

RESEARCH AND DEVELOPMENT PROJECT - FINANCIAL CLOSING NOTICE

PLANT - Bridgeport, Ilion & Lonoke PROJECT NO. - 81-00000
DIVISIONS - Firearms and Ammunition PLANT ORDER - 81-00000
Research, Engineering R&D,
Abrasive Products Research
and Powder Metal Research CLOSING NOTICE - 3-8-82
TITLE - Firearms and Ammunition Research Divisions, Engineering Research and Development, Abrasive Products Research and Powder Metal Research for 1981.

ACCOUNTING DEPARTMENT:

With the completion of the program for the year 1981, cost of the work budgeted under the above project should be closed as follows:

	<u>Authorized Amount</u>	<u>Expended 12-31-81</u>	<u>Percent Difference</u>
Improvement of Established Business	\$6,400,000	\$5,836,563	(8.8)
Exploratory Research	-	-	-
Total Technical Activities	\$6,400,000	\$5,836,563	(8.8)
Other Work	\$1,395,000	\$2,123,379	52.2
Total	\$7,795,000	\$7,959,942	2.1

APPROVALS:

D.E. McWhirt 3/19/82
Treasurer's Department Date

J.P. McAndrews 3/23/82
Research Department Date

c: J.P. McAndrews
E.F. Barrett
J.P. Glas
W.J. Thresher, Sr.
C.E. Erickson
D.E. McWhirt

FIREARMS RESEARCH DIVISION

<u>Project No.</u>	<u>Description</u>	<u>1981 Budget</u>	<u>Amount Expended 12-31-81</u>
<u>Improvement of Established Business</u>			
<u>Arms Design - Shotgun</u>			
B-1800	XSG & XPG Development Program	\$ 675,000	\$ 818,28
1900	M/870 Competition Trap	60,000	100,85
2000	Product Improvement	200,000	146,48
3050	Cost Reduction Programs	100,000	47,71
4050	21MM Seismic Exploration	60,000	55,63
5000	M/700-870 Spl. Slug		8,64
<u>Total Arms Design - Shotgun</u>		<u>\$1,095,000</u>	<u>\$1,177,61</u>
<u>Arms Design - Center Fire</u>			
C-0250	Preliminary Accuracy Study	\$ -	\$ 5,61
0300	New Calibers for C.F. Rifles	-	4,70
1700	M/7400 & M/7600 Development Program	150,000	381,66
1800	Product Improvement Program	135,000	184,56
1850	Bolt Action Carbine Styling Program	85,000	121,34
2000	Cost Reduction Program	90,000	4,46
2050	C.F. Fire Control Improvement Program	200,000	51,10
3000	C.F. Bolt Lock Improvement Program	75,000	16,76
3050	Model 788 Safety/Improvement Program	60,000	-
4000	Model 7 New Bolt Action Rifle	-	12,76
<u>Total Arms Design - Center Fire</u>		<u>\$ 795,000</u>	<u>\$ 782,99</u>
<u>Arms Design - Rim Fire</u>			
D-1100	Product Improvement Program	\$ 40,000	\$ 32,95
1250	Cost Reduction Program	20,000	7,23
1200	Model 6600 Development Program	-	542
<u>Total Arms Design - Rim Fire</u>		<u>\$ 60,000</u>	<u>\$ 40,73</u>

FIREARMS RESEARCH DIVISION

<u>Project No.</u>	<u>Description</u>	<u>1981 Budget</u>	<u>Amount Expended 12-31-81</u>
<u>Arms Design - General</u>			
E-0200	Misc. Exploratory Design Jobs	\$ 40,000	\$ 64,300
0300	Development of Fundamental Firearms Concepts	65,000	57,590
0750	Technical Computer Software Program Development	145,000	63,970
1000	Computer Techniques & Instrumentation for Measurement & Test Lab	75,000	34,920
1050	Consultant Investigation & Exploratory Studies	<u>25,000</u>	<u>-</u>
<u>Total Arms Design - General</u>		\$ 350,000	\$ 220,790
<u>Total Arms Design</u>		<u>\$2,300,000</u>	<u>\$2,222,150</u>
<u>Process & Material Research</u>			
F-0300	Investigation of New Process for Gun Parts	\$ 40,000	\$ 57,460
0500	Numerical Control New Technique Dev.	75,000	67,250
0650	Manipulator Application Program	90,000	25,600
0750	Four Slide Application Program	75,000	(7,920)
0800	High Energy Beam Application Investigation	80,000	17,030
0850	Deformation Process Investigation	45,000	59,470
0900	General Material Investigation	20,000	37,830
0950	XSG Process/Transfer Machine Investigation Program	50,000	145,720
RXI-63	Receiver Polishing	25,000	40,110
F-1100	Injection Molded Powder Metal	<u>-</u>	<u>54,940</u>
<u>Total Process & Material Research</u>		\$ 500,000	\$ 497,530

FIREARMS RESEARCH DIVISION

<u>Project No.</u>	<u>Description</u>	<u>1981 Budget</u>	<u>Amount Expended 12-31-81</u>
<u>Trap</u>			
L-0400	Traps	\$ -	\$ 235
<u>Total Traps</u>			
<u>Total Improvement of Established Business</u>			<u>\$2,719,920</u>
<u>Other Work</u>			
G-0150	Special Testing	\$ 10,000	\$ 29,899
0200	Technical Information & Service	35,000	70,249
0250	Misc. Work for Plant & Others	250,000	- 252,638
0300	Misc. Competitive Arms Evaluation & Work for Sales	75,000	72,171
0400	Research Service - Sales Promotion	35,000	33,882
0450	Plant Assistance on Current Remington Guns	175,000	127,304
1250	Gun Owner Guide Graphic & Layout	50,000	-
1450	Service to SAAMI	10,000	16,046
1500	Model Drawings & Parts List Maintenance	20,000	8,042
1550	Testing Assistance to Bridgeport Research	10,000	1,591
1660	Investigate Material & Packaging of Product	15,000	-
<u>Total Other Work</u>		<u>\$ 685,000</u>	<u>\$ 611,822</u>
<u>TOTAL FIREARMS RESEARCH DIVISION</u>		<u>\$3,485,000</u>	<u>\$3,331,742</u>

AMMUNITION RESEARCH DIVISION

<u>Project No.</u>	<u>Description</u>	<u>1981 Budget</u>	<u>Amount Expended 12-31-81</u>
<u>Improvement of Established Business</u>			
<u>Ammunition-New Products & Processes</u>			
81-12233	New Unibody Shotshell Process	\$ 660,000	\$ 778,839
12249	7mm-08 140 Gr. & 160 Gr. PSP	10,000	12,774
12252	Integral Anvil Battery Cup	145,000	137,437
12258	High Performance C.F. Ammo/Gun	5,000	1,339
12260	21MM Seismic Cartridge	100,000	130,285
12266	Degradable Wad	-	-
12268	New Component Wad	75,000	23,104
12269	20 ga. Steel Shot	5,000	2,678
12272	Remington Target Load	65,000	92,875
12273	357 Super Magnum	30,000	45,387
12274	7mm Bench Rest	25,000	50,205
12275	7mm Mauser 140 Gr. PSP	15,000	10,893
12276	Extended Range Shotshell	100,000	36,808
12277	Extended Range Center Fire	45,000	51,590
12278	22 Cal. Std. Vel. W/Match Bullet	-	-
12279	3" Rifled Slug - 1-1/8 Oz.	30,000	46,906
12280	Spatterless Bullet - R.F.	5,000	2,265
12281	Center Fire Modernization	50,000	31,601
12282	Material Cost Reduction	-	-
12283	Electric Primer	-	-
12284	Scorpion	15,000	23,264
12285	22 Win. Mag.	30,000	3,782
12286	38/357 - 125 Gr.	15,000	3,412
12287	257 Roberts	20,000	2,183
<u>Total Ammo - New Products & Processes</u>		<u>\$1,445,000</u>	<u>\$1,487,630</u>

AMMUNITION RESEARCH DIVISION

<u>Project</u> <u>No.</u>	<u>Description</u>	<u>1981</u> <u>Budget</u>	<u>Amount</u> <u>Expended</u> <u>12-31-81</u>
<u>Improvement of Established Business - Cont'd</u>			
<u>Improvement to Products & Processes</u>			
81-11059	Ballistics Research	\$ 85,000	\$ 26,148
11062	Improved Ballistic Test Facilities	70,000	86,923
11092	Process Safety - Primers	125,000	100,033
11093	Asbestos Elimination	50,000	82,538
11094	Polymer Improvement Program	125,000	109,957
11095	1024 Primer Mix - R.F.	-	-
11096	Wax Application - R.F.	5,000	95
11097	C.F. Muzzle Flash	-	-
11098	C.F. Primer Improvement	15,000	3,728
11103	Long Range S.S. Improvement	80,000	23,558
11104	Current S.S. Product Improvement	65,000	107,057
11105	117X A Primer	20,000	126,636
11106	Target Load Recoil	15,000	13,799
11107	Primer Manufacture Automation	45,000	-
11108	Primer Basics	70,000	118,275
11109	RTL Wad Cost Reduction	55,000	170
11110	Primer Assembly	40,000	727
11111	21MM Cost Reduction	30,000	-
<u>Total Impr. to Products & Processes</u>		<u>\$ 895,000</u>	<u>\$ 799,644</u>
<u>Total Improvement of Established Business</u>		<u>\$2,340,000</u>	<u>\$2,287,274</u>
<u>Other Work</u>			
81-14009	Assistance to SAAMI	\$ 10,000	\$ 3,102
14016	Assistance to Legal	1,000	-
14017	Assistance to Public Relations	1,000	166
14018	Assistance to Customer Service	4,000	375
14019	Assistance to Marketing	25,000	26,442
14020	Assistance to Plant	74,000	65,935
Misc. Plant Work - PSH		5,000	120,859
<u>Total Other Work</u>		<u>\$ 120,000</u>	<u>\$ 216,879</u>
<u>TOTAL AMMUNITION RESEARCH DIVISION</u>		<u>\$2,460,000</u>	<u>\$2,504,153</u>

ENGINEERING RESEARCH & DEVELOPMENT

<u>Project No.</u>	<u>Description</u>	<u>1981 Budget</u>	<u>Amount Expended 12-31-81</u>
<u>Improvement of Established Business</u>			
71-03979	Auto Primer Assembly	\$ 100,000	\$ 16,00
03982	Component Handling Systems	10,000	24,10
03992	Shotshell Mechanization Study	40,000	18,58
03994	Shotshell Assembly Study	115,000	(10,54
03999	Equipment Analysis - New Ammo Products	10,000	2,51
04003	One-Piece Shotshell Body Mfg. Equip.	200,000	363,12
04004	Machine Signature Analysis	40,000	14,17
04006	Paper Covered Flash Hole S.S. Primer	-	(190,48
04007	R.F. Autoloader Defect Detection System	34,000	56,61
04008	One-Piece S.S. Body - Semi-works Equip.	50,000	61,58
04009	21mm Seismic Round - Electric Primer	30,000	24,38
04010	Shotshell Cut Down Inspector	-	17,96
04011	Shotshell Assembly	-	85,62
71001	General Surveys	30,000	29,93
72-05003	C.F. Equipment Improvement Plan	-	11,09
05004	Duplex C.F. Bullet Assembly	-	1,52
05006	Progressive Shell Draw (C.F.)	100,000	29,36
71-3990	New "RXP" Process	-	(3,32
	Provision for Probable Projects	<u>151,000</u>	
<u>Total Improvement of Established Business</u>		<u>\$ 910,000</u>	<u>\$ 552,30</u>
<u>Other Work</u>			
5200-9312	Cope/Machamer & Staat	\$ -	\$ 137,79
51-30350)	Assist to Bridgeport	20,000	3,39
51-30837)			
52-11121	Assist to Lonoke	20,000	5,46
51-30475	Shellmaker Modification	-	43,76
61-04931	Shotshell Load & Pack Optimization	50,000	166,08
62-00024	S.S. HiSpeed Load & Pack-Mfg. Equip.	-	14,92
62-00048	S.S. Feeder Printer	-	36,21
61-04945	21mm Seismic	-	24,81
62-00051	Center Fire Modernization	-	213,54
61-04940	Paper Covered Primer Flash Hole	-	274,14
62-04940	Paper Covered Primer Flash Hole	-	52,53
	Provision for Probable Projects	<u>500,000</u>	<u>322,00</u>
<u>Total Other Work</u>		<u>\$ 590,000</u>	<u>\$1,294,67</u>
<u>TOTAL ENGINEERING RESEARCH & DEVELOPMENT</u>		<u>\$1,500,000</u>	<u>\$1,846,97</u>

ABRASIVE PRODUCTS RESEARCH

<u>Project No.</u>	<u>Description</u>	<u>1981 Budget</u>	<u>Amount Expended 12-31-81</u>
<u>Improvement of Established Business</u>			
81-52101	Diamond Impregnated TC Coating	\$ 35,000	\$ 5,374
<u>Total Improvement of Established Business</u>		\$ 35,000	\$ 5,374
<u>TOTAL ABRASIVE PRODUCTS RESEARCH</u>		\$ <u>35,000</u>	\$ <u>5,374</u>

POWDER METAL RESEARCH

<u>Project No.</u>	<u>Description</u>	<u>1981 Budget</u>	<u>Amount Expended 12-31-81</u>
<u>Improvement of Established Business</u>			
F-0200	Alloy Development	\$ 110,000	\$ 96,692
0450	P/M Basic Research	164,000	138,170
0500	New Alloy	41,000	36,833
<u>Total Improvement of Established Business</u>		\$ 315,000	\$ 271,695
 <u>TOTAL POWDER METAL RESEARCH</u>		 <u>\$ 315,000</u>	 <u>\$ 271,695</u>

SUMMARY
1981 EXPENDITURES BY CLASS

	<u>Firearms Research</u>	<u>Ammunition Research</u>	<u>Engineering R&D Bridgeport</u>	<u>Abrasive Products Research</u>	<u>Powder Metal Research</u>	<u>Total Expended</u>	<u>Total Authorized</u>
Improvement of Established Business	\$2,719,920	\$2,287,274	\$ 552,300	\$ 5,374	\$ 271,695	\$5,836,563	\$6,400,000
Exploratory Research	-	-	-	-	-	-	-
Total Technical Activities	\$2,719,920	\$2,287,274	\$ 552,300	\$ 5,374	\$ 271,695	\$5,836,563	\$6,400,000
Other Work	611,822	216,879	1,294,678	\$ -	\$ -	\$2,123,379	\$1,395,000
Totals	\$3,331,742	\$2,504,153	\$1,846,978	\$ 5,374	\$ 271,695	\$7,959,942	\$7,795,000

Jo LaScala

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER
KINZER V. REMINGTON

R2512888