

CLASSIFIED - CONFIDENTIAL

Copies to:

G. O. Clifford
G. R. McCormick
G. L. Smith
E. A. A. Kentschel
T. R. Kinraide
E. K. Wheat
M. H. Smith
J. Hammond

R. M. Smith
G. L. Fuller
R. H. Grace
W. Holloway
P. B. Rutherford
S. M. Alvis
K. J. Lowe

REC. R. A. A. H.
SEP 27 1945

ACTIVITIES OF THE ARMS DIVISIONTECHNICAL DEPARTMENTTHIRD QUARTER, 1945

This document contains information affecting the national defense of the United States within the meaning of the Espionage Act, 50: U. S. C. 31 and 32, and is prohibited. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

C O N T E N T SCategory B and C Projects

<u>Project Number</u>	<u>Title</u>	<u>Page</u>
FTS-3483	Model 721, Bolt Action High Power Rifle	1
FTS-3484	Model 760, Slide Action Center Fire Rifle	2
FL-3122	Model 740, Autoloading High Power Rifle	2
FTP-3428	Model 851, Autoloading Shotgun	3
TM-3313	Model 550, Autoloading Rim Fire Rifle - Improvement to Functioning	3
FTP-3414	Model 552, Tubular and Model 540 Box Magazine .22 Caliber Rifle	4
TS-3487	Lower Cost Single Shot .22 Caliber Rifle	4
RI-174	New Type Cement Kiln Gun	5
TP-3430	Modification of U. S. Rifle M/1 (Paratrooper's)	5
TP-3417	Sabot Projectiles	6
TP-3446	.30 and .50 Caliber Machine Gun Barrels	6
TS-3465	Commercial Draw Rifling	7
K-3030) TM-3328)	Rite Flite Trap and Magnetic Release Rite Flite Trap	7
TP-3403-9	Induction Heating Equipment	8
TP-3403-11	Cold Test Equipment	8
TP-3403-12	Surface Peening	9
TP-3403-13	Mann Barrel Equipment	9
TP-3403-16	Cutting Oil Cooling and Filtration	9
TP-3403-17	Study of Free-Machining Materials	10
TS-3486	High Speed Carbide Milling	10
TM-3355	Precision Casting Process	11
TP-3445	Low Cost Finishing Methods	11

Category A

TS-5801	Technical Assistance to Plant	12
TS-5901	Technical Assistance to Plant - Current Arms Models	12
Active Projects for Which No Detailed Report is Made at This Time		13
Inactive Projects		13
Projects in Process of Being Closed		13

ACTIVITIES OF THE ARMS DIVISIONTECHNICAL DEPARTMENTTHIRD QUARTER, 1945

Project: Model 721, Bolt Action High Power Rifle - FTS-3483
Personnel: M. H. Walker, Design Section; M. H. Smith, A. Travostino, S. H. Quist,
 L. F. Mitchell, P. F. Henriksen
Authorized Amount: \$71,100 Total Expended to Date: \$40,847

Nature of Problem:

Development of a low cost high power rifle to take the place of the present Model 720.

Progress from Inception:

A design was conceived and built in which the objective of simple parts was met very successfully. Twenty-three of the fifty parts are blank and form operations or springs which can be furnished by vendors specializing in this field. Basic process records have been written for the remaining twenty-seven parts, which are being reviewed by a committee representing Design, Tool Design, Estimating, and Production Engineering of the Technical Department. In processing the gun, operations little used at Ilion, such as internal broaching, rise and fall milling, induction brazing, swage rifling, and automatic machine finishing of barrels, are planned. The recommendations of the Arms Study Processing Report are being given careful consideration.

This Quarter's Work:

Work on the .30-06 head size extractor has been completed except for a function test, which will be completed along with the additional calibers. The new extractor will lift approximately twice the load of the old claw type extractor (about 300 pounds, the load at which the case rim shears). 30,000 operations on the equivalent of a steel case rim failed to wear the extractor appreciably or to affect its function. Barrels for the additional calibers are ready and will be assembled to the actions as soon as bolt heads for the new extractor are installed. The stock design has not, as yet, been approved by the Arms Products Committee. Two stocks according to the latest specifications are being fabricated and probably will be submitted to the Arms Products Committee before October 1.

With the closing of military work, personnel became available about the middle of August for further work on processing the 721. The process for the stock is ready to start tool design. Proposals are being received on machines for manufacture of the barrel and receiver. Vendors are being sought for manufacture of purchased parts.

Proposed Next Quarter's Work:

Complete and secure approval of Products Committee on stocks. Complete and test .300 magnum extractor. Make tests with defective ammunition and install new barrels for functional testing for 30-06, .270, and .257 calibers.

Complete processing all parts. Procure samples of purchased parts. Start tool design. Procure some machine tools for Pilot Shop.

Nature of Problem:

The design of traps that are more economical than those in our present line, and a magnetic release for use with these traps.

Summary of Progress from Inception:

Models of the trap and release have been completed. Detail design of alterations to eliminate rapid wear between pawl and trigger has been made, including improvement in the basic design through the elimination of looseness in the head at the cocked position.

This Quarter's Work:

Some new parts were made up, and a model was assembled and demonstrated to various members of the Sales Department at the Lordship Club in Bridgeport. A revised project has been submitted to cover the remaining work.

Proposed Next Quarter's Work:

A report will be prepared to show comparison of Rite Elite traps with similar models by competitors. This has been requested for the purpose of making a sales forecast.

Project: Induction Heating Equipment - TP 3403-9

Personnel: C. F. Benner

Authorized Amount: \$500

Total Expended to Date: \$315

Nature of Problem:

To procure new induction heating equipment and dispose of old equipment.

Summary of Progress from Inception:

A project was submitted and approved for a 30 KW. Unit; and the unit has been ordered, delivered, and installed.

This Quarter's Work:

Included above.

Proposed Next Quarter's Work:

Place the new machine in operation and, after gaining experience in its use, set up production work on the machine.

Project: Cold Test Equipment - TP-3403-11

Personnel: H. C. Moss

Authorized Amount: \$300

Total Expended to Date: \$322

Summary of Progress from Inception:

A perspective drawing was made and a supplier contacted for a quotation on equipment.

This Quarter's Work:

A project to purchase equipment was written and circulated.

Proposed Next Quarter's Work:

None