

December 3, 1946

TO: P. B. Kalkreuth

FROM: W. B. Walker

SUBJECT: THEORETICAL UNSAFE CONDITIONS OF M/722 SAFETY

Straight calculation of the amount the Safety lifts the Bear off the Trigger gives a max. lift of .0147" and a min. lift of ~~higher~~ .0021". However, fourteen (14) different dimensions are used in the calculation. The actual amount of lift by statistical analysis would be a max. of .009" and a min. of .0032".

Objections have been raised to the above theoretical unsafe condition. According to L. T. Murphy, the necessary dimension changes at the Bear to eliminate this condition can be made without changes to tooling or gaging. With a minimum lap of .026" between Bear and Firing Pin head the change can be made by changing the depth of grind on the Bear notch.

This change will be incorporated in the drawing as soon as tool procurement is completed.

*W. B. Walker*  
W. B. Walker,  
Design Section,  
Arms Technical Division

MHV:LJ

AS 0031916

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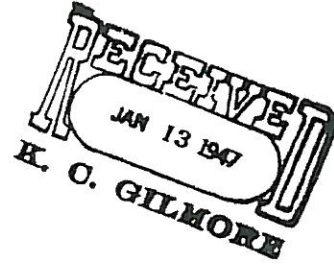
CC: H. A. Brown) In  
S. L. Alvis) Turn  
H. J. Backman

January 13th, 1947

TO: K. C. Gilmore  
R. H. Grace  
J. Hammond  
E. B. Rutherford  
R. M. Smith

FROM: V. G. DeReus

SUBJECT: MODEL 721 PROJECT REVIEW



Up to the present time we have been verbally discussing and estimating the costs on the Model 721-722 (five calibers) to complete the work required. A request has now been made for the Wilmington Estimating Group to visit the Technical Department for the purpose of reviewing the FD-721 Project - particularly with reference to over-runs.

In the reports submitted to date, we have indicated an over-run of approximately \$4000 in the Gun Design Section - \$3000 of which was the amount expended on the design of Fire Controls resulting from the question of patent infringement.

In the case of Specifications, we have estimated an over-run of \$1500 which is the result of the change for scrap on the first lot of barrel steel on which a 20% scrap developed.

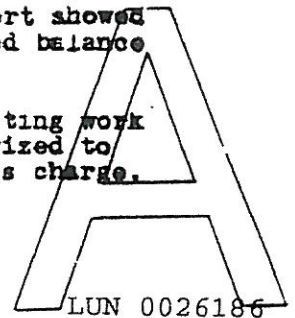
An estimated \$19000 over-run has been used for Tool Design, Tool Design Revisions and Tool Revisions.

No estimated over-run has been submitted to date for Process Engineering, Trial Run and Pilot Operations. However, on a quick review with W. Gregg on Thursday, January 9th, it was indicated to him that there would be an approximate over-run in the amounts shown below:

Process Engineering	\$ 13000 (Dec. 29 Report showed an over-expenditure of \$3740).
Trial Run	\$ 3100 (Dec. 29 Report showed an unexpended balance of \$3100).

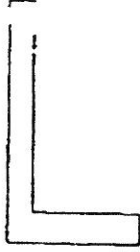
In addition, we were authorized to complete Design and Testing work on the Double Sear by G. O. Clifford. We have been authorized to over-run the Project in the amount of \$10,000 to cover this charge. This is covered in a separate letter.

*120 - No over-run necessary*



REM 0094849

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DAILY PROGRESS REPORT

SUBJECT M/721 Pilot Line Inspection

Data 4/9/47

There is evidence from the functioning of the above mentioned guns that the Connector, Safety Cam and Seat are not within design limits. This situation can be very dangerous from a safety and functional point of view and the existing condition has caused the following listed malfunctions to occur in several guns that were inspected:

1. Firing Pin moves forward during the bolt locking cycle.
2. Possible to fire the gun by pushing the Safety to the "off" position.
3. Occasionally the firing pin moves forward during the bolt locking cycle.

From the inspection standpoint, situation #3 should be considered the most dangerous in that the malfunction might not occur during the relatively few cycles that the gun would be functioning during inspection.

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M. E. Leek  
Test Engineer

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The Type II proposal has the advantage similar to Type I of eliminating the safety operation.

The economics of each trigger type are as follows:

	Present Design	Proposed Type I	Proposed Type II	Proposed Type III
Expenditures to Date	-----	(\$3,000 on all Proposed Design)		
Expenditures to Complete	-----	\$21,300.	\$ 7,800.	\$12,900
Standard Material	\$30.588/100	\$34.105/100	\$34.038/100	\$29.358/100
Standard Labor	\$25.268/100	\$27.262/100	\$29.238/100	\$25.565/100

RECOMMENDATIONS

In view of the lack of additional complaints covering the question of the Model 721 firing when moving the safe to the "off" position and the inability to duplicate the complaints received from the field, we recommend that action be considered as follows:

1. Consideration be given to maintaining the current M/721 trigger "as is".
2. If a change is to be made to eliminate any remote theoretical possibility of the gun firing when moving the safe to the "off" position, we consider type I which in our opinion is the best design. Its disadvantages lay in the high expenditure required to make the conversion.
3. Consideration of the Type III design for the lowest product cost with adequate safety.
4. Last, the consideration of the Type II design. A "hard safety" would always be prevalent in this version as well as high product cost. This design is presented primarily to give Sales an opportunity to maintain their advertising feature of the safety blocking the firing pin.

*D. S. Foote*  
 D. S. Foote  
 Design Unit  
 Ames Technical Division

DSJ:K.  
 S/:E:MS

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CC: D. S. Foote  
B. H. Alvis  
H. W. Young

August 16, 1948

TO: M. A. Brown  
FROM: M. H. Walker  
SUBJECT: REVISIONS TO SAFETY DESIGN

One modification of the M/721 Safety uses a trigger block in addition to the present design. This is accomplished by providing a boss on the rear of the trigger to hold an adjusting screw with a lock nut. When the Safety is "on", the end of this screw is contacted by a projection on the Safety effectively blocking the trigger.

Tooling-wise the parts affected are these:

1. Trigger

A boss with a drilled and tapped hole must be provided. As now toolled this would mean a change in the blanking die and a change in the cold forming die, with tooling provided for drilling, counterboring and tapping.

2. Safety

A projection must be added with a surface which is a radius about the pivot hole. Changes to the blanking die would be necessary plus possibly a means provided for finishing the radius after the hole is drilled. Changes to the bending die may be necessary.

3. Trigger Guide Flats

It is necessary to lengthen the slot in the Trigger Guide Flats to provide clearance for the new Trigger.

4. Safety Adjusting Screw and Lock Nut

These are added parts.

PLAINTIFF'S  
EXHIBIT  
3078

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1 of 2

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington

PETERS

Bridgeport, Connecticut,

August 31, 1948

TO: MR. S. M. ALVIS,  
From: Mr. A. J. Greene,  
Subject: MODEL 721 SAFETY

The gun mentioned in your letter of August 27th was duly delivered to us by Mr. Pinckney, and is returned to him with his copy of this letter. We are unable to secure a malfunction of its safety, and deem its construction a substantial improvement over the model which we had previously examined.

Our usual potential liability for the safety of our product is somewhat augmented by our knowledge that some Model 721 safeties have malfunctioned. However, our liability does not seem to be out of proportion to the advantage of retaining the present sear and safety construction, pending receipt of further complaints from the field.

We note that in the production gun which you supplied the three adjustment screws in the trigger assembly are not staked, as they were in the earlier models. We believe it important that these screws, particularly the one which determines the amount of engagement of connector and sear, be so sealed as to afford a positive indication when our factory adjustment has been altered.

*out  
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Worley  
Notified  
H.A. - 4/7/48  
A. J. G. - 11/1/48*

AL 003190

*A. J. GREENE*  
A. J. GREENE,  
Patent Attorney.