

# **Sporting Arms and Ammunition Manufacturers' Institute**

## **SMALL ARMS AMMUNITION**

### **Properties & Recommendations for Storage & Handling**

This handout has been prepared by the Sporting Arms and Ammunition Manufacturers' Institute, based upon information currently available to it. It is furnished to interested persons as a courtesy and in the interests of safety. It is not intended to be comprehensive; it does not modify or replace safety suggestions, standards, or regulations made by designated authorities, public or private. It is subject to revisions as additional knowledge and experience are gained. SAAMI expressly disclaims any warranty, obligation, or liability whatsoever in connection with the information contained herein or its use. These paragraphs are meant to give everyone concerned for the shipment, storage and handling of small arms ammunition certain basic and important facts about the properties of this widely distributed product. Such information should dispel some of the rumors and tales which persist regarding ammunition bulk safety. It also outlines recommended storage conditions, and reports the reactions of ammunition when exposed to fire or intense heat and rough or vigorous handling. These statements and recommendations do not supersede local, state or federal regulations. Local authorities should be consulted regarding regulations on the storage, transportation, sale and handling of sporting ammunition in each specific community.

### **Properties of Small Arms Ammunition**

All ammunition is carefully engineered and manufactured as an article of commerce. It has a specific use; if stored in a proper manner and used as intended in firearms in good condition and designed for the specific cartridge, the safety and satisfaction of the shooter should be assured. Small arms ammunition is packed in cartons and cases as specified by the US Department of Transportation. These container designs were developed in the interest of safety in transportation, storage and marketing. Therefore, unapproved packaging should never be substituted. Specific properties or characteristics of small arms ammunition of particular interest to shippers, warehouse operators, dealers and users are as follows:

- Stocks of small arms ammunition will NOT mass explode. That is to say, if one cartridge or shotshell in a carton or case is caused to fire, it will not cause other adjacent cartridges or shotshells or their packages to explode sympathetically or in a simultaneous manner. There are no limits imposed on packaged quantities of ammunition which may be shipped, warehoused or displayed in

commercial establishments. This fact recognizes the inherently safe, non-hazardous characteristics of such ammunition in public or private storage.

- Small arms ammunition is not a super-sensitive item. Packages of ammunition may be dropped from any height which the packages will physically withstand, and cartridges or shotshells therein will not fire due to the shock. Properly packaged small arms ammunition will withstand all the rough handling tests of commerce such as drop test, vibration tests, and rotating drum tests without individual cartridges or shotshells firing.

- Small arms ammunition, if discharged in the open without the support provided by a firearm's chamber or other close confinement, discharges inefficiently. The flights — more accurately "movement" — of projectiles or debris particles from such incidents are extremely limited in velocity, range and energy. The small primer cups or rimfire case fragments are the missiles of highest velocity in such occurrences. Specifically, bullets and shot charges, being heavier than shell or cartridge cases in most instances, are rarely projected away from the location at which the unchambered round of ammunition was caused to ignite and discharge. However, small particles of metal or plastic from the burst case and primer cups may be propelled for short distances (usually not over 50 feet) at velocities sufficient in some instances to cause injury or discomfort. In so far as the Sporting Arms and Ammunition Manufacturers' Institute has been able to determine, there have been no substantiated reports of serious or fatal injuries caused by the discharge of packaged or loose ammunition in handling or in fires, regardless of the quantity or type of cartridges or shotshells involved. SAAMI has no verified report of any fire fighter hurt by flying bullets or shot pellets in fires involving a sportsman's in-the-home personal supply of ammunition, a retail sporting goods store's stock, wholesaler's or distributor's sizable inventory, or an in-transit cargo of this product.

### **Handling and Storage of Ammunition**

Small arms ammunition contains explosive ingredients: A percussion-sensitive primer mixture and a smokeless propellant. It should be treated with respect and care in all handling, transportation and storage. Ammunition should be stored in the factory carton or package. The labeling and identification on the original container help to assure that future use will be in the gun for which the ammunition is intended. Ammunition stored in the home, retail outlet or distributor's warehouse over extended periods in factory packaging, subject to the ordinary variations of temperature and humidity ranging from tropic to Arctic conditions, can be expected to perform satisfactorily and safely in the firearms for which it was intended if such firearms are in proper working order and condition. Extreme high temperatures (over 150° F) however, should be avoided. Ammunition should not be immersed in water or exposed to any organic solvent, paint thinner, petroleum product, ammonia, etc. Such

materials may penetrate a loaded round and reach the powder or primer; a deteriorating effect will result which may cause misfires or squib shots. The latter can result in a projectile's lodging in a gun barrel, the obstruction possibly causing serious damage or injury when another shot is fired. Ideally, home storage of small arms ammunition is in a locked closet or cabinet out of the reach of children and uninformed or incompetent persons. Both guns and ammunition should be stored out of sight and reach of children and others not physically or mentally capable of giving them correct, proper use and respect. Storing guns and ammunition in locked auto trunks may be convenient, or required by state or local law, during short periods when moving to and from the hunting field or target range. The possibilities of extremely high temperatures make it sensible to remove firearms and ammunition from vehicles following the trip. The passenger compartment of a closed car when exposed to the sun often develops an extreme high temperature and is thus not a desirable spot to leave ammunition. While blank cartridges will not mass detonate if one in a box is caused to fire, the noise of firing outside a gun will be nearly as loud as in normal use and may be harmful to hearing. The blank's "explosion" may also be rather violent due to rapidly expanding gasses released during burning. Obviously, blank cartridges deserve the same respectful handling and careful storage as other ammunition. Retail and wholesale stocks of ammunition, not required for display, should be stored in original outer cartons or boxes exactly as supplied by the factory. When placed on basement or warehouse floors subject to moisture it would be well to stack the cartons on pallets. In some locations police or public security regulations may prescribe the manner in which small arms ammunition stocks are displayed and the quantity that may be in sight. Check with local authorities. Packages of ammunition should not be placed in proximity to heavily trafficked aisles in the reach of children.

### **Small Arms Ammunition in a Fire**

Although much has been written and rumored about the 4th of July characteristics and so-called havoc of ammunition in fires, it just isn't so. Members of firefighting units are understandably uneasy when confronted by fires where ammunition is involved. Several members of the Sporting Arms and Ammunition Manufacturers' Institute have undertaken extensive experiments to show what can be expected when ammunition is involved in a fire. These companies have also made careful investigations after such fires, which show that the missiles do not have sufficient energy to penetrate the garments and protective gear worn by fire fighters. Tests also show that the whizzing sound heard in the vicinity of ammunition fires are caused by primers expelled from the burning cartridges. The "pops" and "bangs" are exploding primers; the propellant powders burn inefficiently and make little noise. Metallic cartridges in a fire are difficult to sustain in a burning condition once the packing materials have been consumed due to the cooling effects of the metal parts and the relatively high

ratio of metal weight to smokeless powder. Only a vigorous fire around metallic ammunition stocks will cause all cartridges to burn. Shotshell ammunition is difficult to ignite, but once ignited it will sustain its own burning due to the plastic or paper tubes (hulls).

### **Disposal of Unserviceable Ammunition**

Ammunition that has been in a structural fire, and has become wetted or scorched, or has been exposed to flood waters should never be returned to commercial sales channels or sold at salvage sales, since it could be rendered dangerous to the shooter by such exposure. It should be scrapped. Never dispose of ammunition by burying it or dumping it in a waterway. It may be retrieved years later, fully "live," and pose dangers to children or uninformed persons. Under most circumstances, unserviceable ammunition may be scrapped by returning it to the manufacturer. Written permission should first be obtained from the Product Services Manager of the manufacturer before shipment is made. If the manufacturer is not known, contact SAAMI at the address listed on the cover of this brochure.

### **Know the Following**

#### **RECOMMENDATIONS ON STORAGE AND HANDLING**

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#### **Chapter 11**

Small Arms Ammunition and Primers, Smokeless Propellants, and Black Powder Propellants

##### **11-1 Basic Requirements.**

**11-1.1** In addition to all other applicable requirements of this code, intrastate transportation of small arms ammunition, small arms primers, smokeless propellants, and black powder shall comply with US Department of Transportation Hazardous Materials Regulations, 49 CFR, Parts 100-199.

**11-1.2** This chapter applies to the channels of distribution of and to the users of small arms ammunition, small arms primers, smokeless propellants, and black powder.

**11-1.3** This chapter does not apply to in-process storage and intra-plant transportation during manufacture.

**11-1.4** This chapter applies to the transportation and storage of small arms ammunition and components.

**11-1.5** This chapter does not apply to safety procedures in the use of small arms ammunition and components.

##### **11-2 Small Arms Ammunition**

**11-2.1** No restrictions shall be imposed on transportation of small arms ammunition other than those imposed by the US Department of Transportation or by the presence of other hazardous materials.

**11-2.2** No quantity limitations shall be imposed on the storage of small arms ammunition in warehouses, retail stores, and other occupancies other than those imposed by limitations of the storage facility and by public safety regulations.

**11-2.3** Small arms ammunition shall be separated from materials classified by the US Department of Transportation as flammable liquids, flammable solids, and oxidizing materials by a distance of 15 ft (4.6 m) or by a fire partition having a fire resistance of at least 1 hour.

**11-2.4** Small arms ammunition shall not be stored together with Division 1.1, Division 1.2, or Division 1.3 Explosives, except where the storage facility is suitable for the storage of explosive materials.

**11-2.5\*** Small arms ammunition that has been exposed to fire or damaged by exposure to water shall not be returned to commercial channels for reasons of consumer safety. The manufacturer shall be contacted to obtain recommendations for disposal of damaged ammunition.

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