

Design Criteria:

1. Remove Adjustments
2. Preset Engagement
3. Preset Overtravel
4. Preset Trigger Pull
5. Retrofitability
6. Eliminate "Fire on Safety Release" malfunction
7. Balanced Trigger
8. Tamper Proof / Evidence of tampering
9. Force Engagement in "safe" position
10. 3lb. Trigger Pull
11. Manufacturable

Problems:

1. Trigger block plunger binds in trigger
2. Trigger shoe out of position
3. Hard safe "on" forces
4. Safe does not force trigger engagement
5. Safety can be removed in the field with no evidence.

Solutions:

1. Alter assembly procedure to locate off trigger block plunger hole with a max diameter + .0005" pin.
2. Insertion of trigger model into the fire control layout found trigger engagement surface out of position by .020" in the horizontal direction and .005" out of position in the vertical position.
3. New assembly procedure eliminates sear being forced too far down during assembly thereby eliminating interlocking radii on sear and safety, thus eliminating hard safe "on" forces.
4. Added a safety strap to prevent the safety arm from flexing out thus riding over the trigger block plunger instead of forcing the plunger in the trigger hole.
5. Designing a new safety retaining clip which is unable to remove without being destroyed.

Current Status:

1. Parametric Model of the following components:
 - a. Front Spacer
 - b. Rear Spacer

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- c. Left & Right Side Plates
 - d. Safety
 - e. Trigger Housing Bushings
 - f. Sear
 - g. Trigger
2. Inserted new trigger in fire control layout
 - a. Trigger had no engagement
 - b. Trigger engagement surface is .005" too high
 3. Min/Max analysis on fire control assembly to determine feasibility of eliminating drilling operation at assembly.
 4. Redesign Safety Lever Retaining Pin to eliminate disassembly of fire control in the field.
 5. Designed an assembly fixture to aid in mass production.
 6. Measured four fire control assemblies.

Recommendations:

1. Make both side plates from the same die thus eliminating tolerance variances between side plates.
2. Tighten surface finish specification on trigger block plunger
3. Demagnetize trigger block plunger and trigger
- 4.

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