

APPENDIX A
MUNITIONS DATASHEETS

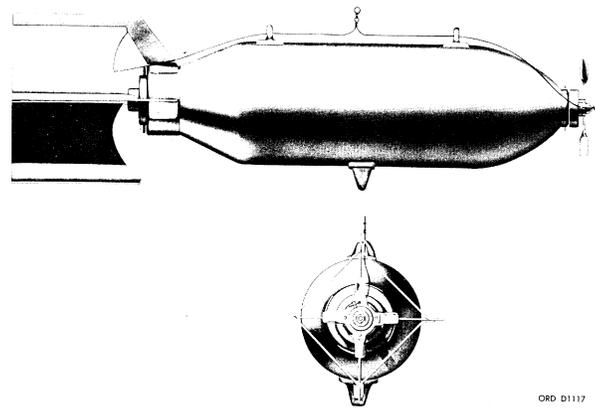
MUNITIONS LIST:

ID	NAME	DATA SHEET
CTT07	BOMB, GENERAL PURPOSE, OLD STYLE	YES
CTT18	16-INCH, AP, Mk 5	YES
CTT18	3-INCH, SHRAPNEL. Mk I	YES
CTT18	8-INCH, AP, Mk 21	YES
CTT32	M1A1, MINE, ANTI-TANK	YES
CTT47	Mk 1, DEPTH CHARGE	YES
CTT51	EXPERIMENTAL	NO

CTT07

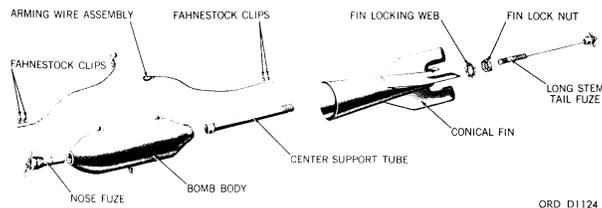
BOMBS, HIGH EXPLOSIVE

BOMB, GENERAL PURPOSE (GP) OLD SERIES



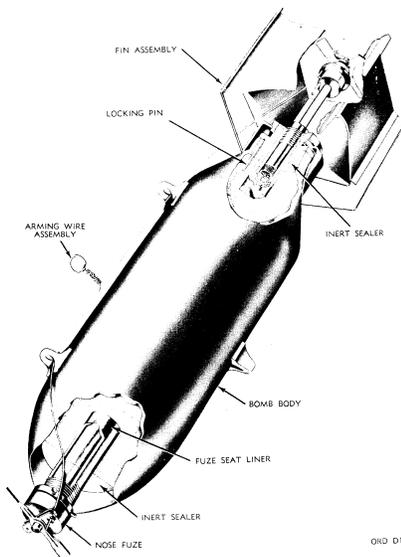
ORD D1117

Figure 1. Old-series GP bomb with box fin assembly.



ORD D1124

Figure 2. Old-series GP bomb with conical fin assembly, exploded view.



ORD D1118

Figure 3. Old series GP bomb, cutaway view.

General. The old-series GP bomb is a relatively thin-cased bomb with an ogival nose, parallel sidewalls, and a tapered aft section. Both nose and tail fuzes are used for a majority of operations. Approximately 50 percent of the complete weight of the round is its explosive filler of amatol 50-50, TNT, Tritonal or Composition B. Two suspension lugs, 14 inches or 30 inches apart, are welded to one side of the bomb body, and a single lug is welded to the opposite side at the center of gravity. Both the box-type fin assembly and the conical-type fin assembly. The box type fin assembly is secured to the aft end of the bomb body with a fin locknut, while the conical type fin assembly is secured by means of a support tube, and a locking web and a locknut. The base plug of the bomb is locked securely to the bomb body by two studs that extend from the base plug into the solidified explosive filler. The adapter-booster is locked to the base plug by a locking pin that is passed through a hole in the adapter-booster into a groove in the base plug. Bombs filled with amatol 50-50 include nose and tail surrounds of TNT, a body gasket, and an auxiliary booster. These features are not included with other explosives fillers.

Tabulated Data. Refer to table 8-1 through 8-4, for tabulated data on old-series GP bombs. Refer to figures 1. through 3., for illustrations of old-series GP bombs.

Difference Between Bombs.

AN-M30A1 and AN-M30. Bomb AN-M30A1 contains anti-withdrawal pins in the base plug and a device for locking the adapter-booster to the base plug. The earlier model, AN-M30, does not have these features. The AN-M30 is lighter in weight than its modification, the AN-M30A1. The M30 is an earlier model of the AN-M30 that differs in that it does not have a lug for single suspension. It also employs a base plug having internal threads (instead of the present externally Threaded plug) for assembly to the bomb.

AN-M57A1 and AN-M57. Bomb AN-M57A1 contains anti-withdrawal pins in the base plug and an adapter-booster that can be locked to the base plug. The earlier model, AN-M57, does not have these features.

AN-M64A1 and AN-M64. Bomb AN-M64A1 contains anti-withdrawal pins in the base plug and an adapter-booster that can be locked in place. The earlier AN-M64 lacks these anti-withdrawal features.

AN-M65A1 and AN-M65. Bomb AN-M65A1 contains anti-withdrawal pins in the base plug and an adapter-booster and fuze adapter that can be locked in place. The earlier AN-M65 lacks these anti-withdrawal features. The released weight of the AN-M65 is greater than that of the AN-M65A1, the AN-M65 having an explosive filler of 53 percent as compared to the 50 percent ratio of bomb AN-M65A1.

AN-M66A2 and AN-M66A1. Bombs AN-M66A2 and AN-M66A1 contains anti-withdrawal pins in the base plug and an adapter-booster and fuze adapter that can be locked in place. The earlier bomb AN-M66 lacks these features. The AN-M66A2 differs further from the AN-M66A1 and AN-M66 bombs by having a thicker and rounded nose. In the AN-M66A2, the ratio of explosive filler to total weight is approximately 50 percent, as compared to an average weight ratio of 53 percent in the other two bombs.

Table 8-1. Bomb, General Purpose: 100-Pound, AN-M30A1

	Fin assembly AN-M103A1	Fin assembly M135
Model	AN-M30A1	AN-M30A1
Length.....	40.26	54.2
Body Diameter.....	8.18	8.18
Fin Span (in.)	11.0	11.18
Weight of Filler (lb.):		
Amatol.	54.0	54.0
TNT.....	57.0	57.0
Tritonal.....	62.0	62.0
Weight of Fin Assembly (lb).....	5.6	17.5
Weight of Assembled Bomb (lb)		
Loaded with Amatol	116.5	128.5
Loaded with TNT.	119.5	131.5
Loaded with Tritonal.	124.5	136.5
Fin Lock Nut.....	M1 or MK2	
Arming-Wire Assembly		
Nose or Tail Fuze.....	MK1 or AN-M6A2	MK1 or AN-M6A2
Nose and Tail Fuzing.....	AN-M1A2	M14 or AN-M1A2
Adapter-Booster.	M102A1	M102A1
Nose Fuze.....	M904E1	M904E1
	M904E2	M904E2
	AN-M103A1	AN-M103A1
	AN-M139A1	AN-M139A1
	AN-M140A1	AN-M140A1
	MK243 Mod 0	MK243 Mod 0
	MK244 Mod 1	MK244 Mod 1
	AN-M166 (VT)	AN-M166 (VT)
	AN-M166E1 (VT)	AN-M166E1 (VT)
	AN-M168 (VT)	AN-M168 (VT)
	M188 (VT)	M188 (VT)
	M163	M163
	M164	M164
	M165	M165
Tail Fuze.....	AN-M100A2	M172
	M115	AN-M175
	M116	M181
	AN-M123A1 or AN-M132	
	M160	

Table 8-2. Bomb, General Purpose: 250-Pound, AN-M57A1

	Fin assembly AN-M106A1	Fin assembly M126
Model.....	AN-M57A1	AN-M57A1
Length of Assembled Bomb (in.).....	47.8	62.2
Body Diameter (in.).....	10.9	10.9
Fin Span (in.).....	15.0	15.0
Weight of Filler (lb.):		
Amatol.....	98.4	98.4
TNT.....	125.0	125.0
Tritonal.....	136.0	136.0
Weight of Fin Assembly (lb).....	8.0	25.0
Weight of Assembled Bomb (lb)		
Loaded with Amatol.....	256.63	273.63
Loaded with TNT.....	261.35	278.35
Loaded with Tritonal.....	272.35	289.35
Fin Lock Nut.....	M1 or MK2 Mod 0	
Arming-Wire Assembly:		
Nose or Tail Fuze.....	MK1 or AN-M62A2	MK1 or AN-M6A2
Nose and Tail Fuzing.....	AN-M1A2	M14
Adapter-Booster.....	M102A1	M102A1
Nose Fuze.....	M904E1	M904E1
	M904E2	M904E2
	AN-M103A1	AN-M103A1
	AN-M139A1	AN-M139A1
	AN-M140A1	AN-M140A1
	MK243 Mod 0	MK243 Mod 0
	MK244 Mod 1	MK244 Mod 1
	AN-M166 (VT)	AN-M166 (VT)
	AN-M168 (VT)	AN-M168 (VT)
	AN-M166E1 (VT)	AN-M166E1 (VT)
	M188 (VT)	M188 (VT)
	M163	M163
	M164	M164
	M165	M165
Tail Fuze.....	AN-M100A2	M172
	AN-M115	AN-M175
	AN-M123A1	M181
	AN-M132	
	M160	

Table 8-3. Bomb, General purpose: 500-Pound AN-M64A1

	Fin assembly AN-M109A1	Fin assembly M128A1
Model.	AN-M64A1	AN-M64A1
Length (in.)	59.16	72.10
Body Diameter (in.)	14.18	14.18
Fin Span (in.)	18.94	19.56
Weight of Filler (lb.):		
Amatol	262.00	262.00
TNT.....	266.00	266.00
Composition B.....	273.00	273.00
Tritonal.	283.0	283.0
Weight of Fin Assembly (lb.).....	18.6	41.0
Weight of Assembled Bomb (lb.):		
Loaded with Amatol.....	541.87	564.27
Loaded with TNT.....	548.69	571.09
Loaded with Composition B.	555.39	577.79
Loaded with Tritonal.....	561.00	586.00
Fin Lock Nut.....	M2 or MK3 Mod 0	
Arming-Wire Assembly		
Nose or Tail Fuze.....	MK1 or AN-M6A2	MK1 or AN-M6A2
Nose and Tail Fuzing.	AN-M7A1 or M13	M13
Adapter-Booster.	M115A1	M115A1
Nose Fuze.	M904E1	M904E1
	M904E2	M904E2
	AN-M103A1	AN-M103A1
	AN-M139A1	AN-M139A1
	AN-M140A1	AN-M140A1
	MK243 Mod 0	MK243 Mod 0
	MK244 Mod 1	MK244 Mod 1
	AN-M166 (VT)	AN-M166 (VT)
	AN-M166E1 (VT)	AN-M166E1 (VT)
	AN-M168 (VT)	AN-M168 (VT)
	M188 (VT)	M188 (VT)
	M163	M163
	M164	M164
	M165	M165
Tail Fuze	AN-M101A2	M172
	AN-MK230	AN-M175
	AN-M116	M181
	AN-M124A1	
	AN-M133	
	M161	

Table 8-4. Bomb, General Purpose: 1,000-Pound, AN-M65A1

	Fin assembly AN-M113A1	Fin assembly M129
Model	AN-M65A1	AN-M65A1
Length of Assembled Bomb (in.)	69.5	91.1
Body Diameter (in.)	18.8	18.8
Fin Span (in.)	25.4	26.2
Weight of filler (lb.):		
Amatol.	530.0	530.0
TNT.....	555.0	555.0
Composition B.....	560.0	560.0
Tritonal.....	595.0	595.0
Weight of Fin Assembly (lb.).....	32.1	73.0
Weight of Assembled Bomb (lb.):		
Loaded with Amatol.....	1044.0	1147.0
Loaded with TNT	1064.0	1165.2
Loaded with Composition B.	1069.0	1170.0
Loaded with Tritonal.....	1104.0	1205.21
Fin Lock Nut.....	M2 or MK 3 Mod 0	
Arming-Wire Assembly:		
Nose or Tail Fuze.....	MK1 or AN-M6A2	MK1 or AN-M6A2
Nose and Tail Fuze.	MK2 or AN-M7A1	MK13
Adapter-Booster.	M115A1	M115A1
Nose fuze.	M904E1	M904E1
	M904E2	M904E2
	AN-M103A1	AN-M103A1
	AN-M139A1	AN-M139A1
	AN-M140A1	AN-M140A1
	MK243 Mod 0	MK243 Mod 0
	MK244 Mod 1	MK244 Mod 1
	AN-M166 (VT)	AN-M166 (VT)
	AN-M166E1 (VT)	AN-M166E1 (VT)
	AN-M168 (VT)	AN-M168 (VT)
	M188 (VT)	M188 (VT)
	M163	M163
	M164	M164
	M165	M165
Tail Fuze.....	AN-M102A2	M176
	AN-MK230 Mods 4,5,6	M182
	M162	M184
	AN-M117	
	AN-M125A1	
	AN-M134	

Table 8-5. Bomb, General Purpose: 2,000, AN-M166A2

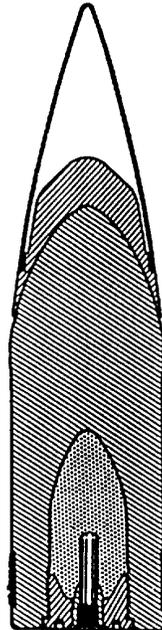
	Fin assembly AN-M116A1	Fin assembly M130
Model	AN-M66A2	AN-M66A2
Length of Assembled Bomb (in.)	92.63	116.8
Body Diameter (in.)	23.29	23.29
Fin Span (in.)	31.6	32.32
Weight of Filler (lb.):		
Amatol.	1061.0	1061.0
TNT.....	1097.7	1097.7
Composition B.....	1146.0	1146.0
Tritonal.....	1181.0	1181.0
Weight of Fin Assembly (lb.).....	54.4	135.0
Weight of Assembled Bomb (lb.):		
Loaded with Amatol.....	1977.0	2059.0
Loaded with TNT	2113.2	2194.5
Loaded with Composition B.	2162.0	2244.0
Loaded with Tritonal.....	2196.5	2277.5
Fin Lock Nut.....	M3 or MK4 Mod 0	
Arming-Wire Assembly.		
Nose or Tail Fuze.....	MK1 or AN-M6A2	MK1 or AN-M6A2
Nose and Tail Fuzing.	AN-M8A1 with MK1 Extension	M16
Adapter-Booster.	M115A1	M115A1
Nose Fuze	M904E1	M904E1
	M904E2	M904E2
	AN-M103A1	AN-M103A1
	AN-M139A1	AN-M139A1
	AN-M140A1	AN-M140A1
	MK243 Mod 0	MK243 Mod 0
	MK244 Mod 1	MK244 Mod 1
	AN-M166 (VT)	AN-M166 (VT)
	AN-M166E1 (VT)	AN-M166E1 (VT)
	AN-M168 (VT)	AN-M168 (VT)
	M188(VT)	M188(VT)
	M163	M163
	M164	M164
	M165	M165
Tail Fuze	AN-M102A2	AN-M117
	AN-MK230, Mod 4,5 & 6	M183
	AN-M177	AN-M185
	AN-M125A1	
	AN-M134	
	M162	

Reference: TM 9-1325-200, *Bombs and Bomb Components*, April 1966

CTT18

LARGE CALIBER (37MM AND LARGER), HE

PROJECTILE, 16-INCH, AP, MK 5 MOD 1-5



16-inch A.P. Mk 5 Mods 1-5

Armor-Piercing (AP). These projectiles are designed to penetrate an equal caliber of Class A armor plate. The windshield is made of either forged mild steel, steel stamping, or aluminum. It has no special strength other than to prevent destruction during handling and set back on firing. The cap is a soft steel designed to increase the power of penetration to the projectile. The body is of high quality alloy steel. The base plug closes off the explosive cavity and holds the base fuze or base fuze adapter. The base fuze is inserted through the base plug or base fuze adapter and is designed to detonate the projectile after penetration.

Length

- with cap and windshield**..... 64.0 inches
- without cap and windshield** 43.387 inches

Diameter of bourrelet..... 15.97 inches

Width of band 5.32 inches

Weight..... 2,240 pounds

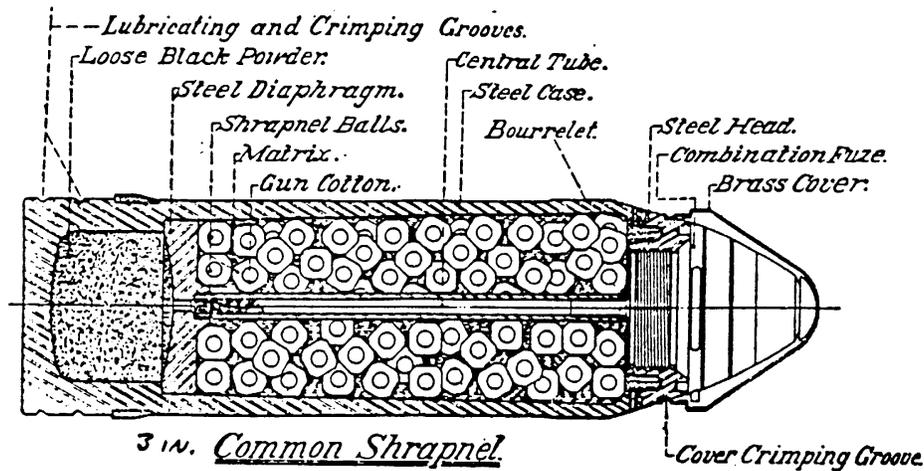
Filler Explosive D

Weight of filler 34 pounds

Fuze Base Fuze, Mk 21 Mods 0 and 1

Reference: TM 9-1904, *Ammunition Inspection Guide*, March 1944, West Point Text Book, "Ordnance and Gunnery", copyright 1907

PROJECTILE, 3-INCH, SHRAPNEL, MK I



General. This projectile consists of a steel case, near the base of which a shoulder is formed on the interior surface. A base charge of 3 ounces of black powder is packed in the base of the projectile beneath a diaphragm of steel which rest on the shoulder. This diaphragm also supports a flash tube, the upper end of which is flared out into a smaller thin diaphragm. Between the two diaphragms is held a charge of melted resin which holds 253 lead balls (hardened with antimony) suspended within it. These balls average 42 to the pound, totaling 6.2 pounds. Above the lower diaphragm, the interior of the shrapnel case is gradually enlarged in diameter so that it tapers outward from base to head. The top of the case is closed by a steel head which fastens to the case with a fine thread, and which is adapted to the fuze with a coarse thread.

Components. The complete round consists of the Mk I projectile, fuze with the 21-second M1907 Combination Fuze, and using the Mk IA1 or Mk IIA1 Cartridge Case with a propelling charge of N.H. smokeless powder, distance wad, and M28A2 Primer.

Function. The shrapnel projectile is actually a gun within a gun. The flame from the magazine charge of the fuze flashes down the central tube and ignites the black powder base charge. Explosion of the charge forces the lower diaphragm, matrix and balls, and flash tube upward, blowing off the fuze and head. The balls are ejected from the case with a velocity of 350 fps in addition to the velocity of the projectile.

Projectile Length	11.3 inches
Diameter	3 inches
Color	Red w/ white markings
Weight	15 Pounds
Explosive Filler	Black Powder
Weight of filler	3 ounces
Propellant	NH or FNH smokeless powder
Propellant Weight	5 pounds (approximately)
Fuze	M1907 Combination Fuze

References: TM 9-1904, *Ammunition Inspection Guide*, March 1944; No. 2036, *Service Markings of Ammunition and Ammunition Containers*, 1929

PROJECTILE, 8-INCH, ARMOR PIERCING, MK 21 MOD 1-5



8-inch AP, MK 21 Mods 1 - 5

Armor-Piercing (AP). These projectiles are designed to penetrate an equal caliber of Class A armor plate. The windshield is made of either forged mild steel, steel stamping, or aluminum. It has no special strength other than to prevent destruction during handling and set back on firing. The cap is a soft steel designed to increase the power of penetration to the projectile. The body is of high quality alloy steel. The base plug closes off the explosive cavity and holds the base fuze or base fuze adapter. The base fuze is inserted through the base plug or base fuze adapter and is designed to detonate the projectile after penetration.

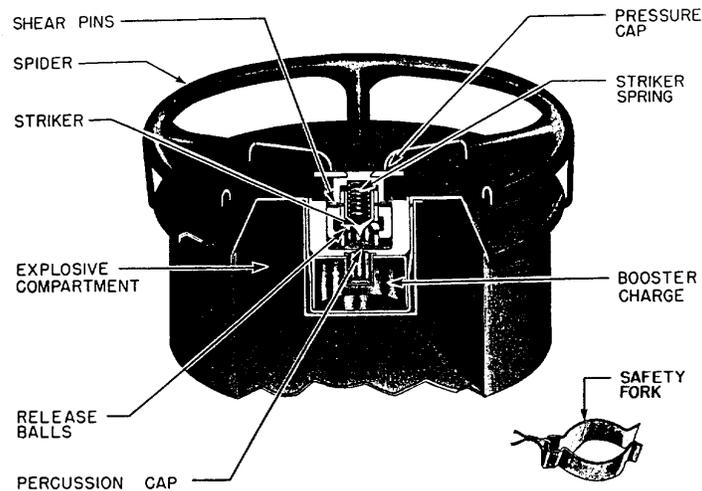
Length	
with cap and windshield	36.0 inch
without cap and windshield	24.5 inch
Diameter of bourrelet	7.97 inch
Width of band	3.30 inch
Weight	335 pound
Filler	Explosive D
Weight of filler	5.03 pounds
Fuze	Base Fuze, Mk 21 Mods 0 and 1 Base Fuze, Mk 23 Mod 0

Reference: NAVSEA OP 1664, Volume 1, *U.S. Explosive Ordnance*, 28 May 1947, West Point Text Book, "*Ordnance and Gunnery*", copyright 1907

CTT32

LANDMINES, ANTI-TANK

MINE, ANTI-TANK, M1A1



Description. The metallic Anti-Tank Mine, M1A1 has three main components: loaded body, fuze, and spider. The spider fits over the fuze to increase the effective size of its head. The steel body is a squat cylindrical container of light steel filled with high explosive. A carrying ring is attached to its side. In the center of the top is the cavity for the fuze and booster: the booster fits into the cavity and locks into place. The fuze, M1A1 consists of a striker assembly and a body with a primer. Pressure of 500 pounds directly on the fuze head, or 250 pounds on the edge of the spider functions the mine. The fuze, M1A2 is identical in outward appearance to the M1A1. The detonator is more powerful to insure a high-order explosion. The safety fork is removed to arm the mine and is left beside the mine attached to the mine with a cord.

Practice mine M1B1. This mine is made of sheet metal and resembles the service mine except that the filling hole is in the bottom of the mine body. The mine is sand-filled to weight before is issued for use in practice. Four sections are cut out of the top of the bomb body near the fuze well to permit the passage of smoke. The mine is painted blue with white markings.

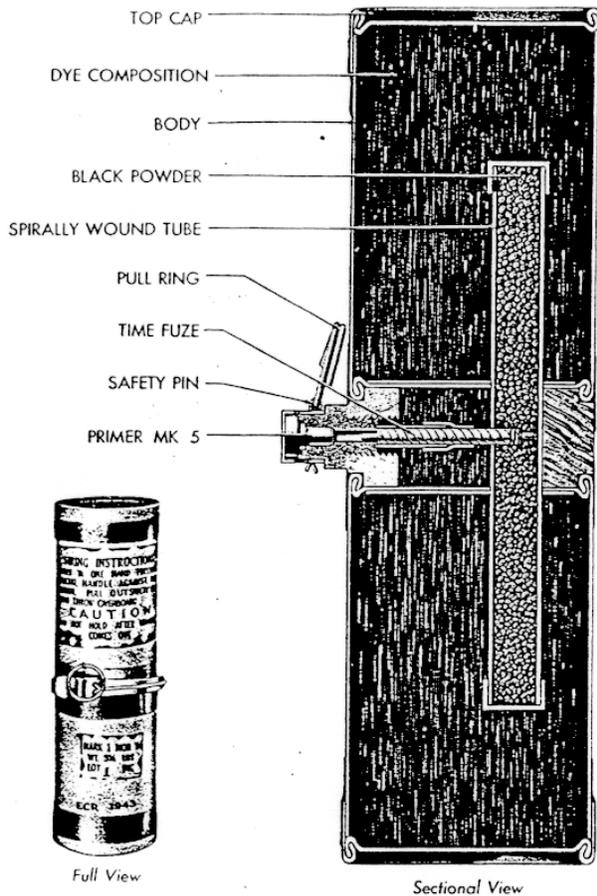
Diameter	8.0 inches
Height (with spider)	4.0 inches
Height of body	2.75 inches
Total Weight	10.6 pounds
Filler	TNT (cast)
Weight of Filler	6.0 pounds
Fuze	M1A1, M1A2
Colors	bottom and $\frac{3}{4}$ inch on side is painted yellow; rest of the mine is olive drab; markings in black

References: NAVSEA OP 1664 Volume 1&2, *U.S. Explosive Ordnance*, May 47; TM 9-1940, *Land mines*, Jul 43

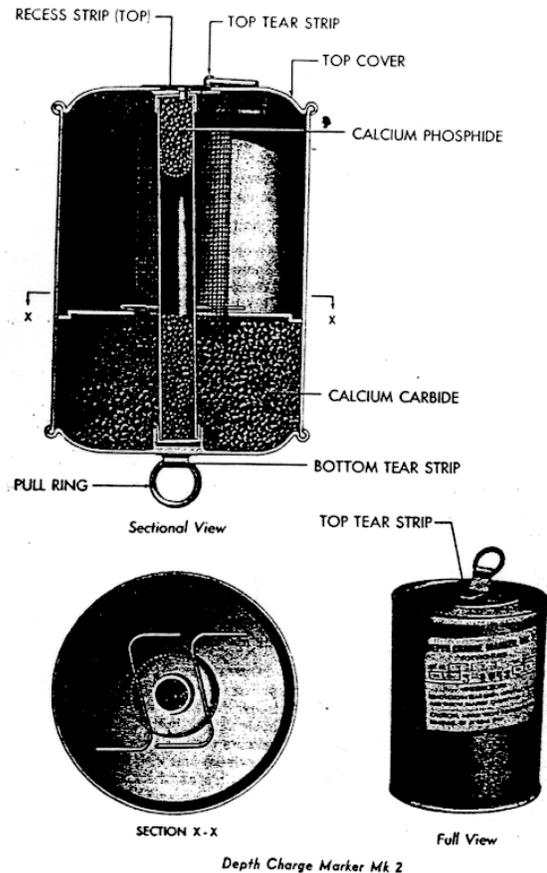
CTT47

TORPEDOES/SEA MINES

DEPTH CHARGE MARKER, MK 1 AND MK 2



Depth Charge Marker Mk 1 Mod 1



Depth Charge Marker Mk 2

Description: The MK 1 marker consists of a circular wooden block on which is mounted a grenade firing mechanism with a 15-second delay. The MK 2 marker is a sealed, cylindrical, metal container that has a centrally located tube, sealed on both ends by tear strips with a pull ring attached.

MK1

Overall length 11.88 inches
Diameter 3.46 inches
Weight 3.5 pounds
Weight of dye 2.75 pounds
Weight of bursting charge

MK 2

Overall length 7 inches
Diameter 5 inches
Weight 2.5 pounds
 30 grams

Reference: NAVSEA OP 1664, Volume 1, 28 May 1947, with change 1, dated Jan 1969

**NO DATASHEET AVAILABLE
EXPERIMENTAL**

