Mines Advisory Group Lao PDR

BOMB LIVE UNIT (BLU) RECOGNITION GUIDE

FOREWORD

BOMBLETS

Military artillery projectiles, rockets guided missiles, and aircraft bombs as well as special aircraft dispensers are currently employed by the U.S. Armed Forces to dispense small explosive bomblets or sub-projectiles over a battlefield area There is a decided tactical advantage to be gamed by employing this type of munitions system. An artillery projectile, for example, can only strike and explode in one portion of the battlefield, whereas small bomblets ejected by the same projectile high above the combat area will strike and explode in many areas, producing more casualties. These small bomblets have been recovered in the past by Law enforcement officers from persons who have stolen them from arms plants and military installations or who have brought them back to the United States as war souvenirs.

While it is not possible to present a complete listing of each bomblet **in** existence due to the classified nature of some military items, the majority of bomblet configurations currently **in** use are illustrated in the following section, which should be more than adequate as a recognition guide. The military identification for the majority of these small bomblets is BLU followed by an identifying number and letter designation. The BLU identification stands for *Bomb Live Unit.*

Unfortunately, not all bomblets are designated as BLU's. In some cases, a bomblet has been developed for more than one tactical use, and it is referred to by a different name, even though it is identical to another bomblet with a BLU designation. The text and illustrations in this section will indicate those bomblets, which have the same recognition features but different name designations, and group them together into recognition families. The other designations used for BLU's are *grenade* and *mine.*

Practice versions of live or explosive loaded BLU bombs are identified as *BDU's (Bomb Dummy Unit).* BDU's are *not always* inert but frequently contain *spotting charges of black powder*

intended to produce a smoke puff upon impact with the target. These spotting charges are sometimes capable of causing the bomb body to rupture and produce fragmentation and BDU's should, therefore, be handled with caution. BDU’s are frequently, but not always, painted a torch red colour (very bright red) or a bright orange colour to aid in their identification and location on military bombing and gunnery ranges. When spotting charges are employed in BDU’s, a 1/2 to 3/4 inch wide band of brown paint is supposed to be placed on the bomb body to indicate that it contains a low explosive charge. Experience has indicated that this band is not always present.

BDU bodies that are inert (containing no spotting charge) have been painted light blue in the past and may be encountered painted in this manner. Live BLU bombs are normally painted bright yellow, olive drab or black, or may be found unpainted. In general, it is *unwise* to rely upon colour coding of BLU or BDU items as a primary method of identification, the overall configuration of the found item generally provides the best method of positive identification because of the distinctive shapes employed.

BLU-3B Fragmentation Antipersonnel and Anti-Material Bomb

The BLU-3/B is a small, fragmentation anti-personnel and anti-material bomb that measures 3 3/4 inches in length by 2 3/4 inches in diameter and weighs approximately 13/4 pounds. The bomb, normally painted bright yellow, is used against targets such as personnel, trucks, parked aircraft, ammunition dumps, fuel tanks, and radar equipment. When the bomb is ejected, air pressure lifts off the wind tab, releasing the retaining band, which holds the fins together. The fins spring outward, stabilising the bomb in its fall and arming the fuze. Upon impact, detonation projects small steel balls at high velocity in a radial pattern. Figure 329 illustrates the BLU3/B bomb.

Practice bombs almost identical in physical size and shape to the BLU-3/B are identified as BDU-27/B, BDU-28/B, and BDU-40/B.

The BDU-2 7/B has a solid aluminium body and contains approximately 38 grains of a black powder spotting charge. The BDU-28/B has a hollow cast aluminium body and does not contain a spotting charge. The BLU4O/B has a plastic body, which contains a shotgun shell spotting charge. Figure 330 illustrates these practice bombs which are normally painted bright red or orange. Those practice bombs containing a spotting charge should have a 1/2- to 3/4 inch brown paint band around the body.

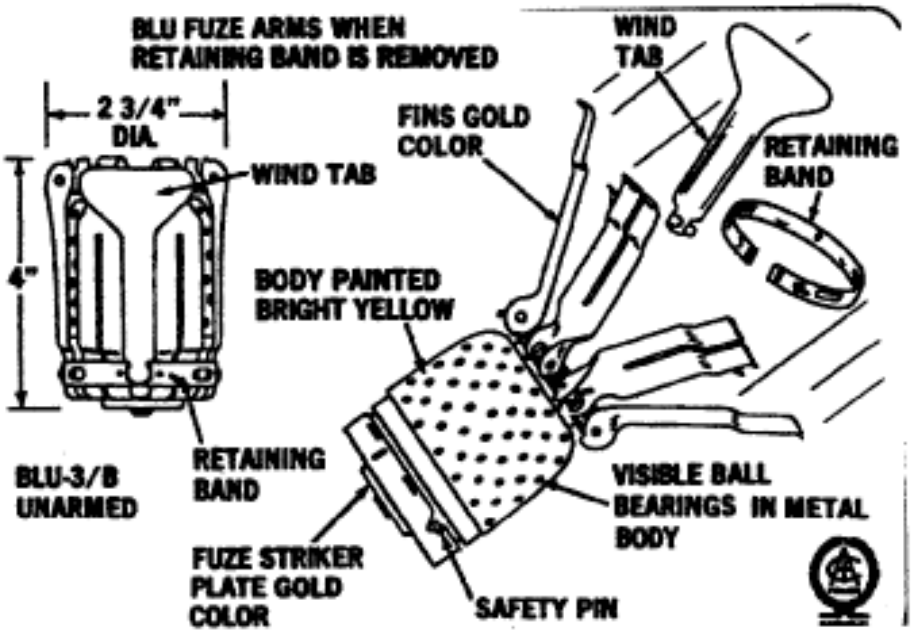


Figure 329: BLU-3B FRAGMENTATION ANTI-PERSONNEL BOMB

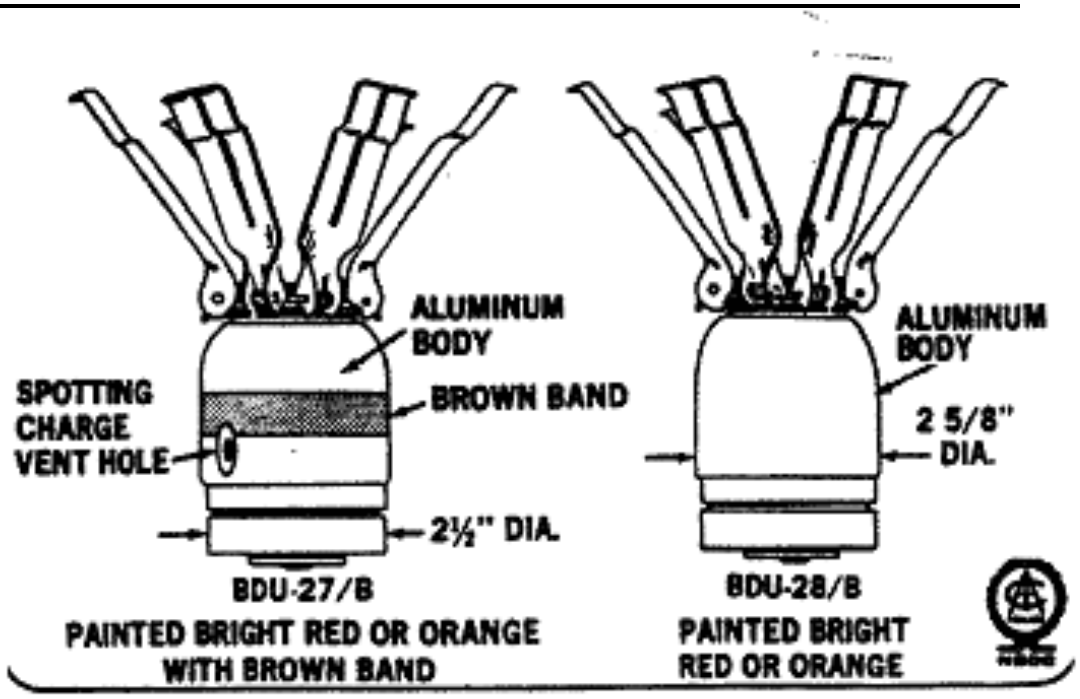


Fig 330: BLU-27/B and BDU-28/B PRACTICE BOMBS

BLU4A/B Fragmentation Anti-Personnel Bomb

The BLU-4AIB is a small, fragmentation anti-personnel bomb. This bomb has a maximum diameter of 2 3/4 inches (with the fins closed) and is approximately *5* inches **in** length. The bomb weighs 11/4 pounds. When it is ejected from the aircraft or other dispenser, air pressure lifts off the wind tab which in turn releases the fin retaining band holding the fins (also known as *drag vanes)* together. The spring steel fins spring outward, stabilising the bomb in its fall and arm the fuze and the ejection portion of the bomb. Upon impact, a fragmentation hemisphere is ejected from the bomb body and a lanyard, fastened to both the fragmentation hemisphere and the bomb body, unreels. When the lanyard reaches its full 10-foot length, it detonates the high explosive charge in the fragmentation hemisphere. No practice bomb has been identified for the BLU-4/B. Figure 331 illustrates the BLU-4AIB bomb

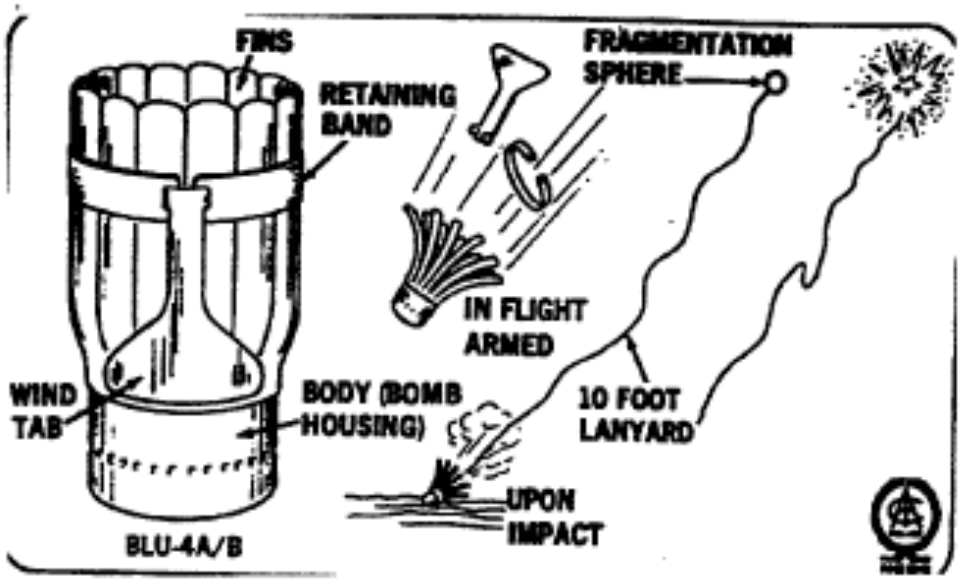


Fig 331: BLU-4A/B Fragmentation Anti-Personnel Bomblet

BLU-7B and BLU-7A/B Anti Tank Shaped Charge Bomb

The BLU-7/B and BLU-7A/B are anti-tank shaped charge bombs employed against targets such as tanks, armoured vehicles, and parked aircraft. The BLU-7/B bomb is 7 7/8 inches in length by 2 3/4 inches in diameter, and weighs 1 1/2 pounds. The BLU-7AIB is 8.1/4 inches in length and 2 3/4 inches in diameter. These bombs are parachute-armed and stabilised. When the bombs are ejected, the air stream lifts off the wind tab, permitting the retaining band and plastic parachute protector to fall away and allow a ribbon parachute to open and arm the fuze. Upon impact with a solid object such as a tank, the fuze striker drives into the detonator, which initiates the explosive tram and detonates the bomb. Detonation of the explosive forms a shaped charge jet to perforate the tanks armour. Figure 332 illustrates the BLU-7/B and BLU-7A/B.

The two practice bombs for the BLU-7 bombs are identified as the BDU37/B and the BDU-2 5/B. The practice bomb BDU-3 7/B is identical in size and shape to the BLU-7A/B bomb and does not contain a spotting charge. The practice bomb BDU- 7/B usually has a light blue, anodised aluminium body.

The BDU-2 5/B practice bomb is a partly hollow steel cylinder with a parachute packed inside. The body is painted bright red. Raised letters on the bottom of the BDU-25/B identify it as “Bomb, Practice, *BDU-25/B.”* This BDU contains no explosive. Figure 333 illustrates the BDU-37/B and the BDU-25/B.

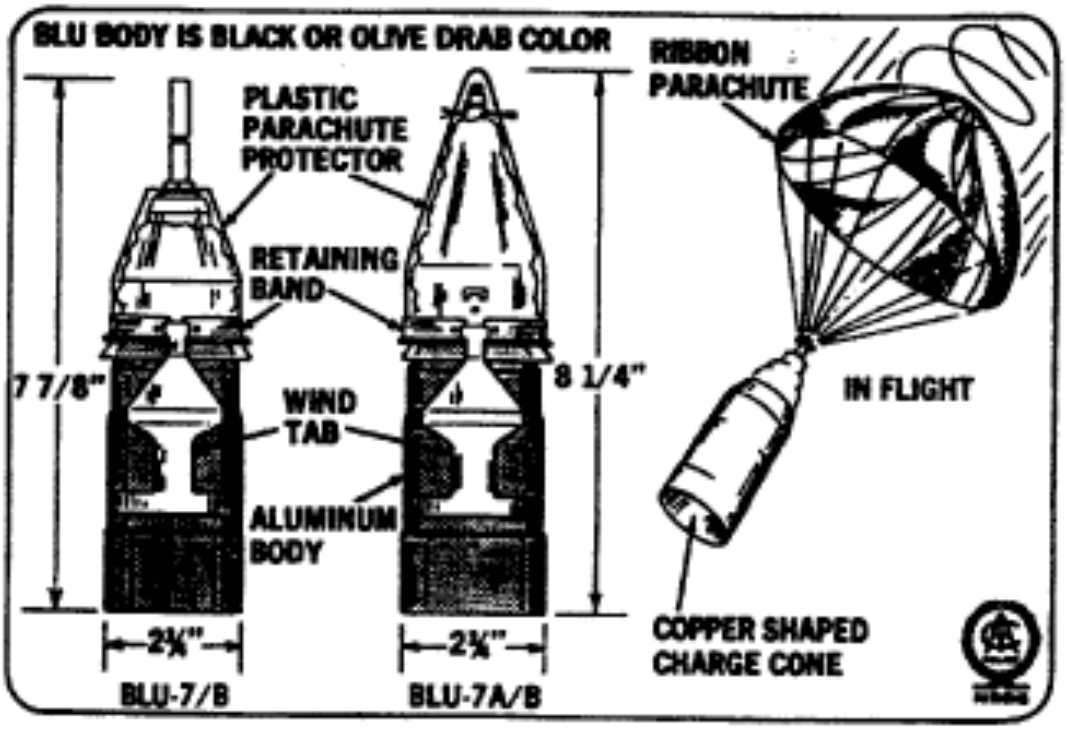


Figure 332
BLU-7B AND BLU-7A/B ANTI-TANK SHAPED CHARGE BOMBS

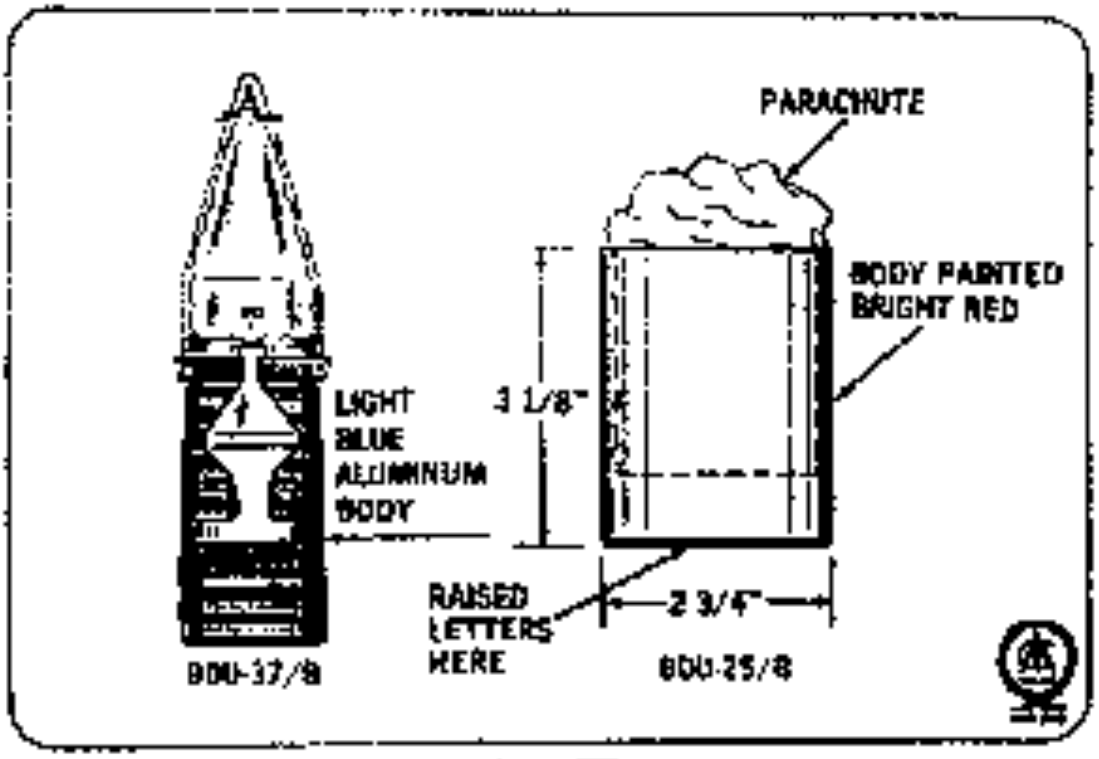


Figure 333
BDU-33/B AND BDU-25/B PRACTICE BOMBS

BLU-16/B Burning White Smoke (HC) Bomb

The BLU-16/B is a small cylindrical, beer can-size burning white smoke bomb, similar in appearance to the M8 smoke hand grenade. The body is 2 3/4 inches in diameter and 4 3/4 inches in length. The weight of the bomb is approximately 2 1/4 pounds. A M2OIAI striker release hand grenade fuze installed in the top of the bomb body ignites the burning smoke mixture. Four tape-covered smoke vent holes are located in the top of the metal body surrounding the fuze. When the bomb is ejected, the wind tab is lifted off by air pressure, releasing the retaining band and allowing the striker release hand grenade fuze to function. The bomb body is normally painted light green, except for the top, which is painted white to indicate the colour of the smoke. Bomb markings are stencilled on the body in white or black paint. Figure 334 illustrates theBLU-16/B bomb. There is no practice bomb for this BLU.

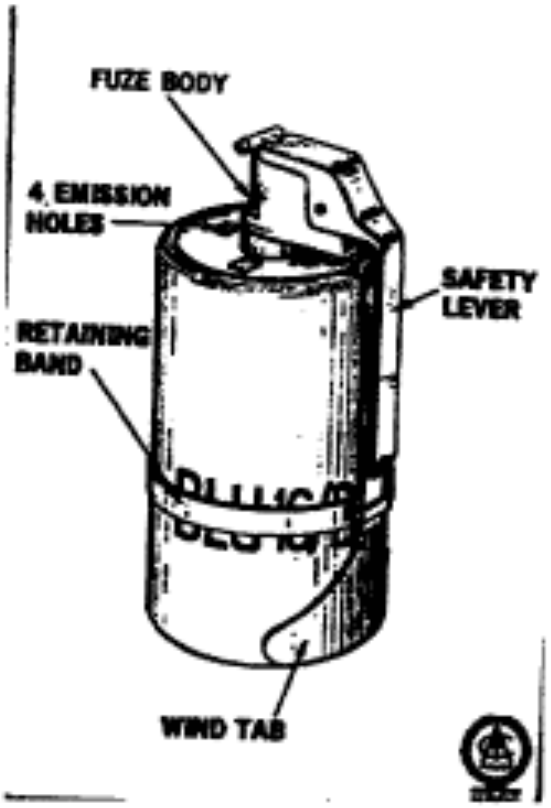


Figure 334: BLU-16/B Burning White Smoke (HC) Bomb

BLU-17/B Burning Smoke White Phosphorous (WP) Bomb.

The BLU-17/B is a small, cylindrical bursting smoke; white phosphorus (WP) filled bomb that detonates above the ground. The bomb with fuze is 5 3/4 inches in height and has a diameter of 2 3/4 inches. The weight of the bomb with the fuze is 2 1/4 pounds. When it is ejected from the aircraft dispenser, air pressure lifts off the wind tab which releases the retaining band and allows the hand grenade fuze safety lever to move outward, releasing the striker and functioning the fuze. After a delay of 4 to 5 seconds, the fuze functions detonating the burster and rupturing the bomb body. Particles of steel and burning white phosphorus as well as dense smoke are scattered over a 35-yard radius. The bomb body is normally painted light green with markings stencilled in red on the side or bottom of the body. Figure 335 illustrates the BLU-I 7/B bomb. There is no practice bomb for this BLU.

Figure 335: BLU-17/B Bursting Smoke White Phosphours (WP) Bomb

BLU- 18/B Fragmentation Anti-Personnel Bomb

The BLU-18/B is a small, anti-personnel, fragmentation bomb, which is fin-stabilised in flight. The aluminium body of the bomb is triangular in shape with a 2-inch base, and is 2 inches wide and 1 1/2 inches high. The triangular aluminium body is normally unpainted and the fins are black in colour. The bomb has a weight of 1/2 pound. When it is ejected, the bomb fins open and fuze arming occurs. Upon impact with the target, the fuze striker is driven into a primer, which fires a propellant charge, projecting a fragmentation sphere into the air. The fragmentation sphere detonates 4 to 6 feet above the ground. Figure 336 illustrates the BLU-18/B bomb.

The practice bomb for the BLU-18/B bomb is identified as the BDU-34/B This practice bomb has a solid aluminium body and contains no explosive. No fragmentation sphere is present. The BDU-3 4/B body is unpainted, but the fins are sometimes painted bright orange.

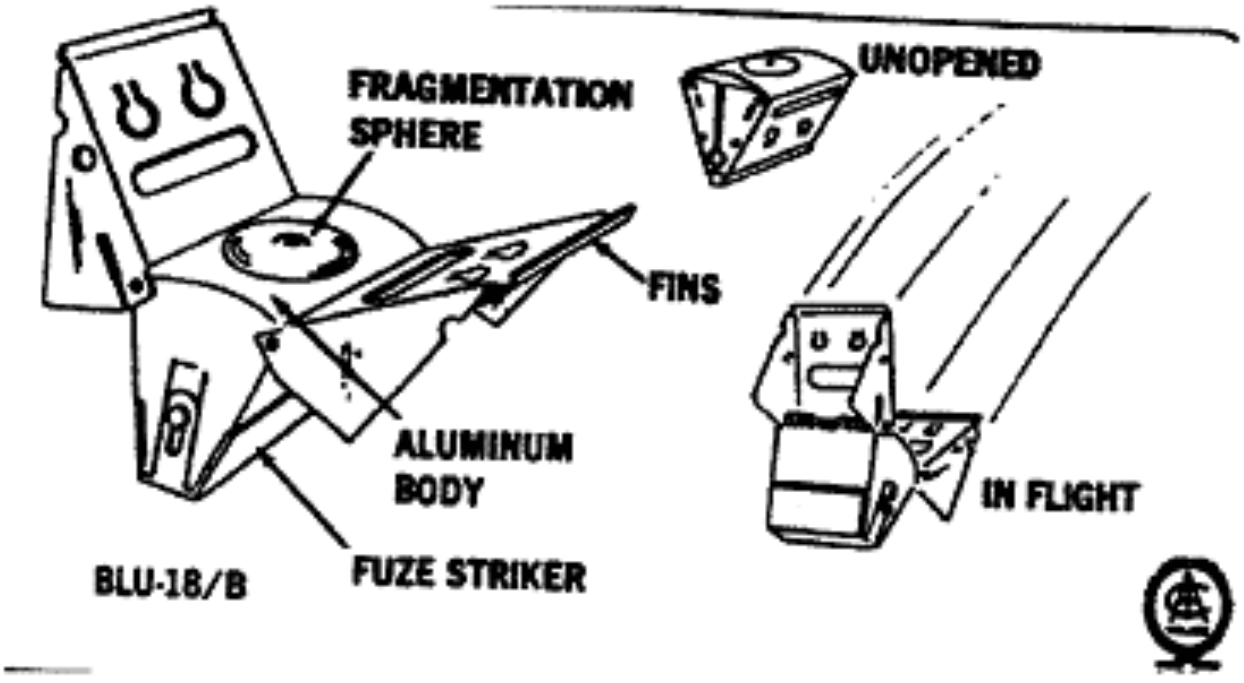


Figure 336: BLU-18/B Fragmentation Anti-Personnel Bomb

BLU-19/B23 Bursting Chemical War Gas (GB) Bomb

The BLU-19/B23 is a cylindrical bomb, 9 7/16 inches in length by 4 5/8 inches in diameter. It weighs 9 1,2 pounds and is employed as an antipersonnel, chemical war gas munition. It contains an RDX central burster and a chemical war gas agent known as GB. The bomb is armed 112 seconds after it leaves the dispenser tube. Upon impact the all-ways action impact fuze detonates the explosive in the central burster tube and the lethal chemical agent is dispersed. Figure 337 illustrates the BLU-19/B23 bomb. No practice bomb for this BLU has been identified.

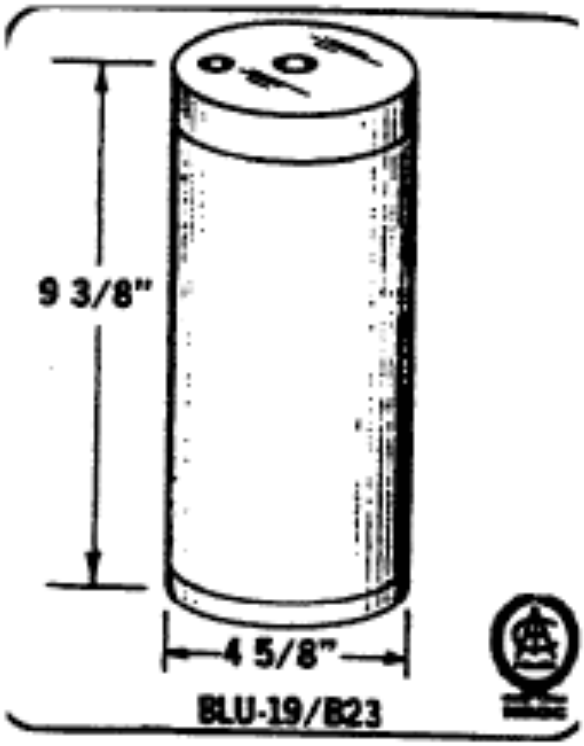


Figure 337: BLU-19/B23 Bursting Chemical Bomb

24/B, BLU-24B/B, BLU-24C/B, BLU-66A/B and BLU-66B/B Anti Personnel Bombs (Jungle Bomb)

The BLU-24/B is an anti-personnel fragmentation bomb designed to penetrate jungle foliage before detonation. The bomb is 3 11/16 inches in length by 2 7/8 inches in diameter, with a total weight of 1 5/8 pounds. A plastic vane (rotating fin assembly) provides the necessary spin force for arming the bomb as it falls. When the bomb impacts and penetrates jungle foliage, the spin force declines and the bomb detonates, producing fragmentation. The BLU's are delivered to the target area by an aircraft dispenser and may in the future be delivered by a 2.75 inch FFAR rocket projectile. The bomb bodies are normally painted bright yellow.

The practice bomb for the BLU-24 and BLU-66 family of bombs has the same construction as the live bombs but contains no explosive. The BDU-42/B is normally painted bright red. Figure 338 illustrates this family of bombs.

SPECIAL NOTE

BLU bombs which are ball-shaped and fitted with wind vanes have fuzes which are armed by centrifugal force and require approximately 2400 revolutions per minute (rpm) in order to cause arming. Rolling the bomb along the ground or throwing it through the air does not normally provide sufficient centrifugal force to cause the bomb fuze to arm. Hence, their employment as hand thrown grenades is not generally practical.

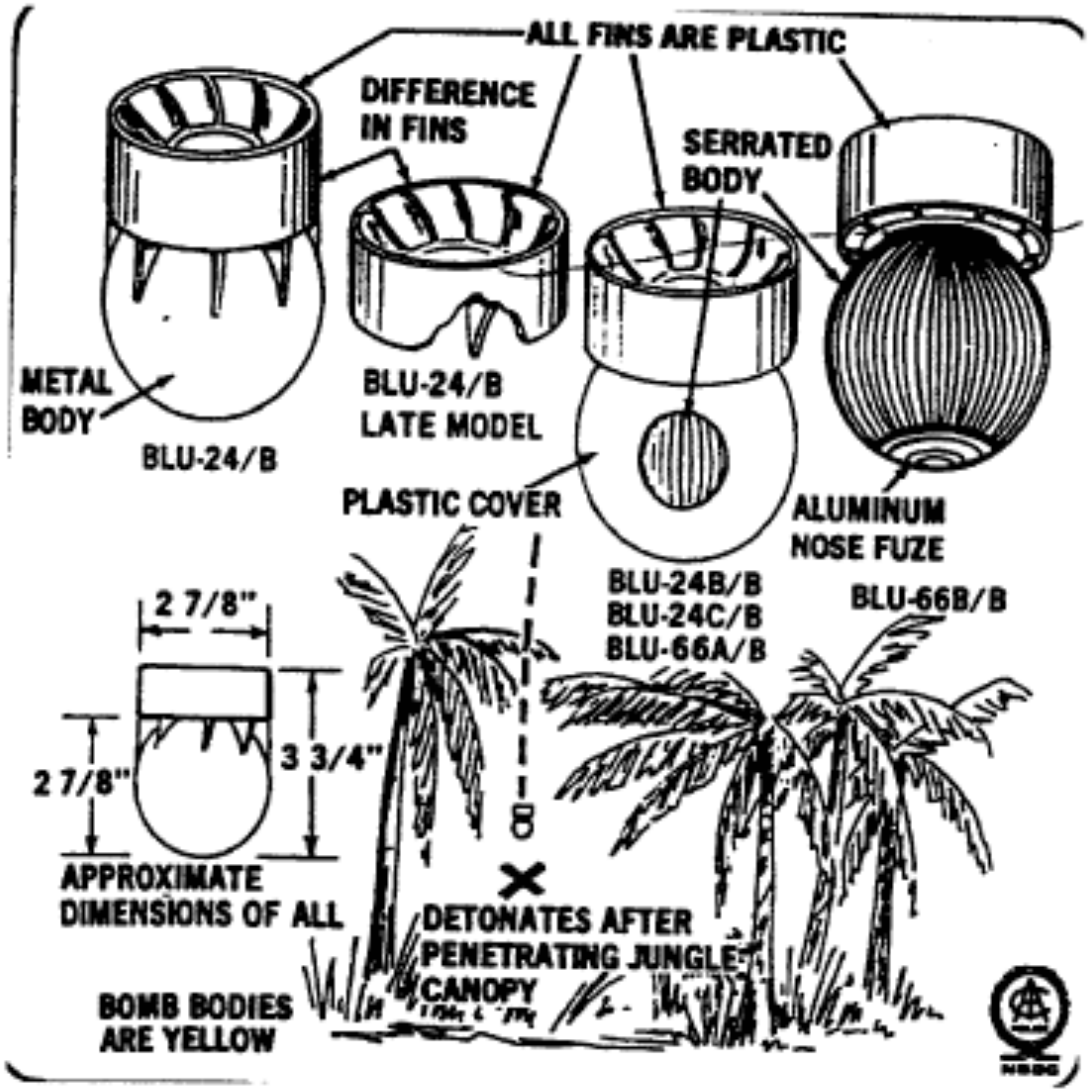


Figure 338: BLU-24/B, BLU-24B/B, BLU-24C/B, BLU-66C/B and BLU-66B/B Fragmentation Anti-Personnel Bombs (Jungle)

BLU-26/B, BLU-36/B, BLU-59/B, and BLU-63/B Fragmentation Anti-Personnel Bombs

These bombs are round; free-fall fragmentation bombs intended for tactical use against light material and personnel targets. The bomb is similar in size to a baseball, having a diameter of 2 3/4 inches and weighing approximately 1 pound. It has four protruding wind vanes moulded into the metal body to impart spin to the bomb as it falls, causing the fuze to arm. Upon detonation, the bomb produces a large number of small, high velocity fragments. Figure 339 illustrates this family of bombs.

The only difference between these bombs is in the type of fuze employed. The BLU-26/B and BLU-63/B have an impact fuze, which detonates the bomb on contact with the ground. The BLU-3 6/B and BLU*59/B* both employ a variable time delay fuze, which will detonate the bomb at some time after impact with the ground. These bomb bodies may be painted olive drab with a 1/4 inch-diameter dot of yellow paint at some point on the body. Identification markings, if present, should be stencilled in yellow.

SPECIAL NOTE

BLU bombs which are ball-shaped and fitted with wind vanes have fuzes which are armed by centrifugal force and require approximately 2400 revolutions per minute (rpm) in order to cause arming. Rolling the bomb along the ground or throwing it through the air does not normally provide sufficient centrifugal force to cause the bomb fuze to arm. Hence, their employment as hand thrown grenades is not generally practical.

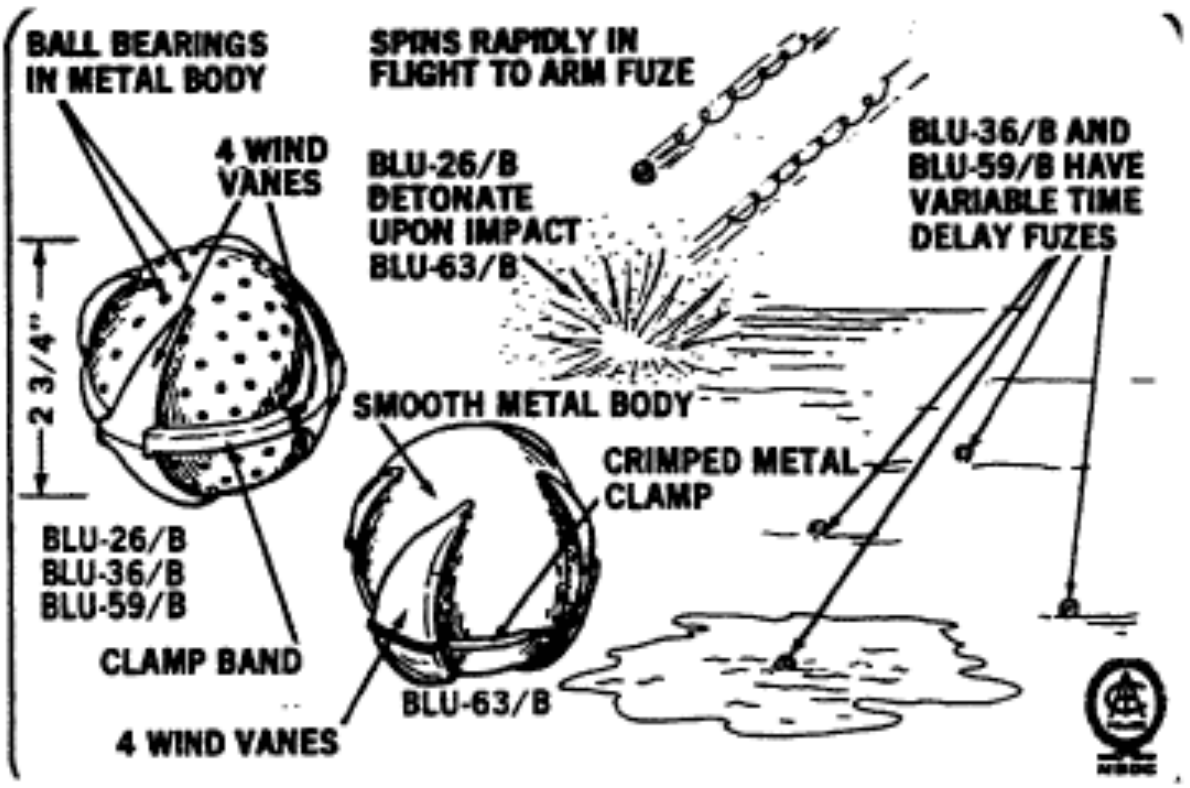


Figure 339: BLU-26/B, BLU-36/B and BLU-59/B Fragmentation Anti-Personnel Bombs

XM38, M38, and M40 Fragmentation Anti-Personnel Grenades.

These anti-personnel grenades are dispensed from an aircraft bomb, but are nonetheless identified as grenades. The grenades are the general shape and size of a large ping-pong ball and measure 111/16 inches in diameter. Several rows of protruding wind flutes are moulded into the metal body. When released from the aircraft, the wind flutes impart a high rate of spin to the grenade and arm its internal fuze. Impact with the water, mid, soft earth, or any hard surface causes the M40 grenade to detonate, propelling fragments in all directions. The XM38 and M38 grenades do not detonate upon impact. The XM38 and M38 grenades are equipped with internal random time delay fuzes and detonate after the expiration of a pre-set time. No visible distinction can be made between the three grenades. The grenade bodies are normally painted olive drab and have no markings. Figure 340 illustrates this family of grenade.

SPECIAL NOTE

BLU bombs which are ball-shaped and fitted with wind vanes have fuzes which are armed by centrifugal force and require approximately 2400 revolutions per minute (rpm) in order to cause arming. Rolling the bomb along the ground or throwing it through the air does not normally provide sufficient centrifugal force to cause the bomb fuze to arm. Hence, their employment as hand thrown grenades is not generally practical.

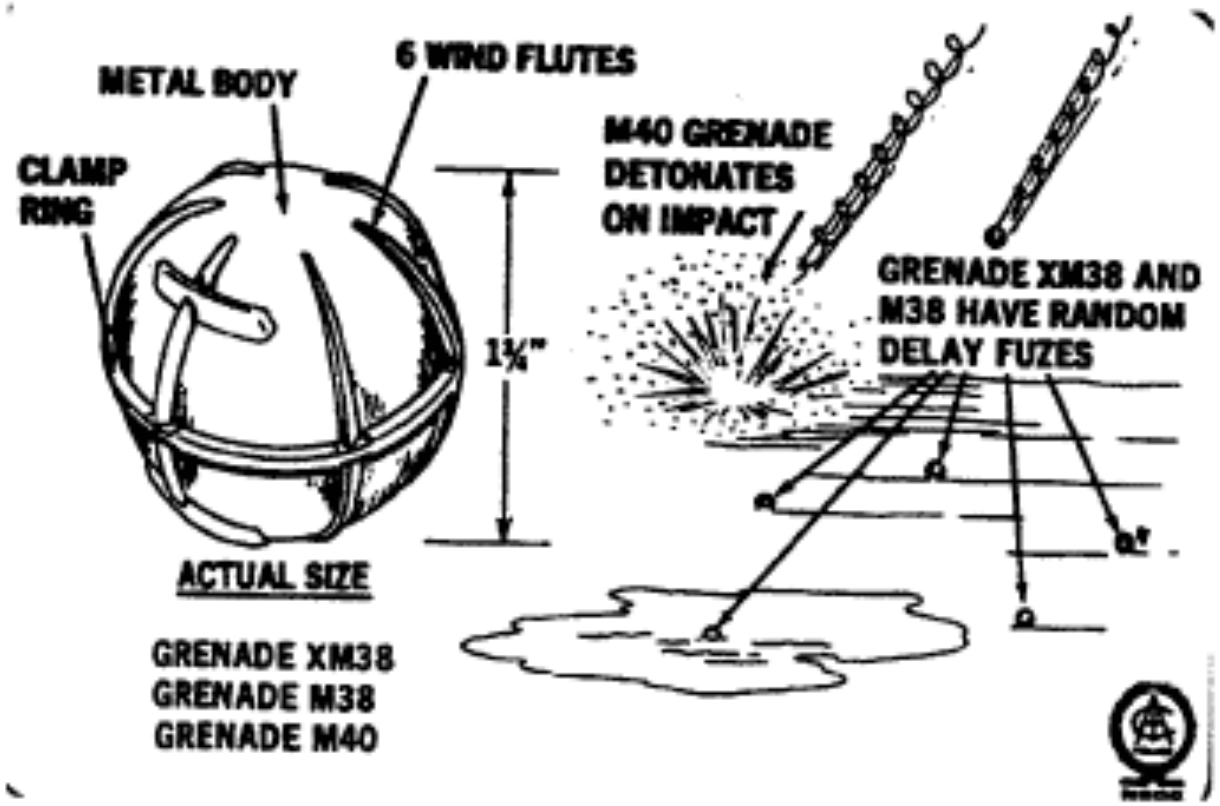
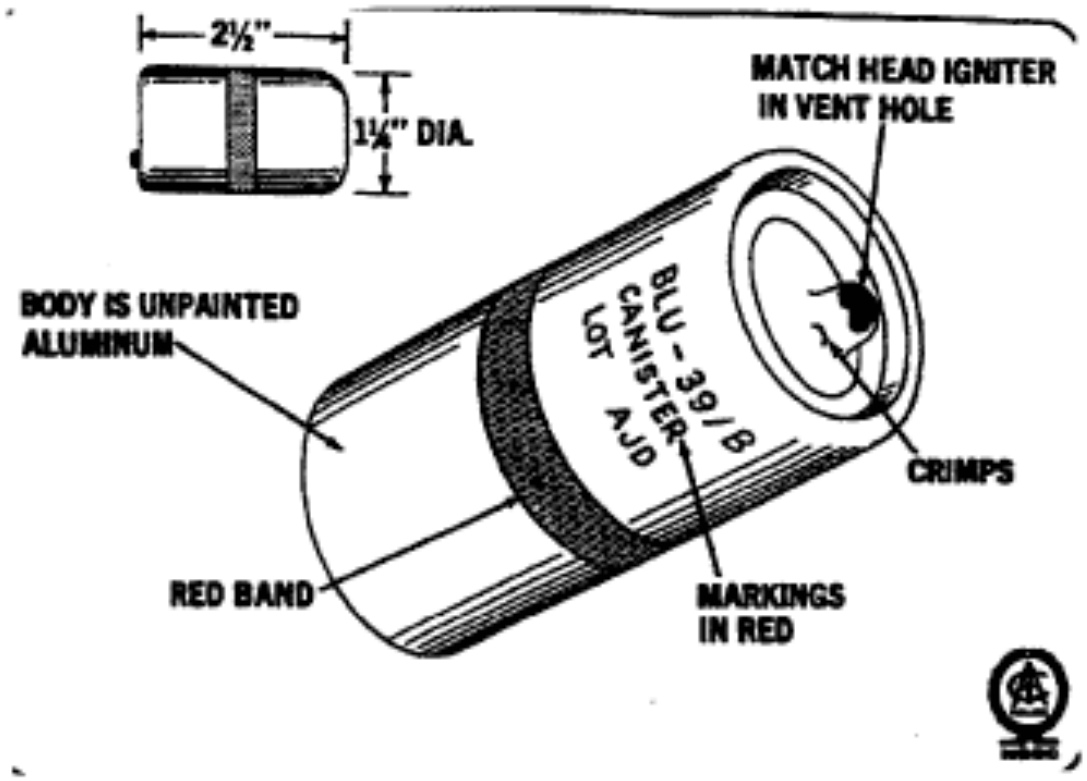


Figure 340: XM38, M38 and M40 Fragmentation Anti-Personnel Grenades.

BLU-39/B Burning CS Bomb (Skitter Bomb)

The BLU-39/B is a small, cylindrical CS (tear gas) filled bomb. The bomb measures 2 1/2 inches in length by I 1/4 inches in diameter and weighs approximately 2 ounces. Its primary use is to disrupt enemy operations by causing eye and respiratory irritations. When the bombs are ejected, the match head igniters of each bomb are activated by a flash from the ejection charge. A length of safety fuse in each bomb burns for approximately 6 seconds. At the end of the delay time, the safety fuse ignites the burning CS filler. Because of the off-center vent hole in the upper bomb body, the burning of the CS filler propels the bomb along the ground in an erratic path as it burns. Hence, its name of "skitter bomb." The BLU-39/B has a 1/2-inch-wide circumferential red band painted around the midsection of the body. Figure 341 illustrates the BLU-39/B bomb. No practice bomb has been identified for the BLU-39/B



BLU42IB, BLU-42A/B and BLU-54/B Fragmentation Anti-Personnel (SADAA or WAAPM) Mines

These three BLU bombs are designated as mines. The mines are similar in size and shape to a baseball and have a diameter of 2 3/8 inches, excluding wind vanes. The four protruding wind vanes moulded into the sintered iron body impart spin to the mine as it falls through the air. Steel cross-shaped tabs are positioned at the top and bottom of the ball-shaped body, covering and restraining eight circular metal plugs. The live mines are normally painted an olive drab colour. These mines are delivered to the target areas by aircraft or artillery projectile. As the mine falls, air pressure on the wind vanes causes spin, which arms an internal electro-mechanical fuze. Upon impact with the ground, trip lines (strings) are ejected outward from the eight round plugs in the body. The trip lines are attached to a disturbance ring in the fuze assembly. A pull of several ounces on any one of the trip strings will cause detonation of the mine. If undisturbed, the mine will self-destruct after a predetermined delay. Detonation of the mine produces a fragmentation anti-personnel effect.

This mine is extremely dangerous once the trip lines have been ejected and should not be disturbed in any manner. Should this item be encountered, contact the nearest U.S. Armed Forces Explosive Ordnance Disposal team for assistance. The three mines, identical in size, shape, and appearance are illustrated in Figure 342. The practice mine is identical in appearance to the live mines except that it is normally painted light blue and contains no explosive.

SPECIAL NOTE

BLU bombs which are ball-shaped and fitted with wind vanes have fuzes which are armed by centrifugal force and require approximately 2400 revolutions per minute (rpm) in order to cause aiming. Rolling the bomb along the ground or throwing it through the air does not normally provide sufficient centrifugal force to cause the bomb fuze to arm. Hence, their employment as hand thrown grenades is not generally practical.

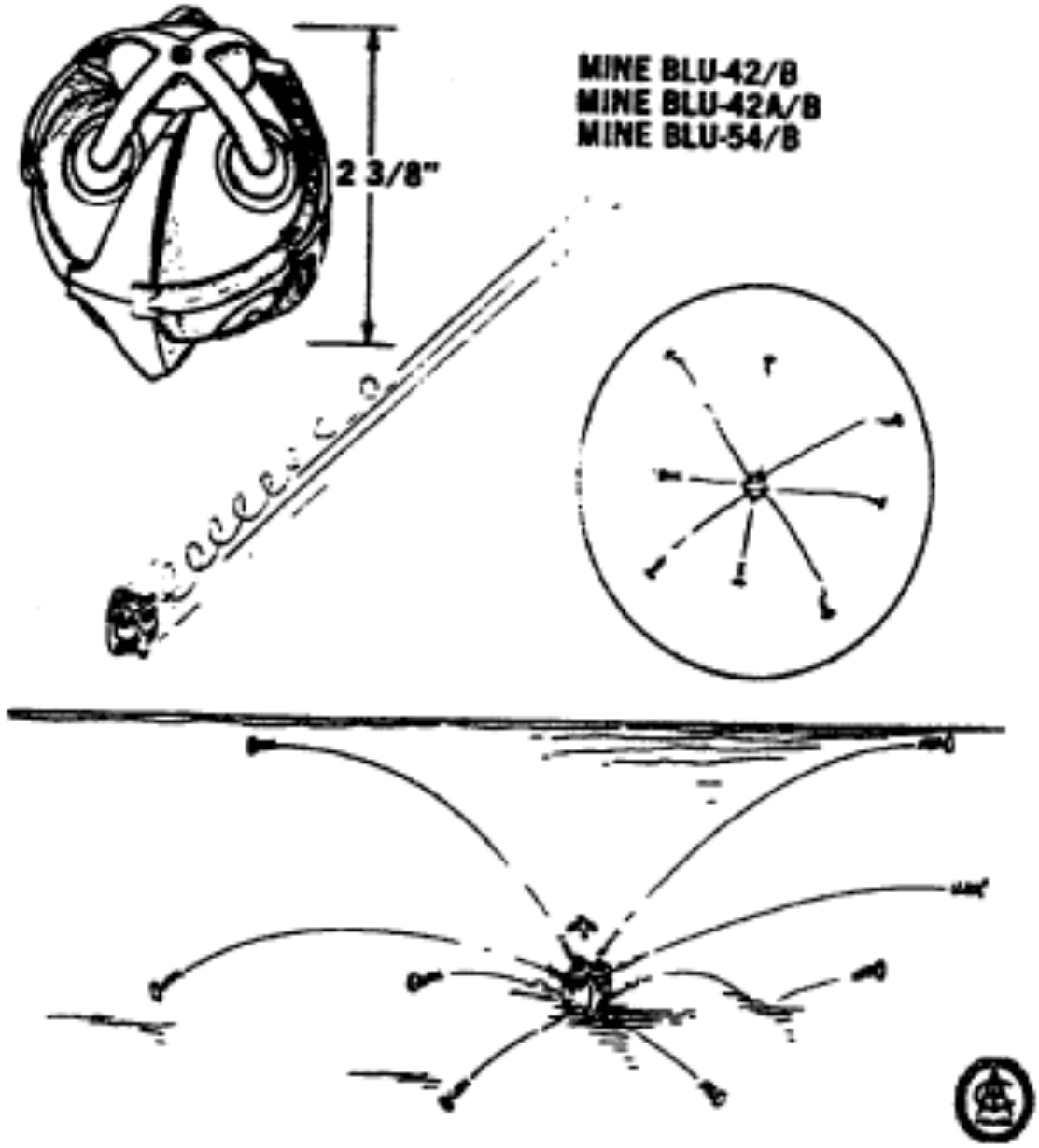


Figure 342: BLU-42/B, BLU-42A/B, BLU-54/B Fragmentation Anti-Personnel Mines
(SADA or WAAPM Mine)

BLU-45/B Anti-Material Mine

The BLU-45/B mine has a rectangular bullet shape, measuring 14 1/4 inches in length and 4 inches in width. It has a heavy cast steel nose and weighs approximately 20 pounds, containing some 5 pounds of explosive. When the mine is released from the aircraft, four folding umbrella fins open to stabilise it in flight. The mine fuze and its functioning are classified by the military. Figure 343 illustrates this mine. No practice mine for this BLU has been identified.

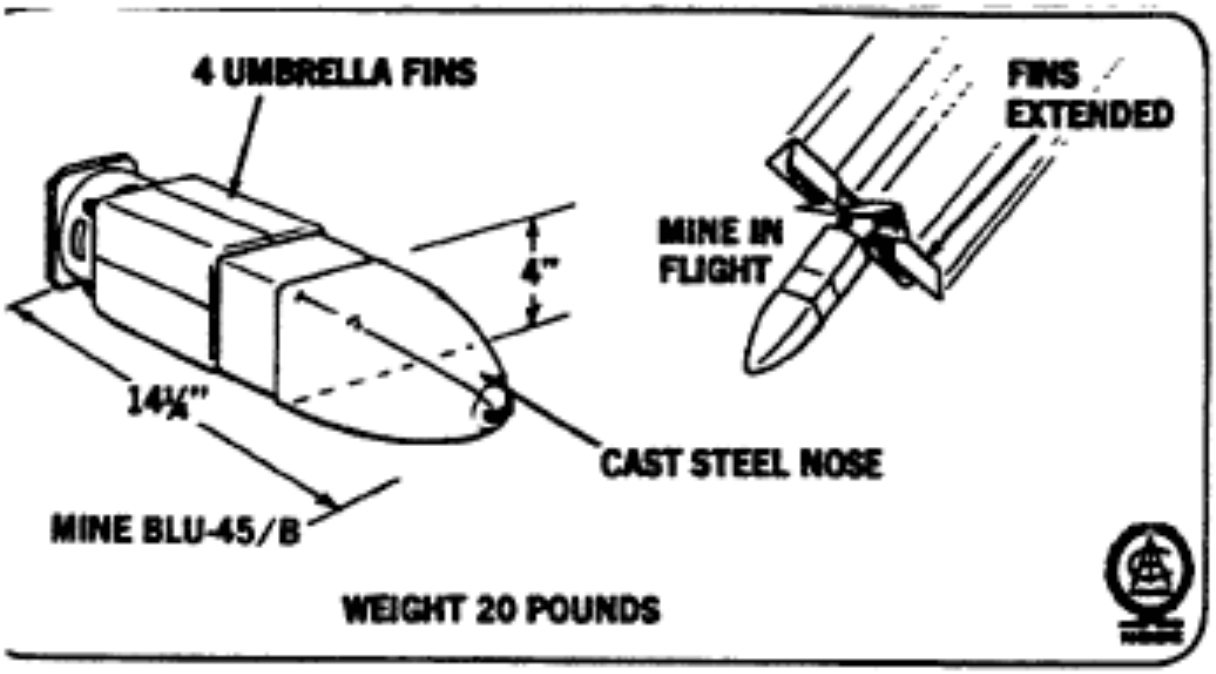


Figure 343: BLU-45/B Anti-Material Mine

BLU-49/B Fragmentation Anti-Material Anti-Personnel Bomb (Ringtail)

The BLU-49/B consists of a fragmentation body 10 inches in length by 4 5/8 inches in diameter, with a total weight of 13 pounds. When this anti-material, anti-personnel bomb is ejected from the aircraft, a conical spring extends the telescoping fin assembly and permits fuze arming to begin. The bomb will explode upon impact with the ground, fragmenting the serrated body. The bomb body is manufactured of cast steel and the fin assembly is of plastic. The BLU-49/B body is normally painted bright yellow with markings in black. The practice bomb is normally painted bright red and may contain a large spotting charge. Figure 344 illustrates this bomb.

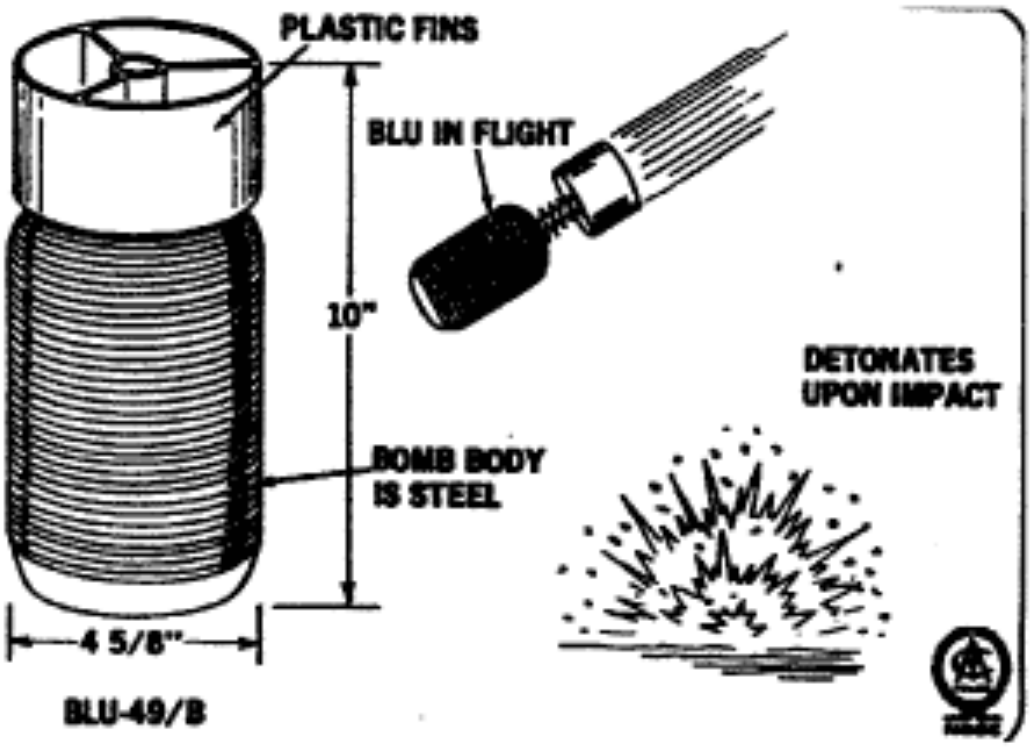


Figure 344: BLU-49/B Fragmentation Anti-Personnel Bomb (Ringtail)

BLU-61/B Fragmentation and Incendiary Anti-Personnel and Anti-Material Bomb

The BLU-611B bomb is the shape and size of a large softball measuring 3 7/8 inches in diameter and weighing approximately 2 1/2 pounds. The bomb has four protruding wind vanes moulded into its steel body. When the bomb is released, the wind vanes impart spin to the bomb and arm the internal fuze. Upon impact, the bomb detonates, producing a large number of high velocity fragments, which may also produce an incendiary effect upon striking a material target. The bomb is normally painted olive drab with a 1/4 inch diameter yellow paint dot and a 1/4 inch red paint dot on each half of the bomb. The bomb identification markings are normally stencilled on the body in black paint. No practice bomb has been identified for this BLU. Figure 345 illustrates the BLU-61/B bomb.

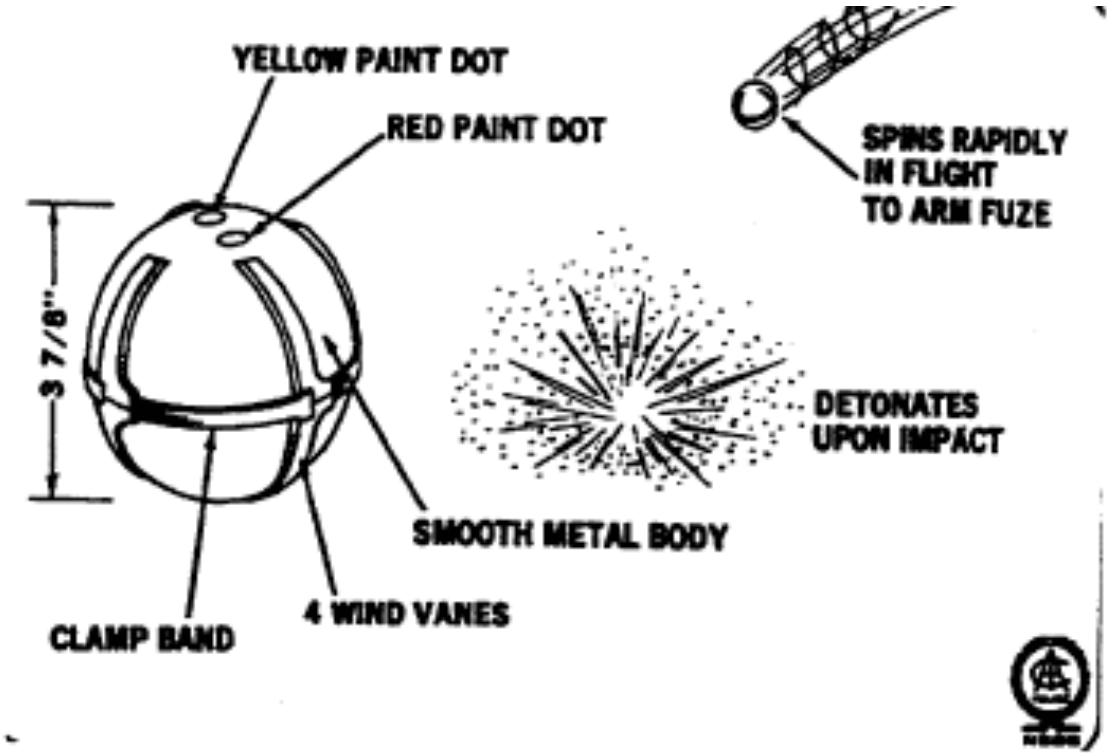


Figure 345: BLU-61/B Fragmentation and Incendiary Anti-Personnel Anti-Material Bomb