

Toolmarks on Reloaded Ammunition

Forensic Training Class



Class Host:

Albuquerque Police Department
Firearms Unit

Where:

Albuquerque Police Department,
5350 2nd St. NW,
Albuquerque, NM 87107

When:

September 22-24, 2014
3 Days (24 hrs)

Instructor:

Axel Manthei

This class is designed for:

Firearm Examiners
NIBIN Technicians

- This course has live reloading components to it! You will see how the toolmarks are generated and which tool they come from
- Introduction into reloading philosophy. What motivates to reload cartridges?
- Which cartridges can be reloaded?
- Practical, hands on reloading techniques, with single stage and progressive reloading machines
- Explanation of the different tools and dies involved in the reloading process.
- Case cleaning methods and their effect on breechface extractor and ejector marks.



- Special case preparation procedures for improved accuracy and the toolmarks they leave
- A thorough review of reloading components (projectiles, cases, primers and propellants)

- Practical demonstration and explanation of the different bullet manufacturing processes used by reloaders.
- Chemical tests to determine whether a cartridge case is, or is not reloaded.
- Origin of toolmarks on the cartridge cases and primers



- Toolmarks on the bullets
- Persistence of reloading marks after firing



- Conversion of commonly available cases into obsolete calibers
- Reloading methods for obsolete calibers
- Sources for reloading tools and dies
- Sources for reloading components (common and obsolete)

- Introduction into the investigation of reloading accidents with blown up firearms.
- The history of reloading
- Historical reloading tools



- No live ammunition will be reloaded by the students. Only dummies without propellant

what have you learned?

- Final test... "Is it a reloaded cartridge?"
Different toolmarks of reloaded cartridges will be examined and evaluated on samples by the students

• **Certificate of Completion**

(should you pass!)

Students Should Bring:

Note Taking Equipment
Eye and Ear Protection
Computers (if you wish)
Digital cameras (if you wish)
Magnifying glass / Dino Lite

3 Day Tutition Fee: \$900 (USD)

**Axel Manthei,
Ing. (EUR ING)**

***Forensic Scientist
Firearm Examiner
Accomplished Target Shooter***

Axel Manthei has an engineering degree in firearms design and ballistics from the HTBL Ferlach, Austria. He was employed as a research & development engineer with UMAREX for 6 years. Since 1988 he has worked as a Firearms Examiner in a large German Police Crime Laboratory, and has examined crime scenes in Europe, Asia and South America. He also owns his own company which produces the well-known Ammunition Database, CartWinPro. 2007 he was awarded the title European Engineer (EUR ING) for his achievements by the European Federation of National Engineering Associations (FEANI).

Axel is a Distinguished Member of the Association of Firearm and Toolmark Examiners (AFTE). He has presented numerous papers at AFTE (association of Toolmark and Firearm Examiners) and ENFSI (European Network of Forensic Science Institutes) conferences in the US and across Europe.

Also he is an accomplished target pistol shooter on an international level. He has competed in Europe, America, Asia, Australia and the Middle East and has been a US-National Champion as well as World Champion. In this capacity he reloads his own ammunition since 1977. In these more than 35 years the cartridges he has produced probably exceed a quarter of a million rounds. The combination of being a handloader and a forensic scientist in the field of firearms and ammunition prompted the idea of a class in the forensic aspects of reloading for firearm examiners in 1999. Since then he has taught numerous consecutive sessions of this topic at the German Federal Forensics Section (BKA) in Wiesbaden.

