

DISCUSSION: Test results summarized in Table I show Teflon-S coating improves 243 cal. gun function much more than 30-06 cal. The difference in reject rate was 57.8% compared to 16.3%. More important, Gallery performance of both calibers with Teflon-S coated action components was equal, as shown by acceptance rate and shots/gun. This suggests that small caliber M/742 guns, and possibly small gauge M/1100 guns, will perform identical to larger calibers when action components are coated with 0.6 mils of Teflon-S.

Standard production ran an average power reject rate of 28.6% for 243 cal. and 9.5% for 30-06 cal. during the period when guns were collected. However, this should not influence test analysis since 100% rejects were used to establish uniform datum.

Guns rejected during the test were returned to the same Assembler, repaired, and retested. Reject rate for both calibers closely matched the first test. Apparently, repair had little effect on improving gun function. More tests are needed to determine the value of repairing first round power rejects versus immediate reshooting or dry cycling; especially 30-06 calibers which "break-in" rapidly.

Teflon-S coatings are baked for 20 min. at 650°F metal temperature to stratify structure. After coating, a high percentage of Teflon coated action bars required restraightening compared with control. Minor stress relief may have occurred. One additional test is planned to evaluate effect on power of action bar stress relief after the pinning operation. The effect is expected to be minor.

RECOMMENDATIONS:

1. Adopt Teflon-S coating for M/742 action components to improve function, reduce Gallery cost, and stimulate new gun sales.
2. Evaluate Teflon-S coating on other autoloading and pump models; particularly small caliber rifles and shotguns.
3. Evaluate economics of dry cycling or retesting all "First Time" power rejects. Limited test data shows "break-in" effect lets 77% of 30-06 cal. power rejects pass retest without repair.
4. Determine if power problems can be reduced by stress relieving action bar assemblies in both M/742 and M/1100 autoloading models.

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