

strength
FUNCTIONAL TEST¹⁴

for

M/721 - Pre-Pilot Bolt Action Rifle¹²

1/21/47

Conditions of Firing:

One shot every 5 seconds. Time includes cooling and loading. Cool with compressed air every 40 rounds. Functioning - slow, medium and fast. Alternately load magazine. See Ammunition Schedule attached.

Conditions of Test:

Make the following Measurements, Cleaning and Inspection at 0, 500 rounds and after 10,000 dry cycles:

Clean and Oil - Type III.

Head Space Test #3.

Trigger Pull Test #6.

Firing Pin ~~Test #1~~ and Protrusion Test #8.

~~Bolt Opening Test #13 - 5 rounds~~

Safety Mechanism Function Test #22.

Safety Sear Mechanism Test #25.

~~Measure free length of all springs at 0 rounds~~

Measure surfaces of locking mechanism, sear and manual safety at 0 rounds, 500 rounds and 10,000 dry cycles. ~~Measure the "lips" in the nose of the magazine at 0 and 500 rounds.~~

Rounds

1. Take Down Inspection Test #11.
2. Head Space Test #3.
3. Proof Test #1. ~~E~~liminate if gun has been previously proofed. 0-1
4. Safety Operation Test #31.
5. Jar Off Test #21.
6. Cleaning and Oiling - Type III.
7. Head Space Test #3 (if gun has not been previously proofed).
8. Preliminary Live Fire Test #45 - 128 rounds. 2-130
9. Competitive Ammunition Test - 100 rounds, 30 per type 131-230
10. Accuracy Test #4 - 50 rounds. 231-280
11. Angular Position Test - 60 rounds (20 rds. in each position). 281-340
12. Determine position of ejected rounds with respect to the shooter - 60 rounds. 341-400

-2-

	<u>Rounds</u>
13. Feeding rounds into "Loaded Chamber Test" - 20 rounds.	401-420
14. Breech Gas Escape Test - 20 rounds.	421-440
15. Defective Ammunition Test - 60 rounds. 3 types - 20 rounds per type. Use proof chamber.	441-460
16. Fire 9 proof rounds.	461-469
17. Head Space Test #3.	
18. Determine if firing pin will mark primers.	469-478
19. Head Space Test #3	478-488
20. Sub Zero Test (-60°F.) - 30 rounds.	479-490.500
21. Head Space Test #3.	
22. Chamber Size Test #48 - 10 rounds. Measure bolt opening.	491-500

22. Perform 10,000 Dry Cycle Operations.

~~24. Safety Lug Shear Test - 20 rounds.~~

501-520

23. Locking Lug, Head Lug & Bolt handle shear test. *done.*

AMMUNITION SCHEDULE

M/721 - Pre-Pilot Bolt Action Rifle

<u>Routing Ticket No.</u>	<u>Manufacture</u>	<u>Ammunition Type</u>	<u>Grain</u>	<u>Rounds</u>
3	Remington	Proof Ammunition		0-1
8	Remington	Hi Speed, Bronze Point	150 (42 rounds)	2-130
	"	Hi Speed, Soft Point	180 "	
	"	Soft Point Express	220 (44 rounds)	
9	Western	Open Point Expanding	150 (20 rounds)	131-230
	"	Soft Point	180 "	
	"	Open Point Expanding, Boat Tail	180 "	
	"	Silver Tip	220 "	
	Winchester	Super Speed	180 "	
10	Remington	Match Taper Heel	150	231-280
11	"	Bronze Point	180	281-340
12	"	Mushroom	220	341-400
	"	Bronze Point	180	
	"	" "	150	
13.	"	Bronze Point	150	401-420

-3-

AMMUNITION SCHEDULE (Cont'd)

<u>Routing Ticket No.</u>	<u>Manufacture</u>	<u>Ammunition Type</u>	<u>Grain</u>	<u>Rounds</u>
14	Remington	Mushroom	220 (5 rds.)	421-440
	"	Soft Point	220 "	
	"	" "	180 "	
	"	Bronze Point	150 "	
15	Remington	Soft Point	220	441-460
16	"	Proof	4	461-469
20	"	Soft Point	220	479- ⁵²⁰ 499
22	Remington	Soft Point	220	491-500
23 24	"	Hand Loaded	120	501-520

-4-

Normal Bolt Head not brazed to Bolt Body. Poor braze on Bolt Handle.

Objective: To test inertia force on Bolt Handle

3 Proof

No evidence of inertia force on Bolt Handle.

Normal Bolt Head. Not brazed to Bolt Body. Normal~~ly~~ brazed to Bolt Handle. Bolt Lugs not locked to Receiver. Bolt Handle shimmied to firing position. Objective:

To test strength of Bolt Handle.

Determine if the Bolt Handle will withstand the force imparted by a standard round

1 150 gr. Bronze Point

Bolt Handle sheared from Bolt Body. Bolt body damaged.

Trigger Guard ~~was~~ bent.

Stock splintered in numerous pieces. Forward end of ~~locking~~ ^{locking} ~~rod~~ ^{rod} sheared. Primer pierced.

Head of Bolt broken rearward.

Locking recess in Receiver slightly burred. No other evidence of breakage or deformation of Receiver or Barrel was noted.

Measurements @ Barling & Johnston

Head Space Trigger Pull Firing Pin ^{Protrusion} ~~Protrusion~~ ~~Protrusion~~

0 - Rounds 1.940 ~~in~~ av 5# 30z within limits

500 Rounds 1.942 ~~in~~ av 5# 30z within limits

Note: there was no measurable wear

Note:

Measurable wear
Measurements on

Safety Cam Gear Safety

0-500 rds 0-wear 0-wear 0-wear

500 rds - 10,000 dry cycle .0005" 0-wear .0014"