

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

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File m 1700

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FROM: T. W. RAWSON *TWR*

SUBJECT: SUMMARY EXECUTIVE BOLT ACTION RIFLE COMPETITIVE AUDIT

On 10/15/81 the second Annual Executive Firearms Competitive Audit was held. Because of the competitive situation, bolt action rifles were chosen as the subject. Observations and discussion at this audit were limited to product. Once again the evaluation was restricted to visual impressions as would be typical in a store environment. Technical evaluation will be presented by R & D in November.

Attached is a matrix similar to the one filled out which summarizes the scoring. Following are observations on that scoring and a summary of the discussion.

- First, second and third place without price consideration went to 700 BDL, M70 Featherweight and Ruger M77 respectively.
- The overall scores did differ from the cumulative individual item scores indicating that overall impression and other factors than those cited contributed to ranking.
- The addition of pricing information (copy attached) did change the ranking. Ruger M77 went from third to a first place tie with the 700 BDL in this analysis. The M70 FWT fell from 2nd to 3rd reflecting the negative reaction to its higher price.
- Stock appearance honors went to M70 FWT, 700 BDL and Ruger M77 in that order suggesting some combination of the 3 might prove most desirable. While the 700 Classic was not audited a sample was reviewed. An oral concensus seemed to indicate our classic was the favorite style. The narrow forend, open styled pistol grip and straight comb of the M70 FWT received special mention.

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- Action smoothness, a characteristic discussed in market research panel studies, ranked Remington entries rather low. This ranking suggests the work being done on the recessed follower is in the right direction.
- Browning, known for its high quality appearance, ranked first in metal finish. Dropping back down the price scale the auditors seemed to agree, there was little difference between the major three contenders. Remington did outrank both WW and Ruger in this characteristic on the sample guns. Some auditors expressed surprise at this but warehouse audits and in store checks confirm, generally, this situation.
- Remington's BDL and ADL took the honors in the extractor, ejector, locking system category. It was mentioned that our design yields the cleaner, neater appearance as a system. Objectivity may have been compromised here as well because of what we believe to be true of the strength and safety of our system. While more bulky and less streamlined the Ruger extractor (Mauser type) does get a lot of play in the press and trade as the more impressive looking mechanism. It was noted that our extractor appears less than impressive and this is partly due to the crudely ground off rivet used to hold the extractor in place. *color*
- The panel was asked to judge the safety not so much from its "safeness" which is difficult to judge in this environment, but from the point of view of convenience, quietness and quality of appearance. The Browning and Ruger took 1st and 2nd place respectively. Both rifles feature sliding, "shotgun type" tang safeties. Remington safety which is functionally similar to Rugers was relegated to 4th place because of the side tang position which necessitates an elongated hole in the stock and yields relatively poor appearance.
- Ruger took first place for accessory parts (sights, scope mounts, grip caps, etc). Their combination of clean barrel (no sights, no holes) and scope mount plus absence of white line spacers at grip cap and butt seemed to be most preferred. The Ruger scope mount system is respected functionally but was described as rather bulky - visually. Negative comment was recorded regarding the safety message on Ruger's barrel. (cosmetic reaction).

Summary:

Within our price segment there was little to choose from an execution point of view between the big 3. (Rem., WW, Ruger).

Remington's wood finish, fits and metal finish were at least as good as competition. Small details, like the previously mentioned white extractor rivet head were jarring footnotes.

While the functional analysis has yet to be heard there was little apparent, in the visual audit phase to suggest Remington's functional quality suffers by comparison.

Confining the conversation to product then, it appears that we suffer in the competitive comparison with design cosmetics. In the absolute sense our styling left something to be desired. The panels interest in the 700 Classic, M70 Featherweight and Ruger M77 all fairly well follow a documentable trend in bolt action rifle styling in evidence today. Considering the M700 in current form is basically 20 years old while the movement toward pre 64 M70 - classic styling started by Ruger with the M77 is but 10 years down the product life cycle, this is not surprising. More subtle however is the apparent visual quality of mechanical design from which people imply overall product quality. The M700 safety while functionally similar to the Ruger 77 suffers by comparison in the visual sense. The quality of our design from a styling point of view needs some upgrade as well as styling in the absolute.

Finally the audit also raises a more significant question relevant to quality. Our execution is acceptable and functional design adequate to superior. The styling differences seem short of a total explanation for slipping sales. The price value relationship is the key and as can be seen by the summary matrix the price does effect peoples opinion of gun desirability. Ruger with price added represents the significant threat to M700 sales. Price-cost relationships are the rub. Significant improvement in productivity through better management control of scrap, rework and warranty repair are the benefits of an improved quality system outlined in the quality plan. The changes called for in that plan are essential to improving the cost situation.

TWR:fd

attachment

After inspecting all samples, please fill in matrix below. Best score = 1; Worst score = 7. Duplicates are acceptable.

	REM. 700-BDL	RUGER M/77	REM. 700-ADL	W-W 70-XTR	W-W 70-FWT	BROWNING BBR	S&W 1500
Stock Appearance	2	3	6	4	1	5	7
Action Smoothness	5	3	6	4	2	1	7
Metal Finish	2	5	3	6	4	1	7
Extractor, Ejector, Locking System	1	4	2	5	5	3	6
Safety	4	2	4	3	3	1	5
* Accessory Parts (Grip Caps, Sights)	2 (2)	1 (3)	6 (5)	5 (5)	4 (4)	3 (1)	7 (6)
Best Overall wo Price	1	3	6	4	2	5	7
Best Overall with Price	1	1	2	4	3	5	6

* Number in Parenthesis is placement based on individual item scores above. Best overall W.O. and W. price reflect overall impression and other factors not identified as individual items.

COMMENTS:

COMPETITIVE BOLT ACTION RIFLE AUDIT 1981

PRICING INFORMATION

	<u>M/700 BDL</u>	<u>RUGER M/77</u>	<u>M/700 ADL</u>	<u>W-W 70-XTR</u>	<u>W-W 70FWT</u>	<u>BROWNING BBR</u>	<u>S & W 1500</u>
Suggested Retail Start '81	399.95	325.**	334.95	412.	433.	429.95	334.95 Std. 379.95 Deluxe
Retail Median Selling Price 6/81	315.	269.	250.	385.	433.*	400.*	255. Std 305. Deluxe

* Estimated

** 340. as of 6/1/81

Summary of advance funding to be requested.

3	Trigger Guard (BDL)	\$ 12,500.00
	Floor Plate (BDL)	7,500.00
	Scope Mount - Front (P/M)	24,400.00
1	Scope Mount - Rear (P/M)	16,400.00
	Scope Mount Rings (P/M)	12,000.00
4	Stock	58,100.00
2	Magazine Followers (3)	13,000.00
	Total	<u>\$144,000.00</u>

Cancellation charges included in the above total by component are as follows:

Trigger Guard	\$ 0.00
Floor Plate	0.00
Scope Mount - Front	14,430.00
Scope Mount - Rear	2,430.00
Scope Mount Rings	8,500.00
Stock	17,500.00
Magazine Followers	3,000.00
Total cancellation charges	<u>\$45,900.00</u>

Explanatory notes:

- o Advance authorization request includes:
 - 100% of tool design work
 - 30% of the total value of vendor tooling (cancellation charge)
 - 10% of machine costs (assuming cancellation within 2 - 3 months)

- o Included in the work-up on the Stock is:
 - \$11000 for the design and build of the first Master Stock
 - \$6000 for the development work required prior to building the steel former.
 - \$10,000 for the design and build of a new Grip Cap mold for the proposed ADL.

- o Certain assumptions have been made for the purposes of this work-up. They are:
 - Design on each component will be firm at the time it is transmitted and will not vary significantly from what has been estimated.
 - There will not be significant design changes between Trial and Pilot and production.
 - The current average lead times for machines, cutting tools, fixtures, and gages will remain stable.
 - The initial design and build of cutting tools will be done by Valeron in order to obtain the best deliveries.
 - Three quote requirement will be waived if necessary on critical tooling or machines.

TRIGGER GUARD - BDL

This component has been proposed as a steel investment costing replacing the die cast aluminum part used on the M/700 BDL.

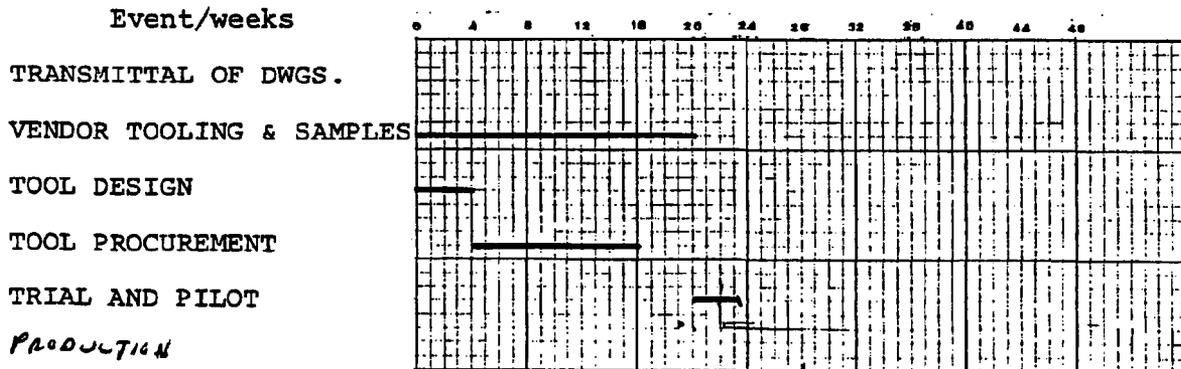
Assumptions:

- o Design of the steel component will be the same as the present aluminum Trigger Guard.
- o It will be run on the same machines as the present part. This group is currently burdened approximately 33%.
- o Current average lead times for machines, fixtures, cutting tools, and gages will remain stable.

Machining Operations	Vendor Tooling		Tooling	
	Tooling	Machines	design	build
C'sink screw holes			80	240
Mill clearance			213	636
Misc. drill and ream				
Totals in: hours			<u>293</u>	<u>876</u>
dollars	<u>\$6,000</u>		<u>\$6500</u>	<u>\$24,000</u>

ADVANCE AUTHORIZATION TO BE REQUESTED:

Tool Design	\$ 6500.00
Vendor Tooling	6000.00
Cancellation chg's	0.00
	<u>\$12500.00</u>



FLOOR PLATE - BDL

This component has been proposed as a steel investment casting replacing the die cast aluminum part used on the M/700 BDL.

Assumptions:

- o Design of the steel component will be the same as the present aluminum Floor Plate.
- o It will be run on the same machines as the present part. This group is currently burdened approximately 33%.
- o Current average lead times for machines, fixtures, cutting tools, and gages will remain stable.

Machining Operations	Vendor	Machines	Tooling	
	Tooling		design	build
Straddle mill front end			40	240
Form mill back			40	240
Profile undercut for Mag.Spg			40	240
Drill hinge pin hole			40	120
Totals in: hours			<u>160</u>	<u>840</u>
dollars	<u>\$4000.00</u>		<u>\$3500</u>	<u>\$23,100</u>

TRANSMITTAL OF DWGS

VENDOR TOOLING & SAMPLES

TOOL DESIGN

TOOL PROCUREMENT

TRIAL AND PILOT

	6	8	12	16	20	24	28	32	36	40	44	48
TRANSMITTAL OF DWGS												
VENDOR TOOLING & SAMPLES												
TOOL DESIGN												
TOOL PROCUREMENT												
TRIAL AND PILOT												

Advance authorization to be requested:

Tool Design	\$3500.00
Vendor tooling	4000.00
Cancellation chg.	0.00
Total	<u>\$7500.00</u>

SCOPE MOUNT - FRONT

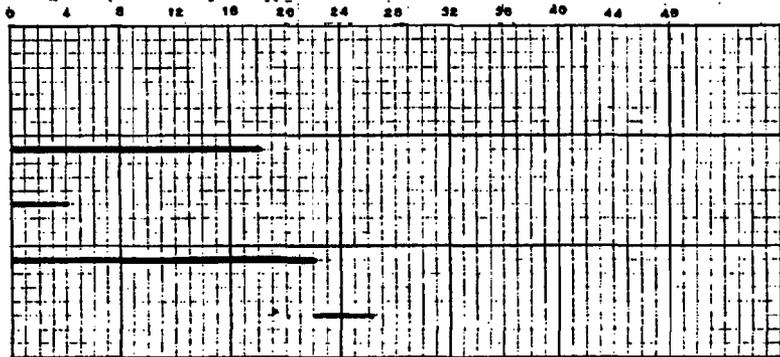
This component is proposed as a powder metal blank requiring secondary machining and finishing operations.

Assumptions:

- o Design of this component will be firm when transmitted and will not vary significantly from what has been estimated.
- o Initial order for form cutters will be placed with Valeron to assure the best delivery.
- o Current average lead times for machines, cutting tools, fixtures, and gages will remain stable.

Machining Operations	Vendor		Tooling	
	Tooling	Machines	design	build
		6 spindle		
Drill & c'bore mounting holes		drill press \$15000	70	210
Drill & tap 4 screw holes			90	270
Straddle mill		Plain mill \$35000	140	341
Form mill 1st side		Plain mill \$35000	80	240
Form mill 2nd side		Plain mill \$35000	80	240
Total in: hours			460	1301
dollars	\$8100	\$120,000	\$10000	\$36000

TRANSMITTAL OF DWGS.
 VENDOR TOOLING & SAMPLES
 TOOL DESIGN
 TOOL & MACHINE PROCUREMENT
 TRIAL AND PILOT
 ADVANCE AUTHORIZATION TO BE REQUESTED



Tool design	\$10,000.00
Vendor tooling - cancellation charge	2,430.00
Machines - cancellation charge	12,000.00
Total	\$24,430.00

SCOPE MOUNT RINGS

This component is proposed as a powder metal component requiring secondary machining and finishing operations. Two are required per set.

Assumptions:

- o Design of this component will not vary significantly from what has been estimated when it is transmitted.
- o Current average lead time for machines, cutters, fixtures, and gages will remain stable.

Machining Operations	Vendor	Machines	Tooling	
	Tooling		design	build
Drill (4) screw holes			70	210
Mill 1st side		plain miller \$35000	80	240
Mill 2nd side		plain miller \$35000	80	240
Totals in: hours			<u>150</u>	<u>690</u>
dollars \$4850		\$70,000	\$3300	\$19000

ADVANCE AUTHORIZATION TO BE REQUESTED:

Tool design	\$ 3300.00
Vendor tooling - cancellation	1500.00
Machine cancellation	7000.00
Total	\$11800.00

TRANSMITTAL OF DWGS.

VENDOR TOOLING & SAMPLES

TOOL DESIGN

TOOL & MACHINE PROCUREMENT

TRIAL & PILOT

	0	4	8	12	16	20	24	28	32	36	40	44	48
TRANSMITTAL OF DWGS.													
VENDOR TOOLING & SAMPLES													
TOOL DESIGN													
TOOL & MACHINE PROCUREMENT													
TRIAL & PILOT													

STOCK (ADL & BDL)

Assumptions:

- o Design of the Stock will be common for both ADL and BDL except for a wooden Fore-end Tip on the BDL.
- o Design will be firm when tooling and machines are ordered.
- o Design and build of the Remington special machines will be handled by outside houses.
- o Master Stock will be developed and built by R & D's N/C group.

Design and development	design	build
Master Stock	120	400
Former development at Ilion		220
Fabrication of steel former		180
Total in: hours	<u>120</u>	<u>800</u>
dollars	\$2600	\$22000

Machining Operations	Machines	Tooling	
		design	build
Drill sling swivel screw studs	Rem. Spec \$20000	200	
Machine Grip area (ADL only)	Rem. Spec \$25000	240	
Machine Grip area (BDL only)	Rem. Spec \$30000	300	
Checkering - develop new program		200	
New Grip Cap mold - ADL			370
Totals in: hours		<u>940</u>	<u>370</u>
dollars	\$75000	\$21000	\$10000

ADVANCE AUTHORIZATION TO BE REQUESTED:

Tool design & Machine design	\$23600.00
Cancellation charge (machines)	7500.00
Tool procurement (Grip Cap mold)	10000.00
Master Stock	11000.00
Development of Former	6000.00
Total	<u>\$58100.00</u>

EVENT/WEEKS	0	4	8	12	16	20	24	28	32	36	40	44	48
TRANSMITTAL OF DWGS													
VENDOR TOOLING & SAMPLES													
TOOL DESIGN													
TOOL & MACHINE PROCUREMENT													
TRIAL AND PILOT													

MAGAZINE FOLLOWERS

There are three Magazine Followers involved. They are being proposed as investment castings to a new R & D design.

Assumptions:

- o Design will be firm at the time an order must be placed.
- o Lead time for production quantities will remain stable.

Machining Operations

No secondary machining operations are necessary. The parts will follow the process for the present M/700 Magazine Followers which requires only finishing operations.

Vendor tooling

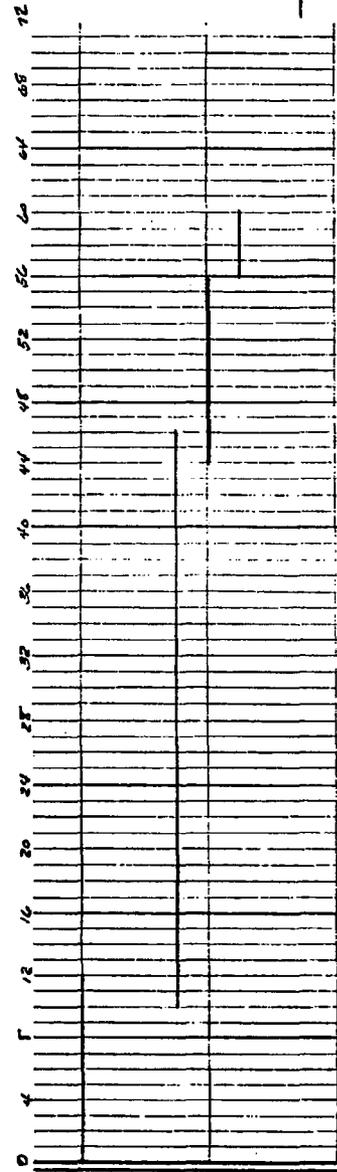
Three sets of vendor tools are required at \$3290.00/set. This amounts to a total of \$9870 or \$10,000.

ADVANCE AUTHORIZATION TO BE REQUESTED:

Vendor tooling	\$10,000.00
Cancellation charge	<u>3,000.00</u>
Total	\$13,000.00

EVENTS/WEEKS	0	4	8	12	16	20	24	28	32	36	40	44	48
TRANSMITTAL OF DWGS													
VENDOR TOOLING AND PARTS													
TRIAL AND PILOT													

BOLT ACTION CARBINE



EVENT WEEKS
 OBTAIN ADVANCE FUNDS
 START TOOL DESIGN (APPROX 4 WEEKS)
 PROJECT APPROVAL
 ACQUIRE TOOLING AND SPECIAL MACHINES
 TRIAL PILOT
 R&D VERIFICATION TESTING
 DESIGN AND/OR PROCESS REV. PRODUCTION TO WAREHOUSE

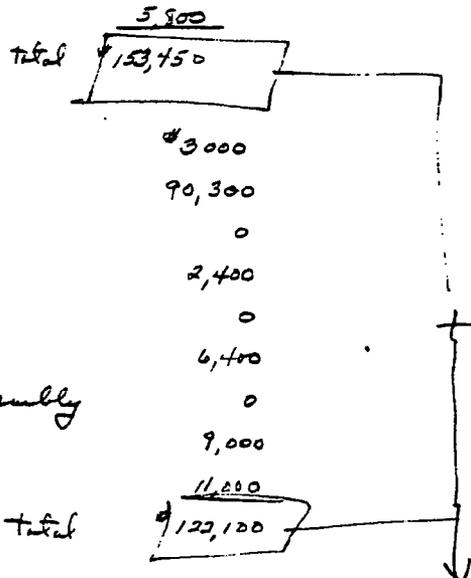
Hope to have complete economic ~~now~~ November

Explanatory Notes

- Cancellation charges are based on:
 - 30% of actual cost of vendor tooling if cancelled
 - 10% of machine cost if cancelled within the first month
- Total advance authorization request includes:
 - 100% of tool and machine design fees,
 - the total of the cancellation charges.
- Certain assumptions were made in the preparation of this write-up. They are:
 - Design will be firm when transmitted is made.
 - The three quote requirement will be waived on critical tooling if necessary to obtain best possible delivery.
 - The initial order for cutters will go to Talaron to assure best delivery
 - The present average lead times for machines and tooling will remain stable.
 - There will be no significant design changes between trial & pilot and production.
- Magazine Followers were estimated without quotations.

Summary of
Advanced Authorization Request and Cancellation Charge
For the Proposed Bolt Action Carbine.
Advance funding should be requested as follows:

Receiver	10,850
Stock & Stock Assembly	90,000
Floor Plate Assembly	6,500
Floor Plate Pad	8,000
Floor Plate Cover	18,600
Floor Plate Base	6,000
Floor Plate Cover Assembly	2,400
Magazine Followers	5,300
Misc.	5,800



Cancellation charges:

Receiver	\$3,000
Stock & Stock Assembly	90,300
Floor Plate Assembly	0
Floor Plate Pad	2,400
Floor Plate Cover	0
Floor Plate Base	6,400
Floor Plate Cover Assembly	0
Magazine Followers	9,000
Misc.	11,000

Total \$122,120

Total amount to be requested on advanced authorization

TOTAL \$275,550