

EXHIBIT A

RD-49 REV. 7-54

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington



c: B. K. Daubenspeck  
R. W. Rawson  
R. A. Partnoy

Bridgeport, Conn.  
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E. G. LARSON

PROPELLANT MIX - 7mm EXPRESS REMINGTON  
AND OTHER CARTRIDGES

Previous tests of high pressure 7mm Express Remington rounds in a M700 rifle produced a maximum pressure of 93200 psi, which locked up the bolt but did not burst the receiver. Since then we have tested similar ammunition in a M742, which represents the minimum chamber strength condition in this caliber. A test procedure was written to evaluate the rifle/ammunition behavior for different pressure levels. This procedure is outlined below.

Handloads using 4198 powder, 150-PSFCL bullets, and cases from lot M09I were used to establish high pressure loads. Once the loads were established using a test barrel, cases from lot M07I were used to load the test ammunition. Five rounds were loaded at each of six pressure levels. Not all rounds were fired at the three highest levels because the bolt began to freeze requiring the removal of the fire control system to pry out the fired cases. This was a lengthy task. Finally, at a pressure level of 94380 psi, the rifle was severely damaged and rendered useless. The receiver was bulged, the bolt carrier fractured, the magazine box torn, and the follower and follower spring deformed. The test summary is shown in Table 1.

Mixed Propellant in Other Cartridges

In addition to the 7mm Express Remington, the mixed propellant was also found in certain loadings of the 6mm Remington, 280 Remington, 30-06 Springfield, and 300 Winchester Magnum.

Tables 2-5 show statistical summaries of velocity and pressure firing tests. Even though no official transducer pressure specifications in psi exist for these cartridges, the pressure levels are generally moderate. One high pressure round of 69400 psi was observed during the firing of the 6mm Remington. Just what this pressure would be in CUP is not known, but experience with other cartridges indicate that it probably would be less than the  $\bar{x} + 3\sigma$  value of 63900 which is taken to be the maximum permissible observed pressure.

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