RECOMMENDATIONS
FOR SAFE AMMUNITION STORAGE AND HANDLING

SAAMI®
SPORTING ARMS AND AMMUNITION MANUFACTURERS' INSTITUTE, INC.
SINCE 1926

INTRODUCTION

This publication has been prepared by the Sporting Arms and Ammunition Manufacturers' Institute, Inc. (SAAMI) and is part of our commitment to firearms and ammunition safety. SAAMI was created in 1926 at the request of the United States government to create standards for safety, reliability, and interchangeability in the design, manufacture, transportation, storage and use of firearms, ammunition and components. This information about ammunition is being provided for general education purposes in the interest of promoting safety. It is not intended to be a comprehensive discussion about ammunition.[i]

This document contains basic and important facts about the properties of ammunition for sporting and law enforcement use, as well as recommendations for safe storage and handling. This information is intended to address some common misperceptions and myths about the safety of ammunition. There may be federal, state or local laws or regulations that differ from the information contained in this document. You should contact your local law enforcement agency or state attorney general office if you have any questions.

PROPERTIES OF SPORTING AMMUNITION

Smokeless powder [ii], the propellant in modern ammunition, is a unique product. For example, powder in consumer packaging is intended to burn but not explode if ignited. However, even a small amount ignited in the confined space of the chamber of a firearm will result in a significant but managed increase in pressure, which drives the projectile down the bore of the firearm at highly repeatable pressures and velocities.

Ammunition is manufactured for specific uses. Individual cartridges and shotshells should only be used for their intended purpose and will likely burst if ignited outside the chamber of a firearm. A burst cartridge or shotshell may project the primer, projectile(s), and/or fragments of case material. It is also important to remember that cartridges may ignite if the primer is struck due to the cartridge being dropped or otherwise mishandled. However, if one cartridge ignites and bursts, it will not usually cause surrounding cartridges to ignite.

SPORTING AMMUNITION AND FIRE

In the event of a fire in an area where sporting ammunition is stored, firefighter turnout gear will offer protection and should be kept on until a fire is fully extinguished. It is important to note, however, that if a cartridge is chambered in a firearm and ignited by the heat of a fire, it will send the projectile down the barrel with the same velocity and energy as if the trigger were pulled. SAAMI published a video that more fully discusses and demonstrates the properties of ammunition when subjected to various potential initiation scenarios. This video can be found by following the hyperlink or on the SAAMI website www.saami.org.

ENVIROMENTAL OR CHEMICAL EXPOSURE

Many environmental or chemical exposure factors may affect the performance of ammunition. Factory-fresh ammunition will function properly in conditions ranging from dry arctic regions to tropical rainforests; however, extended exposure to high temperatures and/or high humidity may damage ammunition. This damage may result in increased or decreased chamber pressure, incomplete burning of the propellant, or failure to fire. Similarly, exposure to water, solvents, petroleum products, acids, ammonia, and other chemicals can damage ammunition. This can happen through corrosive effects that weaken the cartridge case or make the cartridge difficult or impossible to chamber. If moisture or chemicals enter the cartridge, their effects on the components may result in failure to fire, incomplete burning, or delayed firing. Ammunition should always be inspected prior to use. DO NOT use ammunition that has been damaged or suspected to be damaged.

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STORAGE GUIDELINES

- Ammunition should always be stored and handled in a proper manner.
- Manufacturers package ammunition to meet criteria as specified by the U.S. Department of Transportation and international transport standards. Ammunition should be stored in its original packaging or other packaging designed for the purpose.
- Ammunition should be stored in a cool, dry location away from solvents and other chemicals, heat sources, or open flames.
- It is not advisable to leave ammunition inside a vehicle (including the trunk) for extended periods in direct sunlight or at elevated temperatures. Doing so can accelerate the deterioration of the propellant in ammunition.
- Ammunition should be stored separately from firearms and made inaccessible to unauthorized persons.
- Firearms should be secured to prevent access by unauthorized individuals such as children and others who do not have your permission to handle or use your firearms.

HANDLING GUIDELINES

- Ammunition should always be used as intended in firearms that are in good operating condition and designed for the specific cartridge.
- Always make sure the cartridge designation on the ammunition's headstamp matches the cartridge designation marked on the firearm's barrel (e.g. 9mm Luger ammunition is to be used in a firearm marked 9mm Luger or 12 gauge shotshell is to be used in a shotgun marked 12 gauge. If the chamber(s) in your firearm is specifically designed to accommodate more than one cartridge, consult the owner's manual to verify which cartridges can be safely fired. SAAMI publishes a list of common unsafe firearm-ammunition combinations on its website at www.saami.org.
- Ammunition should chamber easily and allow the bolt or breech face to close without the use of unusual force. NEVER fire a cartridge that requires abnormal force to close the bolt or breech of any firearm.
- Inspect ammunition prior to use and properly dispose of cartridges or shotshells that show signs of physical damage, such as corrosion, deep dents and/or scratches, etc. If in doubt, do not chamber or fire the ammunition. Ammunition should only be disposed of in accordance with Federal, State, and Local Regulations. Your local law enforcement, fire department or shooting facility may be able to provide disposal guidance. For further information on ammunition that has been submerged in water see SAAMI's "Guidance on Ammunition That Has Been Submerged In Water," that can be found at www.saami.org.
- The repeated loading and unloading (known as rechambering) of a cartridge or shotshell into the chamber of a firearm may cause physical damage to the case or hull, which could prevent the cartridge or shotshell from firing. It can also damage the primer pellet, resulting in a misfire. Repeated rechambering of a cartridge can push the projectile deeper into the case, reducing internal case volume and increasing chamber pressure. Do not repeatedly rechamber the same cartridge.
- When loading a magazine, do not insert fresh ammunition on top of or behind existing ammunition, rather, empty the magazine and inspect the cartridges or shotshells that were removed. Reload the magazine ensuring the older ammunition is fired first (loaded last), as repeated exposure to recoil can damage cartridges and shotshells contained in the firearm. This is a particular concern in training conditions, or similar usage scenarios.

i SAAMI expressly disclaims any warranty, obligation, or liability whatsoever in connection with the use of information contained herein.

ii The information contained in this pamphlet is relevant to ammunition loaded with smokeless powder only. Storage and handling guidelines for non-smokeless powder propellant may be different.

For more information please visit www.saami.org. For specific information on a particular firearm or ammunition, please contact the manufacturer.

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