

TEST AND MEASUREMENT LAB - TEST REPORT

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

DATE: 1/6/89
 WORK ORDER: 481152

TEST TYPE: Developmental

FIREARM STAT'S: MODEL: XP100

CAL: 35REM 67MMBR

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.

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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.

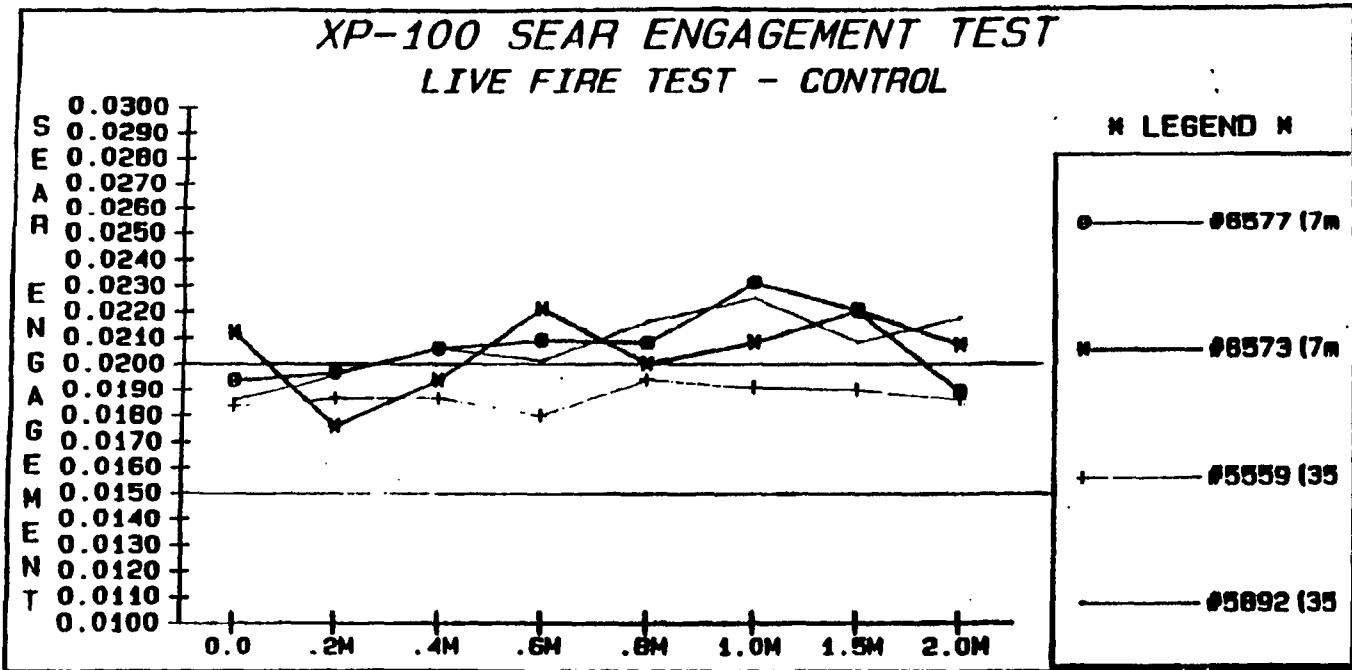
LIVE FIRE:

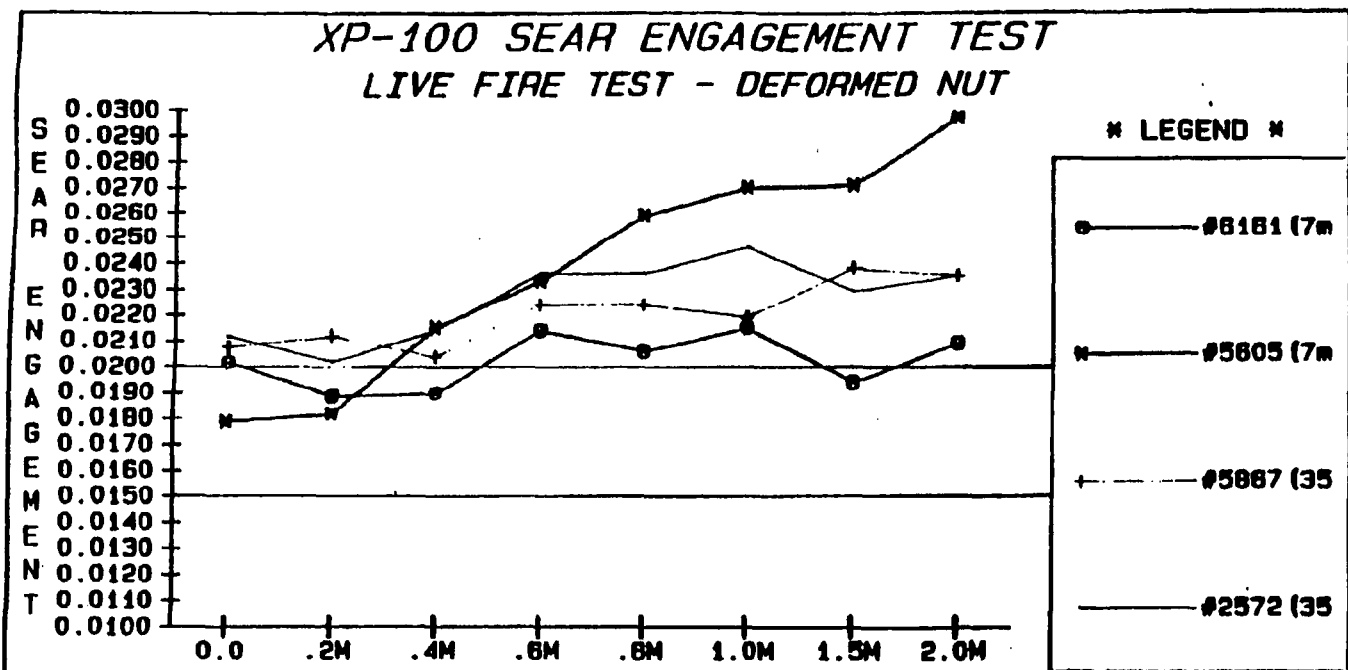
Sear engagement measurements varied within a .005 inch band throughout 2000 rounds of endurance shooting in both the control group and the test group. At no time throughout the test did sear engagement fall below the min. limit of .015 inches in any of the guns.

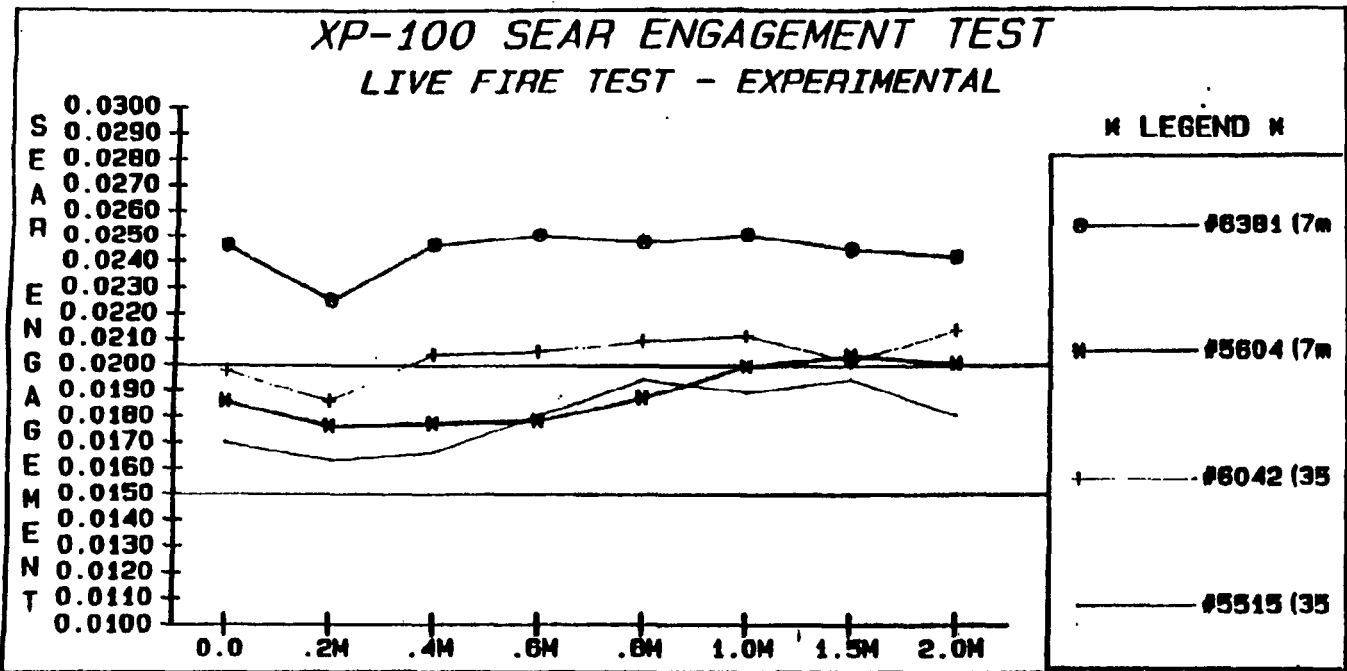
SEE ATTACHED DATA

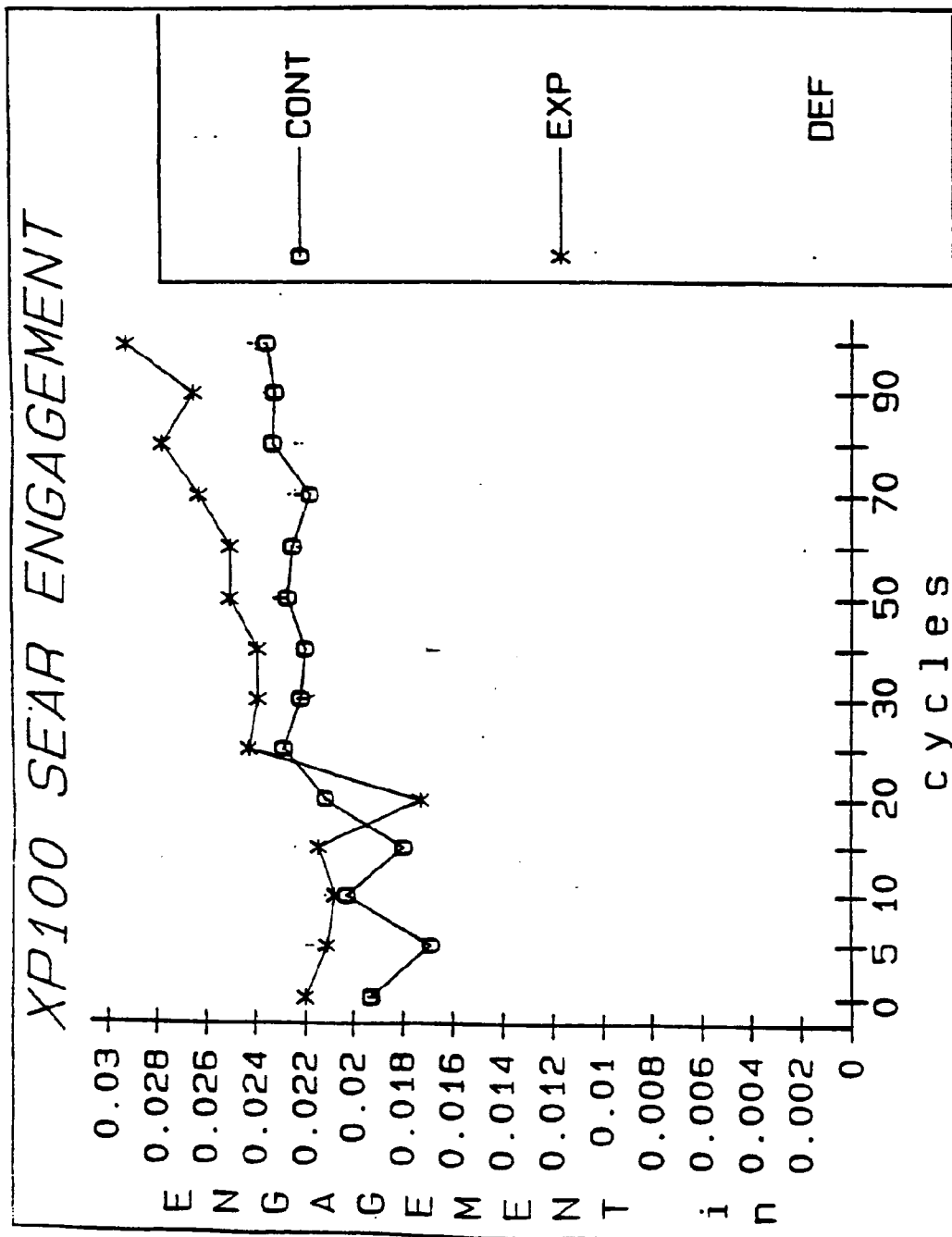
XP-100 SEAR ENGAGEMENT - LIVE FIRE TEST; RAW DATA TABLE

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	0.0208	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	0.0238	0.0238	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	0.0186	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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DATA SHEET

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IF100 DRY CYCLE

CYCLES X 100	SEAR ENGAGEMENT		
	CONT 6604	EXP 3583	DEP 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	0.0213	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	0.0223	0.025	0.022
70	0.0218	0.0263	0.0224
80	0.0233	0.0278	0.0221
90	0.0232	0.0263	0.0239
100	0.0233	0.0292	0.0239