

4. A small sample of the powder charges in each lot was weighed:

| <u>Code</u>    | <u>Avg. Wt. (grains)</u> |
|----------------|--------------------------|
| MO6I           | 52.3                     |
| MO7I           | 52.7                     |
| MO9I           | 52.2                     |
| M13I           | 52.7                     |
| N22B (control) | 54.1                     |

5. Finally, a sample of powder was taken from a lot (N22B) of ammunition manufactured in May, 1980 (incorrectly identified as April, 1979 in the letter of July 1, 1980 mentioned above). There was no mixing of propellants evident in this sample.

Further Investigations with 7mm Express Remington

A meeting attended by representatives of Research, Marketing, Purchasing, and DuPont Potomac River Works was held to review the investigative work by Research and to recommend further action. It was suggested that the pressure might increase greatly if the ammunition had been stored under conditions that would dry the powder. Accordingly, a severe storage conditions test was conducted and is summarized in Table 3. No pressure increase capable of freezing a bolt was observed.

In order to determine the proportions of the powder mix with more assurance, a total of 31 cartridges from codes MO6I, MO7I, MO8I (which had arrived by this time), MO9I, and M13I were pulled down. The powder granules were separated by sieves and weighed. Table 4 shows the results. Based on statistics, a maximum of 10% 4198 was projected.

Handloads were assembled using a mixture of 10% 4198 and 90% 7514. These rounds were stored for four days at 150°F and fired hot. The pressures were high - 68176 psi average and 74000 maximum, but still not high enough to lock up a M700 if other conditions are normal. Refer to Table 5 for the summary of this test.

The fired case from the round which locked the bolt on Mr. Paisley's rifle was received along with a fired case which fired normally. These cases were sectioned longitudinally and mounted in plastic to facilitate measurement of web thickness and hardness. The web thicknesses of these two cases which came from lot MO8I were compared to the control case web thickness and to those of code MO9I in Table 6. Note that codes MO8I and MO9I showed web thicknesses less than the Remington minimum specification of .035 inches. The control cases were within specifications.

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