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**GRENADES AND PYROTECHNICS SIGNAL**

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2. A star (*) marks new or changed material.

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**By Order of the Secretary of the Army:**

PETER J. SCHOOMAKER  
*General, United States Army*  
*Chief of Staff*

**Official:**

JOYCE E. MORROW  
*Administrative Assistant to the Secretary of the Army*  
*0631002*

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PREFACE

The purpose of this manual is to orient Soldiers to the functions and descriptions of hand grenades and ground pyrotechnic signals. It provides a reference for the identification and capabilities of various hand grenades and pyrotechnic signals. It also provides a guide for the proper handling and throwing of hand grenades, suggests methods and techniques for the tactical employment of hand grenades, and provides a guide for commanders conducting hand grenade training.

This manual provides information and guidance for operating, using, and training with hand grenades. It is intended for two user groups: training centers responsible for introducing and training soldiers to a basic knowledge level; and field units, officers, and noncommissioned officers responsible for sustaining basic knowledge level skills and advancing Soldier skills in the employment of hand grenades on the battlefield.

The development of new hand grenades and improvement of existing hand grenades has resulted in many different grenade types within the U.S. inventory. While only a limited number of grenade types are in production today for U.S. Armed Forces, the majority of all hand grenades produced are used by either the armed forces of our allies or countries to which we occasionally provide military assistance. This manual addresses hand grenades common to the U.S. Army.

A blank copy of DA Form 3517-R (Hand Grenade Qualification Scorecard) can be found at the back of this manual. This form is not available through normal supply channels. It may be reproduced locally on 8 1/2- x 11-inch paper. An electronic version is also available on the Army Publishing Directorate website at http://www.apd.army.mil.

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E-mail: 229-DOC-LIT@benning.army.mil
Phone: Commercial: 706-545-8623 or DSN: 835-8623
Fax: Commercial: 706-545-8600 or DSN: 835-8600
US Mail: Commandant, USAIS
ATTN; ATSH-INB, BLDG 74, Room 102
6650 Wilkin Drive, Bldg 74, Rm 102
Fort Benning, GA 31905-5593

Unless otherwise stated, whenever the masculine gender is used, both men and women are included.
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CHAPTER 1
TYPES OF HAND GRENADES

This chapter describes the various types of hand grenades, their components and mechanical functions, and examples of the grenades used by U.S. forces.

1-1. DESCRIPTION
The hand grenade is a hand-held, hand-armed, and hand-thrown weapon. U.S. forces use colored smoke, white smoke, riot-control, special purpose, fragmentation, offensive, and practice hand grenades. Each grenade has a different capability that provides the soldier with a variety of options to successfully complete any given mission. Hand grenades give the soldier the ability to kill enemy soldiers and destroy enemy equipment. Historically, the most important hand grenade has been the fragmentation grenade, which is the soldier’s personal indirect weapon system. Offensive grenades are much less lethal than fragmentation grenades on an enemy in the open, but they are very effective against an enemy within a confined space. Smoke and special purpose grenades can be used to signal, screen, control crowds or riots, start fires, or destroy equipment. Because the hand grenade is thrown by hand, the range is short and the casualty radius is small. The 4- to 5-second delay on the fuse allows the soldier to safely employ the grenade.

1-2. TYPES
The six types of hand grenades are (Figure 1-1, page 1-2):

- **Fragmentation.** These grenades are used to produce casualties by high-velocity projection of fragments.
- **Illuminating.** This grenade is used to provide illumination of terrain and targets.
- **Chemical.** These grenades are used for incendiary, screening, signaling, training, or riot-control.
- **Offensive.** This grenade is used for blast effect.
- **Practice and Training.** These grenades are for training personnel in use, care and handling of service grenades.
- **Nonlethal.** This grenade is used for diversionary purposes or when lethal force is not desired.
1-3. COMPONENTS
The hand grenade is made up of three components:
- **Body.** The body contains filler and, in certain grenades, fragmentation.
- **Filler.** The filler is composed of a chemical or explosive substance.
- **Fuse Assembly.** The fuse causes the grenade to ignite or explode by detonating the filler.

1-4. MECHANICAL FUNCTION
All U.S. hand grenades function in a similar manner. The sequence for the mechanical functioning of the M67 fragmentation hand grenade is as follows.

a. **Remove Safety Clip and Safety Pin.** First remove the safety clip, then the safety pin, from the fuse by pulling the pull ring. Be sure to maintain pressure on the safety lever--it springs free once the safety clip and the safety pin assembly is removed.

b. **Release Pressure on Lever.** Once the grenade is thrown, the pressure on the safety lever is released, and the striker is forced to rotate on its axis by the striker spring, throwing the safety lever off. The striker then detonates the primer, and the primer explodes and ignites the delay element. The delay element burns for the prescribed amount of time then activates either the detonator or the igniter. The detonator or igniter acts to either explode or burn the filler substance (Figure 1-2).