

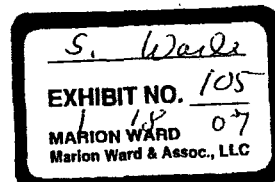
Firearms Project Summaries

Revised: 10/12/95

Project	Status/Summary	Schedule	Completion
M/700 Improvements	Sensitivity test is continuing. Five prototype and five current production fire controls are at HP White Laboratories for environmental testing. Design acceptance testing is rescheduled until the week beginning December 4, 1995 to allow for new prototypes to be built.	Revised	TBD
M700 IL	Overall, the development portion of the project is on schedule. The drawing package has been transmitted to Hion. The first draft of the instruction book has been distributed in review. Competitive lock time measurements have been completed.	On Schedule	01/11/96
NALRR	Finalized rear sight layout and receiver/stock interface with marketing. Received hammers and link return springs. Prototype assembly is still on schedule for 12/1/95. Prototypes will not include rear sight assemblies.	Revised	12/01/95
M/700 VS EV	Two (2) completed prototypes were tested for accuracy at Lonoke with good results. To date 250 rounds fired, successfully in the firearm. Accuracy testing resulted in .5 to .75 inch groupings. Testing will move to Hion where the original accuracy test was performed. This will provide a more comprehensive comparison between the 700 varmint and the 700 varmint electronic rifle.	Two weeks late	10/16/95
M/870 H.D.	Overall the project is on schedule. The initial mechanical drawing package for the M/870 H.D. is complete and parts have been ordered and part received and checked. WPI Magnetec Inc. our second vendor for a custom latching solenoid has received an indemnification statement, and product specification. Anticipated delivery date for a solenoid prototype is November 15th.	12/15/95	12/29/95
Biodegradable Target	Canmerzell received body consisting of 3 different moistures (5%, 10%, 15%). Only the body and 5% moisture will be used. The entire 600 lb. of mixture was too fine, and the moisture content on the other two were too low. Approximately 800 targets should be shipped by the end of the week. Also, a Winchester thrower was received from Lonoke on Tuesday.	TBD	TBD

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Project Name: M/700 Improvements

Revised: 10/12/95

Project Manager: Edward Ford
Technical Lead: David Findlay

Marketing Manager: Jay Hinting
Plant Contact: Joe Mead

Abstract:

Status/Summary	Schedule	Completion
Sensitivity test is continuing. Five prototype and five current production fire controls are at HP White Laboratories for environmental testing. Design acceptance testing is rescheduled until the week beginning December 4, 1995 to allow for new prototypes to be built.	Revised	TBD

Accomplishments Since Last Revision:

1. Five new safety detent springs have passed 50,000 cycles with no part breakage.
2. Twenty safety retaining clips made to the current clip profile but with AISI 6150 are complete and ready for heat treat and plating.
3. Five prototypes and five current production fire controls are at HP White Laboratories.
4. Sensitivity test is continuing.

Areas of Concern:

1. Testing still incomplete.

Current Activities:

Action Item	Status	Responsible	Date
1. Sensitivity Test	In progress.	Development Team	TBD
2. Environmental testing.	10 guns at HP White Laboratories.	J. Snedeker	10/20/95

Schedule / Key Milestones:

Milestone	Original Date	Current Date
Design Acceptance Testing Complete	9/15/95	TBD
Transmittal	9/22/95	TBD

Project Name: In-line Blackpowder

Revised: 10-12-95

Project Manager: Nick Sachse
Technical Lead: Nick Sachse

Marketing Manager: John Ballo
Plant Contact: Jim Rabbia

Abstract:

Status/Summary	Schedule	Completion
Overall, the development portion of the project is on schedule. The drawing package has been transmitted to Ilion. The first draft of the instruction book has been distributed for review. Competitive lock time measurements have been completed.	On Schedule	11 January 96

Accomplishments Since Last Revision:

1. Completed the first draft of the Instruction Book and distributed for evaluation and legal review.
2. Have completed lock time testing on competitive products. The results are: Remington-3ms, Knight-9ms, TC-14ms, CVA-11ms, Traditions-17ms

Areas of Concern:

1. A decision to proof test rifles in manufacturing could hinder production start up dates while an efficient and effective methodology to accomplish this is being developed.
2. The Remington projectiles will have to perform to standards the first time they are shot in late October to meet the January 1st deadline for getting the loading chart in the owners manual and for showing to the outdoor writers.

Current Activities:

Action Item	Status	Responsible	Date
1. Field Service Manual first draft.	Being Done	Sachse	10-31
2. Review 1st draft of Instruction Manual	Out for review	Team	10-31
3. Manufacture 15 (minimum) production prototype rifles.		Rabbia, McKee	10-15

Schedule / Key Milestones:

Milestone	Original Date	Current Date
Owners manual and field service manual complete.	1-1-96	1-1-96
Destructive testing complete.	12-1-95	12-1-95
Loading chart complete.	12-1-95	12-1-95

Project Name: NALRR

Revised: 10/12/95

Project Manager: Edward Ford
Technical Lead: Michael KeeneyMarketing Manager: John Ballo
Plant Contact: John Aldrich**Abstract:**

Status/Summary	Schedule	Completion
Finalized rear sight layout and receiver/stock interface with marketing. Received hammers and link return springs. Prototype assembly is still on schedule for 10/12/95. Prototypes will not include rear sight assemblies.	Revised	12/01/95

Accomplishments Since Last Revision:

1. Finalized rear sight layout.
2. Finalized receiver/stock interface layout.
3. Finalized front sight bend geometry.
4. Altered trigger housing to eliminate flat on bottom of trigger bow.
5. Assembled magazine latch, magazine latch spring, latch pivot pin, and release button. Redesigned magazine latch spring to increase return force.
6. All detail drawings complete with the exception of the bolt, receiver and housing. Bolt, receiver and housing drawings are being updated to reflect changes requested by marketing.

Areas of Concern:

1. Kinematic analysis of fire control with new components needs to be started.
2. Trigger pull - target 5 lbs.
3. Trigger regain.
4. Magazine box - feed lip geometry.

Current Activities:

Action Item	Status	Responsible	Date
1. Drawing package	Blank drawings required based on process sequence.	M. Keeney G. Barnes	12/01/95
2. Updating rear sight component model.	Finalized rear sight layout. Updating component model and detail drawings.	M. Keeney V. Vernani	10/13/95
3. Housing modifications.	Completed.	M. Keeney D. Ortenzi	10/13/95
4. Receiver / Stock cosmetics.	Finalized receiver/stock interface. Altering current prototype receivers to approved layout.	M. Keeney J. Ballo	10/20/95

Schedule / Key Milestones:

Milestone	Original Date	Current Date
Prototype Build	08/30/95	10/12/95

Project Name: M700 VS SF EV

Revised: 10-12-95

Project Manager: W. James
Technical Lead: J. RonkainenMarketing Manager: J. Bunting/S. Dwyer
Plant Contact:**Abstract:**

Status/Summary	Schedule	Completion
Two (2) completed prototypes were tested for accuracy at Lonoke with good results. To date 250 rounds fired successfully in the firearm. Accuracy testing resulted in .58 to 1.15 inch groupings. Testing will move to Ilion where the original accuracy test was performed. This will provide a more comprehensive comparison between the 700 varmint and the 700 varmint electronic rifles.	Two weeks late	10/16/95

Accomplishments Since Last Revision:

- Two (2) additional prototypes built.
- 250 rounds successfully fired in the firearm.
- Accuracy testing performed at Lonoke.
 - Accuracy shot at 100 yards
 - Shooter - Jim Ronkainen
 - Ammunition: Experimental 22-250 electrically primed

Gun S/N	Group 1	Group 2	Group 3	Average	SD
S6277540	0.82	0.58	0.84	0.75	0.14
S6279095	0.75	0.43	0.95	0.95	0.20

Areas of Concern:

- The conductive ammunition schedule does not provide time for alterations of either design (Primer or Firearm). Overall properties of the conductive mix is not fully understood. (see: #9 1/2 primer status)
- Electronics may be damaged if a defective or shorted round is fired. Electronic modifications required.
- Movement of the "button" in the primer which serves as the electronic contact/interface for the firing pin electrode causes significant changes in the primer resistance.

Current Activities:

Action Item	Status	Responsible	Date
1. Test Prototype	Complete	Ronkainen/Dave	9/27/95
2. Build Additional Prototypes	Complete	Ronkainen/Dave	10/6/95
3. Accuracy Testing	Complete	Ronkainen/Dave	10/11/95
4. Ship to Marketing	Performance evaluation (executive review)	Danner	10/13/95
5. Writers Conference	Ship for Outdoor Writers Conference	Team	10/16/95

Schedule / Key Milestones:

Milestone	Original Date	Current Date
First Prototype Complete	9/1/95	9/27/95
Test Prototype	9/15/95	10/11/95

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Project Name: 9 1/2 Primer

Revised: 10/12/95 4/31/2006

Project Manager: W. James
Technical Lead: Spence WildmanMarketing Manager: J. Dwyer
Plant Contact: T. Douglas

Abstract:

Status/Summary	Schedule	Completion
Preliminary testing of handloaded 22-.250 cartridges with conductive mix electric primers using two modified Model 700 rifles is complete. Reviewing results of firing 250 rounds in electric varmint. Demonstration to a group of outdoor writer's will be arranged at a later date. A new more reliable and manufacturable primer design has been conceived.	10/1/95	TBD

Accomplishments Since Last Revision:

1. Testing of 150 rounds in two modified Model 700 rifles was conducted with a very low frequency of gas leakage and misfires.

Areas of Concern:

1. Overall properties of the conductive mix not fully understood.
2. Insulator (ammunition) sealing at average pressure of 60,000 psi.
3. Cup internal volume is too small to hold mixture securely.
4. Extended function and accuracy testing not yet completed.
5. Unexplained misfires
6. Primer design not manufacturable.

Current Activities:

Action Item	Status	Responsible	Date
1. New primer design under study	CAD drawings being compiled, component arrangements being analyzed	Wildman/D. Ronkainen	10/27/95
2. Firearm Testing-function and accuracy	Two rifles modified, function and accuracy in progress	J. Ronkainen/D. Wolterman	10/15/95
3. Procure primer insulators	500 on order	D. Ronkainen	10/17/95

Schedule / Key Milestones:

Milestone	Original Date	Current Date
Firearm Testing-function and accuracy 400 rounds	10/1/95	10/11/95
Writer' Conference demonstration	10/20/95	TBD
Test new primer design	11/8/95	11/8/95

Project Name: M870 H.D.

Revised: 10-12-95

Project Manager: W. James
Technical Lead: D. Findlay

Marketing Manager: J. Hunting
Plant Contact:

Abstract:

Status/Summary	Schedule	Completion
Overall the project is on schedule. The initial mechanical drawing package for the M870 H.D. is complete and parts have been ordered. Some part received and checked. WPI Magnetec Inc. our second vendor for a custom latching solenoid has received an indemnification statement and product specification. Anticipated delivery date for a solenoid prototype is November 15th.	12/15/95	12/29/95

Accomplishments Since Last Revision:

1. Prototype parts were sent to outside vendor for checking. Some parts will be reworked.
2. Next review for Oak Grigsby's custom solenoid is schedule for October 20th.
3. The legal language has been work out with Remington's Legal Department and WPI (solenoid vendor), agreement statement received from WPI.

Areas of Concern:

1. Oak Grigsby, our secondary vendor for a custom solenoid design, is planning their design to incorporate an magnetic detent. We do not expect this design to hold as well as WPI's (mechanical detent) during the drop test.

Current Activities:

Action Item	Status	Responsible	Date
1. Procurement of parts	Receive parts have critical dimensions checked	James/D. Findlay	complete
2. Finalize Drawings	Some drawing alterations will be necessary.	D. Findlay	10/15/95
3. Review Solenoid	Review solenoid design with WPI Magnetec, Inc.	Team	10/20/95
4. Test electronic boards	Functional testing underway, some minor board layout alterations may be necessary	D. Wolterman	10/15/95
5. Indemnity statement	Secure signatures associated with indemnification agreement	W. James	complete

Schedule / Key Milestones:

Milestone	Original Date	Current Date
Component Verification (electro-mech. device)	8/30/95	TBD
Verification model complete	12/16/95	11/15/95

Project Name: Biodegradable Targets**Revised: 10/12/95****Project Manager: Valerie Goldberg**
Technical Lead: Old Hickory**Marketing Manager: Art Wheaton**
Plant Contact: None**Abstract:**

Status/Summary	Schedule	Completion
Cammerzell received body consisting of 3 different moistures (3%, 10%, 15%). Only the body at 15% moisture will be used. The entire 800lb. of mixture was too fine, and the moisture content on the other two were too low. Approximately 800 targets should be shipped by the end of the week. Also, a Winchester thrower was received from Lonoke on Tuesday. Issues for mounting the thrower are still being investigated.	TBD	TBD

Accomplishments Since Last Revision:

1. Target body being pressed at Cammerzcell.
2. Draft test plan being written.
3. A Winchester trap machine has been received at E-Town and will be on loan to until March '96.

Areas of Concern:

1. Homogeneity of the target.
2. End product cost. Raw materials cost look good, but processing significantly different than current.
3. Controlling moisture content of targets is critical.

Current Activities:

Action Item	Status	Responsible	Date
1. Pressing of 200lb. of mix.	Should be shipped to E-town by the end of the week	Cammerzcell	10/13/95
2. Obtain strength test materials	Samples need to be tested at Old Hickory lab.	Schluckebier, Schneider	10/13/95
3. FEA Mesh models	Underway	Franz, Davidson	TBD
4. Test trap acquisition	Trap has been received.	Schneider	10/10/95
5. Test Plan	Draft test plan being authored.	Goldberg	10/13/95
6. Kinematic Analysis	Waiting for mesh completion	Franz, Davidson, Schluckebier	TBD

Schedule / Key Milestones:

Milestone	Original Date	Current Date
Design Complete	TBD	TBD
Design Acceptance/Test	TBD	TBD