

D R A F T
6-12-82
A.

- I. Minimum 48 Inch Height Drop Test.
(Safety Switch in "Safe" Position.)
- II. Minimum 24 Inch Height Jar-Off Test.
(Safety Switch in "Fire" Position.)
- III. Exposed Hammer/Striker Impact Test.
(Safety Switch in "Safe" Position.)
- IV. Controlled Lab Bump Test Simulation.
(Safety Switch in "Safe" Position.)
- V. Safety Switch Operational Force Requirements.
- VI. Minimum Safety Switch Dry Cycle Endurance Performance.
- VII. Minimum Safety Switch Firing Endurance Performance.
- VIII. Performance Requirements Associated with Misuse and Abusive Firing.
- IX. Sear Engagement/Trigger Pull Adjustment
Review and Performance
- X. Lubrication Review of Firearm - Firing Mechanism.

- I. Drop Test - Safety Switch in "Safe" Position.
- A. Measurements required prior to and at end of test. (Min.)
1. Headspace
 2. Safety switch on and off operational forces
 3. Firing pin shape and dimension
 4. Firing pin max. protrusion
 5. Firing pin indent
 6. Sear lift
 7. Sear engagement
 8. Trigger pull
- B. Catalogue Accessory Consideration.
- Those accessories which may affect testing should be considered. I.e. recoil pad, etc.
- C. Functions Checks -Per Drop.
1. Safety switch movement to "Safe" and "Fire" position
 2. Safety function
 3. Trigger function
 4. Striker movement and function
 5. Bolt operation
- D. Drop Height To Be Measured From Impact Elevation Point To Center of Firearm Mass At Release Elevation Point.

E. Impact Media:

1. Proposed S.A.A.M.I. impact media was that of one inch thick neoprene with material durometer reading of 90.
2. Ilion in-house impact media is two inch thick maple plank secured to rigid masonry structure.

F. Drop Test Techniques

1. Parallel pendulum utilization
2. Hand held - hand released
3. Quick release mechanical device.

G. Drop Test Gun Impact Surface Location.

1. Top drop
2. Bottom drop
3. Muzzle drop
4. Butt drop
5. Left side drop (right hand gun)
6. Possible forty-five degree angle variation of 1 - 5 drop positions.

H. Drop Test Repetition.

1. Full drop test cycle is once for all drop test orientations.
2. Proposed drop test cycle repetition for design evaluation test is three.
3. Proposed drop test cycle repetition for finished product evaluation is one.

- I. Drop Test Performance Control Monitor.
 - 1. Primed cartridge for fire/no fire determination.
 - 2. Firing pin indent copper crusher for marking depth determination.
- J. Parts Failure and/or Parts Damage Failure Related to Striker - Firing Mechanism.
 - 1. Gun does not fire
 - 2. Gun can be safely unloaded
 - 3. Damage does not result in an unsafe gun condition.
- II. Jar-Off Test - Safety Switch in "Fire" Position.

Procedure is same as I. Drop Test except for safety switch in FIRE position.
- III. Exposed Hammer/Striker Impact Test -

Safety switch in "Safe" position.

 - A. One pound mild steel mass, free falling a distance of 12 inches, impacting the exposed hammer/striker assembly with muzzle rigidly supported.
 - B. Three impact events for design evaluation and one impact event for product evaluation.
 - C. Repeat I. Drop Test - Items A,B,C,I,J.
- IV. Gun Bumping Simulation Test - Mallet Test.
 - A. 1 lbs. 6 oz. Weight - Dead Blow - No Bounce Type Mallet.
 - B. 11.5 Inch Overall Length Mallet.
 - C. Ten FREE-FALL Mallet Strokes.
 - 1. Five strokes at prescribed locations.
 - (a) One at front - top of receiver/frame location.
 - (b) One at rifle rear sight location of firearm.
 - (c) One at rear-top of receiver/frame surface.

- (d) One on pistol grip/grip cap location of stock.
- (e) One on receiver/^{LONG}~~lead~~ stock bottom surface at receiver/frame forward location.

2. Five strokes at random locations.

- D. Mallet Test Performance Control Monitor. Is Striker/ Hammer Fall.
- E. Bump Simulation Test To Be Conducted With Safety Switch In The "Safe" Position And Repeated With Safety Switch In The "Fire" Position.

V. Safety Switch Operative Properties.

- A. Thumb/Finger Applied Force Required To Position The Safety Switch In The "Safe" Location. Should Range SIX To EIGHT Lbs.
- B. Thumb/Finger Applied Force Required To Position The Safety Switch In The "Fire" Location Should Range THREE To FOUR Lbs.
- C. Safety Switch Location Should Be Such That Switch Operation Is NOT In The Immediate Proximity Of The Trigger Such As To Be Confused Or Result In Trigger Contact.
- D. Safety Switch Operation Direction Should Be Dissimilar From Trigger Operation.
- E. Safety Switch Moments Of Inertia Should Be Such As Not To Operate Freely During Use [&]~~As~~ Mis-Use.

VI. Dry Cycle Endurance Performance.

- A. Lubricant And Amount Of Lubricant Should Be Consistent With Expected Field Use.
- B. Safety Switch On & Off Dry Cycle Endurance Non-Failure Should Be Established W/Min. Test Level Must Exceed Gun Model Use Life By a FACTOR Of At Least Three.

- C. Cock & Dry Fire Dry Cycle Endurance Non-Failure Should Be Established W/Min. Test Level Must Exceed Gun Model Use Life By A FACTOR Of At Least FIVE.
- D. Inspection & Lubrication On a Cyclic Basis Should Be Consistent With Test Procedure And Results. I.e., Every ²⁵⁰⁰~~2300~~ Cycles.
- E. Dry Cycle Endurance Performance Items To Be Included Are:
 - 1. Triggering movement and operation forces
 - 2. Safety switch function and operational forces
 - 3. Sear lift and engagement and changes
 - 4. Firing pin indent

VII.

Ammo Associated Abuse & Misuse Performance

- A. Subject Test Gun To Pierce Primer For Establishing Gun Damage & Injury Potential. I.e. Gas Flow On To Witness Paper.
- B. Subject Test Gun To Leaky Primer For Establishing Gun Damage & Injury Potential.
- C. Subject Test Gun To ^{SCANNED}~~Balance~~d Primer For Establishing Gun Damage & Injury Potential.
- D. Subject Test Gun To Case Head Separation For Establishing Gun Damage & Injury Potential.
- E. Subject Test Gun To Wrong Ammo For Establishing Gun Damage & Injury Potential.
- F. Subject Test Gun To High Pressure Handload For Establishing Gun Damage And Injury Potential.

- VIII. Firing Mechanism Adjustments.
 - A. Min. - Max. Trigger Pull Establishment.
 - B. Out Of Specs. Trigger Pull Review.
 - C. Min. - Max. Sear Engagement Establishment.
 - D. Out Of Specs. Sear Engagement. Review.
 - E. Min. Sear Engagement - Follow Down Review.
 - F. Follow Down - Sear Engagement Review.
- IX. Lubrication Review
 - A. Variant Amount & Type Of Lubricant.
 - B. Rust & Corrosion Introduction.
- X. Live Fire Endurance And Functional Life Review.