To: Dale Danner
From: Mike Keeney
Date: Jan. 11, 1999
Subject: M/710 Barrel Steel Specification -- Rem Spec 155 vs 4137 Mod/4140

There have been two approaches to the manufacture of the M/710 barrel; utilization of the current centerfire barrel steel (Rem Spec 155) or the current M/700 receiver steel. As you know, the M/710 barrel will consist of a standard barrel with integral locking lugs machined into the hub. Manufacturing has requested the Rem Spec 155 barrel steel due to the machinability aspects. The obvious question is whether the Rem Spec 155 can be heat treated to a level that will sufficiently handle the stresses endured during firing. A FEA report generated by Harold indicated a stress value in the range of 120 Ksi when subjected to 90 Ksi peak pressure load. The analysis was generated as a comparison to previous M/700 data which indicated a stess value for similar loading to be in the range of 150 Ksi. Based on this information and material properties for the Rem Spec 155 steel, Glen believes the Rem Spec 155 material will be sufficient for the barrel of the M/710. I would like to have your department work with Glen to generate the material specification for the M/710. What Glen and I have discussed so far included tensile test and impact data generation for the proposed heat treated 155 material, with the heat treated 4137 Mod/4140 material to be used as the benchmark. The test plan is open to suggestions, but the timeline is very short. We are proceeding with the processing of test barrels from the 155 material. Engineering Evaluation Test barrel blanks (hammer forged) are expected by 3/17/99. The preliminary material specification should be completed before the blanks are processed through the hammer forging operation. Please review, discuss with your group, develop a test plan/schedule, and begin evaluation. The M/710 charge number is 241095, please copy me on all purchase orders so that I can track the spendout.

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