

*Approved by Director: Dr. Guy Vallaro*

A. Purpose:

1. To reduce the amount of powder load in a cartridge. Due to limitations in the Firearm and Toolmark section's bullet recovery devices, it may be necessary to reduce or change the powder load of the cartridge in order to obtain a velocity suitable for safely collecting test standards for comparison purposes.

B. Responsibility:

1. It is the firearm examiner's responsibility to understand the limitations of the firearm section's bullet recovery devices. The examiner must know when it is necessary to reduce the amount of powder load in a cartridge, so that he or she may obtain a test fired bullet specimen for comparative examinations.

C. Safety:

1. Proper caution must be exercised and the use of personal protective equipment must be considered.
2. Appropriate hearing and eye protection must be used.

D. Procedure:

1. Pull the bullet out of the cartridge using an inertia bullet puller or a reloading press.
2. Remove the existing powder.
3. Weigh the pulled bullet.
4. Consult a reloading manual, such as Speer, and obtain the powder charge for the weight of the pulled bullet and the new velocity needed.
5. Weigh out the appropriate powder charge and place in existing cartridge case.
6. Loosely pack a small piece of tissue, or similar material, into the case to fill the gap between the bullet and the powder.
7. Seat the bullet back into the cartridge case using a rubber mallet, leather mallet, or similar device.
8. If appropriate powder is not available, a reduced load using fifty percent (50%) of the original powder can be used. It should be noted that great care must be taken when performing this type

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of downloading. Fifty percent (50%) downloading CANNOT be used with slow burning powders. Fifty percent (50%) downloading CANNOT be used with many non-canister powders.

9. When using downloaded ammunition it is imperative that the examiner check the barrel for obstructions between each firing.

10. Document the exact reduced load or downloading process used in notes of the examination.

E. Equipment:

1. Satorious balance scale.
2. Weigh boat
3. Rubber or leather mallet
4. Inertia bullet puller

F. References:

1. Laboratory safety manual
2. AFTE procedures manual
3. Speer reloading manual

G. Appropriate Appendices:

1. Appendix 1 – Work Sheets