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PHASE II

MI/700 Re-Engineering

4/21/97

ET53743

GOAL

The Goal is to Aggressively Reduce the Cost to Produce Bolt Action Centerfire Rifles by Process; Reducing Lead-time and Provide Greater Flexibility at Final Assembly

THE OBJECTIVE

- Review Current Manufacturing Processes and Identify Constraints
- Evaluate "Stack Up" of Tolerances
- Evaluate the Major Sub-Assemblies (Fire Control, Bolt & Barrel)
- Evaluate Part Commonality
- Evaluate Various Types of Finished and Volume of SKU's

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William W. W.

PRELIMINARY INDICATIONS

- In Conjunction with 4th Floor Protect, Consolidate Fire Control and Trigger Plate Assembly Areas
- Purchase / Implement Seamless Tubing for an Extruded Receiver Blank
- Detail Investigation of Barrel Shop and GFM Dept. (Insert Hammers)
- Retolerance Bolt / Barrel / Bracket / Receivers
- Pre-Proof Barrel Assembly
- Streamline Sub-Assembly Operations with an Assembly Line Approach
- Establish a "Kitting Process" for Build on Assembly Line
- Serialize at Last Station (Packing) of Assembly Line

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FUTURE OPPORTUNITIES

- Evaluate Potential for a One (1) Piece Bolt Body
- Receiver Transfer Line *
- Bolt Transfer Line and Machine Cell *
- Barrel Machine Cell *
- Automated Almco Process *

* Requires Significant Capital Investment

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1997 CURRENT STANDARD COST
M700 30-06 SS BDL (928717)

Remington Arms Company, Inc. Firearms - Ilion, NY												
700 30-06 SS BDL												
		STD HRS/PC	CREW /PC	VARIABLE OVERHEAD								
				MATL	LABOR	DIRECT VARIABLE	EB's	PLANT VARIABLE	SUPPORT	TOTAL VARIABLE	FIXED OVERHEAD	TOTAL
				(1)	(2)	(3)	(4)	(5)	(6)		(7)	
FINAL ASSY	929717	0.2771	0.0348	\$ -	\$ 4.78	\$ 1.64	\$ 2.28	\$ 0.88	\$ 1.47	\$ 6.45	\$ 5.88	\$ 17.10
CARTON	1444	0.0000	0.0000	\$ 3.15	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3.15
MISC SMALL PARTS		0.0475	0.0059	\$ 8.51	\$ 0.73	\$ 0.58	\$ 0.34	\$ 0.43	\$ 0.18	\$ 1.49	\$ 0.69	\$ 8.41
TRIGGER ASSY	97490	0.1859	0.0232	\$ 3.30	\$ 3.24	\$ 1.32	\$ 1.63	\$ 0.59	\$ 0.96	\$ 4.40	\$ 3.96	\$ 14.88
TRIG GUARD ASSY	97886	0.1397	0.0171	\$ 3.87	\$ 2.45	\$ 1.71	\$ 1.12	\$ 0.45	\$ 0.65	\$ 3.82	\$ 3.00	\$ 13.34
FIRING PIN ASSY	105410	0.0621	0.0078	\$ 4.65	\$ 0.02	\$ 0.67	\$ 0.49	\$ 0.19	\$ 0.29	\$ 1.64	\$ 1.25	\$ 8.57
BBL ASSY COMP	105607		0.0000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BARREL ASSY	105577	0.0859	0.0107	\$ -	\$ 1.46	\$ 2.28	\$ 0.72	\$ 0.27	\$ 0.44	\$ 3.69	\$ 1.79	\$ 8.84
BARREL	105983	0.1802	0.0225	\$ 14.49	\$ 3.63	\$ 8.84	\$ 1.73	\$ 0.85	\$ 1.09	\$ 10.07	\$ 4.32	\$ 32.41
RECEIVER	105445	0.3177	0.0397	\$ 10.34	\$ 5.48	\$ 7.14	\$ 2.85	\$ 1.00	\$ 1.83	\$ 12.82	\$ 6.67	\$ 35.29
BBL BRACKET	97483	0.0072	0.0009	\$ 2.18	\$ 0.12	\$ 0.11	\$ 0.08	\$ 0.02	\$ 0.04	\$ 0.22	\$ 0.15	\$ 2.65
BOLT ASSY	105440	0.2564	0.0321	\$ 7.26	\$ 4.19	\$ 3.58	\$ 2.01	\$ 0.77	\$ 1.28	\$ 7.84	\$ 5.12	\$ 24.20
STOCK ASSY	106170	0.0814	0.0102	\$ 8.70	\$ 1.38	\$ 0.88	\$ 0.69	\$ 0.25	\$ 0.51	\$ 2.33	\$ 1.66	\$ 12.05
TOTAL		1.8382	0.2048	\$ 62.52	\$ 28.35	\$ 28.71	\$ 13.60	\$ 5.48	\$ 8.59	\$ 54.67	\$ 34.44	\$ 178.99
OFF STD ALLOW			0.0553									
GUNS/DAY			561									
MEN/DAY			145.9									
Guns Per Manday			3.85									
INCLUDED IN OFF STD ALLOW: CHANGEOVERS, CUTTER CHANGES, MEETINGS, REPAIRS, REWORK, MACH DOWNTIME.												
(1) Includes all Raw Material Components (synthetic stock; no S & K cost applicable)												
(2) Direct Labor												
(3) Includes Cutters, Drifts, Oils, Gloves, Maintenance, Etc.												
(4) Includes Medical Premiums, Vacations, Holidays, Unemployment Insurance.												
(5) Includes Salaries of all Direct (19950) Supervisors, Bulk Machine Coolant												
(6) Includes Set-up personnel and Truckers												
(7) Includes Electricity, Accounting Dept., Engineering Depts.												

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1997 CURRENT STANDARD COST
M700 30-06 BDL EMB (928035)

Remington Arms Company, Inc. Firearms - Ilion, N.Y.												
700 30-06 BDL EMBELLISHED												
	STD	CREW										
	HR9/PC	/PC	MATL	LABOR	DIRECT	PLANT	SUPPORT	TOTAL	FIXED	TOTAL		
			(1)	(2)	(3)	(4)	(5)	(6)	(7)			
FINAL ASSY	926035	0.28999	0.0362	\$ -	\$ 5.02	\$ 1.76	\$ 2.38	\$ 0.92	\$ 1.53	\$ 6.57	\$ 6.13	\$ 17.72
CARTON	1444	0.00000	0.0000	\$ 3.15	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3.15
MISC SMALL PARTS	1721	0.09337	0.0117	\$ 9.93	\$ 1.39	\$ 1.03	\$ 0.63	\$ 0.53	\$ 0.35	\$ 2.54	\$ 1.73	\$ 11.59
TRIGGER ASSY	26345	0.18710	0.0234	\$ 2.09	\$ 3.13	\$ 1.29	\$ 1.48	\$ 0.57	\$ 0.93	\$ 4.28	\$ 3.83	\$ 13.32
TRIG GUARD ASSY	99690	0.04774	0.0060	\$ 3.56	\$ 2.52	\$ 1.89	\$ 1.20	\$ 0.48	\$ 0.71	\$ 4.28	\$ 3.20	\$ 13.66
FIRING PIN ASSY	22040	0.06105	0.0078	\$ 3.30	\$ 1.01	\$ 0.60	\$ 0.48	\$ 0.18	\$ 0.28	\$ 1.55	\$ 1.23	\$ 7.06
BBL ASSY COMP	107607	0.00000	0.0000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BARREL ASSY	107847	0.12039	0.0150	\$ -	\$ 1.94	\$ 2.82	\$ 0.99	\$ 0.37	\$ 0.83	\$ 4.81	\$ 2.14	\$ 8.89
BARREL	26291	0.15565	0.0185	\$ 2.10	\$ 2.67	\$ 1.54	\$ 1.31	\$ 0.49	\$ 0.80	\$ 7.14	\$ 3.28	\$ 15.16
RECEIVER	107837	0.39415	0.0443	\$ 2.41	\$ 8.05	\$ 1.67	\$ 3.13	\$ 1.11	\$ 2.04	\$ 13.84	\$ 7.40	\$ 28.70
BBL BRACKET	14810	0.00939	0.0012	\$ 0.82	\$ 0.16	\$ 0.11	\$ 0.01	\$ 0.03	\$ 0.05	\$ 0.28	\$ 0.19	\$ 1.43
BOLT ASSY	28712	0.23934	0.0299	\$ 6.78	\$ 4.02	\$ 2.94	\$ 1.93	\$ 0.74	\$ 1.21	\$ 8.81	\$ 4.92	\$ 22.52
REAR SIGHT ASSY	103145	0.08930	0.0112	\$ 0.41	\$ 0.88	\$ 0.52	\$ 0.43	\$ 0.33	\$ 0.27	\$ 1.65	\$ 0.93	\$ 3.84
STOCK ASSY	103601	1.22840	0.1538	\$ 56.64	\$ 1.89	\$ 0.27	\$ 0.85	\$ 0.35	\$ 0.71	\$ 2.88	\$ 5.47	\$ 68.67
EMB ROYALTY	99413	0.00000	0.0000	\$ 4.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4.00
FLR PLATE ROYALTY	99904	0.00000	0.0000	\$ 1.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1.00
TOTAL		2.87587		\$ 82.16	\$ 30.76	\$ 28.04	\$ 14.95	\$ 8.10	\$ 9.50	\$ 58.69	\$ 40.41	\$ 219.92
LESS S&K LABOR		1.12200										
		1.75387	0.2182									
OFF STD ALLOW			0.0592									
GUNS/DAY			581									
MEN/DAY			156.2									
Guns per Manday			3.59									
INCLUDED IN OFF STD ALLOW: CHANGEOVERS, CUTTER CHANGES, MEETINGS, REPAIRS, REWORK, MACH DOWNTIME.												
(1) Includes all Raw Material Components (includes processing cost @ S & K)												
(2) Direct Labor												
(3) Includes Cutters, Drills, Oils, Gloves, Maintenance, Etc.												
(4) Includes Medical Premiums, Vacations, Holidays, Unemployment Insurance.												
(5) Includes Salaries of all Direct (19950) Supervisors, Bulk Machine Coolant												
(6) Includes Set-Up personnel and Truckers												
(7) Includes Electricity, Accounting Dept., Engineering Depts.												

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