

TEST AND MEASUREMENT LAB

TEST REPORT

REQUESTER: D. Findlay
WRITTEN BY: D. Thomas
DATE: 10/06/93
WORK ORDER:
REPORT NO.: 932381 & 932772
TEST TYPE: Measurement
MODEL: 522

REASON FOR TEST:

To compare trigger pull and firing pin indent when various experimental parts are used.

EQUIPMENT REQUIRED:

Electronic force gage

Rimfire firing pin indent crushers (ANNEALED by Remington)

10 Control Model 522 rifles (Serial #'s)

3049655	3049627	3049628	3049665	3049786
3049745	3049641	3049785	3049656	3049748

10 Model 522's with experimental sears (Serial #'s)

3049878	3049874	3049881	3049886	3049889
3049855	3049883	3049872	3049890	3049882

5 Model 522's with Magnesium Phosphate coated parts (Serial #'s)

3050467	3050980	3050970	3050995	3050554
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5 Model 522's with Zinc Phosphate coated parts (Serial #'s)

3050482	3050522	3050483	3050471	3050485
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10 2475 Firing Pin Springs

TEST PROCEDURE:

Three Firing Pin indents and three Trigger pulls were taken on each gun.

The 2475 Firing Pin Springs were then assembled into the control guns and the guns with experimental sears. The measurements were then repeated for these twenty guns.

TEST RESULTS:

C1-C6 TRIGGER PULL (LBS)
C7-C12 FIRING PIN INDENT (INCHES)
C1 C7 CONTROL
C2 C8 EXPERIMENTAL SEAR
C3 C9 2475 FIRING PIN SPRING
C4 C10 2475 FIRING PIN SPRING & EXPERIMENTAL SEAR
C5 C11 MAGNESIUM PHOSPHATE COATED PARTS
C6 C12 ZINC PHOSPHATE COATED PARTS

ROW	C1	C2	C3	C4	C5	C6	C7	C8	C9
1	9.9	8.0	9.0	7.0	8.0	8.7	0.0200	0.0150	0.0203
2	9.8	7.4	8.2	6.3	8.3	8.1	0.0207	0.0133	0.0190
3	8.7	7.9	7.8	7.7	8.1	8.9	0.0160	0.0200	0.0167
4	8.2	7.9	7.5	7.2	9.1	8.9	0.0223	0.0173	0.0193
5	8.4	7.4	7.6	7.0	8.2	8.2	0.0177	0.0153	0.0183
6	8.8	7.9	7.9	7.3			0.0220	0.0143	0.0197
7	9.0	8.8	8.0	8.4			0.0197	0.0147	0.0200
8	8.1	8.0	7.4	7.3			0.0180	0.0157	0.0177
9	8.7	8.0	8.0	7.1			0.0193	0.0123	0.0197
10	10.7	7.9	10.3	7.3			0.0227	0.0167	0.0217

ROW	C10	C11	C12
1	0.0143	0.0187	0.0183
2	0.0163	0.0207	0.0183
3	0.0190	0.0200	0.0193
4	0.0160	0.0230	0.0203
5	0.0137	0.0193	0.0200
6	0.0130		
7	0.0160		
8	0.0153		
9	0.0130		
10	0.0157		

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	N	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN
C1	10	9.030	8.750	8.937	0.841	0.266
C2	10	7.920	7.900	7.875	0.385	0.122
C3	10	8.170	7.950	8.000	0.873	0.276
C4	10	7.260	7.250	7.238	0.536	0.169
C5	5	8.340	8.200	8.340	0.439	0.196
C6	5	8.560	8.700	8.550	0.385	0.172
C7	10	0.01984	0.01985	0.01996	0.00218	0.00069
C8	10	0.01546	0.01515	0.01529	0.00217	0.00069
C9	10	0.01924	0.01950	0.01925	0.00141	0.00045
C10	10	0.01523	0.01550	0.01504	0.00182	0.00058
C11	5	0.02034	0.02000	0.02034	0.00167	0.00074
C12	5	0.01924	0.01930	0.01924	0.00093	0.00042

	MIN	MAX	Q1	Q3
C1	8.100	10.700	8.350	9.825
C2	7.400	8.800	7.775	8.000
C3	7.400	10.300	7.575	8.400
C4	6.300	8.400	7.000	7.400
C5	8.000	9.100	8.050	8.700
C6	8.100	8.900	8.150	8.900
C7	0.01600	0.02270	0.01792	0.02207
C8	0.01230	0.02000	0.01405	0.01685
C9	0.01670	0.02170	0.01815	0.02008
C10	0.01300	0.01900	0.01352	0.01608
C11	0.01870	0.02300	0.01990	0.02185
C12	0.01830	0.02030	0.01830	0.02015

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ANALYSIS OF VARIANCE

SOURCE	DF	SS	MS	F	P
FACTOR	5	17.206	3.441	8.18	0.000
ERROR	44	18.506	0.421		
TOTAL	49	35.712			

INDIVIDUAL 95 PCT CI'S FOR MEAN BASED ON POOLED STDEV

LEVEL	N	MEAN	STDEV
C1	10	9.0300	0.8407
C2	10	7.9200	0.3853
C3	10	8.1700	0.8731
C4	10	7.2600	0.5358
C5	5	8.3400	0.4393
C6	5	8.5600	0.3847

POOLED STDEV = 0.6485

7.20 8.00 8.80 9.60

ANALYSIS OF VARIANCE

SOURCE	DF	SS	MS	F	P
FACTOR	5	0.0002252	0.0000450	13.43	0.000
ERROR	44	0.0001475	0.0000034		
TOTAL	49	0.0003727			

INDIVIDUAL 95 PCT CI'S FOR MEAN BASED ON POOLED STDEV

LEVEL	N	MEAN	STDEV
C7	10	0.019840	0.002178
C8	10	0.015460	0.002171
C9	10	0.019240	0.001412
C10	10	0.015230	0.001823
C11	5	0.020340	0.001665
C12	5	0.019240	0.000932

POOLED STDEV = 0.001831

0.0150 0.0175 0.0200 0.0225

Test Request No. 932772

RESEARCH TEST & MEASUREMENT LAB WORK REQUEST

Purpose for Testing:

☒ Developmental	☐ Design Change Eval.	☐ Ammunition Evaluation
☐ Design Acceptance	☐ Plant Assistance	☐ Cost Reduction
☐ Trial & Pilot	☐ Marketing Request	☐ Litigation Support
☐ Safety Issue	☐ Quality Evaluation	☐ Other

Types of Testing Requested:

☐ Intentional Abuse	☐ Endurance Testing	☐ Photography/Video
☐ Function Test	☐ Dry Cycle Testing	☐ High Speed Photography
☐ Accuracy Test	☐ Ammunition Testing	☐ Other (specify)
☐ Measurements	☐ Environmental Testing	<u>TRIGGER PULL / IDENT</u>

Type Report Desired:

☐ Formal Written
☒ Informal Written
☐ Results only

Date Requested: 10/1/93

(dd / mm / YY)

Date Needed: 10/15/93

(dd / mm / YY)

Work Order No. to be
 Charged for This
 Testing: _____

Name of Requester: D. FIDELITY
 Extension where you can reached: 5415
 Pager Number: 242

Firearm Descriptions:

Model(s): <u>A/522</u>	Model(s): _____	Model(s): _____
Gage/Cal: _____	Gage/Cal: _____	Gage/Cal: _____
Barrel Type: _____	Barrel Type: _____	Barrel Type: _____
RAMAC #: _____	RAMAC #: _____	RAMAC #: _____
No. of samples: _____	No. of samples: _____	No. of samples: _____

Explain in DETAIL the reason(s) for conducting this test.

- what are we trying to learn?
- what will be the criteria used to judge the results?
- use back of sheet if more room is needed.

TAKE TRIGGER PULLS + IDENTS WITH
 MAG PHS: AND BULK PHS. COATED PARTS

MAG PHS
 3050554
 3050467
 3050980
 3050970
 3050995

BULK PHS
 3050485
 3050482
 3050471
 3050483
 3050522

TL-FORM # -001

Note: No firearms or parts will be tested
 in the Lab unless accompanied by a Work
 Request that is completely filled out
 along with the guns or parts that are to
 be tested. NO EXCEPTIONS

Date completed: ____/____/____

Completed By: _____

Report Completed: ____/____/____