

Date: February 21, 1998

To: Jim Rabbia

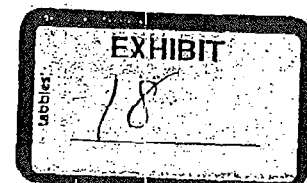
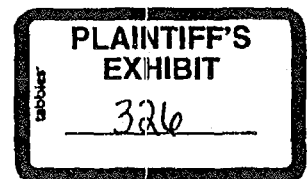
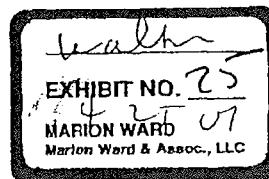
From: Joe Mead and Dave Findlay

Subject: M710 Preliminary Evaluation.

A preliminary evaluation was made of the two concept designs outlined in R&D's position paper for the firearms, dated January 12, 1998. Our impression of the designs are that they represent a great deal of potential. Some of the concepts deviate substantially from the processing capabilities at Ilion, and therefore would require fairly substantial investments in capital and technical resources to implement. The implementation of these new models would also require the establishment of a separate production line in order to maintain current production during the process development phase. Development of a new line (cost center) would have the advantage of allowing us to capture the real overheads associated with the new product. It would also allow us to utilize some of the agile manufacturing techniques discussed in the position paper.

We feel that emphasis should be given to only one of the design concepts, so as to minimize expenditures of time and money. Our choice would be the round Receiver concept as it builds on the existing model 700 product lines great reputation as the best out of the box bolt action rifle available. Some of the process choices discussed in the report need further explanation from Research to better understand their merits.

During the design development and refinement phase of the program, input from the manufacturing group would be essential. By utilizing all of the design and manufacturing expertise available, we will refine the product to it's fullest potential. When detailed drawings become available, a more precise estimate can be made. The following tables outline some of our thoughts.



Subject to Protective Order - Williams v. Remington

ETE00004051

M/710 (High End) Process Evaluation:

Component	Process and/or Description	Opportunities	Concerns	Capital Requirements High = over 500M Med = 250M to 500M Low = under 250M
Receiver	Extruded Tube	Less Machining No Recoil Lug No Broaching	Complete retooling of the line (capital outlay requirements) Phase of new design while running current product	High
Barrel	Threaded Attachment		Changes in gaging required throughout the Plant Deburring extremely difficult	High
Bolt Assembly	One Piece	No Braze Bolt Handle	Extremely difficult to fixture Extremely difficult to grind	Med
One Piece Stock	Wood or Synthetic	Less Capital Outlay	More expensive piece price	Low
Magazine Clip	Stamping	One Clip with Mag. Spacer	Unknown	Low
Trigger Guard	Metal		Unknown	Low
Firecontrol	Link Design	System Return Bolt Lock	Unknown	High
Overall/ Total				Approximately 1 1/2 years of process development and 2-3 million in capital

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M/710 (Low End) Process Evaluation:

Component	Process and/or Description	Opportunities	Concerns	Capital Requirements High = over 500M Med = 250M to 500M Low = under 250M
Receiver	Investment Cast	Less Machining No Recoiling No Broaching	Complete retooling of the line (capital outlay requirements) Phase of new design while running current product More cosmetic outside finishing required	High
Barrel	Clamped Attachment	No Barrel Threading	Changes in gauging required throughout the Plant	High
Bolt Assembly	One Piece	No Braze Bolt Handle	Extremely difficult to fixture Extremely difficult to grind	Med
Two Piece Stock and Fore End	Wood or Synthetic	Less material utilized therefor less expensive	More expensive capital outlay Blow molding not believed to be the best process for this part	Low
Magazine Clip	Synthetic	One Clip with Mag. Spacer Reduced Cost	Dimensional control	Low
Trigger Guard	Synthetic	Reduced Cost	Unknown	Low
Firecontrol	Link Design	System Return Bolt Lock	Unknown	High
Overall/ Total				Approximately 1 1/2 years of process development and 2-3 million in capital