

**REMINGTON ARMS COMPANY INC.
ILION, NY PLANT SITE**

**TECHNICAL DIVISION
TEST & MEASUREMENTS LAB**

TEST REPORT

M/700 Weatherby Magnum DAT

Request # 20080021

DATE: 6/16/08

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DISTRIBUTION LIST

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ABSTRACT:

A new caliber has been added to the M/700 rifle platform. The new caliber, 257 Weatherby magnum, is a belted magnum similar in scale to the 264 Winchester magnum. The main physical difference is the Weatherby's unique shoulder configuration of opposing curves.

A quantity of rifles was produced from which the Test Lab drew a sample to run a Design Acceptance Test. Testing was successful and the rifles performed well both functionally and in terms of accuracy. The DAT is therefore considered *passed*.

SCOPE:

13 rifles were drawn for testing. Five rifles were selected for function and endurance and eight were selected for field testing.

First, preliminary measurements were taken for trigger pull, safe on & off force, bolt lift force and sear-lift. Next, basic jack function was performed with 20 rounds of ammunition to check for any major issues or unforeseen problems. Next, accuracy was evaluated by firing 3 x 5 shot groups from a bench rest at 100 yards. After accuracy was established extended function and endurance testing was performed. A pyramid scheme was used to for a total of 9000 rounds across the five rifles as shown:

Serial Number	# of Rounds
G6748126	3000
S6649413	2000
S6649428	2000
S6649441	1000
S6649587	1000

Each of the endurance rifles was loaded to capacity and all loaded rounds were fired, cycling the safety with each loading. The rifles were cooled at 20-round intervals.

Eight rifles were taken to the field and were tested by 6 shooters in rotation. As done in the endurance shooting each rifle was loaded to capacity and all loaded rounds were fired, cycling the safety with each loading. The rifles were cooled at 20-round intervals.

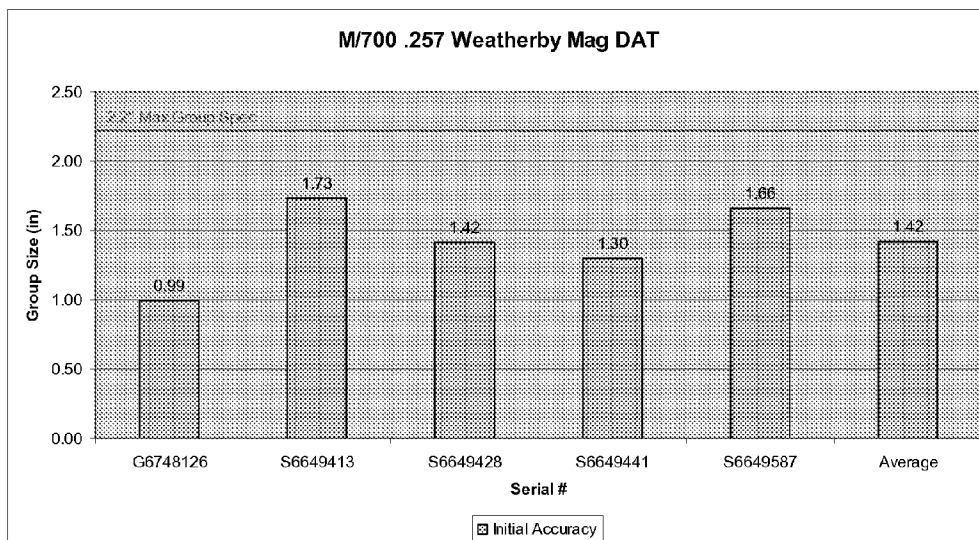
RESULTS:**Measurements:**

All measurements taken were acceptable or within their specified limits.

Serial #	TRIGGER PULL (LBS.)	SAFETY FORCE (lbs)		BOLT LIFT FORCE (LBS.)		SEAR LIFT (IN.)
		to Off	to On	Cocked	Fired	
G6748126	4.8	3.1	5.4	5.5	7.8	0.011
S6649413	4.6	3.9	7.5	5.2	6.3	0.012
S6649428	4.5	4.0	6.8	4.9	7.2	0.011
S6649441	4.9	3.9	8.1	4.5	5.8	0.012
S6649587	5.0	4.0	6.9	5.4	6.3	0.011
AVERAGE	4.8	3.8	6.9	5.1	6.7	0.0114

Accuracy:

The five rifles targeted for group size at 100 yards easily met the standard group size specification for this caliber. The specification for a 5-shot group is 2.2 inches maximum. The average of the 5 rifles targeted was 1.42 inches.

**Data:**

Initial Accuracy								
REPORT NO. 20080021	Caliber	Ammunition	Range (yds)	GRP	Horizontal Spread (in)	Vertical Spread (in)	Group Size (in)	Number of Shots
SERIAL #								
G6748126	.257 Weatherby Magnum	H257100SP	100	1	0.39	0.60	0.87	5
				2	0.47	0.98	0.98	5
				3	1.32	0.52	1.33	5
				AVG.	0.73	0.70	0.99	
S6649413	.257 Weatherby Magnum	H257100SP	100	1	1.65	1.19	1.89	5
				2	0.86	1.79	1.86	5
				3	1.21	1.28	1.44	5
				AVG.	1.24	1.42	1.73	
S6649428	.257 Weatherby Magnum	H257100SP	100	1	1.56	1.63	1.65	5
				2	0.82	1.04	1.10	5
				3	0.52	1.49	1.50	5
				AVG.	1.00	1.39	1.42	
S6649441	.257 Weatherby Magnum	H257100SP	100	1	1.39	0.84	1.47	5
				2	0.86	1.10	1.14	5
				3	0.75	1.26	1.28	5
				AVG.	1.00	1.07	1.30	
S6649587	.257 Weatherby Magnum	H257100SP	100	1	1.21	1.74	1.74	5
				2	1.22	1.36	1.51	5
				3	1.56	0.69	1.72	5
				AVG.	1.33	1.33	1.66	

Extended Function (Endurance):

The same five rifles tested for accuracy were subjected to an endurance phase that also provided an extended functional evaluation opportunity. 9000 total rounds were fired through the five rifles in the pyramid arrangement as shown in the following table. No endurance issues surfaced such as broken or excessively worn components. The functional performance was nearly flawless with only 2 malfunctions occurring in 9000 rounds fired for an overall malfunction rate of just 0.022%.

FUNCTION TEST SUMMARY											
MALFUNCTIONS SORTED BY SERIAL NUMBER											
Serial #	# of Malif	# of Rds. Fired	Malif. Rate	BOR	DE	HUR	JM	SBC	SOR	SBC	SLC
G6748126	1	3000	0.03%	1							
S6649413	0	2000	0.00%								
S6649428	0	2000	0.00%								
S6649441	1	1000	0.10%		1						
S6649697	0	1000	0.00%								
TOTALS	2	9000	0.022%	1	1	0	0	0	0	0	0

Field Function:

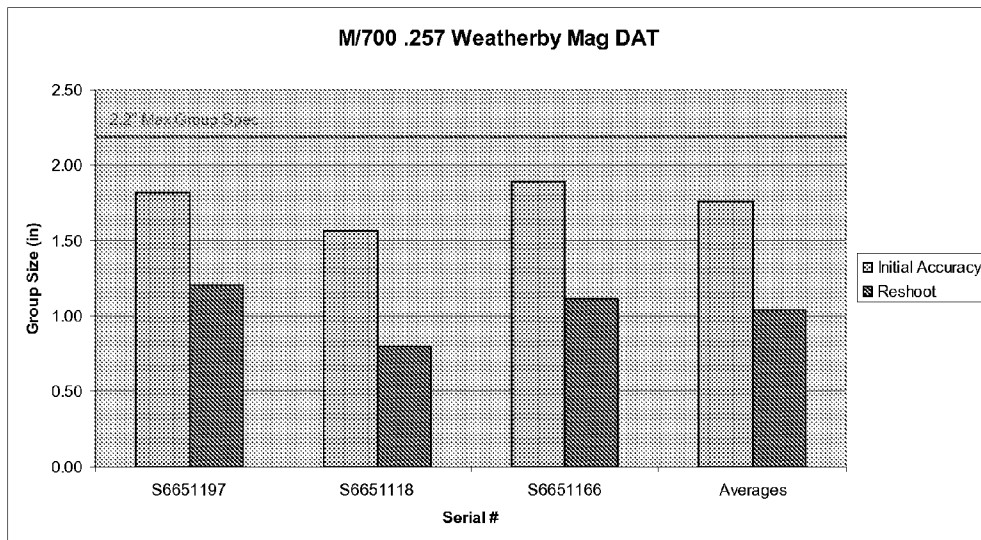
The field test sample also performed very well. The eight rifles in the sample experienced only five malfunctions for an overall rate of 0.8%. Four of the five malfunctions were occurred with one of the six shooters in the test. The table below summarizes the field results:

FUNCTION TEST SUMMARY							
MALFUNCTIONS SORTED BY SERIAL NUMBER							
Serial #	# of Malif	# of Rds. Fired	Malif. Rate	BOR	OH	SBC	SOR
G6748159	0	80	0.0%				
G6748203	1	80	1.3%	1			
G6748104	0	80	0.0%				
S6649400	2	80	2.5%			1	1
S6649446	0	80	0.0%				
S6649407	2	80	2.5%		1		1
S6649450	0	80	0.0%				
S6649582	0	80	0.0%				
TOTALS	5	640	0.8%	1	1	1	2

Follow Up:

Since a production run was occurring at the heels of DAT testing it was decided to draw a 3-piece sample of new guns and "audit" their performance to verify that they performed to the same standard.

The rifles were targeted out-of-the-box at 100 yards. One hundred rounds of ammunition were fired through each rifle and then the rifles were each targeted again at 100 yards. There were no malfunctions and the rifles grouped 1.76" initially and then 1.04" after the 100 round test. The target results are shown in the following graph:

**Data:**

REPORT NO.								
20080021								
SERIAL #	Caliber	Ammo	Range (yds)	GRP	Horizontal Spread (in)	Vertical Spread (in)	Group Size (in)	Number of Shots
S6651197	.257 Weatherby Magnum	H257100SP	100	1	1.34	1.04	1.42	5
				2	0.94	1.37	1.61	5
				3	1.53	1.99	2.44	5
				AVG.	1.27	1.47	1.82	
S6651118	.257 Weatherby Magnum	H257100SP	100	1	1.82	0.43	1.82	5
				2	0.31	1.05	1.07	5
				3	1.59	0.77	1.81	5
				AVG.	1.27	0.75	1.57	
S6651166	.257 Weatherby Magnum	H257100SP	100	1	2.26	1.16	2.26	5
				2	1.57	0.39	1.62	5
				3	1.43	1.36	1.81	5
				AVG.	1.75	0.97	1.90	

REPORT NO.								
20080021								
SERIAL #	Caliber	Ammo	Range (yds)	GRP	Horizontal Spread (in)	Vertical Spread (in)	Group Size (in)	Number of Shots
S6651197	.257 Weatherby Magnum	H257100SP	100	1	1.26	0.90	1.33	5
				2	1.16	0.47	1.16	5
				3	0.95	0.63	1.14	5
				AVG.	1.12	0.67	1.21	
S6651118	.257 Weatherby Magnum	H257100SP	100	1	0.47	0.58	0.58	5
				2	0.97	1.14	1.15	5
				3	0.58	0.47	0.68	5
				AVG.	0.67	0.73	0.80	
S6651166	.257 Weatherby Magnum	H257100SP	100	1	0.48	0.83	0.96	5
				2	0.69	0.42	0.74	5
				3	1.43	0.99	1.64	5
				AVG.	0.87	0.75	1.11	