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PROTOTYPE TESTING FOR GUN SIGHTS  
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At least five gunsights of each model are to be subject to each of the tests described below. The same gunsight(s) are to be used for each test. Order of the testing is not significant. Between each test the gunsights are to be visually inspected to ensure there have been no detrimental effects to the gunsights. The gunsights must not become loosened or detached from the guns (tests 3.2.7 & 3.2.8) and the light sources must not become loosened or detached from the gunsights as a result of any of the tests. Once all tests are completed, the gunsights are to be subject to the evaluation in section 3.2.9.

### 3.2.1 CHEMICAL

The gunsight is to be immersed for 48 hours at room temperature in each of the following:

- gun oil
- trichloromethane(chloroform)\*
- cleaning compound according to MIL-C-372B

*\* trichloromethane is not readily obtainable and is not a common solvent used for cleaning guns. Appropriate substitutes are acceptable.*

### 3.2.2 TEMPERATURE

#### *High Temperature:*

The temperature of the gunsight is to be raised from ambient to 120°C and held at this temperature for one hour.

#### *Low Temperature:*

The temperature of the gunsight is to be lowered from ambient to -46°C and held at this temperature for 48 hours.

#### *Relative Humidity:*

The gunsight is to be placed in an environment of 100% relative humidity and a temperature of 42°C and held in this environment for 48 hours

### 3.2.3 TEMPERATURE SHOCK

The gunsight is to be heated to 80°C and held at this temperature for 15 minutes. The gunsight is to be transferred, within 15 seconds, to a cold chamber having a temperature of -46°C and held in this chamber for 15 minutes. If water is used as the cold chamber, it is to be flowing at a rate of at least 10 times the gunsight volume per minute. If the water is stationary, the water volume is to be at least 20 times the volume of the gunsight.

### 3.2.4 VIBRATION

The gunsight is to be subject to simple harmonic motion having an amplitude of 0.075 cm. The vibration cycle is to go from 10 Hz to 50 Hz and back again in approximately 1 minute. This is to be carried out for 10 cycles.

Afterwards, the gunsight is to be subject to 30 minutes of vibration at resonance frequency. This test is to be carried out in each of the three principal axes of the gunsight.

### 3.2.5 PRESSURE

The gunsight is to be placed in a test chamber and exposed to 0.25 and 2.0 bars for 4 periods of 15 minutes each, the pressure being returned to atmosphere between each period.

### 3.2.6 PENETRATION

A hammer with a small point and weighing 10 g is to be dropped from a height of 1 meter onto the exposed surface of the light source.

### 3.2.7 MECHANICAL SHOCK

This test is to be performed with the gunsight attached to the gun which would have the most detrimental effect on the gunsight.

The gun is to be dropped from 2 meters onto a hard surface (at least 1" thick 85 durometer rubber backed by concrete). The gun is to be dropped 60 times in such a manner that it strikes the surface ten times in each of the following attitudes: "\* Barrel vertical, muzzle down "\* Barrel vertical, muzzle up "\* Barrel horizontal, bottom up "\* Barrel horizontal, bottom down "\* Barrel horizontal, left side up "\* Barrel horizontal, right side up.

### 3.2.8 FIRING

This test is to be performed with the gunsight attached to the gun which would have the most detrimental effect on the gunsight. The gun is to sequentially fire 5000 rounds of ammunition with lapses only sufficient to allow reloading (only one of each model site needs to be subjected to the firing test).

### 3.2.9 EVALUATION

After each test, the gunsight is to be immersed in water for 24 hours at ambient temperature. The volume of the water is to be about equal to 10 times that of the volume of the gunsight. After the gunsight is removed, the activity of the solution is to be measured. The activity of the solution is to be less than or equal 50 nanocuries.