

CONFIDENTIAL

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May 17, 1945

TO: E. W. Davis

FROM: E. W. Davis

SUBJECT: REMINGTON 771 RIFLE - STRENGTH (BOLT HEADS)

I have been subjecting several R771 rifles to our standard strength test. These rifles contained one of two types of brazed and pinned bolt heads, as follows:

1. Copper Bronze - Standard production (Brass - Good)
2. Silver Solder - Hand torch brazed (Brass - Questionable)

We have evidence to show that these bolts, either brass, will fail in phase E of the strength test, this failure being caused by allowing breech gas to flow rearward, expanding the Bolt Body and causing permanent damage to the gun.

In the original strength tests, the gun would withstand tremendous pressure tests, including phase F, without allowing a damaging amount of breech gas to flow rearward.

We have two conditions which apparently can cause trouble, namely,

1. The brass in the bolt head-bolt body section fails in tension, allowing the bolt body to pull away from the bolt head.
2. The thread is hard in copper brazed bolt heads and will not expand under high pressure without cracking. This allows the gas to move rearward, causing damage to the gun.

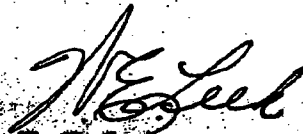
These conditions are serious and, in my estimation, should be corrected immediately. It is felt that manufacturing tolerances will not allow a strength of brass that is adequate, and the pinned type bolt certainly is not the answer to this problem.

E. E. Davis

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May 17, 1938

I therefore recommend that because of existing manufacturing conditions concerned with the construction of M721-722 Bolts, the process of manufacture be changed to a one-piece Bolt Head and Bolt Body combination.



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