

Post
T&P Test

CONFIDENTIAL 83

ET06594

From: Franz, Scott
Sent: Thursday, November 02, 2000 8:57 AM
To: Golemboski, Matt R.; Zajk, Joseph J; Diaz, Danny; Keeney, Mike;
Danner, Dale; Snedeker, Jim
Subject: 10 Gun Test Summary
Importance: High

Attached are the summary results for the 10 gun test that was completed yesterday.

Results can be summarized as follows:(see attached file for specifics)

2 Bolt Handle Braze Failures

1. One handle failed at 107 rounds during live fire testing
2. The second handle failed during the bolt plug abuse test

Trigger pulls not within Specification

Followers sticking in magazine boxes

Bolt stop detent Inconsistent

Bolt Closing Force High

1. Improved over DAT (Could not measure accurately)
2. High closing force related to extractor operation (2 guns)

In addition our "albeit" limited test shows the new bolt plug design superior.

Recommend T&P samples all have the new configuration. Call if you have any questions.

Scott

<<File: M710 10 Gun Test Summary.xls>>

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ET06595

PROJECT# 241085
TLW 0344

GUN	TRIGGER PULL	Trial 1	Trial 2	Trial 3	AVERAGE
A-1		4.75	5	4.5	4.75
A-2		4.75	4.75	4.75	4.75
A-3		5.5	5.25	5	5.25
A-4		5.5	5.5	5.25	5.42
A-5		6	5.75	5.75	5.83
A-6		4.75	4.25	4.75	4.58
A-7		4.75	5	5	4.92
A-8		5.5	5.5	6	5.87
A-9		6	5.25	5.5	5.58
A-10		4.75	4.5	4.75	4.67

Overall Avg. =	5.14	lbs.
Std. Dev. =	0.4632914	lbs.

CONFIRM PROPER FIT BETWEEN STOCK AND RECEIVER AND STOCK TO BARREL. NO SHIMS

GUN
A-1 STOCK, BARREL AND RECEIVER GAPS NOT UNIFORM BUT NOT EXCESSIVE NO SHIMS
A-2 STOCK, BARREL AND RECEIVER GAPS NOT UNIFORM BUT NOT EXCESSIVE NO SHIMS
A-3 STOCK, BARREL AND RECEIVER GAPS NOT UNIFORM BUT NOT EXCESSIVE NO SHIMS
A-4 STOCK, BARREL AND RECEIVER GAPS NOT UNIFORM BUT NOT EXCESSIVE NO SHIMS
A-5 STOCK, BARREL AND RECEIVER GAPS NOT UNIFORM BUT NOT EXCESSIVE NO SHIMS
A-6 OK
A-7 OK
A-8 STOCK, BARREL AND RECEIVER GAPS NOT UNIFORM BUT NOT EXCESSIVE NO SHIMS
A-9 STOCK, BARREL AND RECEIVER GAPS NOT UNIFORM BUT NOT EXCESSIVE NO SHIMS
A-10 STOCK, BARREL AND RECEIVER GAPS NOT UNIFORM BUT NOT EXCESSIVE NO SHIMS

CONFIRM PERMANENT ATTACHMENT OF RECOIL LUG TO STOCK
RECOIL LUGS ON ALL 10 GUNS WERE PERMANENTLY GLUED TO THE STOCK.

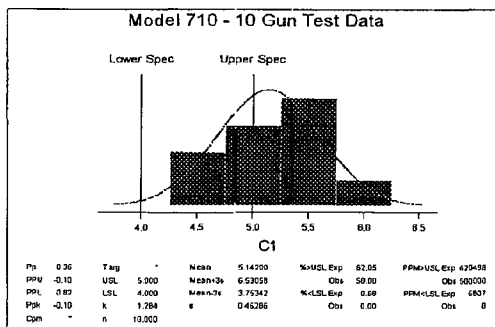
GUN	HEAD SPACE	PROOF RDS	HEAD SPACE	HEAD SPACE
				@ 10 RDS.
A-1	MIN	1	0.001	0.002
A-2	0.001	1	0.003	0.003
A-3	0.002	1	0.002	0.003
A-4	MIN	1	0.002	0.002
A-5	0.001	1	0.002	0.002
A-6	0.001	1	0.002	0.002
A-7	0.001	1	0.002	0.002
A-8	0.001	1	0.002	0.002
A-9	0.001	1	0.002	0.002
A-10	0.001	1	0.002	0.002

BOLT OPENING FORCE MEASUREMENTS (lbs.)				
Firing Pin	w/DUMMY	w/o DUMMY	w/DUMMY	w/o DUMMY
	Cocked	Cocked	Uncocked	Uncocked
A-1	4.23	2.67	12.88	11.82
A-2	3.43	2.84	13.75	13.48
A-3	2.48	2.87	13.15	12.76
A-4	3.89	3.34	11.63	10.82
A-5	3.58	2.55	13.54	12.34
A-6	3.25	2.53	11.69	11.54
A-7	2.97	2.50	14.88	15.05
A-8	3.28	3.06	14.61	14.97
A-9	3.16	3.39	11.87	11.03
A-10	3.05	3.54	10.03	9.93
Avg.	3.38	2.82	12.77	12.33
Std. Dev.	0.49	0.38	1.51	1.77

BOLT CLOSING FORCE MEASUREMENTS (lbs.)
w/DUMMY
WARD FORCE

38.70
32.85
35.45
34.37
34.82
33.75
32.94
39.68
30.59
30.17
34.33
3.07

Note: Could not get consistent closing force measurements.
Overall impression is that they close better than DAT samples.



ET06596

PROJECT# 241095

TLW 0344

200 ROUND JACK FUNCTION TEST

GUN	AMMO	ROUNDS	
A-1	REM R30065 180GR	200	NO MALFUNCTIONS
A-2	REM R30065 180GR	107	BOLT HANDLE BROKE 107 RDS
A-3	REM R30065 180GR	200	NO MALFUNCTIONS
A-4	REM R30065 180GR	200	(6) STEM LOWS. FOLLOWER STICKING. FILED FOLLOWER NO MORE MALFUNCTIONS
A-5	REM R30065 180GR	200	NO MALFUNCTIONS
A-6	REM R30065 180GR	200	NO MALFUNCTIONS
A-7	REM R30065 180GR	200	NO MALFUNCTIONS
A-8	REM R30065 180GR	200	NO MALFUNCTIONS
A-9	REM R30065 180GR	200	(6) STEM LOWS. FOLLOWER STICKING. FILED FOLLOWER NO MORE MALFUNCTIONS
A-10	REM R30065 180GR	200	NO MALFUNCTIONS

* TESTERS REPORTED THAT THE BOLT CLOSING FORCE WAS VERY HIGH WHILE ROTATING THE OPERATING HANDLE DOWNWARD ON GUNS A-1 & A-7, THIS OCCURRED MOST OF THE TIME, BUT NOT ON EVERY CYCLE.

ET06597

Confidential - Subject - 5.22.06r0000766
Williams v. Remington

PROJECT# 241095
TLR 0344
ISS ABUSE TEST

GUN

OLD STYLE INSERT

- A-1 BOLT CLOSED EASILY WITH ISS LOCKED. NO VISIBLE DAMAGE
- A-5 CLOSED BOLT WITH ISS LOCKED. NO DAMAGE VISIBLE.
- A-7 **CLOSED BOLT WITH ISS LOCKED. BROKE BOLT PLUG. DAMAGE VISIBLE.**
- A-8 **CLOSED BOLT WITH ISS LOCKED. BROKE BOLT PLUG. DAMAGE VISIBLE.**

NEW STYLE INSERT

- A-3 CLOSED BOLT WITH ISS LOCKED. NO DAMAGE VISIBLE.
- A-6 COULD NOT CLOSE BOLT ISS LOCKED. NO DAMAGE VISIBLE.
- A-9 CLOSED BOLT WITH ISS LOCKED. NO DAMAGE VISIBLE.
- A-10 COULD NOT CLOSE BOLT WITH ISS LOCKED. NO DAMAGE VISIBLE.

INSPECTED ALL BOLT PLUG WITHOUT VISIBLE DAMAGE USING STEREOSCOPE

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ET06598

RE Bolt Plugs.txt

From: Franz, Scott
Sent: Wednesday, November 01, 2000 1:25 PM
To: Golemboski, Matt R.; Zajk, Joseph J; Franz, Scott
Cc: Diaz, Danny; Danner, Dale; Keeney, Mike
Subject: RE: Bolt Plugs
Importance: High

Also forgot to mention that we broke off another bolt handle during this test.

From: Franz, Scott
Sent: Wednesday, November 01, 2000 12:10 PM
To: Golemboski, Matt R.; Zajk, Joseph J
Cc: Diaz, Danny; Danner, Dale; Keeney, Mike
Subject: Bolt Plugs
Importance: High

We performed an abuse test to evaluate the two proposed bolt plug designs. 4 of each were tested by attempting to close the bolt with the ISS system in the locked position. 2 of the 4 old design (DAT configuration) plugs cracked during this test while none of the new design plugs failed. Both designs were made of the same material.

FYI,
Scott

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