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"Supplement"

RESEARCH TEST and MEASUREMENT REPORT - Report No. 822811

M/7 LWT. "TRIAL & PILOT" FUNCTION TEST FOR FLOOR PLATE
COMING OPEN ON FIRING. .308 CAL. AND 7MM-08 CAL.

Prepared by: R. Howe

Date Prepared: 11-3-82

Proofread and Cleared By:

J.H. Hennings, / R.E. Nightingale,
Foreman-Test Lab / Foreman-Measurement Lab

J.H. Hennings 11-15-82
Signature Date

C.E. Ritchie,
Sr. Supervisor - Testing,
Meas. & Mech. Analysis Lab

C.E. Ritchie 11/16/82
Signature Date

TEST & MEASUREMENT LAB REPORT

REPORT NUMBER: 822811 "Supplement"
REPORT TITLE: M/7LWT. "Trial & Pilot" Function Test For Floor Plate
Coming Open on Firing. .308 Cal. and 7MM-08 Cal.
MODEL(S): M/7LWT.
GAUGE OR CALIBER: .308 & 7MM-08 Cal.
DATE: 11-3-82
WORK ORDER NO.: C-1856-000
PART NAME: Floor Plate
DESIGNER/ENGINEER: D. Bullis

TEST TYPE:

1. PHOTO LAB
2. STRENGTH TEST - NO. OF GUNS TESTED _____
3. FUNCTION TEST - NO. OF GUNS TESTED 20
4. ACCURACY TEST - NO. OF GUNS TESTED _____
5. MEASUREMENTS - TYPE: Lbs. Pressure to Open Floor Plate
6. ENVIRONMENTAL TEST
7. AMMUNITION TESTING & EVALUATION - TYPE: _____
8. VISUAL EVALUATION - _____ OUT OF _____ GUN SAMPLE
9. ENDURANCE - NO. OF GUNS TESTED: _____

NO. OF ROUNDS PER GUN: _____

TOTAL ROUNDS FIRED IN TEST: _____

AMMO TYPE: MAGS. _____; TARGET: X

RIM FIRE _____ CENTER FIRE _____

November 5, 1982

TO: J. Hennings

FROM: R. Howe

REPORT TITLE: M/SEVEN LWT. TRIAL & PILOT FUNCTION TEST FOR FLOOR PLATE
COMING OPEN ON FIRING.

(SUPPLEMENT TO REPORT No. 822811 SHOT ON OCT. 12th & 19th, 1982)

REASON FOR SUPPLEMENT TEST:

After the Field Test of 10-12-82 and 10-19-82 that showed 50% malfunction rate it was decided to change the design of the Floor Plate Latch on the M/Seven LWT.

Changes were made as follows:

- Design No. 0. Standard Current Production Latch
1. Standard Current Pinned
 2. Standard Current Pinned and Clipped
 3. Standard Current Pinned, Chambered and Clipped
 4. Pinned, Chambered, Clipped and Extended Square
 5. Pinned, Chambered, Clipped and Extended Angle
 6. "Standard" Design of Aluminum

NOTE: All above Designs were placed in guns and shot in Photo Lab with the following ammo types; Cal. - .308 - W-200 - Silver Tip, Cal. - 7MM-08 - R-140-PSP. High Speed Movies of the above latch designs showing their respective success or failure are available in the Photo Lab Library. See Appendix "A".

Drawings of above designs in Supplement Appendix "A".

After observing the above movies, it was decided to Field Test "on 10-28-82" Design No. 5 using both a wide standard production latch spring and a narrow "altered" production latch spring. Five of each spring type for a total of ten guns, to be fired 50 rounds each. Guns were numbered 1 through 10.

It was also decided to use ten M/Seven LWTs from production with the "current" standard (Design No. 0.) production latch and spring as a control group for this test. These were numbered 11 through 20 and also fired 50 rounds each.

Guns 1 through 10 with new Design No. 5 latch were set up as follows:

Numbers 1 - 3 - 7 - 8 - 9 with narrow "Altered" Spring

Numbers 2 - 4 - 5 - 6 - 10 with wide standard spring

Results (of test on 10-28-82)

50 rounds W-200-S. Tip. shot in each gun.

Guns No. 1 through 10 with New Design No. 5 latch showed little or no movement of latch and only gun No. 3. using "Altered" narrow spring had any problem with Floor Plate falling open, while guns No. 11 through 20 (Control Group) had considerable problems with Floor Plate falling open and latch movement.

All Floor Plate openings and Latch Movement listed in Supplement Appendix "B".

Follow-up Test for Design No. 5

On 10-29-82, guns No. 1 - 3 - 7 - 8 - 9 and guns No. 11 through 20 were equipped with Latch Design No. 5 and "Standard" Wide Spring. Then taken back to the Ilion Fish and Game Rifle Range and shot 50 rounds each with W-200 S. Tip.

Results (Of Field Test On 10-29-82)

All 15 of the above guns with New Design No. 5 Latch and Wide Spring had no occurrence of latch moving or Floor Plate falling open shooting 50 rounds each of W-200 - S. Tip.

Results of above Test in Supplement Appendix "C".

NOTE: "Opinion": All Take Down "Floor Plate" screws on M/Seven LWT. should be tightened at least 30 inch pounds to prevent flexing of Floor Plate on recoil.

M/Seven LWT. Latch Evaluation High Speed Film List
(Available in Photo Lab Library)

<u>Design No. 0.</u>	<u>Original</u>	<u>"Current"</u>	<u>Old Latch</u>	
3 Shots	1. Ser. Gun No.	.058	Latch Stayed Closed	Film 3D-1
	2. " " "	.022	" " "	
	3. " " "	.040	" " "	

<u>Design No. 0.</u>				
1 Shot	7MM-08	.140 gr. Bullet	Opened	Film 3D-2

<u>Design No. 0.</u>				
5 Shots	1. Ser No.	.003	Opened	Film 3D-3
	2. " "	.010	"	
	3. " "	.103	Stayed	
	4. " "	.139	Opened	
	5. " "	.028	Stayed	

<u>Design No. 0.</u>				
	J. W. Brooks "Current" Old Latch w/.020 Spring.			
1 Shot	1. Ser. No.	.028		Film 3D-4

<u>Design No. 2</u>	<u>Old Latch Pinned & Clipped</u>			
	7MM-08 - .140 Gr.			Film 3D-5
5 Shots	1. Ser. No.	.003	Stayed	
	2. " "	.101	"	
	3. " "	.043	"	
	4. " "	.139	"	
	5. " "	.103	Opened	

<u>Design No. 3</u>	<u>Modified Pinned Latch</u>			
	Pinned & Chambered & Clipped			Film 3D-6
4 Shots	1. Ser. No.	.101	Opened	
	2. " "	.139		
	3. " "	.103		
	4. " "	.003 W/Prototyped Guard Shot No. 4 Only		

<u>Design No. - Fred Martin Latch "W/Ball End"</u>				
1 Shot	1. Ser. No.	117	10-20-82	Film 3D-7

Design No. 5 "Approved & Now In Use" (W/Wide Spring)

Film 3D-8

3 Shots	1.	Design No. 5	Reg. Wide Spring,	Ser. No. .040	Stayed
	2.	Design No. 0	Reg. Wide Spring,	" " .050	Opened
	3.	Design No. 5	Narrow Spring	" " .040	Stayed

Design No. 6 - Aluminum Latch

"7" Seven Films W/Prototype Guard

Film 3D-9

" 10
" 11
" 12
" 13
" 14
" 15

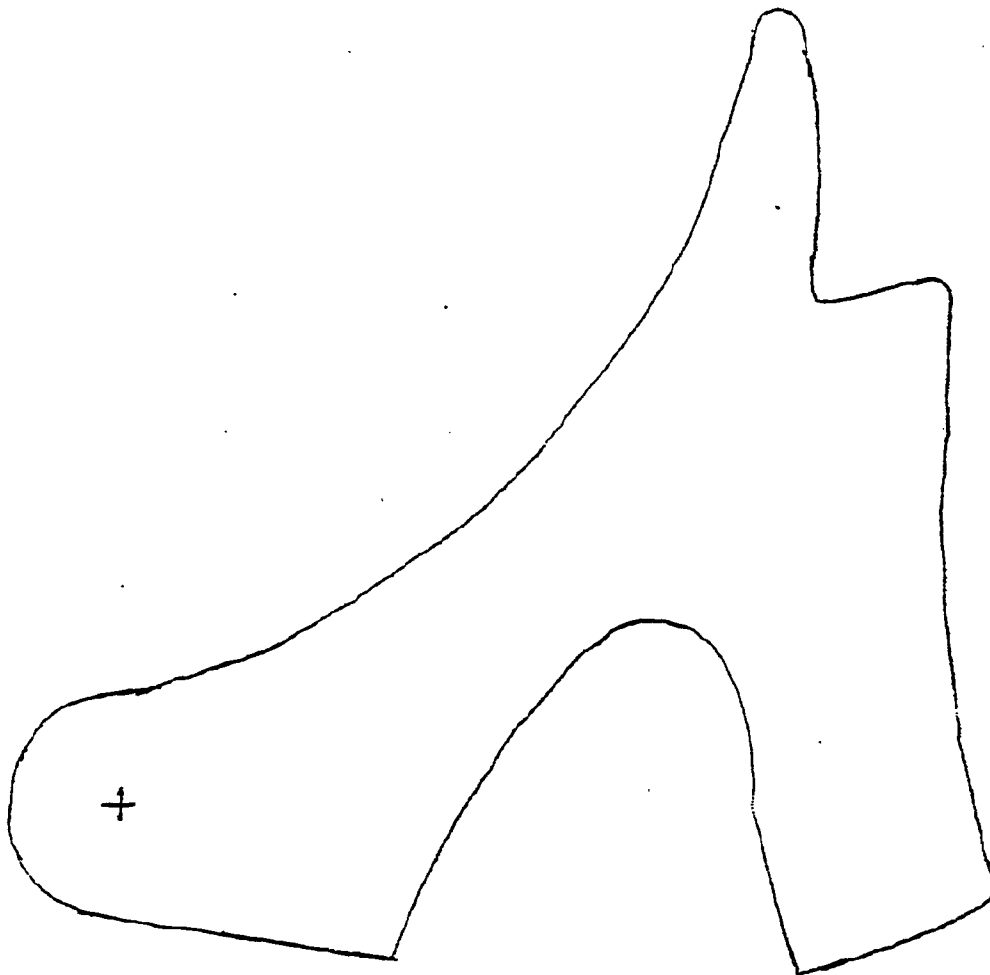
Supplement

" A P P E N D I X " A "

M/7 L.W.T. LATCH DESIGN # ○

NOTE "CURRENT" STANDARD LATCH (FROM PRODUCTION)

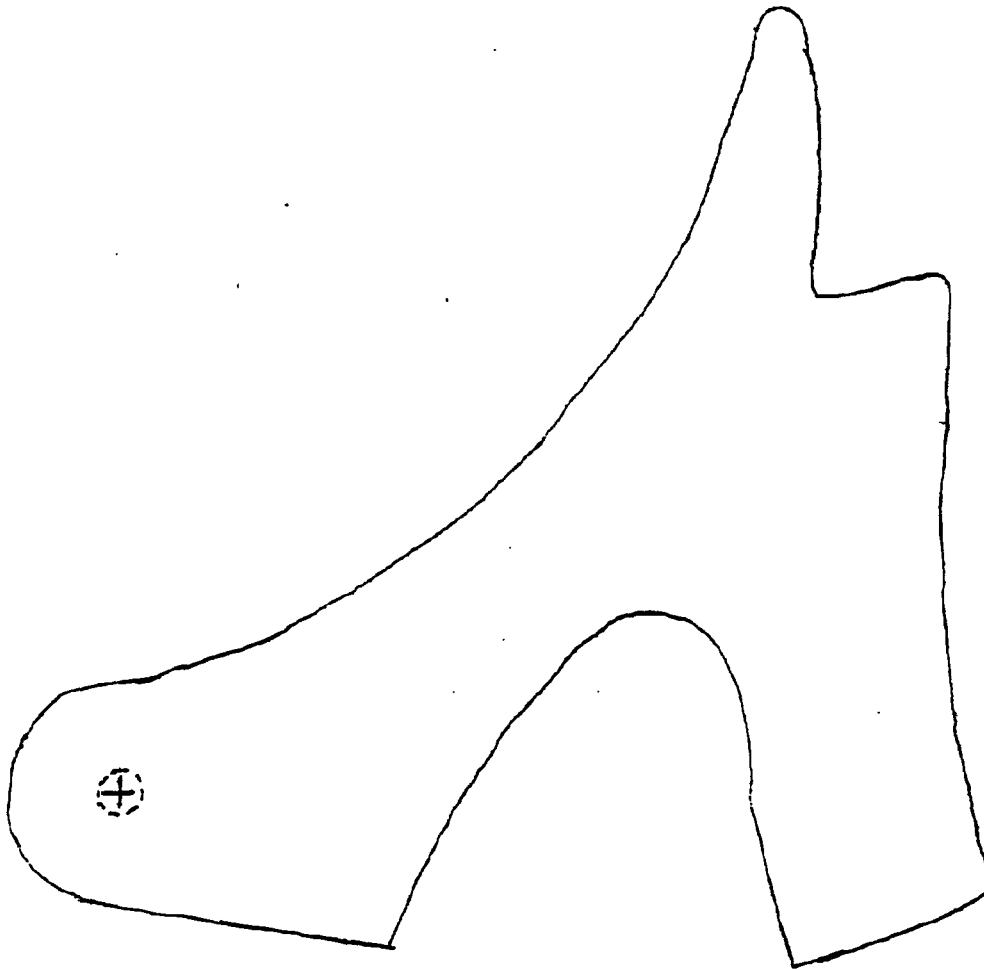
ALTERATIONS SHOWN BY DOTTED LINES -----



M/7 L.W.T. LATCH DESIGN #1

NOTE "CURRENT" PINNED

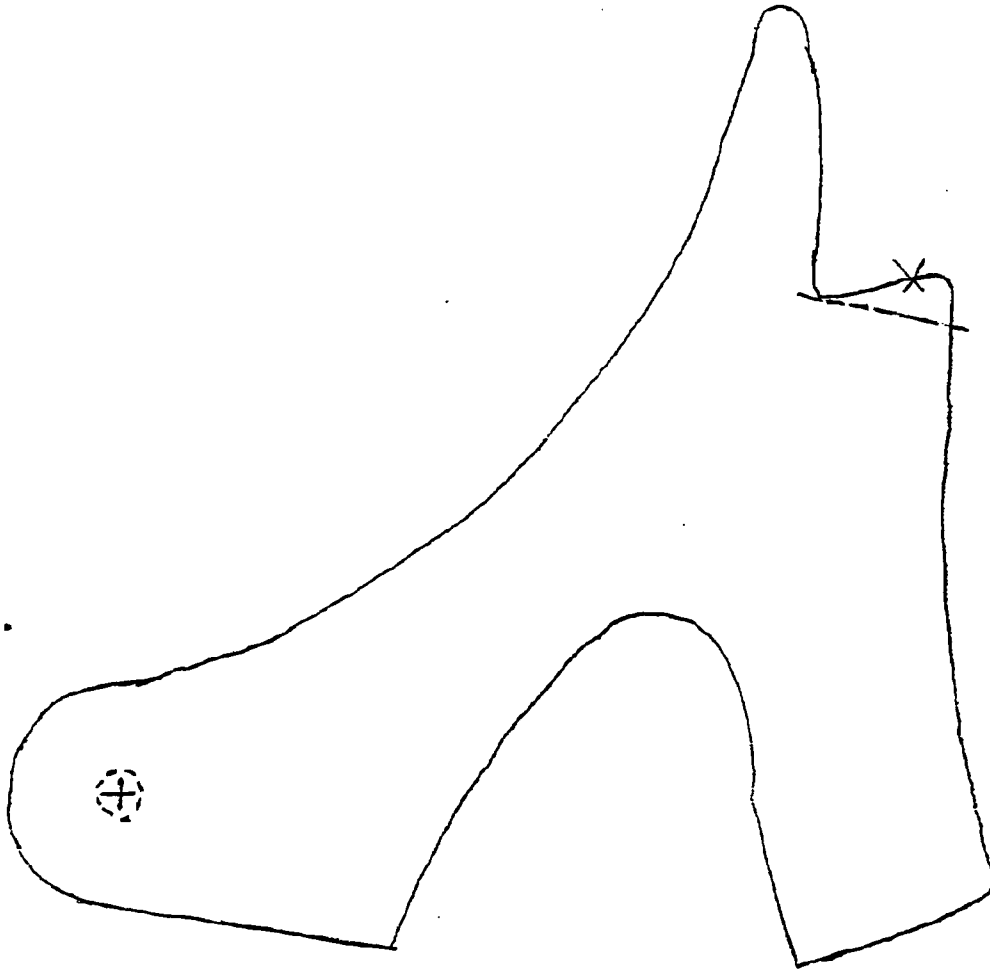
ALTERATIONS SHOWN BY DOTTED LINES -----



M/7 L.W.T. LATCH DESIGN #2

NOTE "CURRENT" PINNED + CLIPPED

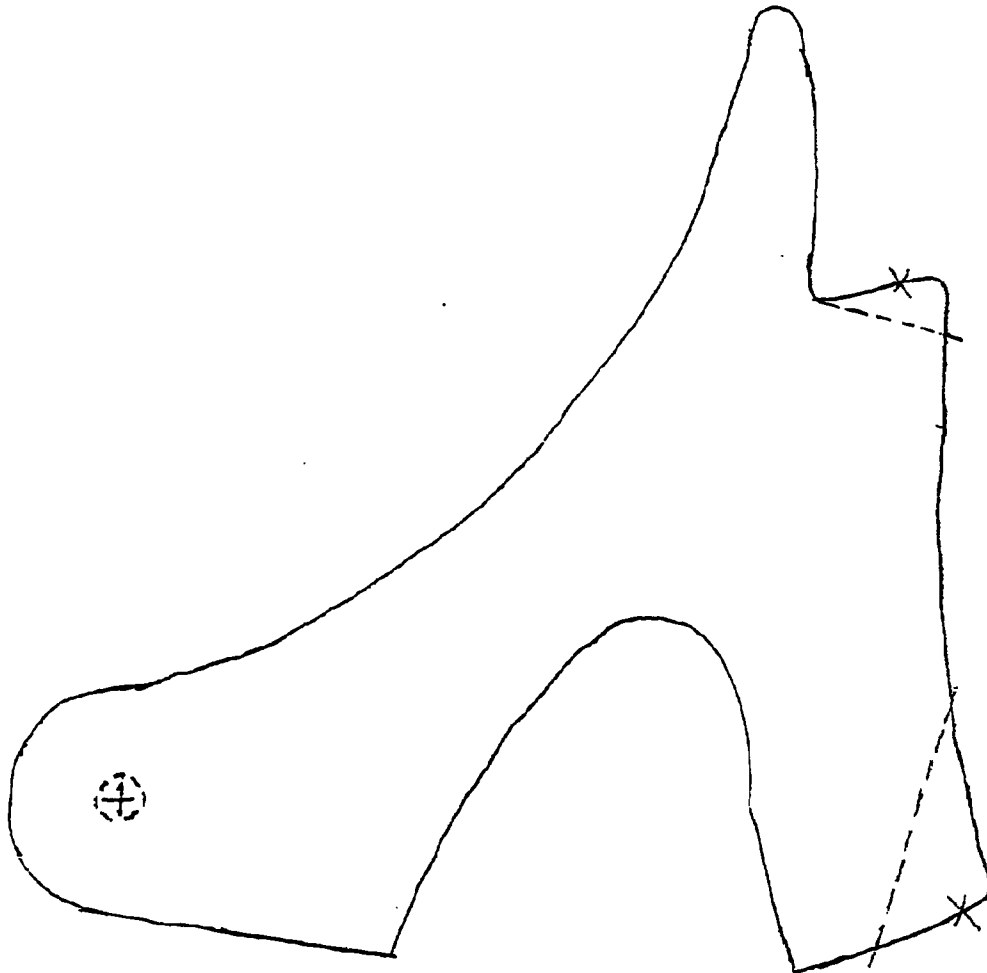
ALTERATIONS SHOWN BY DOTTED LINES -----



M/7 L.W.T. LATCH DESIGN #3

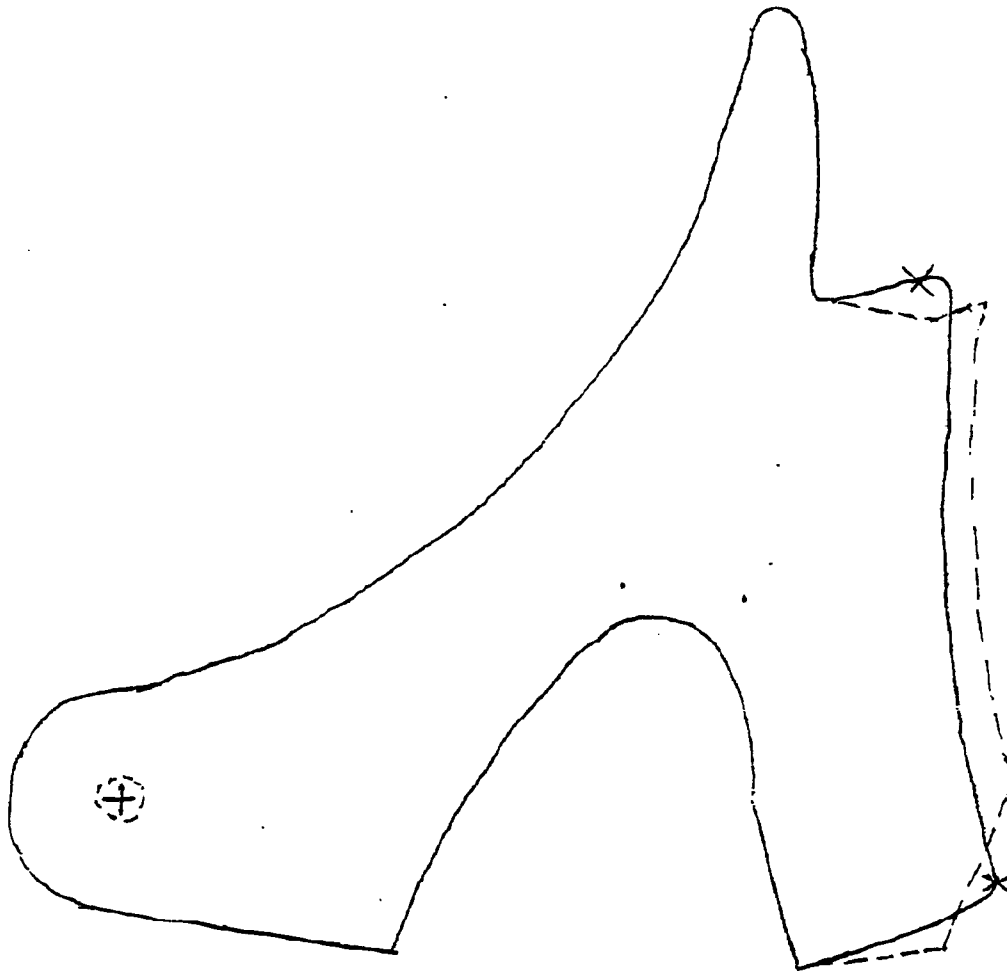
NOTE "CURRENT" PINNED + CHAMFERED + CLIPPED

ALTERATIONS SHOWN BY DOTTED LINES -----



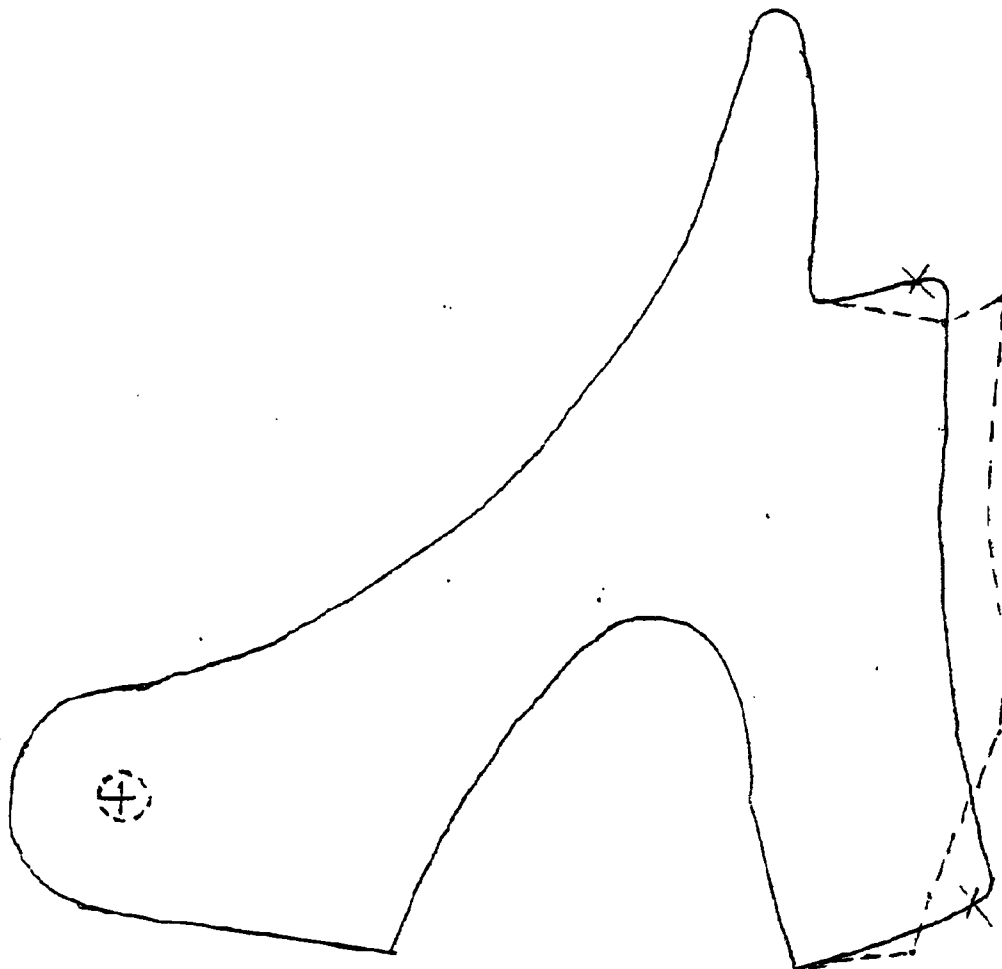
M/7 L.W.T. LATCH DESIGN # 4

NOTE PINNED, CHAMFERED, CLIPPED + EXTENDED SQUARE
ALTERATIONS SHOWN BY DOTTED LINES -----



M/7 L.W.T. LATCH DESIGN #5

NOTE PINNED, CHAMFERED, CLIPPED + EXTENDED ANGLE
= ALTERATIONS SHOWN BY DOTTED LINES -----



Supplement
" A P P E N D I X " B "
Test of 10-28-82

Supplement
APPENDIX "C"
Test of 10-29-82

Report # 822811

10-29-82 TEST

M/7 LWT TRAIN & PILOT FUNCTION TEST FOR FLOOR PLATE COMING OPEN ON FIRING.

ALL GUNS EQUIPPED WITH LATCH DESIGN #5 AND WIND SPRING.

(ALL AMMO. CAL. 308 - W-200 - SILVER TIP)

SHOOTER #	SHOOTER NAME (5 RDS EACH GUN)	GUN #	1	3	7	8	9	11	12	13	14	15	16	17	18	19	20	GUN #	SER. #
1	JOE BAGGETTA	1	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	1	76000138
2	BOB HOWE	2	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	3	76000140
3	BOB BALASKA	3	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	7	76000158
4	BOB SMITH	4	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	5	76000136
5	RON WILLIAMS	5	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	9	76000103
6	RALPH EASTWOOD	6	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	11	76000152
7	CAL DICKERSON	7	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	12	76000133
8	DALE JENNINGS	8	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	13	76000120
9	CHARLIE STEPHENS	9	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	14	76000113
10	DON WILLIAMS	10	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	15	76000165