

*Approved by Director: Dr. Guy Vallaro***A. Purpose:**

1. To determine the barrel length and the overall length of a firearm. One of the routine procedures conducted during the examination of a firearm is determining the barrel length and the overall length of a firearm.

For all firearms except revolvers, barrel length is defined as the distance between the end of the barrel and the face of the closed breechblock or bolt. For revolvers, barrel length is defined as the overall length of the barrel, including the threaded portion within the frame. Barrel length measurements should include compensators, flash hiders, etc., if they are permanently affixed to the firearm.

The overall length of a firearm is defined as the dimension measured parallel to the axis of the bore, from the muzzle to a line at a right angle to the axis, and tangent at the rearmost point of the butt plate or grip. Removable barrel extensions, poly chokes, flash hiders, etc., are not part of the measured barrel length or overall length.

B. Responsibility:

1. The examiner is responsible for measuring the barrel length and the overall length using the appropriate method, and recording those dimensions in their notes and final report.

C. Safety:

1. It is at the discretion of the examiner to use personal protective devices while conducting this examination. Caution should be taken if the item being examined has come into contact with a bio-hazardous material.
2. Treat all firearms as if they are loaded until cleared for examination.

D. Procedure:

1. Firearm overall length
 - a. To determine the overall length of a firearm, measure from the muzzle of the barrel, to the farthest point of the backstrap, slide, or stock, keeping the measurement parallel to the axis of the bore.

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- b. Place the firearm in the PFT measuring device with the rear of the firearm against the stationary end, keeping the measurement parallel to the axis of the bore.
- c. Move the sliding end of the device up to the muzzle and read the measurement from the NIST standard measure in the center.
- d. Record the measurement to a plus or minus one sixteenth of an inch.
- e. The overall measurement of the firearm is a critical measurement.

2. Barrel length

- a. Measure a revolver from the muzzle of the barrel, to the front surface of the cylinder with the cylinder locked into the frame.
- b. Measure pistols, rifles, and shotguns from the muzzle of the barrel, to the front of the firearm's breechface with the firearm in battery.
- c. Place the appropriate diameter rod provided with the PFT measuring device into the barrel of the firearm with the action closed until it stops. Move the sliding collar to the muzzle and tighten the thumb screw to mark the barrel length on the rod.
- d. Remove the rod and place it on the PFT measuring device. Observe the length of the rod between the stationary end of the device to the location on the rod where the collar has been tightened. The measurement is taken from the NIST measure in the center of the device.
- e. Record the measurement to a plus or minus one sixteenth of an inch.
- f. The barrel length measurement is a critical measurement.

E. Equipment:

1. Precision Forensic Testing Firearm Overall / Barrel Length measuring system with NIST certified 36" measure. Scale error is within +/- 0.005" per foot (12") of each scale length.

F. References:

1. AFTE procedures manual
2. AFTE glossary
3. Uncertainty of Measurement article, Forensic Magazine, December 2009, Sevigny, Salyards.

G. Appropriate Appendices:

1. Appendix 1 -- Worksheets