

TO: HAL MUNSON

FROM: MICHAEL KEENEY

DATE: 01/20/92

TOPIC: JANUARY 1992 PROGRESS REPORT

o PROCESS DEVELOPMENT/RESEARCH OF NBAR:

As stated in the December 1991 report, an Applications Engineer from Ingersoll GMBH was to review the proposed internal receiver contour and contact me for further discussion. The proposed locking lug contour utilizes a three lug system, each separated by 60 degrees of rotation, consisting of .136 square inches of load bearing surface area and a lug width of .400". On Jan. 6, 1992, Richard Caron of Ingersoll GMBH and I discussed the proposed contour with respect to the capabilities of the EDM process. According to Richard, the application is highly compatible with their standard machine. He envisioned a two step process, a roughing pass to remove the majority of material and a finish pass to control dimensions and produce a desirable surface finish. The most prominent area of concern at this time is electrode wear and the effect it has on dimensional controllability. A quote from Ingersoll GMBH to produce prototype receivers is expected by 01/24/92. There are ten receiver blanks in process at Remington which will be ready for shipment to Ingersoll by 01/24/92.

As a result of revising the locking lug system from an external entity to an integral system, the conventional recoil bracket concept is no longer applicable. After discussion of possible recoil supporting attachments with Ken Soucy, Ken suggested inverting the conventional concept and molding the stock into recesses in the bottom of the receiver. Upon further investigation, we developed an insert for the stock that will interlock with grooves in the receiver, producing the required interaction between the stock and the receiver. To develop an understanding of the forces applied and failure modes of the proposed system, I expect to have an insert and receiver assembly available for test by 01/27/92. On a production basis, the insert would be forged from a blank of 4140 material with two secondary drilling operations to follow.

The primary area of concern around the nonconventional construction of this bolt action rifle is what implications will a nonreplaceable barrel have on the consumer's perception of this firearm. In response to this concern, I was interested in determining how many M/700 rifles are returned for barrel replacements due to caliber change or barrel life depletion. Discussing this issue with Jack Kast, he stated that the majority of bolt action rifles returned to Remington for barrel replacement are due to sight misalignment or fail to group adequately out of the box. Although these barrels could be replaced, the current practice of Arms Service is not to replace barrels but to replace the entire barrel assembly, (barrel, barrel bracket and receiver). Therefore, from an Arms Service standpoint, the nonreplaceable barrel issue is not a major concern. Marketing is currently working to develop a better understanding of the bolt action rifle market and what percentage of rifle owners have replaced barrels.