

DAILY PROGRESS REPORTSUBJECT M/721 Pre-Pilot TestingDate 3/3/47

Pre-pilot testing has been continued with the objective of determining the strength of the "bolt locking lugs". Proof loads were re-loaded and fired above proof pressure with the following results:

<u>Rounds</u> <u>Fired</u>	<u>Grams of</u> <u>Proof Powder</u>	<u>Adjustments</u>	<u>Remarks</u>
0-1	2.89		No variation from standard round.
1-2	3.00		Blown Primer
2-3	3.1		" "
3-4	3.2		Swelled Head
4-5	3.3	(2) Ejector Firing Pin	Swelled Head. Ejector blown back from face of bolt. Stock split. Firing Pin blown back past cocked position (hung on receiver).
5-6	3.35		Swelled Head. Ejector blown back from face of bolt and protruded into Firing Pin hole in bolt body. Ejector penetrated the Ejector Washer, preventing full forward movement of the Firing Pin. Reamed portion of Ejector protruded into Firing Pin hole.
6-7	3.4		Swelled Head. Outside diameter of the bolt face has expanded. Actually measures .702". Cartridge cases are almost full of proof powder at this loading.

Three bolts with the following listed heat treatment are being prepared for further testing in this gun:

1. Bolt Head dead soft.
2. Decarburized - Rockwell 91 on FN scale (1575°F.) for 25 min.; oil quench.
Drawn at 350°F. for 1 hour; water quench; deplate for 5 min.
3. Harden - no temper.

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