

# Test Lab Work Request Form

Date Submitted: 10 March, 2000

Tracking #: TLW 0010B

Project #: 241095

Engineer: J.R.SNEDEKER

## Test Objective:

### TLW0010B – Proof Test

All test sample firearms will be subjected to a standard .30-06 (or .270) Factory Proof Load, shot in the blow-up room using a lanyard. This procedure will be completed before the firearm can be used for any additional firing tests.

Before proof testing the firearm should be inspected for:

- Barrel Obstructions
- Bore and chamber are free of grease or oil and other debris.

For fully assembled firearms, one definitive proof cartridge should be fired in each firearm. Definitive proof ammunition is to be used in accordance with the "Handling of Ammunition" procedure defined in the SAAMI Technical Committee Manual, Volume III, Section II, Page 2410 as follows.

- a. "Cartridges to be tested should be placed in a vertical position with primer end down in a recessed holding block."
- b. "...a cartridge should be lifted vertically from the block. It should be rotated slowly, end over end, in a vertical plane through 360° pausing momentarily when the powder is at the bullet end and again when the powder is at the primer end."
- c. "The cartridge is then rotated slowly, a minimum amount to enter chamber, keeping primer end in lowest possible position until inserted gently and carefully into the chamber."
- d. "The cartridge should be seated in the chamber as far as practicable with the fingers. The bolt or breech mechanism should be closed gently in order not to disturb the position of the powder in the cartridge case. The object of this method of handling cartridges is to position the propellant powder at the primer end of the cartridge case by permitting it to fall gently against the primer and while rotating the case."

Note that these procedures for proof testing were developed to consistently position the propellant thereby providing greater consistency of proof pressures. Failure to follow

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this procedure during the definitive proof testing of each chamber of the firearm could result in pressure levels significantly below the minimum proof pressure specification as determined for the cartridge.

Any firearms components, such as bolts, bolt heads, receivers including chambers, etc. which were previously subjected to proof testing and, which subsequently, have any proof sensitive components changed, altered, or substituted, should be re-proofed.

### **Test Description:**

#### **Method:**

- Record headspace before proof testing (*see previous procedure "TLW0010A - Measure Headspace."*)
- After firing the proof round, the firearm will be carefully examined to determine if any damage to the product has occurred due to exposure to the proof pressure. This inspection includes:
- Visual inspection for damage,
  - damaged receiver or bolt, especially the locking lugs on the bolt or the receiver
  - bulged chamber or bore; split, cracked or otherwise damaged barrel,
  - broken stock,
  - any other part subjected to the proofing stress, which can be visually examined for damage.
  - Any "suspicious" areas should be submitted to magna-flux inspection before proceeding.
- Magna-Flux all bolt heads after Proof.
- The fired proof cartridge should be examined to determine that no firearm fault has introduced cartridge failure, such as:
  - Expanded cartridge head.
  - Excessive roughness, rings, or bulging, which would affect extraction.
  - Beginning separation or material stretching in front of the case head indicating excessive headspace or excessive pressure as stated above.
- Any cartridge case failure indicating a firearm fault.
- In addition, the spent proof round should be examined for the presence of unusual deformation, split case or split head, and for any evidence of a pierced primer. Any of these conditions may be indicative that high-pressure gases may have vented into the action where other damage to components may have occurred.
- Take note of any indication of significant gas leakage, if present, it may indicate that the firearm was not subjected to full proof pressures and the proof test would then be invalid and would require re-proofing.
- A firearm is only properly proofed when the cartridge has been fired without evidence of significant gas leakage.
- Save the spent proof case in a Zip-Lock plastic bag and label and place in the data packet for further

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reference. If any parts were broken or otherwise damaged, place these parts in the same bag as the proof case and label. Place a label on the firearm and withdraw the firearm from the test.

- Each sample firearms' headspace (*see following procedure "TLW0010C - Re-Measure Headspace after Proof"*) must remain in range from min. to min. +.007" after proofing, with no individual firearm's headspace to grow more than .002" after firing one proof round. After successful proofing, the right lug on the bolt head will be marked in the center (i.e. center of top to bottom and center or front to rear) of the lug with a center punch to indicate that it has been proofed.
- After proof, if the firearm passes the inspection and headspace has been measured (*see next section of test plan*), stamp the firearm on the barrel with an authorized Remington proof stamp. Locate the proof mark on the right rear of the barrel in the specified location for the Remington proof stamp. **DO NOT STAMP** if the headspace exceeds Min + .009".
- Because of the higher pressures involved in shooting proof cartridges, adequate precautions, both mechanical and procedural, should be taken to protect personnel performing the firearms proof testing. To this end, the firearm should be securely mounted, completely shielded from the operator and firing accomplished by a remote control method.

**Data Required:**

- Rifle serial number
- Record and note any headspace growth and the corresponding round level.
- Record significant gas leakage and/or firearm damage.
- Record any case damage or other ammunition related malfunctions.
- Record any damage to the firearm resulting from the proof test. Document with Photographs if necessary.

**Resource Usage:**

**Manpower Requirements - 1 TECH**

**Facility Requirements -**

**Test Results Required:**

**Formal Report: Data Only: X**

**REQUESTED Completion Date:**

**11 MAR. 2000**

**Required Materials/Parts/Equipment (include quantities):**

**Test Parts Availability Date: 11 March 2000**

**Start Date: 9/9/00**

**Completion Date: 9/11/00**

**Report Date:**

**Test Assigned To:**

Steve Wade

Jeff Wade

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|                                    |         |             |                     |             |
|------------------------------------|---------|-------------|---------------------|-------------|
| PROJECT# 241095                    |         | D.A.T. 2    |                     |             |
| TLW 0010A,B,C                      |         |             |                     |             |
| HEAD SPACE, 1 PROOF RD, HEAD SPACE |         |             |                     |             |
| DATE - 9-9-00 — 9-11-00            |         |             |                     |             |
| GUN#                               | SERIAL# | HEAD SPACE  | PROOF RD HEAD SPACE | COMMENTS    |
| B-1                                | 1074    | MIN. + .003 | Yes                 | MIN. + .004 |
| B-2                                | 1346    | MIN. + .002 | Yes                 | MIN. + .002 |
| B-3                                | 1070    | MIN. + .002 | Yes                 | MIN. + .002 |
| B-4                                | 1338    | MIN. + .004 | Yes                 | MIN. + .005 |
| B-5                                | 1340    | MIN. + .002 | Yes                 | MIN. + .003 |
| B-6                                | 1328    | MIN. + .001 | Yes                 | MIN. + .002 |
| B-7                                | 1333    | MIN. + .002 | Yes                 | MIN. + .003 |
| B-8                                | 1083    | MIN. + .003 | Yes                 | MIN. + .004 |
| B-9                                | 1063    | MIN. + .001 | Yes                 | MIN. + .002 |
| B-10                               | 1069    | MIN. + .001 | Yes                 | MIN. + .003 |
| B-11                               | 1345    | MIN. + .001 | Yes                 | MIN. + .002 |
| B-12                               | 1341    | MIN. + .001 | Yes                 | MIN. + .002 |
| B-13                               | 1337    | MIN. + .002 | Yes                 | MIN. + .002 |
| B-14                               | 1062    | MIN. + .001 | Yes                 | MIN. + .002 |
| B-15                               | 1068    | MIN. + .002 | Yes                 | MIN. + .003 |
| B-16                               | 1060    | MIN. + .002 | Yes                 | MIN. + .003 |
| B-17                               | 1331    | MIN. + .001 | Yes                 | MIN. + .002 |
| B-18                               | 1065    | MIN. + .003 | Yes                 | MIN. + .004 |
| B-19                               | 1059    | MIN. + .003 | Yes                 | MIN. + .004 |
| B-20                               | 1064    | MIN. + .002 | Yes                 | MIN. + .003 |
| B-21                               | 1322    | MIN. + .002 | Yes                 | MIN. + .003 |
| B-22                               | 1278    | MIN. + .002 | Yes                 | MIN. + .003 |
| B-23                               | 1075    | MIN. + .001 | Yes                 | MIN. + .002 |
| B-24                               | 1046    | MIN. + .001 | Yes                 | MIN. + .001 |
| B-25                               | 1049    | MIN. + .000 | Yes                 | MIN. + .002 |
| B-26                               | 1025    | MIN. + .001 | Yes                 | MIN. + .002 |
| B-27                               | 1308    | MIN. + .002 | Yes                 | MIN. + .002 |
| B-28                               | 1311    | MIN. + .002 | Yes                 | MIN. + .002 |
| B-29                               | 1313    | MIN. + .001 | Yes                 | MIN. + .002 |
| B-30                               | 1302    | MIN. + .002 | Yes                 | MIN. + .003 |

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