

Test Lab Work Request Form

Date Submitted: 10 March, 2000	Tracking #: TLW 0010G
Project #: 241095	Engineer: J.R.SNEDEKER
Test Objective: TLW0010G - Measure Safe On/Off Forces: Using the Chatillion Digital force gauge and the wooden holding fixture used to take trigger pull readings, push the Safe to the "Safe Off" position on each test sample. Complete three trials. Record all three readings for each firearm. Repeat the test, this time pushing the Safe to the "Safe On" position on each trial. Record all three readings. Average each of the three sets of readings in each direction for each test sample. These measurements are for information only. A minimum of 1 lb. force in either direction will be assumed as the reference criteria.	
Test Description: <u>Method:</u> - Use trigger pull apparatus to hold the rifle for this test. - Use the Chatillion Digital Force gauge (0-10 lb. range) with the disc point or the "v" shaped point. Use the same tip on all subsequent trials. - Make three trials in each direction for each sample. - Average the results of each of the three trials. - For Phase II rifles, the ISS system will be checked.	
<u>Data Required:</u> - Rifle serial number - Each of the three readings for each direction on each sample - The average of each of the three sets of readings - The results of the ISS system check.	
Resource Usage: Manpower Requirements - Facility Requirements -	Test Results Required: Formal Report: Data Only: X REQUESTED Completion Date:
Required Materials/Parts/Equipment (include quantities):	
Test Parts Availability Date:	
Start Date: 13 Sept 2000 Completion Date: 13 Sept 2000 Report Date:	Test Assigned To:

ET06971

Safety On/OFF Forces - TLW 00106

OFF	ON
B1 - 2.86/2.70/3.02 ^{2.86}	5.14/6.08/6.12 5.78
B2 - 2.68/2.68/2.60 ^{2.65}	6.48/6.08/5.82 6.13
B3 - 2.60/2.52/2.44 ^{2.52}	6.10/5.96/5.92 5.99
B4 - 2.08/1.86/1.86 ^{1.93}	4.80/4.70/4.84 4.78
B5 - 1.94/2.28/2.10 ^{2.11}	2.40/2.10/2.20 > Bolt Not Closed (2.83)
B6 - 2.58/2.70/2.54 ^{2.61}	5.26/5.34/5.44 5.35
B7 - 2.80/2.88/2.92 ^{2.87}	6.64/6.58/6.12 6.45
B8 - 2.24/1.96/1.96 ^{2.05}	5.80/5.92/5.86 5.86
B9 - 2.90/2.74/2.74 ^{2.79}	6.00/5.48/5.40 5.63
B10 - 2.88/3.26/2.82 ^{2.99}	6.00/5.72/5.80 5.84

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Worksheet size: 100000 cells

Descriptive Statistics- Safe Off Forces - Phase I & II

Variable	N	Mean	Median	TrMean	StDev	SE Mean
Phase I	10	4.084	3.991	4.084	0.367	0.116
Phase II	10	2.538	2.630	2.558	0.379	0.120

Variable	Minimum	Maximum	Q1	Q3
Phase I	3.512	4.659	3.825	4.457
Phase II	1.930	2.990	2.095	2.863

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Worksheet size: 100000 cells

Descriptive Statistics- Safe On Forces - Phase I & II

Variable	N	N*	Mean	Median	TrMean	StDev
Phase I	10	0	3.1615	3.1542	3.1602	0.1626
Phase II	9	1	5.757	5.840	5.757	0.478

Variable	SE Mean	Minimum	Maximum	Q1	Q3
Phase I	0.0514	2.9167	3.4167	3.0283	3.3183
Phase II	0.159	4.780	6.450	5.490	6.060

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Gun	Safe Off Force (lbs.)	Safe On Force (lbs.)	Bolt Closing		¹ Bolt Opening Up Load (lbs.)	Magazine Load @ .2" (lbs.)	Magazine Load @ 1" (lbs.)	² Overall Weight (lbs.)	Bolt Ass'y Weight (lbs.)	Barrel Ass'y Weight (lbs.)
			Forward Load (lbs.)	Down Load (lbs.)						
B-1	2.86	5.78	40.28	3.02	5.08	1.74	2.73	6.916	0.654	3.867
B-2	2.65	6.13	47.46	2.81	3.11	1.87	2.94	6.881	0.653	3.841
B-3	2.52	5.99	43.47	2.51	2.87	1.74	2.71	6.891	0.655	3.844
B-4	1.93	4.78	44.37	2.49	3.12	1.83	2.92	6.893	0.654	3.853
B-5	2.11					1.98	2.95	6.899	0.655	3.857
B-6	2.61	5.35	40.75	2.98	2.63	1.84	2.86	6.905	0.654	3.863
B-7	2.87	6.45	47.87	2.41	3.06	2.00	3.11	6.897	0.654	3.857
B-8	2.05	5.86	51.53	2.73	2.53	1.93	2.94	6.874	0.653	3.837
B-9	2.79	5.63	42.81	2.23	2.43	2.18	3.67	6.889	0.654	3.856
B-10	2.99	5.84	44.54	3.27	5.08	1.88	2.98	6.900	0.655	3.861
AVERAGE	2.54	5.76	44.79	2.73	3.32	1.90	2.98	6.895	0.654	3.854
MAX.	2.99	6.45	51.53	3.27	5.08	2.18	3.67	6.916	0.655	3.867
MIN.	1.93	4.78	40.28	2.23	2.43	1.74	2.71	6.874	0.653	3.837
Std. Dev.	0.38	0.48	3.62	0.34	1.03	0.13	0.27	0.012	0.001	0.010

¹ Did not fire gun before opening.

² Overall weight with no magazine box. (All taken for End. Testing)

³ Measured from muzzle.

⁴ SAAMI requirement is 40 lbs.

Note: Weight of 1 Magazine box = .215 lbs.

SCROLL TO SEE ADDITIONAL MEASUREMENTS

ET06975

Stock Weight (lbs.)	Take Down Screw Wt. (lbs.)	Firearm Overall Length (in.)	Barrel Length (in.)	Length Of Pull (in.)	³ Balance Pt. Empty (in.)	³ Balance Pt. Loaded (in.)	Drop at Comb (in.)	Drop at Heel (in.)	Drop at Toe (in.)	50 Lb. Trigger Trigger Pull Before (lbs.)
2.354	0.042	41.750	22	13.25	21.9375	22	1.246	1.417	6.278	5.00
2.345	0.042	41.750	22	13.26	21.9375	22	1.300	1.406	6.295	5.08
2.351	0.042	41.750	22	13.25	21.9375	22	1.305	1.398	6.305	4.58
2.344	0.042	41.750	22	13.25	21.9375	22	1.305	1.401	6.306	4.92
2.346	0.042	41.812	22	13.24	21.875	22	1.295	1.404	6.279	
2.347	0.042	41.812	22	13.26	21.875	22	1.305	1.392	6.289	4.92
2.344	0.042	41.750	22	13.24	21.9375	22	1.305	1.391	6.297	4.42
2.343	0.042	41.750	22	13.25	21.9375	22	1.296	1.391	6.292	5.33
2.338	0.042	41.750	22	13.23	21.875	22	1.314	1.415	6.310	4.83
2.343	0.042	41.812	22	13.25	21.875	22	1.298	1.407	6.308	5.17
2.346	0.042	41.769	22	13.25	21.913	22	1.297	1.402	6.296	4.92
2.354	0.042	41.812	22	13.26	21.938	22	1.314	1.417	6.310	5.33
2.338	0.042	41.750	22	13.23	21.875	22	1.246	1.391	6.278	4.42
0.004	0.000	0.030	0	0.01	0.032	0	0.019	0.009	0.012	0.28

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Confidential - Subject - 5.22.06r0001145

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Williams v. Remington

Trigger Pull After (lbs.)	50 Lb. Trigger Pull Test Engagement Before (in.)	50 Lb. Trigger Pull Test Engagement After (in.)	50 Lb. Trigger Pull Test Trigger Gap Before (in.)	50 Lb. Trigger Pull Test Trigger Gap After (in.)	50 Lb. Trigger Pull Test Fire During Safe Release	50 Lb. Trigger Pull Test Fire After Trigger Pull	Magazine Capacity Test
5.08	0.0276	0.0293	0.162	0.140	NO	YES	OK
5.25	0.0282	0.0287	0.163	0.132	NO	YES	OK
4.92	0.0251	0.0263	0.166	0.124	NO	YES	OK
4.75	0.0280	0.0279	0.165	0.123	NO	YES	OK
4.75	0.0280	0.0301	0.166	0.136	NO	YES	OK
4.75	0.0282	0.0307	0.167	0.136	NO	YES	OK
5.00	0.0299	0.0282	0.168	0.149	NO	YES	OK
4.50	0.0304	0.0290	0.161	0.128	NO	YES	OK
5.17	0.0265	0.0281	0.165	0.128	NO	YES	OK
4.91	0.0280	0.0287	0.165	0.133			
5.25	0.0304	0.0307	0.168	0.149			
4.50	0.0251	0.0263	0.161	0.123			
0.24	0.0016	0.0013	0.002	0.008			

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