is soft and quite light and there is a minimum of muzzle blast
7- It is difficult to carry and does not lay flat and secure on flat surfaces.
8. It is a powerful long range short gun and could be classed possibly as a modified single shot carbine
9. The fired cases can be ly hand loaded - no distortion from firing

L. W. Johnson

RD-49 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington DUPONT

RECEIVED DEC 11 1962 OFFICE - F. E. MORGAN

Dallas, Texas
December 10, 1962

TO: F. E. Morgan

FROM: E. B. Spencer

File XP-100 - Test

TEST-EX100

Dear Pete:

Today George Martin and I shot the EX100 through the entire course of fire. We had an excellent spot to shoot with targets at 50 yds., 100 yds. and 200 yds. We shot it from sandbags, from a table, and of course, standing as in regular pistol shooting.

After discovering the EX100 as received would not even shoot on the entire paper target at 50 yds. we adjusted the sights and shot some really fine groups, particularly at 50 yds. Using the standard 50 yd. Pistol Target we were rarely out of the 10 ring, and George shot a couple of 5 shot groups well within two inches, all this at 50 yds. Moving out to 100 yds. and using a standard 100 yd. Big Bore paper target, we were still able to hold most of our shots in the black. The groups at 100 yds. were roughly twice as large as at 50 yds., but still acceptable, and most of our shots would have struck a crow or hawk or varmint at that distance. We did not use a paper target at 200 yds., but instead shot at objects placed on the earthen backstop. At this distance we found the pistol shot a bit low, (approx. 10" or 12"), but still we were amazingly close on many shots.

The accuracy of this Arm is completely up to our expectations. With a scope really excellent accuracy could be obtained up to 100 yds.-150 yds.

The mechanical function of the pistol is slick as a button. The trigger on this particular piece is very good, crisp and adjusted to a good weight. The bolt works quite smoothly; in fact, we could use one as slick on our Model 700. We had no malfunctions or mechanical difficulties at all in our firing. Since

George or I have had very little experience in Pistol shooting, we could not pass with any authority, on the balance or weight. We did determine the best use of the pistol comes with a two hand hold or a rest of some kind.

Without a doubt there is a new market opening in the Southwest on a firearm of this type. There is much varmint type shooting in the Southwest and still plenty of room to shoot. At present the market is probably not very great, but within two or three years it could be large. Our first coverage of the trade should take a considerable number of pistols, and after that the first class Sporting Goods people will take over. It is not an item our Hardware Wholesalers will push or sell.

It should be borne in mind many of these pistols, perhaps the bulk of them in this part of the country, will be equipped with scopes, and if any compensation can be made in the carrying case to accommodate these scoped pistols, it should be done.

Yours very truly,

Buster

E. B. Spencer
Manager, Dallas District

EBS/NB

Ilion, New York
December 10, 1962

T. R. FRYE
Billings, Montana

Dear Tom:

MODEL XP-100 TESTING

Thanks for your two memos and telephone call. Glad you like the XP-100. Latest 5-shot machine rest groups indicate superior accuracy. Some groups as small as .9" at 100 yds. In fact, the XP-100 is shooting more accurately than most rifles.

I am afraid your suggestion of 6mm on the Magnum case might burn the powder too slowly, therefore resulting in poor accuracy, low velocity and a noisy gun. We will have to experiment a little and see what we can work out.

Don't worry about the 30-30 --- there will be other calibers, too.

Best regards and Holiday wishes to the Tom Frye's.

W. E. Leek, Chief Designer
Firearms Design Section
Ilion Research Division

WEL:T

RD 604

cc file

REMINGTON ARMS COMPANY, INC.

File

SPEEDMEMO

Date 11-30-62

Message To: Wayne Leek Subject Handgun

From: Tom Gryp & best regards —

Rec'd sample 11-27- and ammo 11-29-. Mounted Bushnell scope on it and it is a "Going Jessie".

#1- Put a "Glowing" sight like Ithaca on front sight for dark background.

#2- Rear sight - outline in white for faster alignment.

#3- Make it also in 6mm Walker 244 Bullet on 222 Mag case. It will be legal for antelope & deer there - What do you think?

ORIGINATOR—DO NOT WRITE BELOW THIS LINE

Reply To: Date

From:

ORIGINATOR OF MESSAGE: 1. Write message legibly in space provided. 2. Detach and keep yellow copy for your file or follow-up. 3. Send white original and pink copy with carbon between—do not separate.

RECEIVER OF MESSAGE: 1. Write reply legibly in space provided. 2. Detach pink copy for your file. 3. Send your reply to Originator.

RD 89

Arman
Fyi

REMINGTON ARMS COMPANY, INC.

SPEEDMEMO

Date 11-30-62

Message To: Wayne Leek Subject New Bolt action Rifle centerfire.

From: Lou Trupe

Wayne:-
Do not know Model number of this vent rib centerfire rifle - But if we make it only in 30-30 - I won't sell many.
Make it in 6 mm Mag also!
This combination would be entirely new
Whats the dope - gardner?
Hope you are fine.
Best to you
Lou.

ORIGINATOR—DO NOT WRITE BELOW THIS LINE

Reply To: Date

From:

ORIGINATOR OF MESSAGE: 1. Write message legibly in space provided. 2. Detach and keep yellow copy for your file or follow-up. 3. Send white original and pink copy with carbon between—do not separate.

RECEIVER OF MESSAGE: 1. Write reply legibly in space provided. 2. Detach pink copy for your file. 3. Send your reply to Originator.

Ilion, New York
December 3, 1962

M. D. BERKELEY
St. Louis, Missouri

MODEL XP-100 - FIELD TEST

Thank you for your early, precise and accurate report of the field test on this model. Everyone who has had the opportunity to shoot the XP-100, regardless of their ability as a pistol and target shooter, has verified your findings in that it is very easy to shoot accurately.

I am sorry you had difficulty with the sight. Our first difficulties with the rear sight involved bending of the sight when tightening the elevating screw. This was immediately corrected by hardening this part. In checking with the metallurgist, he has determined that the hardness of your particular sight was above specifications and therefore caused embrittlement. It is the only failure we have found.

I agree with you that in careful adjustment and windage of the rear sight it is going to be necessary to provide some kind of micrometer adjusting sight. This is going to be rather expensive and it is our feeling here that it should be added as an accessory. We feel that this sight can be mounted on top of the receiver either in the forward or rearward breech section using the scope screws for the attaching means.

Although I have not been shooting a pistol for some years I was finally able to break my former slow fire pistol scores at the 50-yd. range with an average of around 87 up to 98 with this pistol. With two targets off hand, I had four 10's and one 9, in which the 10's were all X's. I think a reasonably good pistol shot should have no difficulty at 50 yds. to shoot possibles with the XP-100. It might interest you to know that I was lucky enough to hit an army type steel helmet at 300 yds. with one shot penetrating both sides of the helmet at that range.

We have been testing pistols with scopes. There are two types on the market at the present time. I believe that Bushnell makes one, which I have not had a chance to use, and the other is of German manufacture, made especially for pistols. We used a Redfield Junior Mount, reducing its overall length by 1"-.100", and from the bench fired some exceptionally fine targets at the 50-100 yd. range.

As far as off-hand shooting is concerned, it is my opinion that the use of a scope is a detriment and magnifies one's errors in holding, therefore providing a mental hazard.

During presentation of this model to the sports writers there was considerable excitement which I believe was twofold; one because Remington is now entering the pistol business, and second we have produced a most powerful long range and accurate handgun.

Thank you for your comments and I feel sure we will sell thousands of these pistols to the public.

W. E. Leek, Chief Designer
Firearms Design Section
Ilion Research Division

WEL:T

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington DUPONT

cc: Gail Evans
J. E.Dickey

Bridgeport, Connecticut
November 30, 1962

TO: ~~S. M. ALVIS~~
~~WAYNE LEEK~~

FROM: F. E. MORGAN

Attached is a copy of M. D.Berkeley's Field Test Report on the XP-100. His enthusiasm for the saleability and use of the gun is most encouraging.

Note paragraph #4 where reference is made to a broken rear sight part. Suggest this be examined when the gun is returned.

We would also appreciate your comments on the need for strengthening this part.

FEM/mgm

F E Morgan

cc S. H. Lawson

RD-69 REV. 6-58

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington
DUPONT

St. Louis, Missouri
November 28, 1962

RECEIVED
NOV 30 1962
OFFICE - F. E. MORGAN

TO: F. E. MORGAN

FROM: M. D. BERKELEY

SUBJECT: XP100 (#1113) FIELD TEST

The above firearm was tested by S. H. Lawson and me at the Missouri Bottoms Rifle and Pistol Range near St. Charles, Mo. The test was conducted with the assistance of E. A. Wolfram, manager of this range and his son Richard. They were pledged to secrecy concerning this confidential field test.

The conditions for testing were not the best as it was cloudy with the temperature in the low forties with a strong wind blowing across the range.

The test was conducted at ranges of 25, 50, 100 and 200 yards using official N.R.A. targets shooting off hand and two handed at 25 and 50 yards but at 100 and 200 yards using a sand bag rest on a table.

Recognizing the fact that Lawson and I are not expert pistol shots we were amazed at its accuracy at 25, 50 and 100 yards. There is no doubt that in the hands of an expert this new revolutionary pistol would make fantastic groups. We were scarcely successful in hitting the target at 200 yards as conditions and the wind made for a poor sight picture and the size of the 'bull' at this yardage was exceedingly small for our eyes.

Many adjustments of the windage and elevation sights were made at this extreme distance to no avail. We quit shooting on a five shot group at 200 yards after firing a total of 175 rounds at all yardages because the rear sight eyepiece broke on the lower right side when tightening the elevation screw. Examination of the broken part indicates that it is made of sintered metal. If so, we strongly suggest that we use a good carbon steel for this part and 'beef' it up also.

The only bad feature of this pistol, as far as we are concerned, is the rear sight as it is extremely hard to adjust since the graduations are so very small and hard to discern. It is

nearly impossible to make any close or correct adjustment especially with chilled, cold fingers. We recommend a rear sight with click adjustments. A poor rear sight could lose many sales for us and we will be constantly replacing sights if the present one is installed on this pistol.

Everything else about this piece is above reproach, the lines and the eye appeal are excellent, recoil and muzzle or blast are not heavy or objectionable. The pistol lends itself to one or two handed shooting beautifully and balances excellently in the hand in the standing position.

Accuracy at average yardages is only limited to the shooter's ability and loading is exceptionally easy. We found that by simply laying a cartridge in the loading incline and tilting the pistol muzzle down, the cartridge would go forward into the chamber as the bolt moved forward and all that remained to do was to close the bolt. Extraction and ejection is excellent and positive even though the extractor showed wear and the inside of the bolt head was marred and scratched. We had no malfunctions of any type or kind during the test except the breaking of the sight eye piece.

We did not have a scope available for use on this pistol but we imagine the use of one and the experiments with it would have been very enjoyable. We recommend that a suitable scope be provided for use in demonstrating this pistol. This will create additional interest by distributors and dealers who will see that their sales of scopes would increase because of this new pistol.

This revolutionary pistol will excite all the sports writers and thus we will receive much free advertising by them through the many articles that will be written about it. In our opinion, every 'gun nut' will want one of these pistols as well as many thousands of varmint shooters.

The pistol is being returned to Wayne Leek via Express Collect and insured for $500.00.

Merrill

MDB:JHC

RD-41-B

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

cc: W. A. Best
R. P. Kelly

Remington DU PONT PETERS DU PONT

"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"

Ilion, New York
October 4, 1962

W. B. LEEK

ACCURACY TESTING

XP-100 Production Guns

The first ten production guns were fired for accuracy in the experimental XP-100 accuracy device on October 4, 1962. Ammunition used for these tests was loaded at Bridgeport for experimental testing. Results of these tests are shown below.

Guns tested	XP-100 Production models
Ammunition	Bridgeport experimental loads
Range	100 yards
No. of shots	5 - unless otherwise indicated
Group Size Measurement	Inside to inside extreme spread

Gun Serial No.	Group Size	Remarks
1019	1.85"	
1154	3.1 " 1.8 "	4 shots only. Clamps loose.
1044	4.2 " 3.35"	6 shots
1146	3.4 " 3.05"	

BARBER - PRESALE R 0131429

Gun Serial No.	Group Size	Remarks
1171	3.35"	
	1.75"	
	4.6 "	
	2.9 "	Hand Loads w/50 gr. Sierra
	2.4 "	" " " " "
1030	.65"	
	2.80"	
1026	2.0 "	
	1.65"	
1155	2.20"	
	4.0 "	6 shots
1122	2.45"	
	2.1 "	
1130	2.85"	
	2.15"	

H. L. Chambers, Res. Engineer
Firearms Design

HLC:T

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131429 R2532417

Ilion, New York
December 13, 1961

W. E. LEEK

TEMPERATURE TEST ON NYLON RIB

Model XP-700

Since it has been considered feasible to mold a nylon rib for the XP-700, it became necessary to determine the temperature effects on such a part.

The first test was to fire 25 rounds, measuring barrel temperature after each round. The barrel was allowed to cool 45 seconds between shots. Results of this test are shown on Fig. 1.

The second test consisted of firing 20 rounds in two minutes. Temperature was measured after completion of the string, and was found to be 170°F.

The third test was the firing of a 50 round string in four minutes. Barrel temperature at the end of the string was 238°F.

After completion of each test the rib was checked to see if it remained tight on the barrel. No loosening was experienced during or after any of the high temperature tests.

The last test, a low temperature test, consisted of dropping the temperature of the gun to -35°F. The rib was checked at this temperature, and was found to be tight on the barrel. The rib was again inspected when the gun had returned to room temperature and was found to be tight on the barrel.

During these tests the rib was fastened to the barrel with six screws, each compressing the nylon .010 before bottoming in the holes in the barrel.

H. L. Chambers
Arms Design Section

HLC:T

BBL. TEMP. VS. SHOTS FIRED.
XP-700 BOLT ACTION - SINGLE SHOT PISTOL
CAL - .222 SH REM MAG.
TEMP. MEASURED INSIDE MUZZLE
10" BBL - MUZZLE DIA = .460"
45 SEC. BETWEEN SHOTS -

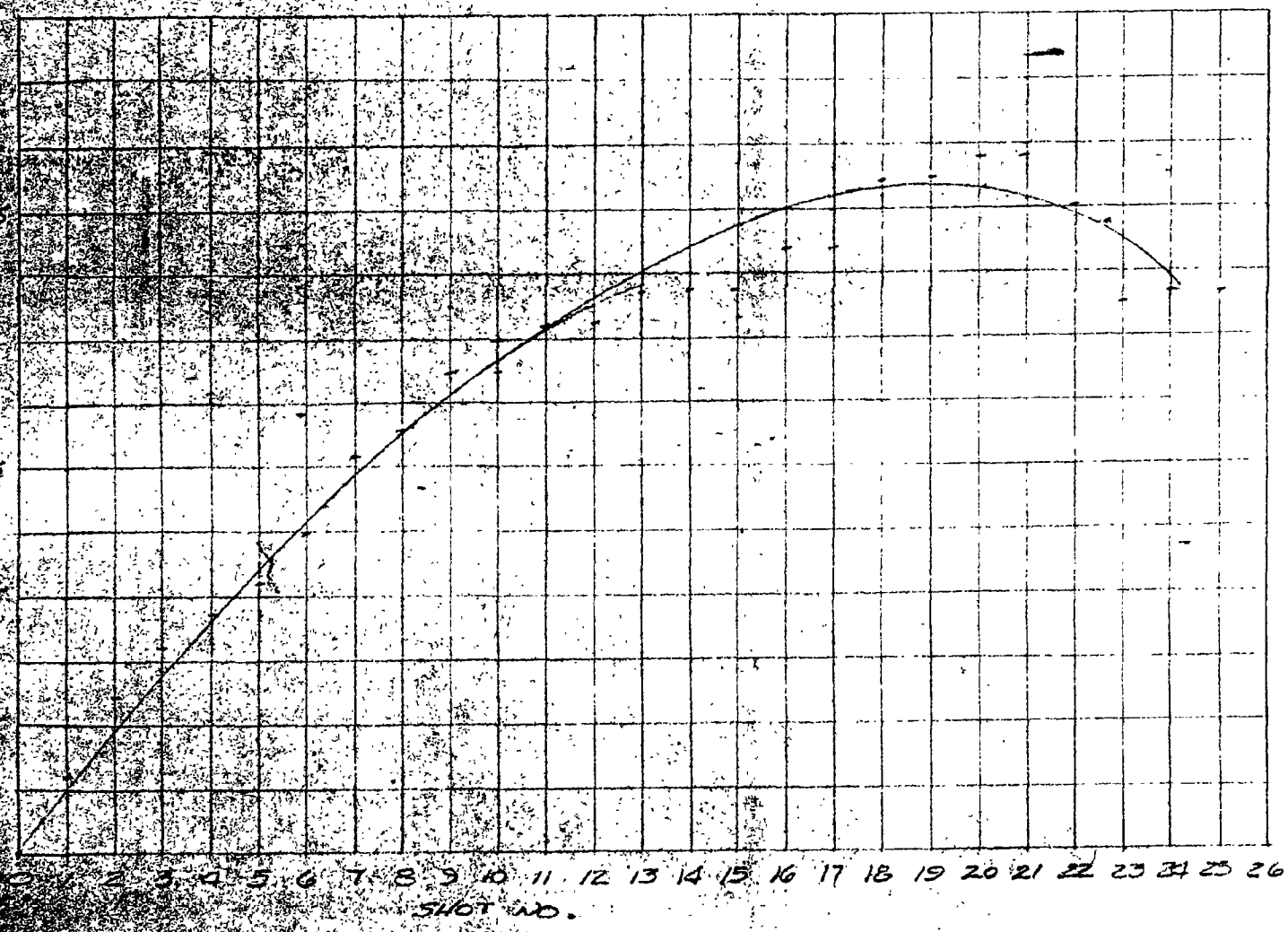


FIGURE I. - TEMP. TEST ON NYLON RIB
M/ KP-700

HJC 12/12/61

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

MODEL XP-100
.221 Fireball

PILOT LINE TEST

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.
Ilion Research Division

December 14, 1962

cc: S. M. Alvis
H. J. Hackman
N. S. Thompson
C. D. Hunt

W. E. LEEK

MODEL XP-100 - TEST RESULTS
Production Pilot Test

The production pilot test on the Model XP-100 Pistol consisted of eight individual tests. Each test was conducted separately with no bearing on any of the other investigations, and each will be covered independently in this report. Tests conducted were as follows:

1. Endurance and Function Test
2. Trigger Pull Test
3. Accuracy Test
4. Effect of Stock Interchangeability on Accuracy
5. Firing Pin Indent Test
6. Packaging Rust Test
7. Lock Time Test
8. Accuracy Comparison - 12" Twist vs. 14" Twist

Howard L. Chambers

H. L. Chambers, Research Engineer
Firearms Design Section

W. R. Googin

W. R. Googin, Foreman
Firearms Testing Unit

HLC:T
Attach.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON
BARBER - PRESALE R 0131434
R2532422

·nd (under barrel) for adding weights Each cavity will hold 3 caliber, metal case, 130 grain bullet (nose down). Barrel ıction must be removed from stock to add weights. **To Remove l and Action:** Push Safety ON SAFE Remove bolt. Unscrew disassemble forward and rear receiver screws See sectional Lift barrel and action from stock. Insert weights and emble barrel and action to stock. Make certain nylon receiver washers (forward and rear) are in correct position against ver during reassembly. Also that trigger balance remains ally positioned on its pin in stock This will enable top of ice to re-enter slot in trigger link easily. Make certain both ver screws properly re-enter metal screw escutcheons in and tighten action securely

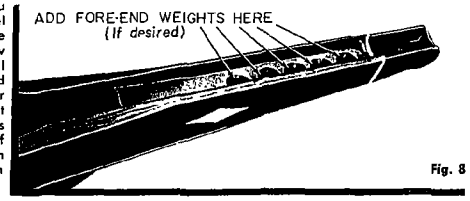


Fig. 8

INSTRUCTIONS FOR ORDERING PARTS

ıse read carefully)

ordering parts — please order by part number and part Give also model name and number of gun, serial number ıy), and state caliber or gauge Please identify from the onent parts, picture or section view.

only one subject in letter or order. Do not order spare and give instructions on repair of a gun or guns in the letter — this delays service

o do not ship sample parts to Firearms Factory unless it possible to identify from the Parts List or Instruction Folder. .hipping instructions concerning FACTORY SERVICE.

will furnish parts for discontinued models as long as the y is available. We are unable to supply parts for models ɔair guns not listed in the Parts List.

The sale of the following parts and certain other parts is restricted because special tools and gauges are required during assembly to make sure the firearms will operate properly.
• Barrel • Breech Block or Bolt • Receiver

All parts will be shipped as ordered, but since they are made to close dimensions, the particular part may require slight adjustment or fitting to assure proper functioning of the arm.

IMPORTANT: Do not combine Part Orders with Gun Service Orders.

Please send Part Orders direct to·

REMINGTON ARMS COMPANY, INC.
PARTS DEPT.
ARMS SERVICE DIVISION
Ilion, New York

INSTRUCTIONS FOR FACTORY SERVICE

Please read carefully before making shipment to the Firearms Plant at ILION, NEW YORK

ıipments should have forwarding and return address clearly ed on gun package as well as on attached letter.

ırther Improve service — please attach complete letter of nation securely on outside of each package returned to the y for repairs

o do not return gun accessories such as sling straps, quick e swivels, special boots, covers, telescopes, mounts or any ıl equipment to the factory with the gun shipment.

full details of the contents of the shipment — state whether lete gun or part List model name and model number, serial er (if any), and caliber or gauge

full condition of contents — stock and fore-end damage (if metal damage (if any), barrel bent or damaged (if any), missing, etc A full description will enable us to more ac- ·ly list the needed repairs

only one subject in letter or order Do not order spare and give instructions on repair of a gun or guns in the letter — this delays service.

THEN — to avoid all possible delay in starting work on your gun *or parts, please include in your first order or letter the trouble* you wish corrected, any changes you desire, or parts you wish replaced

If an estimate is required before the work is started, please advise. Otherwise we will proceed with the necessary work and send a statement of the cost to you. In this manner we can reship your gun or parts at the earliest possible date.

Unless you specify otherwise, shipments will be made by way of Parcel Post on small packages, Express on larger packages.

Remington gun parts are not interchangeable with those of any other make of gun For this reason the Remington Arms Company, Inc cannot service any gun not of our manufacture

We will make repairs on discontinued models as long as the *supply of parts is available However, we cannot make repairs* for models which are **not listed** in the Parts List.

IMPORTANT When returning pistols for Factory Service, shipment by express is recommended. This will avoid any involvement with postal regulations.

CAUTION· Before packaging guns for return to factory, ALL LIVE AMMUNITION SHOULD BE REMOVED

If live ammunition is included in package, shipment cannot be made by Insured Mail All other shipments may be made by Insured Mail, Express, Motor Transport, or Freight

Please send repairs direct to

REMINGTON ARMS COMPANY, INC.
ARMS SERVICE DIVISION
Ilion, New York

Printed in U S A Rev 1162 Form RD 5469

DU PONT

SINGLE SHOT • AUTOMATIC EJECTION **XP-100**

221 Rem. "Fireball"

CENTER FIRE • HIGH POWER CALIBER

INSTRUCTION FOLDER and PARTS LIST

Fig. 1

The Remington XP-100 is a single shot high power pistol for extreme accuracy and long range shooting

SAFETY (Fig 1) — Close bolt and rotate safety rearward to ON SAFE position Side lever type safety is located at right rear of receiver With safety in rear stop position, trigger cannot be pulled to "fire" pistol. When safety is *ON SAFE, bolt handle cannot be raised to open action*

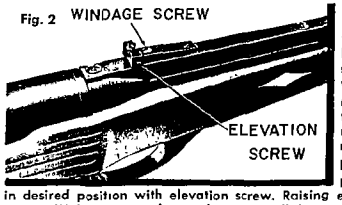
FIRE — Rotate safety with thumb to front stop position. Trigger can be pulled to fire pistol. Bolt handle can be raised to open action

Caution — Before firing make sure barrel is clear, free of heavy oil, grease, or any obstruction

TO LOAD — Raise bolt handle to unlock bolt Pull bolt handle back to open action. Load single cartridge upon loading incline in receiver, close bolt to chamber cartridge, lower bolt handle to lock action closed.

TO UNLOAD — Raise bolt handle and open action carefully This will extract cartridge from barrel, live cartridge then can easily be removed from pistol.

Fig. 2

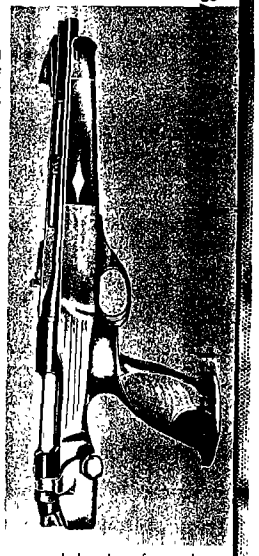


SIGHT ADJUSTMENT — The Remington XP-100 has a ventilated rib on barrel. The front sight is positive "fixed" design and not adjustable Rear sight adjusts for both windage and elevation or range See Fig. 2 A small sight wrench is supplied with each pistol

WINDAGE — Turn windage screw to loosen sight leaf Move sight leaf to right or left, tighten in desired position with windage screw. Moving sight leaf to right will move bullet impact at target to right Moving to left will move bullet impact to left.

RANGE — Turn elevation screw to loosen rear sight eyepiece on sight leaf. Raise or lower eyepiece and tighten in desired position with elevation screw. Raising eyepiece will increase range or raise bullet impact at target With eyepiece lowered range will lessen or range decrease.

RECEIVER SIGHTING — The receiver is drilled and tapped for telescope mounts Receiver plug screws can be removed when mount is assembled on receiver.



PISTOL CLEANING AND CARE

To make cleaning of barrel or bolt easier — remove bolt from pistol (Fig 3) Removal of stock is not recommended unless fore-end weights or replacement of fire control parts is necessary. See Sectional View

TRIGGER ADJUSTMENT — Is sealed at factory. This adjustment provides the proper amount of trigger pull and weight

CLEANING OF BARREL — *Use lightly oiled, soft cloth Clean from breech to muzzle Scrub barrel bore and cartridge* chamber in barrel with a good bore solvent, if necessary Wipe dry and re-oil bore and chamber very lightly

Fig. 3

CLEANING OF BOLT — Remove from pistol by pressing bolt stop (Fig 3) Press down on front of bolt stop. Bolt stop is located in left rear of bolt channel in receiver. Use small flat key or screwdriver. Allow bolt to slide back and disassemble as stop is pressed Pull bolt from pistol. Clean bolt, or bolt parts, with a good petroleum solvent Brush bolt face to remove shooting residue Re-oil lightly and lubricate cam surfaces on bolt to prevent wear

Additional care and cleaning of bolt parts can be done, if necessary See below

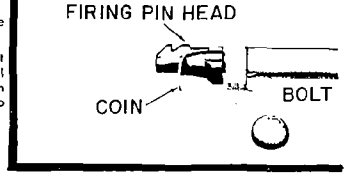
TO DISASSEMBLE BOLT PARTS — Pull bolt from pistol Pull firing pin head back until coin or similar piece can be inserted (Fig 4) Hold bolt handle and turn bolt plug until entire firing pin assembly can be pulled from bolt assembly Reassemble in reverse order

TO PUT BOLT IN PISTOL — With safety forward, simply align bolt lugs to receiver properly, then push bolt forward in pistol

HANDLING — Wipe barrel, receiver and all steel parts to prevent rusting Invisible "prints" of moisture can cause rust unless removed

EXPOSURE — After using in wet weather, always wipe steel parts with oil. Abrupt changes in temperature can also cause condensation and wetness Therefore, special care is needed, especially to inside metal parts to prevent rust When shooting in freezing weather, remove excess oil for best results Use dry graphite if necessary to lubricate metal parts

Fig. 4



REMINGTON ARMS COMPANY, INC.
ILION, NEW YORK, U.S.A.

"Fireball" is Trade Mark of Remington Arms Company, Inc, Bridgeport 2, Conn

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON
BARBER - PRESALE R 0131435
R2532423

Remington

Bolt Action Pistol

SINGLE SHOT

MODEL P-100

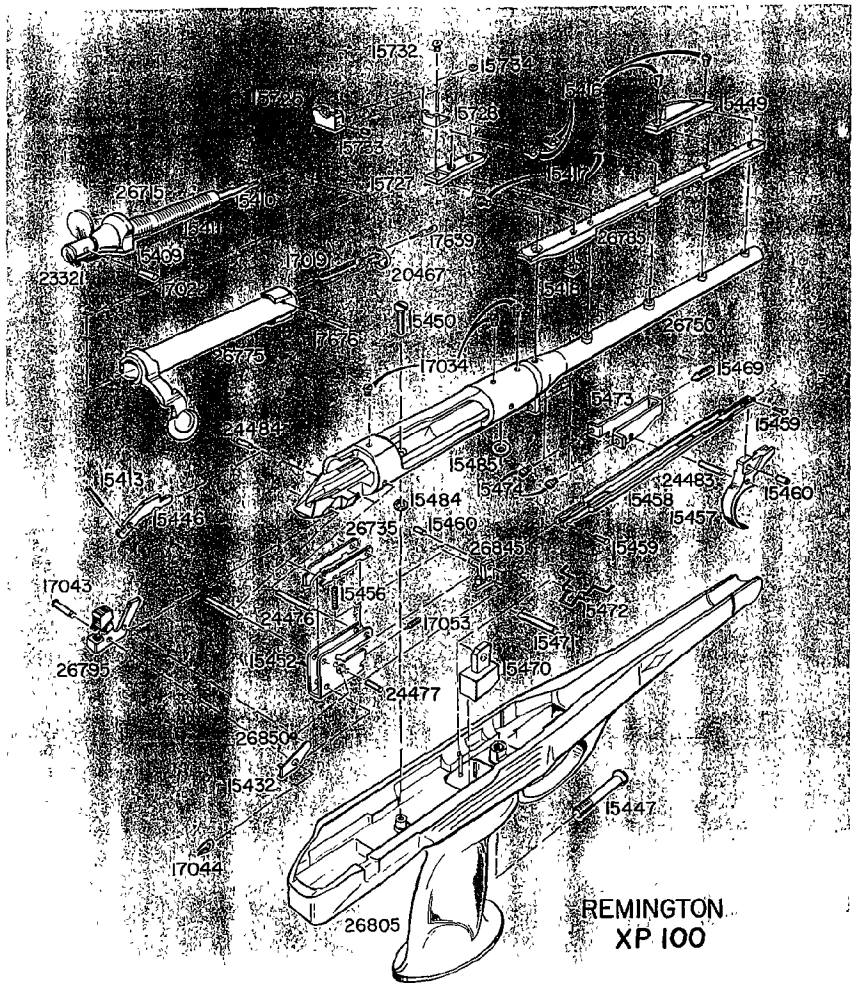
ALWAYS ORDER BY PART NAME AND PART NUMBER

No.	NAME OF PART
0	Barrel Assembly, 221 Rem. "Fireball" (includes Barrel, Barrel Bracket, Barrel Stud (4), Receiver)
5	Bolt Assembly, 221 Rem. "Fireball" (includes Bolt Body Assembly and Bolt Handle)
0	Bolt Final Assembly, 221 Rem. "Fireball" (includes Bolt Assembly, Ejector, Ejector Pin, Ejector Spring, Extractor, Firing Pin Assembly) (not shown)
9	Bolt Plug
6	Bolt Stop
4	Bolt Stop Pin
3	Bolt Stop Spring
9	Ejector
9	Ejector Spring
6	Ejector Pin
7	Extractor
0	Firing Pin
5	Firing Pin Assembly (includes Bolt Plug, Firing Pin, Firing Pin Cross Pin, Firing Pin Head, Main Spring)
2	Firing Pin Cross Pin
1	Firing Pin Head
7	Forward Receiver Screw
5	Forward Receiver Screw Washer
9	Front Sight
1	Main Spring
50	Rear Receiver Screw
4	Rear Receiver Screw Washer
0	Rear Sight Assembly (includes Rear Sight Base, Rear Sight Elevation Screw, Rear Sight Eyepiece, Rear Sight Leaf, Rear Sight Windage Screw) (not shown)
7	Rear Sight Base
3	Rear Sight Elevation Screw
5	Rear Sight Eyepiece
8	Rear Sight Leaf
8	Rear Sight Nut
2	Rear Sight Windage Screw

Part No.	NAME OF PART
15778	Rear Sight Wrench (not shown)
17034	Receiver Plug Screw
26785	Rib
15417	Rib Screw
26795	Safety Assembly (includes Safety, Safety Thumbpiece)
26850	Safety Detent Ball
15432	Safety Detent Spring
17043	Safety Pivot Pin
17044	Safety Snap Washer
26735	Sear and Safety Cam Assembly (includes Safety Cam, Sear)
26845	Sear Block Assembly (includes Sear Block, Sear Block Stud)
24477	Sear Block Pin
15456	Sear Block Spring
17053	Sear Block Stop Screw
15452	Sear Housing
24476	Sear Pin
15416	Sight Screw
26805	Stock Assembly (includes Fore-end Tip, Fore-end Tip Spacer, Fore-end Diamond, Forward Receiver Screw Escutcheon, Grip Diamond, Rear Receiver Screw Escutcheon, Stock Half, Left; Stock Half, Right; Trigger Guard)
15457	Trigger
15469	Trigger Adjusting Screw
15470	Trigger Balance
15471	Trigger Balance Pin
15472	Trigger Balance Spring
15473	Trigger Housing
15474	Trigger Housing Screw
15458	Trigger Link
15459	Trigger Link Pin
15460	Trigger Link Roller
26800	Trigger Link Assembly (includes Trigger, Trigger Link, Trigger Link Pin, Trigger Link Roller, Sear Block Assembly) (not shown)
24483	Trigger Pin

DELIVERIES ARE F O B ILION, N Y

REPLACEMENT PARTS—IDENTIFY COMPONENTS BY PART NUMBER FROM VIEW BELOW **XP-100**



Send all guns for factory service and inquiries on service and parts to
REMINGTON ARMS COMPANY, INC
Arms Service Division
Ilion, New York

All other inquiries are to be addressed to
REMINGTON ARMS COMPANY, INC
Bridgeport 2, Connecticut

BARBER - PRESALE R 0131435

Model XP-100 Test Results
December 14, 1962

Test No. 1

ENDURANCE AND FUNCTION TEST

During the week of October 14 thru 20, 1962, an endurance and function test was run on one Model XP-100; Caliber .221 Fireball. This test was conducted by personnel of the R&D Test Unit. All firing was conducted indoors from mechanical shooting devices.

The ammunition used in the test was loaded at Bridgeport earlier in the year for Ilion R&D testing. The loading specifications were 15.8 grains of 4227 powder with a 50 grain Remington bullet.

The test gun was assembled completely with production parts and no alterations of any kind were made on any of the components. The gun was assembled and adjusted by R&D personnel.

No cleaning of any kind was conducted throughout the test.

Prior to commencing the test, the gun was reviewed by the author and members of the R&D Test Unit. Function and operation of the gun were explained at that time, and a pre-fire check was conducted on the weapon.

At frequent intervals during the test a series of 11 - 5-round groups were fired at 100 yards in an experimental accuracy device. It was the purpose of this targeting to determine the effect of wear on the accuracy of the gun.

Data from these and other checks are indicated on the attached test form. Results of the test have been interpreted by the author as follows:

1. No major change in headspace.
2. Trigger pull increased slightly during test. Probably caused by foreign matter in fire control.
3. Group size decreased from zero to about 2500 rounds, where it commenced to open slightly.
4. No looseness of trigger housing throughout test.
5. Firing pin protrusion and indent constant.
6. No development of trigger creep.
7. Rib and sight screws have tendency to loosen slightly after prolonged shooting.
8. Receiver - Stock bedding OK.
9. Feeding OK with gun horizontal.

HLC:T

XP-100 FUNCTION AND ENDURANCE TEST

TEST GUN #5, S.N. 1130 - STOCK #5

SHOOTER	ROUNDS FIRED	HEAD SPACE	TRIG. PULL W/ STOCK	TRIG. PULL W/O STOCK	TRIG. PULL W/ STOCK AFTER	TRIG. HALF LOAD	F. PIN PRESS.	F. PIN INSERT	TRIG. CREEP	RIB & SAWS TIGHT	STOCK & RECV. TIGHT	ADJUSTMENTS AND HAPPENINGS
GOOGIN	3	O.K.	2	1 1/4		O.K.	.059	.015	O.K.	O.K.	O.K.	DISASSEMBLE & INSPECT
L. EVANS	120	O.K.	2	1	1.55 1.55	O.K.	.053	.015	O.K.	O.K.		DISASSEMBLE & INSPECT
ZOLLER	150	O.K.	2 1/4	1		O.K.	.053	.015	O.K.	[illegible]	O.K.	2 STAM CHECK
ZOLLER	250	O.K.	2 1/4	1		O.K.	.052	.015	O.K.	[illegible]	O.K.	DISASSEMBLE, REP. TIGHT, RS STAKE
L. EVANS	70	O.K.	2 1/4	1	2.00	O.K.	.051	.015	O.K.	" "	O.K.	"
ZOLLER	250	O.K.	2 1/4	1 1/2		O.K.	.053	.015	"	O.K.	"	
L. EVANS	90	O.K.	2 1/4	1 1/4	1.84	[illegible]	.052	.015	"	[illegible]	"	TIGHTEN [illegible]
ZOLLER	250	O.K.	2 1/4	1 1/2		[illegible]	.052	.015	"		"	
ZOLLER	60	O.K.	2 1/4	1 1/4	1.63	"	.052	.015	"	O.K.	"	
BECHARD	250	O.K.	2 1/4	1 1/4		"	.053	.015	"	O.K.	"	
L. EVANS	60	O.K.	2 1/4	1 1/2	1.7	O.K.	.053	.015	"	[illegible]	"	COMPLETE LOOSE WITHOUT NOT
ZOLLER	250	O.K.	2 1/2	1 1/4		O.K.	.053	.015	"	"	"	
L. EVANS	117	O.K.	2 1/2	1 1/4		O.K.	.052	.015		O.K.		
ZOLLER	250	O.K.	2 1/2	1 1/4		O.K.	.052	.015	"	O.K.	"	
L. EVANS	60	O.K.	2 1/2	1 1/4	1.5	O.K.	.053	.015	"	O.K.	"	
ZOLLER	250	O.K.	2 1/2	1 1/4		O.K.	.053	.015	"	O.K.	"	
L. EVANS	60	O.K.	2 1/2	1 1/4	1.4	O.K.	.053	.015	"	O.K.	"	

Model XP-100 Test Results
December 14, 1962

Test No. 2

TRIGGER PULL TEST

This investigation consisted of checking trigger pull weight on the first 84 completely assembled production guns to determine whether or not production specifications of 1.5# to 2.75# trigger pull could be met.

Results of the check are as follows:

a.	Total number of guns checked	84
b.	Average trigger pull	2.143 lbs.
c.	Max. trigger pull	3 lbs.
d.	Min. trigger pull	1.75 lbs.
e.	Number over 2 3/4 lb. limit	2
f.	Number under 1 1/2 lb. limit	0

HLC:T

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

Model XP-100 Test Results
December 14, 1962

Test No. 3

ACCURACY TEST

This test consisted of firing from the XP-100 accuracy device two 5-shot groups at 100 yds. from each of 38 production guns. All ammunition used in the test was Rem. 50 grain factory loads. Groups were measured inside to inside, extreme spread.

Data and test results are as follows:

Gun Serial No.	Group Size (in.)	Avg. Group Size
1015	1.25 - 1.0	1.13
1018	3.0 - 1.0	2.0
1019	2.5 - 2.0	2.25
1024	2.8 - 1.0	1.9
1025	1.5 - 1.0	1.25
1028	1.0 - .75	.88
1029	3.5 - 3.0	3.25
1034	2.0 - 2.5	2.25
1043	1.5 - .75	1.13
1044	2.0 - 1.5	1.75
1050	3.5 - 3.0	3.25
1051	1.0 - 1.5	1.25
1052	2.0 - 1.8	1.9
1054	1.5 - 2.0	1.75
1065	3.5 - 3.0	3.25
1074	2.0 - 1.25	1.63
1082	1.0 - 1.2	1.1
1086	1.5 - 1.5	1.5
1089	1.0 - .75	.88
1091	2.5 - 3.0	2.75
1101	1.0 - .75	.88
1115	2.0 - 1.0	1.5
1119	2.0 - 2.5	2.25
1122	1.25 - 1.7	1.48
1125	1.5 - 1.0	1.25
1126	1.5 - 4.0	2.75
1132	2.5 - 3.0	2.75
1134	3.0 - 1.5	2.25
1136	2.0 - 1.5	1.75
1139	3.0 - 3.0	3.0
1140	1.0 - 1.3	1.15
1153	2.7 - 1.0	1.85
1155	1.5 - 1.0	1.25
1157	2.0 - 1.5	1.75
1162	1.8 - 1.0	1.4
1165	1.5 - 1.25	1.38
1171	1.8 - 1.0	1.4
1176	1.5 - 1.3	1.14

Model XP-100 Test Results
December 14, 1962

Test No. 3
Sheet 2

ACCURACY TEST

Total guns tested	38
Average Group Size	1.802
No. of Guns with over 3" Group	3
Percentage	7.9%
No. of Guns with Average over 3" Group	3
Percentage	7.9%

HLC:T

Model XP-100 Test Results
December 14, 1962

Test No. 4

EFFECT OF STOCK INTERCHANBEABILITY
ON
ACCURACY and POINT OF IMPACT

Several guns were fired by W.E. Leek and H.L. Chambers to determine the effect of interchanging stocks on accuracy and point of impact.

All shooting in this test was done off hand, out of doors.

Guns were fired by both shooters with common stocks to determine shootability and point of impact. Stocks were then interchanged and the guns were refired. No change in grouping or point of impact was noted.

It should be brought out at this point that production guns are targeted without stocks, and the effect of stock interchangeability on accuracy and point of impact becomes extremely critical.

HLC:T

Model XP-100 Test Results
December 14, 1962

Test No. 5

FIRING PIN INDENT

The purpose of this test was to determine the amount of firing pin indent attained with production guns. Indents were checked with standard copper crushers supported by a crusher holder. A total of 36 guns were tested, each gun being checked five times.

The following data indicate the average of the five readings for each gun. In no case was there a variation in crusher indents greater than .001 in. for one gun.

Gun Serial No.	Avg. of 5 Indents	Gun Serial No.	Avg. of 5 Indents
1065	.0183	1173	.0180
1028	.0186	1026	.0193
1138	.0186	1044	.0166
1074	.0186	1167	.0186
1038	.0193	1151	.0190
1155	.0186	1171	.0173
1018	.0180	1146	.0176
1057	.0173	1133	.0176
1129	.0170	1122	.0206
1086	.0180	1126	.0186
1183	.0190	1043	.0186
1141	.0213	1082	.0200
1090	.0206	1041	.0190
1050	.0180	1154	.0196
1176	.0176	1139	.0203
1019	.0200	1140	.0200
1162	.0183	1071	.0176
1056	.0186	1174	.0180

Total Guns Checked	36
Max. Avg. Indent for 1 Gun	.0213
Avg. Indent for 36 Guns	.0187
Min. Avg. Indent for 1 Gun	.0166

HLC:1

Model XP-100 Test Results
December 14, 1962 Test No. 6

PACKAGING RUST TEST

The purpose of this test was to determine whether or not the proposed plastic zipper case for the XP-100 would induce or retard rusting.

Sections of scrap barrels from the XP-100 were prepared for various treatments including color and no color, Steelgard, and also proprietary material called Rig, for the coating. These were sealed in a plastic zipper case and then the proposed paperboard outer wrap before being placed in the Research weatherometer. The equipment was cycled to provide some 90% humidity and also heated to prescribed temperatures. For control, a duplicate group of the same experimental barrel sections were packed in our regular paperboard gun box, sealed and submitted to the same test.

The packages were opened after 23 days in the weatherometer and conclusions were significantly favorable towards the plastic zipper case. Parts, which included one powder metal component, were very well preserved when colored to provide at least normal treatment. Those in the standard paperboard carton were considerably more rusted. The "Rig" was observed to be better than any other coating used. The samples which were treated with another proprietary oil marketed by Stoeger seemed to give little, if any, protection.

These results relieve any immediate concern; however, arrangements are being made to store one of the XP-100 Pistols in a case for long time exposure under natural conditions.

Model XP-100 Test Results
December 14, 1962

Test No. 7

LOCK TIME

One production Model XP-100 was checked by the Research Measurements Lab to determine lock time. A series of thirty readings was made. Results of the test are as follows:

Max. Lock Time	3.56 milliseconds
Avg. Lock Time (30 readings)	3.505 "
Min. Lock Time	3.45 "

An investigation is being carried on at the present time to determine an economical way to decrease lock time without weakening the firing system.

HLC:T

Model XP-100 Test Results
December 14, 1962

Test No. 8

GROUP SIZE COMPARISON
12" Twist vs. 14" Twist

On recommendation of the Ammunition Research Department at Bridgeport, the bore twist of the XP-100 was changed from 1 turn in 14 inches to 1 turn in 12 inches. The purpose of this change was to provide proper stability for a faster, lighter weight bullet. Until now, all XP-100 barrels have been made with the 14 inch twist. Recently, however, a limited number of barrels with 12 inch twist have been made, and it was the purpose of this test to compare group sizes fired in the two barrel types with various bullet weights.

Test data and results are shown below:

1. Group Measurement --
   5 shot groups - 100 yds. - measured inside to inside.

2. All shooting done in accuracy device.

3. Ammunition Data
   50 gr. - Rem. Factory Ammo. - 15.8 gr. 4227
   35 gr. - Handloads - Rem. Bullets - 16.6 gr. 4227
   60 gr. - Handloads - Morse-Watkins Bullets - 15.0 gr. 4227

4. Guns - XP-100 Production Models

Twist - 1 Turn in 12 in.			
Gun Serial No.	Group Size		
	35 gr.	50 gr.	60 gr.
1200	2.25	2.25	2.25
1219	1.75	2.25	2.25
1226	3	2.25	1
1197	3	1.5	1.5
1199	1.9	2.25	1.25
1217	2.13	1.75	1
1177	4.5	2.75	1.75
Average Group Size	2.5[illegible]	2.[illegible]	1.571
No. of Groups Over 3 in.	1	0	0

Model XP-100 Test Results
December 14, 1962

Test No. 8
Sheet 2

Twist - 1 Turn in 14 in			
Gun Serial No.	Group Size		
	35 gr.	50 gr.	60 gr.
1192	2.75	1.25	2.25
1185	3	1.75	3
1072	2.25	2.75	2.75
1206	1.75	2.5	2
1201	3.25	2	3.13
1220	2	2.75	2.25
1180	2.75	2	2.25
Average Group Size	2.536	2.143	2.519
No. of Groups Over 3 in.	1	0	1

RESULTS

Average Group Sizes

	12" Twist	14" Twist
35 gr.	2.647	2.536
50 gr.	2.143	2.143
60 gr.	1.571	2.519
Overall Avg. Group Size	2.120	2.399

BLOT

AD XP-700-3 (Prel. Catalog Sheet)
Model XP-100 Single Shot Pistol and
Model 600 Center Fire Rifle

R D 1386-REV.

REMINGTON ARMS COMPANY, INC.

APPROPRIATION REQUEST

Department Research & Development Works Ilion Project No. AD XP-700-3

Request for $ (9,500) Reduction Date March 25, 1963

Category Expanded Facilities - Established Product

Title MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600 CENTER FIRE RIFLE

	Previous Parts (Part II Authorized 3/2/62)	This Part III	Total
Construction	$ 180,300	$ (9,500)	$ 170,800
Supporting Research	92,300	12,100	104,400
Operations	399,100	17,600	416,700
Total	$ 671,700	$ 20,200	$ 691,900

This project is not included in Forecast No. 2

To be commenced March 2, 1962

To be ready for use: XP-100 3/1/63
M/600 1/1/64

To be physically completed March 1, 1964

Estimate prepared by Methods & Standards, ~~PE&C and Research & Development~~ 3/18/63
Date

Approved as to form, accounting aspects, and rules compliance

Treasurer or Assistant Treasurer — Date

Approved or Authorized _____ Date

Approved or Authorized _____ Date

Approved or Authorized _____ Date

Approved or Authorized _____ Date

President and General Manager

Authorized BOARD OF DIRECTORS

Secretary

Preliminary approvals:

	Date		Date

(Subdivision 1)

REMINGTON ARMS COMPANY, INC.

GENERAL INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

PRESENT FACILITIES AND TO WHAT EXTENT THEY ARE INADEQUATE

The Board of Directors authorized a construction appropriation of $180,300 on March 2, 1962 (total expenditures of $671,700 including research and operations charges) to complete the development of models and to procure tooling and equipment for production of the Model XP-100 Pistol (formerly XP-700) and the Model 600 Center Fire Rifle (formerly XC-13).

The new handgun was introduced March 1, 1963 featuring the new .221 Remington "Fireball" cartridge. Introduction of the XP-100 handgun is in response to the increased demand for handguns and consumer preferences for high power and velocity in handguns (.357 Magnum, 44 Magnum and 22 Remington Jet).

Features of the XP-100 include:

1. Unique design.
2. Long range high velocity performance without sight adjustment.
3. Bolt action for accuracy and strength.
4. Reduced muzzle jump and recoil reduction.
5. Stock for right or left hand shooters.
6. Grip flared for added stabilization.
7. Grip checkering and inlays.
8. Ribbed barrel.

The Model 600 Center Fire Rifle has been designed for lighter weight carbine type design including such features as:

1. Shorter length for easier handling.
2. Ribbed barrel for improved sighting and appearance.
3. Custom checkering.
4. Heavier caliber than present guns of similar type.
5. Attractive retail price.

The Model 600 Rifle is now in pilot operations for the .308 Caliber, and design is completed for Calibers 30-30 Winchester and .222 Remington. It is scheduled for announcement on January 1, 1964.

Because of the added product cost and project expenditures for the Caliber 30-30 Winchester version of the rifle, the Sales Department has recommended that the .35 Remington Caliber be substituted for the 30-30 Winchester Caliber.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.

PROJECT NO. AD XP-700-3 - ILION WORKS

SUMMARY OF ESTIMATED EXPENDITURES

	Total
Construction Project	
Direct manufacturing facilities	
Equipment	$ 170,800
Other	
Product development	$ 104,400
Tooling	326,500
Other	86,200
Provision for advancing wages and material prices and allowance for unforeseen items	4,000
Total	$ 521,100
Total expenditure	$ 691,900

ACCOUNTING DISTRIBUTION OF EXPENDITURES

	Expenditures This Project	Final Net Results in Accounts
Construction Project		
Permanent investment	$ 170,800	$ 170,800
Other		
Research (Supporting)	$ 104,400	$ 104,400
Operations	416,700	416,700
Total	$ 521,100	$ 521,100
Total	$ 691,900	$ 691,900

(Subdivision 2)

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

DESCRIPTION OF PROPOSED WORK

It is proposed to complete the development of the Model 600 Center Fire Rifle in the .35 Remington Caliber and the procurement of tooling and equipment for production. Tooling and equipment are being provided for production of 6155 XP-100 Handguns for the first year and 5000 XP-100 and 15,000 Model 600 Center Fire Rifles for the third year.

This Part III is a request for ($9,500) reduction to cover the construction underrun on this project.

REMARKS

Changes in design and scope of work since Part II was authorized results in increased expenditures as indicated below:

	Increase (Decrease) from Part II	
	Amount	Per Cent
Construction	$ (9,500)	(5.3)
New equipment expenditures underrun due to utilization of machines on hand.		
Research	$ 12,100	13.1
Additional expenditures required due to the revision to accommodate the larger diameter .35 Remington cartridge and additional work on sights and molds for nylon parts.		
Operations	$ 17,600	4.4
Operations charges increased due to tooling for revised sights and stock former and additional equipment alterations (which reduced construction expenditures).		

PATENT STATUS

Consideration of the designs for both the pistol and rifle indicates that no patent infringement will be involved.

A design patent application is being prepared to cover the appearance of the pistol. A search has indicated that the fire control mechanism of the pistol and the rib mounting scheme for both contain some novelty. Patent applications will be filed to cover both these inventions.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.
ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD XP-700-3 - ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR
MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600
CENTER FIRE RIFLE
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT

	Third Year of Operation		
	Present Operation	Results From This Project	Operation After This Project
QUANTITY	341,115	20,000	361,115
SALES	$17,985,150	$1,079,800	$19,064,950
Less: Mill cost	12,935,780	581,310	13,517,090
Selling expense) Administrative expense)	1,708,600	--	1,708,600
Technical activities expense	593,500	--	593,500
	$15,237,880	$ 581,310	$15,819,190
OPERATIVE EARNINGS	$ 2,747,270	$ 498,490	$ 3,245,760
Less: All other expense: All other 6%; Federal tax 52%	1,507,700	273,570	1,781,270
NET EARNINGS	$ 1,239,570	$ 224,920	$ 1,464,490
INVESTMENT			
Project expenditures	$ --	$ 170,800	$ 170,800
Manufacturing and service facilities	11,991,000	--	11,991,000
Working capital	11,429,000	488,000	11,917,000
Position A: Total capital required including facilities to be retired	$23,420,000	$ 658,800	$24,078,800
Facilities to be retired (Deduct)			--
Position B: Total investment after completion of this project			$24,078,800

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.
ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD XP-700-3 - ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR
MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600
CENTER FIRE RIFLE
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT

	Third Year of Operation		
	Present Operation	Results From this Project	Operation After This Project
RETURN ON INVESTMENT			
Position A	5.3%	34.1%	6.1%
Position B	--	--	6.1%
* * * * * * * * * *			
Return on total capital required including research and development and other operations charges	5.3%	19.1%	6.0%
* * * * * * * * * *			

SUMMARY COMPARISON OF RESULTS FROM THIS PROJECT - FIRST AND THIRD YEARS OF OPERATION

	First Year	Third Year
Quantity	6,155	20,000
Sales	$334,520	$1,079,800
Operative earnings	130,310	498,490
Net earnings	58,800	224,920
Investment		
Project expenditures	$155,000	$ 170,800
Allocated investment	--	--
Working capital	165,000	488,000
Total	$320,000	$ 658,800
Net return on investment	18.4%	34.1%
* * * * * * * * * *		
Return on total capital required including research and development and other operations charges	7.5%	19.1%

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

Remington Arms Company, Inc.

DETAIL ESTIMATE OF EXPENDITURES

PROJECT NO. AD XP-700-3 - Ilion WORKS

	Amount Previously Authorized	Requested this Part III	Total Indicated Cost
Development	$ 87,800	$ 16,600	$ 104,400
Investigation	11,000	(4,000)	7,000
Design	31,500	5,900	37,400
Model making	24,800	14,100	38,900
Design testing	12,000	(5,700)	6,300
Tryout & pilot - Nylon Molds	--	5,000	5,000
Development - powder metal	1,500	2,800	4,300
Development - custom checkering	2,000	(1,500)	500
Eng.-Folders, C.of O., Standards	5,000	--	5,000
Product Engineering	$ 23,800	$ (3,500)	$ 20,300
Process Eng. & Trial Run	22,500	(4,500)	18,000
Pilot lot testing	1,300	1,000	2,300
Tooling	$ 289,900	$ 32,500	$ 322,400
Design	35,400	4,100	39,500
Fixtures & Gages	118,200	32,700	150,900
Molds	88,400	(9,300)	79,100
Perishable tools	2,300	--	2,300
Tool revisions	45,600	5,000	50,600
Remington Machines	$ 37,200	$ 10,400	$ 47,600
Construction	22,500	6,000	28,500
Tooling	5,600	(1,500)	4,100
Operations	9,100	5,900	15,000
Std. Machines & Equipment	$ 155,300	$ (13,000)	$ 142,300
Production Aids	$ 20,200	$ (5,500)	$ 14,700
Pilot Operations	$ 18,800	$ 17,400	$ 36,200
Machine alterations	5,000	10,800	15,800
Pilot lot manufacture	11,800	2,100	13,900
Machine rearrangement	--	4,400	4,400
Component obsolescence	2,000	100	2,100
Provision for advancing wages and material prices and allowance for unforeseen items	$ 38,700	$ (34,700)	$ 4,000
Total Cost	$ 671,700	$ 20,200	$ 691,900

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

MS-818 REV. 6-56

THIS FORM IS PRODUCED BY DU PONT PRINTING PLANT ON NCR (No Carbon Required) PAPER

SPEEDIMEMO

TO Sue Alvis - John Roberts	DEPT.-LOCATION Lion
FROM E. Blackwell	DEPT.-LOCATION
SUBJECT AD XP-700-3	DATE 4/2/63

MESSAGE:

Am returning subject project - per E. H. Blackwell note attached.

EBW.

ORIGINATOR—DO NOT WRITE BELOW THIS LINE SIGNED

REPLY:

DEPT.-LOCATION	SIGNED	DATE / /

SEND PARTS 1 AND 3 INTACT—PART 3 WILL BE RETURNED WITH REPLY

Date: 4/1/63

To: NFL

~~[illegible]~~

From: E. H. Bleckwell

Coley + I agree that project is not needed.

Gail will give Coley story on switch away from 30-30.

[illegible]

INFORMATION COPY

R D 1386-REV.

REMINGTON ARMS COMPANY, INC.

APPROPRIATION REQUEST

Do you agree? EHB

Less Construction - within allowable underrun
Higher volume at higher selling prices
Greater earnings and return
Caliber .38 substituted for 30-30 (suggest separate reason write-up by sales Dept)
No project necessary. HWB

Department Research & Development Works Division — Project No. AD XP-700-3

Request for $ (9,500) Reduction — Date March 25, 1963

Category Expanded Facilities - Established Product

Title MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600 CENTER FIRE RIFLE

	Previous Parts (Part II Authorized 3/2/62)	This Part III	Total
Construction	$ 180,300	$ (9,500)	$ 170,800
Supporting Research	92,300	12,100	104,400
Operations	399,100	17,600	416,700
Total	$ 671,700	$ 20,200	$ 691,900

This project is not included in Forecast No. 2 — Approved or Authorized _____ Date _____

To be commenced March 2, 1962 — Approved or Authorized _____ _____

To be ready for use: XP-100 3/1/63, M/600 1/1/64

To be physically completed March 1, 1964 — Approved or Authorized _____ _____

Estimate prepared by Methods & Standards, PE&C and Research & Development 3/18/63 — Approved or Authorized _____ _____ President and General Manager

Date

Approved as to form, accounting aspects, and rules compliance — Authorized BOARD OF DIRECTORS _____

Treasurer or Assistant Treasurer — Date — Secretary

Preliminary approvals:

	Date		Date

(Subdivision I)

REMINGTON ARMS COMPANY, INC.

PROJECT NO. AD XP-700-3 - ILION WORKS

SUMMARY OF ESTIMATED EXPENDITURES

	Total
Construction Project	
Direct manufacturing facilities	
Equipment	$ 170,800
Other	
Product development	$ 104,400
Tooling	326,500
Other	86,200
Provision for advancing wages and material prices and allowance for unforeseen items	4,000
Total	$ 521,100
Total expenditure	$ 691,900

ACCOUNTING DISTRIBUTION OF EXPENDITURES

	Expenditures This Project	Final Net Results in Accounts
Construction Project		
Permanent investment	$ 170,800	$ 170,800
Other		
Research (Supporting)	$ 104,400	$ 104,400
Operations	416,700	416,700
Total	$ 521,100	$ 521,100
Total	$ 691,900	$ 691,900

(Subdivision 2)

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.

GENERAL INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

PRESENT FACILITIES AND TO WHAT EXTENT THEY ARE INADEQUATE

The Board of Directors authorized a construction appropriation of $180,300 on March 2, 1962 (total expenditures of $671,700 including research and operations charges) to complete the development of models and to procure tooling and equipment for production of the Model XP-100 Pistol (formerly XP-700) and the Model 600 Center Fire Rifle (formerly XC-13).

The new handgun was introduced March 1, 1963 featuring the new .221 Remington "Fireball" cartridge. Introduction of the XP-100 handgun is in response to the increased demand for handguns and consumer preferences for high power and velocity in handguns (.357 Magnum, 44 Magnum and 22 Remington Jet).

Features of the XP-100 include:

1. Unique design.
2. Long range high velocity performance without sight adjustment.
3. Bolt action for accuracy and strength.
4. Reduced muzzle jump and recoil reduction.
5. Stock for right or left hand shooters.
6. Grip flared for added stabilization.
7. Grip checkering and inlays.
8. Ribbed barrel.

The Model 600 Center Fire Rifle has been designed for lighter weight carbine type design including such features as:

1. Shorter length for easier handling.
2. Ribbed barrel for improved sighting and appearance.
3. Custom checkering.
4. Heavier caliber than present guns of similar type.
5. Attractive retail price.

The Model 600 Rifle is now in pilot operations for the .308 Caliber, and design is completed for Calibers 30-30 Winchester and .222 Remington. It is scheduled for announcement on January 1, 1964.

Because of the added product cost and project expenditures for the Caliber 30-30 Winchester version of the rifle, the Sales Department has recommended that the .35 Remington Caliber be substituted for the 30-30 Winchester Caliber.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

DESCRIPTION OF PROPOSED WORK

It is proposed to complete the development of the Model 600 Center Fire Rifle in the .35 Remington Caliber and the procurement of tooling and equipment for production. Tooling and equipment are being provided for production of 6155 XP-100 Handguns for the first year and 5000 XP-100 and 15,000 Model 600 Center Fire Rifles for the third year.

This Part III is a request for ($9,500) reduction to cover the construction underrun on this project.

REMARKS

Changes in design and scope of work since Part II was authorized results in increased expenditures as indicated below:

	Increase (Decrease) from Part II	
	Amount	Per Cent
Construction	$ (9,500)	(5.3)
New equipment expenditures underrun due to utilization of machines on hand.		
Research	$ 12,100	13.1
Additional expenditures required due to the revision to accommodate the larger diameter .35 Remington cartridge and additional work on sights and molds for nylon parts.		
Operations	$ 17,600	4.4
Operations charges increased due to tooling for revised sights and stock former and additional equipment alterations (which reduced construction expenditures).		

PATENT STATUS

Consideration of the designs for both the pistol and rifle indicates that no patent infringement will be involved.

A design patent application is being prepared to cover the appearance of the pistol. A search has indicated that the fire control mechanism of the pistol and the rib mounting scheme for both contain some novelty. Patent applications will be filed to cover both these inventions.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.
ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD XP-700-3 - ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR
MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600
CENTER FIRE RIFLE
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT

	Third Year of Operation		
	Present Operation	Results From This Project	Operation After This Project
QUANTITY	341,115	20,000	361,115
SALES	$17,985,150	$1,079,800	$19,064,950
Less: Mill cost	12,935,780	581,310	13,517,090
Selling expense)			
Administrative expense)	1,708,600	--	1,708,600
Technical activities expense	593,500	--	593,500
	$15,237,880	$ 581,310	$15,819,190
OPERATIVE EARNINGS	$ 2,747,270	$ 498,490	$ 3,245,760
Less: All other expense: All other 6%; Federal tax 52%	1,507,700	273,570	1,781,270
NET EARNINGS	$ 1,239,570	$ 224,920	$ 1,464,490
INVESTMENT			
Project expenditures	$ --	$ 170,800	$ 170,800
Manufacturing and service facilities	11,991,000	--	11,991,000
Working capital	11,429,000	488,000	11,917,000
Position A: Total capital required including facilities to be retired	$23,420,000	$ 658,800	$24,078,800
Facilities to be retired (Deduct)			--
Position B: Total investment after completion of this project			$24,078,800

(Subdivision 5)

REMINGTON ARMS COMPANY, INC.
ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD XP-700-3 - ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR
MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600
CENTER FIRE RIFLE
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT

	Third Year of Operation		
	Present Operation	Results From this Project	Operation After This Project
RETURN ON INVESTMENT			
Position A	5.3%	34.1% 21.8%	6.1%
Position B	--	--	6.1%
* * * * * * * * * *			
Return on total capital required including research and development and other operations charges	5.3%	19.1% 17.5%	6.0%
* * * * * * * * * *			

SUMMARY COMPARISON OF RESULTS FROM THIS PROJECT - FIRST AND THIRD YEARS OF OPERATION

	First Year	Third Year
Quantity	6,155 17M	20,000 18M
Sales	$334,520 150M	$1,079,800 80.7M
Operative earnings	130,310 39%	498,490 32.7
Net earnings	58,800 17.5	224,920 14.4
Investment		
Project expenditures	$155,000 180	$ 170,800 180
Allocated investment	--	--
Working capital	165,000 451	488,000 481
Total	$320,000 631	$ 658,800 661
Net return on investment	18.4% 21.1%	34.1% 21.8%
* * * * * * * * * *		
Return on total capital required including research and development and other operations charges	7.5% 11.9%	19.1% 17.5%

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

Remington Arms Company, Inc.

DETAIL ESTIMATE OF EXPENDITURES

PROJECT NO. AD XP-700-3 - Ilion WORKS

	Amount Previously Authorized	Requested this Part III	Total Indicated Cost
Development	$ 87,800	$ 16,600	$ 104,400
Investigation	11,000	(4,000)	7,000
Design	31,500	5,900	37,400
Model making	24,800	14,100	38,900
Design testing	12,000	(5,700)	6,300
Tryout & pilot - Nylon Molds	--	5,000	5,000
Development - powder metal	1,500	2,800	4,300
Development - custom checkering	2,000	(1,500)	500
Eng.-Folders, C.of O., Standards	5,000	--	5,000
Product Engineering	$ 23,800	$ (3,500)	$ 20,300
Process Eng. & Trial Run	22,500	(4,500)	18,000
Pilot lot testing	1,300	1,000	2,300
Tooling	$ 289,900	$ 32,500	$ 322,400
Design	35,400	4,100	39,500
Fixtures & Gages	118,200	32,700	150,900
Molds	88,400	(9,300)	79,100
Perishable tools	2,300	--	2,300
Tool revisions	45,600	5,000	50,600
Remington Machines	$ 37,200	$ 10,400	$ 47,600
Construction	22,500	6,000	28,500
Tooling	5,600	(1,500)	4,100
Operations	9,100	5,900	15,000
Std. Machines & Equipment	$ 155,300	$ (13,000)	$ 142,300
Production Aids	$ 20,200	$ (5,500)	$ 14,700
Pilot Operations	$ 18,800	$ 17,400	$ 36,200
Machine alterations	5,000	10,800	15,800
Pilot lot manufacture	11,800	2,100	13,900
Machine rearrangement	--	4,400	4,400
Component obsolescence	2,000	100	2,100
Provision for advancing wages and material prices and allowance for unforeseen items	$ 38,700	$ (34,700)	$ 4,000
Total Cost	$ 671,700	$ 20,200	$ 691,900

REMINGTON ARMS COMPANY, INC.

SUPPLEMENTARY INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

INCREASED MANUFACTURING FACILITIES FOR MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600 CENTER FIRE RIFLE

Research and development project charges, and start-up costs chargeable to operations incurred prior to the first year of operation amount to $576,000. Giving effect to amortization of such charges against earnings during the first and second years of operation, earnings and return on investment are as follows:

	Operative Earnings	Amortization of Operations Charges Incurred Prior to First Year	Adjusted Operative Earnings	Net Earnings	Net Return on Investment
1963	$ 130,310	$ 130,310	$ --	$ --	-- %
*1964	488,000	445,690	42,310	19,090	2.9%
1965	498,490	--	498,490	224,920	34.1%

*1965 volumes (5,000 XP-100) assumed for second year
(15,000 M/600)

(Not for submission to Board)

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

G-88

DON'T SAY IT—WRITE IT

RECEIVED
MAR 14 1963
E. B. WALLIN

To G. M. CALHOUN

From S. M. ALVIS

Date March 13, 1963

John has prepared a tentative draft of Part III to the project for the XP-100 and M/600 combination. I have already made some changes in the introduction and remarks to reflect suggestions after conversation with you. Wayne's people are meeting today with the Plant to make another check estimate for preparing revised economics.

In the meantime to expedite things, if you will look this over and if desired review with Neil Larsen. John has called my attention to a significant fact that for Research we are spending about $34,000 more than had been originally estimated, although will now probably be spending less than the last "Estimate to Complete". The project write-up does not reveal but only perhaps implies this being due to the relatively high cost for redesign to accommodate the 30-30; also the building of a model up to the time that the program was changed. At the same time the higher product cost of the 30-30 is essentially the same as described by Wayne Leek at the beginning of the program.

49000 was added to Operations in Part II

WEL:T

THERE IS A SAFE WAY; DO IT THAT WAY

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

DRAFT

R D 1386-REV.

REMINGTON ARMS COMPANY, INC.

APPROPRIATION REQUEST

Department **Research & Development** Works **Ilion** Project No. **AD XP-700-3**

Request for $ **(7,900) Reduction** Date **March 14, 1963**

Category **Expanded Facilities - Established Product**

Title **MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600 CENTER FIRE RIFLE**

	Previous Parts (Part II Authorized 3/2/62)	This Part III	Total
Construction	$ 180,300	$ (7,900)	$ 172,400
Supporting Research	92,300	38,200	130,500
Operations	399,100	29,700	428,800
Total	$ 671,700	$ 60,000	$ 731,700

This project is not included in Forecast No. 2

To be commenced March 2, 1962

To be ready for use: XP-100 3/1/63
M/600 1/1/64

To be physically completed **March 1, 1964**

Estimate prepared by **Methods & Standards, P.E.& C. and Research & Development** 3/14/63 (3/18/63) Date

Approved or Authorized _____ Date _____

Approved or Authorized _____ Date _____

Approved or Authorized _____ Date _____

Approved or Authorized _____ Date _____

President and General Manager

Approved as to form, accounting aspects, and rules compliance

Authorized BOARD OF DIRECTORS _____

Treasurer or Assistant Treasurer _____ Date _____

Secretary _____

Preliminary approvals:

	Date		Date

(Subdivision I)

REMINGTON ARMS COMPANY, INC.

GENERAL INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

INTRODUCTION

The Board of Directors authorized a construction appropriation of $180,300 on March 2, 1962 (total expenditures of $671,700 including research and operations charges) to complete the development of the models and procure tooling and equipment necessary for production of the [redacted] XP-100 Pistol; also, the Model 600 Center Fire Rifle in the .222 [redacted] .308 and 30-30 calibers.

Make note of change in model no.

The work completed to date includes the introduction of [redacted] Pistol in the .221 Fireball Caliber which was announced to the trade on March 1, 1963.

The Model 600 Bolt Action Carbine rifle has been developed to pilot operations for Caliber .308, and designs completed for the Calibers 30-30 and .222. Because of the added cost for design changes to accommodate the 30-30 rimmed case cartridges, the Sales Department has [redacted] caliber specifications for the rifle be changed, [redacted] .35 Remington caliber for the 30-30 Winchester. It is also proposed that the Remington developed "custom checkering" be added as an additional feature for the rifle stock.

The Hart II said we were going to do this.

(Subdivision 3)
Page 1

INTRODUCTION (Continued)

Based on forecast third-year sales, as shown below, the proposed selling prices and estimated operative earnings are:

	Proposed		
	XP-100 Pistol	M/600 C.F. Rifle	Combined Average
Sales quantity			
Retail selling Price	$	$	$
Net selling price	$	$	$
Operative earnings	$	$	$
% of net selling price	%	%	%

DESCRIPTION OF PROPOSED WORK

It is proposed to complete the development of these models in Center Fire Rifle for Calibers .308, .222 Remington Magnum and .35 Remington and procure tooling and equipment for production volume of for the first year ( ) and for the third year.

REMARKS

Based on design and scope of work since Part II was authorized results in increased expenditures as indicated below:

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

R2532456

REMARKS (Continued)

	Increase (Decrease) from Part II Amount	Per Cent
Construction	$ (7,900) 8500	5.3
Research	$ 38,200 12,100	[redacted]
Revisions to accommodate the larger .35 Remington Caliber involve the barrel, stock, and sighting rib. The XP-100 Pistol is also being provided with a luggage type carrying case.		
Operations	$ 29,700 17,600	4.4

Are we doing this? Is money expected?

[redacted] indicates an estimated increase in net earnings of $ in the third year of operation, resulting from this project, equivalent to a net return of % on investment.

(Subdivision 3)
Page 3

PATENT [illegible]

Consideration of the designs for both the pistol and rifle indicates that no patent infringement will be involved.

A design patent application is being prepared to cover the appearance of the pistol. A search has indicated that the fire control mechanism of the pistol and the rib mounting scheme for both contain some novelty. Patent applications will be filed to cover both these inventions.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

11 x 16½ — 14 columns
With description column

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131471

PROJECT ADXP-700-3

PRESENT AND PROPOSED SELLING PRICES AND EST. OPER. EARNINGS

(ADDITIONS TO GUN LINE)

	XP-100 (PISTOL)		M/600 (RIFLE)		COMBINED AVERAGE	BALANCE OF LINE	TOTAL PLANT
			PRESENT				
SALES QUANITY	—		—		—	341,115	341,115
RETAIL SELLING PRICE	—		—		—		
NET SELLING PRICE	—		—		—	57.77	57.77
OPERATIVE EARNINGS	—		—		—	8.56	8.56
% OF NET SELLING	—		—		—	16.7%	16.7%
			PROPOSED				
		Part 2		Part 2			
SALES QUANITY	5000	3000	15,000	15000	20,000	341,115	361,115
RETAIL SELLING PRICE	4 99.95	75.00	4 99.95	85.00	4 99.95		
NET SELLING PRICE	54.35	40.37	53.87	45.74	53.99	57.77	57.79
OPERATIVE EARNINGS	7.56	4.76	8.75	4.21	8.08	9.04	8.99
% OF NET SELLING	13.9%	11.8%	15.3%	9.2%	15.0%	17.1%	17.0%

R. KERR
3-25-63

BARBER - PRESALE R 0131471
R2532459

11 x 16¾ — 14 columns
With description column

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131472

BARBER - PRESALE R 0131472

PROJECT ADXP-700-3

PRESENT AND PROPOSED SELLING PRICES AND EST. OPER. EARNINGS
(ADDITIONS TO GUN LINE)

	XP-100 (PISTOL)	M/600 RIFLE	COMBINED AVERAGE	BALANCE OF LINE	TOTAL PLANT
		PRESENT			
SALES QUANITY	—	—	—	341,115	341,115
RETAIL SELLING PRICE	—	—	—		
NET SELLING PRICE	—	—	—	57.77	57.77
OPERATIVE EARNINGS	—	—	—	8.56	8.56
% OF NET SELLING	—	—	—	16.7%	16.7%
		PROPOSED			
SALES QUANITY	5000	15,000	20,000	341,115	361,115
RETAIL SELLING PRICE	99.95	99.95	99.95		
NET SELLING PRICE	54.35	53.87	53.99	57.77	57.79
OPERATIVE EARNINGS	7.56	8.25	8.08	9.04	8.99
% OF NET SELLING	13.9%	15.3%	15.0%	17.1%	17.0%

R. KERR
3-25-63

R2532460

11 x 16½ — 14 columns
With description column

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131473

BARBER - PRESALE R-0131473

PROJECT ADXP-700-3

PRESENT AND PROPOSED SELLING PRICES AND EST. OPER. EARNINGS

(ADDITIONS TO GUN LINE)

	XP-100 (PISTOL)	M/600 RIFLE	COMBINED AVERAGE	BALANCE OF LINE	TOTAL PLANT
		PRESENT			
SALES QUANITY	—	—	—	341,115	341,115
RETAIL SELLING PRICE	—	—	—		
NET SELLING PRICE	—	—	—	57.77	57.77
OPERATIVE EARNINGS	—	—	—	8.56	8.56
% OF NET SELLING	—	—	—	16.7%	16.7%
		PROPOSED			
SALES QUANITY	5000	15,000	20,000	341,115	361,115
RETAIL SELLING PRICE	$99.95	$99.95	$99.95		
NET SELLING PRICE	54.35	53.87	53.99	57.77	57.79
OPERATIVE EARNINGS	7.56	8.25	8.08	9.04	8.99
% OF NET SELLING	13.9%	15.3%	15.0%	17.1%	17.0%

R. KEIER
3-25-03

R2532461

Rear Sight Base

Powder metal die	1000.00
20	60.00
30	200.00
35	300.00

Rear Sight Eye Piece

Powder metal dies	1500.00
28	1000.00
30	1500.00
32	1000.00
35	1500.00
40	300.00
45	1000.00

Rear Sight Leaf

Powder metal	1000.00
30	1000

	10,860 ✓
Former + Staging for Stock	5000 ✓
	15,860
Mold reduced 1600 Fore-end Tips + Spacers	(9300)
	6,560 ✓

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131475

11 x 16½ — 13 columns
With description column

ADXP700-3 2u/600

Estimate to Complete.

2/18/63

	Auth	Exp 2/18/63	To Complete 2/18/63	Follow up	To Complete 3/1 Panel, Tube Bell, Pin	Follow up	Indicated Total
Investigation	11000	6966	—		—		7000
Design	31500	34100	800	1000	1000	500	37400
Model Making	24800	37817	—		1000		38900
Design Testing	17000	5767	300		200		6300
Tryout + Pilot - Mfg. Dept.	—	4931	300		500		5000
Development - P.M.	1500	3805	—		—	500	4300
Development - Custom Tester	2000	531	—		—		500
Eng. - Federal Cyp. Lab	5000	3100	1700		600		5000
Contg	4500	—	—		—		—
Total	$97300	$91497	7600	1000	3300	1000	104400 N

BARBER - PRESALE R 0131475
R2532463

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131476

Page 1

	Budget			Actual Cost							
Operations											
Proc. Eq. + Tool Room	22500		(4500)	18000							
Pilot for Testing	1300		1000	2300							
Design Tools	3500		4000	39500							
Fixtures Gages	118000		32700 ✓	150700							
Molds	88400		(9300)	79100							
Flashlight Tools	2300		—	2300							
Tool Room	4500		5000	9500							
Tooling - Rem. Machine	5600		(1500)	4100							
Operation - Rem. Machine	9100		5900	15000							
Prod. Aid	20000		(5500)	14700							
Machine Attention	5000		10800 ✓	15800							
Pilot Tool Room	11500		2400	13900							
Machine Maintenance	—		4400 ✓	4400							
Equipment Operations	2000		100	2100							
Entry	31700		(27700)	4000							
	399400		17600	416700 ✓		17600	4.4	%			
Total	671700 ✓			691700 ✓							

Tooling for [illegible] received from [illegible] rotary sight also [illegible] for [illegible] stock increased in cost 6760

Rewind + Racine line rearranged in order to maintain labor efficiency. 10,800

4400

21,760
(5000) Prod Aid
16,760

BARBER - PRESALE R 0131476
R2532464

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131477

AD x P700 x P100 = 4/700

Page 1

Part III

	Auth	Exp 2/28/63	Excess (Savings)	Adjusted Cost				
Construction								
Remington Machine	28500	28500	0500	28500				Were able to use available machine by altering instead of buying new machine.
Standard Machining	145300	141300	(12000)	142300				
Cont'g	2500	—	(2500)	—				
	176300	169800	(9500)	170800		(9500)	(5.3)	%
Research								
Investigation	11000	6761		7000				
Design	31500	34100		37400				
Model Making	24800	37777		38900				
Design Testing	12000	5162		6300				
Trial Production Models	—	4201		5000				
Patent - Pending	1500	3801		4300				
" - Contr. Pending	2000	51		500				
Eng. Field Support	5000	3000		5000				
Cont'g	4500			4500				
	92300	91477		104400		12100	13.1	%

BARBER - PRESALE R 0131477
R2532465

G-88

DON'T SAY IT—WRITE IT

To Ann Broderson

Date 3/28/63

From Fran Beach

For information --

Per J.J. Phillips' request the official copy of Project No. AD XP-700-3 together with the stencils was mailed today to N.F. Larsen. (Your information copy went out yesterday.)

THERE IS A SAFE WAY; DO IT THAT WAY

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

R D 1386-REV.

REMINGTON ARMS COMPANY, INC.

APPROPRIATION REQUEST

Department Research & Development Works Ilion Project No. AD XP-700-3

Request for $ (9,500) Reduction Date March 25, 1963

Category Expanded Facilities - Established Product

Title MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600 CENTER FIRE RIFLE

	Previous Parts (Part II Authorized 3/2/62)	This Part III	Total
Construction	$ 180,300	$ (9,500)	$ 170,800
Supporting Research	92,300	12,100	104,400
Operations	399,100	17,600	416,700
Total	$ 671,700	$ 20,200	$ 691,900

This project is not included in Forecast No. 2 — Approved or Authorized E. Mueller Date 3/25/63

To be commenced March 2, 1962 — Approved or Authorized _____ _____

To be ready for use: XP-100 3/1/63, M/600 1/1/64

To be physically completed March 1, 1964 — Approved or Authorized _____ _____

Estimate prepared by Methods & Standards, PE&C and Research & Development 3/18/63 — Approved or Authorized _____ _____ President and General Manager

Date

Approved as to form, accounting aspects, and rules compliance — Authorized BOARD OF DIRECTORS _____

Treasurer or Assistant Treasurer — Date — Secretary

Preliminary approvals:

	Date		Date
[illegible]	3/27/63		
[illegible]	3/27/63		
R K Hall	3/28/63		

(Subdivision I)

R D 1386-REV.

REMINGTON ARMS COMPANY, INC.

APPROPRIATION REQUEST

Department Research & Development Works Ilion Project No. AD XP-700-3

Request for $ (9,500) Reduction Date March 25, 1963

Category Expanded Facilities - Established Product

Title MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600 CENTER FIRE RIFLE

	Previous Parts (Part II Authorized 3/2/62)	This Part III	Total
Construction	$ 180,300	$ (9,500)	$ 170,800
Supporting Research	92,300	12,100	104,400
Operations	399,100	17,600	416,700
Total	$ 671,700	$ 20,200	$ 691,900

This project is not included in Forecast No. 2

To be commenced March 2, 1962

To be ready for use: XP-100 3/1/63
M/600 1/1/64

To be physically completed March 1, 1964

Estimate prepared by Methods & Standards, P.E.&C. and Research & Development 3/18/63
Date

Approved as to form, accounting aspects, and rules compliance

Treasurer or Assistant Treasurer — Date

Approved or Authorized _____ Date

Approved or Authorized _____ Date

Approved or Authorized _____ Date

Approved or Authorized _____ Date

President and General Manager

Authorized BOARD OF DIRECTORS _____

Secretary

Preliminary approvals:

Date — Date

(Subdivision I)

[illegible] COMPANY, INC.

[illegible]

[illegible] EXPENDITURES

	Total
Construction Project	
[illegible]	
[illegible]	$ 170,800
Other	
[illegible]	$ 104,400
[illegible]	326,500
[illegible]	86,200
[illegible]	4,000
Total	$ 521,100
Total expenditure	$ 691,900

[illegible] EXPENDITURES

	Expenditures This Project	Final Net Results In Accounts
[illegible]		
[illegible]	$ 170,800	$ 170,800
Other		
Research (Support)	$ 104,400	$ 104,400
Operations	416,700	416,700
Total	$ 521,100	$ 521,100
Total	$ 691,900	$ 691,900

(Subdivision 2)

REMINGTON ARMS COMPANY, INC.

GENERAL INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

PRESENT FACILITIES AND TO WHAT EXTENT THEY ARE INADEQUATE

The Board of Directors authorized a construction appropriation of $180,300. on March 2, 1962 (total expenditures of $671,700 including research and operations charges) to complete the development of models and to procure tooling and equipment for production of the Model XP-100 Pistol (formerly XP-700) and the Model 600 Center Fire Rifle (formerly XC-13).

The new handgun was introduced March 1, 1963 featuring the new .221 Remington "Fireball" cartridge. Introduction of the XP-100 handgun is in response to the increased demand for handguns and consumer preferences for high power and velocity in handguns (.357 Magnum, 44 Magnum and 22 Remington Jet).

Features of the XP-100 include:

1. Unique design.
2. Long range high velocity performance without sight adjustment.
3. Bolt action for accuracy and strength.
4. Reduced muzzle jump and recoil reduction.
5. Stock for right or left hand shooters.
6. Grip flared for added stabilization.
7. Grip checkering and inlays.
8. Ribbed barrel.

The Model 600 Center Fire Rifle has been designed for lighter weight carbine type design including such features as:

1. Shorter length for easier handling.
2. Ribbed barrel for improved sighting and appearance.
3. Custom checkering.
4. Heavier caliber than present guns of similar type.
5. Attractive retail price.

The Model 600 Rifle is now in pilot operations for the .308 Caliber, and design is completed for Calibers 30-30 Winchester and .222 Remington. It is scheduled for announcement on January 1, 1964.

Because of the added product cost and project expenditures for the Caliber 30-30 Winchester version of the rifle, the Sales Department has recommended that the .35 Remington Caliber be substituted for the 30-30 Winchester Caliber.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

DESCRIPTION OF PROPOSED WORK

It is proposed to complete the development of the Model 600 Center Fire Rifle in the .35 Remington Caliber and the procurement of tooling and equipment for production. Tooling and equipment are being provided for production of 6155 XP-100 handguns for the first year and 5000 XP-100 and 15,000 Model 600 Center Fire Rifles for the third year.

This Part III is a request for ($9,500) reduction to cover the construction underrun on this project.

REMARKS

Changes in design and scope of work since Part II was authorized results in increased expenditures as indicated below:

	Increase (Decrease) from Part II	
	Amount	Per Cent
Construction	$ (9,500)	(5.3)
New equipment expenditures underrun due to utilization of machines on hand.		
Research	$ 12,100	13.1
Additional expenditures required due to the revision to accommodate the larger diameter .35 Remington cartridge and additional work on sights and molds for nylon parts.		
Operations	$ 17,600	4.4
Operations charges increased due to tooling for revised sights and stock former and additional equipment alterations (which reduced construction expenditures).		

PATENT STATUS

Consideration of the designs for both the pistol and rifle indicates that no patent infringement will be involved.

A design patent application is being prepared to cover the appearance of the pistol. A search has indicated that the fire control mechanism of the pistol and the rib mounting scheme for both contain some novelty. Patent applications will be filed to cover both these inventions.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.
ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD XP-700-3 - ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR
MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600
CENTER FIRE RIFLE
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT

	Third Year of Operation		
	Present Operation	Results From This Project	Operation After This Project
QUANTITY	341,115	20,000	361,115
SALES	$17,985,150	$1,079,800	$19,064,950
Less: Mill cost	12,935,780	581,310	13,517,090
Selling expense)			
Administrative expense)	1,708,600	--	1,708,600
Technical activities expense	593,500	--	593,500
	$15,237,880	$ 581,310	$15,819,190
OPERATIVE EARNINGS	$ 2,747,270	$ 498,490	$ 3,245,760
Less: All other expense: All other 6%; Federal tax 52%	1,507,700	273,570	1,781,270
NET EARNINGS	$ 1,239,570	$ 224,920	$ 1,464,490
INVESTMENT			
Project expenditures	$ --	$ 170,800	$ 170,800
Manufacturing and service facilities	11,991,000	--	11,991,000
Working capital	11,429,000	488,000	11,917,000
Position A: Total capital required including facilities to be retired	$23,420,000	$ 658,800	$24,078,800
Facilities to be retired (Deduct)			--
Position B: Total investment after completion of this project			$24,078,800

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.
ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD XP-700-3 - ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR
MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600
CENTER FIRE RIFLE
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT

	Third Year of Operation		
	Present Operation	Results From this Project	Operation After This Project
RETURN ON INVESTMENT			
Position A	5.3%	34.1%	6.1%
Position B	--	--	6.1%

* * * * * * * * * * *

Return on total capital required including research and development and other operations charges	5.3%	19.1%	6.0%

* * * * * * * * * * *

SUMMARY COMPARISON OF RESULTS FROM THIS PROJECT - FIRST AND THIRD YEARS OF OPERATION

	First Year	Third Year
Quantity	6,155	20,000
Sales	$334,520	$1,079,800
Operative earnings	130,310	498,490
Net earnings	58,800	224,920
Investment		
Project expenditures	$155,000	$ 170,800
Allocated investment	--	--
Working capital	165,000	488,000
Total	$320,000	$ 658,800
Net return on investment	18.4%	34.1%

* * * * * * * * * * *

Return on total capital required including research and development and other operations charges	7.5%	19.1%

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

Remington Arms Company, Inc.

DETAIL ESTIMATE OF EXPENDITURES

PROJECT NO. AD XP-700-3 - Ilion WORKS

	Amount Previously Authorized	Requested this Part III	Total Indicated Cost
Development	$ 87,800	$ 16,600	$ 104,400
Investigation	11,000	(4,000)	7,000
Design	31,500	5,900	37,400
Model making	24,800	14,100	38,900
Design testing	12,000	(5,700)	6,300
Tryout & pilot - Nylon Molds	--	5,000	5,000
Development - powder metal	1,500	2,800	4,300
Development - custom checkering	2,000	(1,500)	500
Eng.-Folders, C.of C., Standards	5,000	--	5,000
Product Engineering	$ 23,800	$ (3,500)	$ 20,300
Process Eng. & Trial Run	22,500	(4,500)	18,000
Pilot lot testing	1,300	1,000	2,300
Tooling	$ 289,900	$ 32,500	$ 322,400
Design	35,400	4,100	39,500
Fixtures & Gages	118,200	32,700	150,900
Molds	88,400	(9,300)	79,100
Perishable tools	2,300	--	2,300
Tool revisions	45,600	5,000	50,600
Remington Machines	$ 37,200	$ 10,400	$ 47,600
Construction	22,500	6,000	28,500
Tooling	5,600	(1,500)	4,100
Operations	9,100	5,900	15,000
Std. Machines & Equipment	$ 155,300	$ (13,000)	$ 142,300
Production Aids	$ 20,200	$ (5,500)	$ 14,700
Pilot Operations	$ 18,800	$ 17,400	$ 36,200
Machine alterations	5,000	10,800	15,800
Pilot lot manufacture	11,800	2,100	13,900
Machine rearrangement	--	4,400	4,400
Component obsolescence	2,000	100	2,100
Provision for advancing wages and material prices and allowance for unforeseen items	$ 38,700	$ (34,700)	$ 4,000
Total Cost	$ 671,700	$ 20,200	$ 691,900

REMINGTON ARMS COMPANY, INC.

SUPPLEMENTARY INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

INCREASED MANUFACTURING FACILITIES FOR MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600 CENTER FIRE RIFLE

Research and development project charges, and start-up costs chargeable to operations incurred prior to the first year of operation amount to $576,000. Giving effect to amortization of such charges against earnings during the first and second years of operation, earnings and return on investment are as follows:

	Operative Earnings	Amortization of Operations Charges Incurred Prior to First Year	Adjusted Operative Earnings	Net Earnings	Net Return on Investment
1963	$ 130,310	$ 130,310	$ --	$ --	-- %
*1964	488,000	445,690	42,310	19,090	2.9%
1965	498,490	--	498,490	224,920	34.1%

*1965 volumes (5,000 XP-100) assumed for second year
(15,000 M/600)

(Not for submission to Board)

R D 1386-REV.

REMINGTON ARMS COMPANY, INC.

APPROPRIATION REQUEST

Department Research & Development Works Ilion Project No. AD XP-700-3

Request for $ (9,500) Reduction Date March 25, 1963

Category Expanded Facilities - Established Product

Title MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600 CENTER FIRE RIFLE

	Previous Parts (Part II Authorized 3/2/62)	This Part III	Total
Construction	$ 180,300	$ (9,500)	$ 170,800
Supporting Research	92,300	12,100	104,400
Operations	399,100	17,600	416,700
Total	$ 671,700	$ 20,200	$ 691,900

This project is not included in Forecast No. 2

To be commenced March 2, 1962

To be ready for use: XP-100 3/1/63
M/600 1/1/64

To be physically completed March 1, 1964

Estimate prepared by Methods & Standards, PE&C and Research & Development 3/18/63
Date

Approved or Authorized _____ Date _____

Approved or Authorized _____ _____

Approved or Authorized _____ _____

Approved or Authorized _____ _____
President and General Manager

Approved as to form, accounting aspects, and rules compliance

Authorized BOARD OF DIRECTORS _____

_____ Treasurer or Assistant Treasurer _____ Date

_____ Secretary

Preliminary approvals:

	Date		Date

(Subdivision I)

REMINGTON ARMS COMPANY, INC.

PROJECT NO. AD XP-700-3 - ILION WORKS

SUMMARY OF ESTIMATED EXPENDITURES

	Total
Construction Project	
Direct manufacturing facilities	
Equipment	$ 170,800
Other	
Product development	$ 104,400
Tooling	326,500
Other	86,200
Provision for advancing wages and material prices and allowance for unforeseen items	4,000
Total	$ 521,100
Total expenditure	$ 691,900

ACCOUNTING DISTRIBUTION OF EXPENDITURES

	Expenditures This Project	Final Net Results in Accounts
Construction Project		
Permanent investment	$ 170,800	$ 170,800
Other		
Research (Supporting)	$ 104,400	$ 104,400
Operations	416,700	416,700
Total	$ 521,100	$ 521,100
Total	$ 691,900	$ 691,900

(Subdivision 2)

REMINGTON ARMS COMPANY, INC.

GENERAL INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

PRESENT FACILITIES AND TO WHAT EXTENT THEY ARE INADEQUATE

The Board of Directors authorized a construction appropriation of $180,300 on March 2, 1962 (total expenditures of $671,700 including research and operations charges) to complete the development of models and to procure tooling and equipment for production of the Model XP-100 Pistol (formerly XP-700) and the Model 600 Center Fire Rifle (formerly XC-13).

The new handgun was introduced March 1, 1963 featuring the new .221 Remington "Fireball" cartridge. Introduction of the XP-100 handgun is in response to the increased demand for handguns and consumer preferences for high power and velocity in handguns (.357 Magnum, 44 Magnum and 22 Remington Jet).

Features of the XP-100 include:

1. Unique design.
2. Long range high velocity performance without sight adjustment.
3. Bolt action for accuracy and strength.
4. Reduced muzzle jump and recoil reduction.
5. Stock for right or left hand shooters.
6. Grip flared for added stabilization.
7. Grip checkering and inlays.
8. Ribbed barrel.

The Model 600 Center Fire Rifle has been designed for lighter weight carbine type design including such features as:

1. Shorter length for easier handling.
2. Ribbed barrel for improved sighting and appearance.
3. Custom checkering.
4. Heavier caliber than present guns of similar type.
5. Attractive retail price.

The Model 600 Rifle is now in pilot operations for the .308 Caliber, and design is completed for Calibers 30-30 Winchester and .222 Remington. It is scheduled for announcement on January 1, 1964.

Because of the added product cost and project expenditures for the Caliber 30-30 Winchester version of the rifle, the Sales Department has recommended that the .35 Remington Caliber be substituted for the 30-30 Winchester Caliber.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

DESCRIPTION OF PROPOSED WORK

It is proposed to complete the development of the Model 600 Center Fire Rifle in the .35 Remington Caliber and the procurement of tooling and equipment for production. Tooling and equipment are being provided for production of 6155 XP-100 Handguns for the first year and 5000 XP-100 and 15,000 Model 600 Center Fire Rifles for the third year.

This Part III is a request for ($9,500) reduction to cover the construction underrun on this project.

REMARKS

Changes in design and scope of work since Part II was authorized results in increased expenditures as indicated below:

	Increase (Decrease) from Part II	
	Amount	Per Cent
Construction	$ (9,500)	(5.3)
New equipment expenditures underrun due to utilization of machines on hand.		
Research	$ 12,100	12.1
Additional expenditures required due to the revision to accommodate the larger diameter .35 Remington cartridge and additional work on sights and molds for nylon parts.		
Operations	$ 17,600	4.4
Operations charges increased due to tooling for revised sights and stock former and additional equipment alterations (which reduced construction expenditures).		

PATENT STATUS

Consideration of the designs for both the pistol and rifle indicates that no patent infringement will be involved.

A design patent application is being prepared to cover the appearance of the pistol. A search has indicated that the fire control mechanism of the pistol and the rib mounting scheme for both contain some novelty. Patent applications will be filed to cover both these inventions.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.
ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD XP-700-3 - ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR
MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600
CENTER FIRE RIFLE
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT

1

	Third Year of Operation		
	Present Operation	Results From This Project	Operation After This Project
QUANTITY	341,115	20,000	361,115
SALES	$17,985,150	$1,079,800	$19,064,950
Less: Mill cost	12,935,780	581,310	13,517,090
Selling expense)			
Administrative expense)	1,708,600	--	1,708,600
Technical activities expense	593,500	--	593,500
	$15,237,880	$ 581,310	$15,819,190
OPERATIVE EARNINGS	$ 2,747,270	$ 498,490	$ 3,245,760
Less: All other expense: All other 6%; Federal tax 52%	1,507,700	273,570	1,781,270
NET EARNINGS	$ 1,239,570	$ 224,920	$ 1,464,490
INVESTMENT			
Project expenditures	$ --	$ 170,800	$ 170,800
Manufacturing and service facilities	11,991,000	--	11,991,000
Working capital	11,429,000	488,000	11,917,000
Position A: Total capital required including facilities to be retired	$23,420,000	$ 658,800	$24,078,800
Facilities to be retired (Deduct)			--
Position B: Total investment after completion of this project			$24,078,800

(Subdivision 5)
Page 1

REMINGTON ARMS COMPANY, INC.
ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD XP-700-3 - ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR
MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600
CENTER FIRE RIFLE
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT

	Third Year of Operation		
	Present Operation	Results From this Project	Operation After This Project
RETURN ON INVESTMENT			
Position A	5.3%	34.1%	8.1%
Position B	--	--	6.1%
* * * * * * * * * *			
Return on total capital required including research and development and other operations charges	5.3%	19.1%	6.0%
* * * * * * * * * *			

SUMMARY COMPARISON OF RESULTS FROM THIS PROJECT - FIRST AND THIRD YEARS OF OPERATION

	First Year	Third Year
Quantity	6,155	20,000
Sales	$334,520	$1,079,800
Operative earnings	130,310	498,490
Net earnings	58,800	224,920
Investment		
Project expenditures	$155,000	$ 170,800
Allocated investment	--	--
Working capital	165,000	488,000
Total	$320,000	$ 658,800
Net return on investment	18.4%	34.1%
* * * * * * * * * *		
Return on total capital required including research and development and other operations charges	7.5%	19.1%

(Subdivision 5)
Page 2

Remington Arms Company, Inc.

DETAIL ESTIMATE OF EXPENDITURES

PROJECT NO. AD XP-700-3 - Ilion WORKS

	Amount Previously Authorized	Requested this Part III	Total Indicated Cost
Development	$ 87,800	$ 16,600	$ 104,400
Investigation	11,000	(4,000)	7,000
Design	31,500	5,900	37,400
Model making	24,800	14,100	38,900
Design testing	12,000	(5,700)	6,300
Tryout & pilot - Nylon Molds	--	5,000	5,000
Development - powder metal	1,500	2,800	4,300
Development - custom checkering	2,000	(1,500)	500
Eng.-Folders, C.of O., Standards	5,000	--	5,000
Product Engineering	$ 23,800	$ (3,500)	$ 20,300
Process Eng. & Trial Run	22,500	(4,500)	18,000
Pilot lot testing	1,300	1,000	2,300
Tooling	$ 289,900	$ 32,500	$ 322,400
Design	35,400	4,100	39,500
Fixtures & Gages	118,200	32,700	150,900
Molds	88,400	(9,300)	79,100
Perishable tools	2,300	--	2,300
Tool revisions	45,600	5,000	50,600
Remington Machines	$ 37,200	$ 10,400	$ 47,600
Construction	22,500	6,000	28,500
Tooling	5,600	(1,500)	4,100
Operations	9,100	5,900	15,000
Std. Machines & Equipment	$ 155,300	$ (13,000)	$ 142,300
Production Aids	$ 20,200	$ (5,500)	$ 14,700
Pilot Operations	$ 18,800	$ 17,400	$ 36,200
Machine alterations	5,000	10,800	15,800
Pilot lot manufacture	11,800	2,100	13,900
Machine rearrangement	--	4,400	4,400
Component obsolescence	2,000	100	2,100
Provision for advancing wages and material prices and allowance for unforeseen items	$ 38,700	$ (34,700)	$ 4,000
Total Cost	$ 571,700	$ 20,200	$ 591,900

REMINGTON ARMS COMPANY, INC.

SUPPLEMENTARY INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

INCREASED MANUFACTURING FACILITIES FOR
MODEL XP-100 SINGLE SHOT PISTOL AND
MODEL 600 CENTER FIRE RIFLE

Research and development project charges, and start-up costs chargeable to operations incurred prior to the first year of operation amount to $676,000. Giving effect to amortization of such charges against earnings during the first and second years of operation, earnings and return on investment are as follows:

	Operative Earnings	Amortization of Operations Charges Incurred Prior to First Year	Adjusted Operative Earnings	Net Earnings	Net Return on Investment
1963	$ 130,310	$ 130,310	$ --	$ --	-- %
*1964	488,000	445,690	42,310	19,090	2.9%
1965	498,490	--	498,490	224,520	34.1%

*1965 volumes (5,000 XP-100) assumed for second year
(15,000 M/600)

(Not for submission to Board)

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

R D 1386-REV.

REMINGTON ARMS COMPANY, INC.

APPROPRIATION REQUEST

Department Research & Development Works Ilion Project No. AD XP-700-3

Request for $ (9,500) Reduction Date March 25, 1963

Category Expanded Facilities - Established Product

Title MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600 CENTER FIRE RIFLE

	Previous Parts (Part II Authorized 3/2/62)	This Part III	Total
Construction	$ 180,300	$ (9,500)	$ 170,800
Supporting Research	92,300	12,100	104,400
Operations	399,100	17,600	416,700
Total	$ 671,700	$ 20,200	$ 691,900

This project is not included in Forecast No. 2

To be commenced March 2, 1962

To be ready for use: XP-100 3/1/63
M/600 1/1/64

To be physically completed March 1, 1964

Estimate prepared by Methods & Standards, P.E&C. and Research & Development 3/18/63
Date

Approved or Authorized _____ Date _____

Approved or Authorized _____ Date _____

Approved or Authorized _____ Date _____

Approved or Authorized _____ Date _____
President and General Manager

Approved as to form, accounting aspects, and rules compliance

Authorized BOARD OF DIRECTORS _____

_____ Treasurer or Assistant Treasurer _____ Date

_____ Secretary

Preliminary approvals:

	Date		Date

(Subdivision I)

REMINGTON ARMS COMPANY, INC.

PROJECT NO. AD XP-700-3 - ILION WORKS

SUMMARY OF ESTIMATED EXPENDITURES

	Total
Construction Project	
Direct manufacturing facilities	
Equipment	$ 170,800
Other	
Product development	$ 104,400
Tooling	326,500
Other	86,200
Provision for advancing wages and material prices and allowance for unforeseen items	4,000
Total	$ 521,100
Total expenditure	$ 691,900

ACCOUNTING DISTRIBUTION OF EXPENDITURES

	Expenditures This Project	Final Net Results in Accounts
Construction Project		
Permanent investment	$ 170,800	$ 170,800
Other		
Research (Supporting)	$ 104,400	$ 104,400
Operations	416,700	416,700
Total	$ 521,100	$ 521,100
Total	$ 691,900	$ 691,900

(Subdivision 2)

REMINGTON ARMS COMPANY, INC.

GENERAL INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

PRESENT FACILITIES AND TO WHAT EXTENT THEY ARE INADEQUATE

The Board of Directors authorized a construction appropriation of $180,300 on March 2, 1962 (total expenditures of $671,700 including research and operations charges) to complete the development of models and to procure tooling and equipment for production of the Model XP-100 Pistol (formerly XP-700) and the Model 600 Center Fire Rifle (formerly XC-13).

The new handgun was introduced March 1, 1963 featuring the new .221 Remington "Fireball" cartridge. Introduction of the XP-100 handgun is in response to the increased demand for handguns and consumer preferences for high power and velocity in handguns (.357 Magnum, 44 Magnum and 22 Remington Jet).

Features of the XP-100 include:

1. Unique design.
2. Long range high velocity performance without sight adjustment.
3. Bolt action for accuracy and strength.
4. Reduced muzzle jump and recoil reduction.
5. Stock for right or left hand shooters.
6. Grip flared for added stabilization.
7. Grip checkering and inlays.
8. Ribbed barrel.

The Model 600 Center Fire Rifle has been designed for lighter weight carbine type design including such features as:

1. Shorter length for easier handling.
2. Ribbed barrel for improved sighting and appearance.
3. Custom checkering.
4. Heavier caliber than present guns of similar type.
5. Attractive retail price.

The Model 600 Rifle is now in pilot operations for the .308 Caliber, and design is completed for Calibers 30-30 Winchester and .222 Remington. It is scheduled for announcement on January 1, 1964.

Because of the added product cost and project expenditures for the Caliber 30-30 Winchester version of the rifle, the Sales Department has recommended that the .35 Remington Caliber be substituted for the 30-30 Winchester Caliber.

(Subdivision 3)

DESCRIPTION OF PROPOSED WORK

It is proposed to complete the development of the Model 600 Center Fire Rifle in the .35 Remington Caliber and the procurement of tooling and equipment for production. Tooling and equipment are being provided for production of 6155 XP-100 Handguns for the first year and 5000 XP-100 and 15,000 Model 600 Center Fire Rifles for the third year.

This Part III is a request for ($9,500) reduction to cover the construction underrun on this project.

REMARKS

Changes in design and scope of work since Part II was authorized results in increased expenditures as indicated below:

	Increase (Decrease) from Part II	
	Amount	Per Cent
Construction	$ (9,500)	(5.3)
New equipment expenditures underrun due to utilization of machines on hand.		
Research	$ 12,100	13.1
Additional expenditures required due to the revision to accommodate the larger diameter .35 Remington cartridge and additional work on sights and molds for nylon parts.		
Operations	$ 17,600	4.4
Operations charges increased due to tooling for revised sights and stock former and additional equipment alterations (which reduced construction expenditures).		

PATENT STATUS

Consideration of the designs for both the pistol and rifle indicates that no patent infringement will be involved.

A design patent application is being prepared to cover the appearance of the pistol. A search has indicated that the fire control mechanism of the pistol and the rib mounting scheme for both contain some novelty. Patent applications will be filed to cover both these inventions.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.
ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD XP-700-3 - ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600 CENTER FIRE RIFLE
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT

	Third Year of Operation		
	Present Operation	Results From This Project	Operation After This Project
QUANTITY	341,115	20,000	361,115
SALES	$17,985,150	$1,079,800	$19,064,950
Less: Mill cost	12,935,780	581,310	13,517,090
Selling expense)			
Administrative expense)	1,708,600	--	1,708,600
Technical activities expense	593,500	--	593,500
	$15,237,880	$ 581,310	$15,819,190
OPERATIVE EARNINGS	$ 2,747,270	$ 498,490	$ 3,245,760
Less: All other expense: All other 6%; Federal tax 52%	1,507,700	273,570	1,781,270
NET EARNINGS	$ 1,239,570	$ 224,920	$ 1,464,490
INVESTMENT			
Project expenditures	$ --	$ 170,800	$ 170,800
Manufacturing and service facilities	11,991,000	--	11,991,000
Working capital	11,429,000	488,000	11,917,000
Position A: Total capital required including facilities to be retired	$23,420,000	$ 658,800	$24,078,800
Facilities to be retired (Deduct)			--
Position B: Total investment after completion of this project			$24,078,800

(Subdivision 5)
Page 1

REMINGTON ARMS COMPANY, INC.
ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD XP-700-3 - ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600 CENTER FIRE RIFLE
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT

	Third Year of Operation		
	Present Operation	Results From this Project	Operation After This Project
RETURN ON INVESTMENT			
Position A	5.3%	34.1%	6.1%
Position B	--	--	6.1%
* * * * * * * * * * *			
Return on total capital required including research and development and other operations charges	5.3%	19.1%	6.0%
* * * * * * * * * * *			

SUMMARY COMPARISON OF RESULTS FROM THIS PROJECT - FIRST AND THIRD YEARS OF OPERATION

	First Year	Third Year
Quantity	6,155	20,000
Sales	$334,520	$1,079,800
Operative earnings	130,310	498,490
Net earnings	58,800	224,920
Investment		
Project expenditures	$155,000	$ 170,800
Allocated investment	--	--
Working capital	165,000	488,000
Total	$320,000	$ 658,800
Net return on investment	18.4%	34.1%
* * * * * * * * * * *		
Return on total capital required including research and development and other operations charges	7.5%	19.1%

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

Remington Arms Company, Inc.

DETAIL ESTIMATE OF EXPENDITURES

PROJECT NO. AD XP-700-3 - Ilion WORKS

	Amount Previously Authorized	Requested this Part III	Total Indicated Cost
Development	$ 87,800	$ 16,600	$ 104,400
Investigation	11,000	(4,000)	7,000
Design	31,500	5,900	37,400
Model making	24,800	14,100	38,900
Design testing	12,000	(5,700)	6,300
Tryout & pilot - Nylon Molds	--	5,000	5,000
Development - powder metal	1,500	2,800	4,300
Development - custom checkering	2,000	(1,500)	500
Eng.-Folders, C.of O., Standards	5,000	--	5,000
Product Engineering	$ 23,800	$ (3,500)	$ 20,300
Process Eng. & Trial Run	22,500	(4,500)	18,000
Pilot lot testing	1,300	1,000	2,300
Tooling	$ 289,900	$ 32,500	$ 322,400
Design	35,400	4,100	39,500
Fixtures & Gages	118,200	32,700	150,900
Molds	88,400	(9,300)	79,100
Perishable tools	2,300	--	2,300
Tool revisions	45,600	5,000	50,600
Remington Machines	$ 37,200	$ 10,400	$ 47,600
Construction	22,500	6,000	28,500
Tooling	5,600	(1,500)	4,100
Operations	9,100	5,900	15,000
Std. Machines & Equipment	$ 155,300	$ (13,000)	$ 142,300
Production Aids	$ 20,200	$ (5,500)	$ 14,700
Pilot Operations	$ 18,800	$ 17,400	$ 36,200
Machine alterations	5,000	10,800	15,800
Pilot lot manufacture	11,800	2,100	13,900
Machine rearrangement	--	4,400	4,400
Component obsolescence	2,000	100	2,100
Provision for advancing wages and material prices and allowance for unforeseen items	$ 38,700	$ (34,700)	$ 4,000
Total Cost	$ 671,700	$ 20,200	$ 691,900

REMINGTON ARMS COMPANY, INC.

SUPPLEMENTARY INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

INCREASED MANUFACTURING FACILITIES FOR
MODEL XP-100 SINGLE SHOT PISTOL AND
MODEL 600 CENTER FIRE RIFLE

Research and development project charges, and start-up costs chargeable to operations incurred prior to the first year of operation amount to $676,000. Giving effect to amortization of such charges against earnings during the first and second years of operation, earnings and return on investment are as follows:

	Operative Earnings	Amortization of Operations Charges Incurred Prior to First Year	Adjusted Operative Earnings	Net Earnings	Net Return on Investment
1963	$ 130,310	$ 130,310	$ --	$ --	-- %
*1964	468,000	445,690	42,310	19,090	2.9%
1965	498,490	--	498,490	224,920	34.1%

*1965 volumes (5,000 XP-100) assumed for second year
(15,000 M/600)

(Not for submission to Board)

BARBER - PRESALE R 0131504

PRESALE ADXP-3002

PERSONAL AUDIO PROFIT SELLING PRICE AND ESTIMATED SALES VOLUME

(ADDITIONS TO GOW LINE)

	XP-100 (ALL TOTAL)	MAX [illegible]	[illegible]	[illegible]	TOTAL [illegible]
			PRESENT		
SALES QUANITY	—	—	—	341,115	341,115
RETAIL SELLING PRICE		—	—		
NET SELLING PRICE		—	—	57.77	57.77
OPERATING EARNINGS	—	—	—	8.56	8.56
% OF NET SELLING				16.8%	16.8%
			PROPOSED		
SALES QUANITY	[illegible]	15,000	[illegible]	341,115	361,115
RETAIL SELLING PRICE	$ 99.[illegible]	$ 99.95	$ 99.98		
NET SELLING PRICE	5[illegible].35	[illegible]	53.99	57.77	57.77
OPERATING EARNINGS	7.56	[illegible]	8.[illegible]	9.04	8.99
% OF NET SELLING	13.9%	15.[illegible]	15.[illegible]%	15.1%	15.0%

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131504

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

7/18/62

Remington Arms Company, Inc.
Project No. 10 87-- - 3 - Ilion Works
Summary of Estimated Expenditures

Construction Project	
Direct Manufacturing Facilities	
Equipment	$ 1[illegible]
Provision for advancing wages and material prices and allowance for unforeseen items	[illegible]
Other	
Product Development	$ 10[illegible]
Tooling	316,500
Other	80,[illegible]
Provision for advancing wages and material prices and allowance for unforeseen items	[illegible]
	$ 5[illegible],100
Total Expenditures	$ 69,900

Accounting Distribution of Expenditures

	Expenditures this project	Adjusting entries	Final Net Results in Accounts
Construction Project			
Permanent investment	$ 17[illegible]	$ —	$ 17[illegible]
Other			
Supporting research	10[illegible]		10[illegible]
Operations	1[illegible]		[illegible]
	$ 5[illegible],100		$ 5[illegible],100
	$ 69,900	$	$ 69,900

BARBER - PRESALE R 0131505

BARBER - PRESALE R 0131505
R2532493

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131506

Remington Arms Company, Inc.

DETAIL ESTIMATE OF EXPENDITURES

Project No. AD XP700-3 - Ilion Works

3/18/63

cc: R. L. Hall
J. J. Phillips (2)
V. G. DeReus
L. D. Cox
File

	Authorized	Expended to 7/25/63	Requested this part II	Vendor's tooling	Total indicated cost	Contingency
	$	$	$		$	
Development	87800	90474	16600		104100	
Investigation	11000	8966	(4000)		7000	
Design	31500	34100	5900		37400	
Model making	24800	37877	14100		51900	
Design testing	17000	5760	(5700)		60	
Models for test	—	—				
Development - powder metal	1500	3500	1500		5000	
Development-custom [illegible]	2000	501	(1500)		500	
Eng.-Folders, C of C, Illus	1500	3500	—		3500	
Product Engineering	138600	146634	(3500)		143100	
Process Eng. & Trial run	22500	14457	(4500)		10000	
Pilot Lot Testing	1300	1300	1000		2300	
Expediting	—					
Tooling	258700	270400	32500		302900	
Design	3400	3686	4100		7800	
Fixtures & Gages	118500	132860	32700		165700	
Molds	82400	77100	(7000)		70100	
Perishable tools	3300	3300	—		3300	
Tool revisions	45600	37860	5000		50600	
Special Machines						
Construction						
Tooling						
Operations						
Remington Machines	37200	42510	10400		47600	
Construction	22500	22500	1000		23500	
Tooling	5600	4077	(1500)		4100	
Operations	7100	14917	5900		20800	
Std Machines & equipment	155900	141700	(12000)		143700	
Production Aids	20200	15600	(5700)		14900	
Construction						
Operations	20200	15600	5700		14900	
Pilot Operations	189200	207700	17400		225100	
Machine alterations	5100	14700	1800		16500	
Pilot lot mfg.	11200	10500	2000		12500	
Machine rearrangement	—	4700	4400		4400	
Component Obsolescence	3000	1000	100		1100	
Provision for Advancing Wages and Material Costs	3700		34700		4000	
GRAND TOTAL	1717[illegible]	1579400	290500		681900	

BARBER - PRESALE R 0131506
R2532494

DESCRIPTION OF PROPOSED WORK

It is proposed to complete the development of the and Model 600 Center Fire Rifle in the .35 Remington Caliber and the procurement of tooling and equipment for production. Tooling and equipment is being provided for production of 6155 XP-100 Handguns for the first year and 5000 XP-100 and 15,000 Model 600 Center Fire Rifles for the third year.

This Part III is a request for ($9,500) reduction to cover the construction underrun on this project.

REMARKS

Changes in design and scope of work since Part II was authorized results in increased expenditures as indicated below:

	Increase (Decrease) from Part II	
	Amount	Per Cent
Construction	$ (9,500)	(5.3)
New equipment expenditures underrun due to utilization of machines on hand.		
Research	$ 12,100	13.1
Additional expenditures required due to the revision to accommodate the larger diameter .35 Remington cartridge and additional work on sights and molds for nylon parts.		
Operations	$ 17,600	4.4
Operations charges increased due to tooling for revised sights and stock former and additional equipment alterations (which reduced construction expenditures).		

PATENT STATUS

Consideration of the designs for both the pistol and rifle indicates that no patent infringement will be involved.

A design patent application is being prepared to cover the appearance of the pistol. A search has indicated that the fire control mechanism of the pistol and the rib mounting scheme for both contain some novelty. Patent applications will be filed to cover both these inventions.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.

PROJECT NO. AD XP-700-3 - ILION WORKS

SUMMARY OF ESTIMATED EXPENDITURES

	Total
Construction Project	
Direct manufacturing facilities	
Equipment	$ 170,800
Other	
Product development	$ 104,400
Tooling	326,500
Other	86,200
Provision for advancing wages and material prices and allowance for unforeseen items	4,000
Total	$ 521,100
Total expenditure	$ 691,900

ACCOUNTING DISTRIBUTION OF EXPENDITURES

	Expenditures This Project	Adjusting Entries	Final Net Results in Accounts
Construction Project			
Permanent investment	$ 170,800	--	$ 170,800
Other			
Research (Supporting)	$ 104,400	--	$ 104,400
Operations	416,700	--	416,700
Total	$ 521,100		$ 521,100
Total	$ 691,900		$ 691,900

(Subdivision 2)

REMINGTON ARMS COMPANY, INC.

GENERAL INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

PRESENT FACILITIES AND TO WHAT EXTENT THEY ARE INADEQUATE

The Board of Directors authorized a construction appropriation of $180,300 on March 2, 1962 (total expenditures of $671,700 including research and operations charges) to complete the development of models and to procure tooling and equipment for production of the Model XP-100 Pistol (formerly XP-700) and the Model 600 Center Fire Rifle (formerly XC-13).

The new handgun was introduced March 1, 1963 featuring the new .221 Remington "Fireball" cartridge. Introduction of the XP-100 handgun is in response to the increased demand for handguns and consumer preferences for high power and velocity in handguns (.357 Magnum, 44 Magnum and 22 Remington Jet).

Features of the XP-100 include:

1. Unique design.
2. Long range high velocity performance without sight adjustment.
3. Bolt action for accuracy and strength.
4. Reduced muzzle jump and recoil reduction.
5. Stock for right or left hand shooters.
6. Grip flared for added stabilization.
7. Grip checkering and inlays.
8. Ribbed barrel.

The Model 600 Center Fire Rifle has been designed for lighter weight carbine type design including such features as:

1. Shorter length for easier handling.
2. Ribbed barrel for improved sighting and appearance.
3. Custom checkering.
4. Heavier caliber than present guns of similar type.
5. Attractive retail price.

The Model 600 Rifle is now in pilot operations for the .308 Caliber, and design is completed for Calibers 30-30 Winchester and .222 Remington. It is scheduled for announcement on January 1, 1964.

Because of the added product cost and project expenditures for the Caliber 30-30 Winchester version of the rifle, the Sales Department has recommended that the .35 Remington Caliber be substituted for the 30-30 Winchester Caliber.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

DESCRIPTION OF PROPOSED WORK

~~It is proposed to complete the development of the Model 600 Center Fire Rifle in the .35 Remington and tooling and equipment is being provided for production of 6155 XP-100 Pistols for the first year and 5000 XP-100 Pistols and 15,000 Model 600 Center Fire Rifles for the third year.~~

~~This Part III is a request for $ (9,500) reduction to cover the construction under run on this project.~~

REMARKS

Changes in design and scope of work since Part II was authorized results in increased expenditures as indicated below:

Increase (Decrease)

It is proposed to complete the development of the Model 600 Center Fire Rifle in the 35 Remington Caliber and the procurement of tooling and equipment for production. Tooling and equipment is being provided for production of 6155 XP100 Handguns for the first year and 5000 XP-100 and 15000 Model 600 Center Fire Rifles for the third year.

This Part III is a request for ($9500) reduction to cover the construction underrun on this project.

G-88

DON'T SAY IT—WRITE IT

cc: E.B. Wallin

To N. F. Larsen

Date March 27, 1963

From J. A. Roberts

Project AD XP-700-3

Attached are two information copies as you requested. We are forwarding one copy to E.B. Wallin. The original is being circulated at Ilion and should go forward tomorrow.

JAR:B
Attach.

File Copy

THERE IS A SAFE WAY; DO IT THAT WAY

R D 1386-REV.

REMINGTON ARMS COMPANY, INC.

APPROPRIATION REQUEST

Department Research & Development Works Ilion Project No. AD XP-700-3

Request for $ (9,500) Reduction Date March 25, 1963

Category Expanded Facilities - Established Product

Title MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600 CENTER FIRE RIFLE

	Previous Parts (Part II Authorized 3/2/62)	This Part III	Total
Construction	$ 180,300	$ (9,500)	$ 170,800
Supporting Research	92,300	12,100	104,400
Operations	399,100	17,600	416,700
Total	$ 671,700	$ 20,200	$ 691,900

This project is not included in Forecast No. 2 — Approved or Authorized _____ Date _____

To be commenced March 2, 1962 — Approved or Authorized _____ _____

To be ready for use: XP-100 3/1/63
M/600 1/1/64

To be physically completed March 1, 1964 — Approved or Authorized _____ _____

Estimate prepared by Methods & Standards, PE&C and Research & Development 3/18/63 — Approved or Authorized _____ _____

_____ Date — President and General Manager

Approved as to form, accounting aspects, and rules compliance — Authorized BOARD OF DIRECTORS _____

_____ Treasurer or Assistant Treasurer — _____ Date — _____ Secretary

Preliminary approvals:

	Date		Date

(Subdivision I)

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.

PROJECT NO. AD XP-700-3 - ILION WORKS

SUMMARY OF ESTIMATED EXPENDITURES

	Total
Construction Project	
Direct manufacturing facilities	
Equipment	$ 170,800
Other	
Product development	$ 104,400
Tooling	326,500
Other	86,200
Provision for advancing wages and material prices and allowance for unforeseen items	4,000
Total	$ 521,100
Total expenditure	$ 691,900

ACCOUNTING DISTRIBUTION OF EXPENDITURES

	Expenditures This Project	Final Net Results in Accounts
Construction Project		
Permanent investment	$ 170,800	$ 170,800
Other		
Research (Supporting)	$ 104,400	$ 104,400
Operations	416,700	416,700
Total	$ 521,100	$ 521,100
Total	$ 691,900	$ 691,900

(Subdivision 2)

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.

GENERAL INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

PRESENT FACILITIES AND TO WHAT EXTENT THEY ARE INADEQUATE

The Board of Directors authorized a construction appropriation of $180,300 on March 2, 1962 (total expenditures of $671,700 including research and operations charges) to complete the development of models and to procure tooling and equipment for production of the Model XP-100 Pistol (formerly XP-700) and the Model 600 Center Fire Rifle (formerly XC-13).

The new handgun was introduced March 1, 1963 featuring the new .221 Remington "Fireball" cartridge. Introduction of the XP-100 handgun is in response to the increased demand for handguns and consumer preferences for high power and velocity in handguns (.357 Magnum, 44 Magnum and 22 Remington Jet).

Features of the XP-100 include:

1. Unique design.
2. Long range high velocity performance without sight adjustment.
3. Bolt action for accuracy and strength.
4. Reduced muzzle jump and recoil reduction.
5. Stock for right or left hand shooters.
6. Grip flared for added stabilization.
7. Grip checkering and inlays.
8. Ribbed barrel.

The Model 600 Center Fire Rifle has been designed for lighter weight carbine type design including such features as:

1. Shorter length for easier handling.
2. Ribbed barrel for improved sighting and appearance.
3. Custom checkering.
4. Heavier caliber than present guns of similar type.
5. Attractive retail price.

The Model 600 Rifle is now in pilot operations for the .308 Caliber, and design is completed for Calibers 30-30 Winchester and .222 Remington. It is scheduled for announcement on January 1, 1964.

Because of the added product cost and project expenditures for the Caliber 30-30 Winchester version of the rifle, the Sales Department has recommended that the .35 Remington Caliber be substituted for the 30-30 Winchester Caliber.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

DESCRIPTION OF PROPOSED WORK

It is proposed to complete the development of the Model 600 Center Fire Rifle in the .35 Remington Caliber and the procurement of tooling and equipment for production. Tooling and equipment are being provided for production of 6155 XP-100 Handguns for the first year and 5000 XP-100 and 15,000 Model 600 Center Fire Rifles for the third year.

This Part III is a request for ($9,500) reduction to cover the construction underrun on this project.

REMARKS

Changes in design and scope of work since Part II was authorized results in increased expenditures as indicated below:

	Increase (Decrease) from Part II	
	Amount	Per Cent
Construction	$ (9,500)	(5.3)
New equipment expenditures underrun due to utilization of machines on hand.		
Research	$ 12,100	13.1
Additional expenditures required due to the revision to accommodate the larger diameter .35 Remington cartridge and additional work on sights and molds for nylon parts.		
Operations	$ 17,600	4.4
Operations charges increased due to tooling for revised sights and stock former and additional equipment alterations (which reduced construction expenditures).		

PATENT STATUS

Consideration of the designs for both the pistol and rifle indicates that no patent infringement will be involved.

A design patent application is being prepared to cover the appearance of the pistol. A search has indicated that the fire control mechanism of the pistol and the rib mounting scheme for both contain some novelty. Patent applications will be filed to cover both these inventions.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.
ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD XP-700-3 - ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR
MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600
CENTER FIRE RIFLE
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT

		Third Year of Operation	
	Present Operation	Results From This Project	Operation After This Project
QUANTITY	341,115	20,000	361,115
SALES	$17,985,150	$1,079,800	$19,064,950
Less: Mill cost	12,935,780	581,310	13,517,090
Selling expense) Administrative expense)	1,708,600	--	1,708,600
Technical activities expense	593,500	--	593,500
	$15,237,880	$ 581,310	$15,819,190
OPERATIVE EARNINGS	$ 2,747,270	$ 498,490	$ 3,245,760
Less: All other expense: All other 6%; Federal tax 52%	1,507,700	273,570	1,781,270
NET EARNINGS	$ 1,239,570	$ 224,920	$ 1,464,490
INVESTMENT			
Project expenditures	$ --	$ 170,800	$ 170,800
Manufacturing and service facilities	11,991,000	--	11,991,000
Working capital	11,429,000	488,000	11,917,000
Position A: Total capital required including facilities to be retired	$23,420,000	$ 658,800	$24,078,800
Facilities to be retired (Deduct)			--
Position B: Total investment after completion of this project			$24,078,800

(Subdivision 5)

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.
ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD XP-700-3 - ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR
MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600
CENTER FIRE RIFLE
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT

	Third Year of Operation		
	Present Operation	Results From this Project	Operation After This Project
RETURN ON INVESTMENT			
Position A	5.3%	34.1%	6.1%
Position B	--	--	6.1%
* * * * * * * * * *			
Return on total capital required including research and development and other operations charges	5.3%	19.1%	6.0%
* * * * * * * * * *			

SUMMARY COMPARISON OF RESULTS FROM THIS PROJECT - FIRST AND THIRD YEARS OF OPERATION

	First Year	Third Year
Quantity	6,155	20,000
Sales	$334,520	$1,079,800
Operative earnings	130,310	498,490
Net earnings	58,800	224,920
Investment		
Project expenditures	$155,000	$ 170,800
Allocated investment	--	--
Working capital	165,000	488,000
Total	$320,000	$ 658,800
Net return on investment	18.4%	34.1%
* * * * * * * * * *		
Return on total capital required including research and development and other operations charges	7.5%	19.1%

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

Remington Arms Company, Inc.

DETAIL ESTIMATE OF EXPENDITURES

PROJECT NO. AD XP-700-3 - Ilion WORKS

	Amount Previously Authorized	Requested this Part III	Total Indicated Cost
Development	$ 87,800	$ 16,600	$ 104,400
Investigation	11,000	(4,000)	7,000
Design	31,500	5,900	37,400
Model making	24,800	14,100	38,900
Design testing	12,000	(5,700)	6,300
Tryout & pilot - Nylon Molds	--	5,000	5,000
Development - powder metal	1,500	2,800	4,300
Development - custom checkering	2,000	(1,500)	500
Eng.-Folders, C.of O., Standards	5,000	--	5,000
Product Engineering	$ 23,800	$ (3,500)	$ 20,300
Process Eng. & Trial Run	22,500	(4,500)	18,000
Pilot lot testing	1,300	1,000	2,300
Tooling	$ 289,900	$ 32,500	$ 322,400
Design	35,400	4,100	39,500
Fixtures & Gages	118,200	32,700	150,900
Molds	88,400	(9,300)	79,100
Perishable tools	2,300	--	2,300
Tool revisions	45,600	5,000	50,600
Remington Machines	$ 37,200	$ 10,400	$ 47,600
Construction	22,500	6,000	28,500
Tooling	5,600	(1,500)	4,100
Operations	9,100	5,900	15,000
Std. Machines & Equipment	$ 155,300	$ (13,000)	$ 142,300
Production Aids	$ 20,200	$ (5,500)	$ 14,700
Pilot Operations	$ 18,800	$ 17,400	$ 36,200
Machine alterations	5,000	10,800	15,800
Pilot lot manufacture	11,800	2,100	13,900
Machine rearrangement	--	4,400	4,400
Component obsolescence	2,000	100	2,100
Provision for advancing wages and material prices and allowance for unforeseen items	$ 38,700	$ (34,700)	$ 4,000
Total Cost	$ 671,700	$ 20,200	$ 691,900

REMINGTON ARMS COMPANY, INC.

SUPPLEMENTARY INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

INCREASED MANUFACTURING FACILITIES FOR MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600 CENTER FIRE RIFLE

Research and development project charges, and start-up costs chargeable to operations incurred prior to the first year of operation amount to $576,000. Giving effect to amortization of such charges against earnings during the first and second years of operation, earnings and return on investment are as follows:

	Operative Earnings	Amortization of Operations Charges Incurred Prior to First Year	Adjusted Operative Earnings	Net Earnings	Net Return on Investment
1963	$ 130,310	$ 130,310	$ --	$ --	-- %
*1964	488,000	445,690	42,310	19,090	2.9%
1965	498,490	--	498,490	224,920	34.1%

*1965 volumes (5,000 XP-100) assumed for second year
(15,000 M/600)

(Not for submission to Board)

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131520

11 x 16½ — 14 columns
With description column

PROJECT ADXP-700-3

PRESENT AND PROPOSED SELLING PRICE AND EST. OPER. EARNINGS

(ADDITIONS TO GUN LINE)

	XP-100 (PISTOL)	M/600 RIFLE	COMPUTED AVERAGE	BALANCE OF LINE	TOTAL PROJECT
		PRESENT			
SALES QUANITY	—	—	—	341,115	341,115
RETAIL SELLING PRICE	—	—	—		
NET SELLING PRICE	—	—	—	57.77	57.77
OPERATIVE EARNINGS	—	—	—	8.56	8.56
% OF NET SELLING	—	—	—	16.4%	16.4%
		PROPOSED			
SALES QUANITY	5000	15,000	20,000	341,115	361,115
RETAIL SELLING PRICE	4 99.95	4 99.95	4 99.95		
NET SELLING PRICE	54.35	53.87	53.99	57.77	57.77
OPERATIVE EARNINGS	7.56	8.75	8.08	9.04	8.99
% OF NET SELLING	13.9%	16.3%	15.0%	17.1%	17.0%

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131520 R2532508

1P. PART III
M/600 RIFLE

REMINGTON ARMS COMPANY, INC.
ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AOXP700-3 ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR PRODUCT A

CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT
~~(Dollars and Units in Thousands (if appropriate)~~

	Third Year of Operation		
	Present Operation	Results From this Project	Operation After This Project
QUANTITY	341,115	20,000	361,115
SALES	$17,985,150	$1,079,800	$19,064,950
Less: Mill cost	12,935,780	681,310	13,617,090
Selling expense			
Administrative expense	1,708,600	—	1,708,600
Technical activities expense	593,500	—	593,500
	$15,237,880	$ 681,310	$15,919,190
OPERATIVE EARNINGS	2,747,270	398,490	3,145,760
Less: All other expense: All other 6 %; Federal tax 54 %	1,607,700	273,570	1,881,270
NET EARNINGS	$1,139,570	$ 224,920	$1,464,490
INVESTMENT			
Project expenditures	$ —	$ 170,800	$ 170,800
Manufacturing and service facilities (Allocated)	11,991,000	—	11,991,000
Working capital	11,429,000	488,000	11,917,000
Position A: Total capital required including facilities to be retired	$23,420,000	$ 658,800	$24,078,800
~~Expenditures chargeable to depreciation (Deduct)~~			
~~Facilities to be retired (Deduct)~~			—
Position B: Total investment after completion of this project			$24,078,800

(Subdivision 5)

FORM 1A, Page 1

REMINGTON ARMS COMPANY, INC.
ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD XP-700-3 ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR PRODUCT A
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT
(~~Dollars and Units in Thousands (if appropriate)~~)

Third Year of Operation

	Present Operation	Results From this Project	Operation After This Project
RETURN ON INVESTMENT			
Position A	5.3 %	34.1 %	6.1 %
Position B	—	—	6.1 %
* * * * * * *			
Return on total capital required including research and development and other operations charges	5.3 %	19.1 %	6.0 %
* * * * * * *			

SUMMARY COMPARISON OF RESULTS FROM THIS PROJECT-
FIRST AND THIRD YEARS OF OPERATION

	First Year	Third Year
Quantity	6155	70,000
Sales	$ 334,570	$1,079,800
Operative earnings	130,310	498,490
Net earnings	58,800	224,970
Investment		
Project expenditures	$ 155,000	$ 170,800
Allocated investment	—	—
Working capital	165,000	488,000
Total	$ 320,000	$ 658,800
Net return on investment	18.4 %	34.1 %
* * * * * * *		
Return on total capital required including research and development and other operations charges	5.3 %	19.1 %

BARBER - PRESALE R 0131523

11 x 16½ — 14 columns
With description column

PROJECT ADXP-100-3

PRESENT AND PROPOSED SELLING PRICES AND EST. OPERATIVE EARNINGS
(ADDITIONS TO GUN LINE)

	XP-100 (PISTOL)	M40 RIFLE			
PRESENT					
SALES QUANITY	—	—			
RETAIL SELLING PRICE	—	—			
NET SELLING PRICE	—	—			77
OPERATIVE EARNINGS	—	—			66
% OF NET SELLING	—	—			16.4%
PROPOSED					
SALES QUANITY	5000	15,000	[illegible]	[illegible]	361,115
RETAIL SELLING PRICE	4 99.95	4 99.95	[illegible]		
NET SELLING PRICE	54.35	53.87	[illegible]		54.79
OPERATIVE EARNINGS	7.56	8.75	[illegible]		8.99
% OF NET SELLING	13.9%	15.3%	[illegible]	[illegible]	17.0%

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131523
R2532511

BARBER - PRESALE R 0131524

11 x 16½ — 14 columns
With description column

PROJECT ADXP-700-3

PRESENT AND PROPOSED SELLING PRICES AND EST. OPER. EARNINGS
(ADDITIONS TO GUN LINE)

	XP-100 (PISTOL)	M 600 (RIFLE)	COMBINED A. CRAFT	PACKING	TOTAL PROJECT
		PRESENT			
SALES QUANITY	—	—	—	361,115	361,115
RETAIL SELLING PRICE	—	—			
NET SELLING PRICE	—	—	—	67.79	67.79
OPERATIVE EARNINGS	—	—	—	8.56	8.56
% OF NET SELLING	—	—	—	16.3%	16.3%
		PROPOSED			
SALES QUANITY	5000	15000	20000	361,115	361,115
RETAIL SELLING PRICE	99.95	99.95	99.95		
NET SELLING PRICE	54.35	53.87	53.99	67.79	67.79
OPERATIVE EARNINGS	7.56	8.75	8.39	9.09	8.99
% OF NET SELLING	13.9%	16.3%	15.5%	13.1%	13.0%

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131524
R2532512

11 x 16½ — 14 columns
With description column

PROJECT ADXP-700-3

PRESENT AND PROPOSED SELLING PRICES AND EST. OPER. EARNINGS
(ADDITIONS TO GUN LINE)

	XP-100 (PISTOL)	M/600 (RIFLE)	COMBINED AVERAGE	BALANCE OF LINE	TOTAL PLANT
		PRESENT			
SALES QUANITY	—	—	—	341,115	341,115
RETAIL SELLING PRICE	—	—	—		
NET SELLING PRICE	—	—	—	54.74	54.74
OPERATIVE EARNINGS	—	—	—	8.56	8.56
% OF NET SELLING	—	—	—	16.4%	16.4%
		PROPOSED			
SALES QUANITY	5000	15,000	20,000	341,115	361,115
RETAIL SELLING PRICE	99.95	99.95	99.95		
NET SELLING PRICE	54.35	53.87	53.99	54.74	54.79
OPERATIVE EARNINGS	7.56	8.45	8.08	9.04	8.99
% OF NET SELLING	13.9%	15.3%	15.0%	17.1%	17.0%

R. KERR
3-25-63

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131525

BARBER - PRESALE R 0131525
R2532513

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131526

PROJECT ADXP-700-3

PRESENT AND PROPOSED SELLING PRICES AND EST. OPER. EARNINGS
(ADDITIONS TO GUN LINE)

	XP-100 (PISTOL)	M/600 (RIFLE)	COMBINED AVERAGE	BALANCE OF LINE	TOTAL PLANT
PRESENT					
SALES QUANITY	—	—	—	341,115	341,115
RETAIL SELLING PRICE	—	—	—		
NET SELLING PRICE	—	—	—	54.74	54.74
OPERATIVE EARNINGS	—	—	—	8.56	8.56
% OF NET SELLING	—	—	—	16.4%	16.4%
PROPOSED					
SALES QUANITY	5000	15,000	20,000	341,115	361,115
RETAIL SELLING PRICE	$ 99.95	$ 99.95	$ 99.95		
NET SELLING PRICE	54.35	53.87	53.99	54.74	54.79
OPERATIVE EARNINGS	7.66	8.45	8.08	9.04	8.99
% OF NET SELLING	13.9%	15.2%	15.0%	17.1%	17.0%

R. KERR
3-25-63

R. KERR
3-25-63

BARBER - PRESALE R 0131526
R2532514

BARBER - PRESALE R 0131527

INCREASED MANUFACTURING FACILITIES FOR MODEL XP-100 PISTOL AND MODEL 600 RIFLE

RESEARCH AND DEVELOPMENT PROJECT CHARGES AND START-UP COSTS CHARGEABLE TO OPERATIONS INCURRED PRIOR TO THE FIRST YEAR OF OPERATION AMOUNT TO $[illegible],000. GIVING EFFECT TO AMORTIZATION OF SUCH CHARGES AGAINST EARNINGS DURING THE FIRST AND SECOND YEARS OF OPERATION, EARNINGS AND RETURN ON INVESTMENT ARE AS FOLLOWS:

YEAR	OPERATIVE EARNINGS	AMORTIZATION OF OPER. CHGS INCURRED PRIOR TO 1ST YEAR	ADJUSTED OPERATIVE EARNINGS	NET EARNINGS	NET RETURN ON INVESTMENT
	$	$	$	$	
1963	130,310	130,310	—	—	—
*1964	488,000	445,690	44,310	19,090	7.9%
1965	498,490	—	498,490	244,940	34.1%

*1965 VOLUMES (5000 XP-100'S, 15,000 600'S) ASSUMED FOR SECOND YEAR

R. KERR 3-26-63

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131527
K2532515

cc: S.M.Alvis

DON'T SAY IT—WRITE IT

TO G. M. CALHOUN DATE 3-19-63

FROM L. D. COX

SUBJECT: ATTACHED MEMO ON MODEL 600 RIFLE

The attached memorandum covers the additional costs for the larger barrel required by 35 Remington and 350 Remington Magnum requested by the Operations Committee. It also coers the latest estimated expenditure. This has been discussed with Sam and Wayne and reflects their opinions.

I am sending your copy by the first morning mail up to the Ad Building for you to have time to read it before it is generally distributed to the other Committee members. Sam suggested I do this. I will send copies by afternoon mail to the balance of the Committee.

THERE IS A SAFE WAY; DO IT THAT WAY

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

cc: N.F. Larsen
J.E. Dickey, Jr.
F.E. Morgan
S.M. Alvis
D.E. Miller
File

LIMITED DISTRIBUTION

Ilion, New York
March 19, 1963

E.H. BLECKWELL
H.K. FAULKNER
G.M. CALHOUN
H.M. STOESSEL
GAIL EVANS

OPERATIONS COMMITTEE - ILION DIVISION
MODEL 600 RIFLE - CALIBER 35 REMINGTON
Reference: Minute #6-1963, Page 3

This memorandum outlines the effect on project cost and product cost of the redesign and retooling for the larger barrel, stock and bolt head required for Caliber 35 Remington. The Sales Department informed the Committee at their March 12 meeting that this caliber along with the 308 Winchester and 222 Remington are to be offered in the Model 600 rifle. The Sales Department was unaware the .35 Remington would require a larger barrel with subsequent redesign and retooling cost. The Committee asked that the effect of the .35 Remington on the project and product costs to be determined.

The caliber .35 Remington will not affect product cost or return on project investment. It will increase the project cost $25,000 for Operations and Research charges as tabulated below:

	Spent and Committed to 4/1/63	Balance to Complete	Total
Operations - New & Revised Tooling for Stock, Barrel and Bolt Head	$ 2,000	$ 18,600	$20,600
Research - Design, Model, and Testing	2,000	2,300	4,300
Total	$ 4,000	$ 21,000	$25,000

The project expenditure would be reduced $21,000 by a decision to retain the present barrel size which is not adequate for calibers larger than .308. Spending the $21,000 will provide a barrel adequate for up to caliber .350 Remington short case Magnum should it be developed and added later. The research cost to develop the

the .350 Remington Magnum is not included in the above project expenditure. It is being developed on a separate research account, the estimated cost of which will range from $5,000 to $7,000.

The Ilion Research Section feels the additional project cost for the caliber .35 Remington barrel (which would be adequate for later addition of the .350 Remington Magnum) should be undertaken at this time to provide maximum potential to later improve and sustain this model. They feel that limiting the design to handle up to only caliber 308 will discourage future exploitation. Ilion Production feels that if the decision is ultimately to accomodate calibers larger than 308 that this decision should be made now. Though a decision now will not reduce the cost of new and revised tooling over that at some later date, it does eliminate the problem of product obsolescence which would be encountered later.

Both Research and Production are proceeding with redesign and re-tooling for the caliber .35 Remington unless instructions are received to do otherwise.

The revised project cost for Part 3 to the project being prepared is $20,200 higher than the present authorization. The source of the increase are shown in the table below.

	Present Authorization	Effect of This Part	Total Authorization Requested
Construction	$180,300	$(9,500)	$170,800
Operations	399,100	17,600	416,700
Research	92,300	12,100	104,400
	$671,700	$ 20,200	$691,900

The increased Operations and Research costs are due to adding Custom Checkering ($5,000) as well as to the caliber .35 Remington ($25,000). The total $30,000 increase is offset by a $10,000 reduction in estimated construction expense resulting in a net increase of $20,000 over the present authorization. The $17,600 and $12,100 additional Operations and Research requests, respectively, from the above table cannot be compared directly with the $20,600 and $4,300 additional Operations and Research costs for the larger barrel. There is a compensating underrun of Operations and an overrun of Research costs for the calibers 308 and 222.

The Part 3 of the project is being written based on the latest estimated total expenditure. N.F. Larsen is determining if this is the correct procedure and will inform the Plant.

L. D. Cox

L. D. Cox
Secretary

LDC:pb

REMINGTON ARMS COMPANY, INC.

GENERAL INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

PRESENT FACILITIES AND TO WHAT EXTENT THEY ARE INADEQUATE

The Board of Directors authorized a construction appropriation of $180,300 on March 2, 1962 (total expenditures of $671,700 including research and operations charges) to complete the development of ~~the~~ models and to procure tooling and equipment ~~necessary~~ for production of the Model XP-100 Pistol (formerly XP-700) ~~also the~~ and the Model 600 Center Fire Rifle (formerly XC-13). ~~Center Fire Rifle in the .222 Remington, .308 and 30-30 Calibers.~~

The new handgun was introduced March 1, 1963 featuring the new .221 Remington "Fireball" cartridge. Introduction of the XP-100 handgun is in response to the increased demand for hand guns and ~~line with the national growth of pistol and ammunition sales, and consumer~~ consumer preferences for high power and velocity in handguns (.357 Magnum, 44 Magnum and 22 Remington Jet).

Features ~~include:~~ of the XP100 include

1. Unique design.
2. Long range high velocity performance without sight adjustment.
3. Bolt action for accuracy and strength.
4. Reduced muzzle jump and recoil reduction.
5. Stock for right or left hand shooters.
6. Grip flared for added stabilization.
7. Grip checkering and inlays.
8. Ribbed barrel.

The Model 600 Center Fire Rifle has been designed for lighter weight ~~in~~ carbine type ~~rifle~~ design including such features as:

1. Shorter length for easier handling.
2. Ribbed barrel for improved sighting and appearance.
3. Custom checkering.
4. Heavier caliber than present guns of similar type.
5. ~~Lower retail price.~~ ~~than what?~~ Attractive retail price

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

PRESENT FACILITIES AND TO WHAT EXTENT THEY ARE INADEQUATE (Continued)

The Model 600 Rifle is now in pilot operations for the .308 Caliber, and design is completed for Calibers 30-30 Winchester and .222 Remington. It is scheduled for announcement on January 1, 1964.

Because of the added Product cost for ~~design changes to handle~~ the Caliber 30-30 Winchester version of the rifle, ~~cartridges~~ the Sales Department has recommended that the 35 Rem Caliber substituted for the 30-30 Winchester ~~caliber specifications for the rifle be changed, substituting the current .35 Remington Caliber for the 30-30 Winchester~~.

~~The Research & Development Department initiated work in 1960 to design these models under the authorized Research Budget.~~

DESCRIPTION OF PROPOSED WORK

It is proposed to complete the development of the Model 600 with the 35 Rem ~~these models in Center Fire Rifle for Calibers .308, .222 Remington Magnum and .35 Remington and~~ the procurement of Tooling + Equip is being provided for production of ~~procure tooling and equipment for production volume of~~ 6165 XP-100 Pistol for the first year and 5000 XP-100 Pistol and 15,000 Model 600 Center Fire Rifle for the third year.

This Part III is a request for $ 0,500) reduction to cover the Construction underrun of this project.

(Subdivision 3)
Page 1-a

PRESENT FACILITIES AND TO WHAT EXTENT THEY ARE INADEQUATE (Continued)

1 ~~The Sales Department recommended the~~ Introduction of the XP-100 handgun is in line with ~~Pistol due to~~ the national growth of pistol and ammunition sales, and consumer preferences for high power and velocity in handguns (.367 Magnum, 44 Magnum and 22 Remington Jet).

Features include:

1. Unique design.
2. Long range high velocity performance without sight adjustment.
3. Bolt action for accuracy and strength.
4. Reduced muzzle jump and recoil reduction.
5. Stock for right or left hand shooters.
6. Grip flared for added stabilization.
7. Grip checkering and inlays.
8. Ribbed barrel.

2 The Model 600 Center Fire Rifle has been designed for lighter weight in carbine type rifle including such features as:

1. Shorter length for easier handling.
2. Ribbed barrel for improved sighting and appearance.
3. Custom checkering.
4. Heavier caliber than present guns of similar type.
5. Lower retail price.

3 The Research and Development Department initiated work in 1960 to design these models under the authorized Research Budget.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

PRESENT FACILITIES AND TO WHAT EXTENT THEY ARE INADEQUATE (Continued)

~~The Sales Department recom~~ [redacted] introduction of the XP-100 handgun [redacted] due to the national growth of ~~pistol and~~ ammunition sales, and consumer preferences for high power and velocity in handguns (.367 Magnum, 44 Magnum and 22 Remington Jet).

Features include:

1. Unique design.
2. Long range high velocity performance without sight adjustment.
3. Bolt action for accuracy and strength.
4. Reduced muzzle jump and recoil reduction.
5. Stock for right or left hand shooters.
6. Grip flared for added stabilization.
7. Grip checkering and inlays.
8. Ribbed barrel.

The Model 600 Center Fire Rifle has been designed for lighter weight in carbine type rifle including such features as:

1. Shorter length for easier handling.
2. Ribbed barrel for improved sighting and appearance.
3. Custom checkering.
4. Heavier caliber than present guns of similar type.
5. Lower retail price.

The Research and Development Department initiated work in 1960 to design these models under the authorized Research Budget.

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R D 1395-REV.

REMINGTON ARMS COMPANY, INC.

APPROPRIATION REQUEST

Department Research & Development Works Ilion

Project No. AD XP-700-2

Request for $ 180,300

Date January 23, 1962

Category Expanded Facilities - Established Product

Title MODEL XP-700 SINGLE SHOT PISTOL AND MODEL XC-13 CENTER FIRE RIFLE

	Previous Part	This Part II	Total
Construction	$ -	$180,300	$180,300
Supporting Research	62,300	30,000	92,300
Operations	-	399,100	399,100
	$ 62,300	$609,400	$671,700

This project is included in Forecast No. 1 in the amount of $ 95,000

To be commenced when authorized.

To be ready for use XP-700 2/1/63
XC-13 5/1/63

To be physically completed Aug. 1, 1963

Estimate prepared by Methods & Standards, P.E. & C. and R&D 1/22/62 Date

Approved as to form, accounting aspects, and rules compliance /s/H.M.Stoessel 2/14/62 Date
Treasurer or Assistant Treasurer

		Date
Approved or ~~Authorized~~	/s/ D.E.Miller	1/26/62
	/s/ G.M.Calhoun	1/29/62
Approved or Authorized	/s/ H.K.Faulkner	2/2/62
Approved or Authorized	/s/ Gail Evans	2/6/62
Approved or Authorized	/s/ R.H.Coleman	2/20/62
Approved or Authorized	/s/ M.R.Warden	2/21/62
	President and General Manager	

Authorized BOARD OF DIRECTORS 3/2/62

H. M. Stoessel
Secretary

Preliminary approvals:

	Date		Date

REMINGTON ARMS COMPANY, INC.

PROJECT NO. AD XP-700-2 - ILION WORKS

SUMMARY OF ESTIMATED EXPENDITURES

	Total
Construction Project	
Direct Manufacturing Facilities Equipment	$177,800
Provision for Advancing Wages and Material Prices and Allowance for Unforeseen Items	2,500
Total	$180,300
Other	
Product Development	$ 87,800
Tooling	295,500
Other	71,900
Provision for Advancing Wages and Material Prices and Allowance for Unforeseen Items	36,200
Total	$491,400
Total Expenditures	$671,700

ACCOUNTING DISTRIBUTION OF EXPENDITURES

	Expenditures This Project	Adjusting Entries	Final Net Results In Accounts
Construction Project			
Permanent Investment	$180,300	-	$180,300
Other			
Operations	399,100	-	399,100
Supporting Research	92,300	-	92,300
Total	$491,400		$491,400
Total	$671,700		$671,700

(Subdivision 2)

REMINGTON ARMS COMPANY, INC.

GENERAL INFORMATION

PROJECT NO. AD XP-700-2 - ILION WORKS

INTRODUCTION

Under Part I of this project $62,300 was authorized and designs were developed and models built for test and evaluation for the new pistol and center fire rifles.

XP-700 PISTOL

The changing patterns of public interest in shooting have created a modest but new opportunity for increased Remington firearms business. The specific market conditions affecting this project are national growth of pistol and revolver shooting indicated by increased sales (estimated 500,000 annually) of both domestic and foreign handguns, our steadily increasing sales of center fire pistol and revolver ammunition, and consumer preferences for handguns having high power and high velocity (357 Magnum - 44 Magnum - 22 Remington Jet).

When these market conditions are considered together with our Nylon molding experience, success of and performance characteristics of our center fire bolt action rifles, particularly in 222 Remington caliber, we find an opportunity to offer handgun shooters a varmint shooting bolt action single shot pistol of unique design and performance for long-range firing.

We are not recommending entry into the general field of pistol and revolver business at this time. The current profit opportunities are not favorable due to price competition and foreign imports. This condition has apparently led three handgun manufacturers (High Standard, Ruger, Colt) to enter the center fire rifle field.

Nevertheless, we believe a pistol of the unique design proposed will sell at a profitable value and price level. No competitive handgun compares with the field performance of the proposed design for hunting woodchucks, fox, coyote and similar varmints. It will also be useful to trappers, cattle and sheep ranchers, and it is basically a target pistol of the "free pistol" category used in International Matches. The single-shot type minimizes legal restrictions and a favorable ruling has been obtained by the Patent Attorney from the U. S. Treasury Department.

The action is of the turning bolt type with a form fitting free pistol type of stock suitable for use for either right or left hand shooters. The bottom of the grip is flared for added stabilization during firing. The stock is designed for nylon molding and can be integrated into the Ilion operations. The stock and action provide a center of gravity very close to the center line of the barrel, which significantly reduces the muzzle jump and recoil effect so prominent in conventional designs.

The action is a short receiver version of the basic Model 700 and thus adaptable to many of the existing operations and equipment. At the same time it offers a distinct sales advantage in that it is the strongest action ever used in a

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

INTRODUCTION (Continued)

bolt action rifle and the first commercial type of bolt action to be used in a handgun.

The best results for accuracy and high velocity with low trajectory have been achieved through use of a Caliber .222 Remington barrel. However, consideration is also being given to an alternate design of the bolt and extractor to accommodate the Remington "Jet" cartridge.

XC-13 CENTER FIRE RIFLE

Remington has no center fire rifle to compete in the price range of the Winchester, Marlin, and Sears lever action rifles ($69.95 to $83.95). Many thousands of these competitive rifles are sold annually. Remington's lowest retail price for a center fire rifle is $114.95.

There is a definite market for a bantam weight high power bolt action carbine rifle of Remington quality at a competitive price. Such a rifle can be produced in combination with the proposed pistol. Its weight would be about 5-1/4 pounds and length only 37 inches.

The appearance and handling qualities are good and sample guns have been favorably received in preliminary showings to the Sales Department.

The rifle stock may be either molded or of the conventional wood, in which case it is proposed to utilize the newly developed custom checkering. This, together with the smaller sized wood blank, will result in significant savings. Other savings and improvements in processing for the barrel, receiver and bolt have resulted in further reductions in manufacturing cost, thus providing greater marketing potential.

In addition to the smaller varmint calibers, the carbine rifle will also be capable of handling cartridges up to and including Caliber .308, thus providing distinct advantage in power as compared to other so-called saddle guns.

The Sales Department has recommended that serious consideration be given to including the Caliber 30-30 which has always been a relatively high volume seller in competitive rifles. This being a rim type cartridge, it will present design problems requiring development of a new extractor, and also some means will have to be provided to accomplish feeding of this type of round from a box magazine. It is therefore planned to do further work in an effort to accommodate the 30-30 cartridge but at the same time not delay introduction of the rifle, which can already handle the rimless type ammunition.

Based on forecast third-year sales, as shown below, the proposed selling prices and estimated operative earnings are:

	Proposed		
	XP-700 Pistol	XC-13 C. F. Rifle	Combined Average
Sales quantity	3,000	15,000	18,000
Retail selling price	$75.00	$85.00	$83.33
Net selling price	$40.37	$45.74	$44.85
Operative earnings	$ 4.76	$ 4.21	$ 4.30
% of net selling price	11.8%	9.2%	9.6%

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KINZER V. REMINGTON

DESCRIPTION OF PROPOSED WORK

It is proposed to complete the development of the models and procure tooling and equipment necessary for production of the Model XP-700 Pistol in 222 Remington short magnum with a Nylon stock. The Model XC-13 Center Fire Rifle will be offered with a wood stock in Calibers .222 Remington, .308 and 30-30.

PATENT STATUS

Consideration of the designs for both the pistol and rifle indicates that no patent infringement will be involved.

A design patent application will be filed to cover the appearance of the pistol when all features of the molded stocks, ribbed barrel, etc., are stabilized. In view of a search conducted on the fire control mechanism of the pistol as shown in a detailed drawing and photograph submitted to the Patent Attorney, it is believed that this control has some novelty and will support a patent application.

REMARKS

Investigation into the feasibility of the 30-30 Caliber has not progressed to the point where a model has been made. It is, however, anticipated that feeding, extracting and chamber problems will be involved due to the rim cartridge in this caliber. Therefore, a high-spot estimate of $49,000 has been included for this caliber and charged to operations.

Subdivision 5 indicates an estimated increase in net earnings of $144,280 in the third year of operation, resulting from this project, equivalent to a net return of 21.8% on investment. The estimated increase in net earnings in the first year of operation is $134,670, equivalent to a net return of 21.1% on investment.

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KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.

ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD XP-700-2 - ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR
M/XC-13 RIFLE AND M/XP-700 PISTOL
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT

	Third Year of Operation		
	Present Operation	Results From this Project	Operation After this Project
QUANTITY	372,700	18,000	390,700
SALES	$18,547,090	$807,210	$19,354,300
Less: Mill cost	13,116,070	480,480	13,596,550
Selling expense) Administrative expense)	1,761,970	-	1,761,970
Technical activities expense	463,680	-	463,680
	$15,341,720	$480,480	$15,822,200
OPERATIVE EARNINGS	$ 3,205,370	$326,730	$ 3,532,100
Less: All other expense: All other 8%; Federal tax 52%	1,789,880	182,450	1,972,320
NET EARNINGS	$ 1,415,490	$144,280	$ 1,559,780
INVESTMENT			
Project expenditures	$ -	$180,300	$ 180,300
Manufacturing and service facilities (Allocated)	11,998,300	-	11,998,300
Working capital	12,277,000	481,000	12,758,000
Position A: Total capital required including facilities to be retired	$24,275,300	$661,300	$24,936,600
Facilities to be retired (Deduct)			-
Position B: Total investment after completion of this project			$24,936,600

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.

ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD-XP-700-2 - ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR
M/XC-13 RIFLE AND M/XP-700 PISTOL
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT

	Third Year of Operation		
	Present Operation	Results From this Project	Operation After This Project
RETURN ON INVESTMENT			
Position A	5.8%	21.8%	6.3%
Position B			6.3

* * * * * * *

Return on total capital required including research and development and other operations charges	5.8%	12.5%	6.1%

* * * * * * *

SUMMARY COMPARISON OF RESULTS FROM THIS PROJECT - FIRST AND THIRD YEARS OF OPERATION

	First Year	Third Year
Quantity	17,000	18,000
Sales	$750,730	$807,210
Operative earnings	304,950	326,730
Net earnings	134,670	144,280
Investment		
Project expenditures	180,300	180,300
Allocated investment	-	-
Working capital	457,000	481,000
Total	$637,300	$661,300
Net return on investment	21.1%	21.8%

* * * * * * *

Return on total capital required including research and development and other operations charges	11.9%	12.5%

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.

SUPPLEMENTARY INFORMATION

PROJECT NO. AD XP-700-2- ILION WORKS

INCREASED MANUFACTURING FACILITIES FOR
MODEL XP-700 PISTOL AND MODEL XC-13 RIFLE

Research and development, project charges, and start-up costs chargeable to operations incurred prior to the first year of operation amount to $560, 600. Giving effect to amortization of such charges against earnings during the first and second years of operation, earnings and return on investment are as follows:

	Operative Earnings	Amortization of Operations Charges Incurred Prior to First Year	Adjusted Operative Earnings	Net Earnings	Net Return on Investment
1963	$ 304,950	$ 304,950	$ -	$ -	-
1964	326,730	255,650	71,080	31,389	4.7%
1965	326,730	-	326,730	144,280	21.8%

(Not for submission to Board)

Remington Arms Company, Inc.

DETAIL ESTIMATE OF EXPENDITURES

PROJECT NO. AD XP-700-2 - Ilion WORKS

	Amount Previously Authorized	Requested This Part II	Total Indicated Cost
Development	$ 62,300	$ 25,500	$ 87,800
Investigation	7,000	4,000	11,000
Design	24,000	7,500	31,500
Model Making	18,000	6,800	24,800
Design Testing	7,000	5,000	12,000
Development - Powder Metal	300	1,200	1,500
Eng.-Folders, C.of O., Stds.	4,000	1,000	5,000
Development - Custom Checkering	2,000	-	2,000
Product Engineering	$ -	$ 23,800	$ 23,800
Process Eng. & Trial Run	-	22,500	22,500
Pilot Lot Testing		1,300	1,300
Tooling	$ -	$ 289,900	$ 289,900
Design		35,400	35,400
Fixtures & Gauges		118,200	118,200
Molds		88,400	88,400
Perishable Tools		2,300	2,300
Tool Revisions		45,600	45,600
Special Machines	$ -	$ 37,200	$ 37,200
Construction		22,500	22,500
Operation		9,100	9,100
Tooling		5,600	5,600
Std. Machines & Equipment	$ -	$ 155,300	$ 155,300
Production Aids	$ -	$ 20,200	$ 20,200
Pilot Operations	$ -	$ 18,800	$ 18,800
Machine Alterations		5,000	5,000
Pilot Lot Manufacture		11,800	11,800
Component Obsolescence		2,000	2,000
Provision for Advancing Wages and Material Prices and Allowance for Unforeseen Items	$ -	$ 38,700	$ 38,700
Total Cost	$ 62,300	$ 609,400	$ 671,700

(Not submitted to Board)

REMINGTON ARMS COMPANY, INC.

GENERAL INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

INTRODUCTION

The Board of Directors authorized a construction appropriation of $180,300 on March 2, 1962 (total expenditures of $671,700 including research and operations charges) to complete the development of the models and procure tooling and equipment necessary for production of the Model XP-100 Pistol; also, the Model 600 Center Fire Rifle in the .222 Remington, .308 and 30-30 calibers.

The work completed to date includes the introduction of the XP-100 Pistol in the .221 Fireball Caliber which was announced to the trade on March 1, 1963.

The Model 600 Bolt Action Carbine rifle has been developed to pilot operations for Caliber .308, and designs completed for the Calibers 30-30 and .222. Because of the added cost for design changes to accommodate the 30-30 rimmed case cartridges, the Sales Department has recommended that the caliber specifications for the rifle be changed, substituting the current .35 Remington caliber for the 30-30 Winchester. It is also proposed that the Remington developed "custom checkering" be added as an additional feature for the rifle stock.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

INTRODUCTION (Continued)

Based on forecast third-year sales, as shown below, the proposed selling prices and estimated operative earnings are:

	Proposed		
	XP-100 Pistol	M/600 C.F. Rifle	Combined Average
Sales quantity			
Retail selling Price	$	$	$
Net selling price	$	$	$
Operative earnings	$	$	$
% of net selling price	%	%	%

Requests to Equal Opp. Body

DESCRIPTION OF PROPOSED WORK

It is proposed to complete the development of these models in Center Fire Rifle for Calibers .308, .222 Remington Magnum and .35 Remington and procure tooling and equipment for production volume of for the first year ( ) and for the third year.

This Part III is a request for $(700a) reduction to cover the underrun of the project.

REMARKS

Changes in design and scope of work since Part II was authorized results in increased expenditures as indicated below:

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KINZER V. REMINGTON

REMARKS (Continued)

	Increase (Decrease) from Part II Amount	Per Cent
Construction	$ ~~(7,900)~~ (Non)	(.3)

Two equipment expenditures undertaken due to providing equipment on hand after alterations.

Research	$ ~~38,200~~ 17100	13.1

Revisions to accommodate the larger .35 Remington Caliber involve the barrel, stock, and sighting rib. ~~The XP-100 Pistol is also being provided with a luggage type carrying case.~~

Revised sights

Also changed in design of stock, trigger & spring for the XP-100 & including the luggage type carrying case

Operations	$ ~~20,200~~ 17600	4.4

Subdivision 5 indicates an estimated increase in net earnings of $ in the third year of operation, resulting from this project, equivalent to a net return of % on investment.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

PATENT STATUS

Consideration of the designs for both the pistol and rifle indicates that no patent infringement will be involved.

A design patent application is being prepared to cover the appearance of the pistol. A search has indicated that the fire control mechanism of the pistol and the rib mounting scheme for both contain some novelty. Patent applications will be filed to cover both these inventions.

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XP-100 — Project. Wallin —

[Part III AD-68]

Got good look for [illegible]

[Take down format + approach.]

Rough Draft - Par I - refers to

Prior model no's.

Part II —

Different no's.

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also prepared adding ch. hy.

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what we are for ~~the~~ nos.

Then on

Page 3

Const.

New equip exp. under dev & use
of

3v Cal

Calibration XP/100 ~~[illegible]~~ holder required

Open

Old tool Inventor Signature of
old — — Const.

~~Started # 7600 Oct 1960~~
~~XP100 Sales 1960 1965~~
~~M600 " — 1000~~

The Sales Department recommended the introduction of the XP100 Pistol due the natural growth of pistol and ammunition sales, and consumer preferences for high power and velocity in handguns (357 Magnum, 44 Magnum & 222 Remington Jet).

Features include:

1. Unique Design
2. Long range high velocity performance without sight adjustment
3. Bolt action for accuracy and strength
4. Muzzle jump and recoil reduction
5. Stock for right or left hand shooters
6. Grips flared for added stabilization
7. Grips checkering and inlays
8. Ribbed barrel

The Model 600 Center Fire Rifle had been designed for lighter weight in carbine type rifle including such features as:

1. Shorter length for easier handling
2. Ribbed barrel for improved sighting & appearance
3. Custom checkering
4. Heavier caliber than present guns of similar type.
5. Lower retail price

~~6 & 7~~

The Research and Development Department initiated work in 1960 to design these models under the authorized Research Budget.

Under Parts 1 and 2 of the subject Appropriation Request, a construction expenditure of $180,300 was authorized by the Board to procure and install facilities for production of the Model XP100 (Formerly XP700) Pistol and the Model 600 (Formerly XC-13) Center Fire Rifle. Alteration to available equipment reduces construction expenditures previously authorized.

The estimated increase in net earnings in the third year is $ (Federal Taxes at 52%), equivalent to a net return of % on investment

Authorization is requested of Appropriation Request No. AD XP700-3 in the amount of ($9,500) reduction, making a total appropriation of $170,800.

R. N. Coleman

Construction $(9700) (V.3)

New equipment expenditures underrun due to providing machines on hand after alterations.

Research $12100 13.1

Additional expenditures required due to the revisions to accommodate the larger 30 Remington cartridge. Also, different sights and pilot of XP100 nylon wrench increased expenditures.

Operations $17600 4.4

Tooling for the revised sights and stock former, and the available equipment alterations (which reduced construction expenditures) increased expenditures.

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KINZER V. REMINGTON

Remington Arms Company, Inc.

DETAIL ESTIMATE OF EXPENDITURES

Project No. ADXP700-3 - Ilion Works

3/18/63

cc: R. L. Hall
J. J. Phillips (2)
V. G. DeReus
L. D. Cox
File

	Authorized $	Expended to 7/31/63 $	Requested this Part II $	Vendor's tooling	Total Indicated Cost $	Contingency
Development	87800	96477	16600		104100	
Investigation	11000	6966	(4000)		7000	
Design	31500	34100	5900		37400	
Model making	24800	37877	14100		51900	
Design testing	17000	5763	(5700)		6000	
Models for test	—	—				
Development - pd under metal	1500	3331	1500		4800	
Development-custom [illegible]	2400	[illegible]	(1500)		500	
Eng. - Folders, C [illegible]	5500	3300	—		3300	
Product Engineering	23800	11664	(3500)		20200	
Process Eng. & [illegible]	22500	[illegible]	(4500)		17000	
Pilot Lot Testing	1300	[illegible]	1000		[illegible]	
Expediting	—					
Tooling	289700	179422	32500		382200	
Design	35400	35416	4100		[illegible]	
Fixtures & Gages	118500	132860	32700		165700	
Molds	83400	[illegible]	(7000)		[illegible]	
Perishable tools	2300	[illegible]	—		2300	
Tool revisions	45600	[illegible]	5000		50600	
Special Machines						
Construction						
Tooling						
Operations						
Remington Machines	37200	[illegible]	10400		41600	
Construction	22500	22500	2000		24500	
Tooling	7800	9000	(1500)		[illegible]	
Operations	7100	14913	5900		14800	
Std Machines & equipment	155300	141[illegible]	(13000)		142300	
Production Aids	20000	[illegible]	(5500)		16500	
Construction						
Operations	20000	10600	[illegible]		14500	
Pilot Operations	18200	[illegible]	17400		[illegible]	
Machine alterations	5000	1[illegible]	[illegible]		2[illegible]	
Pilot lot mfg.	11200	[illegible]			12[illegible]	
Machine rearrangement	—	4500	1400		5900	
Component Obsolescence	5000	1[illegible]	[illegible]		[illegible]	
Provision for Advancing Wages and Material Costs	37700		(3500)		4000	
GRAND TOTAL	$971700	$679422	$[illegible]		$681900	

BARBER - PRESALE R 0131553
BARBER - PRESALE R 0131553
R2532541

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KINZER V. REMINGTON

BARBER - PRESALE R 0131554

3/18/63

Remington Arms Company, Inc.
Project No. 48-447-2-9 - Ilion Works

Summary of Estimated Expenditures

Construction Project

Direct Manufacturing Facilities
Equipment $ 17,000

Provision for advancing wages and material prices and allowance for unforeseen items 4,700

Other
Product Development $ 10,400
Tooling 27,500
Other 8,500

Provision for advancing wages and material prices and allowance for unforeseen items 4,000
$42,400

Total Expenditures $69,900

Accounting Distribution of Expenditures

	Expenditures this project	Adjusting entries	Final Net Results In Accounts
Construction Project			
Permanent investment	$17,000	$	$17,000
Other			
Supporting research	10,400		10,400
Operations	41,500		41,500
	$69,900	$	$69,900

BARBER - PRESALE R 0131554
R2532542

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11 x 16½ — 13 columns
With description column

AD x P700 x P100 ~~2~~ 2w/600

Part III

	Auth	Exp 7/31/63	Savings (Overrun)	Indicated Cost			
Construction							
Remington Facilities	$ 27500	28500	6000	28500			
Standard Machine	1500300	141300	(13000)	142300			
Contg	25000	—	(2500)	—			
	$ 1803300	1698000	(9500)	1708000 ✓	(9500)	(.5)	%
Research							
Investigation	$ 11000	6966		7000			
Design	31500	34100		37400			
Model Making	24800	37877		38900			
Design Testing	17000	5767		6300			
Tryout & Pilot Machines	—	4231		5000			
Devel - PM	15000	3805		4300			
" - Cutter Making	2000	531		500			
Eng Models & Exp	5000	3500		5000			
Contg	4500						
	$ 97300	96477		104400 ✓	12100	13.1	%

BARBER - PRESALE R 0131555

BARBER - PRESALE R 0131555
R2532543

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131556

11 x 16½ — 13 columns
With description column

	Quote		Reduced Cost			
Operations						
Proc. Eng + Trial Run	22500	(4500)	18000			
Pilot Rot Testing	1300	1000	2300			
Design - (Tools)	39400	4100	39500			
Fixtures + Gages	118200	32700 ✓	150900			
Molds	88400	(9300)	79100			
Perishable Tools	2300	—	2300			
Tool Reserve	45600	5000	50600			
Tooling - Rem Industries	5600	(1500)	4100			
Operations - Rem Industries	9100	5900	15000			
Prod. Aid	20200	(5500)	14700			
Unclassified Operations	5000	10800 ✓	15800			
Pilot Lot Manufacture	11800	2100	13900			
Machine Preassembly	—	4400 ✓	4400			
Component Obsolescence	2000	100	2100			
Contg.	31700	(27700)	4000 Pro			
	399100	17600	416700 ✓	17600	4.4	%
Total $	671700 ✓		691900 ✓			

BARBER - PRESALE R 0131556
R2532544

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131557

11 x 16½ — 13 columns
With description column

3/18/63
gac

Remington Arms Company, Inc.
Project No. AD 4700-3 - Ilion Works
Summary of Estimated Expenditures

Construction Project	
Direct Manufacturing Facilities	
Equipment	$170800
Provision for advancing wages and material prices and allowance for unforeseen items	—
	$170800
Other	
Product Development	$104400
Tooling	326500
Other	86700
Provision for advancing wages and material prices and allowance for unforeseen items	4000
	$521100
Total Expenditures	$691900

Accounting Distribution of Expenditures

	Expenditures this project	Adjusting entries	Final Net Results in Accounts
Construction Project			
Permanent investment	$170800	$ —	$170800
Other			
Supporting research	104400	—	104400
Operations	416700	—	416700
	$691900	$ —	$691900

BARBER - PRESALE R 0131557
R2532545

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

11 x 16½ — 13 columns
With description column

3/18/63

cc: R. L. Hall
J. J. Phillips (2)
V. G. DeReus
L. D. Cox
File

Remington Arms Company, Inc.

DETAIL ESTIMATE OF EXPENDITURES

Project No. AD YP700 - 3 - Ilion Works

	Authorized	Expended to 7-8-63	Requested this Part II	Vendor's tooling	Total Indicated Cost	Contingency
	$		$		$	
Development	87800	96472	16600		104400	
Investigation	11000	6966	(4000)		7000	
Design	31500	34100	5900		37400	
Model making	24800	37877	14100		38900	
Design testing	17000	5762	(5700)		6300	
Models for test	—	—				
Crystal Pilot - Zylon Zoeks	—	4031	5000		5000	
Development - powder metal	1500	3805	2900		4000	
Development-custom checker	2000	531	(1500)		500	
Eng.-Folders, C of O, Stds	5000	3760	—		5000	
Product Engineering	23800	14684	(3500)		20300	
Process Eng. & Trial Run	22500	14451	(4500)		18000	
Pilot Lot Testing	1300	233	1000		2300	
Expediting	—					
Tooling	289900	294433	32500		322400	
Design	35400	35686	4100		39500	
Fixtures & Gages	118200	132860	32700		150900	
Molds	88400	79125	(9300)		79100	
Perishable tools	2300	2300	—		2300	
Tool revisions	45200	34962	5000		50600	
Special Machines						
Construction						
Tooling						
Operations						
Remington Machines	37200	47515	10400		47600	
Construction	22500	28560	6000		28500	
Tooling	5600	4097	(1500)		4100	
Operations	9100	14918	5900		15000	
Std Machines & equipment	155300	141783	(13000)		142300	
Production Aids	20200	17683	(5500)		14700	
Construction						
Operations	20200	17683	(5500)		14700	
Pilot Operations	18800	34756	17400		36200	
Machine alterations	5000	15784	10800		15800	
Pilot lot mfg.	11800	10860	2100		13900	
Machine rearrangement	—	4354	4400		4400	
Component Obsolescence	2000	1774	100		2100	
Provision for Advancing Wages and Material Costs	38700		(34700)		4000	
GRAND TOTAL	$ 671700	637347	$ 20200		$ 681900	

BARBER - PRESALE R 0131558
BARBER - PRESALE R 0131558
R2532546

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131559

Model 600 Re Estimate 2/15/63

VG McGinnis 3/15/63

	Expended 3/1/63	308 to complete		22 Caliber	25 Caliber				
Process Eng	14500	1000		500	2000				18000
Pilot Lot Testing	250	1000		500	500				2300
Tool Revisions	40000	5000		600	5000				50600
Tool Design	35700	200		600	3000				39500
Fixt + Gages	135400	500 + 1000	per Dorlan 3/18/63	1000	8000	500	Checkering		1000 149900
Pilot Oper	10900	1000		500	1500				13900
Comp Dlvg	1300	200	Zimmer	0	600				2100
Production Rclg	12700	2000							14700
Standard machines	141300	1000							142300
Contg						4000			4000
	391100	~~11900~~ 17900		3700	20600	9000			438300
							45500 OK		

MW x P900 Part III
3/18/63

BARBER - PRESALE R 0131559
R2532547

REMINGTON ARMS COMPANY, INC - ILION WORKS

VENDOR TOOLING _____
SPENT 34364
SPENT & COMMITTED 52874
AUTHORIZED _____

ARMS DEVELOPMENT

TITLE AD-XP-700 M/XP100 SINGLE SHOT PISTOL & M/600 C. F. Rifle EXPENDITURES FOR MONTH OF FEBRUARY, 1963

MWO	Spent this Month	Actual Expenditures To Date	Spent and Committed To Date	Amount Authorized	Total Indicated Cost
1. Development	2336	96472		87800	136200
Investigation		6966		11000	7000
Design	1228	34100		31500	48300
Model Making	778	37877		24800	42100
Design Testing		5762		12000	17600
Models for Test					6000
Tryout & Pilot-Nylon Molds	21	4231			5000
Development — P.M.		3805		1500	4700
Dev.-Custom Checkering		531		2000	500
Eng.-Folders, C of O., Stds	309	3200		5000	5000
2. Product Eng.	216	14684		23800	17300
Proc. Eng. & Trial Run	216	14451	18000	22500	16000
Pilot Lot Testing		233	2500	1300	1300
3. Tooling	2406	292433		289900	333200
Design		35686	38000	35400	41000
Fixtures & Gages	740	135360	150000	118200	155900
Molds		79125	80000	88400	88000
Perishable Tools		2300	2300	2300	2300
Tool Revisions	1666	39962	55000	45600	46000
4. Special Machines					
Construction					
Tooling					
Operations					
5. Remington Machines		47515	47700	37200	47900
Construction		28500		22500	28500
Tooling		4097		5600	4100
Operations		14918		9100	15100
6. Std. Machines & Eqpt.	2018	141283	143900	155300	143900
7. Production Aids		12683	17000	20200	17000
Construction					
Operations		12683		20200	17000
8. Pilot Operations	286	32272		18800	38500
Machine Alterations		15784	15800	5000	18000
Pilot Lot Mfg.	151	10860	14000	11800	14000
Mach. Rearrangement		4354	5000	[illegible]	5000
Comp. Obsolescence	135	1274	2000	[illegible]	[illegible]
Provision for Advancing — R & D				4500	
— Plant			10000	34200	
Wages & Mat'l Costs					
GRAND TOTAL	7212	637342		671200	723800

BARBER - PRESALE R 0131561

80 x 1.750 x 1.100 = 24,600

Page 1

Part III

	Auth	Est 2/28/63		Adjusted Cont		
Construction						
Remington Lodge	28500			28500		
Hardware Shop	145900			143900		
Entry	2500			—		
#	180300			172400	(7900)	
Research						
Investigation #	11000	6900		7000		
Design	31500	34100		44000		
Model Making	24800	37977		46000		
Design Testing	1000	5154		17000		
Tooling & Production Machines	—	9211		6000		
Overhead & W	1500	3054		5000		
Cost Accounting	2000	—		—		
Eng. Admin Exp. Tax	5000	3100		5000		
Other	4500			5000		
#	72300	96496	38100	130500	38100	

Increase in design & model making due to change in Caliber design problems in 30-30 & pilot production of molded components of powder metal parts.

8000
9900
17900
1100
16800

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131561
R2532549

	Budget	Adjusted Cost	
Operations			
Tree Co. - Tool Room	22500	18000	
Pilot for Testing	1300	2500	
Design - (Tools)	34600	28000	
Fixtures - Tools	118200	150000	
Molds	8400	8000	
Furnaces Tools	2300	2300	
Tool Rooms	45600	55000	
Tooling - Gun Barrels	5600	4100	
Operations - Gun Barrels	9100	15500	
Prod. Aid	20200	17000	
Machine Rotation	5000	15500	
Prod. Tool Room Supplies	11800	14000	
Machine Overhaul	—	5000	
Equipment Overhaul	2000	2000	
Entry	31700	10000	
	399100	475000	29900
Total	671900	731700	

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131562

BARBER - PRESALE R 0131562

G-88

DON'T SAY IT—WRITE IT

To G. M. CALHOUN

Date March 13, 1963

From S. M. ALVIS

John has prepared a tentative draft of Part III to the project for the XP-100 and M/600 combination. I have already made some changes in the introduction and remarks to reflect suggestions after conversation with you. Wayne's people are meeting today with the Plant to make another check estimate for preparing revised economics.

In the meantime to expedite things, if you will look this over and if desired review with Neil Larsen. John has called my attention to a significant fact that for Research we are spending about $34,000 more than had been originally estimated, although will now probably be spending less than the last "Estimate to Complete". The project write-up does not reveal but only perhaps implies this being due to the relatively high cost for redesign to accommodate the 30-30; also the building of a model up to the time that the program was changed. At the same time the higher product cost of the 30-30 is essentially the same as described by Wayne Leek at the beginning of the program.

WEL:T

THERE IS A SAFE WAY; DO IT THAT WAY

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

DRAFT

R D 1386-REV.

REMINGTON ARMS COMPANY, INC.

APPROPRIATION REQUEST

Department **Research & Development** Works **Ilion** Project No. **AD XP-700-3**

Request for $ **(7,900) Reduction** Date **March 14, 1963**

Category **Expanded Facilities - Established Product**

Title **MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600 CENTER FIRE RIFLE**

	Previous Parts (Part II Authorized 3/2/62)	This Part III	Total
Construction	$ 180,300	$ (7,900)	$ 172,400
Supporting Research	92,300	38,200	130,500
Operations	399,100	29,700	428,800
Total	$ 671,700	$ 60,000	$ 731,700

This project is not included in Forecast No. 2

To be commenced March 2, 1962

To be ready for use: XP-100 3/1/63
M/600 1/1/64

To be physically completed **March 1,1964**

Estimate prepared by **Methods & Standards, P.E.& C. and Research & Development** **3/14/63** Date

Approved as to form, accounting aspects, and rules compliance

Treasurer or Assistant Treasurer — Date

Approved or Authorized _____ Date

Approved or Authorized _____ Date

Approved or Authorized _____ Date

Approved or Authorized _____ Date

President and General Manager

Authorized BOARD OF DIRECTORS _____

Secretary

Preliminary approvals:

Date — Date

(Subdivision I)

REMINGTON ARMS COMPANY, INC.

GENERAL INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

INTRODUCTION

The Board of Directors authorized a construction appropriation of $180,300 on March 2, 1962 (total expenditures of $671,700 including research and operations charges) to complete the development of the models and procure tooling and equipment necessary for production of the Model XP-100 Pistol; also, the Model 600 Center Fire Rifle in the .222 Remington, .308 and 30-30 calibers.

The work completed to date includes the introduction of the XP-100 Pistol in the .221 Fireball Caliber which was announced to the trade on March 1, 1963.

The Model 600 Bolt Action Carbine rifle has been developed to pilot operations for Caliber .308, and designs completed for the Calibers 30-30 and .222. Because of the added cost for design changes to accommodate the 30-30 rimmed case cartridges, the Sales Department has recommended that the caliber specifications for the rifle be changed, substituting the current .35 Remington caliber for the 30-30 Winchester. It is also proposed that the Remington developed "custom checkering" be added as an additional feature for the rifle stock.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

INTRODUCTION (Continued)

Based on forecast third-year sales, as shown below, the proposed selling prices and estimated operative earnings are:

	Proposed		
	XP-100 Pistol	M/600 C.F. Rifle	Combined Average
Sales quantity			
Retail selling Price	$	$	$
Net selling price	$	$	[redacted]
Operative earnings	$	$	[redacted]
% of net selling price	%	%	[redacted]

DESCRIPTION OF PROPOSED WORK

It is proposed to complete the development of these models in Center Fire Rifle for Calibers .308, .222 Remington Magnum and .35 Remington and procure tooling and equipment for production volume of for the first year ( ) and for the third year.

REMARKS

Changes in design and scope of work since Part II was authorized results in increased expenditures as indicated below:

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

R2532554

REMARKS (Continued)

	Increase (Decrease) from Part II Amount	Per Cent
Construction	$ (7,900)	
Research	$ 38,200	
Revisions to accommodate the larger .35 Remington Caliber involve the barrel, stock, and sighting rib. The XP-100 Pistol is also being provided with a luggage type carrying case.		
Operations	$ 29,700	

Subdivision 5 indicates an estimated increase in net earnings of $ in the third year of operation, resulting from this project, equivalent to a net return of % on investment.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

PATENT STATUS

Consideration of the designs for both the pistol and rifle indicates that no patent infringement will be involved.

A design patent application is being prepared to cover the appearance of the pistol. A search has indicated that the fire control mechanism of the pistol and the rib mounting scheme for both contain some novelty. Patent applications will be filed to cover both these inventions.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

Remington Arms Company, Inc.
General Information
Project No. AD XP700-3 - Show Works

Introduction

The Board of Directors authorized a construction appropriation of $180,300 on March 2, 1962 (total expenditures of $671,700 including research and operations charges) to complete the development of the models and process tooling and equipment necessary for production of the Model XP100 Pistol. Also, the Model 600 Center Fire Rifle in the .222 Remington, .308 and 30-30 calibers.

The work completed to date includes the introduction of the XP100 Pistol in the .221 Fireball caliber which was announced to the trade on March 1, 1963. ~~The selling price of the XP100 Pistol was increased from $[illegible] indicated in Part II of this project to $99.95 which includes the additional cost of engraving for the stock and a~~ Piggyge type carrying case.

Remarks

~~The Model 600 Center Fire Rifle has been developed and future changes will include revisions to the barrel which will be larger and the barrel hole in the stock to accommodate the larger barrel. Also, chambering these barrels for the 308 Cal, .222 Rem. Magnum and 35 Remington Calibers. Press checkering will also be included as an additional feature on these models.~~

~~Originally in the Part II of this project the 30-30 Caliber was included for this Model 600. However, after reviewing design and indicated manufacturing costs which would be higher for this caliber~~

(Subsequent, 3)

due to the rim case the Operations Committee recommended deletion of the 30-30 Caliber and replace with the 35 Remington.

The model 600 Bolt action Carbine rifle has been developed to pilot operations for Cal 308, and designs completed for the calibers 30-30 and 222. Because of the added cost ~~[illegible]~~ for design changes to accommodate the 30-30 rimmed case cartridge, the Sales Department has recommended that the caliber specifications for the rifle be changed, substituting the current 35 Remington caliber, for the 30-30 Winchester. It is also proposed that the Remington developed "custom checkering" be added as an additional feature for the rifle stock.

(Subdivision 3)

Based on forecast third-year sales, as shown below, the proposed selling prices and estimated operating earnings are:

	Proposed		
	XP100 Pistol	700/600 C2 Rifle	Combined Average
Sales quantity			
Retail selling price	$	$	$
Net selling price	$	$	$
Operating earnings	$	$	$
% of net selling price	%	%	%

(Subdivision 3)

Remarks

Changes in design and scope of work prior Part II was authorized results in increased expenditures as indicated below.

~~The barrel will be revised to accomodate the longer bore caliber 35 Remington caliber, with~~

Revisions to accomodate the longer ~~caliber~~ 35 Remington caliber involve the barrel, stock, and sighting rib. The XP-100 pistol is also being provided with a luggage type carrying case.

Description of Proposed Work

It is proposed to complete the development of these models in Center Fire Rifle for Calibers .308, .22 x Remington Magnum and 35 Remington and procure tooling and equipment for production volume of for the first year ( ) and for the third year.

Patent Status

(See letter)

Remarks

Changes in design and scope of work since Part II was authorized, resulting in additional expenditures as indicated below.

(next page

	Amount (Dollars) from Part II	Amount Present
Construction		
Research		

Operations

Subdivision 5 indicates an estimated increase in net earnings of $ in the third year of operation, resulting from this project, equivalent to a net return of % on investment.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131576

11-X 16½ — 13 columns
With description column

3/14/63
JWR

Remington Arms Company, Inc.
Project No. AA XP700-3 - Ilion Works
Summary of Estimated Expenditures

Construction Project	
Direct Manufacturing Facilities	
Equipment	$ 177,400
Provision for advancing wages and material prices and allowance for unforeseen items	—
	$177,400
Other	
Product Development	175,500
Tooling	319,400
Other	87,400
Provision for advancing wages and material prices and allowance for unforeseen items	17,000
	$599,300
Total Expenditures	$731,700

Accounting Distribution of Expenditures

	Expenditures this project	Adjusting entries	Final Net Results in Accounts
Construction Project			
Permanent investment	$ 177,400	$	$ 177,400
Other			
Supporting research	130,500		130,500
Operations	428,800		428,800
	$ 731,700	$	$ 731,700

Note

BARBER - PRESALE R 0131576
R2532564

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

11 x 16½ — 13 columns
Web description column

cc: R. L. Hall
J. J. Phillips (2)
V. G. DeReus
L. D. Cox
File

Remington Arms Company, Inc.

DETAIL ESTIMATE OF EXPENDITURES

Project No. ADXP700-3 - Ilion Works

	Authorized $	Expended to 2/28/63	Requested this Part II	Vendor's tooling	Total Indicated Cost	Contingency
Development	87800	96477	37700		125500	
Investigation	11000	6966	(4000)		7000	
Design	31500	34100	12500		44000	
Model making	24800	37877	21000		46000	
Design testing	12000	5967	—		12000	
~~Models for test~~	—	—				
Tryout + Pilot Lot - Nylon Molds		4231	6000		6000	
Development - powder metal	1500	3807	3500		5000	
Development-custom checker	2000	531	(1500)		500	
Eng.-Folders, C of O, Stds	5000	3000	—		5000	
Product Engineering	23800					
Process Eng. & Trial Run	22500	14457	(4500)		18000	
Pilot Lot Testing	1300	233	1700		2500	
Expediting						
Tooling	287900					
Design	35400	35686	2600		38000	
Fixtures & Gages	118500	135360	31800		150000	
Molds	88600	79124	(8600)		80000	
Perishable tools	2300	2300	—		2300	
Tool revisions	41600	39962	9400		50000	
Special Machines						
Construction						
Tooling						
Operations						
Remington Machines	37500					
Construction	22500	28500	6000		28500	
Tooling	5500	4097	(1500)		4100	
Operations	9100	14918	6000		15100	
Std Machines & equipment	155300	141283	(11400)		143900	
Production Aids	20200	12682	(3200)		17000	
Construction						
Operations	20200				17000	
Pilot Operations	18800					
Machine alterations	5000	15984	10800		15700	
Pilot lot mfg.	11800	10860	3200		14000	
Machine rearrangement	—	43541	5000		5000	
Component Obsolescence	2000	1274	—		3000	
Provision for Advancing Wages and Material Costs	32700		(23700)		15000	5000 Rm
GRAND TOTAL	$671900	632347	60000		731700	

BARBER - PRESALE R 0131577
BARBER - PRESALE R 0131577
R2532565

R D 1386-REV.

REMINGTON ARMS COMPANY, INC.

APPROPRIATION REQUEST

Department Research & Development Works Ilion Project No. AD XP-700-3

Request for $ (9,500) Reduction Date March 25, 1963

Category Expanded Facilities - Established Product

Title MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600 CENTER FIRE RIFLE

	Previous Parts (Part II Authorized 3/2/62)	This Part III	Total
Construction	$ 180,300	$ (9,500)	$ 170,800
Supporting Research	92,300	12,100	104,400
Operations	399,100	17,600	416,700
Total	$ 671,700	$ 20,200	$ 691,900

This project is not included in Forecast No. 2 — Approved or ~~Authorized~~ D Sullen — Date 3/28/63

To be commenced March 2, 1962 — Approved or Authorized _____ _____

To be ready for use: XP-100 3/1/63, M/600 1/1/64 — Approved or Authorized _____ _____

To be physically completed March 1, 1964 — Approved or Authorized _____ _____

Estimate prepared by Methods & Standards, PE&C and Research & Development 3/18/63 (Date) — Approved or Authorized _____ _____ President and General Manager

Approved as to form, accounting aspects, and rules compliance — Authorized BOARD OF DIRECTORS _____

Treasurer or Assistant Treasurer _____ Date _____ Secretary

Preliminary approvals:

	Date		Date
Simplis	3/27/63		
H Kelsen	3/27/63		
R L Hall	3/28/63		

(Subdivision I)

REMINGTON ARMS COMPANY, INC.

PROJECT NO. AD XP-700-3 - ILION WORKS

SUMMARY OF ESTIMATED EXPENDITURES

	Total
Construction Project	
Direct manufacturing facilities	
Equipment	$ 170,800
Other	
Product development	$ 104,400
Tooling	326,500
Other	86,200
Provision for advancing wages and material prices and allowance for unforeseen items	4,000
Total	$ 521,100
Total expenditure	$ 691,900

ACCOUNTING DISTRIBUTION OF EXPENDITURES

	Expenditures This Project	Final Net Results in Accounts
Construction Project		
Permanent investment	$ 170,800	$ 170,800
Other		
Research (Supporting)	$ 104,400	$ 104,400
Operations	416,700	416,700
Total	$ 521,100	$ 521,100
Total	$ 691,900	$ 691,900

(Subdivision 2)

REMINGTON ARMS COMPANY, INC.

GENERAL INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

PRESENT FACILITIES AND TO WHAT EXTENT THEY ARE INADEQUATE

The Board of Directors authorized a construction appropriation of $180,300 on March 2, 1962 (total expenditures of $671,700 including research and operations charges) to complete the development of models and to procure tooling and equipment for production of the Model XP-100 Pistol (formerly XP-700) and the Model 600 Center Fire Rifle (formerly XC-13).

The new handgun was introduced March 1, 1963 featuring the new .221 Remington "Fireball" cartridge. Introduction of the XP-100 handgun is in response to the increased demand for handguns and consumer preferences for high power and velocity in handguns (.357 Magnum, 44 Magnum and 22 Remington Jet).

Features of the XP-100 include:

1. Unique design.
2. Long range high velocity performance without sight adjustment.
3. Bolt action for accuracy and strength.
4. Reduced muzzle jump and recoil reduction.
5. Stock for right or left hand shooters.
6. Grip flared for added stabilization.
7. Grip checkering and inlays.
8. Ribbed barrel.

The Model 600 Center Fire Rifle has been designed for lighter weight carbine type design including such features as:

1. Shorter length for easier handling.
2. Ribbed barrel for improved sighting and appearance.
3. Custom checkering.
4. Heavier caliber than present guns of similar type.
5. Attractive retail price.

The Model 600 Rifle is now in pilot operations for the .308 Caliber, and design is completed for Calibers 30-30 Winchester and .222 Remington. It is scheduled for announcement on January 1, 1964.

Because of the added product cost and project expenditures for the Caliber 30-30 Winchester version of the rifle, the Sales Department has recommended that the .35 Remington Caliber be substituted for the 30-30 Winchester Caliber.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

R2532568

DESCRIPTION OF PROPOSED WORK

It is proposed to complete the development of the Model 600 Center Fire Rifle in the .35 Remington Caliber and the procurement of tooling and equipment for production. Tooling and equipment are being provided for production of 6155 XP-100 Handguns for the first year and 5000 XP-100 and 15,000 Model 600 Center Fire Rifles for the third year.

This Part III is a request for ($9,500) reduction to cover the construction underrun on this project.

REMARKS

Changes in design and scope of work since Part II was authorized results in increased expenditures as indicated below:

	Increase (Decrease) from Part II	
	Amount	Per Cent
Construction	$ (9,500)	(5.3)
New equipment expenditures underrun due to utilization of machines on hand.		
Research	$ 12,100	13.1
Additional expenditures required due to the revision to accommodate the larger diameter .35 Remington cartridge and additional work on sights and molds for nylon parts.		
Operations	$ 17,600	4.4
Operations charges increased due to tooling for revised sights and stock former and additional equipment alterations (which reduced construction expenditures).		

PATENT STATUS

Consideration of the designs for both the pistol and rifle indicates that no patent infringement will be involved.

A design patent application is being prepared to cover the appearance of the pistol. A search has indicated that the fire control mechanism of the pistol and the rib mounting scheme for both contain some novelty. Patent applications will be filed to cover both these inventions.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.
ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD XP-700-3 - ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR
MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600
CENTER FIRE RIFLE
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT

		Third Year of Operation	
	Present Operation	Results From This Project	Operation After This Project
QUANTITY	341,115	20,000	361,115
SALES	$17,985,150	$1,079,800	$19,064,950
Less: Mill cost	12,935,780	581,310	13,517,090
Selling expense) Administrative expense)	1,708,600	--	1,708,600
Technical activities expense	593,500	--	593,500
	$15,237,880	$ 581,310	$15,819,190
OPERATIVE EARNINGS	$ 2,747,270	$ 498,490	$ 3,245,760
Less: All other expense: All other 6%; Federal tax 52%	1,507,700	273,570	1,781,270
NET EARNINGS	$ 1,239,570	$ 224,920	$ 1,464,490
INVESTMENT			
Project expenditures	$ --	$ 170,800	$ 170,800
Manufacturing and service facilities	11,991,000	--	11,991,000
Working capital	11,429,000	488,000	11,917,000
Position A: Total capital required including facilities to be retired	$23,420,000	$ 658,800	$24,078,800
Facilities to be retired (Deduct)			--
Position B: Total investment after completion of this project			$24,078,800

(Subdivision 5)
Page 1

REMINGTON ARMS COMPANY, INC.
ESTIMATED EARNINGS AND RETURN ON INVESTMENT
PROJECT NO. AD XP-700-3 - ILION WORKS
INCREASED MANUFACTURING FACILITIES FOR
MODEL XP-100 SINGLE SHOT PISTOL AND MODEL 600
CENTER FIRE RIFLE
CATEGORY: EXPANDED FACILITIES - ESTABLISHED PRODUCT

	Third Year of Operation		
	Present Operation	Results From this Project	Operation After This Project
RETURN ON INVESTMENT			
Position A	5.3%	34.1%	6.1%
Position B	--	--	6.1%
* * * * * * * * * *			
Return on total capital required including research and development and other operations charges	5.3%	19.1%	6.0%
* * * * * * * * * *			

SUMMARY COMPARISON OF RESULTS FROM THIS PROJECT - FIRST AND THIRD YEARS OF OPERATION

	First Year	Third Year
Quantity	6,155	20,000
Sales	$334,520	$1,079,800
Operative earnings	130,310	498,490
Net earnings	58,800	224,920
Investment		
Project expenditures	$155,000	$ 170,800
Allocated investment	--	--
Working capital	165,000	488,000
Total	$320,000	$ 658,800
Net return on investment	18.4%	34.1%
* * * * * * * * * *		
Return on total capital required including research and development and other operations charges	7.5%	19.1%

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

Remington Arms Company, Inc.

DETAIL ESTIMATE OF EXPENDITURES

PROJECT NO. AD XP-700-3 - Ilion WORKS

	Amount Previously Authorized	Requested this Part III	Total Indicated Cost
Development	$ 87,800	$ 16,600	$ 104,400
Investigation	11,000	(4,000)	7,000
Design	31,500	5,900	37,400
Model making	24,800	14,100	38,900
Design testing	12,000	(5,700)	6,300
Tryout & pilot - Nylon Molds	--	5,000	5,000
Development - powder metal	1,500	2,800	4,300
Development - custom checkering	2,000	(1,500)	500
Eng.-Folders, C.of O., Standards	5,000	--	5,000
Product Engineering	$ 23,800	$ (3,500)	$ 20,300
Process Eng. & Trial Run	22,500	(4,500)	18,000
Pilot lot testing	1,300	1,000	2,300
Tooling	$ 289,900	$ 32,500	$ 322,400
Design	35,400	4,100	39,500
Fixtures & Gages	118,200	32,700	150,900
Molds	88,400	(9,300)	79,100
Perishable tools	2,300	--	2,300
Tool revisions	45,600	5,000	50,600
Remington Machines	$ 37,200	$ 10,400	$ 47,600
Construction	22,500	6,000	28,500
Tooling	5,600	(1,500)	4,100
Operations	9,100	5,900	15,000
Std. Machines & Equipment	$ 155,300	$ (13,000)	$ 142,300
Production Aids	$ 20,200	$ (5,500)	$ 14,700
Pilot Operations	$ 18,800	$ 17,400	$ 36,200
Machine alterations	5,000	10,800	15,800
Pilot lot manufacture	11,800	2,100	13,900
Machine rearrangement	--	4,400	4,400
Component obsolescence	2,000	100	2,100
Provision for advancing wages and material prices and allowance for unforeseen items	$ 38,700	$ (34,700)	$ 4,000
Total Cost	$ 671,700	$ 20,200	$ 691,900

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

REMINGTON ARMS COMPANY, INC.

SUPPLEMENTARY INFORMATION

PROJECT NO. AD XP-700-3 - ILION WORKS

INCREASED MANUFACTURING FACILITIES FOR
MODEL XP-100 SINGLE SHOT PISTOL AND
MODEL 600 CENTER FIRE RIFLE

Research and development project charges, and start-up costs chargeable to operations incurred prior to the first year of operation amount to $576,000. Giving effect to amortization of such charges against earnings during the first and second years of operation, earnings and return on investment are as follows:

	Operative Earnings	Amortization of Operations Charges Incurred Prior to First Year	Adjusted Operative Earnings	Net Earnings	Net Return on Investment
1963	$ 130,310	$ 130,310	$ --	$ --	-- %
*1964	488,000	445,690	42,310	19,090	2.9%
1965	498,490	--	498,490	224,920	34.1%

*1965 volumes (5,000 XP-100) assumed for second year
(15,000 M/600)

(Not for submission to Board)

XP100
223 Rem
Design Assignment
3/26/85

DUPONT RECORDS CONTROL SCHEDULE

RECORDS CATEGORY OR TITLE:

COPY "O" (OFFICIAL) ☐ "X" (EXTRA) ☐

TOTAL RETENTION: _____

GS-11050 Rev. 8/78

XP 100 - 223 Rem

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington PETERS

xc: Firearms Business Team

"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"

Ilion, New York
August 2, 1985

E0237
XP100

TO: T.C. DOUGLAS
D.S. FINDLAY

FROM: J.W. BOWER

NOTES FROM BUSINESS TEAM MEETING

Decisions made at yesterday's meeting that are of interest to you:

- The 1986 offerings in the Sportsman 78 and XP-100 will be made in .223 caliber, not 5.56 mm. This is in response to SAAMI's recommendation that .223 and 5.56 be considered a dangerous combination.

ADAM

- The XP-100 will be introduced as soon as possible in 1986. Based on our previous conversations, I committed to a November 1 transmittal.
- Marketing requested that the sight be removed from the XP-100.
- Deer Gun economics were approved. That package should be transmitted as soon as possible.
- The Business Team reiterated their commitment to introduce the Model 870 Improvements in 1987, and they are prepared to ask for advance funds to accomplish the schedule. Ken Soucy is to review the schedule and determine a "drop dead" date for 1987 introduction. Research needs to be in a position to transmit the package by October 1.
- The new, one piece centerfire sight, will be phased in as soon as its available. We need to get drawings to MIM as soon as possible.

RD 6606

cc: J. White

TO: D. CHRISTIE

ILION RESEARCH DIVISION

FIREARMS WITHDRAWAL XXXXXXXXXXXXX

DATE 8/5/85

LETTER NO. 2186

QUANTITY 10

MODEL XP-100 CAL/GA. 221 REM WORK ORDER E0237

SERIAL NOS.			
	RAMAC # 5470	B7512261	B7512214
		B7512475	B7512792
		B7511606	B7512428 ←
		B7511966	B7512507
		B7511642	B7508065

REMARKS:

Approval

AHugick:js

Sheet 1 of 1

SPECIAL TEST REPORT
GALLERY DATA

MODEL XP 100 SHOOTER R. Cabrera DATE 10 02 85

Gun No.	Ga./ Cal.	Heavy Jack Rds.	Heavy Jack Type	Heavy Jack Results	Light Jack Rds.	Light Jack Type	Light Jack Results
1606	223	7	55 PSP	5" GROUP ACTION OK	7	55 PLHP	2.5 GROUP
1966	223	7	55PSP	5.5 GROUP ok	7	55 PLHP	2.5 GROUP
2214	↓	↓	↓	5.5 ok	↓	↓	3.5
2507	↓	↓	↓	1.5 ok	↓	↓	4.5
1642	↓	↓	↓	4.5 ok	↓	↓	4.5
8065	↓	↓	↓	4.5 ok	↓	↓	4.5
2261	↓	↓	↓	5.0 ok	↓	↓	5.5
2475	↓	↓	↓	4.5 ok	↓	↓	4.5
2192	↓	↓	↓	.5 ok	↓	↓	4.5
2428	↓	↓	↓	5.0 ok	↓	↓	4.0

GALLERY TARGETS DATA

#	SHOTS	VERT	HORIZ.	SPREAD
1	7	5.20	2.90	5.40
2	6	3.60	1.35	3.80
3	5	1.65	2.15	2.70
4	4	1.50	0.40	1.50
5	4	1.20	1.80	1.85
6 ALONG WOOD.	4	8.70	0.70	8.80
7	5	3.10	1.05	3.35
8	6	3.90	0.80	3.90
9	3	0.70	0.35	0.8[illegible]
10	5	1.15	1.10	1.6[illegible]
11	4	0.25	0.35	0.35
12	4	0.20	0.55	0.6[illegible]
13	4	1.40	0.80	1.60
14	7 68	5.30	4.10	5.9[illegible]
15	5	4.10	2.85	4.6
16	4	1.65	0.50	1.7
17	4	1.05	0.95	1.1
18	6	3.10	1.60	3.4
19	7	5.40	1.20	5.3
20	5 99	6.25	2.50	6.8
21	6	3.25	5.35	5.
22	6	2.35	4.95	5.
23	7	7.50	2.45	7.
24	6	6.60	1.95	6.
25	7	3.65	0.80	3.
26	3	0.80	1.00	1.
27	6	4.30	1.60	4.
28	4 mil	5.40	2.30	5.

GALLERY TARGETS DATA

	[illegible]	VERT	HORIZ.	SPREAD
1	6	2.75	3.75	4.15
30	5	4.10	1.10	4.30
31	5	5.30	1.80	5.45
32	5	1.85	1.65	2.45
33	7	2.60	1.20	2.8.
34	4 176 zos	1.85	2.05	2.1[illegible]
	AVER.	3.29	1.76	3.75
	(140)			

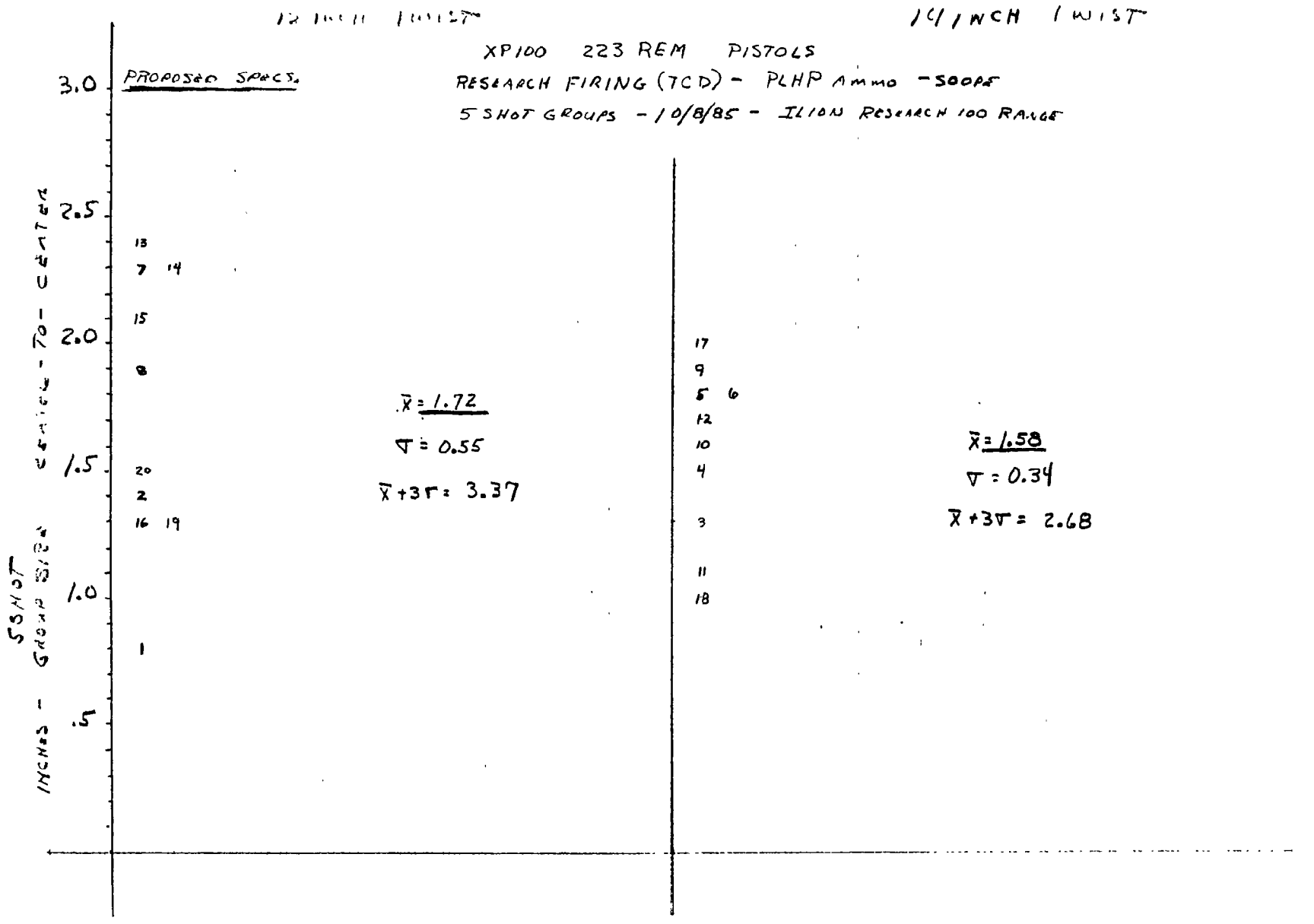
TARGET ROCC ROAD
WITH 12" SCALE 10/3/85
A A HUGLICK.

111.7 39.95 127.3[illegible]

NOTE:

ALL BULLET HOLES WERE ROUND - CLEAN HOLE WITH NO KEY HOLE INDICATIONS WHAT SO EVER.

BARBER - PRESALE R 0131591


12 INCH TWIST
14/1 INCH TWIST
XP100 223 REM PISTOLS
RESEARCH FIRING (TCD) - PLHP AMMO - 500PF
5 SHOT GROUPS - 10/8/85 - ILION RESEARCH 100 RANGE
PROPOSED SPECS.
3.0
2.5
2.0
1.5
1.0
.5
INCHES - 5 SHOT GROUP SIZE - TO - CENTER
13
7 14
15
8
20
2
16 19
1
17
9
5 6
12
10
4
3
11
18
X̄ = 1.72
σ = 0.55
X̄ + 3σ = 3.37
X̄ = 1.58
σ = 0.34
X̄ + 3σ = 2.68
10/9/85 A.

12 INCH TWIST

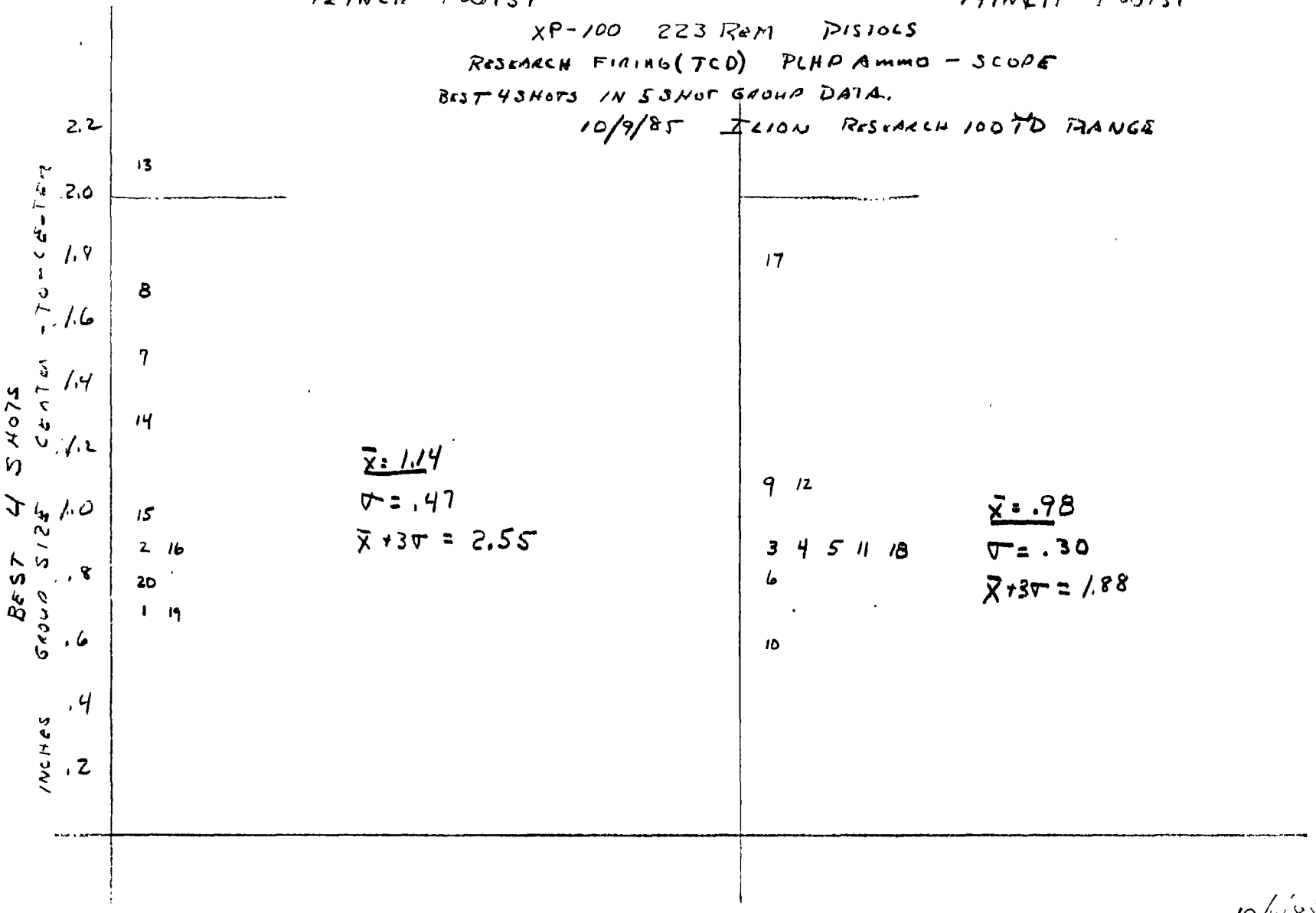
14" INCH TWIST

XP-100 223 REM PISTOLS

RESEARCH FIRING (TCD) PLHP AMMO - SCOPE

BEST 4 SHOTS IN 5 SHOT GROUP DATA.

10/9/85 ILION RESEARCH 100 YD RANGE



10/9/85
A.

BARBER - PRESALE R 0131594

12 INCH TWIST

14 INCH TWIST

XP100 223 REM PISTOLS

RESEARCH FIRING (TCD) - PLHP AMMO - SCOPE

BEST 3 SHOTS IN 5 SHOT GROUP DATA.

10/9/85 ILION RESEARCH Lloyd Ramon

BEST 3 SHOTS

INCHES - GROUP SIZE - CENTER-TO-CENTER

2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
.8
.6
.4
.2

7

8 14

13 20

16

1

2 15 19

$\bar{X} = .67$

$\sigma = .24$

$\bar{X} + 3\sigma = 1.48$

12

4

6 19

3 9 10 18

5 11

$\bar{X} = .64$

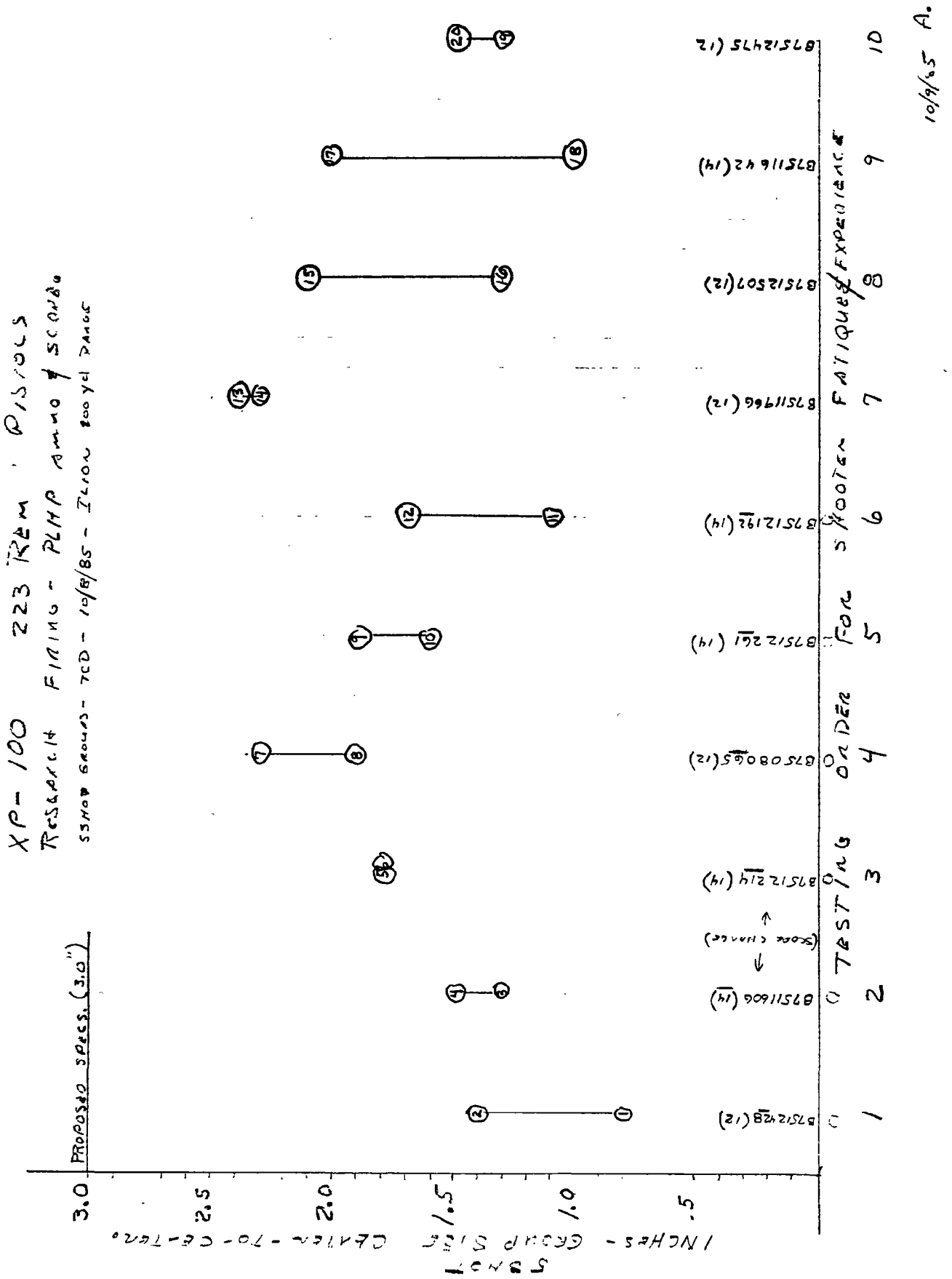
$\sigma = .13$

$\bar{X} + 3\sigma = 1.03$

10/9/85 R.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131594
R2532582


XP-100 223 REM PISTOLS
RESEARCH FIRING - PLMP AMMO & SCOPES
SSHOP GROUPS - 7CD - 10/8/85 - ZERO 200 yd RANGE
PROPOSED SPECS. (3.0")
3.0
2.5
2.0
1.5
1.0
.5
SMART
INCHES - GROUP SIZE CENTER-TO-CENTER
TESTING ORDER FOR SHOOTER FATIGUE & EXPERIENCE
1
2
3
4
5
6
7
8
9
10
875128 28 (12)
875116 06 (14)
(SCOPE CHANGE)
875121 14 (14)
875080 65 (12)
875121 21 (14)
875121 92 (14)
875116 66 (12)
875125 07 (12)
875116 42 (14)
875124 75 (12)
10/9/85 A.

RESEARCH TARGETS, DATA

A.

GUN (14" TWIST)	55 NOT GP.	BEST 45 NOTS	BEST 33 NOTS
606 - 3	1.318	.90	.60
- 4	1.512	.90	.75
214 - 5	1.792	.90	.50
- 6	1.829	.80	.70
261 - 9	1.889	1.05	.55
- 10	1.628	.60	.60
192 - 11	1.093	.85	.45
- 12	1.695	1.10	.90
642 - 17	2.024	1.75	.70
- 18	1.014	.90	.60
	$\bar{x}$ = 1.58	= 0.98	= 0.64
	σ = 0.34	= 0.30	= 0.13
	$\bar{x} + 3\sigma$ = 2.68	= 1.88	= 1.03
428 - 1 (12" TWIST)	.798	.70	.45
- 2	1.397	.90	.40
065 - 7	2.322	1.45	1.20
- 8	1.915	1.65	0.90
966 - 13	2.428	2.10	.70
- 14	2.251	1.30	.90
507 - 15	2.105	1.00	.40
- 16	1.251	.85	.60
475 - 19	1.314	.65	.40
- 20	1.468	.80	.70
	$\bar{x}$ = 1.72	= 1.14	= .67
	σ = 0.55	= 0.47	= .27
	$\bar{x} + 3\sigma$ = 3.37	= 2.55	= 1.48

10/9/85 A.

RESEARCH TARGETS DATA

P.

		5	4	3
428	(12)	.798	.70	.45
		1.397	.90	.40
606	(14)	1.318	.90	.60
		1.512	.90	.75
214	(14)	1.792	.80	.55
		1.829	1.05	.60
065	(12)	2.322	1.45	.90
		1.915	1.65	.70
261	(14)	1.889	.60	.60
		1.628	.85	.45
192	(14)	1.093	1.10	.70
		1.695	1.75	.60

D 475 (12)

D 507 (12)

D 642 (14)

966 (12) WORST

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131598

FIELD CYCLE TEST - SHOTGUNS

PROT NO.: _____ PAGE NO. _____

PREVIOUS ROUNDS 21

DATE: 10/22/85 MODEL: XP100 GAUGE: 223 SERIAL NO. B7512507

TEST TITLE: 223 XP100 ENDURANCE

TTL. RDS. FIRED: _____
TTL. MALFUNCTIONS: _____
MALFUNCTION RATE: _____

"MALFUNCTIONS"

Ammunition Load Size	Shooter	No. of Rounds Fired	Firing	Failed Ejection	Don't Eject	Don't Hold Back	Don't Lock Up	Feed From Mag. 1st	Feed From Mag. 2nd	Double Feed Lock Mag.	Dropped Shell	Don't Lock Up	Other Chamber: Hit	Other Chamber: Low	Other Chamber: Hight	Other Chamber: Left	Fail to Cycle Carrier Latch	Shell Carrier	Loading	Ejec. Shell Stuck	Action Blue Mount	Don't Extract	Breakage	Ability	Defacements	Bolt Malfunctions	Remarks (on back) Yes	Remarks (on back) No
F223A	A	21																									OK	
X223R	A	100										AMMO			COOA		5	2	T	K	3	1					OK	
R223R2	A	20															0	D	2	3	0	1						
R223R1	A	20															5	0	2	K	2	5						
R223R3	A	20															5	0	7	K	D	1						
R223R3	A	37																										
R223R3	A	60																										
10/23/85		172		10/24/85																								
W-X223R1	A	100																										
R223R1	A	100															A	0	3	6	D							
R223R1	A	100																										
R223R1	A	100																										
TOTAL (PER MAL.)																												

578 21 = 600 TOTAL

BARBER - PRESALE R 0131598

R2532586

REMARKS

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.

DIAGRAMS (IF NEEDED)

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131600

FIELD CYCLE TEST - SHOTGUNS

PROJECT NO.: _____ PAGE NO. _____

DATE: 10/24/85 MODEL: XP100 GAUGE: 223 Rem SERIAL NO. B7512507

PREVIOUS ROUNDS 600

TEST TITLE: ENDURANCE - (BACK)

TTL. RDS. FIRED: _____
TTL. MALFUNCTIONS: _____
MALFUNCTION DATE: _____

"MALFUNCTIONS"

Ammunition Load Size	Shooter	No. of Rounds Fired	Misfire	Failed Eject.	Don't Fire	Don't Take Up	Don't Lock Open	Feed From Mag. 1st Latch	Feed From Mag. 2nd Latch	Double Feed Jack Mag.	Failed Eject.	Don't Lock Up	Stuck Chamber Time	Stuck Chamber Loc	Stuck Chamber Time	Stuck Chamber Loc	Bolt to Close Latch	Stuck Carrier	Location	Ent. Stuck Shell	Action Jams Up	Don't Remove	Breakage	Alterations	Discovered	Bolt Velocity	Remarks (on back) YES	Remarks (on back) NO
R223R1	A.	100									CODE		-	A	0	3	L		(	660 BOLT		STOP		F	ELL	OUT)		
R223R1	A.	100																										
R223R1	A.	100																										
R223R1	A.	100																										
R223R1	A.	100																										
TOTAL		100																										
BLACK STOCK																												
R223R1	A.	100																										
TOTAL (PER MAL.)																												

Oct 28, 1985
Edward A. Hungerford

BARBER - PRESALE R 0131600

R2532588

BARBER - PRESALE R 0131601

REMARKS

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

DIAGRAMS (IF NEEDED)

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131601 R2532589

RD-6738 Rev. 2/85

DCR _____

Sheet 1 Of 1

DESIGN CHANGE REQUEST (DCR) ✓

OR

TRANSMITTAL OF DRAWINGS/PARTS LIST ✓

OR

PARTS LIST CHANGE NOTICE (PLCN) ✓

Requested By	Changed By	Date
T.C. DOUGLAS	A.A. HUGICK	10/22/85
Originating Date	Transmittal Date	
10/22/85		

Model	PART NAME/LIST	Drawing No.	Part No.
XP-100	BARREL ASSEMBLY COMPLETE	B31560	31560, 61, 62
XP-100	BARREL	C34945	34945, 46
XP-100	BARREL ASSEMBLY	C34950	34950, 51
——	CHAMBER DRAWING - 223 REM - "REM. ONLY"	LA507	——
——	CHAMBER DRAWING - 223 REM - "INQUIRIES"	LA507	——

Dwg. NO.	Rev. No.	DESIGN CHANGE
B31560	——	INITIAL TRANSMITTAL FOR MRP & 223 REM ADDED CALIBER.
C34945	4, 5	223 REM. ADDED.
C34950	11	223 REM. ADDED.
C34950	12	TABULATION FOR MRP ADDED.
LA507 "REM ONLY"	19, 20	XP100 USE ADDED
LA507 INQUIRIES	12, 15	XP100 USE ADDED
" "	13, 14	700 VARM DELETED, 700 VARM ADDED TO TABULATION OF TWISTS.

Classification of Change

(✓) Initial Transmittal
( ) Functional Change
( ) Safety Mechanism Revision
( ) Appearance

NOTE: Any or all of the above changes require approval of DCR by Lab Director - New Products Research

(✓) Other

Adam A. Hugick
DESIGNER SIGNATURE

Reason for Change:

REV. NO 4, 5, 11, 12, 19, 20, 12, 15, - INITIAL TRANSMITTAL OF ADDED 223 REM CALIBER TO MODEL XP-100 PISTOL.

REV. NO. 13-14 - UPDATED LA507 "INQUIRIES" DWG TO BE SAME AS "REM ONLY" DWG.

Disposition of Parts on Hand: (Check Below)

( ) Scrap ( ) Alter ( ) Use Inventory ( ) RD 6589 Attached

(P.E.&C: If Part is either scrapped or altered

APPROVED: _____ _____ _____

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

NUMBER LA-507

REMINGTON ARMS CO. INC.
RESEARCH & DEV. DEPT.

SCALE 2X | SUPERSEDES-REFERENCE 7-16-63

TITLE CHAMBER .223 REM.

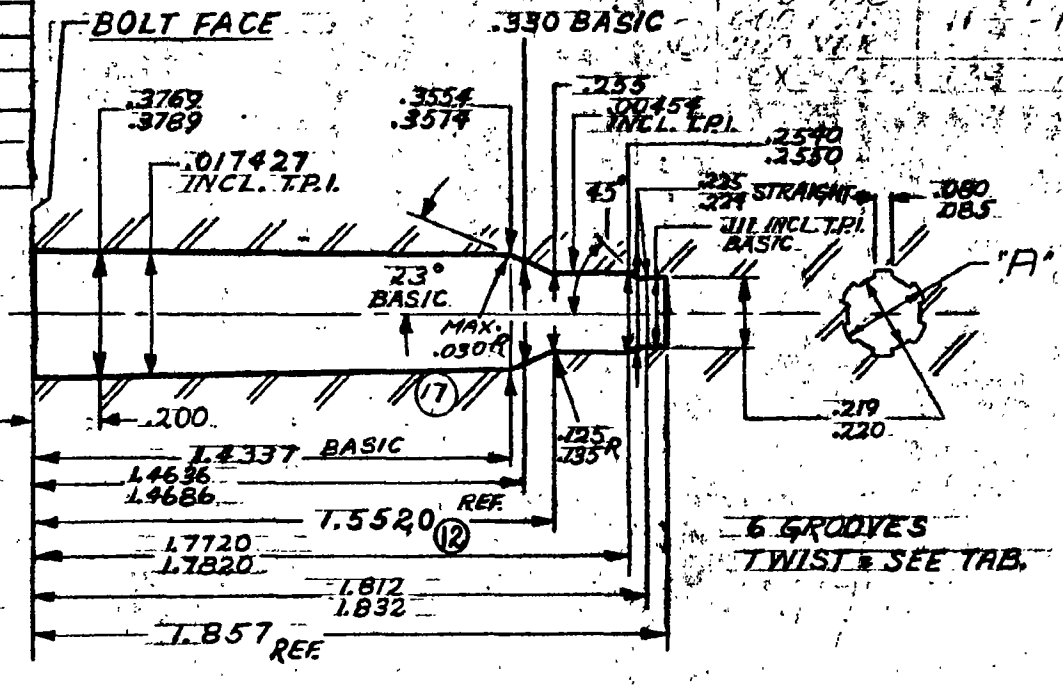
DES. BY DATE | DRN. BY DATE 9P 5/3/66 | CHK. BY DATE | APP. BY DATE

FOR DETAILS, SEE PROCESS RECORD

MODEL	PART USE	QUAN.	SEE
600 EXP.	BBL-223 REM CAL.		
40X-BCF	" - " "		
700 VARM.	" - " "		
788	" - " "		
700 BDL	" " " "		

DO NOT SCALE THIS DRAWING: WORK TO FIGURES
UNLESS OTHERWISE NOTED: TOLERANCES
ON DECIMAL DIMENSIONS ARE ±.005
& ON FRACTIONAL DIMENSIONS ± 1/64
& ON ANGULAR DIMENSIONS ±00°-30'
FINISHES ARE DESIGNATED BY ROOT MEAN SQUARE (R.M.S.) MICRO-INCH ROUGHNESS VALUES AND ARE THE MAXIMUM ROUGHNESS ACCEPTABLE. UNLESS OTHERWISE SPECIFIED, FINISH ROUGHNESS TO BE 125 ✓ OR BETTER.

RECOMMENDED MATERIAL AND HEAT TREAT
MATERIAL
HEAT TREAT
HARDNESS
COLOR
HEAT TREAT AND COLOR TO BE DONE BY REMINGTON
APPR. BY DATE



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ALT.	WAS	REFERENCE	BY	DATE
18	ADDED 700 BDL	11608	PH	7/30/82
17	.025-.030	10429	F.H.	6/7/77
16	ADDED 223	9836	JK	7/8/74
15	REV. BARRTING OF GROOVE DIA.	8661	[illegible]	14APR71
14	REMOVED MODEL 760	7498	J.K.	5-21-68
13	CHANGE TAB. ON 700 VARMINT	6877	B.P.	6-27-67
12	1.55196	6560	RJS	6/8/66
11	DELETED M/700	6534	GP	5/12/66
10	DELETED M/700	6534	GP	5/12/66
9	REVISE & REDRAWN	6524	GP	5/4-66

ALTERATIONS

TFA-3 REV. 1

(11) (13) (18)

	1 TURN (R.H.)
40X-B C.F.	13 3/4 - 14 1/4
760, 788	11 3/4 - 12 1/4
600 EXPT.	
700 VAR.	
700 BDL	

(17) (12)

1 TURN

GROOVE DIA.	MANUF. DIM.	"A" FINISH OR DIA.
VARMINT	.2236 / .2243	.2246 / .2243
ALL OTHER		.2240 / .2250

LA-507

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

NUMBER LA-507

REMINGTON ARMS CO. INC.
RESEARCH & DEV. DEPT.

SCALE 2X | SUPERSEDES-REFERENCE

TITLE CHAMBER .223 REM.

DES. BY DATE	DRN. BY DATE	CHK. BY DATE	APP. BY DATE
	7-17-63	7/26/63	7/31/63

FOR DETAILS, SEE PROCESS RECORD

MODEL	PART USE	QUAN.	SEE
760	CHAM. - 223 REM.	1	
600	EXPORT ONLY	"	
40XBCF	CHAM. - 223 REM.	1	
700 VARM	" " "		
700 BDL	" " "		

DO NOT SCALE THIS DRAWING: WORK TO FIGURES
UNLESS OTHERWISE NOTED: TOLERANCES
ON DECIMAL DIMENSIONS ARE ±.005
& ON FRACTIONAL DIMENSIONS ± 1/64
& ON ANGULAR DIMENSIONS ±00°-30'
FINISHES ARE DESIGNATED BY ROOT MEAN SQUARE (R.M.S.) MICRO-INCH ROUGHNESS VALUES AND ARE THE MAXIMUM ROUGHNESS ACCEPTABLE. UNLESS OTHERWISE SPECIFIED. FINISH ROUGHNESS TO BE 125 OR BETTER.

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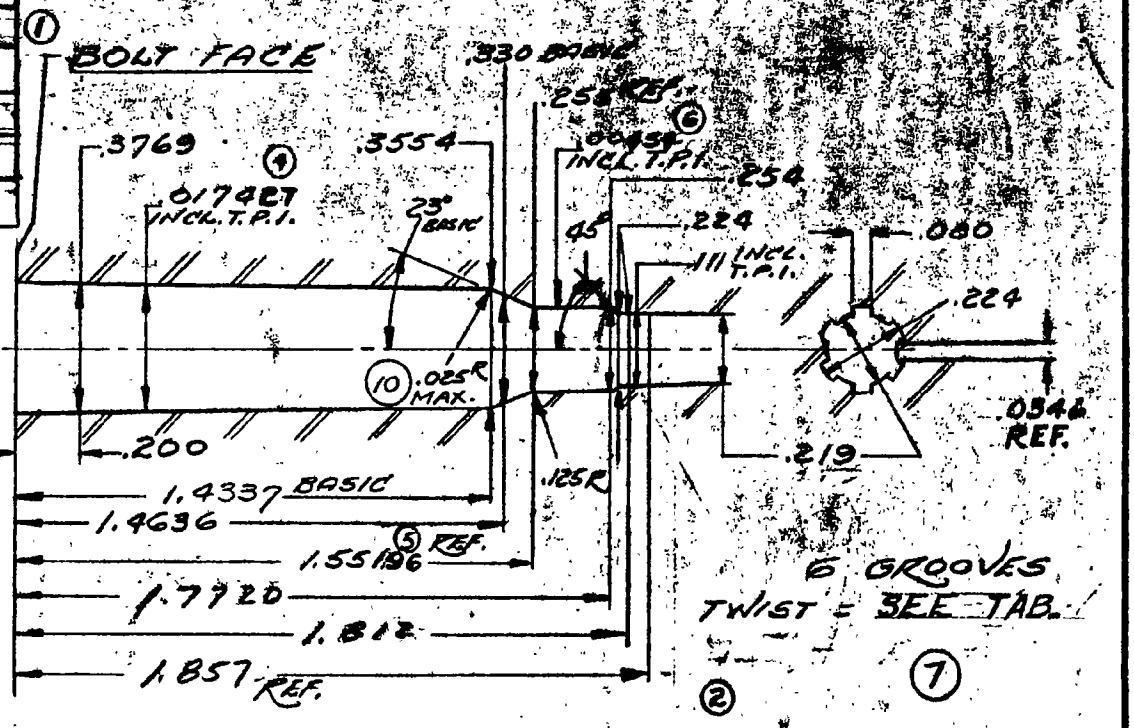

	1 TURN (R.H.)
760 700 BDL 600 EXPORT	11 3/4" - 12 1/4"
40X-B C.F. 700 VARMINT	13 3/4" - 14 1/4"

ALT.	WAS	REFERENCE	BY	DATE
11	ADDED 700 BDL	11608	PN	7/30/82
10	.025 R.	10429	FH	6/8/77
9	DELETED M-700	6534	GP	5/12/66
8	DELETED M-700	6534	GP	5/12/66
7	ADDED	6524	GP	5/5/66
6	.00356	6451	WB	1-27-66
5	1.5541	6451	WB	1-27-66
4	.01746	6451	WB	1-27-66
3	ADD-USE	6199	JNF	6/17-65
2	14° TWIST	5456	JH	12-10-63
1	ADDED	5456	JH	12-10-63

ALTERATIONS

TFA-3 REV. 1

LA-507

(4) (11)(9) (5)(10) (6) (7)

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131605

B31560

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DO NOT SCALE THIS DRAWING: WORK TO FIGURES UNLESS OTHERWISE NOTED.
TOLERANCES ON DECIMAL DIMENSIONS ARE:
1 PLACE (.1) — TOLERANCE ±.015
2 PLACE (.01) — TOLERANCE ±.010
3 PLACE (.001) — TOLERANCE ±.005
& ON FRACTIONAL DIMENSIONS ±1/64
& ON ANGULAR DIMENSIONS ± 0° -30'
FINISHES ARE DESIGNATED BY ROOT MEAN SQUARE (R.M.S.) MICRO-INCH ROUGHNESS VALUES AND ARE THE MAXIMUM ROUGHNESS ACCEPTABLE. UNLESS OTHERWISE SPECIFIED.
FINISH ROUGHNESS TO BE 125 √ OR BETTER.

RECOMMENDED MATERIAL AND HEAT TREAT
MATERIAL —
HEAT TREAT —
HARDNESS —
COLOR Black
HEAT TREAT AND COLOR TO BE DONE BY REMINGTON

ALTERATIONS

ALT.	WAS	REF.	BY	DATE

BBL.ASSEM. COMPLETE	CALIBER	BARREL ASSEM.	BOLT ASSEM	EJECTOR	EJECTOR PIN	EJECTOR SPRING	EXTRACTOR	EXTRACTOR RIVET				
31560	221	26750	28751	17017	17676	17019	15850	27342				
31561	7MMBR	34950	28753	17017	17676	17019	91816	—				
31562	223REM	34951	28751	17017	17676	17019	15850	27342				

NOT AUTHORIZED FOR PRODUCTION

MODEL	PART NO.	PART USE
XP100	—	BBL.ASSEM.COMPLETE

DES. BY DATE	DRN. BY DATE	CHK. BY DATE	APP. BY DATE
	AAH 9-11-85		

TITLE BARREL ASSEM.COMPLETE

NUMBER	SCALE	SUPERSEDES	REFERENCE
B-31560	—		

REMINGTON ARMS CO. INC.
ILION RESEARCH DIV.

BARBER - PRESALE R 0131605
R2532593

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

34945

NOTE:

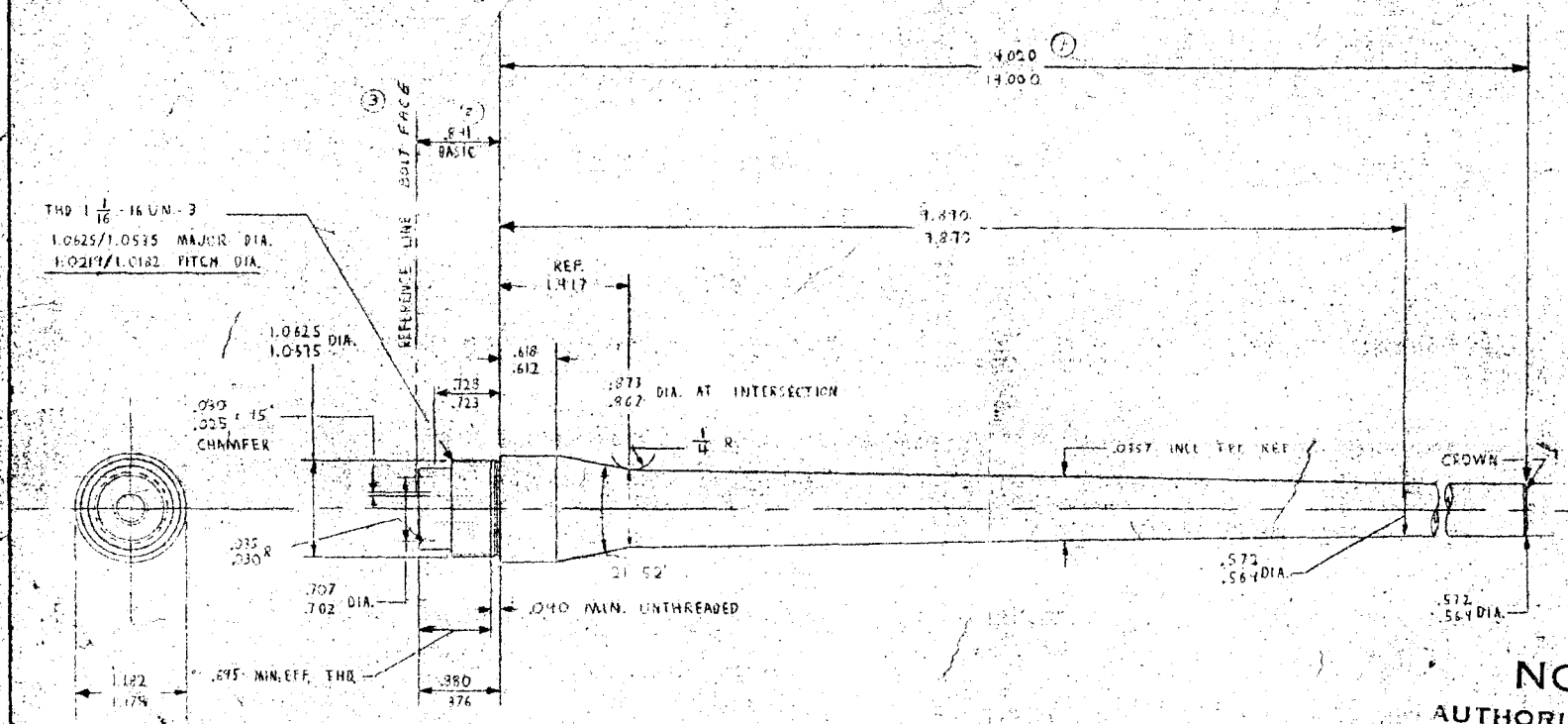
ALLOWABLE ECCENTRICTY OF CHAMBER & C'BORE WITH THREADS = .0035 (.007 INDICATOR READING)
ALLOWABLE ECCENTRICTY OF BORE WITH O.D. AT MUZZLE = .005 (.010 INDICATOR READING)

ALIGNMENT OF THE THREADS MUST BE HELD SO THAT AN INDICATOR READING AT 5" FROM THE MUZZLE, WHEN THE BARREL IS THREADED INTO A ROTATING BUSHING OF ZERO RUNOUT, IS LESS THAN .010.

DO NOT SCALE THIS DRAWING; WORK TO FIGURES UNLESS OTHERWISE NOTED.
TOLERANCES ON DECIMAL DIMENSIONS ARE:
1 PLACE (.1) — TOLERANCE ± .015
2 PLACE (.01) — TOLERANCE ± .010
3 PLACE (.001) — TOLERANCE ± .005
± ON FRACTIONAL DIMENSIONS ± 1/64
± ON ANGULAR DIMENSIONS ± 00°-30'
FINISHES ARE DESIGNATED BY ROOT MEAN SQUARE (R.M.S.) MICRO-INCH ROUGHNESS VALUES AND ARE THE MAXIMUM ROUGHNESS ACCEPTABLE, UNLESS OTHERWISE SPECIFIED.
FINISH ROUGHNESS TO BE 125 OR BETTER.

RECOMMENDED MATERIAL AND HEAT TREAT
MATERIAL SPEC. 175
HEAT TREAT STANDARD C.F.
HARDNESS
COLOR
HEAT TREAT AND COLOR TO BE DONE BY REMINGTON P.O. 6-28-79

ALTERATIONS				
ALT	WAS	NOW	BY	DATE
1	14.120 / 14.100	1032	CR	7/14/79
2	890			
3	ADD BOLT FACE			
4	ADD USE		AAH	9/11/80
5	ADD USE		AAH	9/11/80



NOT AUTHORIZED FOR PRODUCTION

SEPT. 1, 1979
A.R.H.

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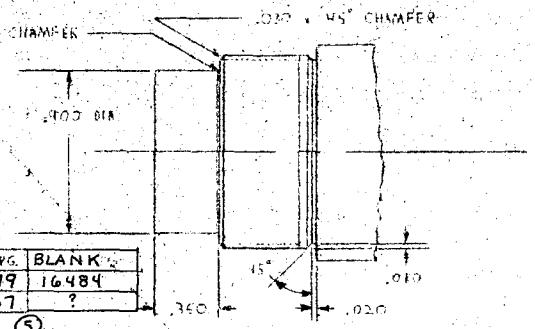
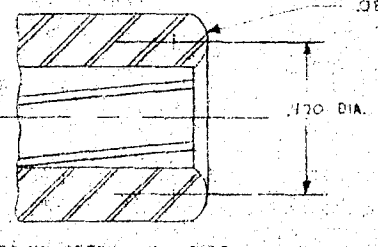


HUB DETAIL - 2 x SIZE



CROWN DETAIL - 4 x SIZE

PART NO.	CALIBER	CHMBR DWG.	BLANK
34945	7 MM BR REM	LB-549	16484
34946	223 REM	LA-507	?

5

MODEL	PART NO.	PART USE
XP100	34946	BARREL - 223 REM
XP100	34945	BARREL 7mm BR REM

4

DES. BY DATE [illegible] DWN. BY DATE DIW 7/6/79 CHK. BY DATE APR. BY DATE

TITLE BARREL

NUMBER C-34945 SCALE FULL SUPERSEDES REFERENCE

REMINGTON ARMS CO. INC. ILION RESEARCH DIV.

BARBER - PRESALE R 0131608 1 12532594

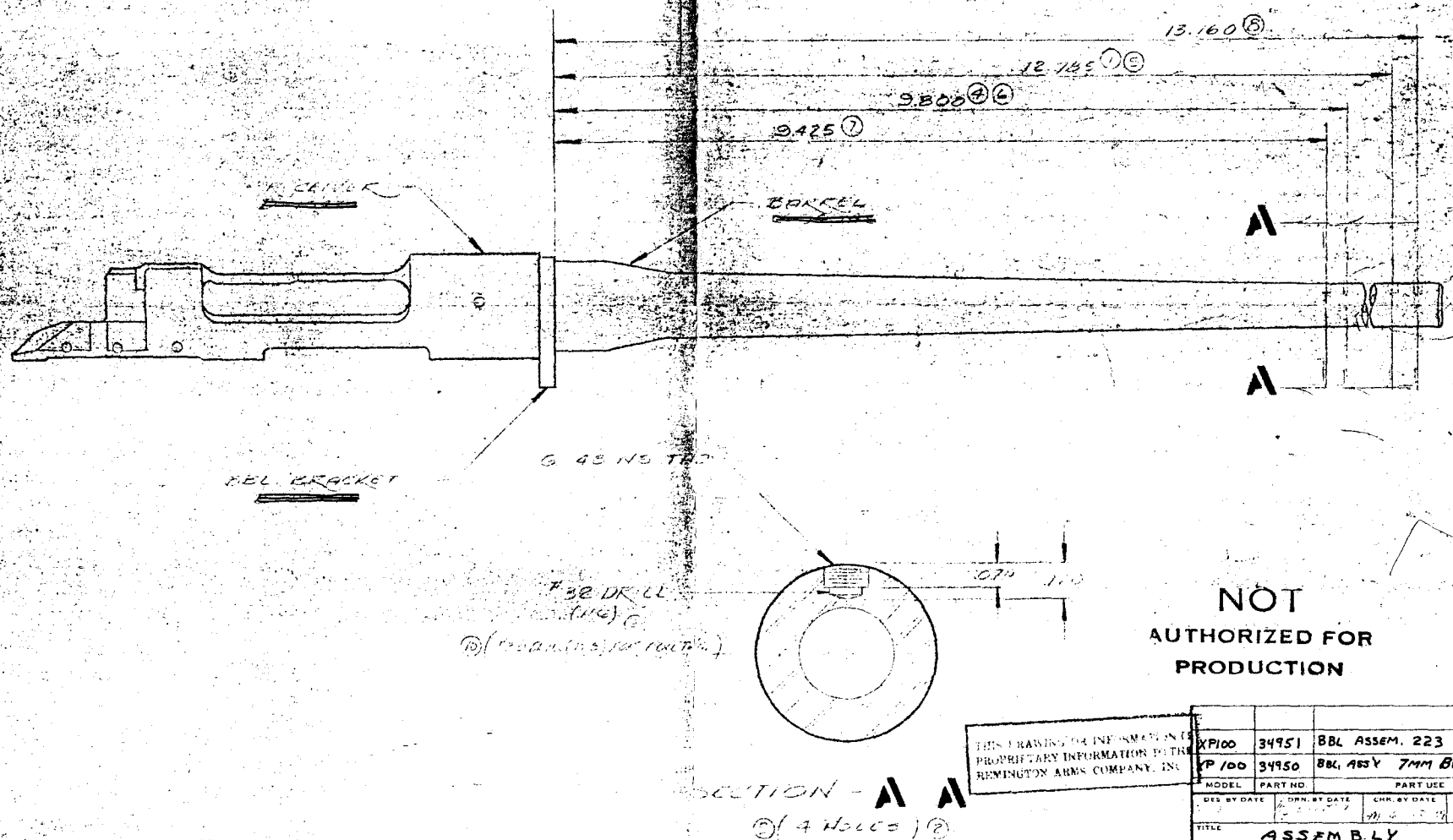
CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

[illegible]	[illegible]	BARREL	RECEIVER	BBL BRACKET	FRONT SIGHT HOLE OPTION
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	WITH HOLES
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	WITHOUT HOLES

(12)

MATERIAL [illegible]
HEAT TREAT
HARDNESS
COLOR BLACK OXIDE
HEAT TREAT AND COLOR TO BE DONE BY REMINGTON P.S.J. 6-18-71

1	[illegible]			
2	[illegible]			
3	[illegible]			
4	9.800	11149		
5	13.160	11178		
6	9.225	[illegible]		
7	MODEL 9.425	11181		
8	" 13.160			
9	2 HOLES			
10	ARROW, GUIDE & SIDE VIEW	11187		
11	223 REM USE ADDED			
12	TABULATION ADDED			



NOT
AUTHORIZED FOR
PRODUCTION

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MODEL	PART NO	PART USE
XP100	34951	BBL ASSEM. 223 REM
XP 100	34950	BBL ASSY 7MM BR. REM

DES. BY DATE	DRN. BY DATE	CHK. BY DATE	APP. BY DATE

TITLE ASSEMBLY

NUMBER	SCALE	SUPERSEDES	REFERENCE
C-34950	REMINGTON ARMS CO. INC. ILION RESEARCH DIV.		

BARBER - PRESALE R 01319[illegible] 2532595

223 REM 05 5.56 mm
TARGETS DATA.
A.

	12 IN. TWIST 7511966				14 IN. TWIST 7511642			
	223		5.56		223		5.56	
RPLHD –	1.85",	1.65"	2.2",	1.6"	1.90"	1.65"	2.65",	1.56"
BOT 45 NOTS	1.50",	1.00"	1.25",	1.0"	1.05"	1.50"	1.90",	1.25"
BOT 35 NOTS	1.40",	0.75"	1.00",	1.0"	0.85"	1.00"	0.80",	0.80"
FMD-40	1.55",	1.60"	2.22",	2.44"	1.80"	1.45"	2.22",	1.64"
BOT 45 NOTS	1.40",	1.40"	1.20",	1.95"	1.55"	1.40"	1.85",	1.40"
BOT 35 NOTS	0.90",	0.65"	0.80"	0.85"	0.85"	0.60"	1.25",	1.30"
WIN FMC-55	1.85",	1.20"	1.78",	2.06"	2.10",	2.15"	1.34",	2.44"
BOT 45 NOTS	1.30",	1.20"	1.20",	1.65"	1.70",	1.75"	0.95"	1.90"
BOT 35 NOTS	1.15",	0.85"	0.65"	0.95"	0.20",	0.85"	0.40"	1.35"
Σ GRAND TOT	23.20		25.80		24.35		27.00	
Σ 55 NOTS	9.70		12.30		11.05		11.85	
Σ 45 NOTS	7.80		8.25		8.95		9.25	
Σ 35 NOTS	5.70		5.25		4.35		5.90	
$\bar{X}$ GRAND	~~1.29~~		~~1.43~~		~~1.35~~		~~1.50~~	
$\bar{X}$ 55 NOTS	1.62		2.05		1.84		1.98	
$\bar{X}$ 45 NOTS	1.30		1.38		1.49		1.54	
$\bar{X}$ 35 NOTS	0.95		0.88		0.73		0.98	
σ 55 NOTS	0.24		0.31		0.27		0.53	
σ 45 NOTS	0.18		0.35		0.25		0.40	
σ 35 NOTS	0.28		0.14		0.29		0.38	
$\bar{X}$ + 3σ	2.34		2.98		2.65		3.57	
$\bar{X}$ + 3σ	1.84		2.43		2.24		2.74	
$\bar{X}$ + 3σ	0.94		1.30		1.60		2.12	

OCT. 10, 85 A.

WRITER GUNS

B7512428 (12), B7511606 (14), B7512214 (14),
B7508065 (12), B7512261 (14), B7512192 (14)

ACCURACY
(TWIST, CHAMBER, BULLET WEIGHTS)

{B7511966 (12), B7511642 (14)

FED 40
WIN 65
GALLERY 20TS (PSP & PLHP)

{ (223 REM VS 5.56 GOVT) - FED 40, WIN 65, RPLHP,

ENDURANCE (STOCK)
100 RDS. FACTORY (SAVE PLHP AMMO - GOOD STUFF,

100 RDS. (EXPERIMENTAL PAINTER STOCK)

XP 100 - 223REM DESIGN TEST
PROGRAM. 8-02-85 AAW.

1. DONE OBTAIN TEN 22CFR BARREL BLANKS (MODEL SEVEN)
   (a) FIVE - 222 REM FOR 14 INCH TWIST
   (b) FIVE - 223 REM FOR 12 INCH TWIST.

2. DONE TURN BARREL CONTOUR AND TRIM LENGTH TO THAT OF 7mm BR REM BARREL BLANK.

3. DONE WITH DRAW FROM WARE HOUSE TEN XP-100 PISTOLS OF 221 CALIBER.

4. DONE HAVE BARRELS (IN CUSTOM SHOP) REMOVED FROM RECEIVERS AND DELIVER ACTIONS TO CUSTOM SHOP.

5. DONE HAVE BARREL CHANNEL OR STOCKS RE CUT TO THAT OF 7mm BR REM BARREL CHANNEL OR OBTAIN TEN STOCKS WITH 7mm BR REM BARREL CONTOUR VIA INVENTORY WITHDRAWAL.

6. DONE HAVE CUSTOM SHOP FABRICATE XP 100 - 223REM PISTOLS. FIVE TO BE STAMPED (12) FOR 12 INCH TWIST AND FIVE TO BE STAMPED (14) FOR 14 INCH TWIST.

7. DONE (PART) PROOF AND ACCURACY TEST ALL TEN PISTOLS WITH 223 REM. AMMO. WITH THREE MAJOR BRANDS (R, W, F.).

(a) ACCURACY TEST MAY BE BOTH IN GALLERY FIXTURE AND HAND FIRED. (100 YARD & 200 YARD INDOOR RANGE(S))?

DONE IN PART & FINALIZE TEST RESULTS AND PREPARE TRANSMITTAL DETAILS FOR XP-100 - 223 REM.

9. DONE IN PART SELECT ONE (12) AND ONE (14) XP100 PISTOL AND HAVE CHAMBER RE CUT (DEEPER THROAT) TO THAT OF 5.56.

10. REFIRE ACCURACY OF ALTERED GUN AND ONE CONTROL GUN.

DONE FINALIZE SECOND TEST RESULTS AND COMPARE TO FIRST ACCURACY TEST.

COMMENT: THE LONG RANGE XP100 BOLT ACTION PISTOL ACCURACY IS EXPECTED TO BE A FUNCTION OF CHAMBER PRESSURE VARIATION(S). A (14) INCH TWIST IS MORE FORGIVING THAN A (12) INCH TWIST BARREL. THE DEEPER THROATED 5.56 IS EXPECTED TO BE MORE FORGIVING THAN A LESSER THROATED 223 REM. CHAMBER. IF SIGNIFICANT INDICATIONS OF ONE GUN WILL INDICATE IF A LARGER SAMPLE IS REQUIRED FOR VERIFICATION OF ACCURACY DIFFERENCE.

NOT TIME

12. WHEN RECUTTING THE 223 REM CHAMBER TO THE 5.56 CHAMBER STRAIN GAGE(S) SHOULD BE PLACED ON GUN FOR STRAIN GAGE PRESSURE DATA AND MUZZLE VELOCITY IF MEAS & TEST TIME ALLOWS.

DEC. 13, 1995

THE (EX) DOUBLE P.C. COATED STOCK WAS ASSEMBLED TO XP-100 CALIBER 223 REM. S.N. B7512507 PISTOL BARREL-ACTION FOR STOCK ENDURANCE FIRING TESTS. THE TEST WILL BE CONDUCTED BY SELF WITH PISTOL MOUNTED IN A SOFT MOUNT TEST FIXTURE AND THE TRIGGER PULLED VIA A LANYARD. OBJECTIVE OF THIS TEST ACTIVITY IS AS FOLLOWS:

- DETERMINE IF DECOAT PROCESS HAS ALTERED XP 100 STOCK STRENGTH.
- DETERMINE IF PC COAT PROCESS HAS ALTERED XP 100 STOCK FIT TO BARREL-ACTION.
- DETERMINE PC BOND TO ZYTEL STOCK AT SHOOTING STRESS AND USAGE CONDITIONS.

A.

DEC 13, 87

- STOCK ASSEMBLED TO BARREL-ACTION INDICATES TIGHT FIT ALONG BARREL CHANNEL. A SECTION ON THE FORE END TIP ONE INCH LONG X 3/8 IN WIDE FRACTURED FROM STOCK ASSEMBLY WHEN BARREL WAS FORCED INTO BARREL CHANNEL. AT THE FRACTURE CONTEX INDICATED P.C. COAT LAYER SEPARATION BETWEEN COAT 2 AND COAT 1. THE STOCK [redacted] IS TIGHT AT BARREL OD MAJOR REDUCTION AT OR NEAL

BARBER - PRESALE R 0131615

FIELD CYCLE TEST - CENTERFIRE

REPROT NO.: _____ PAGE NO. 1

DATE: DEC 20 MODEL: XP100 GAUGE: 223 REM SERIAL NO. B7512507

PREVIOUS ROUNDS 0

TEST TITLE: PC STOCK ENDURANCE/EVALUATION

TTL. RDS. FIRED: _____
TTL. MALFUNCTIONS: _____
MALFUNCTION RATE: _____

"MALFUNCTIONS"

	SHOOTER	NO. OF ROUNDS FIRED	FIRING	FAILED SHELL	DON'T EJECT	DON'T SLOW BACK	DON'T LOCK OPEN	FEED FROM MAG. 1st LATCH	FEED FROM MAG. 2nd LATCH	SHELL STEMS MAG.	POWER OVERRIDE	DON'T LOCK UP	STEM CHAMBER HIGH	STEM CHAMBER LOW	STEM CHAMBER HIGH	STEM CHAMBER LEFT	SHELL JUMPS MAG.	FOLLOWER BINDS	LOADING	BOLT OVERRIDE	ACTION BANG UP	DON'T EXTRACT	BREAKAGES	ADJUSTMENTS	REPLACEMENTS			
R223R1	A	130					COPE		A0	3L	DC	576															OK	AY
R223R2	A	120					COPE		105	LD	00	58																
TOTAL (PER MAL.)																												

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131615

	10
R1	20
	20
	20
	20
	20
	20
	130
	20
R2	20
	20
	20
	20
	20
	120

DISCLAIMER (IF NEEDED)

DISCLAIMER

14 IN

GUN	HS	VS	GS
192 ✓	.960	.878	1.093 ✓
192 ✓	1.656	.757	1.695 ✓
261 ✓	1.728	.760	1.889 ✓
261 ✓	1.250	1.078	1.628 ✓
214 ✓	1.738	.990	1.792 ✓
214 ✓	1.505	1.261	1.829 ✓
606 ✓	1.258	.777	1.318 ✓
606 ✓	1.011	1.174	1.512 ✓
642 ✓	1.838	1.313	2.024 ✓
642 ✓	.851	.991	1.014

AVE 1.5794 $\bar{X}$

$\sigma = .34$

12 IN

GUN	HS	VS	GS
428	.774	.446	.798 ✓
428	1.302	.651	1.397 ✓
065 ✓	2.071	1.378	2.322 ✓
065 ✓	1.901	1.117	1.915 ✓
966 ✓	1.592	2.422	2.428 ✓
966 ✓	1.017	2.251	2.251 ✓
507 ✓	.615	2.078	2.105 ✓
507 ✓	1.251	.404	1.251 ✓
475 ✓	1.282	.456	1.314 ✓
475 ✓	.892	1.166	1.468

AVE 1.7249 $\bar{X}$

$\sigma = .55$

To:W.H.Coleman- J.W.Bower

From: A.A.Husick

Subject: XP-100 223Rem Report

Date: January 20, 1986

Attached are xerox copies of XP-100 223Rem. report sheets with comments. This response is to answer these comments.

1. The XP-100 223Rem. pistol transmittal was with 14 inch twist per indications of testing 12 inch twist vs. 14 inch twist accuracy data.(JWB)

2. The 223Rem. chamber vs. 5.56 Govt chamber test indicated both the 12 inch twist and the 14 inch twist pistols had a larger group size when retested with 5.56 Govt chambers.

12 inch twist:	223Rem	ave 1.62
	5.56Govt	ave 2.05
14 inch twist:	223Rem	ave 1.84
	5.56Govt	ave 1.98

The best shooting pistols were used for Writer's Seminar Pistols and thus I used available remaining XP-100 samples,in this case the 14 inch twist sample was larger than the 12 inch twist sample.(WHC)

3.With this report I was the best qualified to write the Design Conformation Test Report in that design people fired accuracy and endurance while test lab people fired only the 223Rem. vs. 5.56Govt chamber accuracy test.(JWB)

(3) Xc: W.H. Coleman, II
J.W. Bower
T.C. Douglas
File

A Husick
see Pg 3

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.

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

Seem to have accuracy inversion 12" better than 14" Twist versus Pg 2-14" better than 12" Any explanation?

xc: T.C. Douglas.

To: W.H.Coleman- J.W.Bower

From: A.A.Husick

Subject: XP-100 223Rem Report

Date: January 20, 1986

Attached are xerox copies of XP-100 223Rem. report sheets with comments. This response is to answer these comments.

1. The XP-100 223Rem. pistol transmittal was with 14 inch twist per indications of testing 12 inch twist vs. 14 inch twist accuracy data.(JWB)

2. The 223Rem. chamber vs. 5.56 Govt chamber test indicated both the 12 inch twist and the 14 inch twist pistols had a larger group size when retested with 5.56 Govt chambers.

12 inch twist:	223Rem	ave 1.62
	5.56Govt	ave 2.05
14 inch twist:	223Rem	ave 1.84
	5.56Govt	ave 1.98

The best shooting pistols were used for Writer's Seminar Pistols and thus I used available remaining XP-100 samples, in this case the 14 inch twist sample was larger than the 12 inch twist sample.(WHC)

3. With this report I was the best qualified to write the Design Conformation Test Report in that design people fired accuracy and endurance while test lab people fired only the 223Rem. vs. 5.56Govt chamber accuracy test.(JWB)

FROM: 10/14/85

* THIS IS A SUMMARY OF XP-100 · 223 REM ACCURACY SHOOTING WITH 12 VS 14 INCH TWIST USING REM PLHP AMMO.

* I WILL NEED ACCURACY OF FEO 40 GRAIN AND WIN 65 GRAIN FACTORY AMMO. TWO GUNS (ONE OF 12" TWIST & ONE OF 14" TWIST) ARE IN MY OFFICE. ALSO THREE LOTS OF GALLERY AMMO FIRED IN THE GALLERY SHOULD BE FIRED. SAMPLE IS LOCKED UP IN PROOF CABINET.

* TRANSMITTAL OF DRAWING MUST BE PRIOR TO NOV. 1, 1985 AND WRITER SEMINAR PISTOLS HAVE SAME

TIME COMMITMENTS

.223 XP-100

1. 7512428	12"	TWIST	1+2	2X5 SHOT GPS.	LT.	2 1/2 X
3. 7511606	14"	"	3+4	2X5 SHOT "	LT.	2 1/2 X
7512214	14"	"	5+6	2X5 SHOT "	LT	12X
7508065	12"	"	7+8	2X5 SHOT "	RT.	12X
7512261	14"	"	9+10	2X5 SHOT	RT	12X
7512192	14"	"	11+12	2X5 SHOT	LT	12X
7511966	12"	"	13+14	2X5 SHOT	CTR	12X
7512507	12"		15+16	2X5 SHOT	LEFT	12X
7511642	14"		17+18	2X5 SHOT	LEFT+CTR	12X
7512475	12"		19+20	2X5 SHOT	LEFT	12X

FOR ENCLOSURE DATE

TO:

FROM:

Please Discuss With	For Approval	For Attention	For Information	Note and Forward To File	Note and Return To Sender	Forwarded Per Your Request

Guns are proofed
Need to be stamped

Report No. B52731

TEST & MEASUREMENT LAB WORK REQUEST

AREA OF TESTING

___ Safety Related
___ Competitive Evaluation
X New Design
X Design Change
___ Plant Assistance
___ Litigation
___ Warehouse Audit
___ Cost Reduction
Stake ___
X Other ADD NEW CALIBER

REPORT REQ'D.

FORMAL ___
TEST RESULTS ONLY X

DATE REQUESTED: SEPT 30, 85
DATE NEEDED BY: OCT 10, 85
REQUESTED BY: A.A. HUGICK
WORK ORDER NO: E0237-314-Y

TEST TYPE

___ Fatigue Test
___ Function Test
X Accuracy Test
___ Ammunition Test
___ Environmental Test
___ Customer Complaint
___ Dry Cycle Test
___ Measurements
___ Endurance Test
___ Photo/Video
___ Other ___

EXPLAIN IN DETAIL THE REASON FOR THIS TEST:

TEN MODEL XP-100 223 REM PISTOLS FABRICATED IN CUSTOM SHOP FOR DESIGN TEST. FIVE HAVE 12 INCH TWIST AND FIVE HAVE 14 INCH TWIST, WITH TWIST MARKED ON BOLT HANDLE. ACCURACY TEST FOR TWIST COMPARISON USING CURRENT 223 REM M700 AM NO. SPECIFICATION. ALSO INCLUDE LIGHTEST FACTORY AMMO BULLET WEIGHT (EUP 40GRAIN) AND HEAVIEST FACTORY AMMO BULLET WEIGHT (WIN. 65GRAIN). FRONTIER (HORNADY) AMMO LIST 55GRAIN BULLET WEIGHT AND DMC ?. (OVER) ON BACK.

GUNS REQUIRED:

NOTE: NO firearms or parts will be tested in the Labs unless they are accompanied by a Work Request, and both are delivered to the Labs by the designer or engineer. All Work Requests are to be filled out in detail. No Exceptions.

DATE COMPLETED: ___
TEST COMPLETED BY: ___
REPORT DATE: ___

LC GUNS SHOULD BE JACK
NOT FOR ACCURACY. ~~[illegible]~~ WITH
ALLEY SPECC 223 REM M200 AMMO.
IRE TWO OR EACH TWIST WITH LIGH
OGRAM) AND HEAVY (65 GRAM) BULLE

AME TWO SHOULD ALSO BE
AND FIRED IN RESEARCH RANGE
THAT VARIATIONS IN BORE
ISSURE ~~[illegible]~~ MORE PROBLEM W
ISTOLS OVER RIFLES, AND THUS
TWIST AND THROAT (5.56) VAR
HOW UP WITH HAND SHOOTING OVE
IXTURE "IF" CRITICAL.

SE SAME ACCURACY SPEC O
ROUND SIZE AS XP100 221.

I WANT TARGETS SUCH AS
EVIEW BULLET WEIGHT VARIATIONS AND
TWIST VARIATIONS. (SHAPE OR BULLET NOSE ROUNDNESS)

ADAM,

XP-100's will be best shot for accuracy in jacks without stocks so leave the stocks off. Snedeker needs a test requested also.

Tony

OCT. 1, 85
A. A. HUGICK

SAFE
ut & TRIGGER PULL
: & DUMMY UNLOAD.
OOF
ADSORCE
ACCURACY (AMMO = 700 VARMINT 22).
(ACCURACY SPEC = 221 FIREARM SPEC.)
ALL TEN RIFLES AND SAME TARGETS,
WANT TO LOOK AT BULLET HOLE(S)
FOR KEY HOLE POTENTIAL

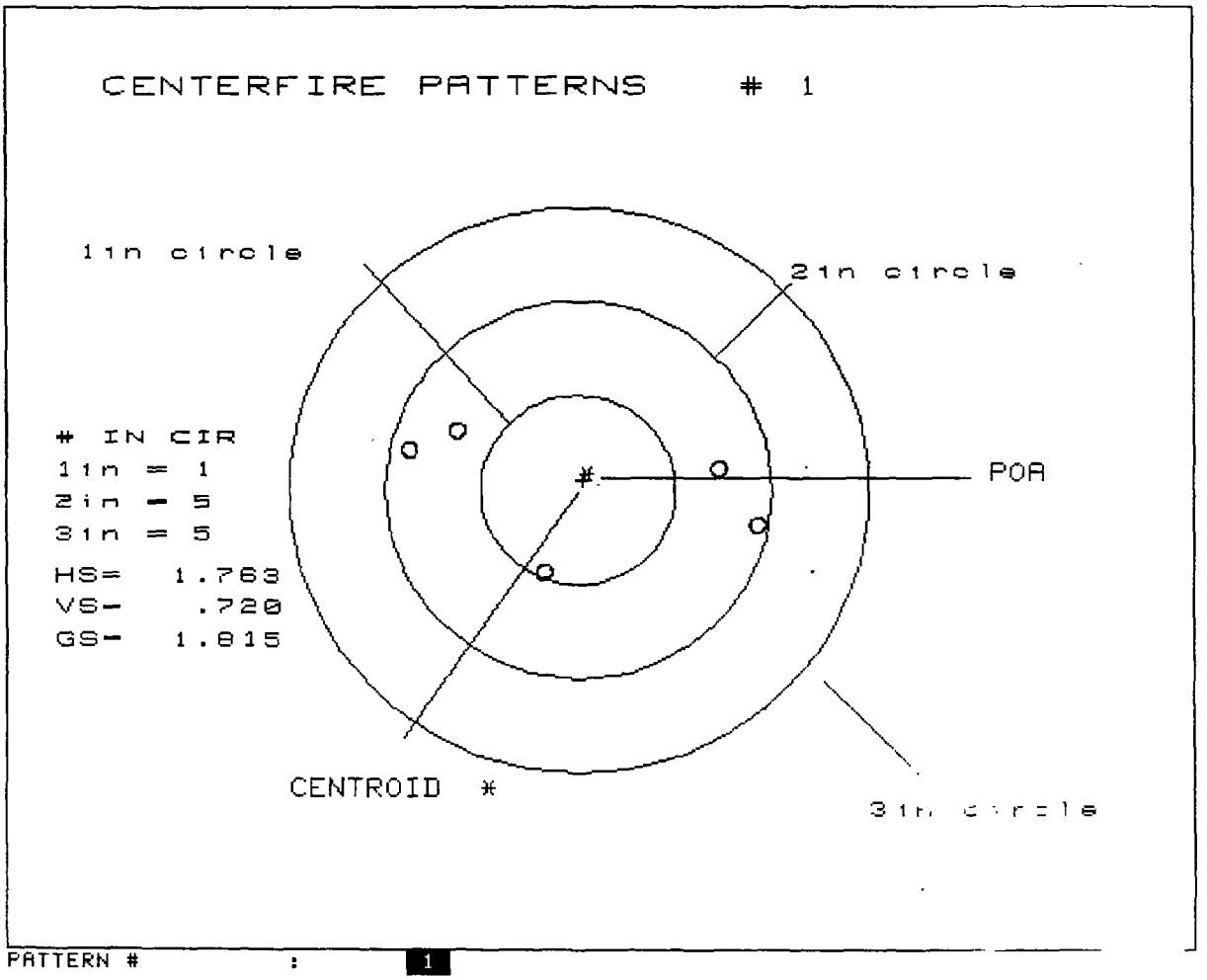
SHOOT TWO WITH 12 ON BOLT HANDLE AND
SHOOT TWO WITH 14 ON BOLT HANDLE W.
WIN 65 GRAM BULLET AND RED 40 GRAM BULLET
THIS IS THE LIGHTEST AND HEAVIEST
FACTORY BULLET WEIGHTS AGAIN SAME TARG

REVIEW RESULT(S) PRIOR TO FUNCTION & OR
ENDURANCE TESTING.

FINAL TESTING MAY BE AS WRITTEN GUNS ON
LPB 223 REM VS 5.56 GOVT CHAMBER RELATED.

#1

14" TWIST

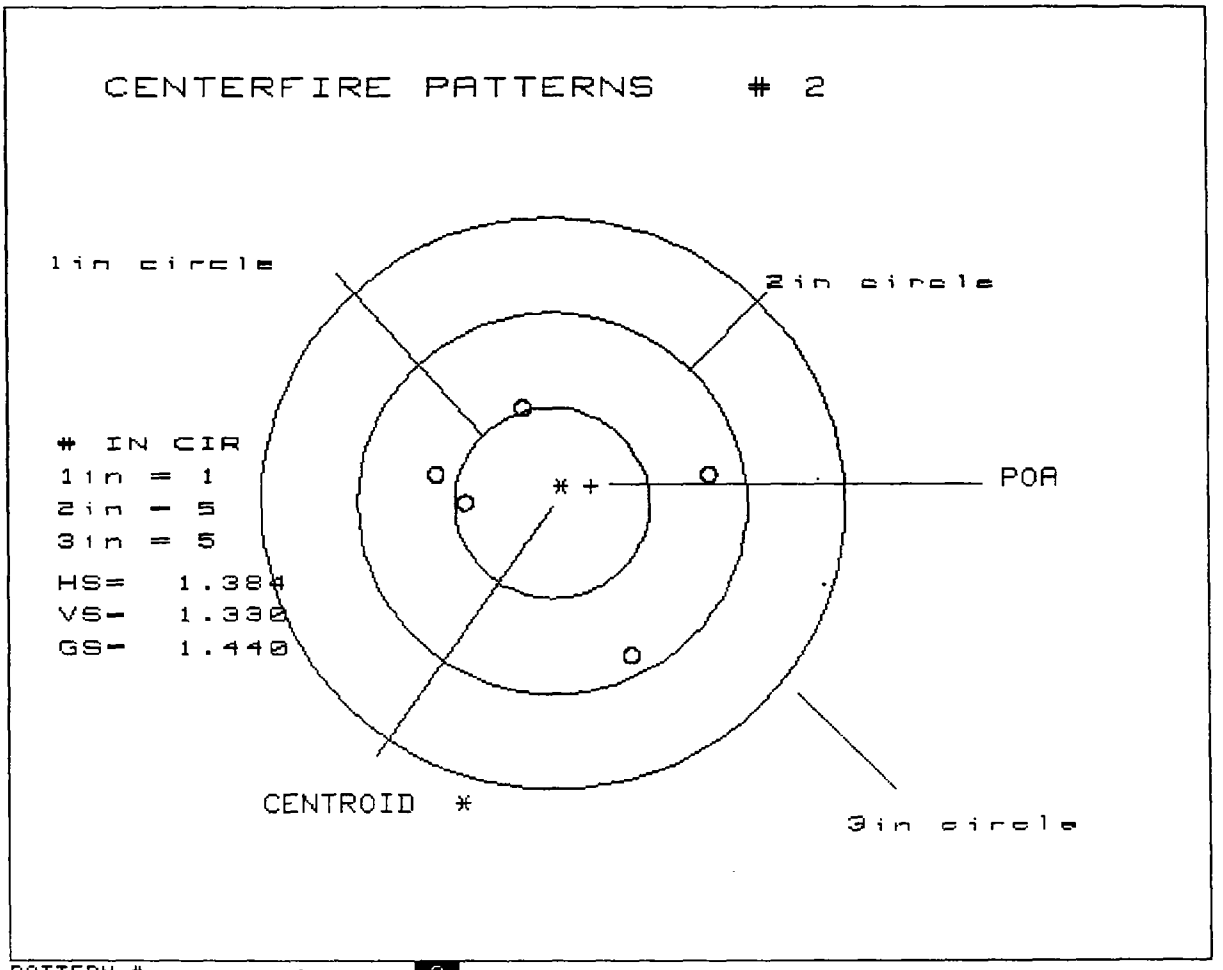


PATTERN #	:	1	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.884	-.879
MINIMUM X & Y	:	.239	-.481
CENTROID X & Y	:	-.026	-.064
POA TO CENTROID RAD	:	.0692	
MIN RADIUS	:	.4484	
MEAN RADIUS	:	.7319	
MAX RADIUS	:	.9341	
HORIZONTAL SPREAD	:	1.7630	
VERTICAL SPREAD	:	.7200	
EXTREME SPREAD	:	1.8152	

*B 751642 - XP-100 :223

FED. 40GR H.P.
LOT 33B-5649

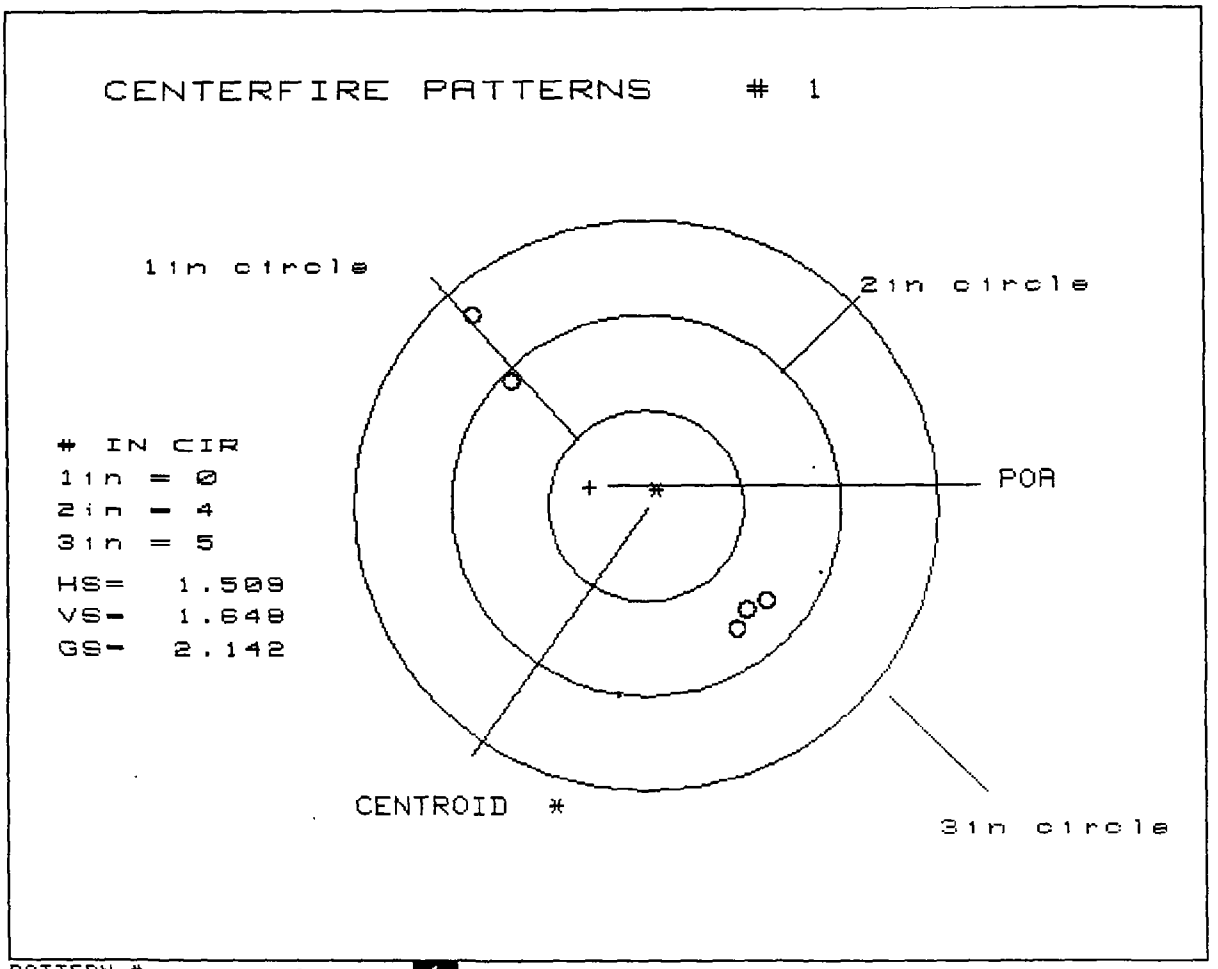
NUMBER IN ONE INCH CIRCLE	=	1
NUMBER IN TWO INCH CIRCLE	=	5
NUMBER IN THREE INCH CIRCLE	=	5



PATTERN #	:	2	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.576	-.808
MINIMUM X & Y	:	.416	-.914
CENTROID X & Y	:	-.202	-.101
POA TO CENTROID RAD	:	.2260	
MIN RADIUS	:	.4290	
MEAN RADIUS	:	.6582	
MAX RADIUS	:	.9079	
HORIZONTAL SPREAD	:	1.3840	
VERTICAL SPREAD	:	1.3300	
EXTREME SPREAD	:	1.4404	

NUMBER IN ONE INCH CIRCLE	=	1
NUMBER IN TWO INCH CIRCLE	=	5
NUMBER IN THREE INCH CIRCLE	=	5

#2 14" TWIST



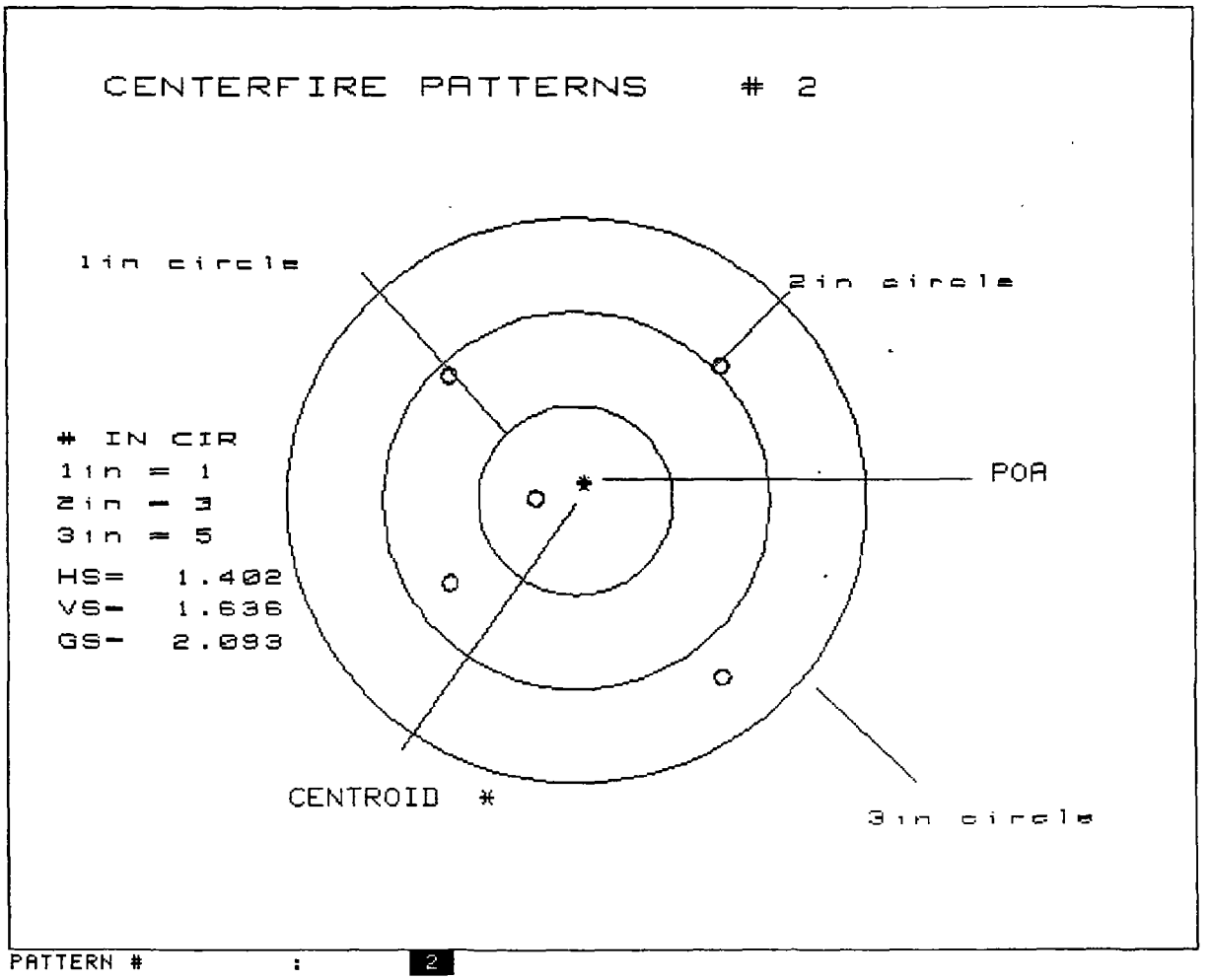
PATTERN # :	1	
NUMBER OF SHOTS :	5	
MAXIMUM X & Y :	.886	-.623
MINIMUM X & Y :	.901	-.747
CENTROID X & Y :	.288	-.108
POA TO CENTROID RAD:	.3074	
MIN RADIUS :	.7518	
MEAN RADIUS :	.9186	
MAX RADIUS :	1.3593	
HORIZONTAL SPREAD :	1.5090	
VERTICAL SPREAD :	1.6480	
EXTREME SPREAD :	2.1424	

NUMBER IN ONE INCH CIRCLE	=	0
NUMBER IN TWO INCH CIRCLE	=	4
NUMBER IN THREE INCH CIRCLE	=	5

B-751/642 XP-100_223

WINCHESTER 55GR. FMC,

LOT- 38 SM 90

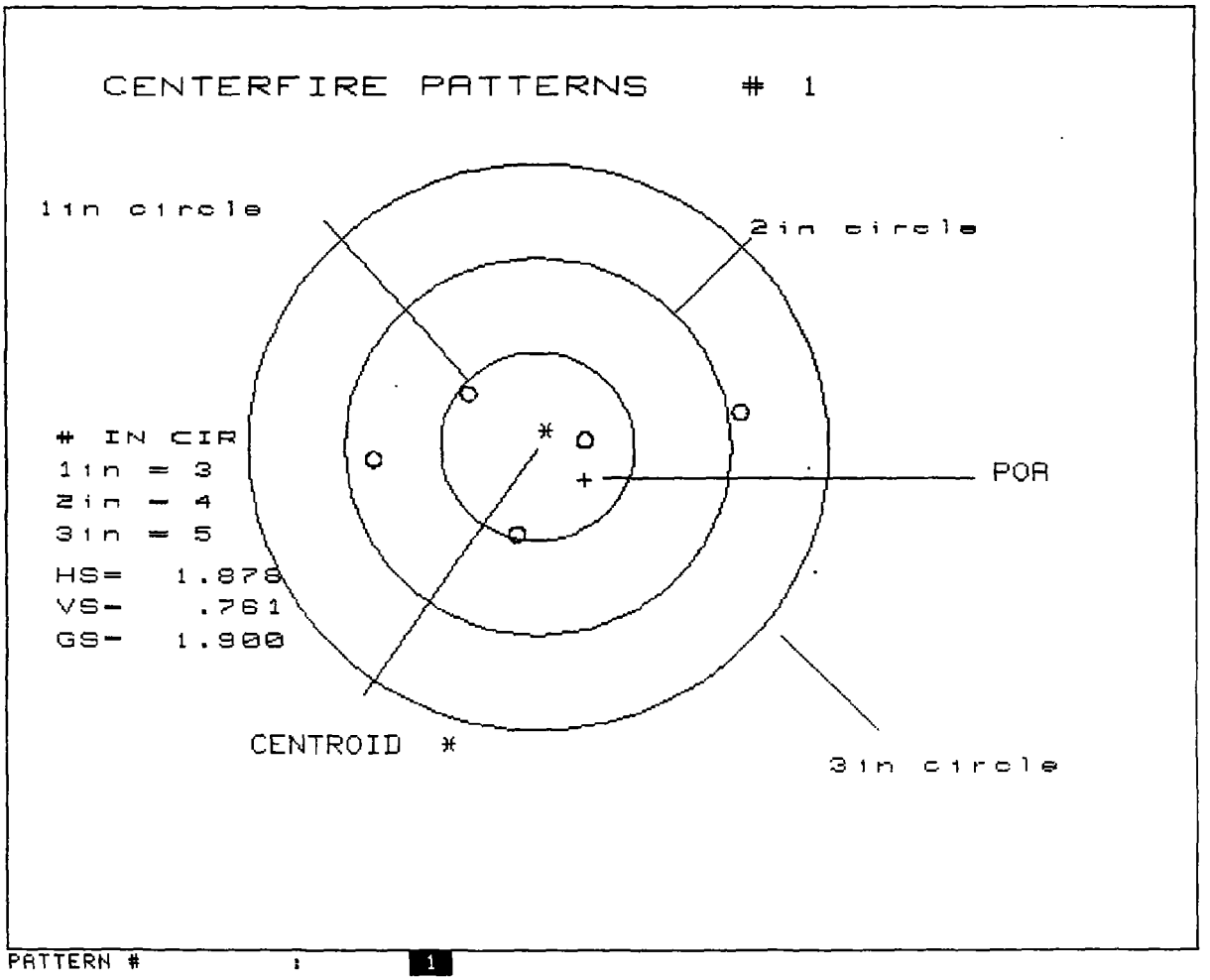


PATTERN #	:	2	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.709	-.693
MINIMUM X & Y	:	.608	-1.028
CENTROID X & Y	:	-.049	-.112
POA TO CENTROID RAD	:	.1225	
MIN RADIUS	:	.2233	
MEAN RADIUS	:	.8250	
MAX RADIUS	:	1.1885	
HORIZONTAL SPREAD	:	1.4020	
VERTICAL SPREAD	:	1.6360	
EXTREME SPREAD	:	2.0930	

NUMBER IN ONE INCH CIRCLE	=	1
NUMBER IN TWO INCH CIRCLE	=	3
NUMBER IN THREE INCH CIRCLE	=	5

#3

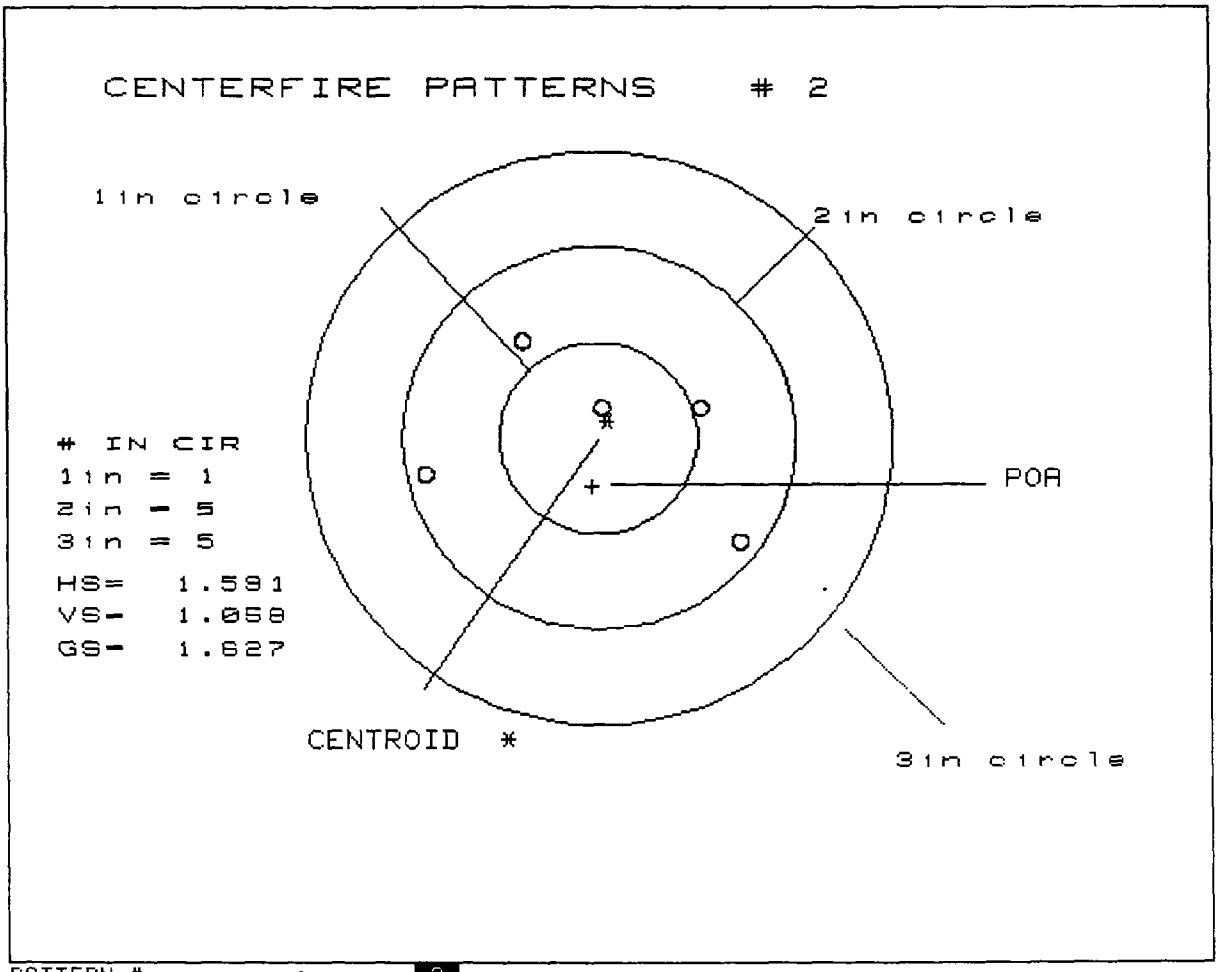
14" TWIST



PATTERN #	:	1	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.782	-1.096
MINIMUM X & Y	:	.461	-.300
CENTROID X & Y	:	-.246	.166
POA TO CENTROID RAD	:	.2969	
MIN RADIUS	:	.2535	
MEAN RADIUS	:	.6158	
MAX RADIUS	:	1.0493	
HORIZONTAL SPREAD	:	1.8780	
VERTICAL SPREAD	:	.7610	
EXTREME SPREAD	:	1.8997	

NUMBER IN ONE INCH CIRCLE	=	3
NUMBER IN TWO INCH CIRCLE	=	4
NUMBER IN THREE INCH CIRCLE	=	5

B-7511642 XP-100-223
REM. GALLERY Ammo
55 GR. PSP
LOT 023 OD 3640

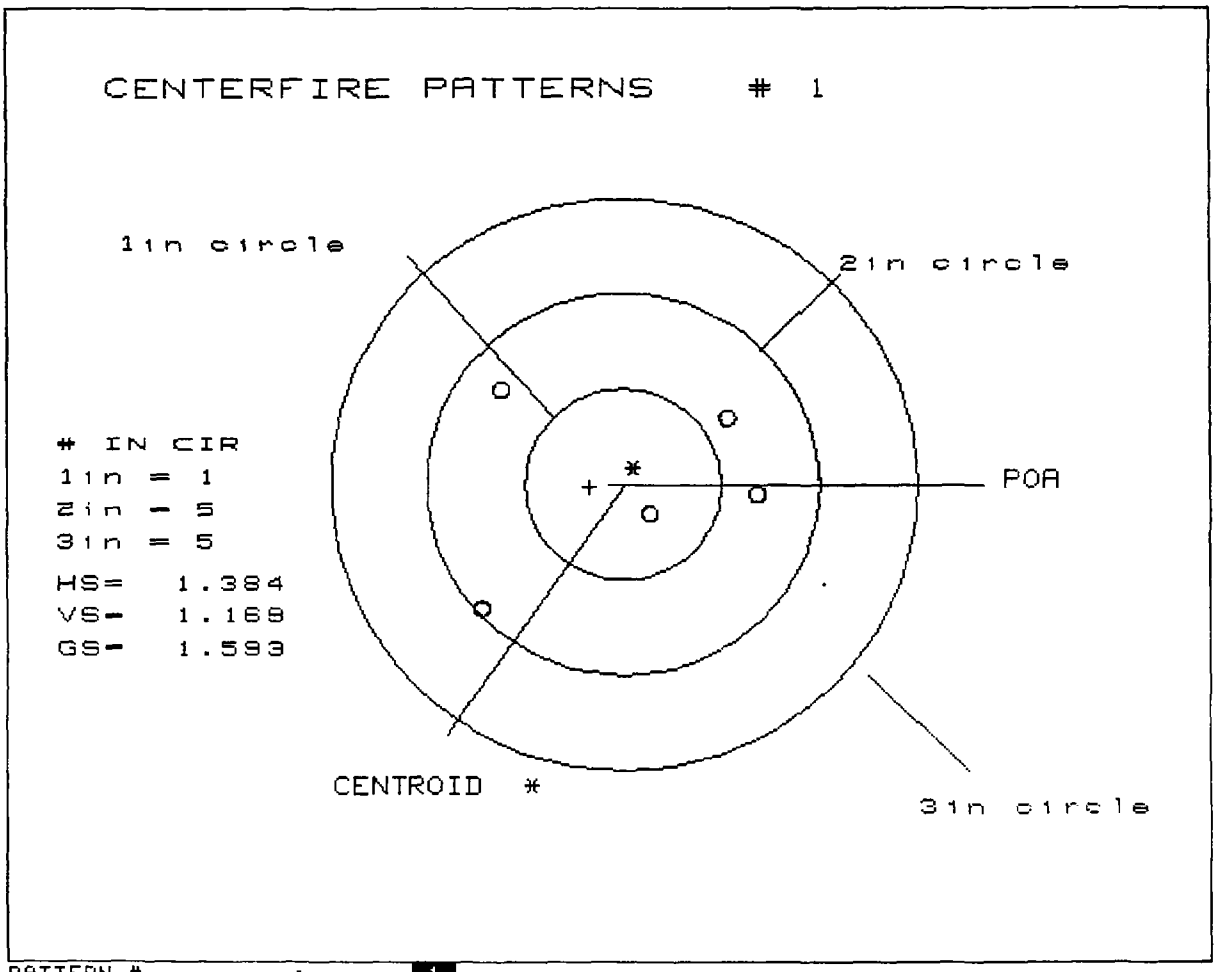


PATTERN #	:	2	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.756	-.835
MINIMUM X & Y	:	.746	-.312
CENTROID X & Y	:	.032	.243
POA TO CENTROID RAD	:	.2453	
MIN RADIUS	:	.1333	
MEAN RADIUS	:	.6211	
MAX RADIUS	:	.9125	
HORIZONTAL SPREAD	:	1.5910	
VERTICAL SPREAD	:	1.0580	
EXTREME SPREAD	:	1.6273	

NUMBER IN ONE INCH CIRCLE	=	1
NUMBER IN TWO INCH CIRCLE	=	5
NUMBER IN THREE INCH CIRCLE	=	5

12" TWIST

#1



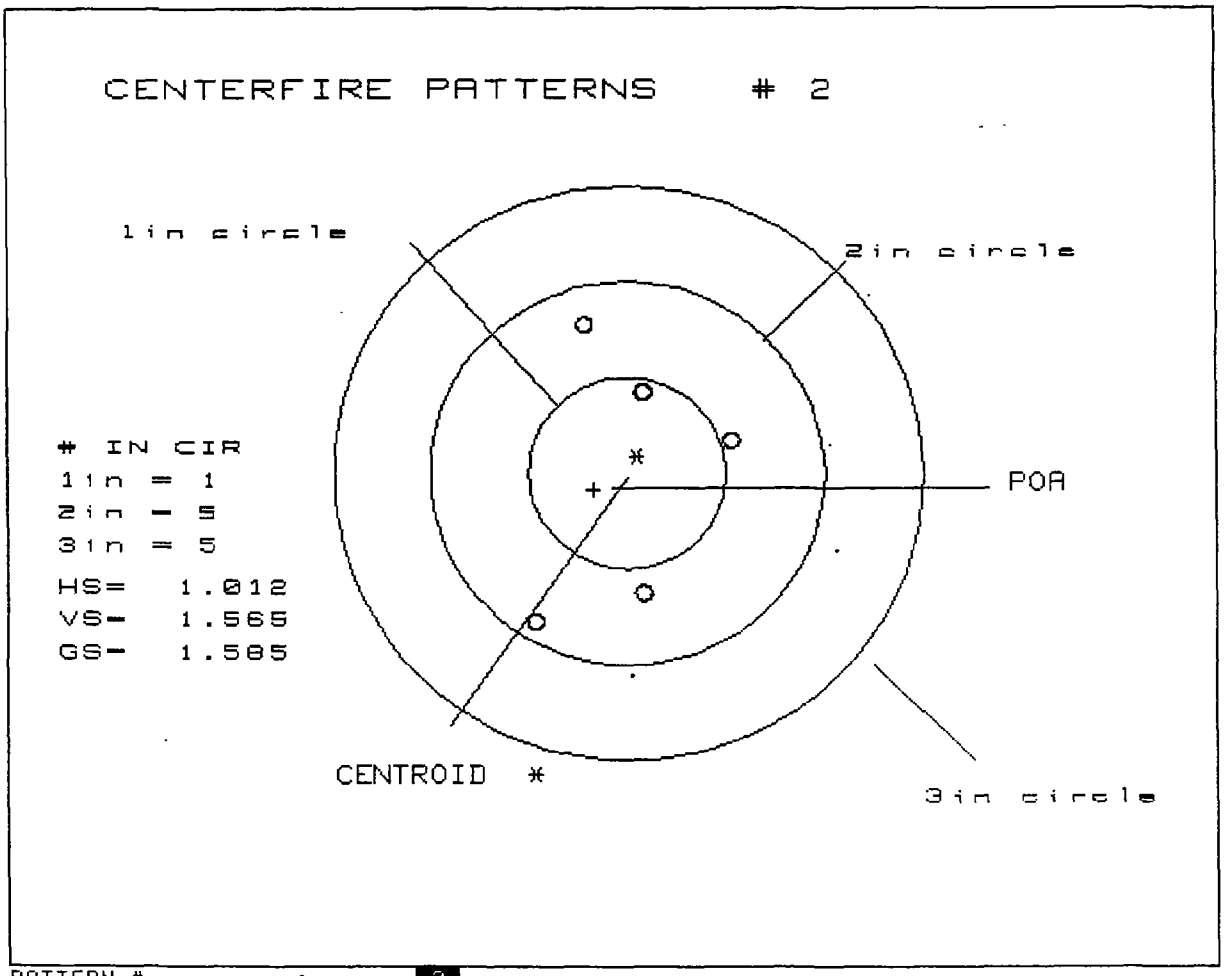
PATTERN #	:	1	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.831	-.553
MINIMUM X & Y	:	.514	-.655
CENTROID X & Y	:	.169	.002
POA TO CENTROID RAD	:	.1690	
MIN RADIUS	:	.2252	
MEAN RADIUS	:	.6565	
MAX RADIUS	:	.9763	
HORIZONTAL SPREAD	:	1.3840	
VERTICAL SPREAD	:	1.1690	
EXTREME SPREAD	:	1.5930	

NUMBER IN ONE INCH CIRCLE	=	1
NUMBER IN TWO INCH CIRCLE	=	5
NUMBER IN THREE INCH CIRCLE	=	5

B-75 11966 · XP-100 .223

FED. 40 GR. H.P.

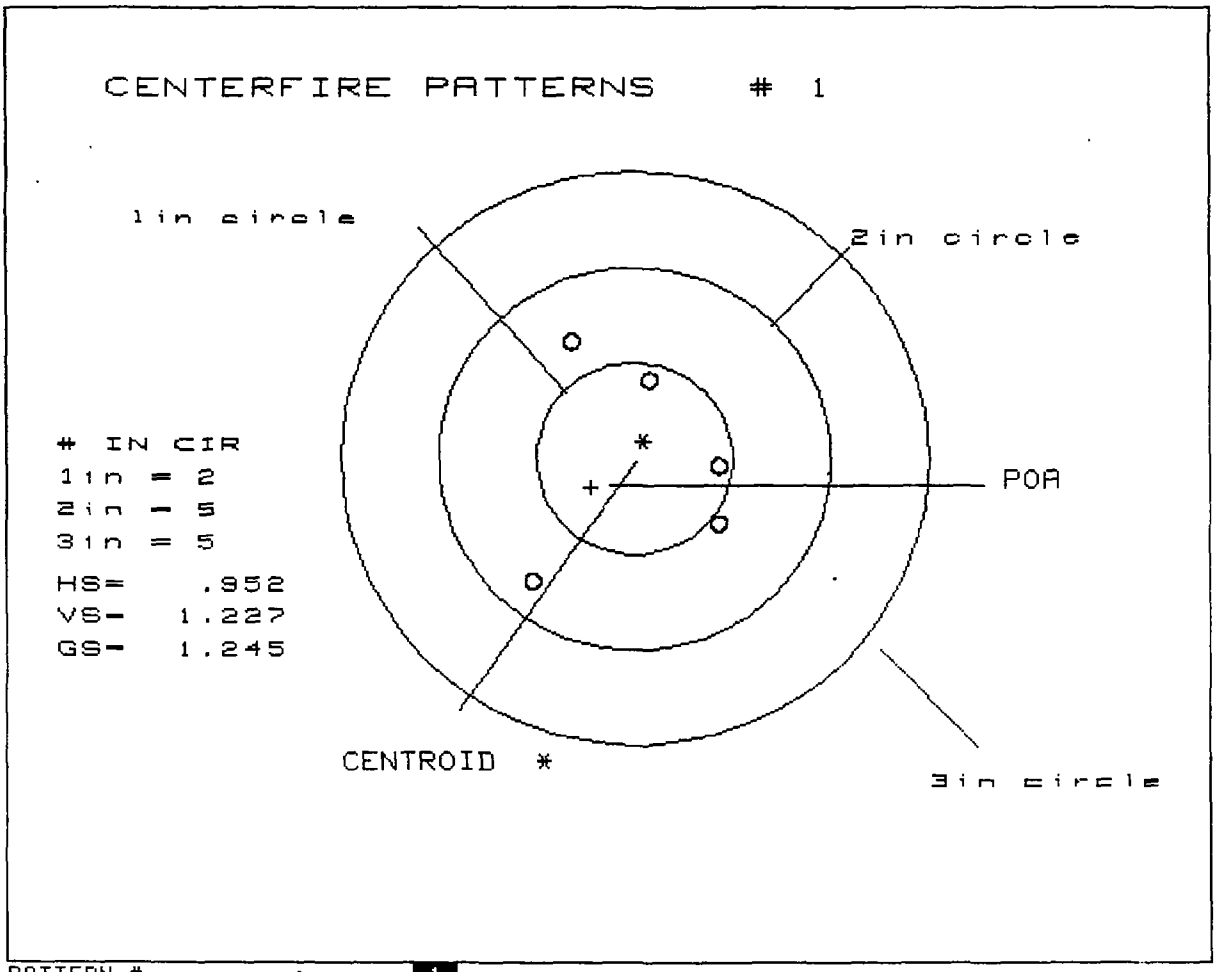
LOT. 33B-5649



PATTERN #	:	2
NUMBER OF SHOTS	:	5
MAXIMUM X & Y	:	.690 -.322
MINIMUM X & Y	:	.850 -.715
CENTROID X & Y	:	.169 .075
POA TO CENTROID RAD	:	.1847
MIN RADIUS	:	.4514
MEAN RADIUS	:	.6731
MAX RADIUS	:	.9300
HORIZONTAL SPREAD	:	1.0120
VERTICAL SPREAD	:	1.5650
EXTREME SPREAD	:	1.5853

NUMBER IN ONE INCH CIRCLE	=	1
NUMBER IN TWO INCH CIRCLE	=	5
NUMBER IN THREE INCH CIRCLE	=	5

#2 12" TWIST



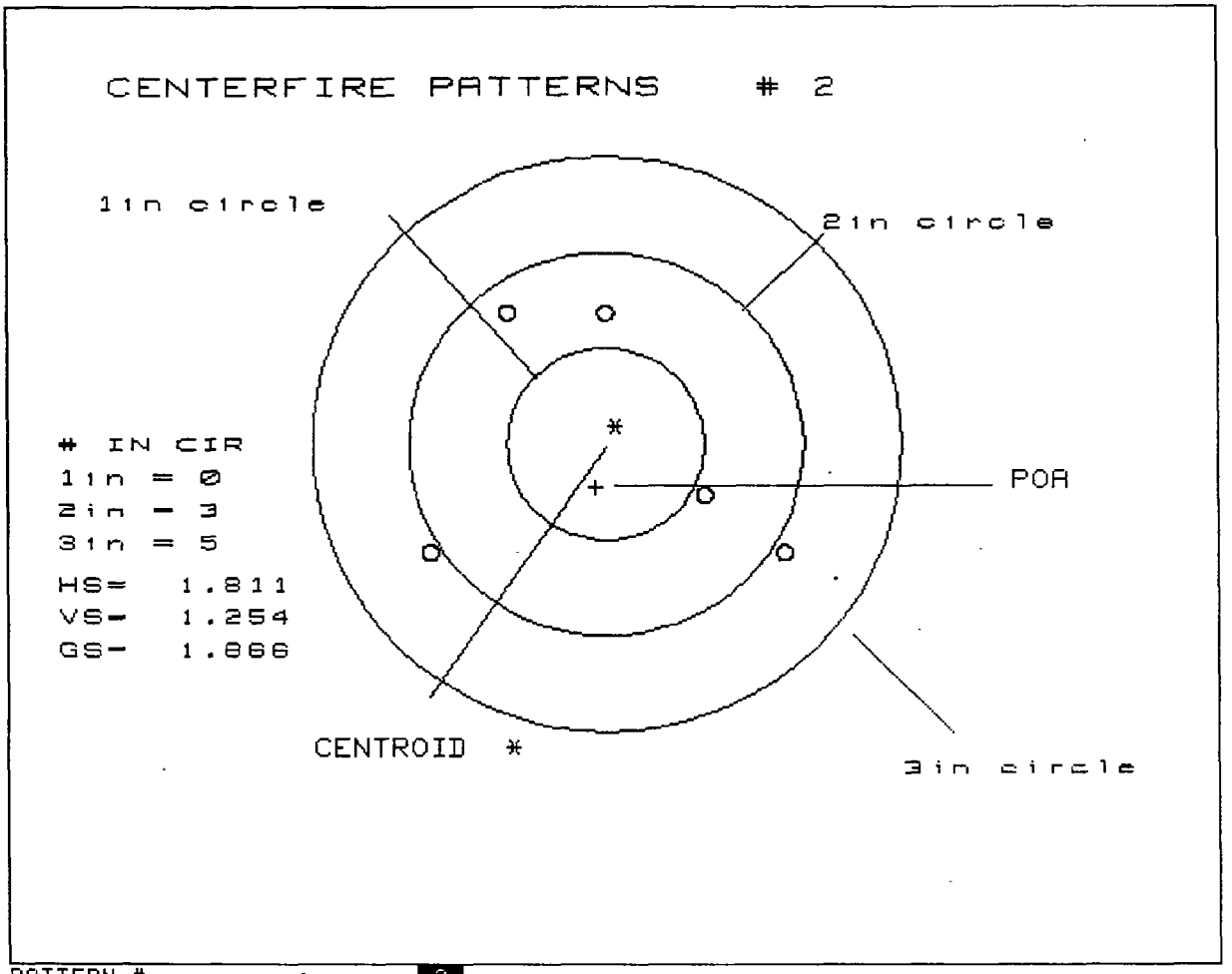
PATTERN #	:	1	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.631	-.321
MINIMUM X & Y	:	.744	-.483
CENTROID X & Y	:	.221	.139
POA TO CENTROID RAD	:	.2616	
MIN RADIUS	:	.4139	
MEAN RADIUS	:	.5818	
MAX RADIUS	:	.8256	
HORIZONTAL SPREAD	:	.9520	
VERTICAL SPREAD	:	1.2270	
EXTREME SPREAD	:	1.2447	

NUMBER IN ONE INCH CIRCLE	=	2
NUMBER IN TWO INCH CIRCLE	=	5
NUMBER IN THREE INCH CIRCLE	=	5

B 7511966- XP-100-.223

WIN. 55GR. F.M.C.

LOT. 38 SM 90

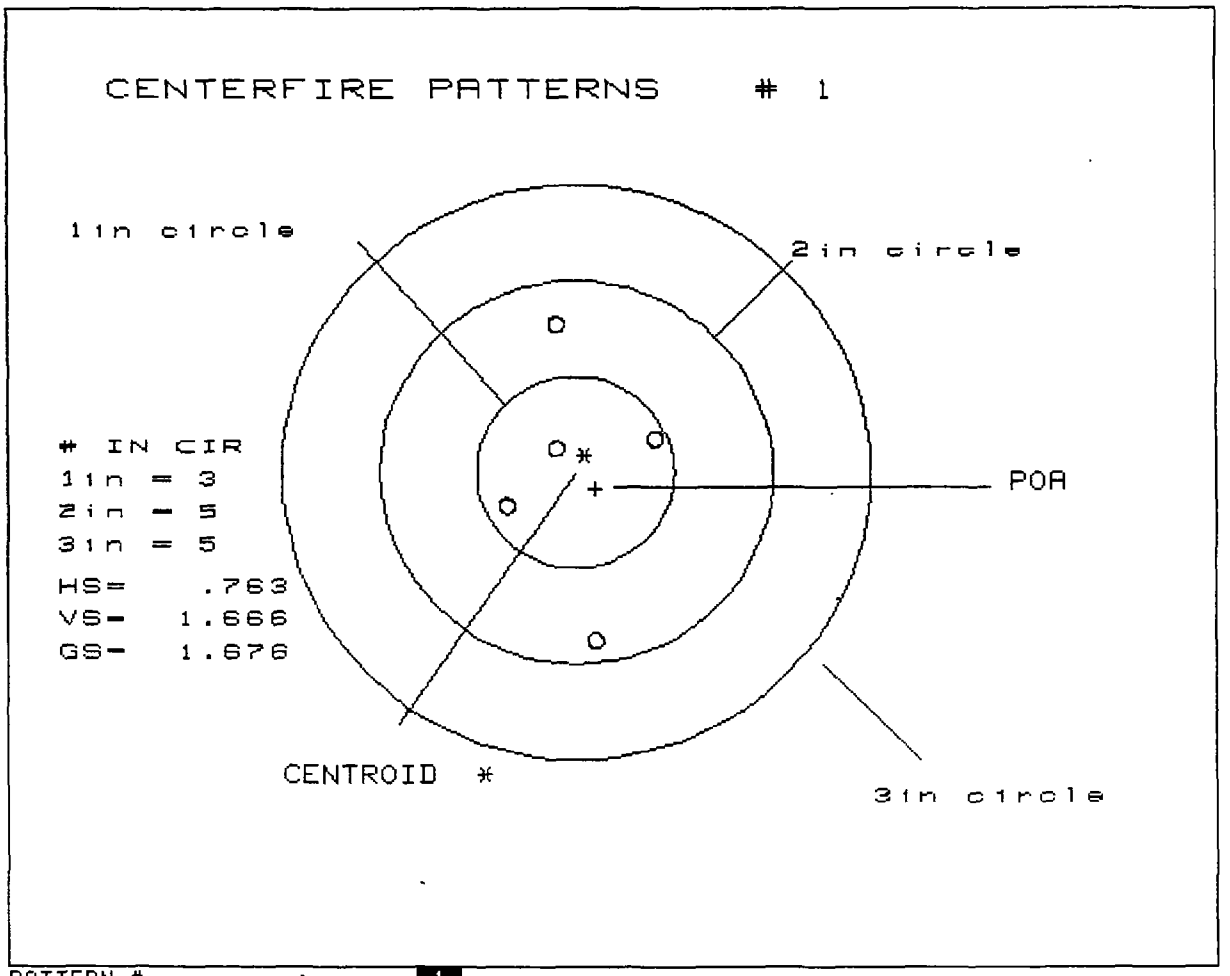


PATTERN # :	2	
NUMBER OF SHOTS :	5	
MAXIMUM X & Y :	.972	-.839
MINIMUM X & Y :	.920	-.334
CENTROID X & Y :	.048	.215
POA TO CENTROID RAD:	.2203	
MIN RADIUS :	.5513	
MEAN RADIUS :	.8402	
MAX RADIUS :	1.0746	
HORIZONTAL SPREAD :	1.8110	
VERTICAL SPREAD :	1.2540	
EXTREME SPREAD :	1.8665	

NUMBER IN ONE INCH CIRCLE =	0
NUMBER IN TWO INCH CIRCLE =	3
NUMBER IN THREE INCH CIRCLE =	5

#3

12" TWIST.



PATTERN #	:	1	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.311	-.452
MINIMUM X & Y	:	.856	-.810
CENTROID X & Y	:	-.102	.078
POA TO CENTROID RAD	:	.1281	
MIN RADIUS	:	.1473	
MEAN RADIUS	:	.5334	
MAX RADIUS	:	.8941	
HORIZONTAL SPREAD	:	.7630	
VERTICAL SPREAD	:	1.6660	
EXTREME SPREAD	:	1.6762	

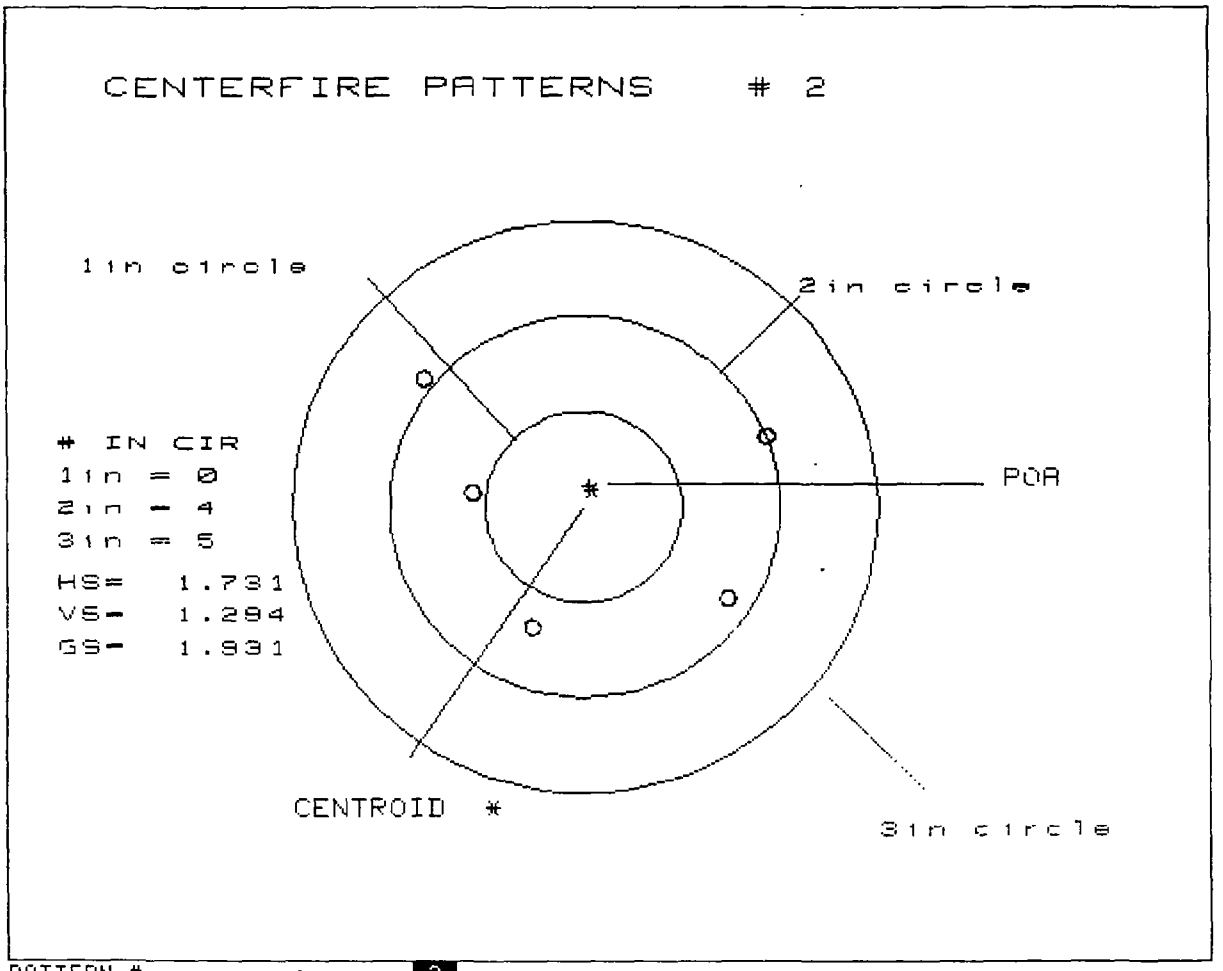
NUMBER IN ONE INCH CIRCLE	=	3
NUMBER IN TWO INCH CIRCLE	=	5
NUMBER IN THREE INCH CIRCLE	=	5

B-7511966- XP-100-.223

REM. GALLERY AMMO.

55 GR. P.S.P.

LOT U23OD 3640



PATTERN #	:	2	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.885	-.846
MINIMUM X & Y	:	.564	-.730
CENTROID X & Y	:	-.034	-.120
POA TO CENTROID RAD	:	.1249	
MIN RADIUS	:	.5908	
MEAN RADIUS	:	.8339	
MAX RADIUS	:	1.0618	
HORIZONTAL SPREAD	:	1.7310	
VERTICAL SPREAD	:	1.2940	
EXTREME SPREAD	:	1.9306	

NUMBER IN ONE INCH CIRCLE	=	0
NUMBER IN TWO INCH CIRCLE	=	4
NUMBER IN THREE INCH CIRCLE	=	5

	649 12" TWIST	AVE	642 14" TWIST	
F40	1.59		1.82	
	1.59		1.44	
		1.59		1.63
W55	1.24		2.14	
	1.87		2.09	
		1.55		2.12
RON GALLOWAY	1.68		1.90	
	1.93		1.63	
		1.81		1.77
$\bar{X}$		1.65		1.84

2 | 3.11 / 1.55

| 3.26 / 1.63

2 | 4.23 / 2.12

2 | 3.61 / 1.81

2 | 3.53 / 1.77

3 | 4.95 / 1.65

3 | 5.52 / 1.84

-R 3-69-B

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington DUPONT PETERS DUPONT

"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
A.A. Hugick

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: 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.

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	1.49	0.76
	3.01	2.02	2.90
	2.32	1.51	1.78
AVERAGE =	2.27	1.67	1.81
B7511217	1.92	1.92	0.73
	0.97	0.45	0.97
	3.04	2.64	2.13
AVERAGE =	1.98	1.67	1.28
B7511233	2.22	2.10	1.45
	1.72	1.44	1.45
	1.44	1.37	0.67
AVERAGE =	1.79	1.64	1.19
B7511137	1.21	0.76	1.12
	1.26	0.90	1.13
	3.24	2.96	1.32
AVERAGE =	1.90	1.54	1.19
B7511598	1.44	1.44	1.00
	1.60	1.55	0.85
	1.93	1.18	1.71
AVERAGE =	1.66	1.39	1.19
B7511186	1.87	1.13	1.68
	1.85	1.80	1.50
	2.03	0.83	1.86
AVERAGE =	1.92	1.25	1.67

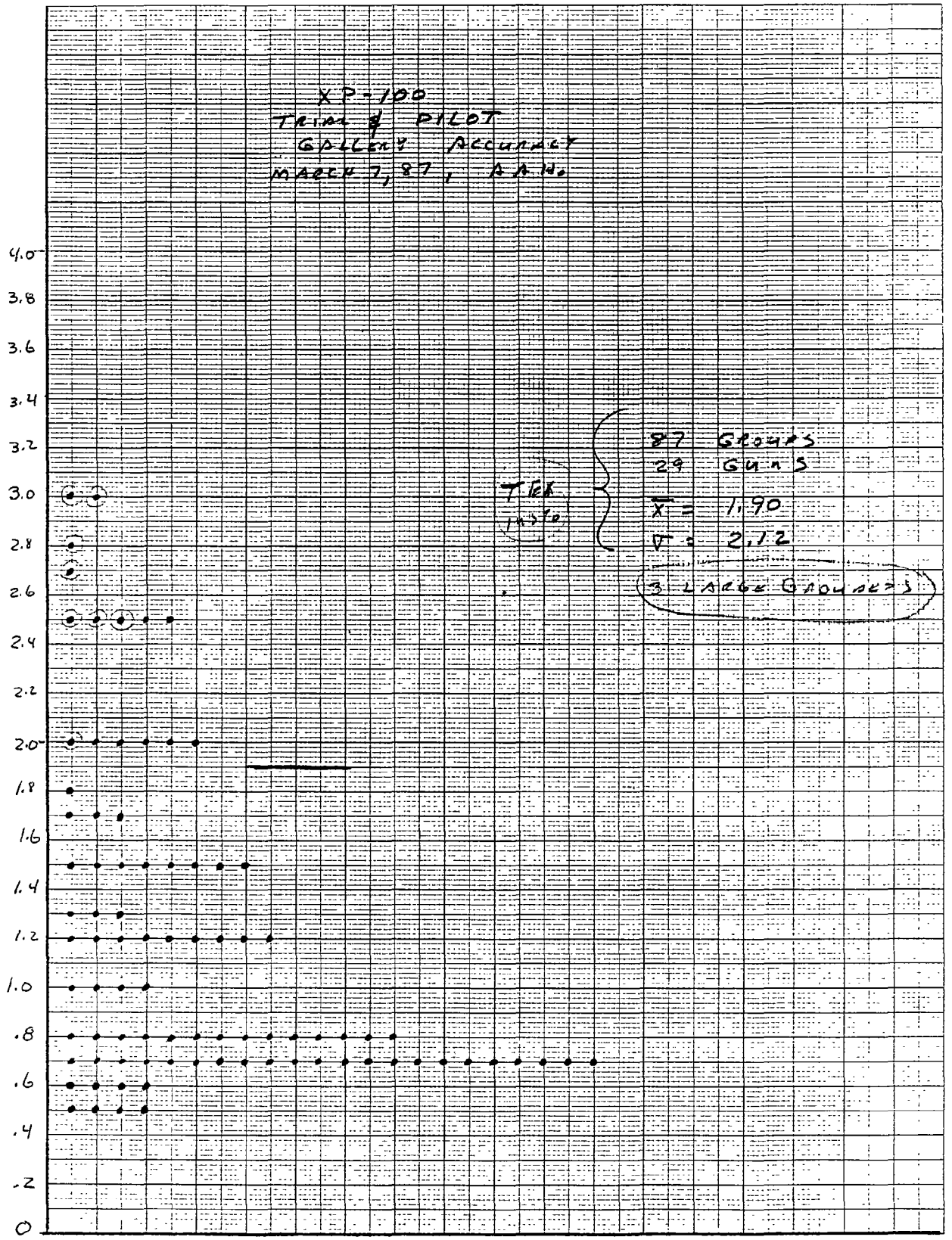
ACCURACY: (continued)

ACCURACY PER INDIVIDUAL RIFLE:

SERIAL#	GROUP SIZE (in.)	HORIZONTAL (in.)	VERTICAL (in.)
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
	2.83	1.64	2.31
	2.04	1.67	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
B7511233	1.79	1.28	1.00
B7511137	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


XP-100
TRIM & PILOT
GALLERY ACCURACY
MARCH 7, 87, A.A.
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
.8
.6
.4
.2
0
TEN
INSTO
87 GROUPS
29 GUNS
X̄ = 1.90
σ = 2.12
3 LARGE GROUPS
461510
K&E 10 X 10 TO THE CENTIMETER 18 X 25 CM
KEUFFEL & ESSER CO. MADE IN U.S.A.

RD 6681 Sheet ____ of ____

1.75 MAR

55 GR H.P. SPECIAL TEST REPORT

MODEL XP100 223 SHOOTER R Carreto DATE 3-5-86

Gun No.	Ga./ Cal.	Heavy Jack Rds.	Heavy Jack Type	Heavy Jack Results				Light Jack Rds.	Light Jack Type	Light Jack Results			
1137 X	223	3 Shoot 55 H.P. 3 Grams		0.7	0.8	0.7	(.73)		0818	0.7	0.6	0.6	(.63)
1220				0.7	0.7	0.8	(.73)		1219	0.7	0.7	0.7	(.7)
1181				1.2	1.5	1.5	(1.3)		1233 X	1.7	1.8	1.7	(1.73)
1211				0.8	1.0	1.0	(.93)		0631	EDS			
1155 X				1.2	1.5	1.5	(1.40)						
2903				0.8	0.7	2.0	(1.16)						
1215				1.5	0.8	1.5	(1.26)						
0694				1.2	0.8	1.0	(1.00)						
1095				2.5	1.2	0.8	(1.5)						
1159				1.0	0.8	0.7	(.83)						
1172				1.5	1.5	2.0	(1.66)						
1174				2.0	1.7	1.2	(1.63)						
1503				2.0	2.5	2.8		(2.43)					
1204 X				0.7	0.8	1.2	(.9)						
1217 X				0.5	0.7	0.7	(.63)						
1225				2.0	1.5	1.2	(1.56)						
1175				2.5	0.8	0.7	(1.33)						
1234 X				0.8	0.7	0.7	(.73)						
1165				0.5	0.7	0.7	(.63)						
1230				2.0	1.3	1.2	(1.5)						
1149				0.5	0.8	0.8	(.7)						
1158 X				0.7	0.7	0.8	(.73)						
1199				0.7	0.5	1.3	(.83)						
1581				2.5	2.7	3.0		(2.73)					
1176				3.0	2.5	1.2		(2.23)					
1156 X				0.7	0.6	0.6	(.63)						

cc: J. White

TO: D. CHRISTIE

ILION RESEARCH DIVISION

FIREARMS WITHDRAWAL ~~AND RETURN~~

DATE 4/7/86

LETTER NO. 2220

QUANTITY 8

RAMAC # 925492

MODEL XP-100

CAL./GA. 223

WORK ORDER 925 C-0805

SERIAL NOS.

	B7511217	B7511186	
LIBRARY	B7511137	B7511598	
	B7511155		
	B7511234		
	B7511233		
CHECKOUT	B7511204		

(7) [X] Will Be

(1) [X] Will Not Be Returned

To be used for: [X] Testing

[ ] Other

REMARKS:

AAHugick:js

Approved

XP-100 DESIGN TEST ITEMS (HANGIN) 10-23-85

- ACCURACY (223) - 12" TWIST GUN - } FED 40 GRAIN
  14" TWIST GUN - } WM 65 GRAIN
  2 REM-GALLERY LOTS,

- RECUT CHAMBER TO 5.56 THROAT. 11-5-85

- ACCURACY (5.56) - 12" TWIST GUN } FED 40 GRAIN
  14" TWIST GUN } WM 65 GRAIN
  LAS LOT USED MOCCURACY,

- 1100 ~~ROUNDS OF XP-100 ENDURANCE (WITH STOCK/FRONTE TO ONE GUN TO MAX OF 1000 RDS.~~ I

- PAINTED STOCK FEASIBILITY - (SAND TEXTURE OR KRINKLE) PLUS ONE STOCK ENDURANCE (200 ± ROUNDS).

- WALTON'S GUNS (FUNCTION/INSPECT/SHIP/_____)

~~THANKS MIT DRAWINGS BY NOV 1, 1985 (14" TWISTS)~~

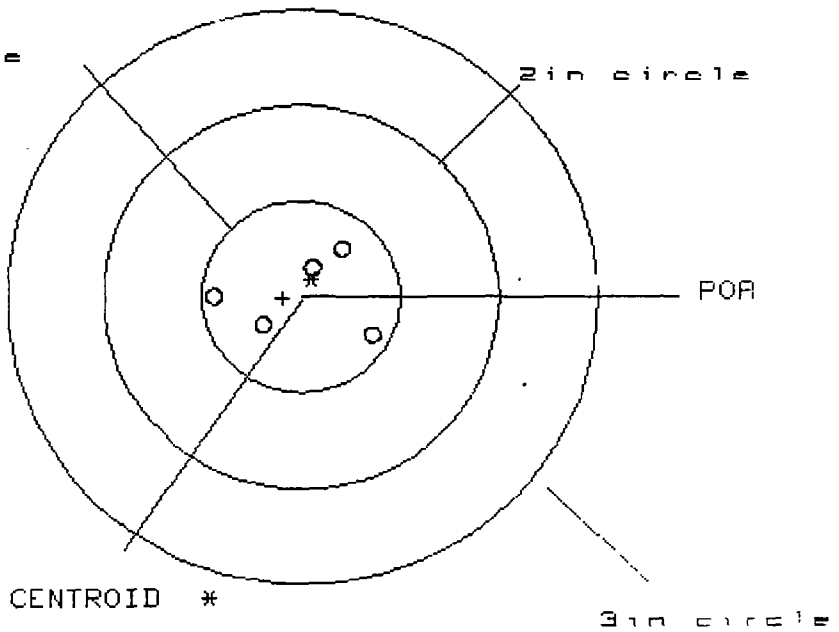
TRIAL & PILOT REPORT NOV 1, 1985
TRIAL & PILOT REPORT AMMUNITION WHEN LATE TEST MATERIAL IS AVAILABLE.

"BLACK" STOCK BARREL GROOVE RECUT, (WALTON)

A. A. HUGICK.

B-75124 7/8 KP 100 .223 12" TWIST.
AMMO: 55 GR "POWER-LOKT" H.P. LOT # UOB-0D2301
SCOPE: 2½ X RED FIELD
RANGE: 100 YD. SAND BAG. REST.

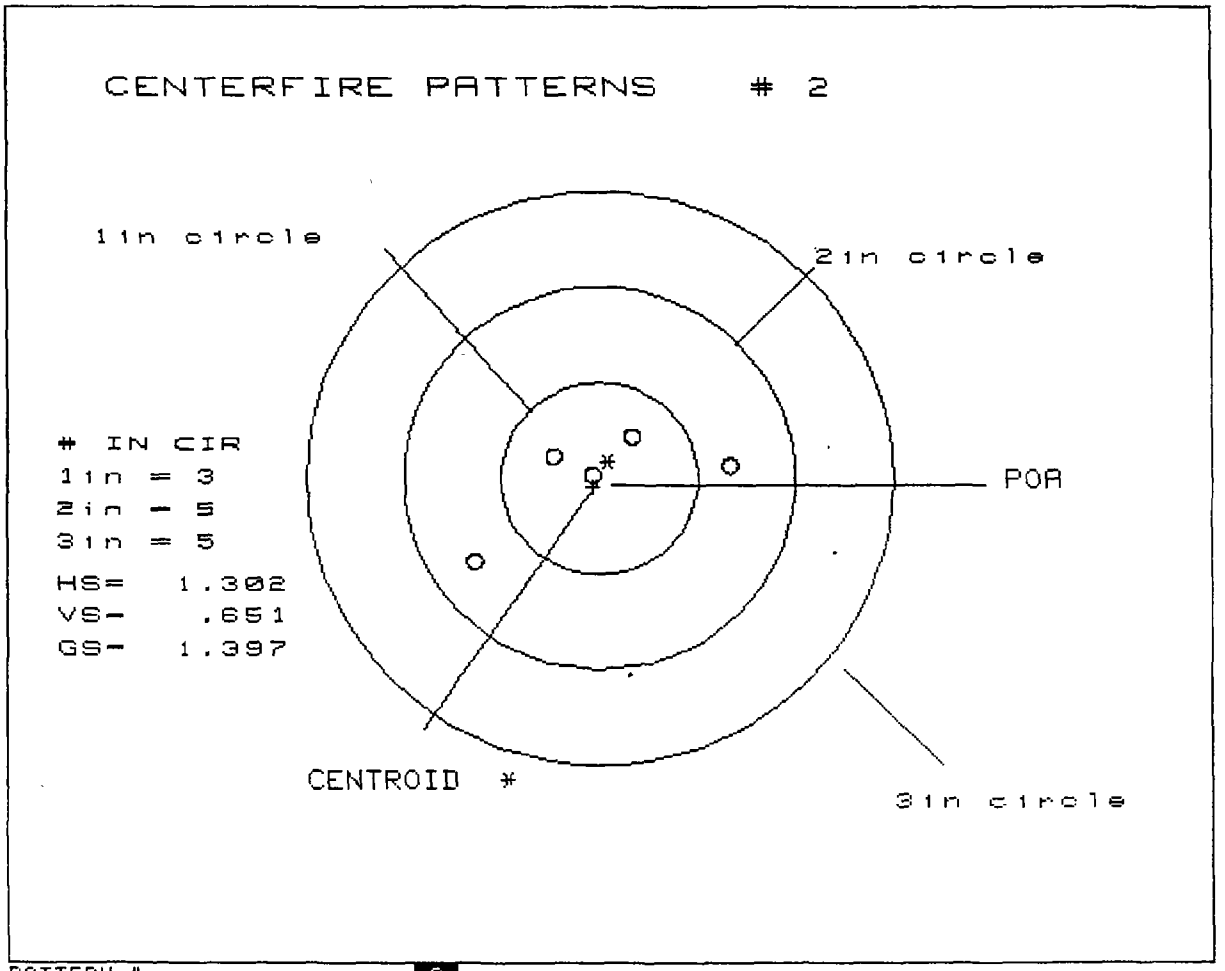
CENTERFIRE PATTERNS # 1



# IN CIR
1in = 5
2in = 5
3in = 5
HS= .774
VS= .446
GS= .798

PATTERN # :	1	
NUMBER OF SHOTS :	5	
MAXIMUM X & Y :	.428	-.346
MINIMUM X & Y :	.242	-.204
CENTROID X & Y :	.092	-.003
POA TO CENTROID RAD:	.0916	
MIN RADIUS :	.1479	
MEAN RADIUS :	.3104	
MAX RADIUS :	.4376	
HORIZONTAL SPREAD :	.7740	
VERTICAL SPREAD :	.4460	
EXTREME SPREAD :	.7984	

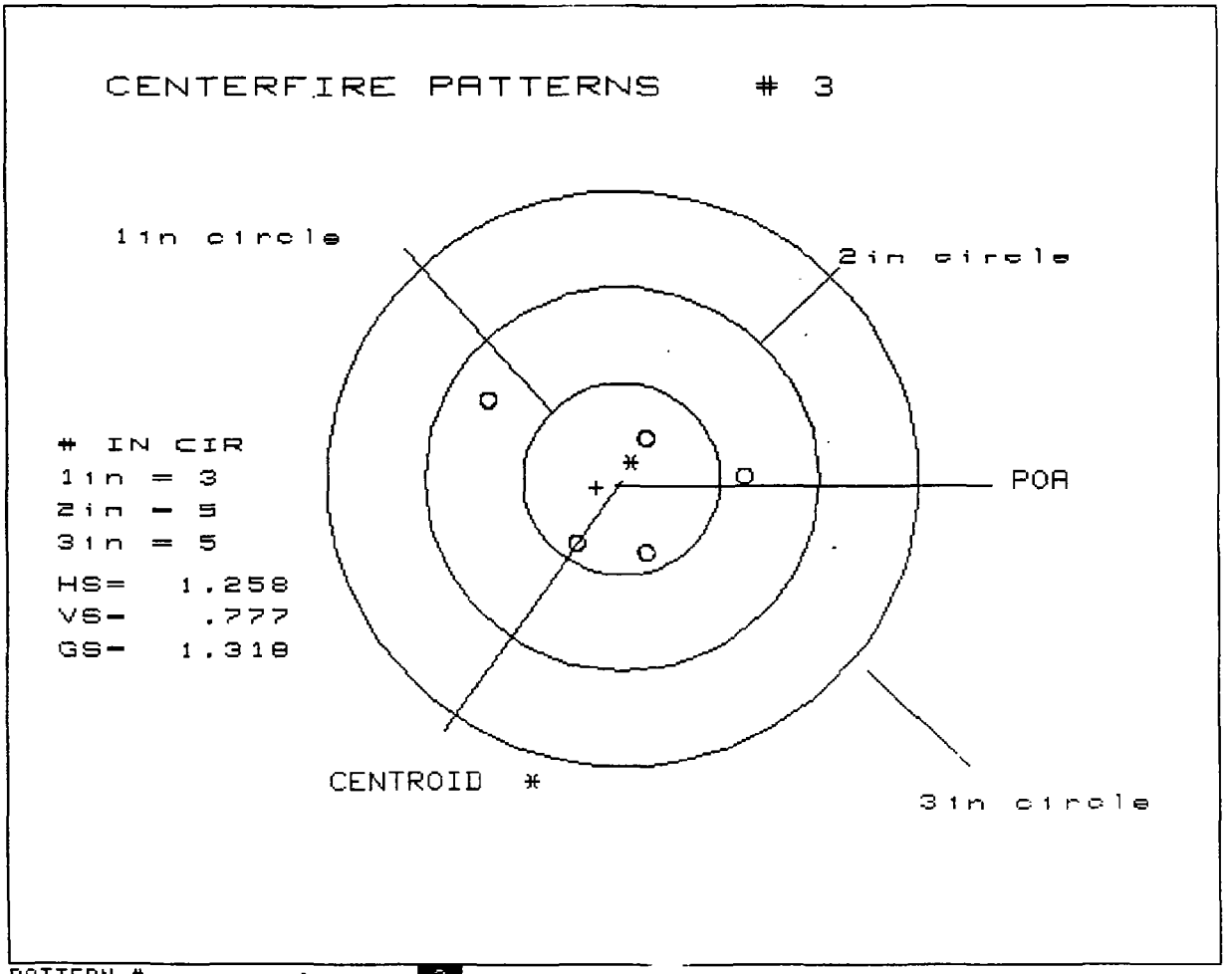
NUMBER IN ONE INCH CIRCLE 5
NUMBER IN TWO INCH CIRCLE
NUMBER IN THREE INCH CIRCLE



PATTERN # :	2	
NUMBER OF SHOTS :	5	
MAXIMUM X & Y :	.720	-.582
MINIMUM X & Y :	.265	-.386
CENTROID X & Y :	.034	.034
POA TO CENTROID RAD:	.0481	
MIN RADIUS :	.0311	
MEAN RADIUS :	.3993	
MAX RADIUS :	.7455	
HORIZONTAL SPREAD :	1.3020	
VERTICAL SPREAD :	.6510	
EXTREME SPREAD :	1.3965	

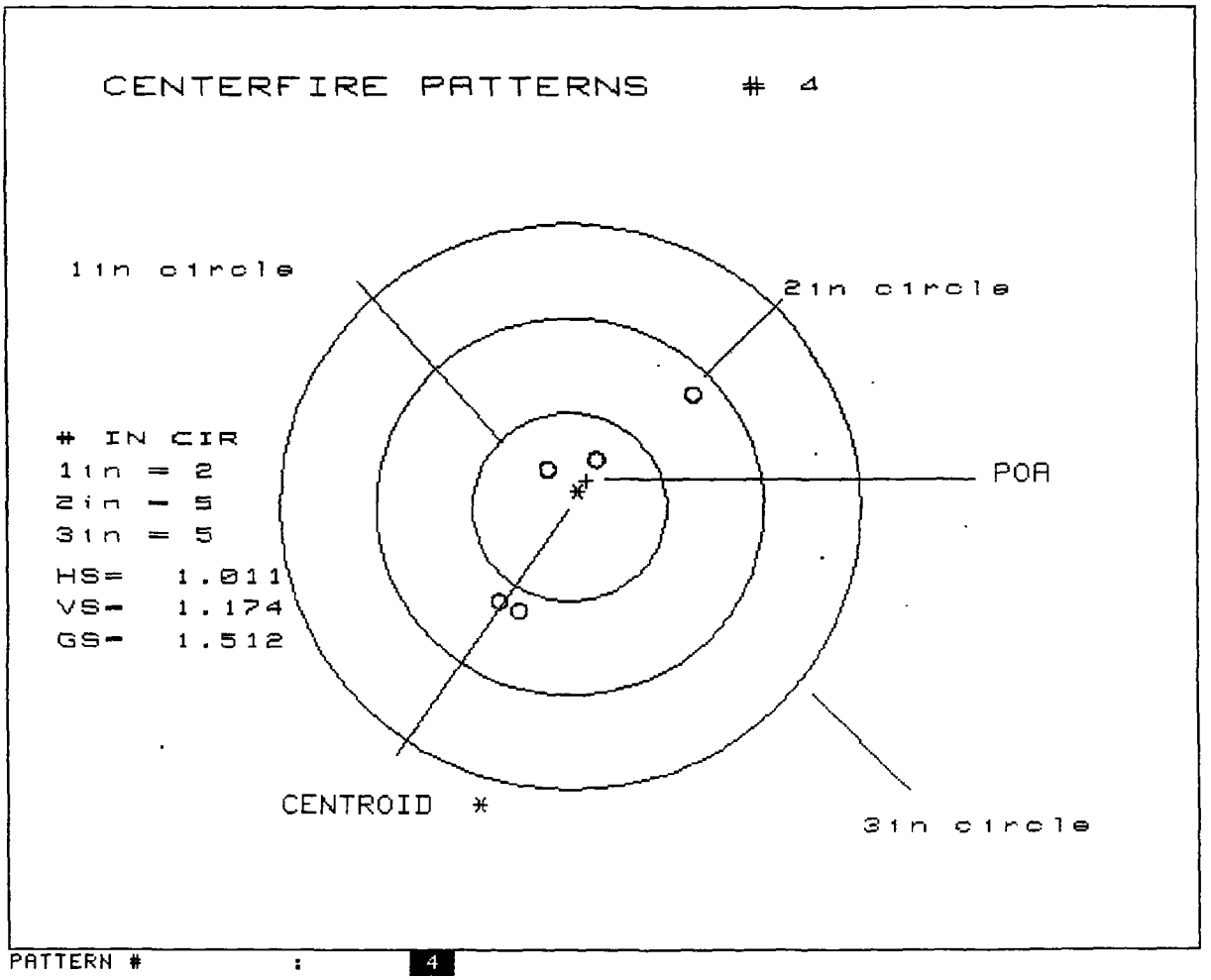
NUMBER IN ONE INCH CIRCLE =	3
NUMBER IN TWO INCH CIRCLE =	5
NUMBER IN THREE INCH CIRCLE =	5

B. 751606. 223 XP-100 14" TWIST.
AMMO: 55GR. HP "POWER LOKT" LOT # 408.DD2301
SCOPE: 2½ X REDFIELD
RANGE: 100 YDS. SAND BAG REST.



PATTERN #	:	3	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.733	-.525
MINIMUM X & Y	:	.448	-.329
CENTROID X & Y	:	.127	.034
POA TO CENTROID RAD	:	.1318	
MIN RADIUS	:	.2730	
MEAN RADIUS	:	.4836	
MAX RADIUS	:	.7728	
HORIZONTAL SPREAD	:	1.2580	
VERTICAL SPREAD	:	.7770	
EXTREME SPREAD	:	1.3180	

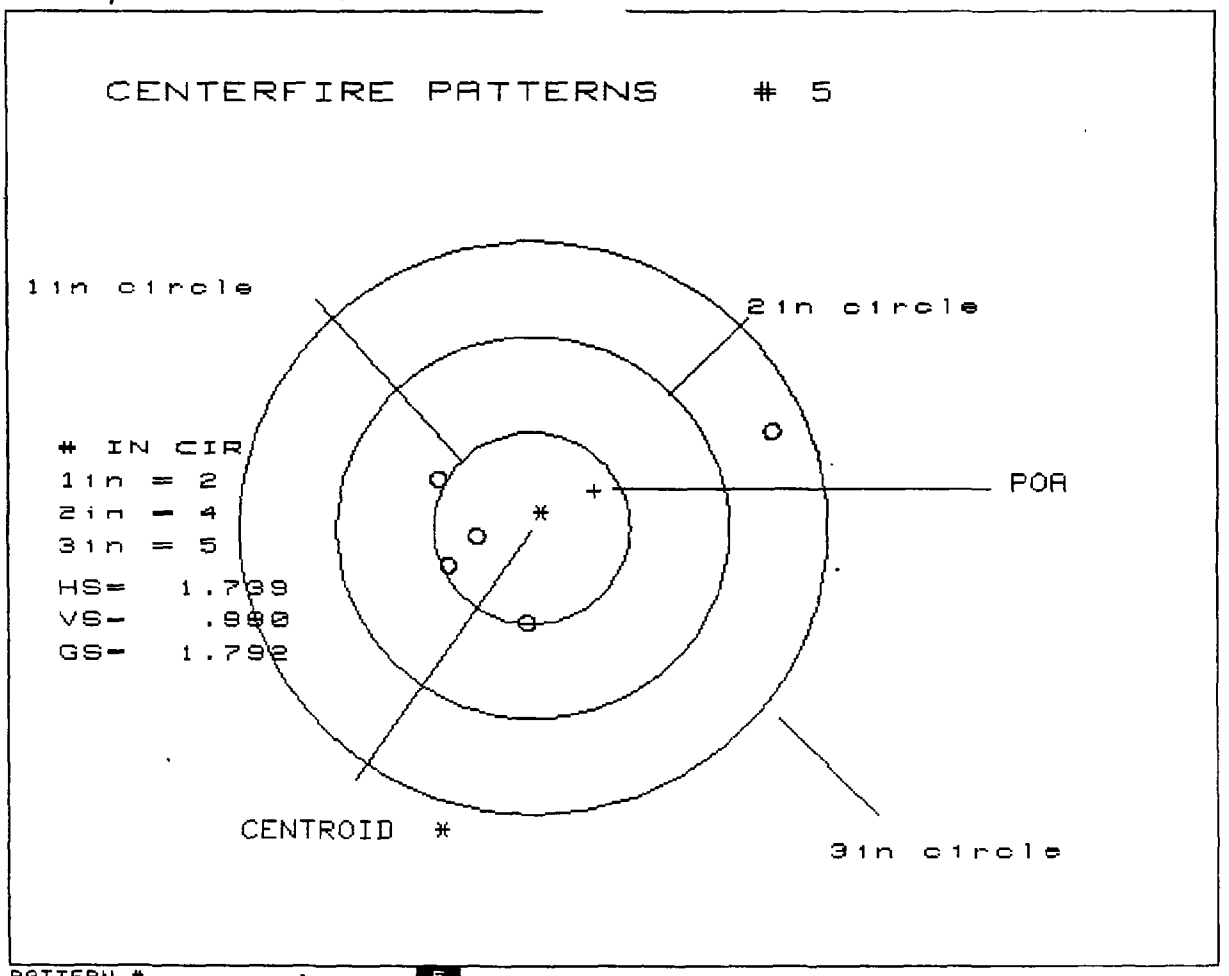
NUMBER IN ONE INCH CIRCLE	=	3
NUMBER IN TWO INCH CIRCLE	=	5
NUMBER IN THREE INCH CIRCLE	=	5



PATTERN #	:	4	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.545	-.466
MINIMUM X & Y	:	.465	-.709
CENTROID X & Y	:	-.088	-.151
POA TO CENTROID RAD	:	.1744	
MIN RADIUS	:	.2130	
MEAN RADIUS	:	.5284	
MAX RADIUS	:	.8828	
HORIZONTAL SPREAD	:	1.0110	
VERTICAL SPREAD	:	1.1740	
EXTREME SPREAD	:	1.5118	

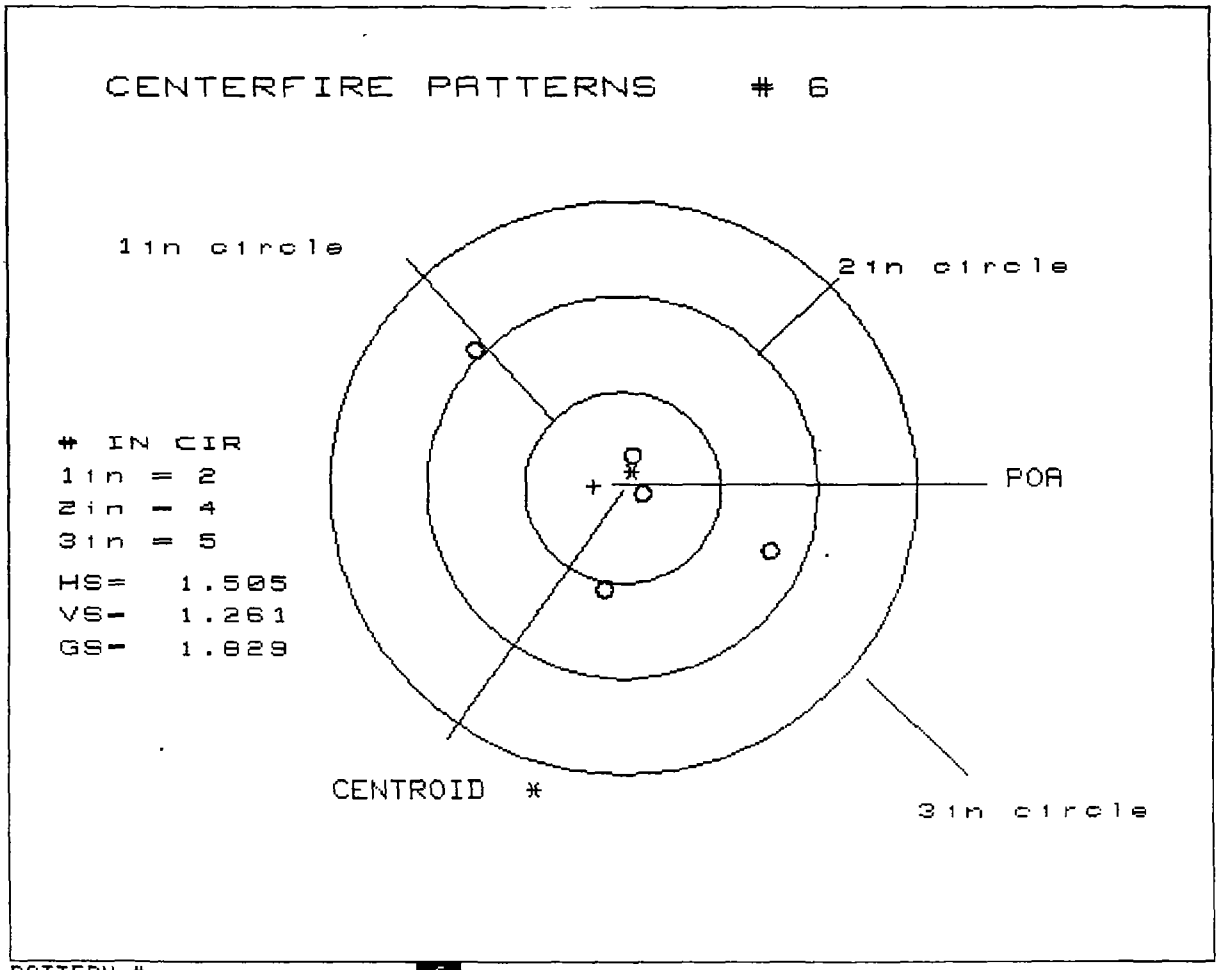
NUMBER IN ONE INCH CIRCLE	=	2
NUMBER IN TWO INCH CIRCLE	=	5
NUMBER IN THREE INCH CIRCLE	=	5

B-7512214 · .223 XP-100 14" TWIST
Ammo: 55GR HR POWER-LOKT" LOT #UOB 0D-2301
SCOPE: 12X RED FIELD
RANGE: 100 YDS. SAND BAG REST



PATTERN #	:	5	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.921	-.818
MINIMUM X & Y	:	.283	-.707
CENTROID X & Y	:	-.322	-.206
POA TO CENTROID RAD	:	.3819	
MIN RADIUS	:	.2967	
MEAN RADIUS	:	.6318	
MAX RADIUS	:	1.3354	
HORIZONTAL SPREAD	:	1.7390	
VERTICAL SPREAD	:	.9900	
EXTREME SPREAD	:	1.7923	

NUMBER IN ONE INCH CIRCLE	=	2
NUMBER IN TWO INCH CIRCLE	=	4
NUMBER IN THREE INCH CIRCLE	=	5

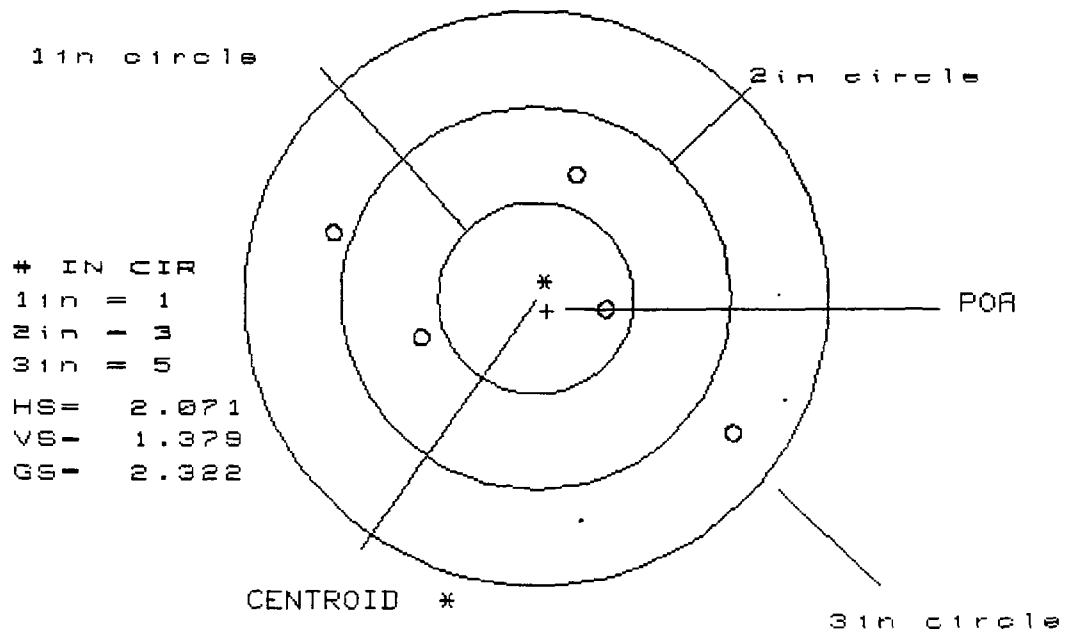


PATTERN #	:	6	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.892	-.613
MINIMUM X & Y	:	.703	-.558
CENTROID X & Y	:	.149	-.020
POA TO CENTROID RAD	:	.1501	
MIN RADIUS	:	.0897	
MEAN RADIUS	:	.5303	
MAX RADIUS	:	1.0500	
HORIZONTAL SPREAD	:	1.5050	
VERTICAL SPREAD	:	1.2610	
EXTREME SPREAD	:	1.8294	

NUMBER IN ONE INCH CIRCLE	=	2
NUMBER IN TWO INCH CIRCLE	=	4
NUMBER IN THREE INCH CIRCLE	=	5

B-750 BOLT .223 XP-100. 12" TWIST.
AMMO: 55GR. H.P "POWER-LOKT" LOT #40B 6D 2301
SCOPE: 12X REDFIELD
RANGE- 100 YDS SAND BAG REST

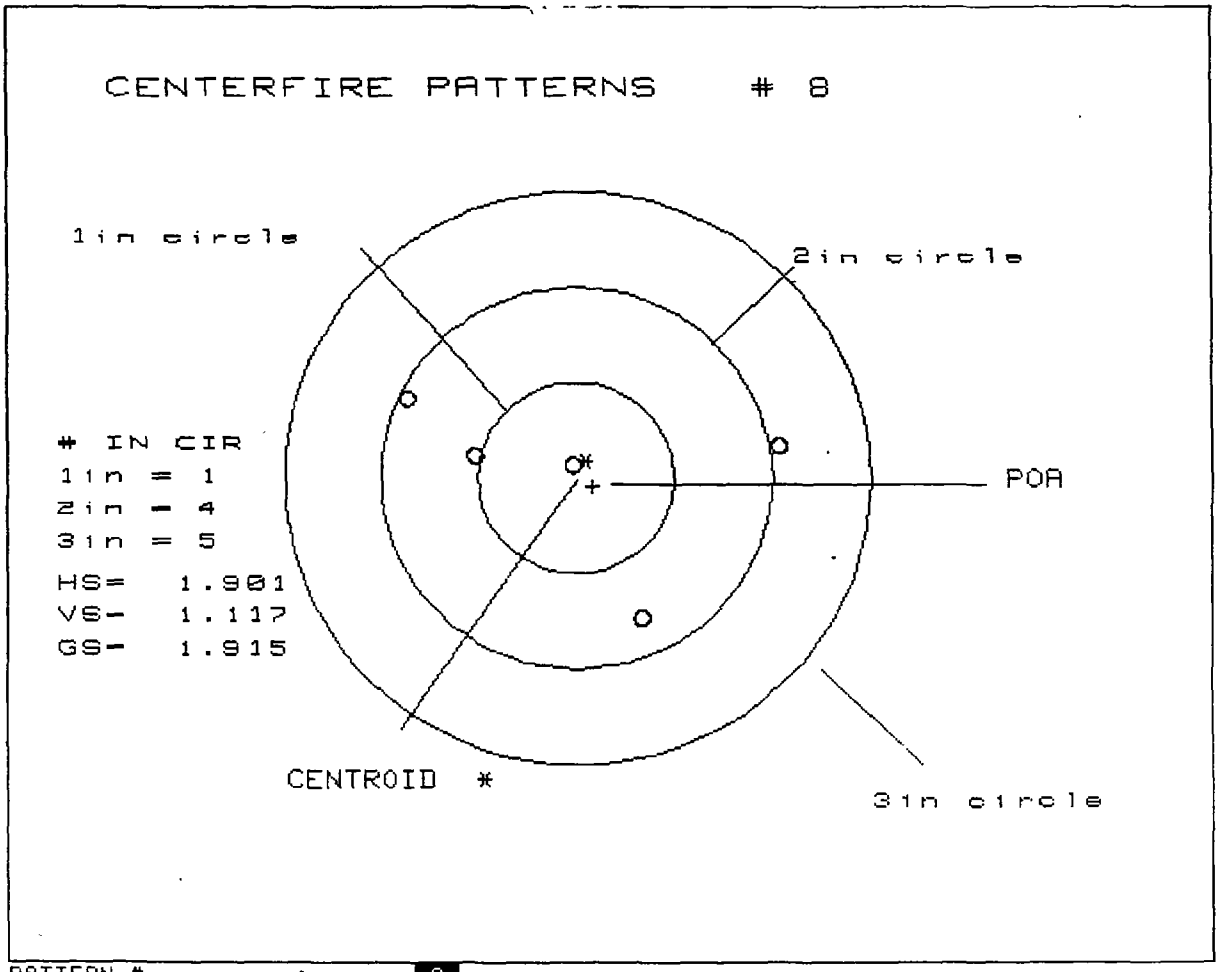
CENTERFIRE PATTERNS # 7



# IN CIR
1in = 1
2in = 3
3in = 5
HS= 2.071
VS= 1.379
GS= 2.322

PATTERN # :	7	
NUMBER OF SHOTS :	5	
MAXIMUM X & Y :	.961	-1.110
MINIMUM X & Y :	.709	-.670
CENTROID X & Y :	-.061	.055
POA TO CENTROID RAD:	.0821	
MIN RADIUS :	.3639	
MEAN RADIUS :	.8035	
MAX RADIUS :	1.2530	
HORIZONTAL SPREAD :	2.0710	
VERTICAL SPREAD :	1.3790	
EXTREME SPREAD :	2.3224	

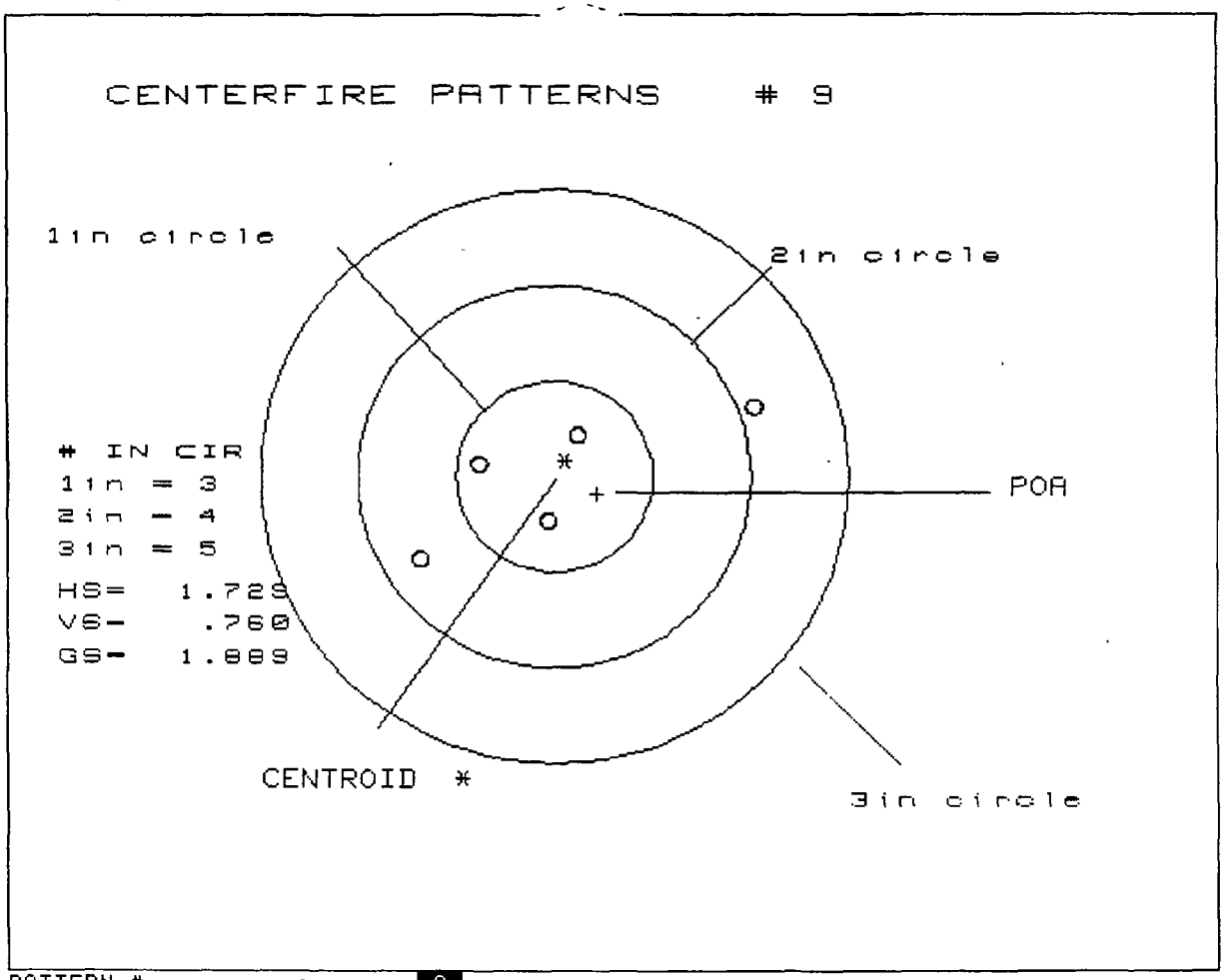
NUMBER IN ONE INCH CIRCLE	-	1
NUMBER IN TWO INCH CIRCLE	·	3
NUMBER IN THREE INCH CIRCLE	=	5



PATTERN #	:	8	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.963	-.938
MINIMUM X & Y	:	.429	-.688
CENTROID X & Y	:	-.084	.033
POA TO CENTROID RAD	:	.0904	
MIN RADIUS	:	.0648	
MEAN RADIUS	:	.6792	
MAX RADIUS	:	1.0607	
HORIZONTAL SPREAD	:	1.9010	
VERTICAL SPREAD	:	1.1170	
EXTREME SPREAD	:	1.9145	

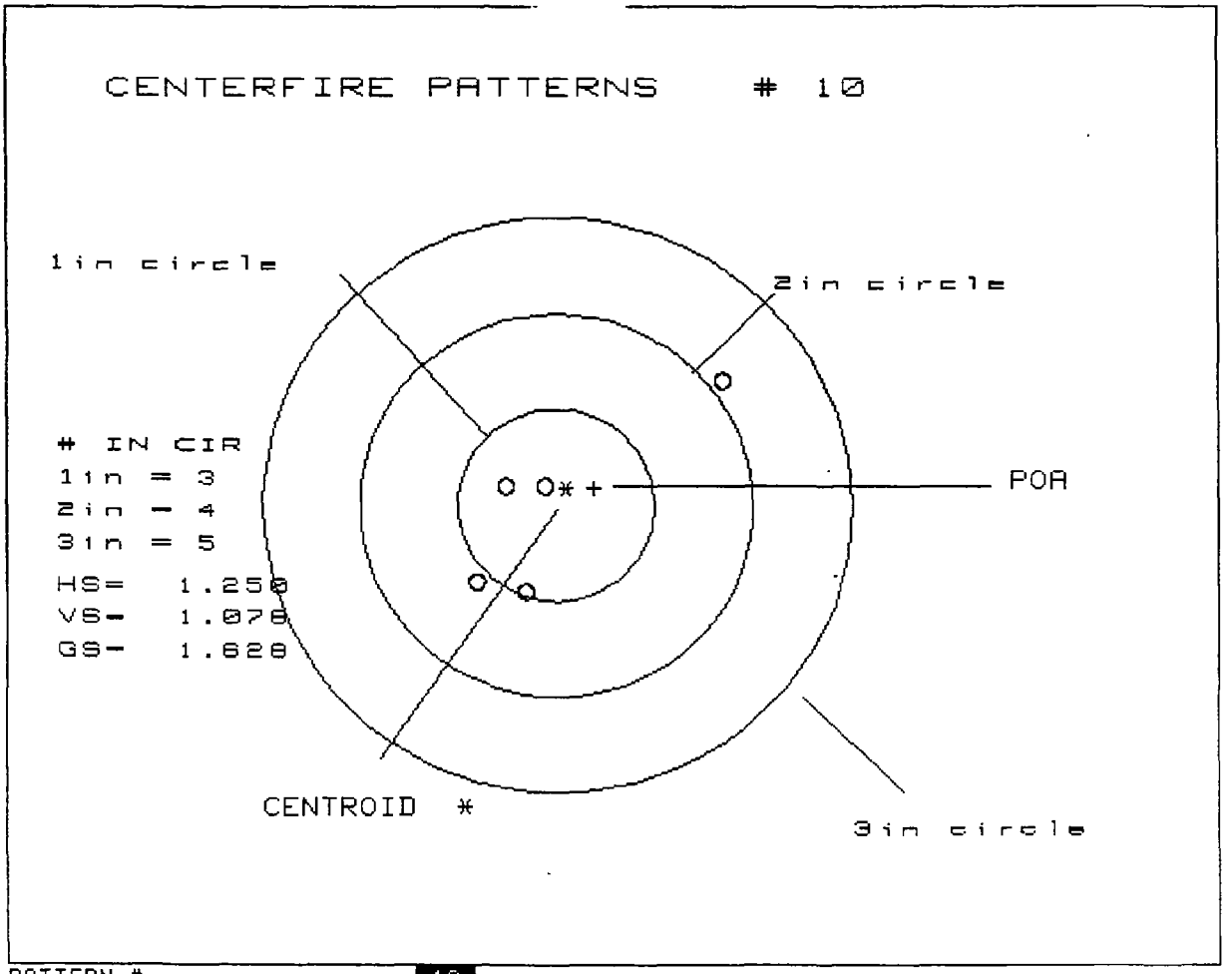
NUMBER IN ONE INCH CIRCLE	=	1
NUMBER IN TWO INCH CIRCLE	=	4
NUMBER IN THREE INCH CIRCLE	=	5

B-7512261 223 XP 100 14" TWIST
AMMO: 55 GR. H.P. "POWER LOKT" LOT # 408. 002301
SCOPE: 12X REDFIELD
RANGE: 100 YDS. SAND BAG REST



PATTERN #	:	9	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.817	-.912
MINIMUM X & Y	:	.434	-.326
CENTROID X & Y	:	-.216	.082
POA TO CENTROID RAD	:	.2309	
MIN RADIUS	:	.2358	
MEAN RADIUS	:	.5615	
MAX RADIUS	:	1.0911	
HORIZONTAL SPREAD	:	1.7290	
VERTICAL SPREAD	:	.7600	
EXTREME SPREAD	:	1.8887	

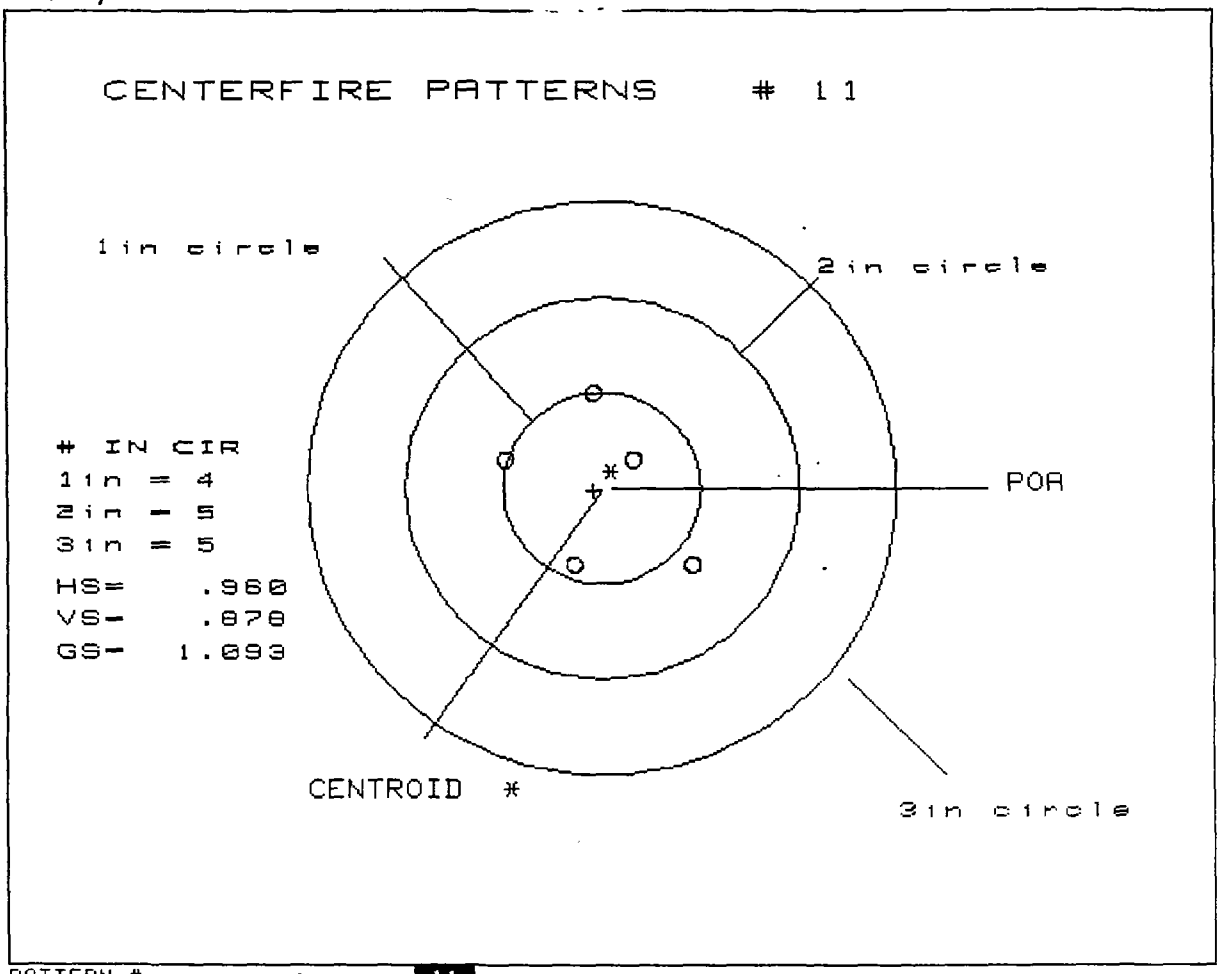
NUMBER IN ONE INCH CIRCLE	=	3
NUMBER IN TWO INCH CIRCLE	=	4
NUMBER IN THREE INCH CIRCLE	=	5



PATTERN #	:	10	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.633	-.617
MINIMUM X & Y	:	.536	-.542
CENTROID X & Y	:	-.195	-.101
POA TO CENTROID RAD	:	.2200	
MIN RADIUS	:	.0914	
MEAN RADIUS	:	.4905	
MAX RADIUS	:	1.0450	
HORIZONTAL SPREAD	:	1.2500	
VERTICAL SPREAD	:	1.0780	
EXTREME SPREAD	:	1.6280	

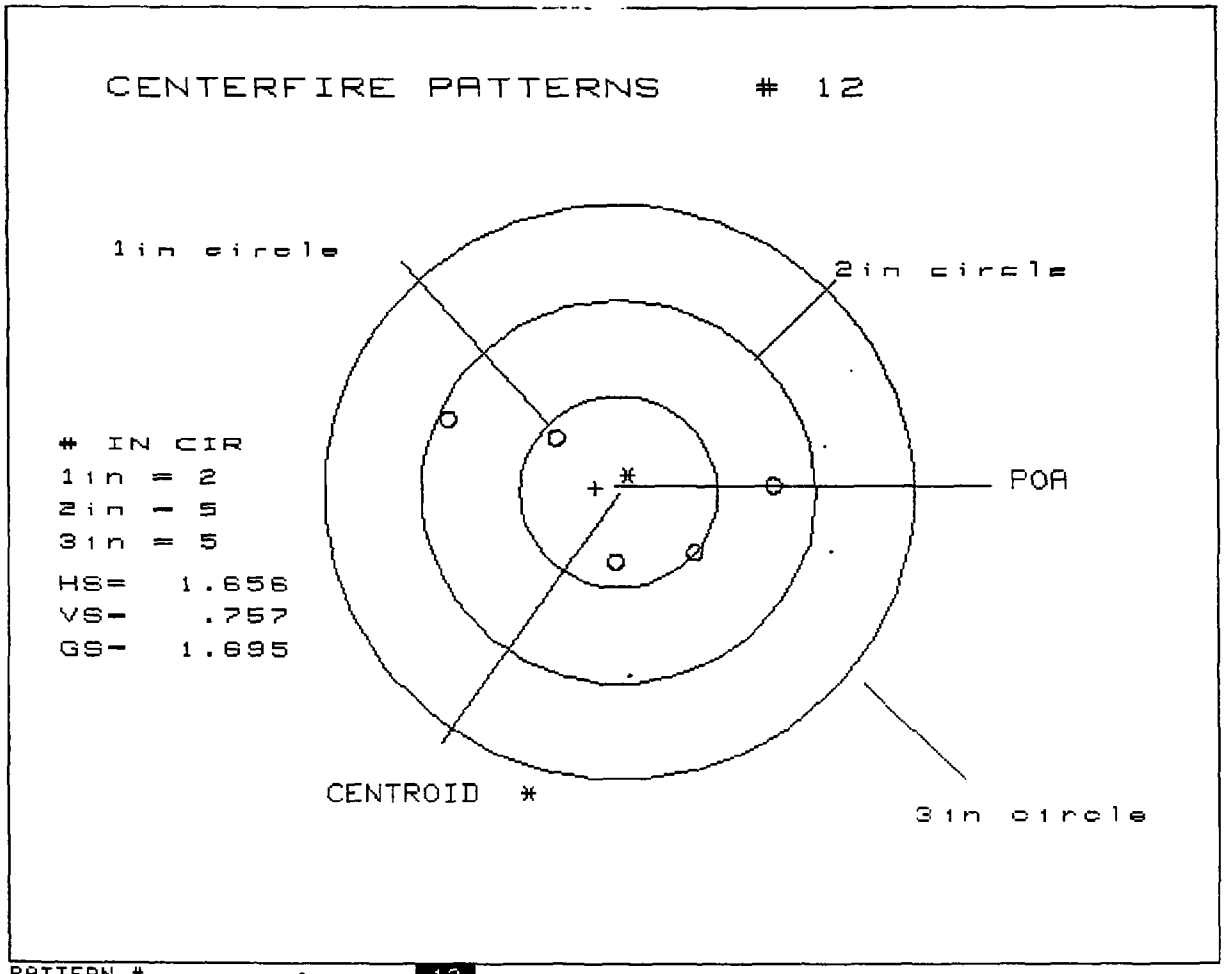
NUMBER IN ONE INCH CIRCLE	=	3
NUMBER IN TWO INCH CIRCLE	=	4
NUMBER IN THREE INCH CIRCLE	=	5

B- 7512192 - XP-100 - .223 14" TWIST
AMMO: 55 GR. H.P "POWER-LOKT" LOT# 408 002301
SCOPE: 12X REDFIELD
RANGE: 100 YDS. SAND BAG REST



PATTERN #	:	11
NUMBER OF SHOTS	:	5
MAXIMUM X & Y	:	.522 -.438
MINIMUM X & Y	:	.487 -.391
CENTROID X & Y	:	.042 0.000
POA TO CENTROID RAD	:	.0418
MIN RADIUS	:	.2331
MEAN RADIUS	:	.4486
MAX RADIUS	:	.6193
HORIZONTAL SPREAD	:	.9600
VERTICAL SPREAD	:	.8780
EXTREME SPREAD	:	1.0932

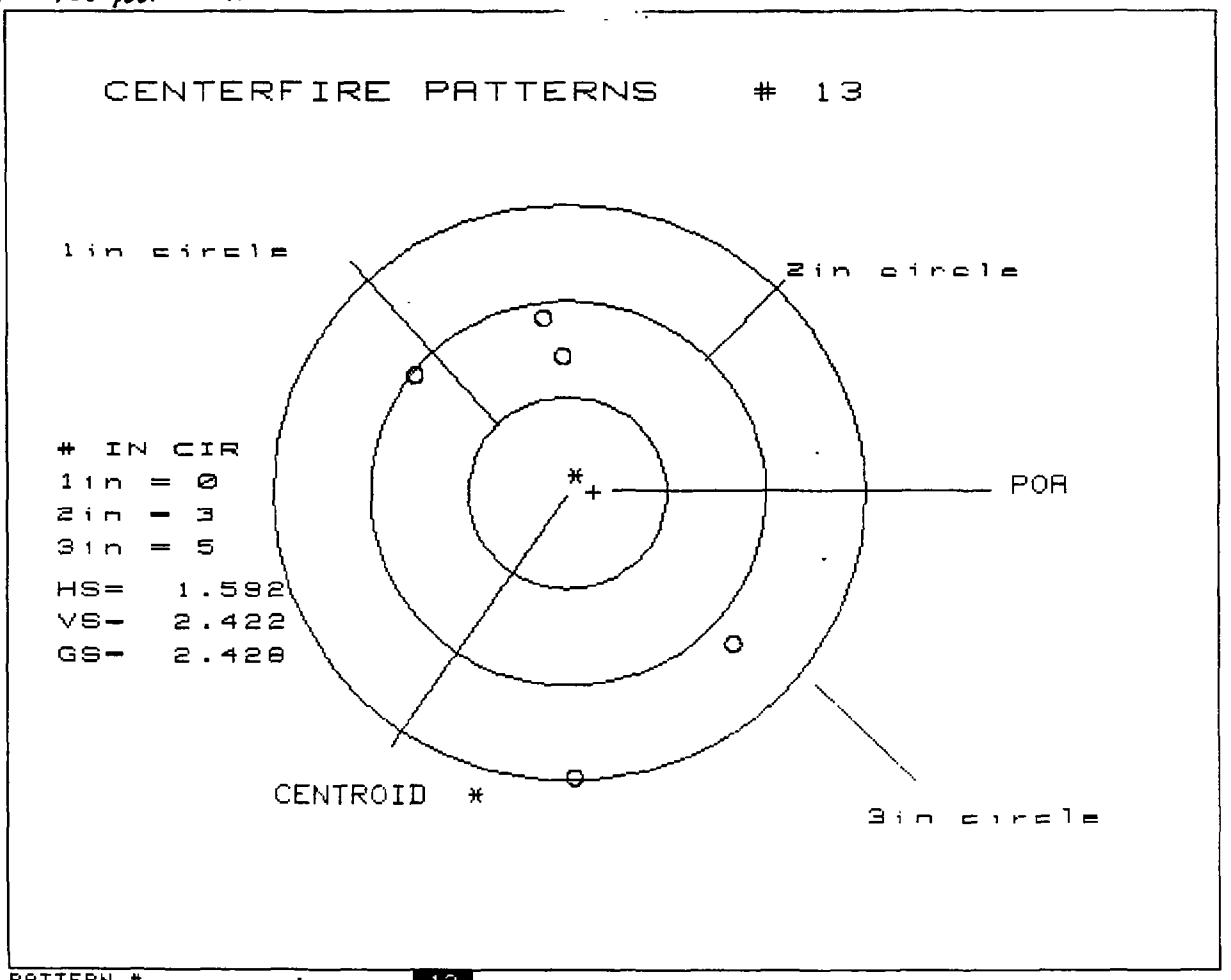
NUMBER IN ONE INCH CIRC	4
NUMBER IN TWO INCH CIRC	5
NUMBER IN THREE INCH CIRCLE	5



PATTERN #	:	12	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.908	-.748
MINIMUM X & Y	:	.351	-.406
CENTROID X & Y	:	.115	-.034
POA TO CENTROID RAD	:	.1197	
MIN RADIUS	:	.3725	
MEAN RADIUS	:	.6068	
MAX RADIUS	:	.9447	
HORIZONTAL SPREAD	:	1.6560	
VERTICAL SPREAD	:	.7570	
EXTREME SPREAD	:	1.6953	

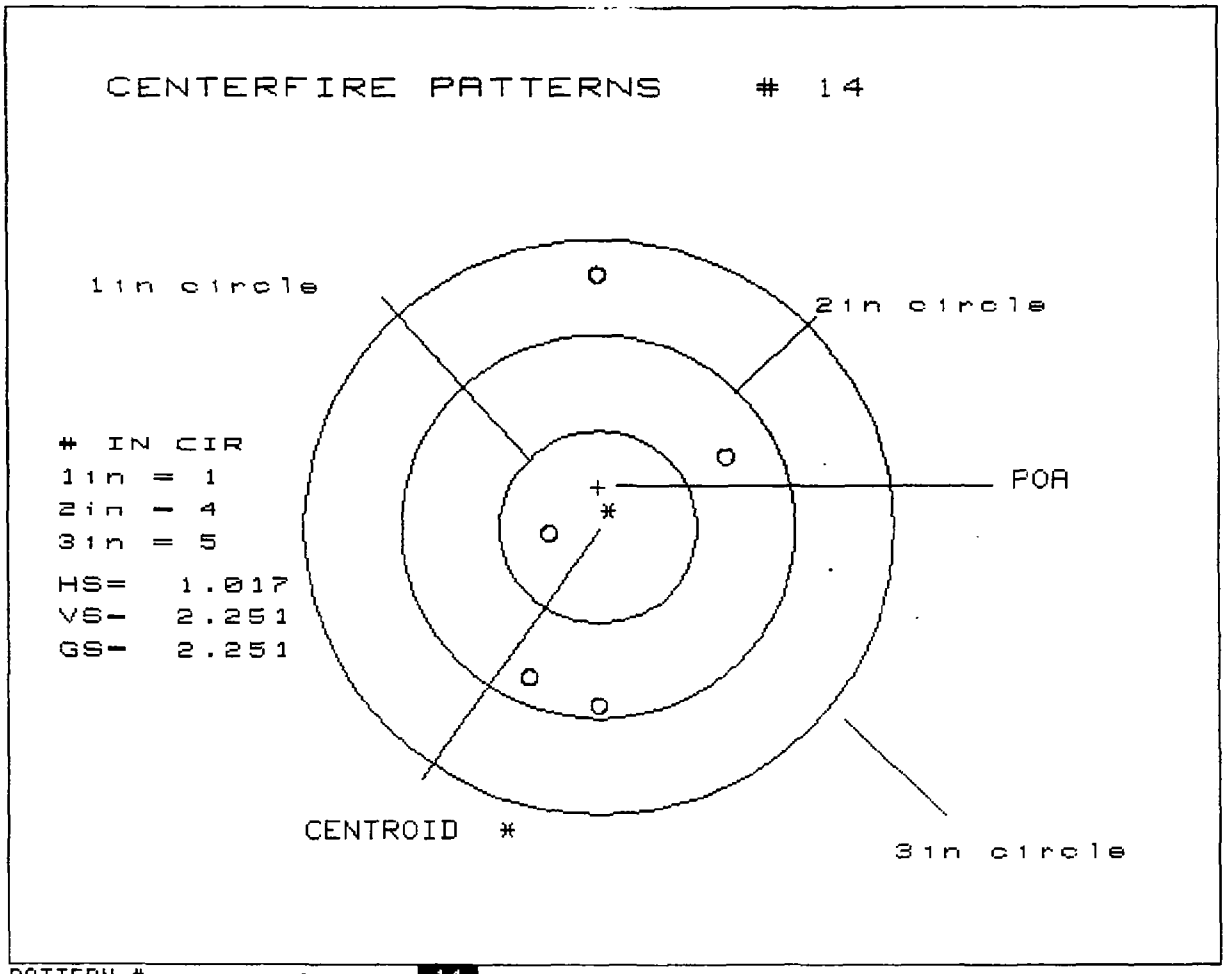
NUMBER IN ONE INCH CIRCLE	=	2
NUMBER IN TWO INCH CIRCLE	=	5
NUMBER IN THREE INCH CIRCLE	=	5

B. 7511 9LL. 223 XP-100. 12" Twist
Ammo: SSLR. H.P. "POWER-LOKT" LOT # U08. 0D2301
SCOPE 12X REDFIELD
RANGE: 100 YDS. SAND BAG REST.



PATTERN #	:	13
NUMBER OF SHOTS	:	5
MAXIMUM X & Y	:	.716 -.876
MINIMUM X & Y	:	.921 -1.501
CENTROID X & Y	:	-.132 -.014
POA TO CENTROID RAD	:	.1323
MIN RADIUS	:	.7170
MEAN RADIUS	:	1.0551
MAX RADIUS	:	1.4878
HORIZONTAL SPREAD	:	1.5920
VERTICAL SPREAD	:	2.4220
EXTREME SPREAD	:	2.4280

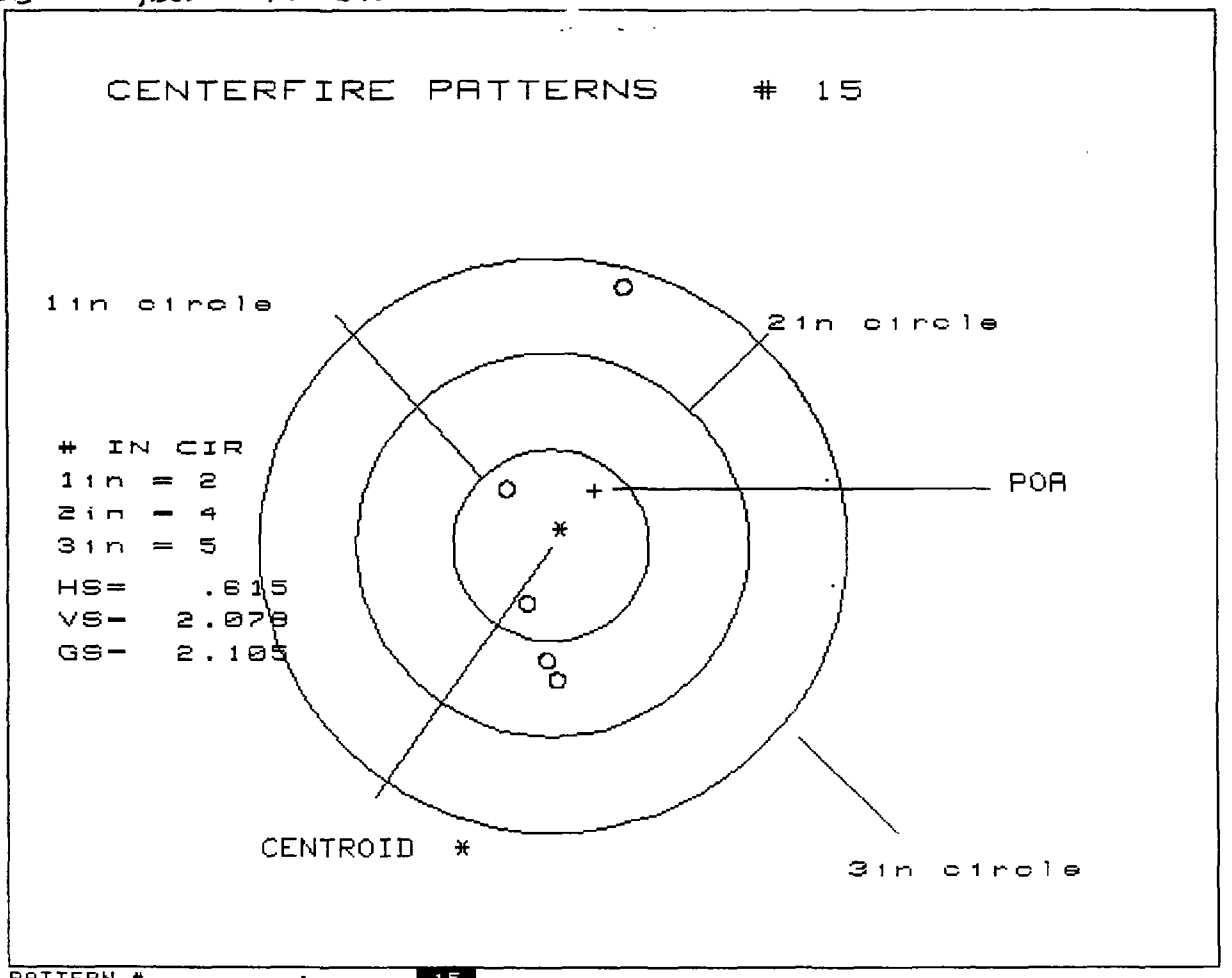
NUMBER IN ONE INCH CIRCLE	0
NUMBER IN TWO INCH CIRCLE	3
NUMBER IN THREE INCH CIRCLE	5



PATTERN #	:	14	
NUMBER OF SHOTS	:	5	
MAXIMUM X & Y	:	.654	-.363
MINIMUM X & Y	:	1.121	-1.130
CENTROID X & Y	:	.003	-.218
POA TO CENTROID RAD	:	.2178	
MIN RADIUS	:	.2784	
MEAN RADIUS	:	.8247	
MAX RADIUS	:	1.3388	
HORIZONTAL SPREAD	:	1.0170	
VERTICAL SPREAD	:	2.2510	
EXTREME SPREAD	:	2.2510	

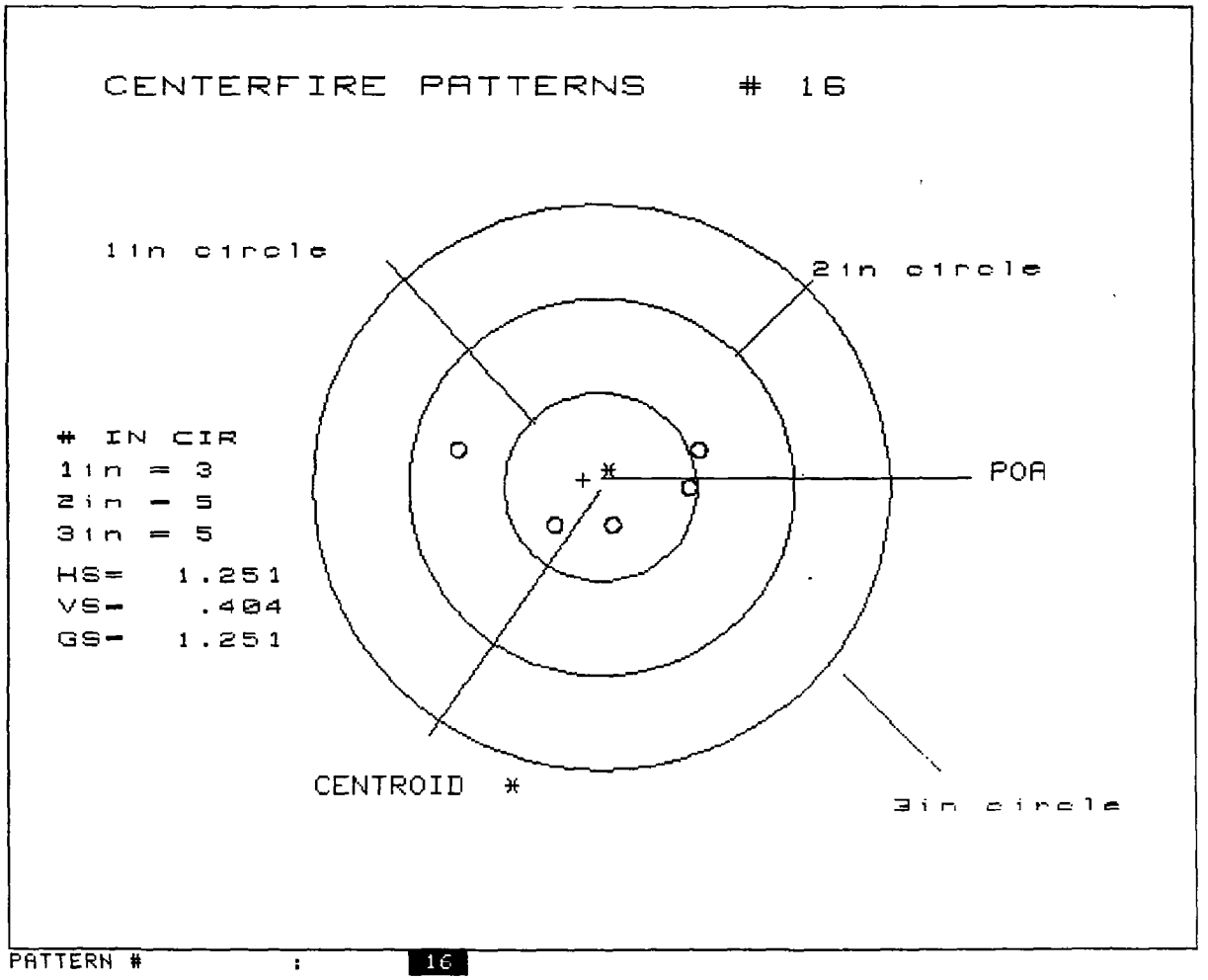
NUMBER IN ONE INCH CIRCLE	=	1
NUMBER IN TWO INCH CIRCLE	=	4
NUMBER IN THREE INCH CIRCLE	=	5

B. 7512507 · XP. 100 · .223 12" TWIST
AMMO: 55 GR. H.P. "POWER-LOKT" LOT.# 408. 002301
SCOPE: 12X REDFIELD.
RANGE: 100 YDS. SAND BAG REST



PATTERN # :	15	
NUMBER OF SHOTS :	5	
MAXIMUM X & Y :	.149	-.466
MINIMUM X & Y :	1.060	-1.018
CENTROID X & Y :	-.224	-.295
POA TO CENTROID RAD:	.3706	
MIN RADIUS :	.3392	
MEAN RADIUS :	.6920	
MAX RADIUS :	1.4057	
HORIZONTAL SPREAD :	.6150	
VERTICAL SPREAD :	2.0780	
EXTREME SPREAD :	2.1053	

NUMBER IN ONE INCH CIRCLE	=	2
NUMBER IN TWO INCH CIRCLE	=	4
NUMBER IN THREE INCH CIRCLE	=	5



PATTERN # :	16	
NUMBER OF SHOTS :	5	
MAXIMUM X & Y :	.585	-.666
MINIMUM X & Y :	.161	-.243
CENTROID X & Y :	.087	-.049
POA TO CENTROID RAD:	.1001	
MIN RADIUS :	.2014	
MEAN RADIUS :	.4582	
MAX RADIUS :	.7820	
HORIZONTAL SPREAD :	1.2510	
VERTICAL SPREAD :	.4040	
EXTREME SPREAD :	1.2514	

NUMBER IN ONE INCH CIRCLE	=	3
NUMBER IN TWO INCH CIRCLE	=	5
NUMBER IN THREE INCH CIRCLE	=	5

B·751/642· 223 XP·100

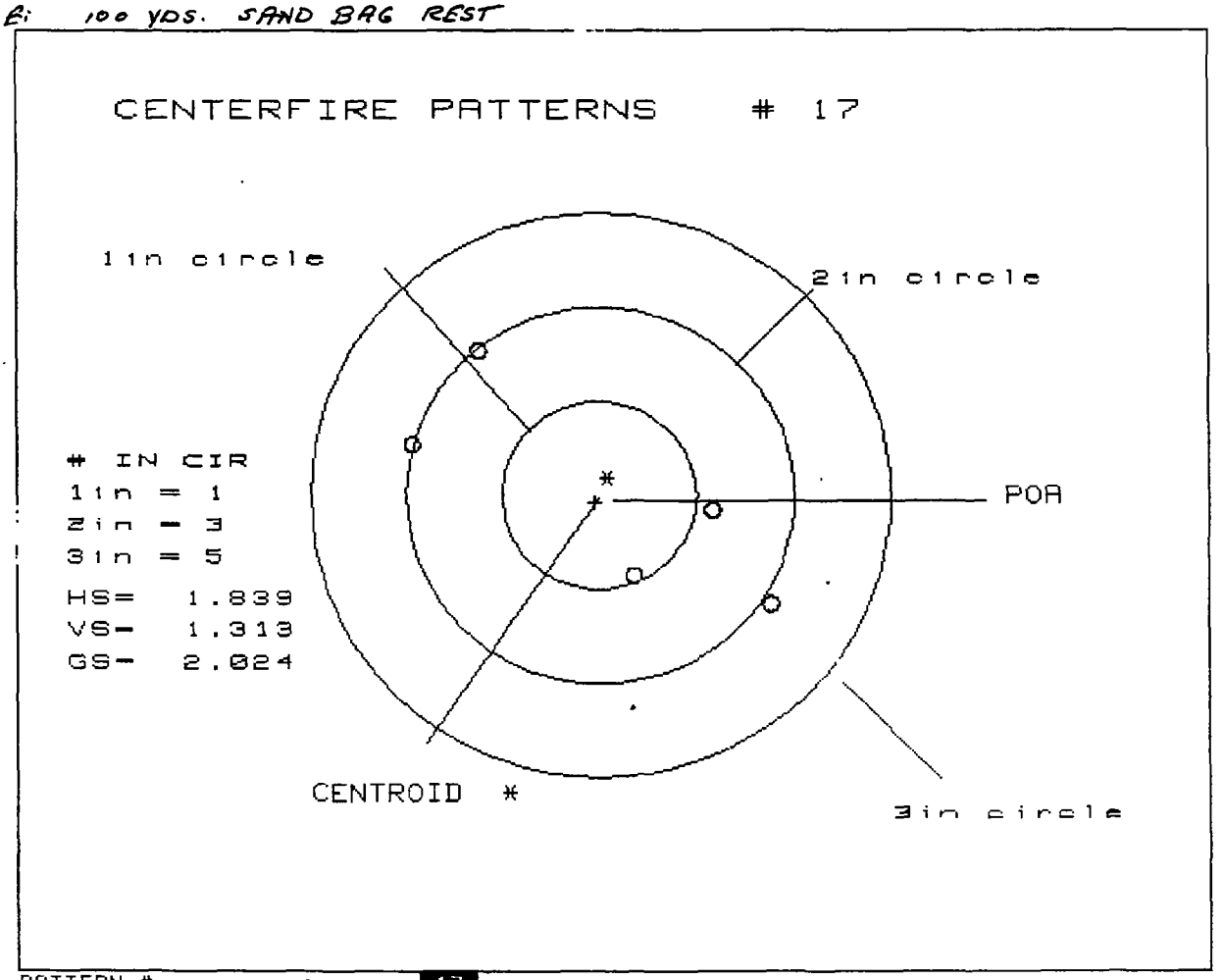
Ammo: 55 GR. H.R "POWER·LOKT"

SCOPE: 12X REDFIELD

RANGE: 100 YDS. SAND BAG REST

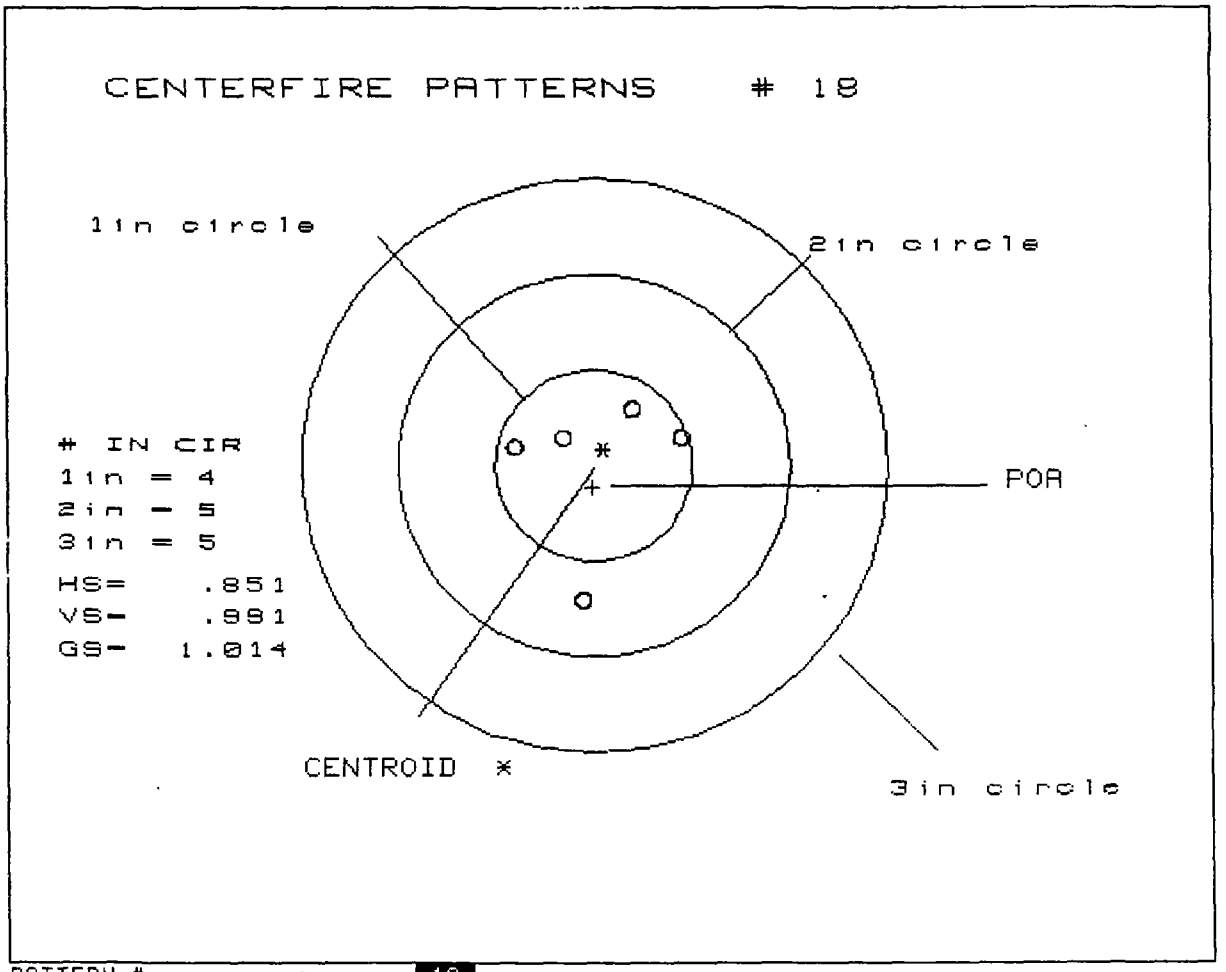
14" TWIST

LOT # UOB·002301



PATTERN # :	17	
NUMBER OF SHOTS :	5	
MAXIMUM X & Y :	.882	-.957
MINIMUM X & Y :	.786	-.527
CENTROID X & Y :	.020	.028
POA TO CENTROID RAD:	.0346	
MIN RADIUS :	.4368	
MEAN RADIUS :	.8058	
MAX RADIUS :	1.0249	
HORIZONTAL SPREAD :	1.8390	
VERTICAL SPREAD :	1.3130	
EXTREME SPREAD :	2.0243	

NUMBER IN ONE INCH CIRCLE =	1
NUMBER IN TWO INCH CIRCLE =	3
NUMBER IN THREE INCH CIRCLE =	5

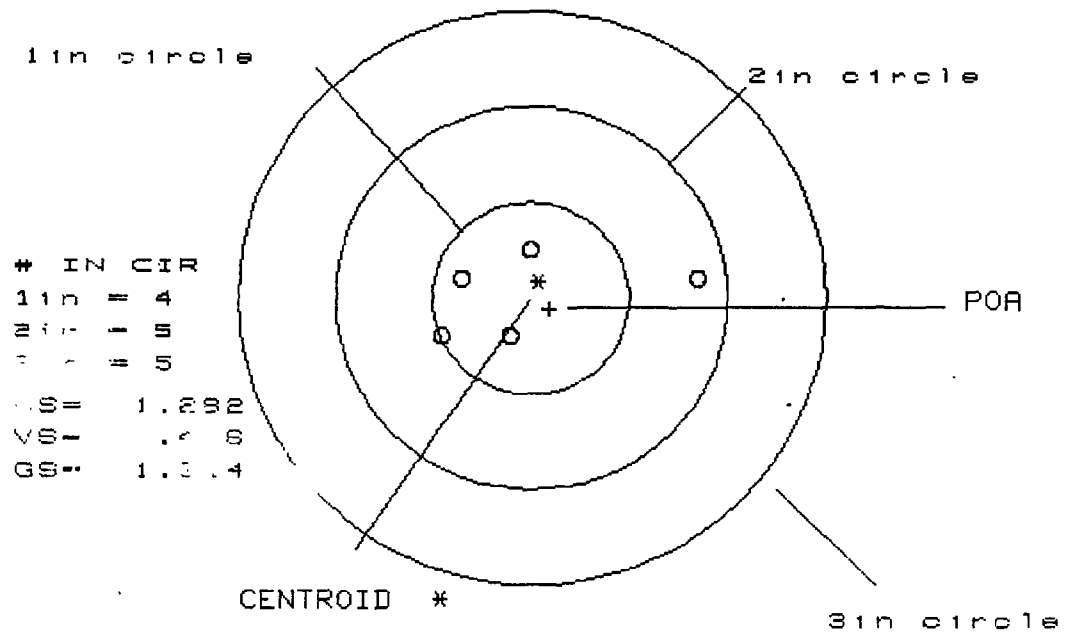


PATTERN #	:	18
NUMBER OF SHOTS	:	5
MAXIMUM X & Y	:	.447 -.404
MINIMUM X & Y	:	.401 -.590
CENTROID X & Y	:	.005 .104
POA TO CENTROID RAD	:	.1041
MIN RADIUS	:	.2302
MEAN RADIUS	:	.4309
MAX RADIUS	:	.6953
HORIZONTAL SPREAD	:	.8510
VERTICAL SPREAD	:	.9910
EXTREME SPREAD	:	1.0143

NUMBER IN ONE INCH CIRCLE	=	4
NUMBER IN TWO INCH CIRCLE	=	5
NUMBER IN THREE INCH CIRCLE	=	5

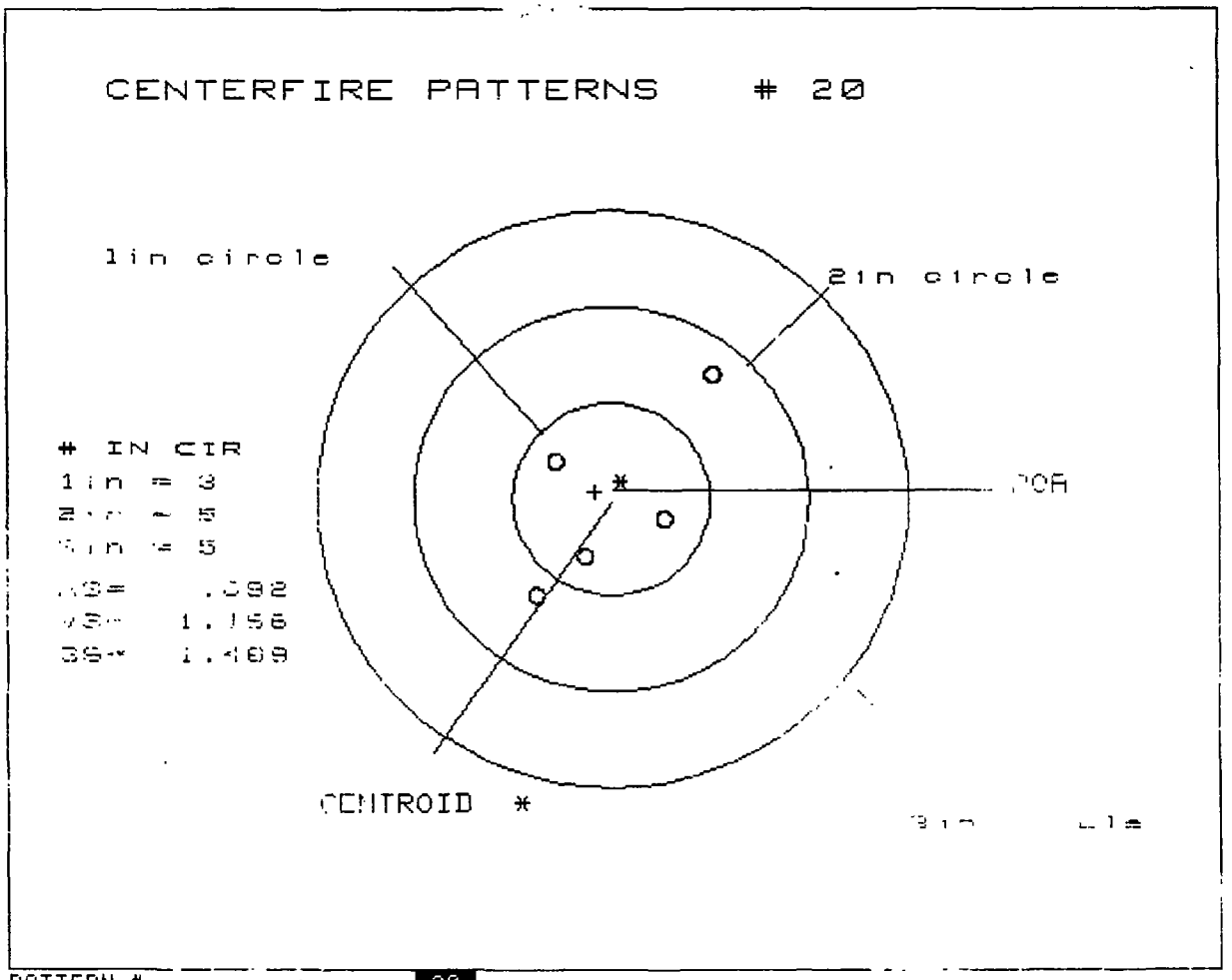
B-252475 .223 XP-100 12" TWIST
AMMO: 55 GR. H.P. "POWER-LOKT" LOT U08 0D2301.
SCOPE: 12X REDFIELD
RANGE: 100 YDS. SAND BAG REST.

CENTERFIRE PATTERNS # 19



PATTERN #	:	19
NUMBER OF SHOTS	:	5
MAXIMUM X & Y	:	.752 -.530
MINIMUM X & Y	:	.289 -.167
CENTROID X & Y	:	-.098 .045
POA TO CENTROID RAD	:	.1084
MIN RADIUS	:	.2342
MEAN RADIUS	:	.4320
MAX RADIUS	:	.8545
HORIZONTAL SPREAD	:	1.2820
VERTICAL SPREAD	:	.4560
EXTREME SPREAD	:	1.3144

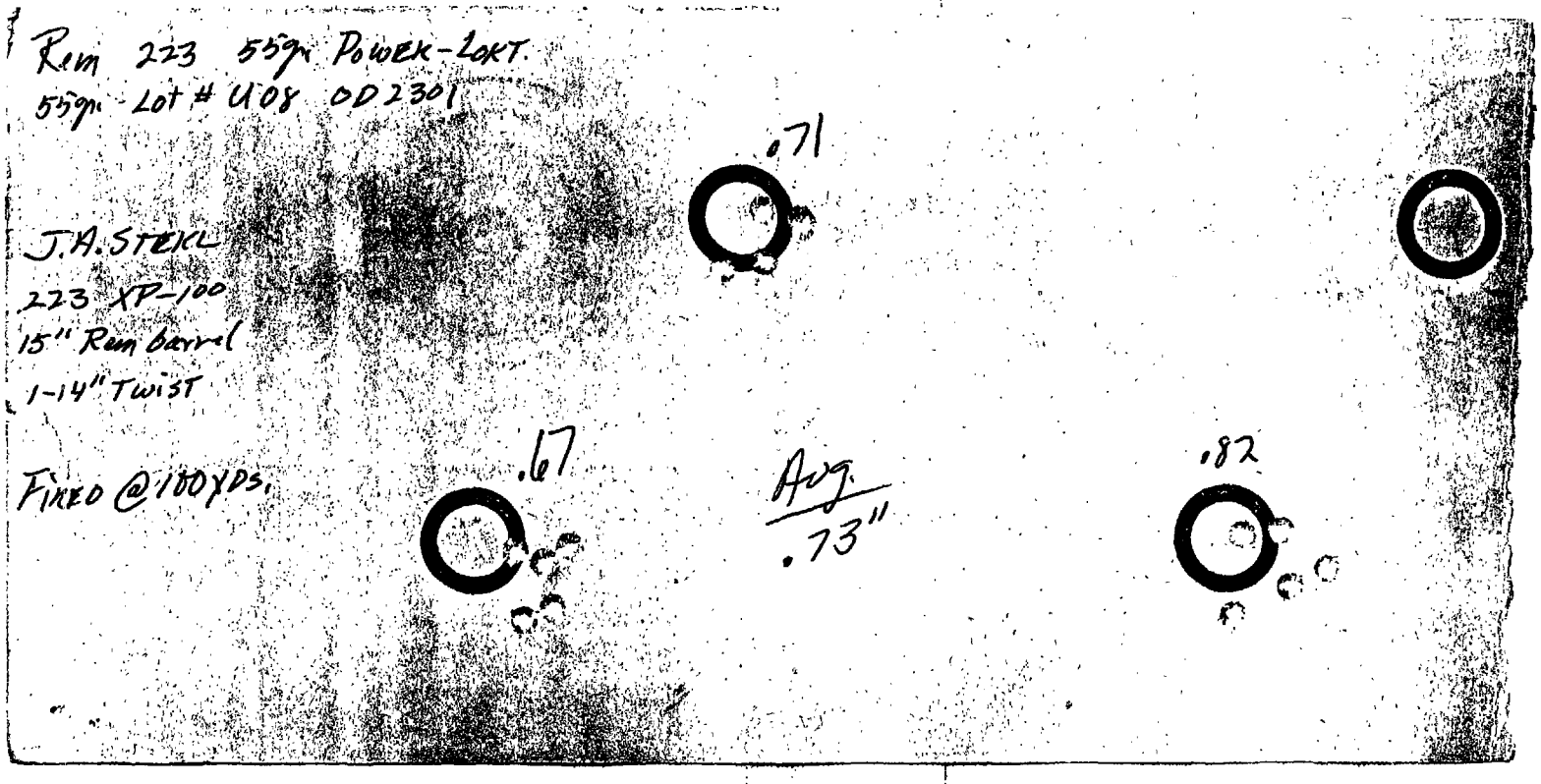
NUMBER IN ONE INCH CIRCLE	=	4
NUMBER IN TWO INCH CIRCLE	=	5
NUMBER IN THREE INCH CIRCLE	=	5

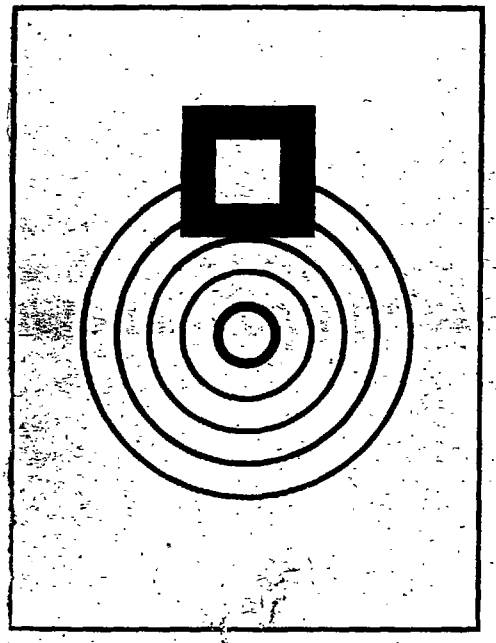


PATTERN # : 20

NUMBER OF SHOTS :	5	
MAXIMUM X & Y :	.579	-.313
MINIMUM X & Y :	.609	-.557
CENTROID X & Y :	.082	-.049
POA TO CENTROID RAD:	.0953	
MIN RADIUS :	.2926	
MEAN RADIUS :	.4798	
MAX RADIUS :	.8246	
HORIZONTAL SPREAD :	.8920	
VERTICAL SPREAD :	1.1660	
EXTREME SPREAD :	1.4681	

NUMBER IN ONE INCH CIRCLE	=	3
NUMBER IN TWO INCH CIRCLE	=	5
NUMBER IN THREE INCH CIRCLE	=	5

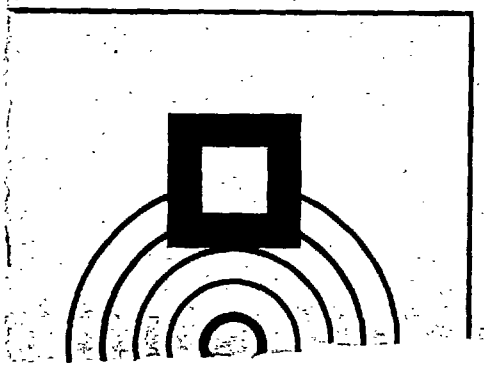

Rem 223 55gr. Power-Lokt.
55gr. Lot # U08 OD2301
J.A. STEKL
223 XP-100
15" Rem barrel
1-14" Twist
Fired @ 100 yds.
.71
.67
.82
Avg.
.73"



I.B.S.

OFFICIAL 100 YD.
BENCH REST TARGET

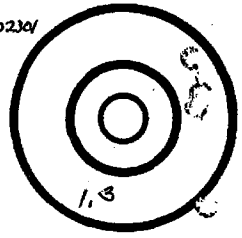
BENCH_____ DATE_____
COMP_____ GROUP_____
RELAY_____ SCORE_____
MATCH No._____

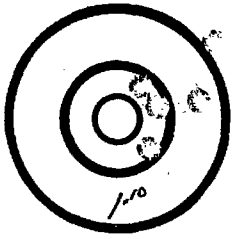


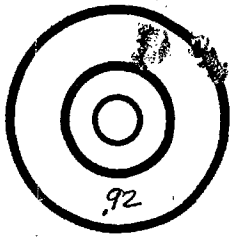
REM-223 55 GR. "POWER-LOKT." H.P

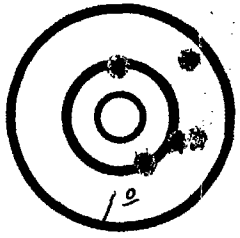
LOT #468-0D2301

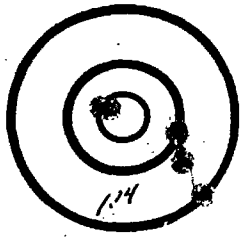
#1189.
223.
m/100











AVG 1.09

Date_____ Rifle No._____ Cal._____ Distance_____ Marksman_____

Form 369

Bruce Ram

XP 100
223

5 56

NOV 15/85

XP100 223 REM PISTOLS

WRITER SEMINAR GUNS TO BE READY
FOR SHIPMENT NOV. 1, 1985

WORK ORDER E0237-306.

REQUESTED ARMS SERVICE ATTENTION ITEMS:
1. POLISH & COLOR BARREL-RECEIVER ASSEMBLY.
2. POLISH & COLOR BOLT ASSEMBLY
MAY REQUIRE EXTRACTOR/EJECTOR DISASSEMBLY
AND RE-ASSEMBLY.
3. BURR & SELECT FIT STOCK (7mm BR REM).
4. RE-ASSEMBLE PISTOL(S).
5. R&D WILL DO FINAL FUNCTION TEST.

THESE EXPERIMENTAL XP-100 223 REM. PISTOLS WERE:
1. FABRICATED IN THE CUSTOM SHOP.
2. PROOF & ACCURACY TESTED IN PLANT GALLERY.
3. BENCH FIRED - ACCURACY TESTED IN RESEARCH (1.6 in).
4. DISASSEMBLY IN CUSTOM SHOP.

ADAM HUGICK EXT 461
RESEARCH

AR-15, Remington LA 357

Ilion Research Division RD 6514

DATE 5-1-81 9-29-80		XP-100 Single Shot - Bolt Action Pistol						
SHEET OF	1 3	Dotted line (– – – –) indicates same part number.		X				
DWG NO		PART NUMBER	221 Fireball	7mm BR Rem.	223			
			PART NUMBERS					
B-31560		BARREL ASSEMBLY COMPLETE	31560	31561	31562			
C-34950		BARREL ASSEMBLY		34950				
? * D-26750		BARREL ASSEMBLY	26750		[illegible]			
C-34945		Barrel (Blank 16484)		34945				
C-26760		Barrel (Blank 16470)	26760		[illegible]			
B-15475		Barrel Bracket (Blank A-15487)	15475	---	----			
D-15476		Receiver	15476	---	----			
C-15483		Barrel & Receiver Marking						
B-15724		Barrel Stud (4)	15724					
D-28750		BOLT ASSEMBLY	28751	28753	28751			
D-28735		BOLT BODY ASSEMBLY	28737	28738	28737			
C-15407		Bolt Body	15407	---	---			
A-18493		Bolt Body Brazing Slug	18493	---	----			
D-28665		Bolt Head (Blank C-32820)	28667		----			
"		Bolt Head		28665				
A-18758		Bolt Pin	18758	---	---			
B-17011		Ejector Washer	17011	---	---			
D-15408		Bolt Handle (Blank D-16510)	15408	---	---			
C-20185		Bolt Handle Brazing Shim	20185	---	---			
A-17017		Ejector (Blank A 13974)	17017	---	----			
A-17676		Ejector Pin (Blank A-91802)	17676	---	----			
A-17019		Ejector Spring	17019	---	---			
C-91816		Extractor (Blank A-90523)		91816				
C-91906		Extractor (Blank A-90522)	91906		----			
A-28600		FIRING PIN ASSEMBLY	28600	---	---			
C-15676		Bolt Plug (Blank C-15674)	15676	---	---			
B-15410		Firing Pin (Blank B-16509)	15410	---	---			
B-17022		Firing Pin Cross Pin	17022	---	---			
C-23320		Firing Pin Head (Blank B-27975)	23321	---	---			
A-15411		Main Spring	15411	---	---			
C-91761		Bolt Stop (Blank C-16812)		91761	?			
C-15446		Bolt Stop (Blank C-16334) *	15446		"			
A-15413		Bolt Stop Spring	15413	---	---			
C-24475		Bolt Stop Pin	24484	---	---			
A-15447		Forward Receiver Screw (Blank A-16502)	15447	---	---			
A-15485		Forward Receiver Screw Washer	15485	---	---			
A-15450		Rear Receiver Screw (Blank A-16503)	15450		----			
A-15484		Rear Receiver Screw Washer	15484	---	---			

Ilion Research Division RD 6514

DATE 11-18-80 5-27-80 ~~6/6/80~~

SHEET 2 OF 3

XP-100
Single Shot – Bolt Action Pistol

Dotted line (– – – –) indicates same part number.

DWG NO	PART ~~NUMBER~~ NAME	221 Fireball	7mm BR Rem.				
		PART NUMBERS					
C-26840	REAR SIGHT ASSEMBLY	26840					
C-15727	Rear Sight Base (Blank 16668)	15727					
A-15733	Elevation Screw	15733					
A-15725	Rear Sight Eyepiece (Blank C-15726)	15725					
C-15728	Rear Sight Leaf (Blank C-16501)	15728					
B-15732	Rear Sight Windage Screw	15732					
A-15418	Rear Sight Nut	15418					
B-17034	Receiver Plug Screw 221 (3) 7mm (5)	17034	– – –	(Blank B-91913)			
D-26785	Rib	26785					
B-15417	Rib Screw (2) (Blank B-16507)	15417					
A-16968	Sight Screw Washer (4)	16968					
B-15416	Sight Screw (4) (Blank B-16508)	15416					
B-15449	Front Sight (Blank B-90948)	15449					
B-91763	Front Sight Ramp (Blank B-91762)		91763				
B-28505	Front Sight Ramp Screw (Blank B-90347)		28505				
C-91496	SAFETY ASSEMBLY	91496	– – –	– – – –			
C-91494	Safety (Blank C-16329)	91494	– – –	– – – –			
C-91495	Safety Button	91495	– – –	– – –			
B-23220	Safety Detent Ball	23222	– – –	– – – –			
B-15432	Safety Detent Spring	15432	– – –	– – –			
B-17043	Safety Pivot Pin (Blank B-91918)	17043	– – –	– – –			
A-17044	Safety Snap Washer	17044	– – –	– – –			
D-26790	SEAR HOUSING ASSEMBLY	26790	– – –	– – – –			
B-16925	Sear Housing Sub-Assembly	16925	– – –	– – – –			
D-15452	Sear Housing (Blank D-15744)	15452	– – –	– – – –			
B-17053	Sear Block Stop Screw (Blank B-91920)	17053	– – –	– – –			
C-14269	Sear Safety Cam (Blank C-91919)	14269	– – –	– – – –			
C-24475	Sear Block Pin	24477	– – –	– – –			
A-15456	Sear Block Spring	15456	– – –	– – –			
C-15457	Trigger (Blank C-16872)	15457	– – –	– – –			
D-15458	Trigger Link (Blank D-16325)	15458	– – –	– – –			
A-15459	Trigger Link Pin (2) (Blank A-16505)	15459	– – –	– – –			
A-15460	Trigger Link Roller (2)	15460	– – –	– – –			
A-26845	SEAR BLOCK ASSEMBLY	26845	– – –	– – –			
B-15461	Sear Block (Blank B-15718)	15461	– – –	– – –			
A-15462	Sear Block Stud	15462	– – –	– – –			
C-24475	Sear Pin (2)	24476	– – –	– – –			

Remington Research Division — RD – 6514

DATE 12/8/80
5-27-80

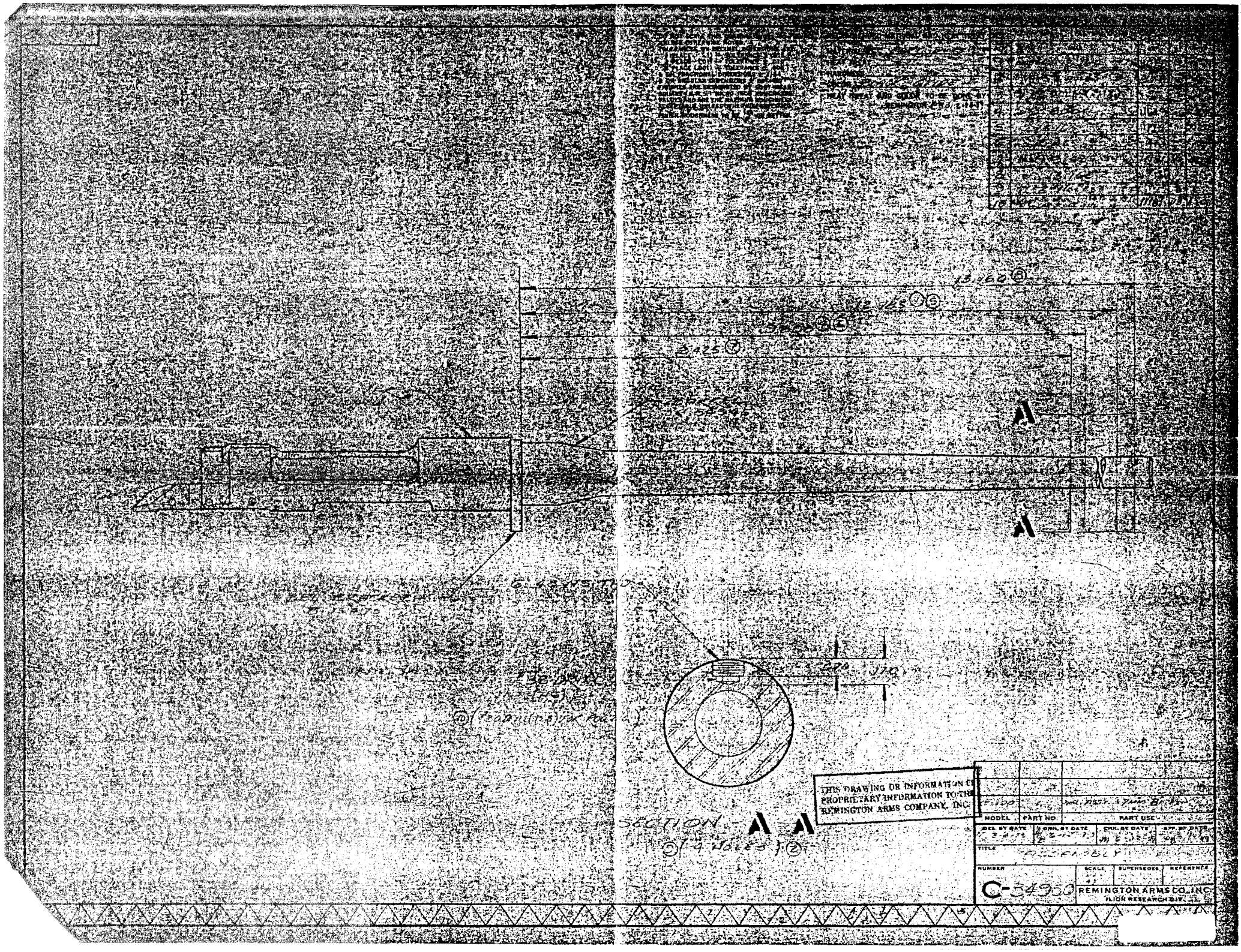
SHEET 3 OF 3

XP–100
Single Shot – Bolt Action Pistol

Dotted line (– – – –) indicates same part number.

DWG NO	PART ~~NUMBER~~ NAME	221 Fireball	7mm BR Rem.				
		PART NUMBERS					
D-91765	STOCK ASSEMBLY (Checker C-15496)		91765	– – – –			
A-26805	STOCK ASSEMBLY	26805					
C-15463	Fore-end Tip	15463	– – –	– – –			
B-15464	Fore-end Tip Spacer	15464	– – –	– – –			
A-15493	Fore-end Diamond (2)	15493	– – –	– – –			
C-15448	Foreward Receiver Screw Escutcheon (Blank C-16873)	15448	– – –	– – –			
B-15465	Grip Diamond	15465	– – –	– – –			
C-15451	Rear Receiver Screw Escutcheon (Blank C-16875)	15451	– – –	– – –			
E–15466	Stock Half, Left	15466	– – –	– – –			
E-15467	Stock Half, Right	15467	– – –	– –			
C-15468	Trigger Guard	15468	– –	– – –			
B-16876	TRIGGER HOUSING ASSEMBLY	16876	– – –	– – –			
C-15473	Trigger Housing (Blank C-16871)	15473	– – –	– –			
A-15469	Trigger Housing Screw, Front (Blank A-16504)	15469	– – –	– –			
B-15470	Trigger Balance (Blank B-16874)	15470	– – –	– – –			
A-15471	Trigger Balance Pin (Blank 13859)	15471	– – –	– – –			
C-15472	Trigger Balance Spring	15472	– – –	– – –			
B-15474	Trigger Housing Screw (2) (Blank B-16506)	15474	– – –	– – –			
C-24475	Trigger Pin	24483	– – –	– – –			
A-15778	Rear Sight Wrench	15778					

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON



BARBER - PRESALE R 013168
R2532670

Ilion Research Division RD 6514

DATE 5-1-81 9-29-80		XP-100 Single Shot - Bolt Action Pistol						
SHEET OF	1 3	Dotted line (– – – –) indicates same part number.						
DWG. NO.		PART NUMBER	221 Fireball	7mm BR Rem.				
			PART NUMBERS					
B-31560		BARREL ASSEMBLY COMPLETE	31560	31561				
C-34950		BARREL ASSEMBLY		34950				
D-26750		BARREL ASSEMBLY	26750					
C-34945		Barrel (Blank 16484)		34945				
C-26760		Barrel (Blank 16470)	26760					
B-15475		Barrel Bracket (Blank A-15487)	15475	---				
D-15476		Receiver	15476	---				
C-15483		Barrel & Receiver Marking						
B-15724		Barrel Stud (4)	15724					
D-28750		BOLT ASSEMBLY	28751	28753				
D-28735		BOLT BODY ASSEMBLY	28737	28738				
C-15407		Bolt Body	15407	---				
A-18493		Bolt Body Brazing Slug	18493	---				
D-28665		Bolt Head (Blank C-32820)	28667					
"		Bolt Head		28665				
A-18758		Bolt Pin	18758	---				
B-17011		Ejector Washer	17011	---				
D-15408		Bolt Handle (Blank D-16510)	15408	---				
C-20185		Bolt Handle Brazing Shim	20185	---				
A-17017		Ejector (Blank A 13974)	17017	---				
A-17676		Ejector Pin (Blank A-91802)	17676	---				
A-17019		Ejector Spring	17019	---				
C-91816		Extractor (Blank A-90523)		91816				
C-91906		Extractor (Blank A-90522)	91906					
A-28600		FIRING PIN ASSEMBLY	28600	---				
C-15676		Bolt Plug (Blank C-15674)	15676	---				
B-15410		Firing Pin (Blank B-16509)	15410	---				
B-17022		Firing Pin Cross Pin	17022	---				
C-23320		Firing Pin Head (Blank B-27975)	23321	---				
A-15411		Main Spring	15411	---				
C-91761		Bolt Stop (Blank C-16812)		91761				
C-15446		Bolt Stop (Blank C-16334)	15446					
A-15413		Bolt Stop Spring	15413	---				
C-24475		Bolt Stop Pin	24484	---				
A-15447		Forward Receiver Screw (Blank A-16502)	15447	---				
A-15485		Forward Receiver Screw Washer	15485	---				
A-15450		Rear Receiver Screw (Blank A-16503)	15450					
A-15484		Rear Receiver Screw Washer	15484	---				

Ilion Research Division RD 6514

DATE 5-1-81 9-29-80	XP-100 Single Shot - Bolt Action Pistol		
SHEET 1 OF 3	Dotted line (– – – –) indicates same part number.		
DWG. NO.	PART NUMBER	221 Fireball	7mm BR Rem.
		PART NUMBERS	
B-31560	BARREL ASSEMBLY COMPLETE	31560	31561
C-34950	BARREL ASSEMBLY		34950
D-26750	BARREL ASSEMBLY	26750	
C-34945	Barrel (Blank 16484)		34945
C-26760	Barrel (Blank 16470)	26760	
B-15475	Barrel Bracket (Blank A-15487)	15475	---
D-15476	Receiver	15476	---
C-15483	Barrel & Receiver Marking		
B-15724	Barrel Stud (4)	15724	
D-28750	BOLT ASSEMBLY	28751	28753
D-28735	BOLT BODY ASSEMBLY	28737	28738
C-15407	Bolt Body	15407	---
A-18493	Bolt Body Brazing Slug	18493	---
D-28665	Bolt Head (Blank C-32820)	28667	
	Bolt Head		28665
A-18758	Bolt Pin	18758	---
B-17011	Ejector Washer	17011	---
D-15408	Bolt Handle (Blank D-16510)	15408	---
C-20185	Bolt Handle Brazing Shim	20185	---
A-17017	Ejector (Blank A 13974)	17017	---
A-17676	Ejector Pin (Blank A-91802)	17676	---
A-17019	Ejector Spring	17019	---
C-91816	Extractor (Blank A-90523)		91816
C-91906	Extractor (Blank A-90522)	91906	
A-28600	FIRING PIN ASSEMBLY	28600	---
C-15676	Bolt Plug (Blank C-15674)	15676	---
B-15410	Firing Pin (Blank B-16509)	15410	---
B-17022	Firing Pin Cross Pin	17022	---
C-23320	Firing Pin Head (Blank B-27975)	23321	---
A-15411	Main Spring	15411	---
C-91761	Bolt Stop (Blank C-16812)		91761
C-15446	Bolt Stop (Blank C-16334)	15446	
A-15413	Bolt Stop Spring	15413	---
C-24475	Bolt Stop Pin	24484	---
A-15447	Forward Receiver Screw (Blank A-16502)	15447	---
A 15485	Forward Receiver Screw Washer	15485	---
A 15450	Rear Receiver Screw (Blank A-16503)	15450	
A 15484	Rear Receiver Screw Washer	15484	---

Ilion Research Division RD – 6514

DATE 5-1-81 9-29-80		XP-100 Single Shot - Bolt Action Pistol						
SHEET OF	1 3	Dotted line (– – – –) indicates same part number.						
DWG. NO.		PART NUMBER	221 Fireball	7mm BR Rem.				
			PART NUMBERS					
B-31560		BARREL ASSEMBLY COMPLETE	31560	31561				
C-34950		BARREL ASSEMBLY		34950				
D-26750		BARREL ASSEMBLY	26750					
C-34945		Barrel (Blank 16484)		34945				
C-26760		Barrel (Blank 16470)	26760					
B-15475		Barrel Bracket (Blank A-15487)	15475	---				
D-15476		Receiver	15476	---				
C-15483		Barrel & Receiver Marking						
B-15724		Barrel Stud (4)	15724					
D-28750		BOLT ASSEMBLY	28751	28753				
D-28735		BOLT BODY ASSEMBLY	28737	28738				
C-15407		Bolt Body	15407	---				
A-18493		Bolt Body Brazing Slug	18493	---				
D-28665		Bolt Head (Blank C-32820)	28667					
"		Bolt Head		28665				
A-18758		Bolt Pin	18758	---				
B-17011		Ejector Washer	17011	---				
D-15408		Bolt Handle (Blank D-16510)	15408	---				
C-20185		Bolt Handle Brazing Shim	20185	---				
A-17017		Ejector (Blank A-13974)	17017	---				
A-17676		Ejector Pin (Blank A-91802)	17676	---				
A-17019		Ejector Spring	17019	---				
C-91816		Extractor (Blank A-90523)		91816				
C-91906		Extractor (Blank A-90522)	91906					
A-28600		FIRING PIN ASSEMBLY	28600	---				
C-15676		Bolt Plug (Blank C-15674)	15676	---				
B-15410		Firing Pin (Blank B-16509)	15410	---				
B-17022		Firing Pin Cross Pin	17022	---				
C-23320		Firing Pin Head (Blank B-27975)	23321	---				
A-15411		Main Spring	15411	---				
C-91761		Bolt Stop (Blank C-16812)		91761				
C-15446		Bolt Stop (Blank C-16334)	15446					
A-15413		Bolt Stop Spring	15413	---				
C-24475		Bolt Stop Pin	24484	---				
A-15447		Forward Receiver Screw (Blank A-16502)	15447	---				
A-15485		Forward Receiver Screw Washer	15485	---				
A-15450		Rear Receiver Screw (Blank A-16503)	15450					
A-15484		Rear Receiver Screw Washer	15484	---				

Ilion Research Division RD – 6514

DATE 11-18-80 5-27-80 6/6/80

SHEET 2 OF 3

XP–100
Single Shot – Bolt Action Pistol

Dotted line (– – – –) indicates same part number.

DWG. NO.	PART ~~NUMBER~~ NAME	221 Fireball	7mm BR Rem.				
		PART NUMBERS					
C-26840	REAR SIGHT ASSEMBLY	26840					
C-15727	Rear Sight Base (Blank 16668)	15727					
A-15733	Elevation Screw	15733					
A-15725	Rear Sight Eyepiece (Blank C-15726)	15725					
C-15728	Rear Sight Leaf (Blank C-16501)	15728					
B-15732	Rear Sight Windage Screw	15732					
A-15418	Rear Sight Nut	15418					
B-17034	Receiver Plug Screw 221 (3) 7mm (5)	17034	---	(Blank B-91913)			
D-26785	Rib	26785					
B-15417	Rib Screw (2) (Blank B-16507)	15417					
A-16968	Sight Screw Washer (4)	16968					
B-15416	Sight Screw (4) (Blank B-16508)	15416					
B-15449	Front Sight (Blank B-90948)	15449					
B-91763	Front Sight Ramp (Blank B-91762)		91763				
B-28505	Front Sight Ramp Screw (Blank B-90347)		28505				
C-91496	SAFETY ASSEMBLY	91496	---				
C-91494	Safety (Blank C-16329)	91494	---				
C-91495	Safety Button	91495	---				
B-23220	Safety Detent Ball	23222	---				
B-15432	Safety Detent Spring	15432	---				
B-17043	Safety Pivot Pin (Blank B-91918)	17043	---				
A-17044	Safety Snap Washer	17044	---				
D-26790	SEAR HOUSING ASSEMBLY	26790	---				
B-16925	Sear Housing Sub-Assembly	16925	---				
D-15452	Sear Housing (Blank D-15744)	15452	---				
B-17053	Sear Block Stop Screw (Blank B-91920)	17053	---				
C-14269	Sear Safety Cam (Blank C-91919)	14269	---				
C-24475	Sear Block Pin	24477	---				
A-15456	Sear Block Spring	15456	---				
C-15457	Trigger (Blank C-16872)	15457	---				
D-15458	Trigger Link (Blank D-16325)	15458	---				
A-15459	Trigger Link Pin (2) (Blank A-16505)	15459	---				
A-15460	Trigger Link Roller (2)	15460	---				
A-26845	SEAR BLOCK ASSEMBLY	26845	---				
B-15461	Sear Block (Blank B-15718)	15461	---				
A-15462	Sear Block Stud	15462	---				
C-24475	Sear Pin (2)	24476	---				

Ilion Research Division RD – 6514

DATE 12/8/80 5-27-80		XP–100 Single Shot – Bolt Action Pistol						
SHEET OF	3 3	Dotted line (– – – –) indicates same part number.						
DWG. NO.		PART ~~NUMBER~~ NAME	221 Fireball	7mm BR Rem.				
			PART NUMBERS					
D-91765		STOCK ASSEMBLY (Checker C-15496)	.	91765				
A-26805		STOCK ASSEMBLY	26805					
C-15463		Fore-end Tip	15463	---				
B-15464		Fore-end Tip Spacer	15464	---				
A-15493		Fore-end Diamond (2)	15493	---				
C-15448		Foreward Receiver Screw Escutcheon	15448	---				
		(Blank C-16873)						
B-15465		Grip Diamond	15465	---				
C-15451		Rear Receiver Screw Escutcheon	15451	---				
		(Blank C-16875)						
E–15466		Stock Half, Left	15466	---				
E-15467		Stock Half, Right	15467	---				
C-15468		Trigger Guard	15468	---				
B-16876		TRIGGER HOUSING ASSEMBLY	16876	---				
C-15473		Trigger Housing (Blank C-16871)	15473	---				
A-15469		Trigger Housing Screw, Front (Blank A-16504)	15469	---				
B-15470		Trigger Balance (Blank B-16874)	15470	---				
A-15471		Trigger Balance Pin (Blank 13859)	15471	---				
C-15472		Trigger Balance Spring	15472	---				
B-15474		Trigger Housing Screw (2) (Blank B-16506)	15474	---				
C-24475		Trigger Pin	24483	---				
A-15778		Rear Sight Wrench	15778					

TEST PROGRAM 7-9-85

223 REM VS 5.56 MIL

RIFLES & AMMO

CHAMBER DRAWINGS

PROOFING PRACTICE

AMMO PRESSURES

{ BILL COLE TO CALL WALT NICHOLS 7-17-85
I AM TO CALL HERM COCKSHUCK

(1)

JULY 9, 1985

223 REM VS. 5.56 CHAMBER

TEST RIFLES PROPOSED:

FIVE X MODEL SEVEN RIFLES CALIBER 223 REM.

FIVE X MODEL 700 BDL VARIMENT RIFLES CALIBER 223 REM.

TEST AMMUNITION PROPOSED.

REM 223 REM. FACTORY AMMO. — 240

WIN 223 REM. FACTORY AMMO. — 240

FED 223 REM. FACTORY AMMO. — 240

REM 223 REM. PROOF AMMO. — 40

GOVERNMENT 5.56 SERVICE AMMO. — 240

223 REM CUSTOM SHOP HANDLOADS. — 240

TEST PROCEDURE(S):

I. WITHDRAW ABOVE GUNS FROM WARE HOUSE AND AMMUNITION FROM MEAS & TEST LAB AMMO STORES.

II. FIRE ALL ABOVE RIFLES FOR ACCURACY.

PER GUN SHOOTING — 2 X 5SHOT GROUPS WITH REM AMMO

— 2 X 5SHOT GROUPS WITH FED AMMO

— 2 X 5SHOT GROUPS WITH WIN AMMO

— 2 X 5SHOT GROUPS WITH 5.56 GOV'T

— 2 X 5SHOT GROUPS WITH HANDLOADS.

III. RECORD ACCURACY RESULTS.

IV. SELECT MEAN ACCURACY MODEL 700 BDL AND MEAN ACCURACY MODEL SEVEN FOR MUZZLE VELOCITY AND STRAIN GAGE PRESSURE MEASUREMENTS.

V. INSTRUMENT BOTH RIFLES AND SHOOT STRAIN GAGE PRESSURES AND MUZZLE VELOCITIES:

1 X 5-SHOT GROUP WITH REM AMMO
1 X 5 SHOT GROUP WITH FED AMMO
1 X 5 SHOT GROUP WITH W/W AMMO
1 X 5 SHOT GROUP WITH 5.56 GOV'T
1 X 5 SHOT GROUP WITH PROOF
1 X 5 SHOT GROUP WITH HANDLOADS.
60 SHOTS TOTAL

VI. HAVE CUSTOM SHOP RECHAMBER BOTH RIFLES WITH 5.56 GOV'T DEEPER THROAT CHAMBER.

VII. RESHOOT BOTH RIFLES FOR STRAIN GAGE PRESSURES AND MUZZLE VELOCITIES

VIII. RECORD DATA OF #5 & #7 FOR REVIEW.

IX. SELECT BEST + NEXT TO WORST MODEL 700 BDL VARMINT AND WORST AND NEXT TO BEST MODEL SEVEN RIFLES FOR RECHAMBER AS 5.56.

X. HAVE CUSTOM SHOP RECHAMBER SELECTED FOUR RIFLES AS 5.56 CHAMBERED RIFLES.

XI. RESHOOT ACCURACY OF II LESS THE TWO RIFLES USED FOR STRAIN GAGE PRESSURES

XII RECORD ACCURACY RESULTS OF XI.

XIII REVIEW DATA:

(a) 223 REM. CHAMBER ACCURACY DATA - TOTAL

(b) 223 REM. CHAMBER ACCURACY RESHOOT DATA

(c) 223 REM. VS 5.56 CHAMBER ACCURACY DATA -

(d) 223 REM. VS 5.56 CHAMBER PRESSURE DATA -

(e) 223 REM. VS 5.56 CHAMBER MUZZLEVEL. DATA -

(f) 223 REM PROOF PRESSURES IN 223 REM VS 5.56 CHAMBER. - (1020 TOTAL TEST RDS)

(g) IF ACCURACY DATA IS QUESTIONED ALTER REMAM RIFLES TO 5.56 AND RESHOOT ACCURACY.

II. 10 x 10 = 100
x 5 = 500 sub #1

V. 5 x 2 = 10
x 6 = 60 sub #2

VII. 5 x 2 = 10
x 6 = 60 sub #3

XI. 10 x 8 = 80
x 5 = 400 sub #4

1020

D-69-8

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

xc: Firearms Business Team

Remington DUPONT PETERS DUPONT

"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"

Ilion, New York
August 2, 1985

E0237
XP100

TO: T.C. DOUGLAS
D.S. FINDLAY

FROM: J.W. BOWER

NOTES FROM BUSINESS TEAM MEETING

Decisions made at yesterday's meeting that are of interest to you:

- The 1986 offerings in the Sportsman 78 and XP-100 will be made in .223 caliber, not 5.56 mm. This is in response to SAAMI's recommendation that .223 and 5.56 be considered a dangerous combination.

ADAM

- The XP-100 will be introduced as soon as possible in 1986. Based on our previous conversations, I committed to a November 1 transmittal.
- Marketing requested that the sight be removed from the XP-100.
- Deer Gun economics were approved. That package should be transmitted as soon as possible.
- The Business Team reiterated their commitment to introduce the Model 870 Improvements in 1987, and they are prepared to ask for advance funds to accomplish the schedule. Ken Soucy is to review the schedule and determine a "drop dead" date for 1987 introduction. Research needs to be in a position to transmit the package by October 1.
- The new, one piece centerfire sight, will be phased in as soon as its available. We need to get drawings to MIM as soon as possible.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131694

SEQUENCE OF OPERATIONS

OP. No.	OPERATION	DEPT.
	TO PRODUCE THE DESIRED BARREL ASSEMBLY, DRAW THE PARTS SHOWN:	
	221 7MMBR	
	Barrel Assembly 26750 34950	
	Barrel 26760 34945	
	Barrel Bracket 15475 15475	
	Receiver 15476 15476	
	Barrel Stud (4) 15724 None	
330	Wash out Threads on Barrel and Receiver, and Wash Barrel Bracket in Degreaser. Apply Loctite pipe sealant to Barrel Threads. Assembly Barrel, Barrel Bracket and Receiver. Wipe off excess Loctite Pipe Sealant.	58
335	Wash, Magnaflux and Stamp	58
340	Roll Mark Caliber	58

OP. No.	OPERATION	DEPT.
345	Roll Mark Patent	58
350	[redacted]	58
355	[redacted]	58
360	[redacted]	58
365	[redacted].	58

DATES AND REASONS FOR REVISIONS 9/29/80-NEW-MRP-RLJ-279136

8/16/83 - Add quanity (4) to 15724 - RLS - 283160

DATES AND REASONS FOR REVISIONS

MODEL	XP-100	PART NAME	Barrel Assembly				PAGE 1	OF 2
		GA. OR CAL.	221 FB	7MM BR				
		PART No.	26750	34950				

RD-6460

BARBER - PRESALE R 0131694
R2532682

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131695

SEQUENCE Or OPERATIONS

OP. No.	OPERATION	DEPT.	OP. No.	OPERATION	DEPT.
3[redacted]	[redacted]	58			
375	Inspect outside and Bore - Check muzzle for Burr. Remove small mars. Check twist and air gage groove, wipe bore.	58		[redacted]	
38[redacted]	[redacted]	58			
385	Wire Brush	58			
390	Black Oxide Color	78			

DATES AND REASONS FOR REVISIONS 9/29/80-NEW-MRP-RLJ-279135

6/13/83 - Obs. op. 395 & add Crib - RLS - 282862

DATES AND REASONS FOR REVISIONS

MODEL	XP-100	PART NAME	Barrel Assembly			PAGE 2	OF 2
		GA. OR CAL.	221 FB	7MMBR			
		PART No.	26750	34950			

RD-0460

BARBER - PRESALE R 0131695
R2532683

Ilion Research Division RD 6514

DATE 5-1-81 9-29-80		XP-100 Single Shot - Bolt Action Pistol						
SHEET OF	1 3	Dotted line (- - - -) indicates same part number.						
DWG. NO.		PART NUMBER	221 Fireball	7mm BR Rem.	223 REM			
			PART NUMBERS					
B-31560		BARREL ASSEMBLY COMPLETE	31560	31561	31562			
C-34950		BARREL ASSEMBLY		34950				
D-26750		BARREL ASSEMBLY	26750					
D26750		BARREL ASSEMBLY			34951			
C-34945		Barrel (Blank 16484)		34945				
C-26760		Barrel (Blank 16470)	26760					
C 34945		BARREL (BLANK)			34946			
B-15475		Barrel Bracket (Blank A-15487)	15475	---	- - -			
D-15476		Receiver	15476	---	- - -			
C-15483		Barrel & Receiver Marking						
B-15724		Barrel Stud (4)	15724					
D-28750		BOLT ASSEMBLY	28751	28753	28751			
D-28735		BOLT BODY ASSEMBLY	28737	28738	28737			
C-15407		Bolt Body	15407	---	- - -			
A-18493		Bolt Body Brazing Slug	18493	---	- - -			
D-28665		Bolt Head (Blank C-32820)	28667		- - -			
"		Bolt Head		28665				
A-18758		Bolt Pin	18758	---	- - -			
B-17011		Ejector Washer	17011	---	- - -			
D-15408		Bolt Handle (Blank D-16510)	15408	---	- - -			
C-20185		Bolt Handle Brazing Shim	20185	---	- - -			
A-17017		Ejector (Blank A 13974)	17017	---	- - -			
A-17676		Ejector Pin (Blank A-91802)	17676	---	- - -			
A-17019		Ejector Spring	17019	---	- - -			
[redacted]		Extractor (Blank [redacted])	17017	[redacted]	- - -			
[redacted]		[redacted]	[redacted]	[redacted]	[redacted]			
		EXTRACTOR RIVET	27342	- - -	- - -			
A-28600		FIRING PIN ASSEMBLY	28600	---	- - -			
C-15676		Bolt Plug (Blank C-15674)	15676	---	- - -			
B-15410		Firing Pin (Blank B-16509)	15410	---	- - -			
B-17022		Firing Pin Cross Pin	17022	---	- - -			
C-23320		Firing Pin Head (Blank B-27975)	23321	---	- - -			
A-15411		Main Spring	15411	---	- - -			
C-91761		Bolt Stop (Blank C-16812)		91761	- - -			
C-15446		Bolt Stop (Blank C-16334)	15446					
A-15413		Bolt Stop Spring	15413	---	- - -			
C-24475		Bolt Stop Pin	24484	---	- - -			
A-15447		Forward Receiver Screw (Blank A-16502)	15447	---	- - -			
A-15485		Forward Receiver Screw Washer	15485	---	- - -			
A-15450		Rear Receiver Screw (Blank A-16503)	15450		- - -			
A-15484		Rear Receiver Screw Washer	15484	---	- - -			

NOT AUTHORIZED FOR PRODUCTION

Rod Research Division RD 6514

DATE 11-18-80 5-27-80 6/6/80

SHEET 2 OF 3

XP-100
Single Shot – Bolt Action Pistol

Dotted line (– – – –) indicates same part number.

DWG. NO.	PART ~~NUMBER~~ NAME	221 Fireball	7mm BR Rem	223 REM.		
		PART NUMBERS				
C-26840	REAR SIGHT ASSEMBLY	26840				
C-15727	Rear Sight Base (Blank 16668)	15727				
A-15733	Elevation Screw	15733				
A-15725	Rear Sight Eyepiece (Blank C-15726)	15725				
C-15728	Rear Sight Leaf (Blank C-16501)	15728				
B-15732	Rear Sight Windage Screw	15732				
A-15418	Rear Sight Nut	15418				
B-17034	Receiver Plug Screw 221 (3) 7mm (5) 223 (3)	17034	---	---	(BLANK B-91913)	
D-26785	Rib	26785				
B-15417	Rib Screw (2) (Blank B-16507)	15417				
A-16968	Sight Screw Washer (4)	16968				
B-15416	Sight Screw (4) (Blank B-16508)	15416				
B-15449	Front Sight (Blank B-90948)	15449				
B-91763	Front Sight Ramp (Blank B-91762)		91763			
B-28505	Front Sight Ramp Screw (Blank B-90347)		28505			
C-91496	SAFETY ASSEMBLY	91496	---	--		
C-91494	Safety (Blank C-16329)	91494	---	--		
C-91495	Safety Button	91495	---	--		
B-23220	Safety Detent Ball	23222	---	--		
B-15432	Safety Detent Spring	15432		--		
B-17043	Safety Pivot Pin (Blank B-91918)	17043		--		
A-17044	Safety Snap Washer	17044	---	--		
D-26790	SEAR HOUSING ASSEMBLY	26790	---	--		
B-16925	Sear Housing Sub-Assembly	16925	---	--		
D-15452	Sear Housing (Blank D-15744)	15452	---	--		
B-17053	Sear Block Stop Screw (Blank B-91920)	17053	---	--		
C-14269	Sear Safety Cam (Blank C-91919)	14269	---	--		
C-24475	Sear Block Pin	24477	---	--		
A-15456	Sear Block Spring	15456	---	--		
C-15457	Trigger (Blank C-16872)	15457	---	--		
D-15458	Trigger Link (Blank D-16325)	15458	---	--		
A-15459	Trigger Link Pin (2) (Blank A-16505)	15459	---	--		
A-15460	Trigger Link Roller (2)	15460	---	--		
A-26845	SEAR BLOCK ASSEMBLY	26845	---	--		
B-15461	Sear Block (Blank B-15718)	15461	---	--		
A-15462	Sear Block Stud	15462	---	--		
C-24475	Sear Pin (2)	24476	---	--		

NOT AUTHORIZED FOR PRODUCTION

Ilion Research Division RD 6514

DATE 12/8/80
5-27-80

SHEET 3 OF 3

XP-100
Single Shot – Bolt Action Pistol

Dotted line (– – – –) indicates same part number.

DWG NO	PART ~~NUMBER~~ NAME	221 Fireball	7mm BR Rem	223 REM
		PART NUMBERS		
D-91765	STOCK ASSEMBLY (Checker C-15496)		91765	– – –
A-26805	STOCK ASSEMBLY	26805		
C-15463	Fore-end Tip	15463	– – –	– –
B-15464	Fore-end Tip Spacer	15464	– – –	– –
A-15493	Fore-end Diamond (2)	15493	– – –	– –
C-15448	Foreward Receiver Screw Escutcheon (Blank C-16873)	15448	– – –	– –
B-15465	Grip Diamond	15465	– – –	– –
C-15451	Rear Receiver Screw Escutcheon (Blank C-16875)	15451	– – –	– –
E-15466	Stock Half, Left	15466	– – –	– –
E-15467	Stock Half, Right	15467	– – –	– –
C-15468	Trigger Guard	15468	– – –	– –
B-16876	TRIGGER HOUSING ASSEMBLY	16876	– – –	– –
C-15473	Trigger Housing (Blank C-16871)	15473	– – –	– –
A-15469	Trigger Housing Screw, Front (Blank A-16504)	15469	– – –	– –
B-15470	Trigger Balance (Blank B-16874)	15470	– – –	– –
A-15471	Trigger Balance Pin (Blank 13859)	15471	– – –	– –
C-15472	Trigger Balance Spring	15472	– – –	– –
B-15474	Trigger Housing Screw (2) (Blank B-16506)	15474	– – –	– –
C-24475	Trigger Pin	24483	–	– –
A-15778	Rear Sight Wrench	15778		

NOT AUTHORIZED FOR PRODUCTION

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131699

THIS DRAWING OR INFORMATION IS PROPRIETARY INFORMATION TO THE REMINGTON ARMS COMPANY, INC.

DO NOT SCALE THIS DRAWING: WORK TO FIGURES UNLESS OTHERWISE NOTED.
TOLERANCES ON DECIMAL DIMENSIONS ARE:
1 PLACE (.1) — TOLERANCE ± .015
2 PLACE (.01) — TOLERANCE ± .010
3 PLACE (.001) — TOLERANCE ± .005
& ON FRACTIONAL DIMENSIONS ± 1/64
& ON ANGULAR DIMENSIONS ± 00°–30'
FINISHES ARE DESIGNATED BY ROOT MEAN SQUARE (R.M.S.) MICRO-INCH ROUGHNESS VALUES AND ARE THE MAXIMUM ROUGHNESS ACCEPTABLE. UNLESS OTHERWISE SPECIFIED.
FINISH ROUGHNESS TO BE 125 OR BETTER.

RECOMMENDED MATERIAL AND HEAT TREAT
MATERIAL
HEAT TREAT
HARDNESS
COLOR
HEAT TREAT AND COLOR TO BE DONE BY REMINGTON

ALTERATIONS

ALT.	WAS	REF.	BY	DATE

CALIBER	BARREL ASSY COMPLETE	BARREL ASSY	BARREL	BARREL BRACKET	RECEIVER	BARREL STUD
221	31560	26750	26760	15475	15476	15724
7MM BR	31561	34950	34945	15475	15476	—
223 REM.	31562	34951	34946	15475	15476	—

NEED D33450 For ~~correct~~ similiar format

~~[illegible]~~ and number assignment

Ready to be placed on reprawn model drawings

Reprawn

D100060

Aug 16, 81 A.

Aug 15, 81 A.

MODEL	PART NO.	PART USE
XP100		BARREL ASSY COMPLETE

DES. BY DATE	DRN. BY DATE	CHK. BY DATE	APP. BY DATE
	V. B. 5-29-80	FGH 5-29-80	5/29/80

TITLE BARREL ASSY COMPLETE

NUMBER	SCALE	SUPERSEDES	REFERENCE
B-31560	—		DCP # 11204

REMINGTON ARMS CO. INC.
ILION RESEARCH DIV.

THIS DRAWING OR INFORMATION IS PROPRIETARY INFORMATION TO THE REMINGTON ARMS COMPANY, INC.

BARBER - PRESALE R 0131699
R2532687

XP100 - 223 REV

I XP100 DRAWINGS NOT IN MRP FORMAT.

✓ A. BARREL ASSEMBLY COMPLETE REVISED & REFORMAT

MRP FORMAT - (LIKE 700) - BOLT ASSEM COMPLETE, CAL, BARREL ASSEM, OK, BOLT ASSEM, EJECTOR, EJECTOR PIN, EJECTOR SPG, FRONT SIGHT ARMS, FRONT SIGHT SCREW, EXTRACTOR, [redacted],

✓ B. BARREL ASSEMBLY

C34950 LIST, ADDUSE (C34951)

MRP, FORMAT (PART#, CAL, BARREL, RECEIVER, BRACKET, SIGHT OPTIONS)

✓ C. ~~BARREL~~

~~C34945 : LIST, ADDUSE (C34946)~~

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington PETERS

"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"

xc: Firearms Business Team

Ilion, New York
August 2, 1985

TO: T.C. DOUGLAS
D.S. FINDLAY

FROM: J.W. BOWER

NOTES FROM BUSINESS TEAM MEETING

Decisions made at yesterday's meeting that are of interest to you:

- The 1986 offerings in the Sportsman 78 and XP-100 will be made in .223 caliber, not 5.56 mm. This is in response to SAAMI's recommendation that .223 and 5.56 be considered a dangerous combination.

ADAM

- The XP-100 will be introduced as soon as possible in 1986. Based on our previous conversations, I committed to a November 1 transmittal.
- Marketing requested that the sight be removed from the XP-100.
- Deer Gun economics were approved. That package should be transmitted as soon as possible.
- The Business Team reiterated their commitment to introduce the Model 870 Improvements in 1987, and they are prepared to ask for advance funds to accomplish the schedule. Ken Soucy is to review the schedule and determine a "drop dead" date for 1987 introduction. Research needs to be in a position to transmit the package by October 1.
- The new, one piece centerfire sight, will be phased in as soon as its available. We need to get drawings to MIM as soon as possible.

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131702

SEQUENCE OF OPERATIONS

OP. No.	OPERATION	DEPT.
	TO PRODUCE THE DESIRED BARREL ASSEMBLY, DRAW THE PARTS SHOWN:	
	221 7MMBR	
	Barrel Assembly 26750 34950	
	Barrel 26760 34945	
	Barrel Bracket 15475 15475	
	Receiver 15476 15476	
	Barrel Stud (4) 15724 None	
330	Wash out Threads on Barrel and Receiver, and Wash Barrel Bracket in Degreaser. Apply Loctite pipe sealant to Barrel Threads. Assembly Barrel, Barrel Bracket and Receiver. Wipe off excess Loctite Pipe Sealant.	58
335	Wash, Magnaflux and Stamp	58
340	Roll Mark Caliber	58
345	Roll Mark Patent	58
350	Drill and Tap Rear Rib Screw Hole in Barrel. (26750, 221, only)	58
355	Projection Weld Studs to Barrel (26750, 221, Only)	58
360	Face studs to proper height and C'sink (26750, 221, Only)	58
365	Drill (4) Front Sight Holes. (34950, 7MM BR, Only)	58

DATES AND REASONS FOR REVISIONS 9/29/80-NEW-MRP-RLJ-279136

8/16/83 - Add quanity (4) to 15724 - RLS - 283160

DATES AND REASONS FOR REVISIONS

MODEL	XP-100	PART NAME	Barrel Assembly				PAGE 1	OF 2
		GA. OR CAL.	221 FB	7MM BR				
		PART No.	26750	34950				

BARBER - PRESALE R 0131702
R2532690

BARBER - PRESALE R 0131703

SEQUENCE Or OPERATIONS

OP. No.	OPERATION	DEPT.	OP. No.	OPERATION	DEPT
370	Tap (4) Front Sight Holes (34950, 7 MM BR, Only)	58			
375	Inspect outside and Bore - Check muzzle for Burr. Remove small mars. Check twist and air gage groove, wipe bore.	58		TO MRP CRIB #29	
380	Spin Polish front end to remove tapping burrs. (34950, 7MM BR, Only)	58			
385	Wire Brush	58			
390	Black Oxide Color	78			

DATES AND REASONS FOR REVISIONS 9/29/80-NEW-MRP-RLJ-279136

6/13/83 - Obs. op. 395 & add Crib - RLS - 282862

DATES AND REASONS FOR REVISIONS

MODEL XP-100 PART NAME Barrel Assembly PAGE 2 OF 2

GA. OR CAL.	221 FB	7MMBR				
PART No.	26750	34950				

SD-6469

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 0131703 R2532691

Tom, (SAYS)

MAY 4, 85

AAA

LIST

B7511912 *
B7512227 } 223 w/ 12" TWIST
B7512535

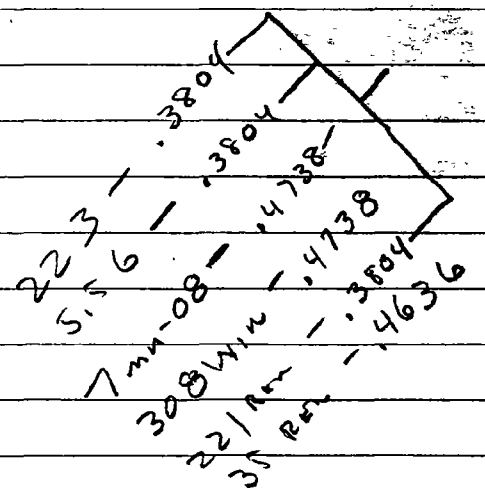
B7513713
B7513096
B7510477 } 223 w/ 14" TWIST
B7514311
B7513899
B7513226

AUGUST 26, 85

GUNS IN TERRY'S OFFICE FILE CABINET

(19)

B7514009 - 223 REM
B7516103 - 223 REM
B7510556 - 223 REM



B7513096 - 308WIN
35 Rem B7511772 - ~~7mm-08~~ ✓
B7516134 - 7mm-08
35 Rem B7515531 - ~~7mm-08~~ X
B7506066 - 7mm MSI
B7513226 - 308WIN
B7506033 - 221
B7505993 - 221
B7513899 - 308WIN
B7514311 - 308WIN
B7506018 - 7mm Br Rem
B7510477 - 308WIN
B7509847 - 7mm-08
B7512648 - 7mm-08
B7513713 - 308WIN
B7518631 - 7mm-08

AUG 2, 1985

JOYCE!

I WILL NEED A LETTER FOR [illegible]

FROM THE WARE HOUSE OF TOM [illegible]

CALIBER 221 REM FIRE BALL [illegible]

WORK ORDER = 80237.

CAT. NO. = ?

ADAM
461

XP 100 - 223REM DESIGN TEST
PROGRAM. 8-02-85 AAH.

OBTAIN TEN 22CFR BARREL BLANKS (MODEL SEVEN)
(a) FIVE - 222 REM FOR 14 INCH TWIST
(b) FIVE - 223 REM FOR 12 INCH TWIST.

. TURN BARREL CONTOUR AND TRIM LENGTH TO THAT OF 7mm BR REM BARREL BLANK.

. WITH DRAW FROM WARE HOUSE TEN XP-100 PISTOLS OF 221 CALIBER.

. HAVE BARRELS REMOVED FROM RECEIVERS AND DELIVER ACTIONS TO CUSTOM SHOP.

. HAVE BARREL CHANNEL OR STOCKS RE CUT TO THAT OF 7mm BR REM BARREL CHANNEL OR OBTAIN TEN STOCKS WITH 7mm BR REM BARREL CONTOUR VIA INVENTORY WITHDRAWAL.

. HAVE CUSTOM SHOP FABRICATE XP 100 - 223REM PISTOLS. FIVE TO BE STAMPED (12) FOR 12 INCH TWIST AND FIVE TO BE STAMPED (14) FOR 14 INCH TWIST.

7. PROOF AND ACCURACY TEST ALL TEN PISTOLS WITH 223 REM. AMMO. (WITH THREE MAJOR BRANDS (R, W, F.).

(a) ACCURACY TEST MAY BE BOTH IN GALLERY FIXTURE AND HAND FIRED.

. FINALIZE TEST RESULTS AND PREPARE TRANSMITTAL DETAILS FOR XP-100-223 REM.

7. SELECT ONE (12) AND ONE (14) XP100 PISTOL AND HAVE CHAMBER RE CUT (DEEPER THROAT) TO THAT OF 5.56.

8. RESHOOT ACCURACY OF ALTERED GUN AND ONE CONTROL GUN.

11. FINALIZE SECOND TEST RESULTS AND COMPARE TO FIRST ACCURACY TEST.

COMMENT: THE LONGE RANGE XP100 BOLT ACTION PISTOL ACCURACY IS EXPECTED TO BE A FUNCTION OF CHAMBER PRESSURE VARIATION(S). A (14) INCH TWIST IS MORE FORGIVING THAN A (12) INCH TWIST BARREL. THE DEEPER THROATED 5.56 IS EXPECTED TO BE MORE FORGIVING THAN A LESSER THROATED 223 REM. CHAMBER. IF SIGNIFICANT INDICATIONS OF ONE GUN WILL INDICATE IF A LARGER SAMPLE IS REQUIRED FOR VERIFICATION OF ACCURACY DIFFERENCE.

BARBER - PRESALE R 0131707

12. WHEN RECUTTING THE 223 REM CHAMBER TO THE 5.56 CHAMBER STRAIN GAGE SHOULD BE PLACED ON GUN FOR STRAIN GAGE PRESSURE DATA AND MUZZLE VELOCITY IF MEAS & TEST TIME ALLOWS.

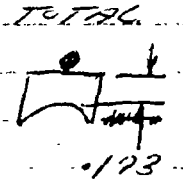
5/2/85 TP

1/25/83 - TUESDAY

1 - UPDATED NOTE BOOK.

2 - DISCUSSED XP 100 223 CAL. WORK WITH LARRY BLACKHURST. CAN'T FIND BOLTS. WE WILL HAVE TO BUY THREE GUN FROM PLANT AND LARRY WILL USE NEEDED PARTS.
BUY THREE XP-100'S - CAL - 221 FIREBALL. TIMAX # 5-470
PICKED UP 3 XP100'S STOCKS W/ 2 7MM BR FROM ARMS SERVICE.

3 - M/870-12GA 3" MAG. - 18" F.C. BARREL - 3 TOTAL. FRONT SIGHT BASE PUT ON. .123 HIGH.



WROTE OUT WORK REQUEST. GIVEN TO EVAN RICHIE. EST. COMP. 2/11/83. 1st TEST LAB. 1-25-83

WE WILL USE ALL PARTS OF THESE GUNS EXCEPT STOCKS AND BARRELS.

RE 1648 — R. Bailey

TO: E. [illegible]

ELGIN RESEARCH DIVISION

FIREARMS WITHDRAWAL

DATE 1/25/83
QUANTITY 3 — LETTER NO. 2001
MODEL 3 XP's - 100 — CAL./GA. 221 — WORK ORDER R-0230-00-F
REM. "FIREBALL" — 88470
SERIAL NOS. R-2571912
R-2572227
R-2572535

REMARKS:

1/25/83
[illegible]

2/12/83 - THURSDAY

1- THREE XP 100'S - 223 CAL - 7MM BR. BARREL CONTOUR # R 2512535, R 2511912, R 2512222

~~[illegible]~~ CUSTOM GUN SIGHT FOR ACCURACY - 100 YDS. SCOPE 2ND RANGE J. SCHLICK

GUN # R 2511912 (NOT-HOUNG - RE-CROWNED MUZZLE - CLEANING)

GROUP # 1 = 1.82

(GIVEN TO J. BROOKS 2-18-83) 2 = 1.98 THIS GUN DOES NOT SHOOT

3 = 1.34 CONSISTENT GOOD GROUPS. MORE

1.71 AVG. THAN THREE GROUPS WERE SHOT TO GET THREE IN SPEC'S

(TO C. WORKMAN 2/18/83)

GUN # R 2512222

GROUP # 1 = 2.56

2 = 2.28

3 = 2.76

2.80 AVE.

(TO C. WORKMAN 2/18/83)

GUN # R 2512535

GROUP # 1 = 1.96

2 = 1.66

3 = 2.46

2.02 AVE

AMMO: REM. POWER LOCK

55 GR. (P.L.) HP

T050D

(2-12-83)

*** OUR 221 FIREBALL AND OUR OF THE ABOVE GUNS # R 2512535 GIVEN TO PEARCE TO SHOW TOBAX. CLEANING AND WAX BATH.

ACCURACY SPEC'S XP-100

221 FIREBALL (5 SHOTS IN 3" INSIDE TO INSIDE)

7MM B.R. (5 SHOTS IN 3" INSIDE TO INSIDE)

NO SPEC'S FOR 223 IN THE XP100

2/11/83

TJT.

(41)

2/18/83 - FRIDAY (CMD)

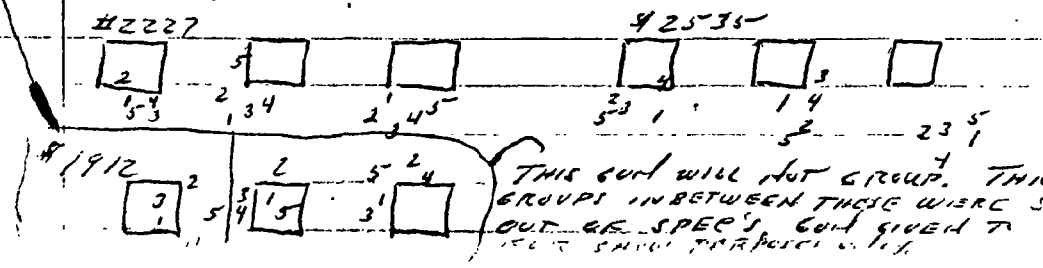
2- M/7 - CAL. C. ASKINS. GUN # 760011.
ACCURACY - THREE FIVE SHOT GROUPS.
1 - 1.70
2 - 2.58 AMMO: REM. 140GR P.S.P.
3 - 1.92 CODE T05UD
2.06 AVG.

NOTE: TO BE FIELD TESTED NEXT WEEK.
40 RDS. TOTAL - 140 GR. P.S.P.
SLOW, MED, FAST FEED. IF
OK SEND GUN OUT.

3- M/1100 LW SLIDE BLOCKS - GETTING INFORMATION READY
FOR REVIEW AND A DECISION ON WHAT TO DO. STAY WITH
POWDER METAL OR GO TO STEEL. A $342000.00 COST
IS NEEDED IF WE GO TO STEEL. (PER J. HILL)

4- XP-100 - CAL .223 - .7MM BR. CONTOUR BBL. GROVE
OFFER TO I BROOKS - POOR GROUPS # B-75-11912.
TWO GIVEN TO P.R. WORKMAN - # B75122227 & B75105735
ONE GIVEN TO P.W. DID NOT HAVE REAR SIGHT
HOLES IN SLIDE. WILL TAKE TO M/S NEXT
WEEK AND HAVE PUT IN.

5- DRAWING CHANGE OF MAT'L FOR M/700 RSP'S
XP 100, 40X'S M/7 INCLUDED



THIS GUN WILL NOT GROUP. THREE ADDITIONAL GROUPS INBETWEEN THESE WERE SHOT BUT WERE OUT OF SPEC'S. GUN GIVEN TO J.W. SMITH FOR SHOOT PURPOSES ONLY.

(48)

3/2/83 - 3/4/83 Wed - Thur

1- Layout overlays on M/700, 19/7, XP100 - 2nd Bbl. Barrel Contour

2- We will make six each of the following
A- M/7 LWT 250 Savage
B XP 100 - 308 Cal

Both will have the 2nd. Barrel Contour.
The XP 100 308 will have to have part of stock removed so barrel will fit.

Picked up all necessary parts so that Custom Gun Shop could build six of each.
A- Barrels & Breech
B- Bolts
C- Receivers
D- XP 100 - Stock (RR)

Receiver No's

XP 100	M/7 LWT
B75-13213	7604575
B75-13096	7604516
B75-10422	7604504
B75-14311	7604703
B75-13899	7604709
B75-13226	7604507

All parts were bought on inventory.

(50)

3/2/83 - Monday

1- M/2 - M. Harvey - Austria Export. (A) Need finished stock. (B) Re-shoot accuracy - (C) Functional test. (D) Heattreated trigger guard and latch pass.

Waiting for finished stock & functional test of heattreated parts before sending out.

2- Need good stock for M/2 LWT 2 mmos for photo's also action. Finished stock. Pad Dick Dietz. As soon as poss.

3- Meeting with Larry Blackhurst on making
6 - XP 100's 308 cal
6 - M/2 LWT - 25-20 Savage
Discussed on page 48 Item 2.

Estimated completion time of above should be 4/8/83. This does not include accuracy for the M/2 or strength and function test of the XP 100 - 308 cal.

Larry Blackhurst
Tom Pommer — 8/83
XP 100 Cal - 308 Wb Clip-on Y-Bolt — 6/Mos
6 Total

1- Cut off to length - Bore - Crown
2- Assem. to action
3- Drill sight hole - Bore - Crown (Cutter)
4- Finish Hand. - (Cover chamber mirror for carbon ring)
5- Polish & color
6- Fit barrels action to stock - Remove excess stock more by hand. Careful not to remove to much
7- Assem. all parts for final trimmer.
*Note I have passed any operation there do. to problem occur case.
Note:
Do not prove or test fire

SECURITY IS EVERYONE'S RESPONSIBILITY

ECD 4/4/83
Per Larry Blackhurst

Larry Blackhurst
Tom Pommer — 8/83
M/2 - 308 Savage Wb Clip-on Y — 6/Mos
6 Total

1- Cut-off barrel to proper length & crown
2- Chamber, finish, polish, finish. - Stamp caliber
3- Check twist
4- Stock - (right side you is final assembly) - Remove excess wood.
5- Prove
6- Accuracy - 2 five shot groups per gun. Rem. 180 ammo. All bullet weights. See R. Nightingale about ammo.

SECURITY IS EVERYONE'S RESPONSIBILITY

ECD - 4/4/83
Per L. Blackhurst

(52)

3/11/83 - FRIDAY - CHAD

FOLLOWING PARTS WERE BOUGHT FROM PROD. GROUP TO L. BLACKHURST - CUSTOM GUN SHOP SCHEDULED TO START 3/21/83.

PARTS BOUGHT	M.R.P.
PARTS TO PICK UP	3/11/83
XP 100 REC'S - 9 TOTAL	(6 for 7mm OD,
cat - 66 #15426	(3 for 223)
M/7 BARRELS - 6 TOTAL	(7mm OD)
cat-66 #32728	
BARREL BRACKETS - 6	(M7)
cat-66 #15425 - 3	(XP100)
BOLT BODY ASSEM. 6 -	(7mm BR.) for 7mm OD)
cat - #24253 3 -	(.221 FB.) (for 223)
STOCKS - XP 100 - 9	(7mm BR.) (6 for 7mm OD)
cat - #91265 -	(3 for 223)

(54)

3/14/83 - MONDAY

1- FOLLOWING MEMO'S TO L. BLACKHURST.

To LARRY BLACKHURST Location CUSTOM GUN SHOP

From TOM PLUNKETT Location R&D Phone No. 256

Subject XP-100 - 223 CALIBER W/O - E-0230-000-Y Date 3/14/8

3 TOTAL

1- CUT OF BARREL TO CORRECT LENGTH. DWG. # C-3494S
2- CROWN
3- ASSEM. TO ACTION, CHAMBER & FINAL HEAD
4- POLISH & COLOR (PRODUCTION POLISH - NO HIGH GLOSS)
5- DRILL SIGHT HOLES. USE DIM'S FOR DEPTH AS DISCUSSED ON 3/11/83. ** DO NOT USE DIM'S FOR HOLE DEPTH ON PRINT NO. C-3495 AS THEY ARE TO DEEP.
6- HAND FIT BARRELED ACTIONS TO STOCKS. BARREL CHANNEL WILL HAVE TO BE RE-WORKED FOR PROPER FIT.
7- ASSEM. REMAINING COMPONENTS
8- PROOF.
9- ACCURACY - 3 FIVE SHOT GROUPS PER GUN. CHART BULLET IMPACT.

To LARRY BLACKHURST Location CUSTOM GUN SHOP

From TOM PLUNKETT Location R&D Phone No. 256

Subject XP-100 - 7MM OB W/O # C-1804-000-Y Date 3/14/

6 TOTAL.

1- CUT OF BARREL TO CORRECT LENGTH. DWG # C-3494
2- CROWN
3- ASSEM. TO ACTIONS. - CHAMBER & FINAL HEAD.
4- DRILL FRONT SIGHT HOLES - USE DIM'S FOR DEPTH AS DISCUSSED ON 3/11/83 - ** DO NOT USE DIM'S ON PRINT C-3495 AS THEY ARE TO DEEP.
5- POLISH AND COLOR. (PRODUCTION COLOR, NO HIGH GLOSS)
6- HAND FIT BARRELED ACTIONS TO STOCKS. BARREL CHANN WILL HAVE TO BE CUT AWAY FOR PROPER FIT.
7- ASSEMBLE REMAINING COMPONENTS.

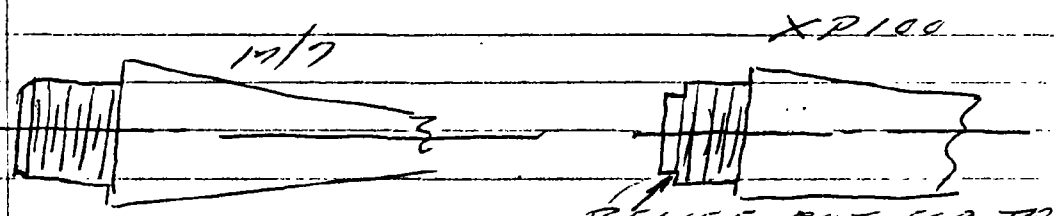
NOTE: DO NOT PROOF OR TEST FIRE.

(57)

3/22/83 - TUESDAY

1- UP-DATED HOT SHEET

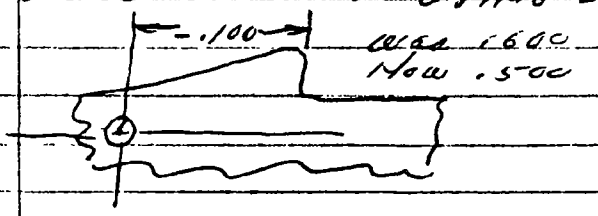
** 2- M/XP-100 - ALL CAL'S USING M/7 LWT BARREL.
*** HUB MUST HAVE RELIEF CUT ON ~~END~~ SO THAT FRONT TAKE DOWN SCREW WILL ENGAGE PROPERLY. HAVE TO ALTER M/7 LWT BARREL



RELIEF CUT FOR TAKE DOWN SCREW.

XP-100-308

3- BOLT STOP - 15 PARTS IN M.S. MOVE BOLT STOP CUT BACK .100 SO THAT SHELL (LIVE RD.) WILL EJECT. USING XP-7 MTR BR STOP



4- HOUSEKEEPING INSPECTION - TEST LAB - 52-1-A & B

5- XP 100-223, 7 MTR, 308 - MAN HOURS REQUIRED FOR MAKING, testing & transmittal (Team -223, 7 mtr)

(60)

3/23/83 - WEDNESDAY

1- SEE BELOW

WORK AND MAN HOURS REQUIRED FOR DESIGNING, BUILDING, TESTING & TRANSMITTAL OF FOLLOWING PRODUCT

AREA & WORK DESCRIPTION	XP100 308	XP100 223	XP100 21mm 33	XP-? 350-300.
CUSTOM GUN SHOP: BUILD BBL. ACTIONS, ACCURACY	(5 DAYS) 40 HRS. $977.20	(8.1 DAYS) 65 HRS. $1587.00	(8.1 DAYS) 65 HRS. $1587.00	(8.1 DAYS) 65 HRS. $1587.00
PRODUCTION: ASSEM, ACCURACY	(1 DAY) 8 HRS. $195.44	(2 DAYS) 16 HRS. $390.88	(2 DAYS) 16 HRS. -----	—
N/C: REPT. CHARTS	(2 DAYS) 16 HRS. $390.88	(2 DAYS) 16 HRS. -----	(2 DAYS) 16 HRS. -----	(2 DAY) 16 HRS. -----
DESIGN: RE-DESIGN STOCK, DWGS, PARTS LIST, COST REQUEST, LAY-OUTS, PICK-UP COMPONENTS, MISC.	(17.5 DAYS) 140 HRS. $3352.00	(5 DAYS) 40 HRS. $446.00	(5 DAYS) 40 HRS. -----	(3 DAYS) 24 HRS. $269.68
MODEL SHOP: BUILD STOCKS, MISC.	(15 DAYS) 120 HRS. $2931.60	—	(3 DAYS 24 HRS. $586.32	—
TEST LAB: PROOF, MEASUREMENTS, ENDURANCE TEST, PRODUCT ACCEPTANCE. #1 #2 #3	#1 (16 DAYS) 128 HRS. #2 (16 DAYS) $3127.04 128 HRS. #3 (16 DAYS) 128 HRS. $3127.04 " "	(16 DAYS) 128 HRS. $3127.04	(16 DAYS) 128 HRS. -----	(16 DAYS) 128 HRS. -----
TOTAL MAN HOURS PER HOUR #1	(56.5 DAYS) 452 HRS.	(33.1 DAYS) 265 HRS.	(36.1 DAYS) 289 HRS.	(39.1 DAYS) 313 HRS.
#2	(25 DAYS) 580 HRS.	$6941.50	$7528.59	$6363.40
#3	(38.5 DAYS) 308 HRS.			
1	$11,960.16			
2	$15,087.20			
3	$18214.24			

DEC. WAGE RATES:
WAGE ROLL — $24.43
NON EXEMPT — $24.43
EXEMPT — $36.15

3/23/83
T.J. PLUNKETT

2- M/S-72 - TRIAL & PILOT - PICKED UP & SAMPLES FROM PRODUCTION. PER J.W. BROCKI

3- RE-DID ABOVE - CUT HOURS

(75)

4- XP-100-223 cal # B 25-11912 - one of original first three prototypes.
Taken to gallery for machine rest accuracy. Would not group in 2/13/82. Ammo to be Rem 55 gr. P.L.H.P. Will re-shot Thursday morning 5/5/82.

5- XP-100-223 cal. New version. M/700 LWT barrel cut-off. D. Bullis barrels. For 1984 product line if acceptable -

Accuracy - Range - 100 yds. - Machine Rest - Sam.
Ammo - Rem. P.L.H.P. - 55 gr. (Rem PSP-55 gr.)
Ade # I 09 OD2636 (415H 06699)
Groups - 3 five shot. Sam.
Meas. - Outside to Inside - 1 Max Spread Sam.

6UH #'s = last four no's on rec.

#	0556	0556	# 4009	4009	# 6013	6013
		(First group wrong ammo shot)				
1	1.36	3.98	1 - 3.60	3.40	1 - 2.22	3.14
2	1.70	2.64	2 - 2.85	5.50	2 - 1.45	1.74
3	3.00	1.96	3 - 2.55	3.50	3 - 2.00	2.04
	6.06		9.00		6.12	
=	2.02 AVE	2.86	= 3.00 AVE	4.13	= 2.05 AVE	2.30

Spec's to be determined Quarter date.

5- M/700 - 1/2 LWT trigger spring & screw. Mod. trigger pull not low enough in most cases. Will start reducing of spring and tol. check tomorrow. Need to determine min. & max. working lengths.
T. Pull to be in 3-5# range. (mine)

9

5/11-13/83 CONT.

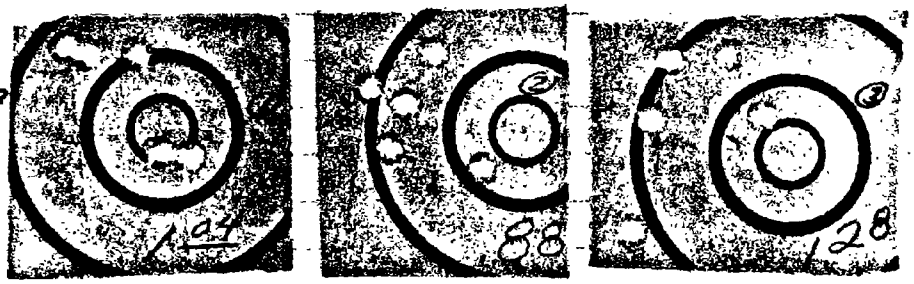
JERRY SGALONI

XP-100-223 - ACCURACY WITH DULL GUN

FOR AMMO VARIFICATION - GUN # 1189 - M/601 HV. BBL.

#1 #2 #3

REM. 1-P.L.H.P. 900



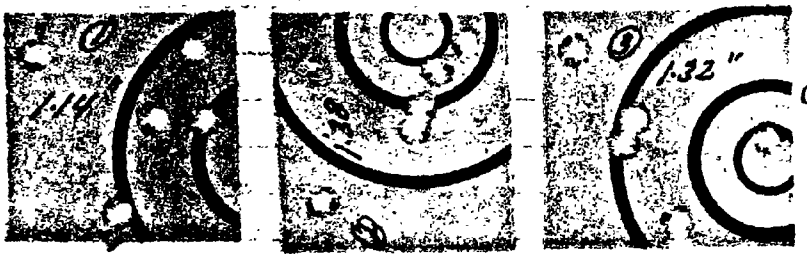
AVG. 1.06

3 REM. 1-GR. R.L.H.P. 311D

AVG. .73

SAVED LOT IN GALLERY

23 REM. 1-GR. R.S.P. 418 H



AVG-1.28 (SAVED LOT IN GALLERY)

NOTES

O-RANGE - 100 YDS. GALLERY

O- GUN CLEANED PRIOR TO TESTING.

O- COOLED AFTER EACH GROUP.

O- NOT CLEANED BETWEEN AMMO TYPES.

O- AMMO SAVED TO BE USED IN FUTURE RECORDS

223 REM IS 12" TWIST

14" TWIST

5/11-13/83. COND.

M/XP-100-223: GOT IN PRODUCTION RUN BARRELS FROM PRODUCTION. (M/7 LWT 222 CAL. NO CHAMBER) THESE WILL BE SENT TO CUSTOM GUN SHOP AND MADE INTO XP100 223 CAL GUNS (M/2 LWT BALL. CUT-OFF.) THIS IS BEING DONE FOR ACCURACY VARIFICATION OF FIRST SET OF BARRELED ACTION. WILL GIVE THEM 5 BARRELS ETC. MOD. 5/16/83.

5/16/83 - MONDAY

1- M/7 LWT. DRAWING GETTING READY FOR CASTING DWG'S WED. STARTED LAYING OUT.

2- GETTING READY FOR CONSERVATION DAY TOMORROW.

3- PER CLARK SEE J. BROOKS WED MORN. FOR REVIEW OF CASTING DRAWINGS FOR M/2 LWT.

5/17/83 - TUES.

1- K.O.A. CONSERVATION FOR HERK. CO. CONSERVATION DAY, 1600 + KIDS - 12 LECTURES - 15 MIN each. Dock 2:20

5/18/83 - Wed.

1- J. Brooks house - 10:30 to 1:30. Reviewing DWG's. Will start work tomorrow. Getting

9-19-85

TERRY:

PER ATTACHED:

DEPENDING ON OUTCOME OF BARREL POLLS & APPEARANCE OF XP-100 PISTOLS BEING MADE AND ACCURACY OF 12 INCH TWIST BARRELS VS 14 INCH TWIST BARRELS THE TEN XP-100 TEST GUNS MAY BE ACCEPTABLE FOR NOVEMBER WINTER SEMINAR GUNS. IF NOT I WILL HAVE TO MAKE UP SAMPLES SPECIAL FOR THAT EVENT.
(XP-100 221 PISTOL + 7mm BAREM STOCKS + CUSTOM SHOP BASES)
QUESTION: DO YOU NEED THESE SCOPED? IF YES THAT MEANS ORDERING SCOPE MOUNTS AND SCOPES. FRED MARTIN RECOMMEND THE ATTACHED BASE, RINGS, AND SCOPE. FRED HAS VERY GOOD EYES NOT REQUIRING CORRECTIVE GLASSES. JIM STEEL WHO NEEDS CORRECTIVE VISION MAY NOT AGREE ON THE SAME SCOPE SELECTION. HOWEVER IF SCOPES, MOUNTS, AND RING ARE NEEDED THEY WILL HAVE TO BE ORDER P.D.Q.

ADAM,

9/17/85

Adam Sugick -

Marketing needs 6 XP-100's (223) for the November writer's seminar. Will they be able to use the guns you are building.

Jim

Redfield One-Piece Base

JR-100 (Fine)

Low or Medium Rings

Leupold or Equiv. I.E.R.

M-8 - 2X

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KINZER V. REMINGTON

BARBER - PRESALE R 0131723

SEQUENCE OF OPERATIONS

OP. No.	OPERATION	DEPT.	OP. No.	OPERATION	DEPT.
	USE BARREL BLANK ~~#26170 - 221 Rem~~ 223 REM ~~#16484 - 7MM BR Rem~~		300	Finish polish.	58
275	~~Chamfer both ends, rough and finish turn, finish form hub and shoulder.~~	~~58~~		Ready For Barrel Assembly Process Crib #	
280	Cut to length and crown muzzle.	57			
285	Face to length, counterbore, and chamber.	57			
290	Thread breech and wire brush.	57			
295	Burnish ream body of chamber and inspect.	57			

DATES AND REASONS FOR REVISIONS

4/11/79 - Update process - DRK - 277775
3/5/80 - Added Cal - 7MM-BR Rem - ZJK - 278591
9/29/80-UPDATE-MRP-RLJ-279135

DATES AND REASONS FOR REVISIONS

MODEL XP-100 PART NAME Barrel PAGE 1 OF 1

GA. OR CAL. ~~201 Rem Fireball~~ ~~7MM BR Rem~~ 223 REM

PART No. ~~26170~~ ~~16484~~

RD-6460

BARBER - PRESALE R 0131723
R2532711

6640

RESEARCH - N/C & MODEL SHOP

ESTIMATED & ACTUAL COST SHEET

Date Issued: SEPT 24, 85 — Date Required: SEPT 30, 85

Part Name: GFM BARREL BLANK — Part Number: 34945

Model: 700 → XP-100 — Drawing Number: C34945

Designer, Engineer or Dept.: AA HUGICK — Work Number: E0237-306-Y

k Description: GIVEN TEN M700-223 REM GFM BARREL BLANK # 92491 TO BE CUT TO LENGTH AND TURNED TO XP 100 - BARREL PER PAMT ATTACHED. NEED GUN BY NOV WRITER SEMM PL.

ponnel Required - Wage Roll ____ From ____ To ____

NE Salary ____ From ____ To ____

Exempt Salary ____ From ____ To ____ Qty. ____

	Cost	
	Estimated	Actual
Model Shop		
Tooling (Tool cost, grind, etc.)		
Material (Cost per part)		
Labor (Cost per part)		
N/C Shop		
Program Time (Est., Proc., Prog., and Deb.)		
Tooling (Tool Cost, grind, and setting)		
Fixture (Design and Fabrication)		
Material (Cost per part)		
Machining Cost (Cost per part)		
Total Cost		
Per Part Cost -		

- Process Preparation Cost
- Machining Cost/Part
- Number of Parts
- Per Part Cost

$$X = \frac{I}{n} + R$$

mpletion Date ____ Prepared by ____

proval ____

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NOTE:

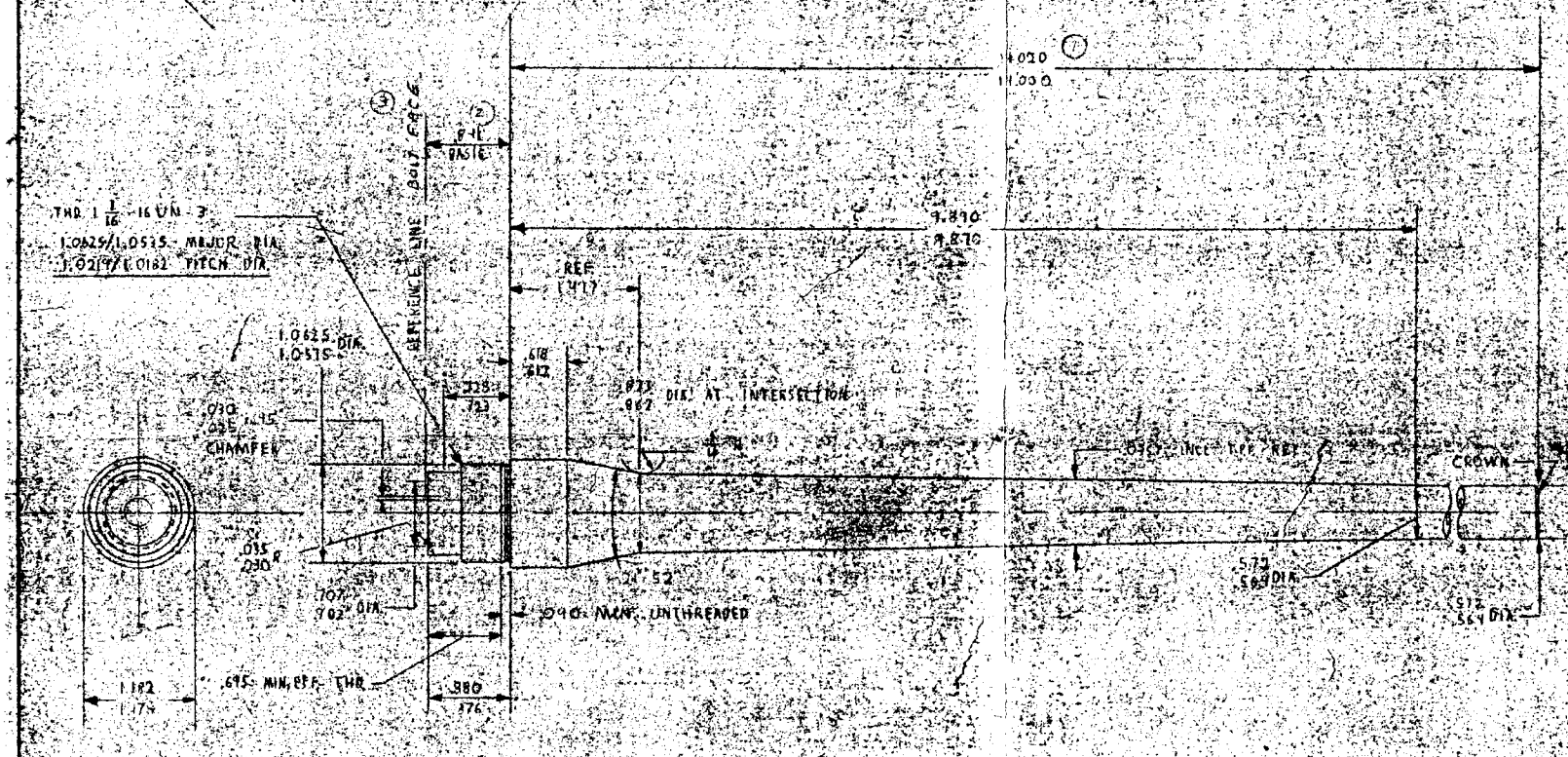
ALLOWABLE ECCENTRICITY OF CHAMFER & C'BORE WITH THREADS - .0035 (.007 INDICATOR READING)
ALLOWABLE ECCENTRICITY OF BORE WITH O.D. AT MUZZLE - .005 (.010 INDICATOR READING)

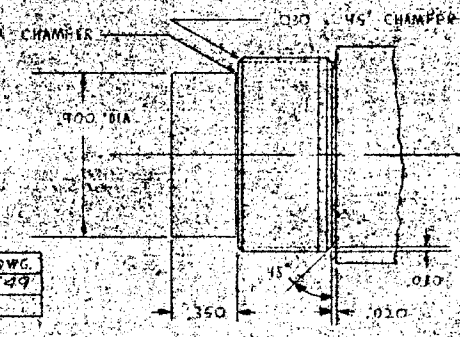
ALIGNMENT OF THE THREADS MUST BE HELD SO THAT AN INDICATOR READING AT 5" FROM THE MUZZLE, WHEN THE BARREL IS THREADED INTO A ROTATING BUSHING OF ZERO RUNOUT, IS LESS THAN .010.

DO NOT SCALE THIS DRAWING. WORK TO FIGURES UNLESS OTHERWISE NOTED.
TOLERANCES ON DECIMAL DIMENSIONS ARE:
1 PLACE (.1) — TOLERANCE ± .015
2 PLACE (.01) — TOLERANCE ± .010
3 PLACE (.001) — TOLERANCE ± .005
ON FRACTIONAL DIMENSIONS ± 1/64
ON ANGULAR DIMENSIONS ± 00° - 30'
FINISHES ARE DESIGNATED BY ROOT MEAN SQUARE (R.M.S.) MICRO-INCH ROUGHNESS VALUES AND ARE THE MAXIMUM ROUGHNESS ACCEPTABLE, UNLESS OTHERWISE SPECIFIED. FINISH ROUGHNESS TO BE 125 OR BETTER.

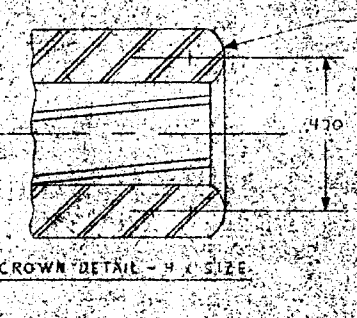
RECOMMENDED MATERIAL AND HEAT TREAT
MATERIAL SPEC. TS
HEAT TREAT STANDARD C.F.
HARDNESS
COLOR
HEAT TREAT AND COLOR TO BE DONE BY REMINGTON

ALT.	DESCRIPTION OF ALTERATIONS			
1	14.100 / 14.100			
2	8.30			
3	ADD BOLT FACE			





HUB DETAIL - 2 x SIZE



CROWN DETAIL - 4 x SIZE

PART NO.	CALIBER	CHMBR DWG.
S-9	7 MM BR REM	LL-549

THIS DRAWING OR INFORMATION IS PROPRIETARY INFORMATION TO THE REMINGTON ARMS COMPANY, INC.

MODEL:	PART NO.	PART USE
DES. BY DATE 5 MAR 79	DRN. BY DATE DIW 3/6/79	CHKD BY DATE
TITLE BARREL		
NUMBER C-34745	SCALE FULL	REMINGTON ARMS CO. INC.

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. <u>Endurance</u>

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 accomodate 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+)

AAHUGICK:js
1/7/86

Sheet 1 of 1

SPECIAL TEST REPORT

GALLERY DATA

MODEL XP100 SHOOTER R Cassenta DATE 10 02 85

Gun No.	Ga./Cal.	Heavy Jack Rds.	Heavy Jack Type	Heavy Jack Results	Light Jack Rds.	Light Jack Type	Light Jack Results
1606	223	7	55 PSP	5" Group Action ok	7	55 PLNP	2.5 Group
1966	223	7	55 PSP	6.5 Group ok	7	55 PLNP	2.5 Group
2214				6.5 ok			3.5
2507				1.5 ok			4.5
1642				4.5 ok			4.5
8065				4.5 ok			4.5
2261				5.0 ok			5.5
2476				4.5 ok			4.5
1192				.5 ok			4.5
428				5.0 ok			4.0

GALLERY TARGETS DATA.

#	SHOTS	VERT	HORIZ.	SECOND
1	7	5.20	2.90	5.40
2	6	3.60	1.35	3.80
3	5	1.65	2.15	2.70
4	4	1.50	0.40	1.50
5	4	1.20	1.80	1.85
6 ALONG WOOD	4	8.70	0.70	8.80
7	5	3.10	1.05	3.35
8	6	3.90	0.80	3.90
9	3	0.70	0.35	0.8C
10	5	1.15	1.10	1.6C
11	4	0.25	0.35	0.35
12	4	0.20	0.55	0.6C
13	4	1.40	0.80	1.60
14	7	5.30	4.10	5.9
15	5	4.10	2.85	4.6
16	4	1.65	0.50	1.7
17	4	1.05	0.95	1.1
18	6	3.10	1.60	3.4
19	7	5.40	1.20	5.3
20	5	6.25	2.50	6.8
21	6	3.25	5.35	5.
22	6	2.35	4.95	5.
23	7	7.50	2.45	7.
24	6	6.60	1.95	6.
25	7	3.65	0.80	3.
26	3	0.80	1.00	1.
27	6	4.30	1.60	4.
28	4	5.50	2.30	5.

BARBER - PRESALE R 0131731

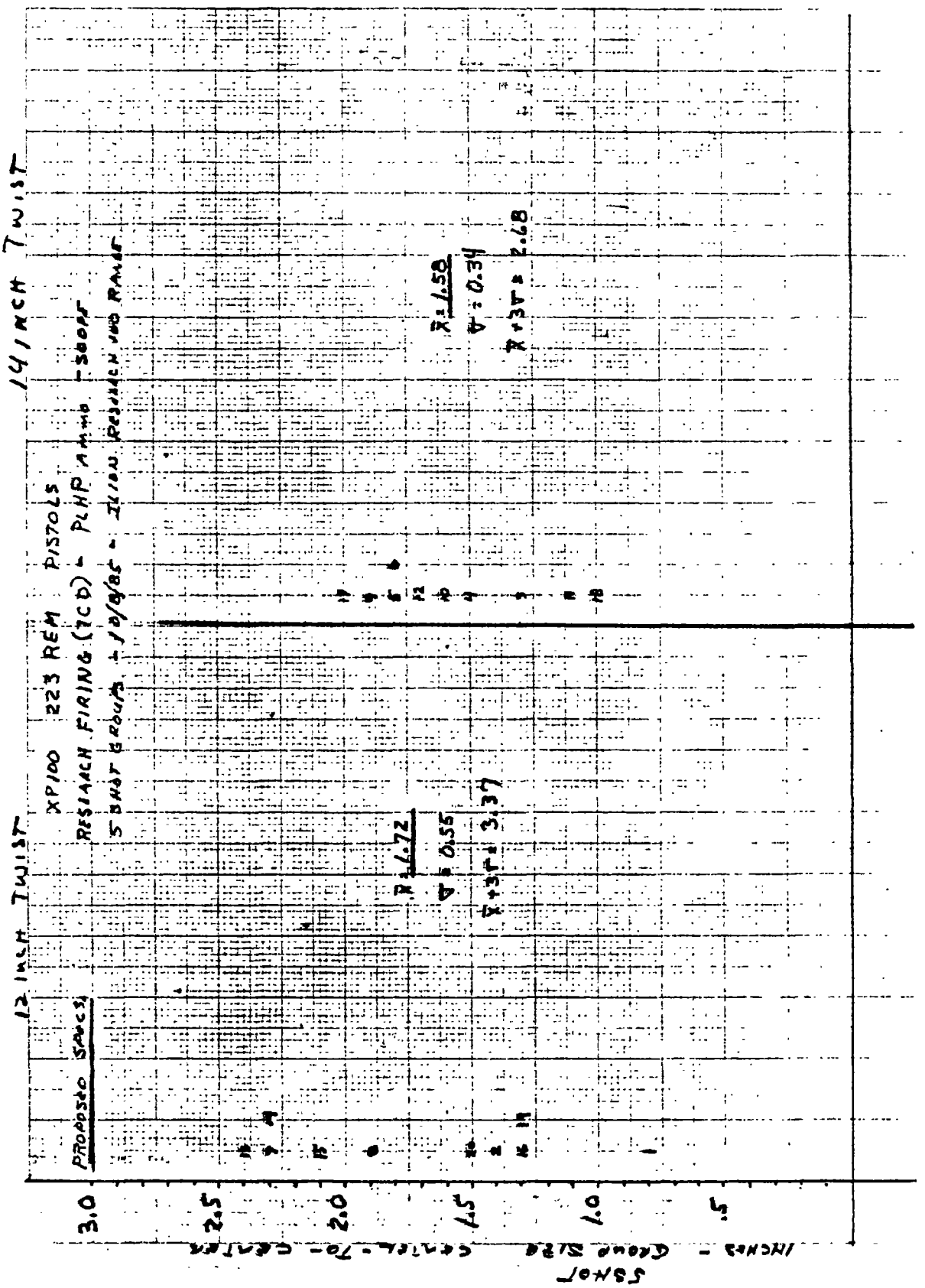
GALLERY TARGETS DATA

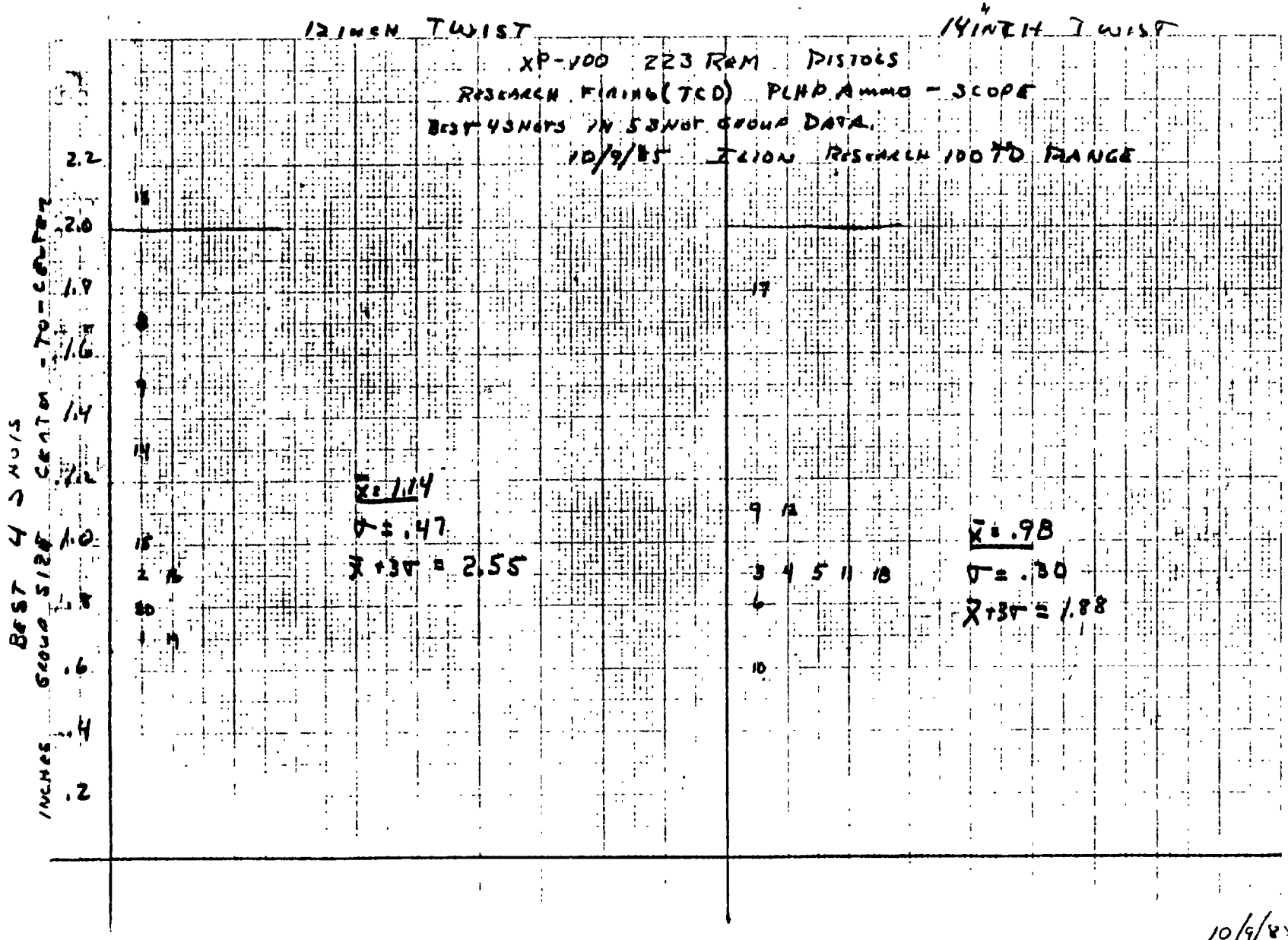
A

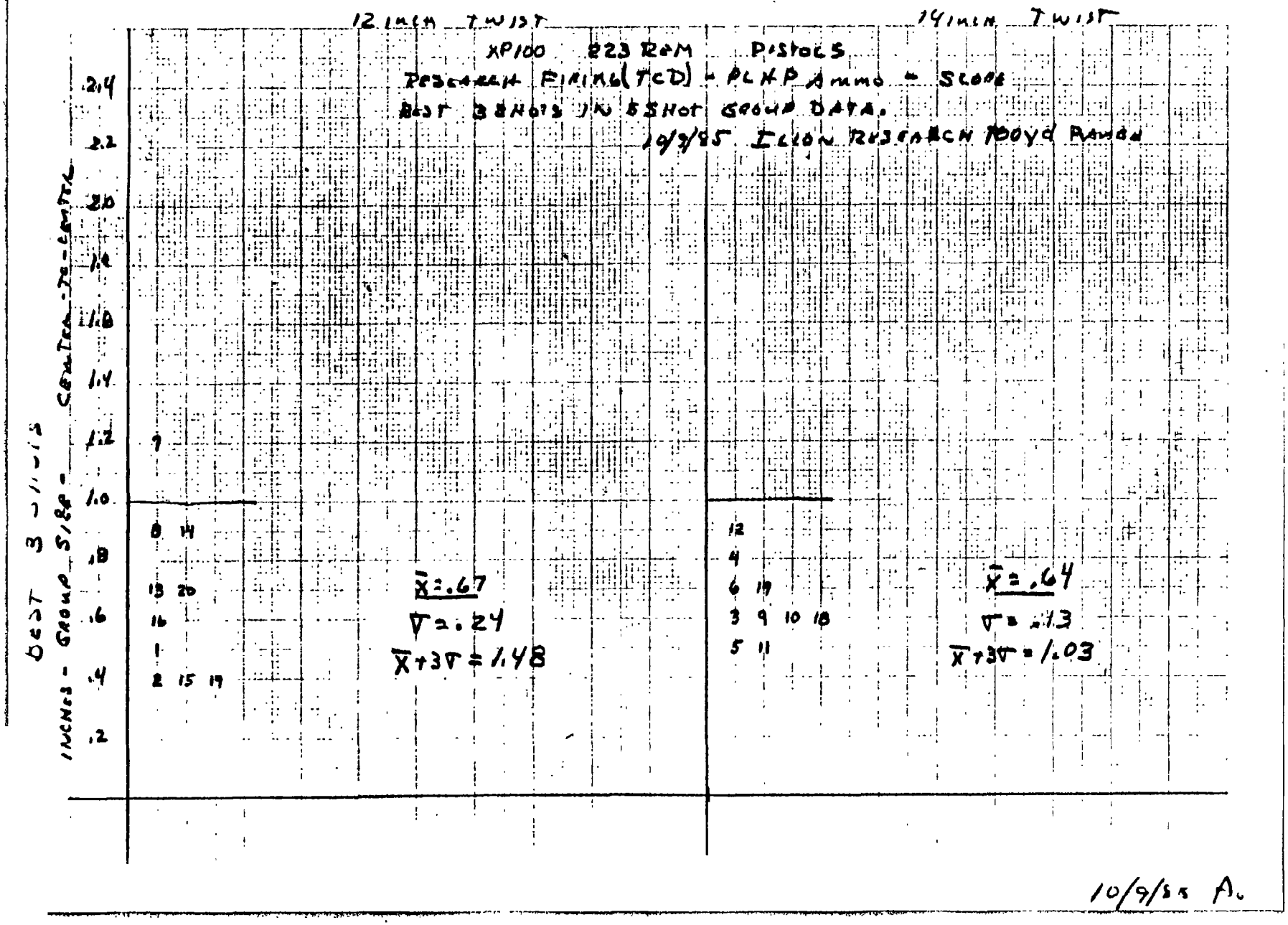
	SHOTS	VERT	HORIZ.	SPREAD
	6	2.75	3.75	4.15
30	5	4.10	1.10	4.30
31	5	5.30	1.80	5.45
32	5	1.85	1.65	2.45
33	7	2.60	1.20	2.8.
34	4 (176 grs)	1.85	2.05	2.1[illegible]
	AVERAGE	3.29	1.76	3.75
	140	TARGET ROLL RUN WITH "SCALE 10/3/85 A A HUGLICK.		
		111.7	37.95	127.3[illegible]

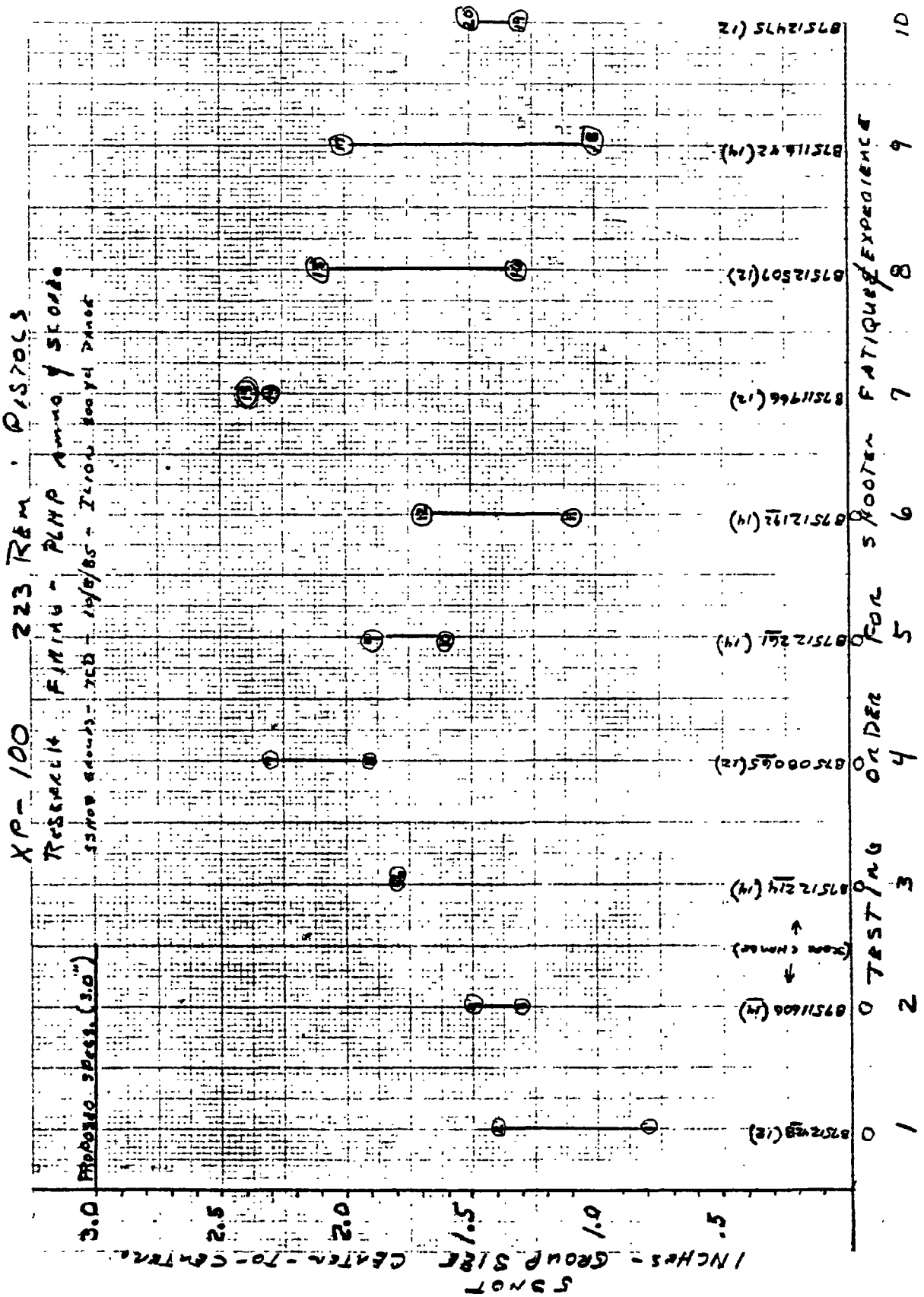
NOTE:

ALL BULLET HOLES WERE ROUND - CLEAN HOLE WITH NO KEY HOLE INDICATIONS WHAT SO EVER.


12 INCH TWIST
XP100 223 REM PISTOLS
RESEARCH FIRING (TCD) - PLHP AMMO - 50 YDS
5 SHOT GROUPS 10/9/85 - THREE RESEARCH 100 RANGE
14 INCH TWIST
PROPOSED SPACES
3.0
2.5
2.0
1.5
1.0
.5
SHOT GROUP SIZE CENTER-TO-CENTER
INCHES
X̄ = 1.72
σ = 0.55
X̄+3σ = 3.37
X̄ = 1.58
σ = 0.34
X̄+3σ = 2.68
10/9/85 A.


12 INCH TWIST
14 INCH TWIST
XP-100 223 REM PISTOLS
RESEARCH FIRING (TCD) PLHP AMMO - SCOPE
BEST 4 SHOTS IN 5 SHOT GROUP DATA.
10/9/85 ILION RESEARCH 100 YD RANGE
BEST 4 SHOTS
GROUP SIZE CENTER-TO-CENTER
INCHES
2.2
2.0
1.8
1.6
1.4
1.2
1.0
.8
.6
.4
.2
X̄ = 1.14
σ = .47
X̄ + 3σ = 2.55
X̄ = .98
σ = .30
X̄ + 3σ = 1.88
10/9/85
A.


12 INCH TWIST
14 INCH TWIST
XP100 223 REM PISTOLS
RESEARCH FIRING (TCD) - PLHP AMMO - SCOPE
BEST 3 SHOTS IN 5 SHOT GROUP DATA.
10/9/85 ELION RESEARCH 100yd RANGE
BEST 3 SHOTS
INCHES - GROUP SIZE - CENTER-TO-CENTER
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
.8
.6
.4
.2
9
8 14
13 20
16
1
2 15 17
12
4
6 19
3 9 10 18
5 11
X̄ = .67
σ = .24
X̄ + 3σ = 1.48
X̄ = .64
σ = .13
X̄ + 3σ = 1.03
10/9/85 A.


XP-100 223 REM. PISTOLS
RESEARCH FIRING - PLNP AMMO & SCORE
SHOW GROUPS - 7CD - 10/8/85 - IRON & SCOPE
PROPOSED SPECS (3.0")
SHOT GROUP SIZE CENTER-TO-CENTER INCHES
3.0
2.5
2.0
1.5
1.0
.5
TESTING ORDER FOR SHOOTER FATIGUE/EXPERIENCE
0
1
2
3
4
5
6
7
8
9
10
875128HS (12)
875116K2 (14)
875125D7 (12)
875117K6 (12)
875121P2 (14)
875125U1 (14)
875008G5 (12)
875121H4 (14)
875116D6 (14)
875125B3 (12)
10/9/85

RESEARCH TARGETS DATA

GUN (4/7/86)	53 MOT 2P.	BEST 45 MOTS	BEST 23 MOTS
608 - 3	1.318	.90	.60
- 4	1.512	.90	.75
214 - 5	1.792	.90	.50
- 6	1.829	.80	.70
261 - 9	1.889	1.05	.55
- 10	1.628	.60	.60
192 - 11	1.093	.85	.45
- 12	1.695	1.10	.90
642 - 17	2.024	1.75	.70
- 18	1.014	.90	.60
	$\bar{x}$ = 1.58	= 0.98	= 0.64
	σ = 0.34	= 0.30	= 0.13
	$\bar{x}+3\sigma$ = 2.68	= 1.88	= 1.03
428 - 1 (12" TWIST)	.798	.70	.45
- 2	1.397	.90	.40
065 - 7	2.322	1.45	1.20
- 8	1.915	1.65	0.90
166 - 13	2.428	2.10	.70
- 14	2.251	1.30	.90
507 - 15	2.105	1.00	.40
- 16	1.251	.85	.60
475 - 19	1.314	.65	.40
- 20	1.468	.80	.70
	$\bar{x}$ = 1.72	= 1.14	= .67
	σ = 0.55	= 0.47	= .27
	$\bar{x}+3\sigma$ = 3.37	= 2.55	= 1.48

10/9/85 A.

RESEARCH TARGETS DATA

		5	4	3
428	(12)	.798	.70	.45
		1.397	.90	.40
606	(14)	1.318	.90	.60
		1.512	.90	.75
214	(14)	1.792	.80	.55
		1.829	1.05	.60
065	(12)	2.322	1.45	.90
		1.915	1.65	.70
261	(14)	1.889	.60	.60
		1.628	.85	.45
192	(14)	1.093	1.10	.70
		1.695	1.75	.60
475	(12)			
507	(12)			
642	(14)			
966	(18)	WORST		

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PREVIOUS ROUNDS 21

DATE: 10/22/65 MODEL: XP100 GAUGE: 223 SERIAL NO. B7512507

TEST TITLE: 223 XP100 ENDURANCE

TTL. RDS. FIRED:
TTL. MALFUNCTIONS:
MALFUNCTION RATE:

"MALFUNCTIONS"

AMMUNITION Load Size	SHOOTER	NO. OF ROUNDS FIRED	FAILURE	FAILED SEARS	DON'T FIRE	MOVE BUT DON'T FIRE	DON'T LOCK GUN	FEED FROM MAG. 1st	FEED FROM MAG. 2nd	DOUBLE FEED FROM MAG.	DROPPED SHELL	DON'T LOCK UP	OTHER CHAMBER HIGH	OTHER CHAMBER LOW	OTHER CHAMBER HIGH	OTHER CHAMBER LOW	FAILS TO CYCLE CARTRIDGE	SHELL CLINGING	LOADING	NO. SHELL SENT	AUTOMATIC FIRE	DON'T ENJ	SAFETY	ADJUSTABILITY	DIRECT/TRIGGER	SCHMOOZING WIDE	REMARKS (ON BACK) YES	NO
F223A	A	21																									OK	
X223R	A	100											AMMO		COD		5	2	T	K	3	1					OK.	
R223R2	A	20															0	D	2	3	0	1						
R223R1	A	20															5	0	K	K	2	5						
R223R3	A	20															5	0	7	K	D	1						
R223R3	A	37																										
R223R3	A	60																										
~~10/23/65~~		178		10/24/65																								
W-X223R1	A	100																										
R223R1	A	100															A	0	3	L	D							
R223R1	A	100																										
R223R1	A	100																										
TOTAL (PER MAL.)																												

578/21 = 600 TOTAL

BARBER - PRESALE R 0131740

PREVIOUS ROUNDS 600

DATE: 10/24/85 MODEL: XP100 GAUGE: 223 Rem SERIAL NO. B7512507

TEST TITLE: ENDURANCE - (JACK)

TTL. RDS. FIRED:
TTL. MALFUNCTIONS:
MALFUNCTION RATE:

"MALFUNCTIONS"

AMMUNITION Load Size	SHOOTER	NO. OF ROUNDS FIRED	FIRING	FAILED TO FIRE	DIDN'T EJECT	DIDN'T MOVE BOLT BACK	DIDN'T LOCK BOLT	FEED FROM MAG. 1st	FEED FROM MAG. 2nd	DOUBLE FEED FROM MAG.	DROPPED SHELL	DIDN'T LOCK UP	BTEN CHAMBER RIGHT	BTEN CHAMBER LEFT	BTEN CHAMBER RIGHT	BTEN CHAMBER LEFT	FAILS TO CLEAR BOLT FACE	STOPS CLEARING	FAILURE	ENG. STOPS SHOOT	AGAIN BACK UP	DIDN'T FUNCTION	BREAKAGE	MISCONDUCT	MISCONDUCT	MISCONDUCT TIME	REMARKS (ON BACK) YES	NO
R223R1	A.	100									CODE	-	A	O	3	C			(660	BOLT	STOP	FELL	OUT)					
R223R1	A.	100																										
R223R1	A.	100																										
R223R1	A.	100																										
R223R1	A.	100																										
TOTAL ~		1100																										
BLACK STOCK																												
R223R1	A.	100																										
TOTAL (PER MAL.)																												

Oct 28, 1985
Adam A. Hungate

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KINZER V. REMINGTON

BARBER - PRESALE R 0131740 R2532728

RD-6738 Rev. 2/85

DCR _____

Sheet 1 of 1

DESIGN CHANGE REQUEST (DCR) ✓

OR

TRANSMITTAL OF DRAWINGS/PARTS LIST ✓

OR

PARTS LIST CHANGE NOTICE (PLCN) ✓

Requested By	Changed By	Date
T.C. DOUGLAS	A.A. HUGICK	10/22/85
Originating Date	Transmittal Date	
10/22/85		

Model	PART NAME/LIST	Drawing No.	Part No.
XP-100	BARREL ASSEMBLY COMPLETE	B31560	31560, 61, 62
XP-100	BARREL	C34945	34945, 46
XP-100	BARREL ASSEMBLY	C34950	34950, 51
—	CHAMBER DRAWING - 223 REM - "REM. ONLY"	LA507	—
—	CHAMBER DRAWING - 223 REM - "INQUIRIES"	LA507	—

Dwg. NO.	Rev. No.	DESIGN CHANGE
B31560	—	INITIAL TRANSMITTAL FOR MRP & 223 REM ADDED CALIBER.
C34945	4, 5	223 REM. ADDED.
C34950	11	223 REM. ADDED.
C34950	12	TABULATION FOR MRP ADDED.
LA507 "REM ONLY"	19, 20	XP100 USE ADDED
LA507 "INQUIRIES"	12, 15	XP100 USE ADDED
" "	13, 14	[illegible] TO TABULATION OF [illegible].

Classification of Change

(✓) Initial Transmittal
( ) Functional Change
( ) Safety Mechanism Revision
( ) Appearance

NOTE: Any or all of the above changes require approval of DCR by Lab Director - New Products Research

(✓) Other

Adam A. Hugick
DESIGNER SIGNATURE

Reason for Change:

REV. NO 4, 5, 11, 12, 19, 20, 12, 15, - INITIAL TRANSMITTAL OF ADDED 223 REM CALIBER TO MODEL XP-100 PISTOL.

REV. NO. 13-14 - UPDATED LA507 "INQUIRIES" DWG'S TO BE SAME AS "REM ONLY" DWG.

Disposition of Parts on Hand: (Check Below)

( ) Scrap ( ) Alter ( ) Use Inventory ( ) RD 6589 Attached

(P.E.&C: If Part is either scrapped or altered

APPROVED: _____ _____ _____

223 REM US 5.56mm

TARGET DATA

	12 IN. TWIST 7511966		14 IN. TWIST 7511642	
	223	5.56	223	5.56
PLND –	1.85*, 1.65*	2.2*, 1.6*	1.90* 1.65*	2.65*, 1.56*
45 SHOTS	1.50*, 1.00*	1.25*, 1.0*	1.05* 1.50*	1.90*, 1.25*
35 SHOTS	1.40*, 0.75*	1.00*, 1.0*	0.85* 1.00*	0.80*, 0.80*
ND – 40	1.55*, 1.60*	2.22*, 2.44*	1.80* 1.45* KH	2.22*, 1.64*
45 SHOTS	1.40*, 1.40*	1.20*, 1.95*	1.55* 1.40*	1.85*, 1.40*
35 SHOTS	0.90*, 0.65*	0.80* 0.85*	0.85* 0.60*	1.25*, 1.30*
INFMC-55	1.85*, 1.20*	1.78*, 2.06*	2.10*, 2.15*	1.34*, 2.49*
45 SHOTS	1.30*, 1.20*	1.20*, 1.65*	1.70*, 1.75*	0.95* 1.90*
35 SHOTS	1.15*, 0.85*	0.65* 0.95*	0.20*, 0.85*	0.40* 1.35*
Σ GRAND TOT	23.20	25.80	24.35	27.00
Σ 55 SHOTS	9.70	12.30	11.05	11.85
Σ 45 SHOTS	7.80	8.25	8.95	9.25
Σ 35 SHOTS	5.70	5.25	4.35	5.90
$\bar{x}$ GRAND	~~1.29~~	~~1.43~~	~~1.35~~	~~1.50~~
$\bar{x}$ 55 SHOTS	1.62	2.05	1.84	1.98
$\bar{x}$ 45 SHOTS	1.30	1.38	1.49	1.54
$\bar{x}$ 35 SHOTS	0.95	0.88	0.73	0.98
σ 55 SHOTS	0.24	0.31	0.27	0.53
σ 45 SHOTS	0.18	0.35	0.25	0.40
σ 35 SHOTS	0.28	0.14	0.29	0.38
+3σ	2.34	2.98	2.65	3.57
−3σ	1.84	2.43	2.24	2.74
[illegible]	0.91	1.30	1.60	[illegible]

OCT. 10, 85 A.

WRITER GUNS

B75 12 428 (12), B75 11606 (14), B75 12 214 (14),
B75 08 065 (12), B75 12 261 (14), B75 12 192 (14)

ACCURACY
TWIST, CHAMBER, BULLET WEIGHTS)

B75 11966 (12), B75 11642 (14)

FED 40
WIN ~~FF~~ 55.
GALLERY 20T5 (PSP & PLHP)

(223 REM VS. 5.56 GOVT) - FED 40, WIN 55, RPLHP,

ENDURANCE (STOCK)
100 RDS. FACTORY (SAVE PLHP AMMO - GOVERNMENT)

100 RDS. (EXPERIMENTAL PAINTER STOCK)

XP 100 - 223REM DESIGN TEST
PROGRAM 8-02-85 AAH.

1. DONE OBTAIN TEN 22CFR BARREL BLANKS (MODEL SEVEN)
   (a) FIVE - 222 REM FOR 14 INCH TWIST
   (b) FIVE - 223 REM FOR 12 INCH TWIST.

2. DONE TURN BARREL CONTOUR AND CUT TO LENGTH TO THAT OF 7mm BR REM BARREL BLANK.

3. DONE WITH DRAW FROM WARE HOUSE TEN XP-100 PISTOLS OF 221 CALIBER.

4. DONE HAVE BARRELS (IN CUSTOM SHOP) REMOVED FROM RECEIVERS AND DELIVER ACTIONS TO CUSTOM SHOP.

5. DONE HAVE BARREL CHANNEL OR STOCKS RE CUT TO THAT OF 7mm BR REM BARREL CHANNEL OR OBTAIN TEN STOCKS WITH 7mm BR REM BARREL CONTOUR VIA INVENTORY WITHDRAWAL.

6. DONE HAVE CUSTOM SHOP FABRICATE XP 100 - 223 REM PISTOLS. FIVE TO BE STAMPED (12) FOR 12 INCH TWIST AND FIVE TO BE STAMPED (14) FOR 14 INCH TWIST.

7. DONE PROOF AND ACCURACY TEST ALL TEN PISTOLS WITH 223 REM AMMO. (WITH THERMATOR BARRELS (R, W, F.).

PART

BARBER - PRESALE R 0131744

(a) ACCURACY TEST MAY BE BOTH IN GALLERY FIXTURE AND HAND FIRED. (100 YARD & 200 YARD INDOOR RANGE(S))?

FINALIZE TEST RESULTS AND PREPARE TRANSMITTAL DETAILS FOR XP-100-223 REM.

SELECT ONE (12) AND ONE (14) XP100 PISTOL AND HAVE CHAMBER RE CUT (DEEPER THROAT) TO THAT OF 5.56.

RESHOOT ACCURACY OF ALTERED GUN AND ONE CONTROL GUN.

FINALIZE SECOND TEST RESULTS AND COMPARE TO FIRST ACCURACY TEST.

COMMENT: THE LONGER RANGE XP100 BOLT ACTION PISTOL ACCURACY IS EXPECTED TO BE A FUNCTION OF CHAMBER PRESSURE VARIATION(S). A (14) INCH TWIST IS MORE FORGIVING THAN A (12) INCH TWIST BARREL. THE DEEPER THROATED 5.56 IS EXPECTED TO BE MORE FORGIVING THAN A LESSER THROATED 223 REM. CHAMBER. IF SIGNIFICANT INDICATIONS OF ONE GUN WILL INDICATE IF A LARGER CHAMBER IS REQUIRED FOR VARIFICATION OF ACCURACY DIFFERENCES.

223 REM. Number of Rounds Fired

NOT TIME

WHEN RECUTTING THE 223 REM CHAMBER TO THE 5.56 CHAMBER STRAIN GAGE(S) SHOULD BE PLACED ON GUN FOR STRAIN GAGE PRESSURE DATA AND MUZZLE VELOCITY IF MEAS & TEST TIME ALLOWS.

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington Peters

"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"

xc: Firearms Business Team

Ilion, New York
August 2, 1985

E0237
XP100

TO: T.C. DOUGLAS
D.S. FINDLAY

FROM: J.W. BOWER

NOTES FROM BUSINESS TEAM MEETING

Decisions made at yesterday's meeting that are of interest to you:

- The 1986 offerings in the Sportsman 78 and XP-100 will be made in .223 caliber, not 5.56 mm. This is in response to SAAMI's recommendation that .223 and 5.56 be considered a dangerous combination.

ADAM

- The XP-100 will be introduced as soon as possible in 1986. Based on our previous conversations, I committed to a November 1 transmittal.
- Marketing requested that the sight be removed from the XP-100.
- Deer Gun economics were approved. That package should be transmitted as soon as possible.
- The Business Team reiterated their commitment to introduce the Model 870 Improvements in 1987, and they are prepared to ask for advance funds to accomplish the schedule. Ken Soucy is to review the schedule and determine a "drop dead" date for 1987 introduction. Research needs to be in a position to transmit the package by October 1.
- The new, one piece centerfire sight, will be phased in as soon as its available. We need to get drawings to MIM as soon as possible.

RD 6606 cc: J. White

TO: D. CHRISTIE

ILION RESEARCH DIVISION

FIREARMS WITHDRAWAL

DATE 8/5/85

LETTER NO. 2186

QUANTITY 10

MODEL XP-100 CAL/GA. 221 REM WORK ORDER R0237

SERIAL NOS.

[redacted] # 5470	B7512261	B7512214
	B7512475	B7512172
	B7511606	B7512428
	B7511966	B7512307
	B7511642	B7508065

REMARKS:

Approval

MMugick:js

XP100 BARREL PROCESS REVIEW
FORWARD SCREW CLEARANCE(S),

	LENGTH(S)	AND	TOLERANCE,
ESCUTCHEON - C15448 -	.513/.507	&	.720/.725
	(±.003)		(±.0025)
SCREW - A15447 -	1.400/1.410		
	(±.005)		

TOTAL TOLERANCE = ± .0105

VARIATION = .0210

SCREW THREAD IS 1/4 28 NF-2

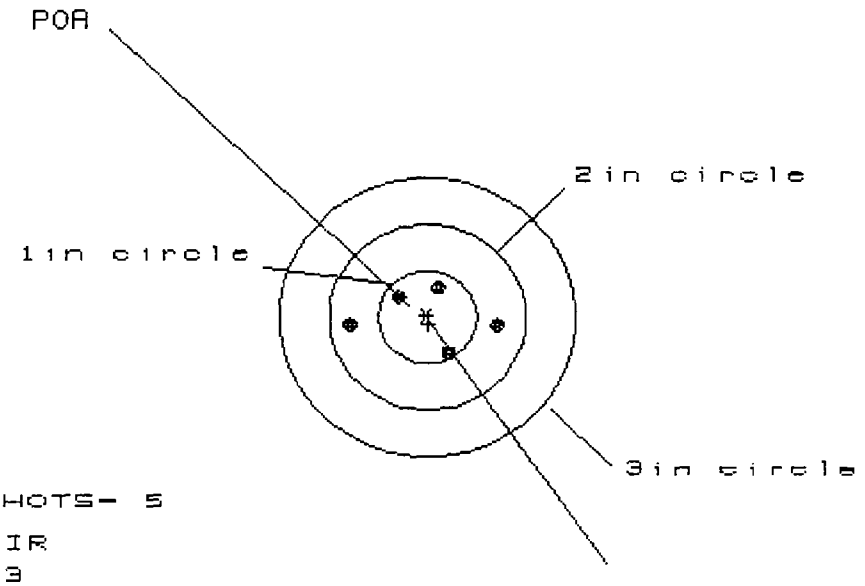
ONE THREAD WITH IS .0357143 (1/28) INCH

$\frac{.0210}{.0357143}$ ~ .59 TURNS

A.A.H.

21 Apr 1986

CENTERFIRE PATTERNS # 1



OF SHOTS= 5

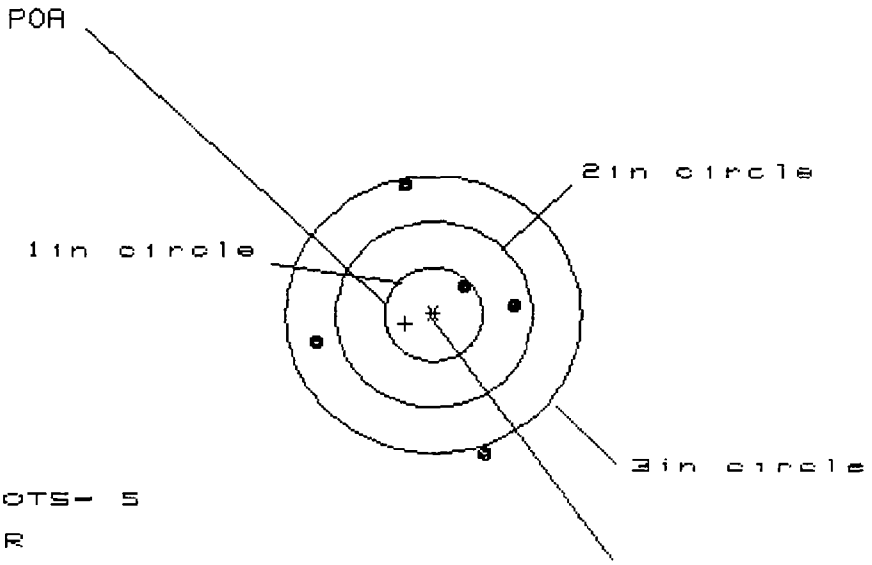
# IN CIR
1in = 3
2in = 5
3in = 5

HS= 1.488
VS= .763
S= 1.490

PATTERN #	:	1	
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.693	.494	.216
MINIMUM X	:	-.795	-.498	-.333
MAXIMUM Y	:	.360	.352	.313
MINIMUM Y	:	-.403	-.411	-.450
CENTROID X	:	-.011	.188	.023
CENTROID Y	:	.081	.089	.128
POA TO CENTROID in.	:	.081	.208	.130
MIN RADIUS	:	.352	.355	.334
MEAN RADIUS	:	.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 ONE INCH CIRCLE	=	✓	3 ✓	✓
NUMBER IN TWO INCH CIRCLE	=		5	
NUMBER IN THREE INCH CIRCLE	=		5	

21 Apr 1986

CENTERFIRE PATTERNS # 2



OF SHOTS- 5

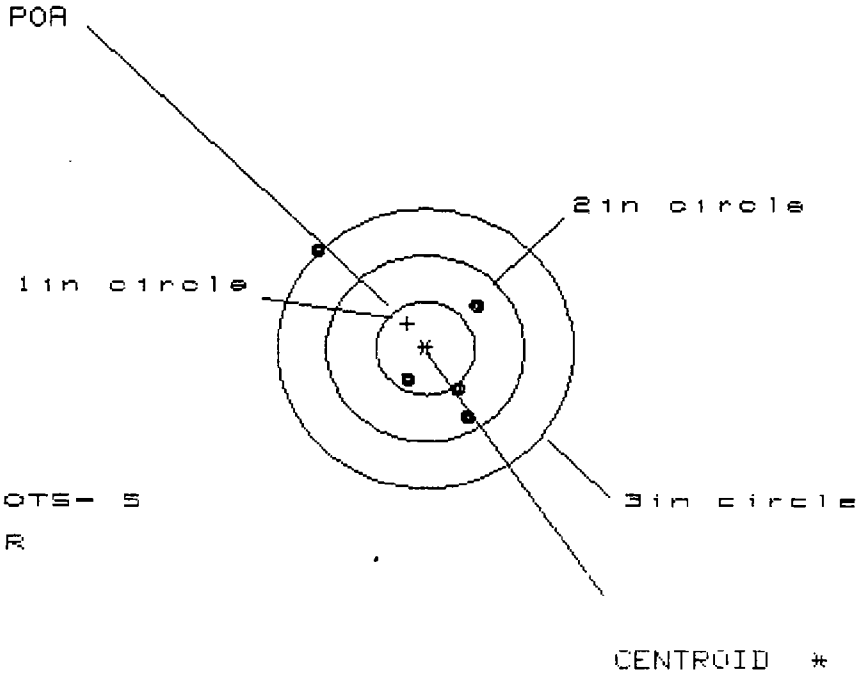
IN CIR
1in - 1
2in - 2
3in = 4

HS- 2.017
VS= 2.900
GS= 3.010

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	

21 Apr 1986

CENTERFIRE PATTERNS # 3



OF SHOTS- 5

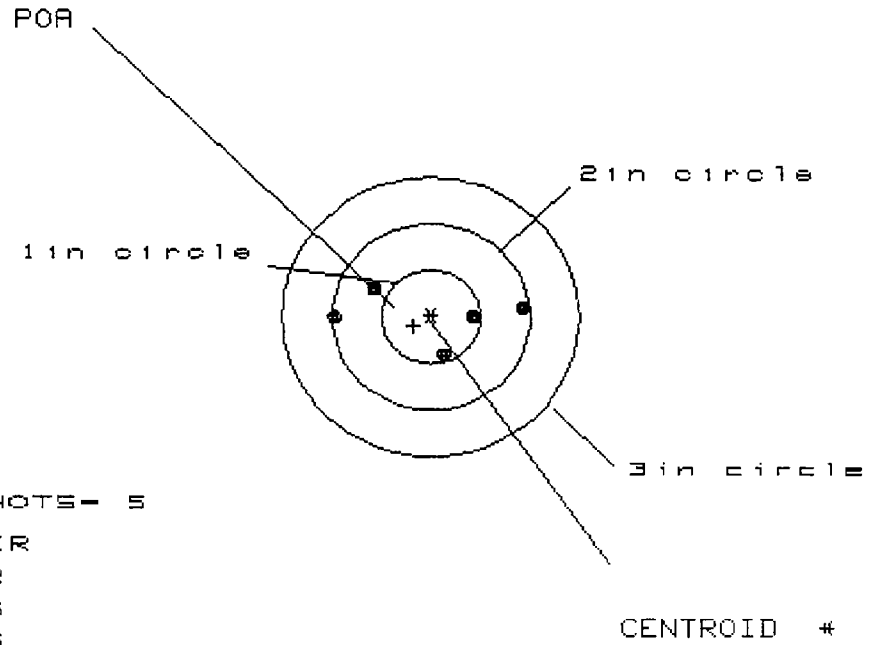
IN CIR
1in - 1
2in - 4
3in = 5

HS- 1.511
VS= 1.779
GS= 2.322

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	:	.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 INCH CIRCLE	=		1	
NUMBER IN TWO INCH CIRCLE	=		4	
NUMBER IN THREE INCH CIRCLE	=		5	

21 Apr 1986

CENTERFIRE PATTERNS # 4



OF SHOTS= 5

# IN CIR
1in = 2
2in = 5
3in = 5

HS= 1.919
VS= .726
GS= 1.920

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.	:	.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 INCH CIRCLE	=		2	
NUMBER IN TWO INCH CIRCLE	=		5	
NUMBER IN THREE INCH CIRCLE	=		5	

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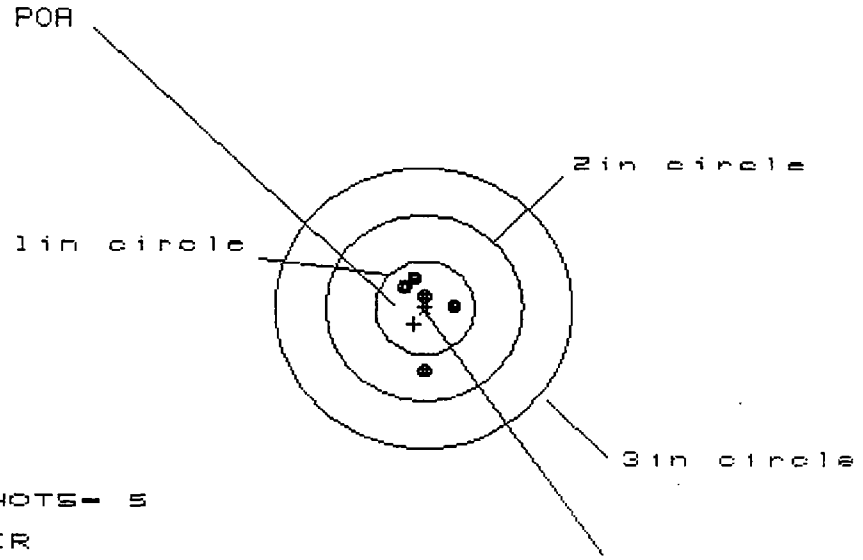
CENTERFIRE PATTERNS # 5



OF SHOTS= 5

# IN CIR
1in = 4
2in = 5
3in = 5

HS= .450
VS= .973
GS= .973

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 SPREAD	:	.450	.450	.450
VERTICAL SPREAD	:	.973	.318	.239
EXTREME SPREAD	:	.973	.510	.510
NUMBER IN ONE INCH CIRCLE	=		4	
NUMBER IN TWO INCH CIRCLE	=		5	
NUMBER IN THREE INCH CIRCLE	=		5	

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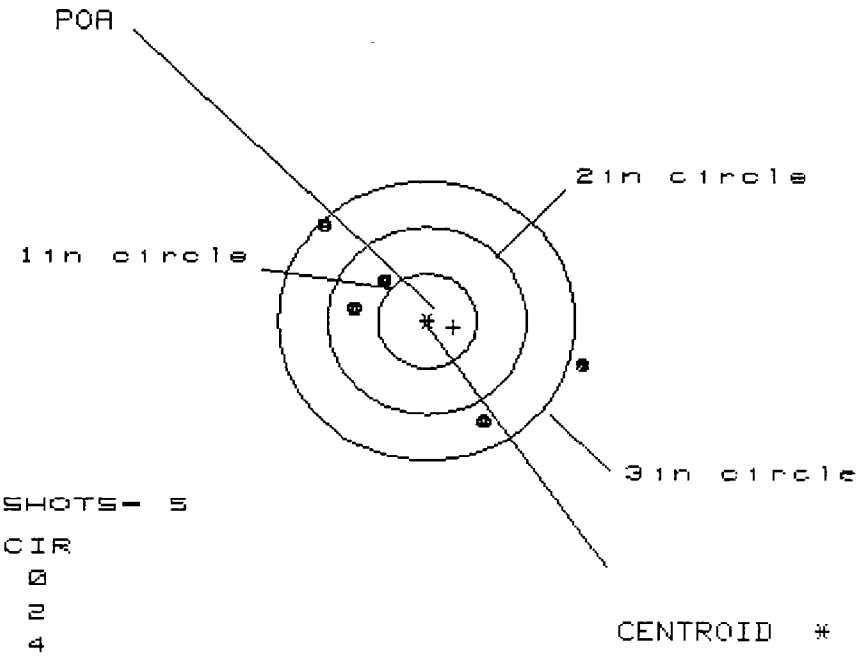
CENTERFIRE PATTERNS # 6

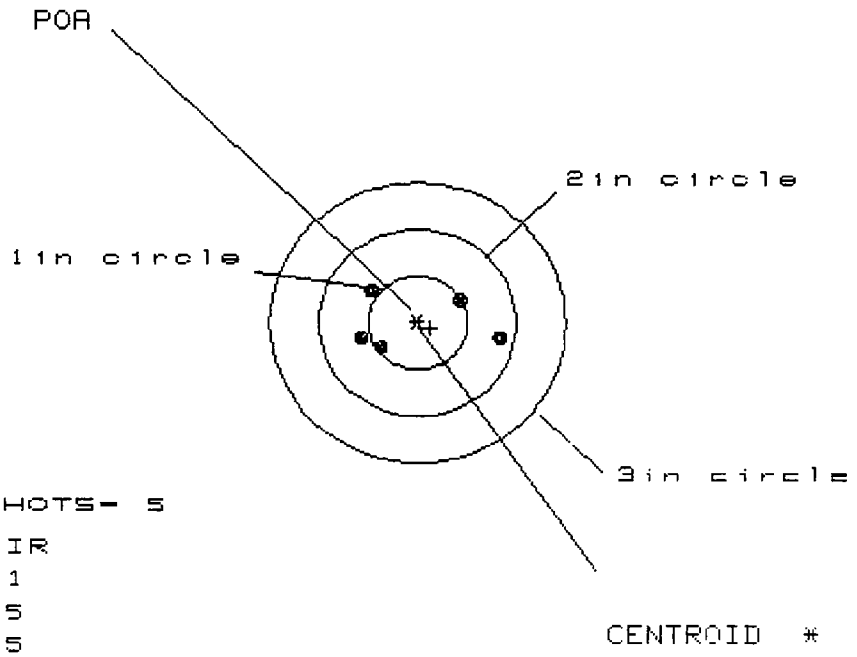


# OF SHOTS= 5
# IN CIR
1in = 0
2in = 2
3in = 4
HS= 2.635
VS= 2.128
GS= 3.037

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 INCH CIRCLE	=	✓	0 ✓	✗
NUMBER IN TWO INCH CIRCLE	=		2	
NUMBER IN THREE INCH CIRCLE	=		4	

21 Apr 1986

CENTERFIRE PATTERNS # 7



OF SHOTS= 5

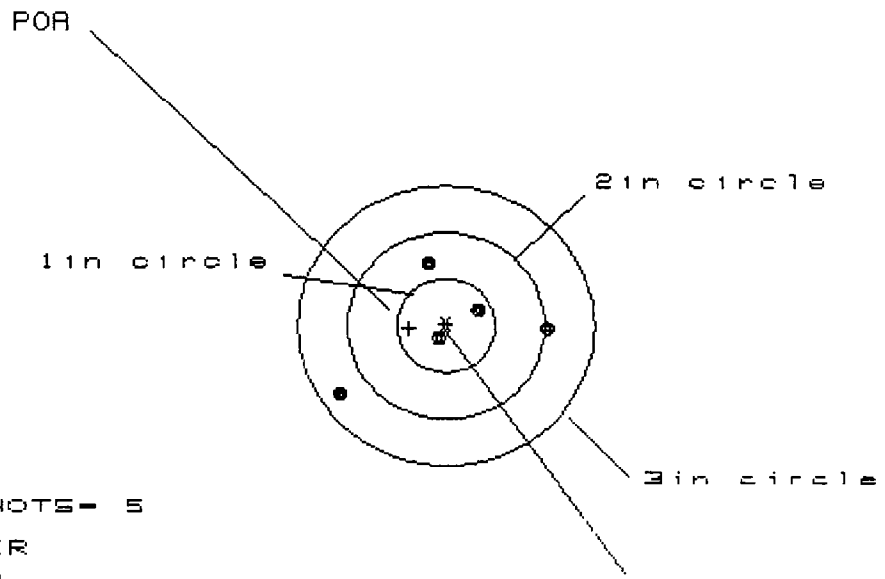
# IN CIR
1in = 1
2in = 5
3in = 5

HS= 1.374
VS= .672
GS= 1.437

PATTERN #	:	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 CIRCLE	=		1	
NUMBER IN TWO INCH CIRCLE	=		5	
NUMBER IN THREE INCH CIRCLE	=		5	

21 Apr 1986

CENTERFIRE PATTERNS # 8



OF SHOTS= 5

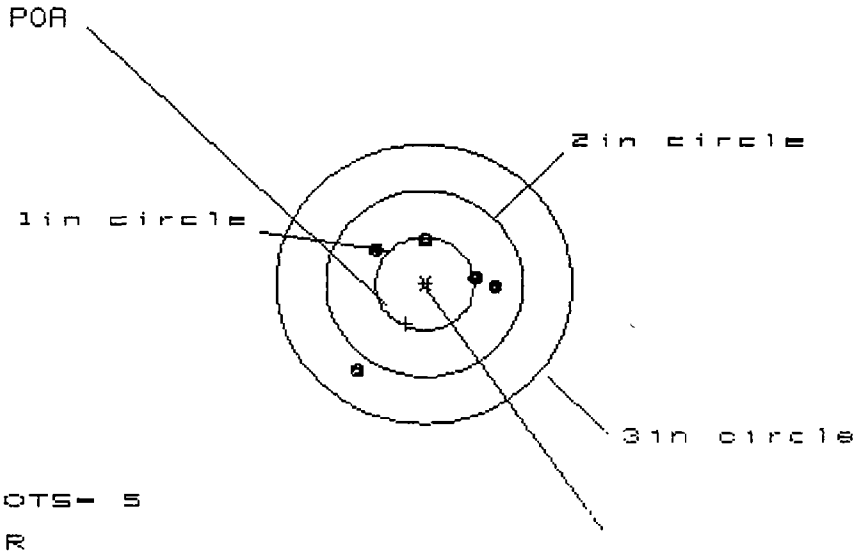
IN CIR
1in - 2
2in - 3
3in = 5

HS= 2.108
VS= 1.453
GS= 2.222

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 SPREAD	:	2.108	1.276	.563
VERTICAL SPREAD	:	1.453	.775	.775
EXTREME SPREAD	:	2.222	1.480	.783
NUMBER IN ONE INCH CIRCLE	=		2	
NUMBER IN TWO INCH CIRCLE	=		3	
NUMBER IN THREE INCH CIRCLE	=		5	

21 Apr 1986

CENTERFIRE PATTERNS # 9



OF SHOTS= 5

IN CIR
1in - 0
2in - 4
3in = 5

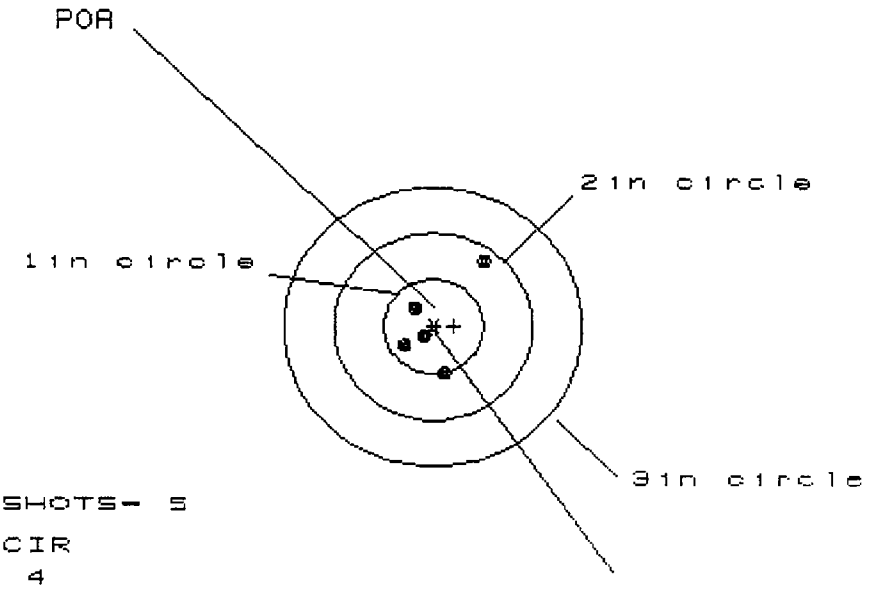
HS= 1.435
VS= 1.452
GS= 1.722

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 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 INCH CIRCLE =	✓	0 ✓	X
NUMBER IN TWO INCH CIRCLE =		4	
NUMBER IN THREE INCH CIRCLE =		5	

21 Apr 1986

CENTERFIRE PATTERNS # 10



OF SHOTS= 5

IN CIR

1in = 4

2in = 5

3in = 5

HS= .763

VS= 1.124

GS= 1.205

PATTERN #	:	10	
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.499	.191	.093
MINIMUM X	:	-.264	-.139	-.076
MAXIMUM Y	:	.656	.359	.258
MINIMUM Y	:	-.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 RADIUS	:	.824	.368	.258
HORIZONTAL SPREAD	:	.763	.330	.169
VERTICAL SPREAD	:	1.124	.663	.438
EXTREME SPREAD	:	1.205	.717	.442
NUMBER IN ONE INCH CIRCLE	=		4	
NUMBER IN TWO INCH CIRCLE	=		5	
NUMBER IN THREE INCH CIRCLE	=		5	

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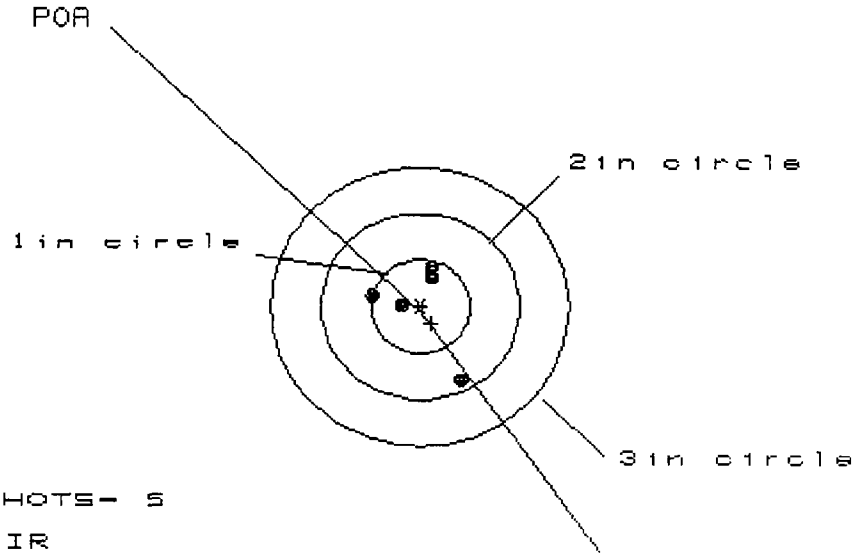
CENTERFIRE PATTERNS # 11



OF SHOTS- 5

IN CIR
1in - 4
2in - 5
3in = 5

HS- .903
VS= 1.125
GS= 1.258

PATTERN # :	11		
SHOTS (BEST OF) :	5	4	3
MAXIMUM X :	.439	.256	.138
MINIMUM X :	-.464	-.354	-.247
MAXIMUM Y :	.369	.180	.156
MINIMUM Y :	-.756	-.190	-.213
CENTROID X :	-.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
HORIZONTAL SPREAD :	.903	.610	.385
VERTICAL SPREAD :	1.125	.369	.369
EXTREME SPREAD :	1.258	.659	.533
NUMBER IN ONE INCH CIRCLE =		4	
NUMBER IN TWO INCH CIRCLE =		5	
NUMBER IN THREE INCH CIRCLE =		5	

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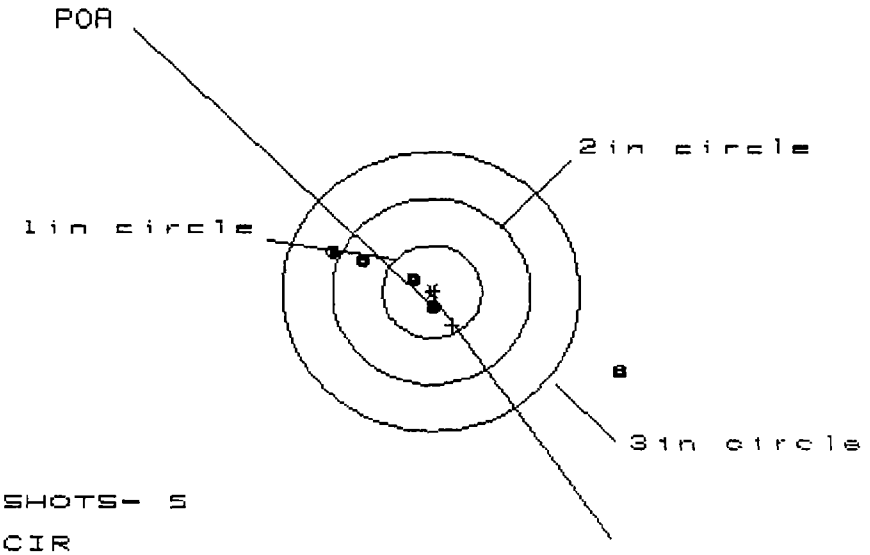
CENTERFIRE PATTERNS # 12



OF SHOTS- 5

IN CIR
1in - 2
2in - 3
3in = 4

HS= 2.958
VS= 1.320
GS= 3.239

PATTERN #	:	12	
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
CENTPOID 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	

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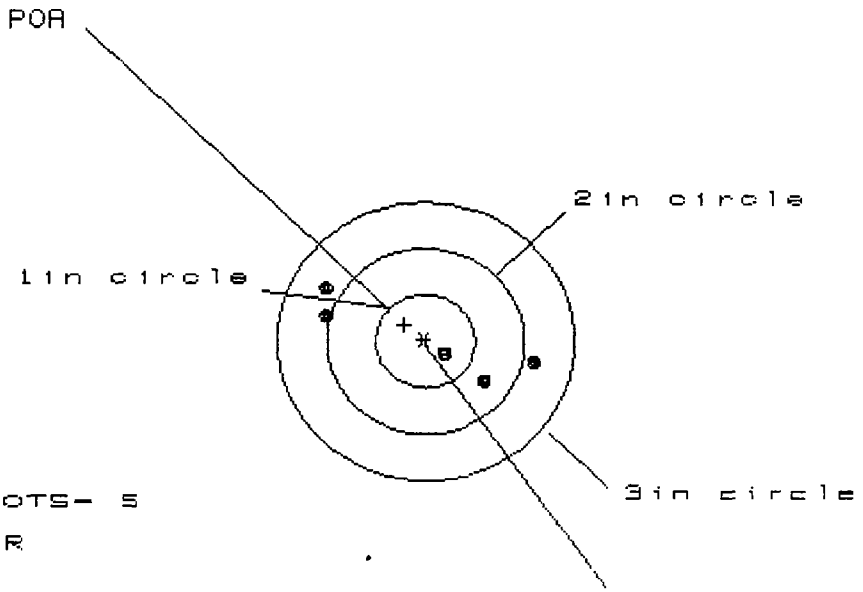
CENTERFIRE PATTERNS # 13



OF SHOTS- 5

IN CIR
1in - 1
2in - 3
3in = 5

HS- 2.100
VS= 1.044
GS= 2.250

PATTERN # : 13

SHOTS (BEST OF) :	5	4	3
MAXIMUM X :	1.115	.869	.652
MINIMUM X :	-.985	-1.208	-.918
MAXIMUM Y :	.585	.409	.384
MINIMUM Y :	-.459	-.312	-.337
CENTROID X :	.211	.457	.168
CENTROID Y :	-.175	-.322	-.297
POA TO CENTROID in.:	.275	.559	.341
MIN RADIUS :	.279	.032	.270
MEAN RADIUS :	.864	.664	.666
MAX RADIUS :	1.146	1.275	.995
HORIZONTAL SPREAD :	2.100	2.076	1.570
VERTICAL SPREAD :	1.044	.721	.721
EXTREME SPREAD :	2.250	2.132	1.728
NUMBER IN ONE INCH CIRCLE =	✓	1 X	
NUMBER IN TWO INCH CIRCLE =		3 X	X
NUMBER IN THREE INCH CIRCLE =		5	

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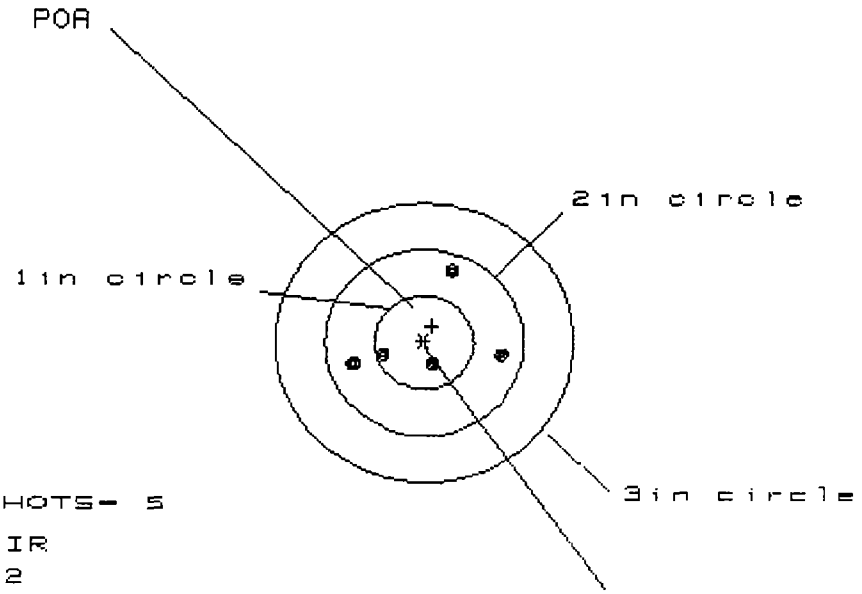
CENTERFIRE PATTERNS # 14



# OF SHOTS= 5
# IN CIR
1in = 2
2in = 5
3in = 5
HS= 1.437
VS= .997
GS= 1.441

PATTERN # :	14		
SHOTS (BEST OF) :	5	4	3
MAXIMUM X :	.733	.797	.453
MINIMUM X :	-.704	-.640	-.374
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
MAX RADIUS :	.774	.802	.456
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	

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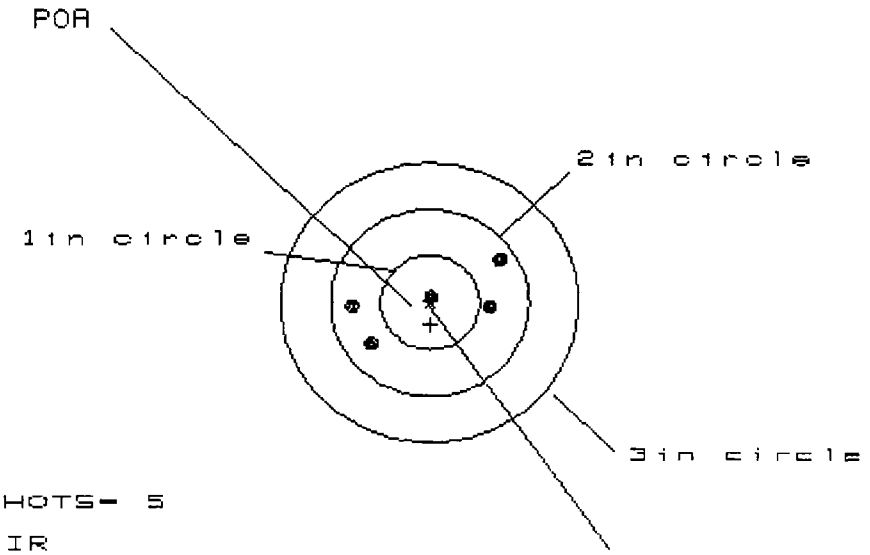
CENTERFIRE PATTERNS # 15



OF SHOTS= 5

# IN CIR
1in = 1
2in = 5
3in = 5

HS= 1.545
VS= .851
GS= 1.602

PATTERN #	:	15		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.742	.791	.585
MINIMUM 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
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 INCH CIRCLE	=	✓	1 ✓	✗
NUMBER IN TWO INCH CIRCLE	=		5	
NUMBER IN THREE INCH CIRCLE	=		5	

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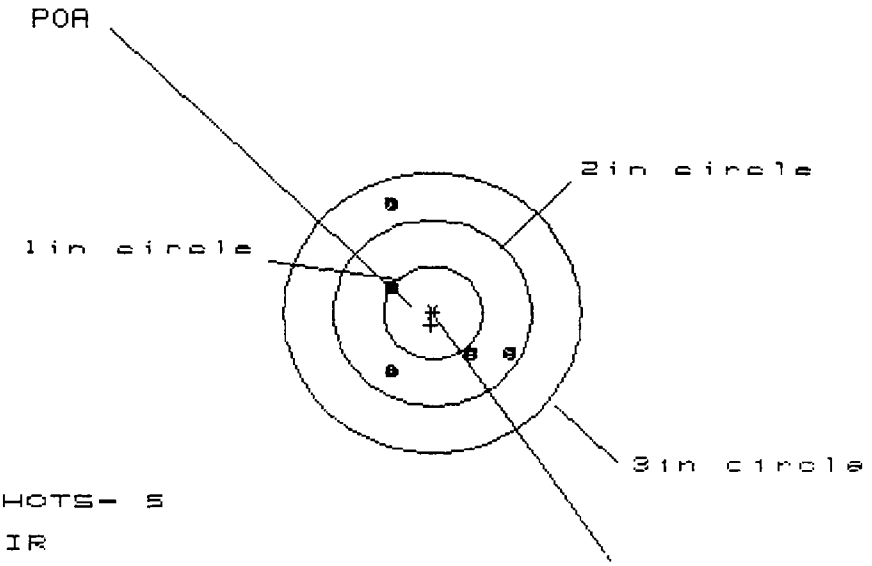
CENTERFIRE PATTERNS # 16



OF SHOTS- 5

IN CIR
1in - 1
2in - 4
3in = 5

HS= 1.179
VS= 1.709
GS= 1.925

PATTERN #	:	16	
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 INCH CIRCLE	=		1	
NUMBER IN TWO INCH CIRCLE	=		4	
NUMBER IN THREE INCH CIRCLE	=		5	

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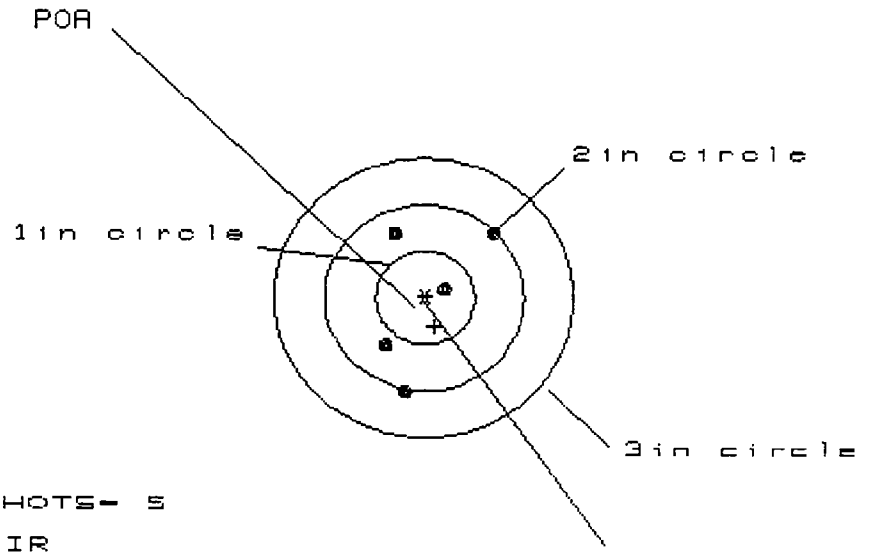
CENTERFIRE PATTERNS # 17



OF SHOTS= 5

# IN CIR
1in = 1
2in = 5
3in = 5

HS= 1.130
VS= 1.676
GS= 1.871

PATTERN # :	17		
SHOTS (BEST OF) :	5	4	3
MAXIMUM X :	.717	.659	.363
MINIMUM X :	-.413	-.471	-.251
MAXIMUM 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
MEAN 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 ✓	X
NUMBER IN TWO INCH CIRCLE =		5	
NUMBER IN THREE INCH CIRCLE =		5	

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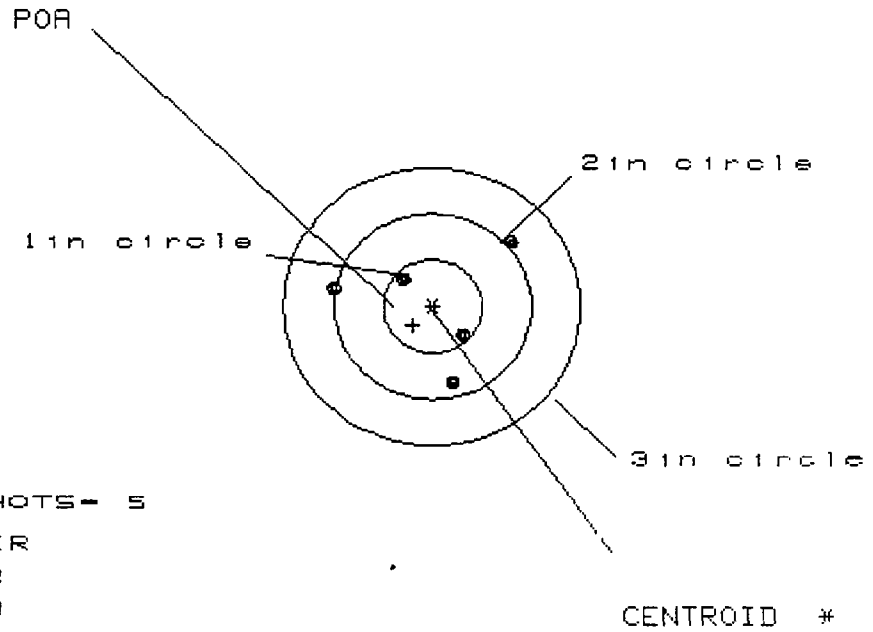
CENTERFIRE PATTERNS # 18



OF SHOTS= 5

# IN CIR
1in = 2
2in = 3
3in = 5

HS= 1.799
VS= 1.496
GS= 1.846

PATTERN #	:	18	
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.808	.489	.227
MINIMUM 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 CIRCLE	=	✓	2 ✓	✗
NUMBER IN TWO INCH CIRCLE	=		3	
NUMBER IN THREE INCH CIRCLE	=		5	

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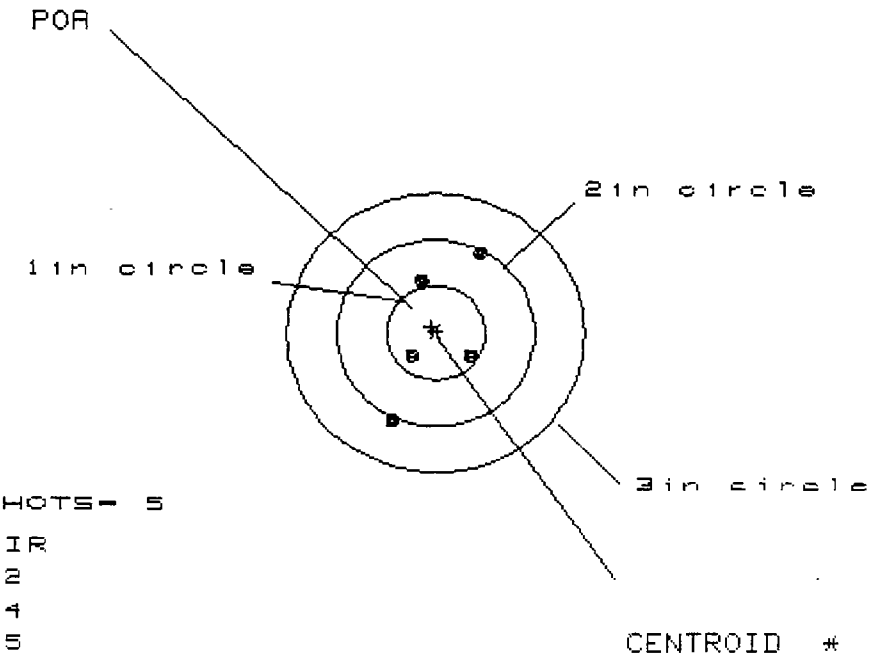
CENTERFIRE PATTERNS # 19



OF SHOTS= 5

# IN CIR
1in = 2
2in = 4
3in = 5

HS= .833
VS= 1.851
GS= 2.030

PATTERN #	:	19	
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.	:	.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 INCH CIRCLE	=		2	
NUMBER IN TWO INCH CIRCLE	=		4	
NUMBER IN THREE INCH CIRCLE	=		5	

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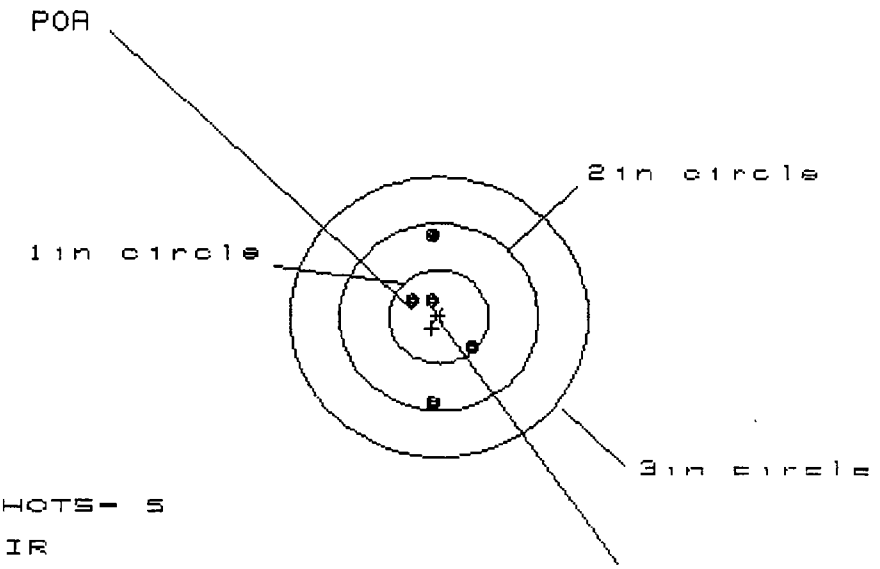
CENTERFIRE PATTERNS # 20



OF SHOTS= 5

# IN CIR
1in = 3
2in = 5
3in = 5

HS= .599
VS= 1.847
GS= 1.847

PATTERN #	:	20	
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
CENTROID 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
MAX RADIUS	:	.963	.647	.467
HORIZONTAL SPREAD	:	.599	.599	.599
VERTICAL SPREAD	:	1.847	1.179	.505
EXTREME SPREAD	:	1.847	1.254	.783
NUMBER IN ONE INCH CIRCLE	=		3	
NUMBER IN TWO INCH CIRCLE	=		5	
NUMBER IN THREE INCH CIRCLE	=		5	

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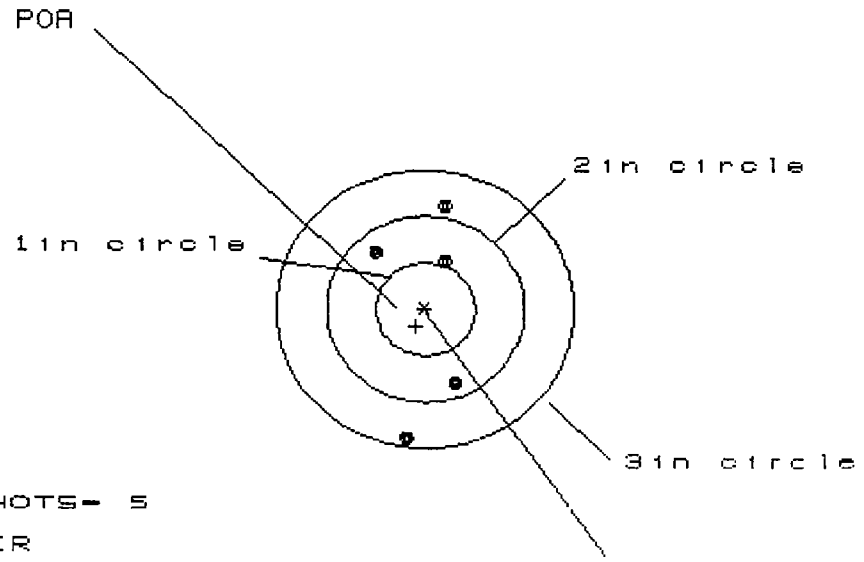
CENTERFIRE PATTERNS # 21



OF SHOTS= 5

# IN CIR
1in = 0
2in = 3
3in = 5

HS= .735
VS= 2.516
GS= 2.555

PATTERN #	:	21	
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 in.	:	.211	.564	.314
MIN RADIUS	:	.535	.195	.433
MEAN RADIUS	:	.948	.682	.700
MAX RADIUS	:	1.445	1.183	.960
HORIZONTAL SPREAD	:	.735	.735	.735
VERTICAL SPREAD	:	2.516	1.892	1.453
EXTREME SPREAD	:	2.555	1.892	1.628
NUMBER IN ONE INCH CIRCLE	=	✓	0 ✓	X
NUMBER IN TWO INCH CIRCLE	=		3	
NUMBER IN THREE INCH CIRCLE	=		5	

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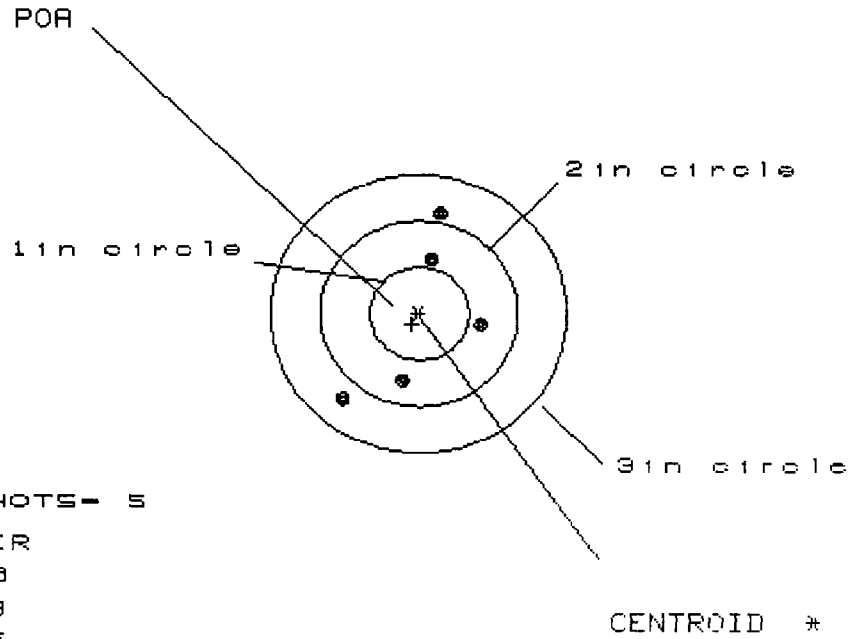
CENTERFIRE PATTERNS # 22



OF SHOTS= 5

# IN CIR
1in = 0
2in = 3
3in = 5

HS= 1.424
VS= 2.022
GS= 2.258

PATTERN #	:	22	
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	=		0	
NUMBER IN TWO INCH CIRCLE	=		3	
NUMBER IN THREE INCH CIRCLE	=		5	

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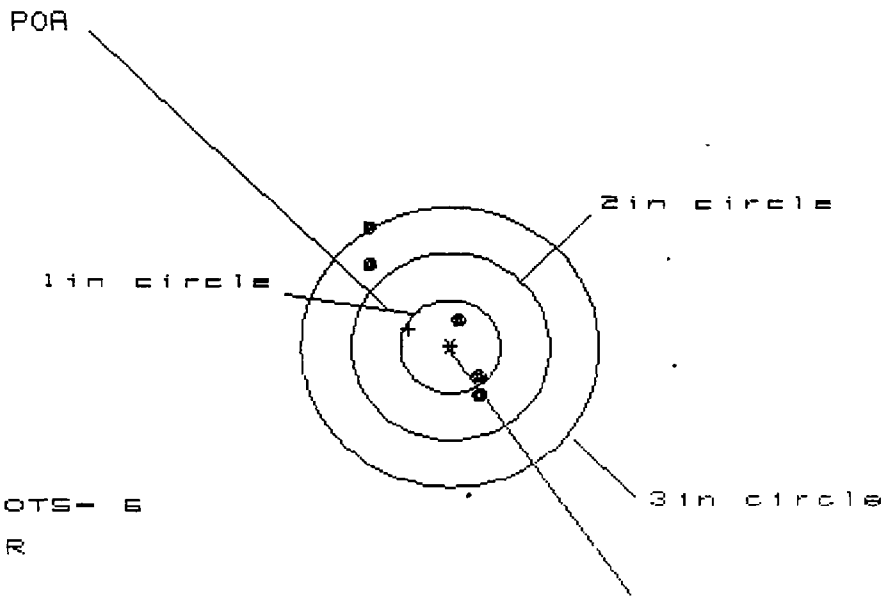
CENTERFIRE PATTERNS # 23



OF SHOTS- 6

IN CIR
1in - 1
2in - 5
3in = 6

HS= 1.105
VS= 1.321
GS= 1.722

PATTERN #	:	23	
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	=		1	
NUMBER IN TWO INCH CIRCLE	=		5	
NUMBER IN THREE INCH CIRCLE	=		6	

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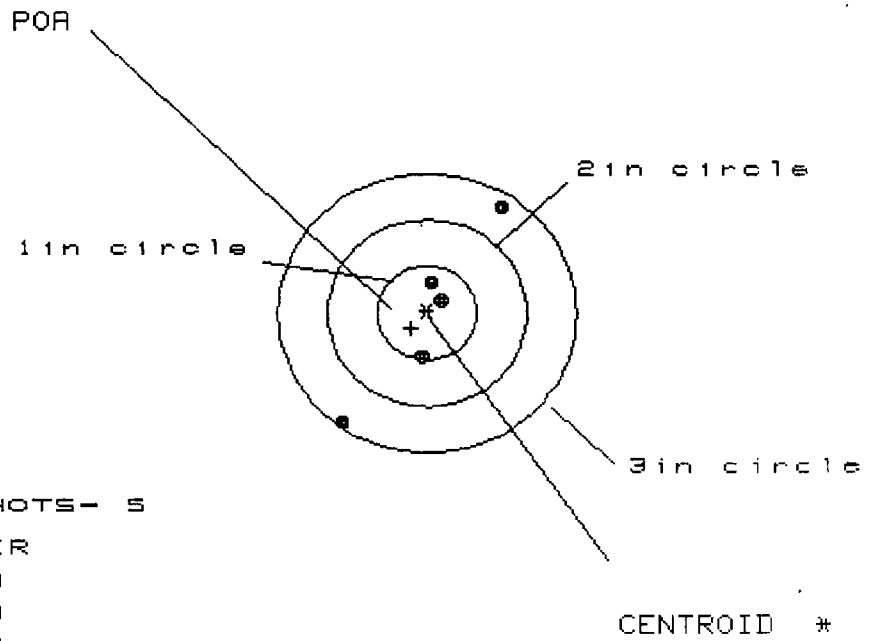
CENTERFIRE PATTERNS # 24



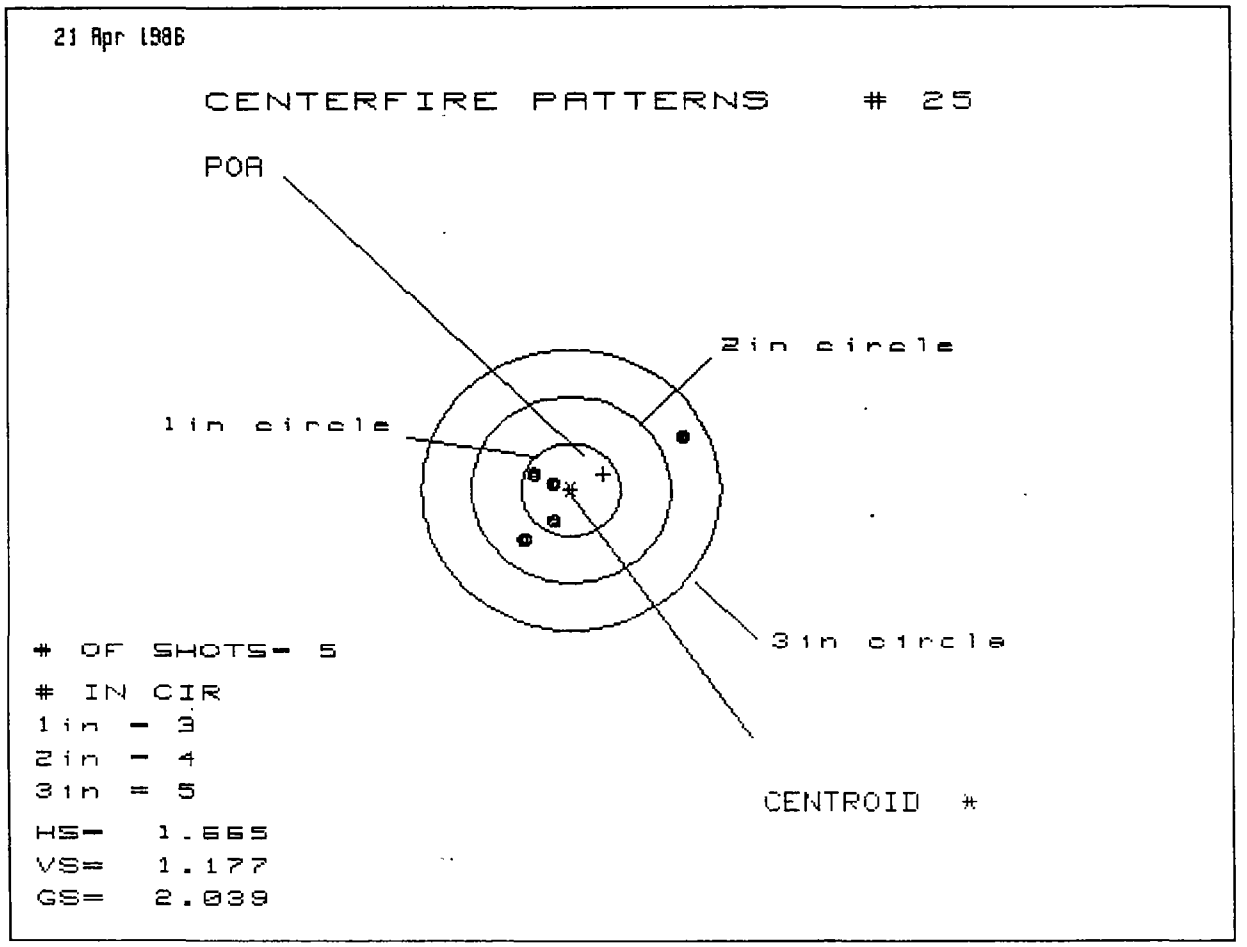
OF SHOTS- 5

IN CIR
1in - 3
2in - 3
3in = 5

HS- 1.637
VS= 2.313
GS= 2.834

PATTERN #	:	24	
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 INCH CIRCLE = 5



PATTERN #	:	25		
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
HOPIZONTAL 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	

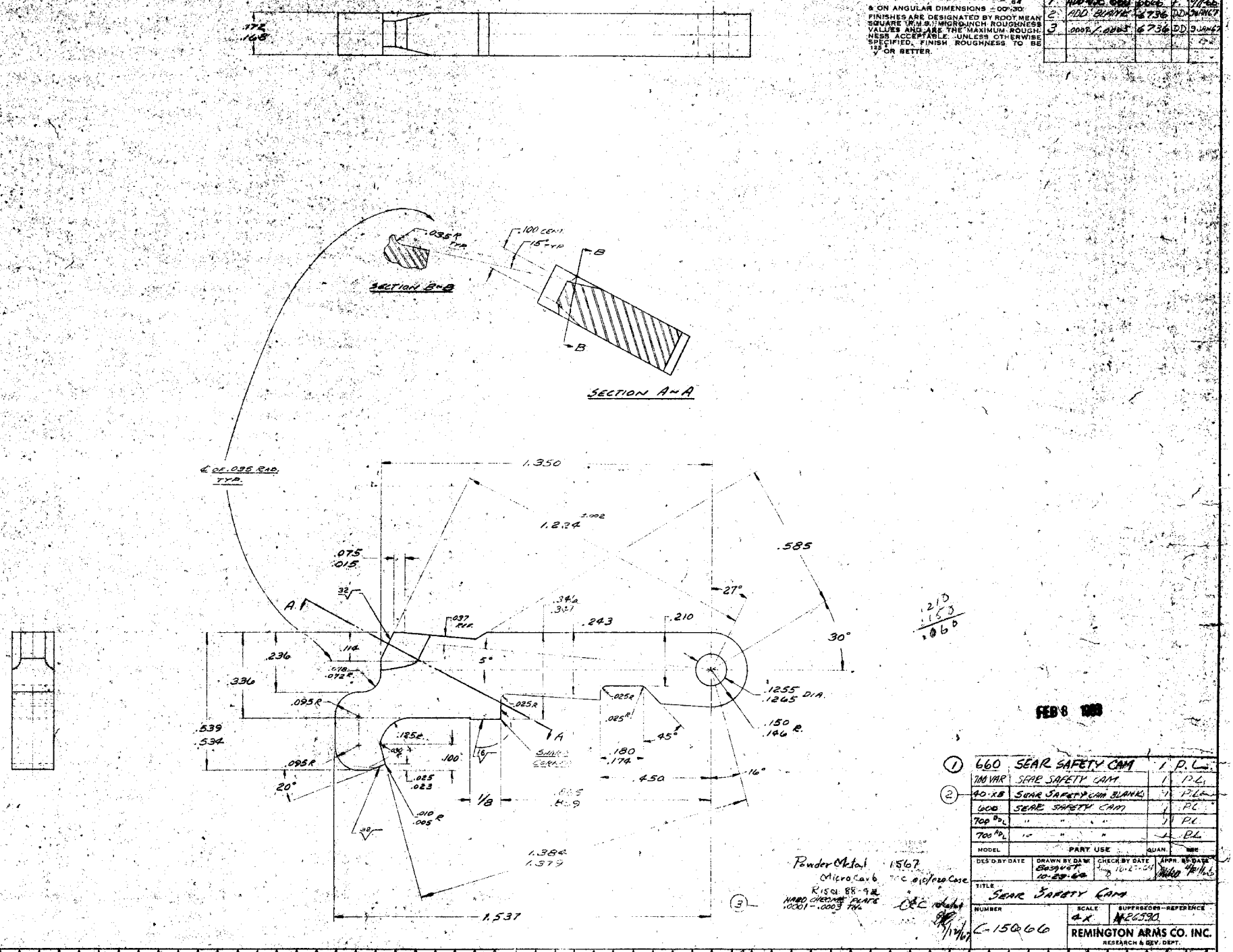
CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

BARBER - PRESALE R 013775

C-15066

DO NOT SCALE THIS DRAWING: WORK TO FIGURES UNLESS OTHERWISE NOTED. TOLERANCES ON DECIMAL DIMENSIONS ARE ±.005 & ON FRACTIONAL DIMENSIONS ± 1/64 & ON ANGULAR DIMENSIONS ±00°30'. FINISHES ARE DESIGNATED BY ROOT MEAN SQUARE (R.M.S.) MICRO-INCH ROUGHNESS VALUES AND ARE THE MAXIMUM ROUGHNESS ACCEPTABLE. UNLESS OTHERWISE SPECIFIED, FINISH ROUGHNESS TO BE 125 √ OR BETTER.

ALTERATIONS				
LET.	WAS	CLEARANCE	BY	DATE
1	ADD 660	6666	F	7/9/66
2	ADD BLANK	6736	DD	9 JAN 67
3	.000R / .0003	6736	DD	9 JAN 67



FEB 8 1968

1	660	SEAR SAFETY CAM	1	P.L.
	7MVAR	SEAR SAFETY CAM	1	P.L.
2	40-XB	SEAR SAFETY CAM BLANK	1	P.L.
	600	SEAR SAFETY CAM	1	P.L.
	700 RDL	" " "	1	P.L.
	700 RDL	" " "	1	P.L.
MODEL		PART USE	QUAN.	

Powder Metal 1567
Micro Carb
Risc 88-92
HARD CHROME PLATE .0001-.0003 THK

3

DES'D BY DATE	DRAWN BY DATE	CHECK BY DATE	APPR. BY DATE
	Bossert 10-23-66	10-27-66	4/11/67

TITLE: SEAR SAFETY CAM

NUMBER	SCALE	SUPERSEDES—REFERENCE
C-15066	4X	M26590

REMINGTON ARMS CO. INC.
RESEARCH & DEV. DEPT.

FORM TFC-1 Rev. 2

BARBER - PRESALE R 013775