

M/710 Centerfire Bolt Action Concept Review 3

Remington Arms Confidential

December 18, 1998

ET34109

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Williams v. Remington

Model 710 - Agenda

- ☐ Concept Overview
- ☐ Progress Update
- ☐ Spendout
- ☐ Prototype Review
- ☐ Schedule
- ☐ Manufacturing Estimate Review
- ☐ Recommendation
- ☐ Action Items

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M/710 - Concept Overview

☐ OBJECTIVE

- ✓ COMPETE WITH SAVAGE, MARLIN, WINCHESTER
- ✓ MINIMIZE COST -- CAP. AND PIECE PRICE
- ✓ TECHNICALLY LOW RISK
- ✓ RAPID INTRO TO MARKET

☐ Barrel with Integral Locking Lugs

☐ Tubular Receiver

☐ Synthetic Receiver Insert with M/700 Trigger Assy

M/710 Progress Update

- ☐ Detailed Drawings of Major Components
- ☐ Manufacturing Estimate
- ☐ Manuf./R&D Estimate Review 11/17/98
- ☐ In House Mold Flow Analysis of Receiver Insert
- ☐ Magazine Box Prototype Development
- ☐ Build Cosmetic Prototype

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M/710 Spendout

- ❑ \$38,000 estimated spendout as of Sept. 28, 1998
 - ✓ M/700 Receiver Endurance Testing - \$6000
 - Manufacturing Concerns - \$0 spent
 - ✓ Mold Flow Analysis of Rec. Insert - \$7000
 - In House Analysis Program - \$0 spent
 - ✓ Magazine Prototyping - \$20,000
 - Prototype stamping house - \$4000 spent
 - ✓ Cosmetic Prototype - \$5000
 - Stock inletting - \$ 9767 spent
- ❑ Total Spendout to Date : **\$13,767**

M/710 Prototype Review

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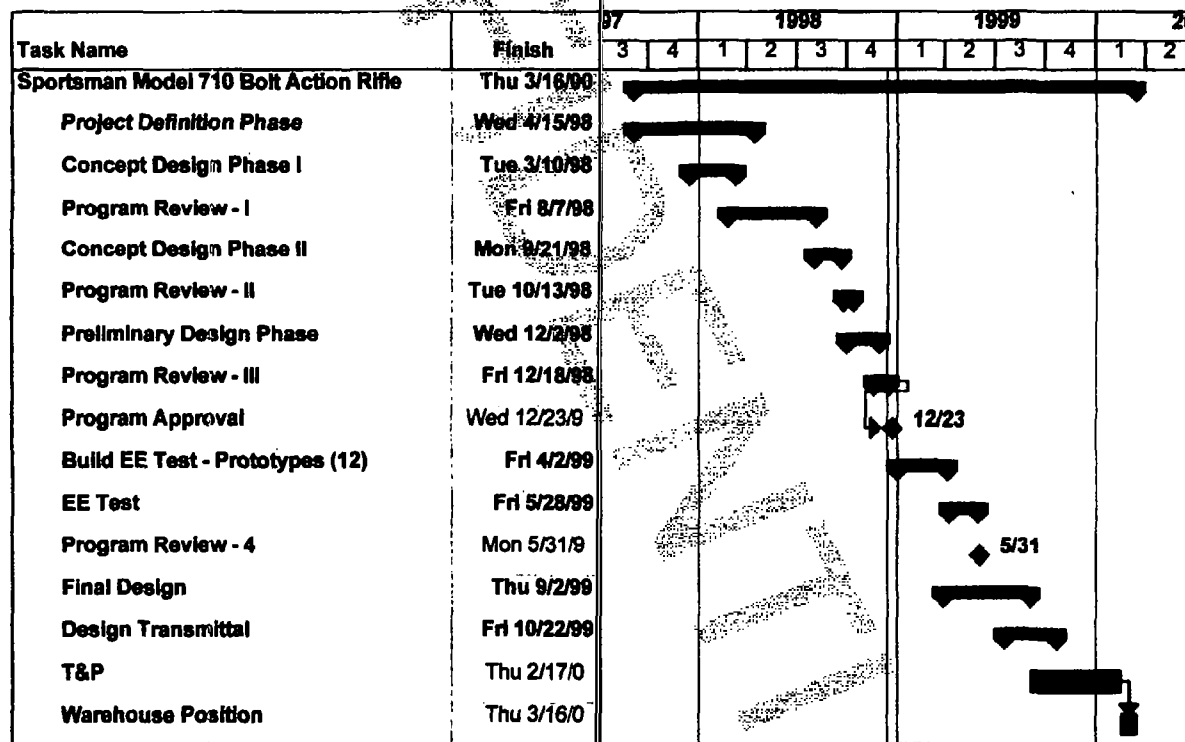
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M/710 Schedule



M/710 Manufacturing Estimate

- ☐ High Spot Estimate Complete
 - ✓ Manufacturing Cost - \$109,47
 - ✓ Manufacturing Capital Required - \$1,984,296
- ☐ Initial Print Package
 - ✓ Part design and tolerancing subject to change
 - ✓ All part designs have not been received
 - ✓ All material specifications are not finalized
- ☐ Limited Exposure to Prototype Parts and Assemblies
 - ✓ Have not seen a working prototype
 - ✓ Seen very few prototype parts
 - ✓ Significant assumptions with respect to assembly

M/710 Manufacturing Concerns & Issues

- ☐ Barrel Material and Processing Concurrence
 - ✓ 4140 prehardened material vs standard material with heat treatment
- ☐ Receiver Insert Manufacturability
 - ✓ Mold Flow Analysis
 - ✓ Part Complexity
- ☐ Subsequent Processing
 - ✓ Pressing plastic part into receiver tube
 - ✓ Barrel receiver attachment
- ☐ Prototyping Schedule
 - ✓ Barrel prototyping achievable but we need to begin in Jan

Proposed Path Forward

- ☐ Continued R&D and Manufacturing concurrent refinement, re-design and completion of all prints
- ☐ Further refinement of capital
 - ✓ Improved equipment utilization
 - ✓ Firm quotes with further purchasing assistance
 - ✓ Process optimization
- ☐ Further cost refinement
 - ✓ Further make vs. buy decisions
 - ✓ Improved process development
 - ✓ Purchased part and raw material price improvement

M/710 Recommendation

☐ Approve Project

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M/710 Action Items

Action Item	Responsible	Date

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M710 Flat Receiver Comparison

M/700 ADL Synthetic .30-06 cal. 05 Costing

Description	Part #	Material	Labor	Overhead	Total
Overall Gun	927478	\$ 32.99	\$ 23.28	\$ 67.31	\$ 123.58
Receiver	99304	\$ 2.35	\$ 4.39	\$ 14.29	\$ 21.03
Barrel	26291	\$ 2.05	\$ 2.45	\$ 8.81	\$ 13.30
Bolt Assy	94097	\$ 6.71	\$ 3.19	\$ 8.92	\$ 18.83
Stock	106153	\$ 6.12	\$ 0.51	\$ 1.06	\$ 7.69
Firecontrol	26345	\$ 2.15	\$ 2.80	\$ 6.69	\$ 11.64
Misc		\$ 13.61	\$ 9.94	\$ 27.54	\$ 51.09

M/710 Synthetic .30-06 Flat-Panel Receiver Option Estimated Cost

Description	Material	Labor	Overhead	Total
Overall Gun	\$ 44.86	\$ 21.85	\$ 60.53	\$ 127.24
Receiver	\$ 4.87	\$ 1.58	\$ 5.48	\$ 11.93
Barrel	\$ 2.44	\$ 5.61	\$ 19.81	\$ 27.86
Bolt Assy	\$ 11.13	\$ 2.14	\$ 7.16	\$ 20.43
Stock/Fore end	\$ 6.16	\$ -	\$ -	\$ 6.16
Firecontrol	\$ 9.09	\$ 1.59	\$ 3.40	\$ 14.09
Misc	\$ 11.17	\$ 10.93	\$ 24.68	\$ 46.77

Comparison: M/700 ADL minus M/710

Description	Material	Labor	Overhead	Total
Overall Gun	\$ (11.87)	\$ 1.43	\$ 6.78	\$ (3.66)
Receiver	\$ (2.52)	\$ 2.81	\$ 8.81	\$ 9.10
Barrel	\$ (0.39)	\$ (3.16)	\$ (11.00)	\$ (14.56)
Bolt Assy	\$ (4.42)	\$ 1.05	\$ 1.76	\$ (1.60)
Stock	\$ (0.04)	\$ 0.51	\$ 1.06	\$ 1.53
Firecontrol	\$ (6.94)	\$ 1.21	\$ 3.29	\$ (2.45)
Misc.	\$ 2.44	\$ (0.99)	\$ 2.86	\$ 4.32

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M/700 ADL Synthetic .30-06 cal. 05 Costing						M/710 Synthetic .30-06 Estimated Cost					
Description	Part #	Material	Labor	Overhead	Total	Description	Material	Labor	Overhead	Total	
Overall Gun	927478	\$ 32.90	\$ 23.08	\$ 66.78	\$ 122.76	Overall Gun	\$ 25.50	\$ 22.71	\$ 64.04	\$ 112.25	
Receiver	99304	\$ 2.35	\$ 4.37	\$ 14.36	\$ 21.08	Receiver	\$ 1.68	\$ 1.60	\$ 5.60	\$ 8.88	
Barrel	26291	\$ 2.05	\$ 2.34	\$ 8.43	\$ 12.82	Barrel	\$ 3.35	\$ 5.05	\$ 18.16	\$ 26.56	
Bolt Assy	94097	\$ 6.71	\$ 3.19	\$ 8.92	\$ 18.82	Bolt Assy	\$ 6.96	\$ 3.39	\$ 10.19	\$ 20.54	
Stock	106153	\$ 6.12	\$ 0.51	\$ 1.06	\$ 7.69	Stock Assy	\$ 6.72	\$ -	\$ -	\$ 6.72	
Firecontrol	26345	\$ 2.15	\$ 2.80	\$ 6.69	\$ 11.64	Firecontrol	\$ 3.45	\$ 2.65	\$ 6.17	\$ 12.26	
Misc		\$ 13.52	\$ 9.87	\$ 27.32	\$ 50.71	Misc	\$ 3.35	\$ 10.03	\$ 23.91	\$ 37.29	
Comparison: M/700 ADL minus M/710											
Description		Material	Labor	Overhead	Total						
Overall Gun		\$ 7.40	\$ 0.37	\$ 2.74	\$ 10.51						
Receiver		\$ 0.67	\$ 2.77	\$ 8.76	\$ 12.20						
Barrel		\$ (1.30)	\$ (2.71)	\$ (9.73)	\$ (13.74)						
Bolt Assy		\$ (0.25)	\$ (0.20)	\$ (1.27)	\$ (1.72)						
Stock		\$ (0.60)	\$ 0.51	\$ 1.06	\$ 0.97						
Firecontrol		\$ (1.30)	\$ 0.15	\$ 0.52	\$ (0.62)						
Misc.		\$ 10.17	\$ (0.16)	\$ 3.41	\$ 13.43						