

REMINGTON ARMS COMPANY, INC.  
Firearms Research Division  
November 5, 1980

.17 Rem. STAINLESS vs. ORDNANCE STEEL BARREL

TEST CHRONOLOGY

SUMMARY OF TESTING

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Guns Tested: M700 Serial No. A6755274 Production Gun  
with 416 stainless steel  
barrel.  
M700 Serial No. A6251655 Test gun  
with Rem.Spec.155 Ordnance  
steel barrel.

Test Ammunition: (Rem.Factory) ALN<sup>S</sup>-J13T - L26I-H09D-L15A

Test Procedure:

All testing was carried out in the Ilion Research Test Lab  
50 yard shooting range.

1. One (1) round was fired every two (2) minutes.
2. Air cool through chamber end every 5 rounds.
3. Every 200 rounds the guns were cleaned thoroughly (Hoppe's Solvent and copper bore brush, and patch dried.)

Air gauge readings were taken in the following locations:

#1	Throat
#2	2" up from throat
#3	2" up from throat
#4	5" up from throat
#5	7" up from throat
#6	muzzle 1" down

Air gauge readings changed little after the first 3" up the bore and graphic information will refer to only the throat, 1" up and 2" up bore gauge readings.

4. Testing was terminated at 1000 rounds on the first stainless steel barrel gun tested due to poor accuracy. (#A6755274).

.17 Rem. Stainless vs. Ordnance Steel Barrel  
Test Chronology - Summary of Testing

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5. Testing was stopped at 1400 rounds on the test gun #6251655 Ordnance steel barrel.
  6. Since the stainless steel barrel fared poorly with the test ammunition J13T, it was decided to reshoot the 1000 round groups with a second lot of test ammunition. Accuracy varied greatly with different lots of factory ammunition.
  7. Standard production gun #A6711652 was tested in a similar manner to the first two test guns, with the exception that the Ordnance steel gun #6251655 was retained in the test and the firing rate was increased to 1 round every 30 seconds.
  8. After 400 rounds it became evident that the standard production gun with a stainless steel barrel (#A6711652) was developing accuracy problems with the test ammunition (J13T). Groups were fired with ALN L26I with a similar improvement in group size as was experienced with stainless steel gun #6755274.
  9. At this point in time the first Ordnance steel gun had 1400 rounds total (#A6251655).
  10. This concluded the testing on Ordnance steel barrel gun ? #A6251655, and stainless production gun #A6712621.
  11. Testing was resumed with two more M700 rifles; #A6712621 with a stainless steel barrel, and a M700 test gun with an Ordnance steel barrel #A6262765.  
  
The last two guns in test were fired every 30 seconds with cleaning and accuracy taken at 200 and 400 rounds. As with the two previous production stainless steel barrels, accuracy problems were in evidence at 400 rounds.
  12. Since all three production M700 .17 Rem. guns showed a sensitivity to the test ammunition at approx. 400 rounds, it was decided to combine the rivetless extractor test and also determine if there is a tendency for a powder residue build-up in the throat (It has been a suggested possibility by Mike Walker.) of the .17 Rem. chamber.
  13. Stainless steel barrel production gun #A6712621 and Ordnance steel test gun #A6262765 were fired an additional 1400 rounds without cleaning, then targeted and velocity checked. Both rifles were cut and inspected for build-up in the throat, primers were randomly checked during the 1400 round endurance shooting for high pressure indication (negative high pressures).

(See photo of chambers and throats of these test guns.)

17 Cal. BARREL LIFE TEST  
STAINLESS vs. ORDNANCE STEEL

		Air Gauge Measurements			
		Stainless Steel #A6755274		Ordnance Steel #A6251655	
		Throat		Throat	
<u>Beginning</u>		1	.17215	1	.17190
		2	.17220 up 1"	2	.17200 up 1"
		3	.17210 + " 2"	3	.17190 + " 2"
		4	.17200 + " 2"	4	.17190 + " 2"
		5	.17200 + " 2"	5	.17190 + " 2"
	Muzzle	6	.17185	6	.17195
<u>200 rds.</u>		1	.1721	1	.1722
		2	.1721 + up 1"	2	.1723 + up 1"
		3	.17205 + " 2"	3	.1722 + " 2"
		4	.1720 + " 2"	4	.17225 + " 2"
		5	.1720 + " 2"	5	.17225 + " 2"
	Muzzle	6	.1720	6	.17185
<u>400 rds.</u>		1	.1721	1	.1723
		2	.1721 + up 1"	2	.1723 + up 1"
		3	.17205 + " 2"	3	.1722 + " 2"
		4	.172 + " 2"	4	.17215 + " 2"
		5	.17205 + " 2"	5	.1722 + " 2"
	Muzzle	6	.1719	6	.17185
<u>600 rds.</u>		1	.17255	1	.17235
		2	.1721 + up 1"	2	.1723 + up 1"
		3	.172 + " 2"	3	.17205 + " 2"
		4	.17195 + " 2"	4	.17195 + " 2"
		5	.172 + " 2"	5	.17195 + " 2"
	Muzzle	6	.17195	6	.172
<u>800 rds.</u>		1	.172	1	.1726
		2	.1719 + up 1"	2	.1725 + up 1"
		3	.1719 + " 2"	3	.1725 + " 2"
		4	.1719 + " 2"	4	.1722 + " 2"
		5	.1719 + " 2"	5	.1722 + " 2"
	Muzzle	6	.17195	6	.172

17 Cal. Barrel Life Test  
Stainless vs. Ordnance Steel

-2-	Air Gauge Measurements					
	Stainless Steel #A6755274			Ordnance Steel #A6251655		
	Throat			Throat		
<u>1000 rds.</u>	1	.1722		1	.1727	
	2	.172	+ up 1"	2	.1726	+ up 1"
	3	.1719	+ " 2"	3	.1722	+ " 2"
	4	.17185	+ " 2"	4	.172	+ " 2"
	5	.1719	+ " 2"	5	.17185	+ " 2"
Muzzle	6	.17195		6	.172	
 <u>1400 rds.</u>				1	.173	
				2	.1729	+ up 1"
				3	.1726	+ " 2"
				4	.1722	+ " 2"
				5	.1719	+ " 2"
	Muzzle			6	.1719	

E N D T E S T

Additional Test Gun (Stainless Steel)

Starting Measurements (Bolt 274) - Shots every 30 sec. -  
Cool every 5  
Target at 400

#A6711652		
	1	.1722
	2	.17225 + up 1"
	3	.17245 + " 2"
	4	.1723 + " 2"
	5	.17225 + " 2"
Muzzle	6	.1721

Keyholes at 400 rds. - Stop Test  
Mid sections .005/19.5" +.0005

12-18-79  
WMC:T  
Typed 11-4-80

17 Cal. BARREL LIFE TEST  
STAINLESS vs. ORDNANCE STEEL

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Beginning Air Gauge Measurements

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		Stainless Steel		Ordinance Steel	
		#A6712621		#A6262765	
		<u>Throat</u>		<u>Throat</u>	
	1	.1719		1	.1722
	2	.1722	1" up	2	.17205 1" up
	3	.1721	2" "	3	.172 2" "
	4	.172	2" "	4	.1719 2" "
	5	.17205	2" "	5	.1719 2" "
Muzzle	6	.1719		6	.172
Full Length	7	.1719 > .1721		7	.172 > .1722

STOP TEST

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1-4-80  
WMC:T  
Typed 11-4-80