

**R&D/PROCESS ENGINEERING REVIEW
M/710 PROCESS ESTIMATE REVISION LEVEL #4**

date of meeting: Nov. 17, 1998

location: Ilion, NY

attendance: M. Santillo, J. Mead, J. Rabbia, J. Swanson, J. Parkhurst, M. Lemay, P. Zito,
W. Zarnoch, R. Joy, R. Leskovar, M. Keeney, D. Diaz

Based on the concept status of the M/710 as presented during the October design review, Process Engineering developed a manufacturing estimate labeled revision level #4. The estimate was completed and submitted on Nov. 3. The final number as presented for the production of the M/710 design concept was \$125.16. The target manufactured cost of the M/710 program is \$103, with the current manufactured cost of the M/700 ADL Synthetic at \$122.76. The obvious objective of the joint meeting was to insure accurate estimation based on design intent and efficiency of design based on manufacturability. 83

The estimate was broken down into five major components and a sixth category encompassing all of the minor components. Each of the categories were reviewed individually with the respective engineers. At the conclusion of the meeting, the estimated manufacturing cost based on the corrections/design changes discussed should reduce the estimated cost to the \$111-\$114 range. The major contributors to the cost reduction were; Receiver Insert material cost estimate error and design changes to enable the part to be molded complete without secondaries. Receiver is to be quoted as an outsourced item, the design lends itself to be manufactured on a large screw machine. Bolt Body is also to be quoted as an outsourced item, again the design would allow the part to be completely machined as a single operation on a screw machine. RFQ's will be issued for all outsourced components, the Rev. #5 estimate will include actual quoted values versus the current estimated values. The Rev. #5 estimate will be presented at the Dec. 18 design review presentation.

In conclusion, the results of the meeting are very favorable. It appears that an estimated cost of approximately \$112 will be obtainable based on high spot estimates. Further cost reductions may be possible based on firm design drawings and processes. Process Engineering noted that there are two major components that will require extensive process development, the receiver insert and the barrel. The receiver insert will be a complicated synthetic component that will require mold iterations to obtain the desired geometry. The barrel design will dictate the use of a pre-hardened steel blank, similar to the new "cold-forged" shotgun barrel process. Although the shotgun barrel process will provide valuable background information, the tooling used to generate a rifle barrel will be significantly different. Process development of the two major components will not begin prior to project approval.

Michael D. Keeney
Senior Research Engineer

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