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ARMOR-PIERCING AMMUNITION for Gun, 90-mm, M3

JANUARY 1945

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Introduction

Various models of the latest enemy Armored Force Vehicles encountered and captured on the battlefield were shipped to the Ordnance Research and Development Center, Aberdeen, Maryland, for tests and examination. Ballistic tests revealed the need for armor piercing ammunition with greater penetrative power to defeat the thick oblique armor plate being used. Immediate steps were taken to provide our troops with ammunition for the 90mm guns which possess the required penetrative ability. Three armor piercing rounds for the Gun, 90mm, M3 have been developed and a detailed description of each and comparative penetration performances are presented in this brochure.

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SHOT, FIXED, H.V., A.P.-T., 90mm, T30E16.

DESCRIPTION. The Shot, H.V., A.P.-T., 90mm, T30E16 is issued as a fixed complete round for the Gun, 90mm, M3 mounted in Gun Motor Carriage, M36 or M36B1 and Heavy Tank, T26E3. The shot is a light weight projectile, consisting of a tungsten carbide core, aluminum body with nose plug and windshield and steel base tracer loaded.

Length:

Shot	13.20 in.
Complete Round	35.90 in.

Weight:

Shot	16.70 lb.
Complete Round	36.00 lb. (Approx.)
Muzzle Velocity	3,350 f/s

PURPOSE. *This is a special hyper-velocity, armor piercing round for attack of heavily armored vehicles. It gives greatly increased penetrative performance up to 2,000 yards range over the standard A.P.C.-T., Projectile, 90mm, M82. It is especially effective at shorter ranges. Since tungsten carbide is a critical material these projectiles should be used sparingly and only when the situation requires increased armor penetration.* This shot will penetrate all plates of the German Pz Kpfw V "Panther" and "King Tiger" Tanks. IT WILL DEFEAT THE GLACIS PLATE OF THE "PANTHER" AT RANGES UP TO 450 YARDS AND OF THE "KING TIGER" AT 100 YARDS RANGE. UP TO RANGES OF 800 YARDS THE SHOT WILL PENETRATE THE GUN MANTLET AND TURRET FRONT OF BOTH THE "PANTHER" AND "KING TIGER" TANKS.

FIRING DATA. a. Aiming data charts are provided for use with the fire control instruments on the Gun Motor Carriages, M36 and M36B1 and Heavy Tank, T26E3. The use of these charts provides direct fire with the following rounds:

Shot, A.P.-T., T33	Projectile, A.P.C.-T., M82
Shot, H.V., A.P.-T., T30E16	Shell, H.E., M71

b. The following aiming data charts are contained in this brochure:

A.D.C. 90-B-1, 90mm Gun, (with muzzle brake) M3 on Heavy Tank, T26E3 with Coaxial Telescope, M71C and Periscope Telescopes, M77F and M80D.

A.D.C. 90-C-3, 90mm Gun, (without muzzle brake) M3 on Gun Motor Carriage, M36 or M36B1 with Coaxial Telescope, M76F.

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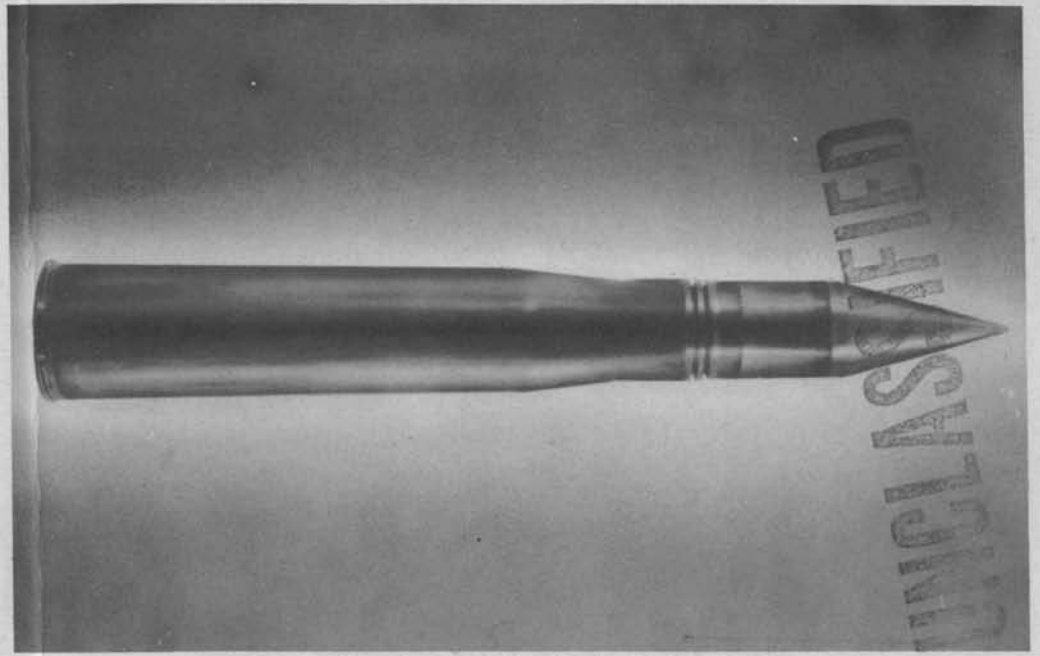
c. Firing Tables are included in this booklet.

ACCURACY. Accuracy firings from the M3 Gun with the rounds loaded for a MV of 3,400 f/s have been conducted with the T30 type shot at a vertical target over a range of 2,100 yards. The extreme horizontal dispersion was 17 inches and the extreme vertical dispersion 30 inches.

PENETRATION. A curve showing the comparison of penetration vs. range of Projectile, A.P.C.-T., M82 and Shot, H.V., A.P.-T., T30E16 when fired against homogeneous armor plate at 20° and 30° obliquity is contained in this report. Illustrations are included indicating results obtained with this shot against the "Panther" tank.

MARKING. Special markings appear on each cartridge case, container and box in red paint.

HYPERVELOCITY
MV 3350 F/S



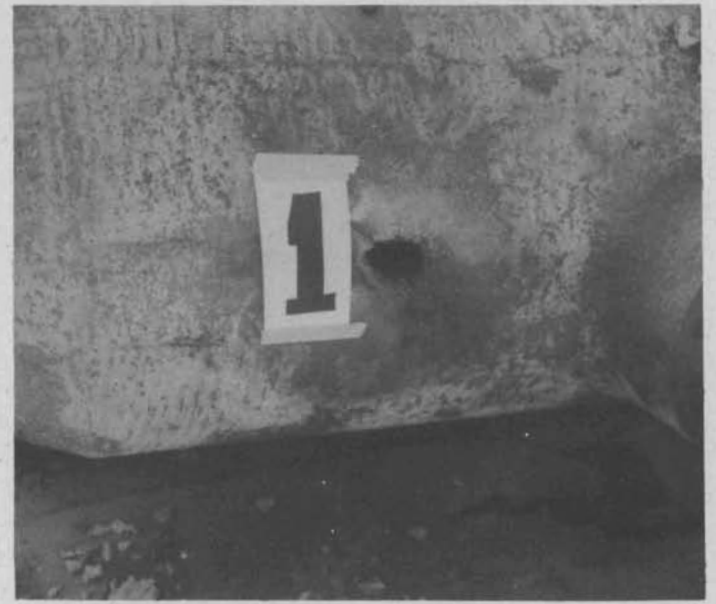
Shot, fixed, H.V., A.P.-T., T30E16 for Gun, 90mm, M3.



Shot, H.V., A.P., 90mm, T30E16.

GUN, 90MM, M3. SHOT, H.V., A.P.-T., T30E16. MUZZLE VELOCITY, 3350 F/S. WEIGHT, 16.7 LBS. C_7, 1.109.

Range yards	Elev. mils	Time of Flight seconds	Max. Ord. feet	Terminal Velocity f/s	Range yards	Elev. mils	Time of Flight seconds	Max. Ord. feet	Terminal Velocity f/s
0	0.0	0.00	0	3350	1800	9.4	1.84	14	2580
100	0.4	0.09	0	3305	1900	10.0	1.96	15	2540
200	0.9	0.18	0	3260	2000	10.7	2.08	17	2500
300	1.3	0.27	0	3216	2100	11.3	2.20	20	2461
400	1.8	0.36	1	3171	2200	12.0	2.32	22	2422
500	2.3	0.46	1	3127	2300	12.7	2.45	24	2383
600	2.8	0.56	1	3083	2400	13.4	2.57	27	2345
700	3.3	0.66	2	3039	2500	14.1	2.70	29	2307
800	3.8	0.76	2	2996	2600	14.8	2.83	32	2269
900	4.3	0.86	3	2953	2700	15.6	2.96	36	2232
1000	4.8	0.96	4	2910	2800	16.3	3.09	39	2195
1100	5.3	1.06	5	2868	2900	17.1	3.23	42	2159
1200	5.9	1.17	6	2826	3000	17.9	3.37	46	2123
1300	6.4	1.28	7	2784	3100	18.7	3.51	50	2087
1400	7.0	1.39	8	2742	3200	19.6	3.66	54	2052
1500	7.6	1.50	9	2701	3300	20.4	3.80	59	2017
1600	8.2	1.61	10	2660	3400	21.3	3.95	64	1982
1700	8.8	1.73	12	2620	3500	22.2	4.11	69	1948



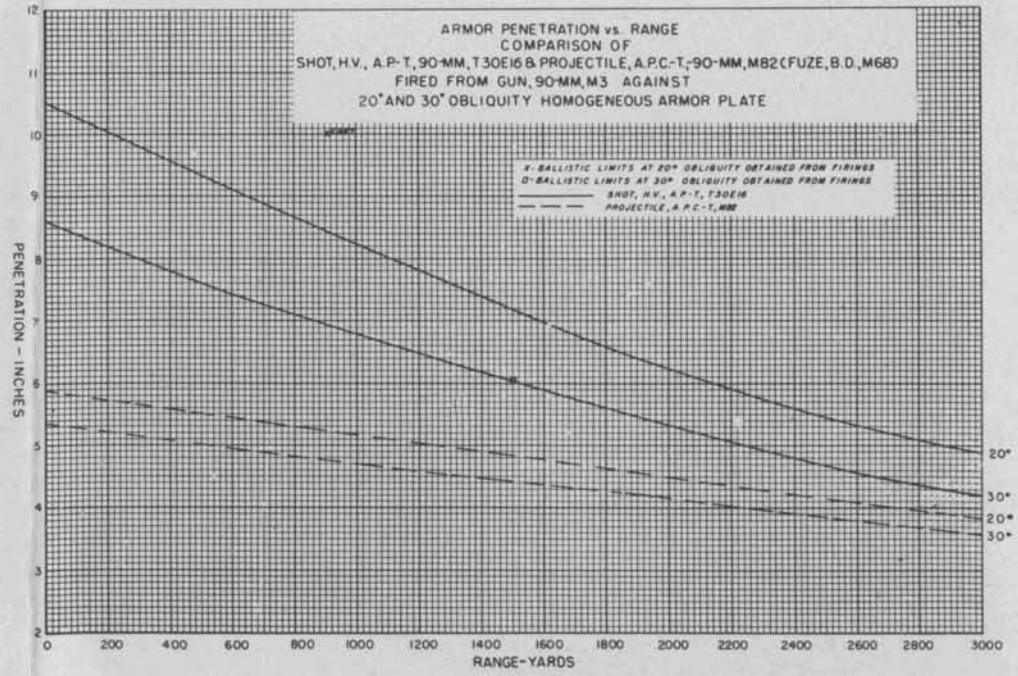
Complete penetration of gun mantlet and turret front plate has been obtained against the German Pz Kpfw V "Panther" Tank by Shot, H.V., A.P., T30E16 at a range of 800 yards.



Complete penetration at the juncture of machine gun ball mount with the glacis plate of German Pz Kpfw V "Panther" Tank by Shot, H.V., A.P., T30E16 at a range of 800 yards.



Complete penetration of lower nose plate of German Pz Kpfw V "Panther" Tank. Shot, H.V., A.P., T30E16 fired at a range of 600 yards.



SHOT, FIXED, A.P.-T., 90mm, T33. DESCRIPTION. The 90mm Armor Piercing Shot T33 is issued as a fixed complete round for the Gun, 90mm, M3 mounted in Heavy Tank, T26E3 and Gun Motor Carriages, M36 and M36B1. The shot is a modification of the standard AP, M77 which has been reheat-treated and to which a ballistic windshield has been attached.

Length:	
Shot	14.78 in.
Complete round	37.53 in.
Weight:	
Shot	24.06 lb.
Complete round	43.82 lb.
Muzzle Velocity	2,800 f/s

PURPOSE. *This is the most effective shot for the defeat of high obliquity caliber thickness homogeneous armor plate.* The shot will defeat all plates of the German Pz Kpfw V "Panther" Tank except the gun mantlet. IT WILL PENETRATE THE GLACIS PLATE OF THE "PANTHER" TANK UP TO 1,100 YARDS RANGE.

FIRING DATA. a. Aiming data charts are provided for use with the fire control instruments on the Gun Motor Carriages, M36 and M36B1 and Heavy Tank, T26E3. The use of these charts provides direct fire with the following rounds:

Shot, A.P.-T., T33
Shot, H.V., A.P.-T., T30E16
Projectile, A.P.C.-T., M82
Shell, H.E., M71

b. The following aiming data charts are contained in this brochure:

A.D.C. 90–B–1, 90mm Gun, (with muzzle brake) M3 on Heavy Tank, T26E3 with Coaxial Telescope, M71C and Periscope Telescopes, M77F and M80D.

A.D.C. 90–C–3, 90mm Gun, (without muzzle brake) M3 on Gun Motor Carriage, M36 or M36B1 with Coaxial Telescope, M76F.

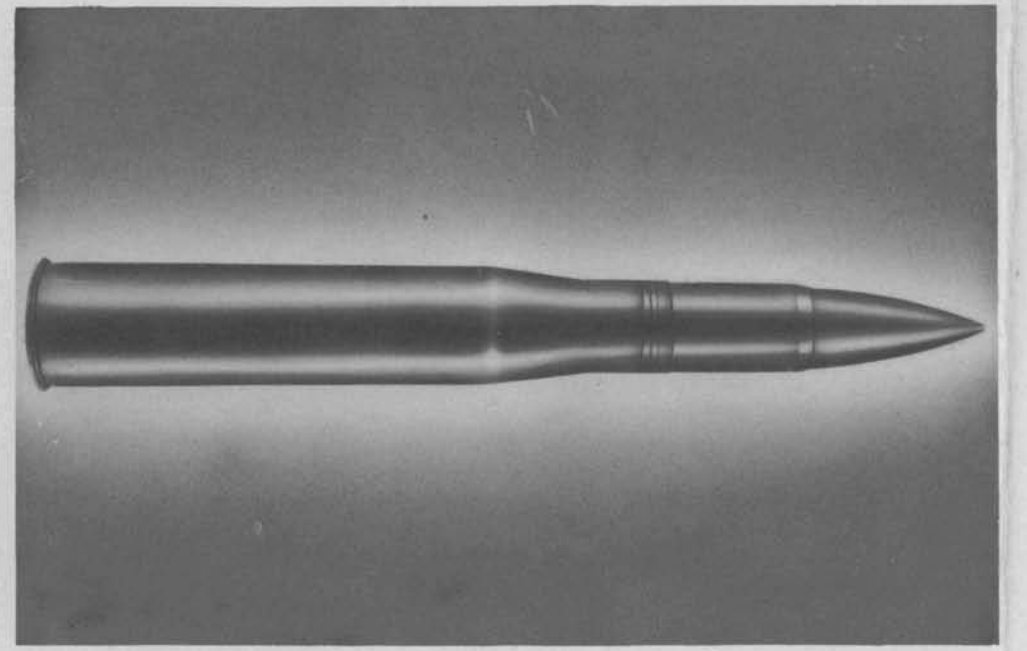
c. Firing Tables are included in this booklet.

ACCURACY. Accuracy firings have been conducted with the T33 round loaded for a M.V. of 2800 f/s and fired from a standard 90-mm Gun over a range of 700 yards at a vertical target. An extreme horizontal dispersion of 16 inches and an extreme vertical dispersion of 19 inches was obtained.

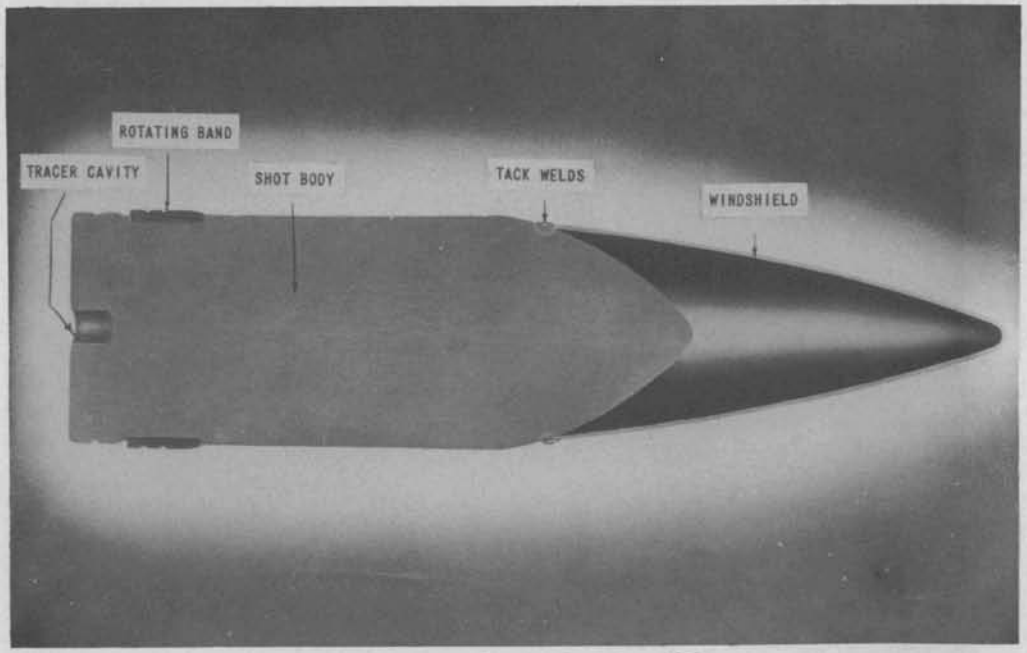
PENETRATION. Armor penetration curves for the shot compared with the standard A.P.C.-T., M82 Projectile when fired against homogeneous armor plate at 20° obliquity are contained herein. Included are illustrations of results obtained, with this shot, against the German Pz Kpfw V "Panther" Tank.

MARKING. A special marking in black appears on each cartridge case, container and box:

MV 2800 F/S



Shot, fixed, A.P.-T., T33 for Gun, 90mm, M3.



Cross Section of Shot, A.P., 90mm, T33.

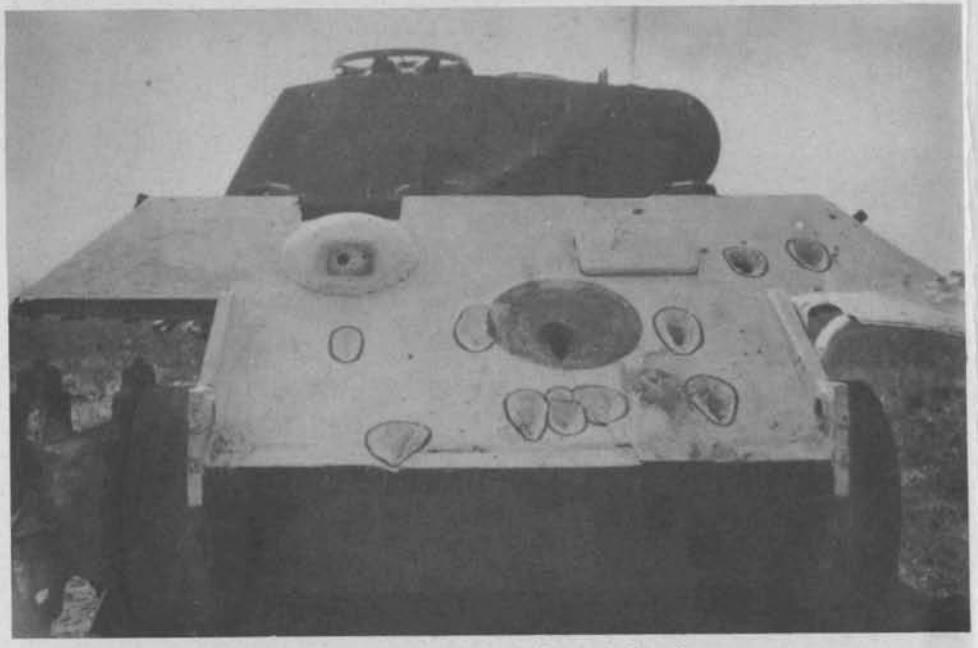
GUN, 90MM, M3. SHOT, 90MM, A.P.-T., T33. MUZZLE VELOCITY, 2800 F/S. WEIGHT, 24.06 LBS.

Range	Elevation	Time of Flight	Maximum Ordinate	Terminal Velocity
yards	mils	sec	feet	f/s
0	0.0	0.00	0	2800
100	0.6	0.11	0	2774
200	1.2	0.22	0	2747
300	1.9	0.33	0	2720
400	2.5	0.44	0	2694
500	3.2	0.55	1	2668
600	3.9	0.66	2	2642
700	4.6	0.77	2	2615
800	5.3	0.88	3	2588
900	6.0	1.00	4	2562
1000	6.7	1.12	5	2536
1100	7.4	1.24	6	2510
1200	8.1	1.36	7	2484
1300	8.9	1.48	9	2457
1400	9.6	1.61	10	2431
1500	10.4	1.73	12	2405
1600	11.2	1.85	14	2379
1700	12.0	1.98	16	2353
1800	12.8	2.11	18	2328
1900	13.6	2.24	20	2302
2000	14.4	2.37	23	2276
2100	15.2	2.50	26	2250
2200	16.0	2.63	29	2225
2300	16.9	2.77	32	2200
2400	17.8	2.91	35	2174
2500	18.7	3.05	38	2149
2600	19.6	3.19	41	2123
2700	20.5	3.33	45	2097
2800	21.4	3.47	49	2072
2900	22.3	3.62	53	2048
3000	23.3	3.77	58	2023
3100	24.3	3.92	63	1998
3200	25.3	4.07	68	1973
3300	26.3	4.22	73	1948
3400	27.3	4.38	78	1924
3500	28.3	4.54	84	1900

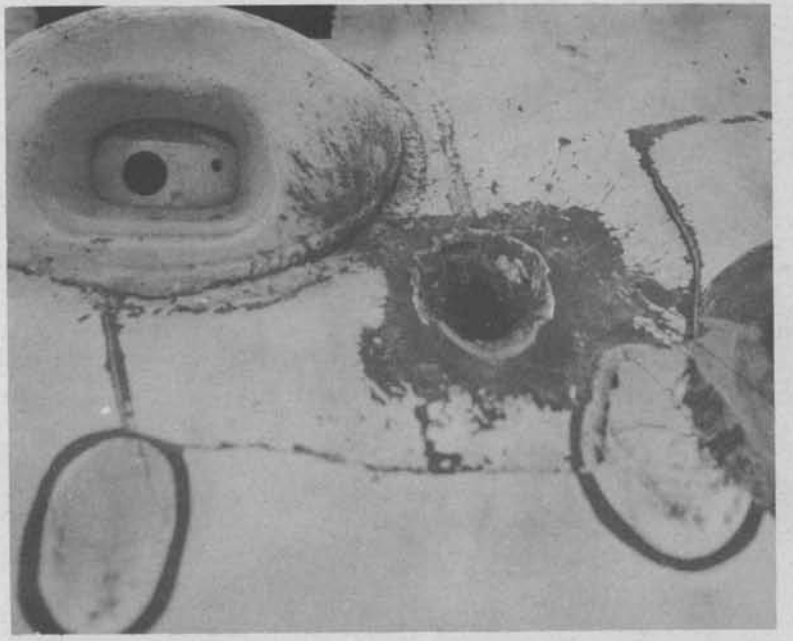
GUN, 90MM, M3. SHOT, 90MM, A.P.-T., T33. MUZZLE VELOCITY, 2800 F/S. WEIGHT, 24.06 LBS.

Range	Elevation	Time of Flight	Maximum Ordinate	Terminal Velocity
yards	mils	sec	feet	f/s
3600	29.4	4.70	90	1876
3700	30.5	4.86	96	1852
3800	31.6	5.02	103	1828
3900	32.7	5.19	110	1804
4000	33.8	5.36	117	1781
4100	35.0	5.53	124	1758
4200	36.2	5.70	132	1734
4300	37.4	5.87	140	1711
4400	38.6	6.05	149	1688
4500	39.8	6.23	158	1666
4600	41.1	6.41	167	1644
4700	42.4	6.59	177	1622
4800	43.7	6.78	187	1600
4900	45.0	6.97	197	1578
5000	46.4	7.16	208	1556
5100	47.8	7.35	219	1535
5200	49.2	7.55	231	1514
5300	50.7	7.75	243	1493
5400	52.2	7.95	256	1472
5500	53.7	8.16	270	1452
5600	55.2	8.37	284	1432
5700	56.8	8.58	299	1412
5800	58.4	8.80	314	1392
5900	60.0	9.02	330	1373
6000	61.7	9.24	346	1354
6100	63.4	9.46	363	1335
6200	65.1	9.69	381	1316
6300	66.9	9.92	399	1298
6400	68.7	10.16	418	1280
6500	70.5	10.40	438	1262
6600	72.4	10.64	459	1244
6700	74.3	10.89	481	1227
6800	76.3	11.14	503	1210
6900	78.3	11.39	526	1193
7000	80.4	11.65	550	1177

Note: When firing with the 90mm Gun, M3 without muzzle brake mounted in the Gun Motor Carriages, M36 or M36B1 add 0.6 mils to all values of elevation.



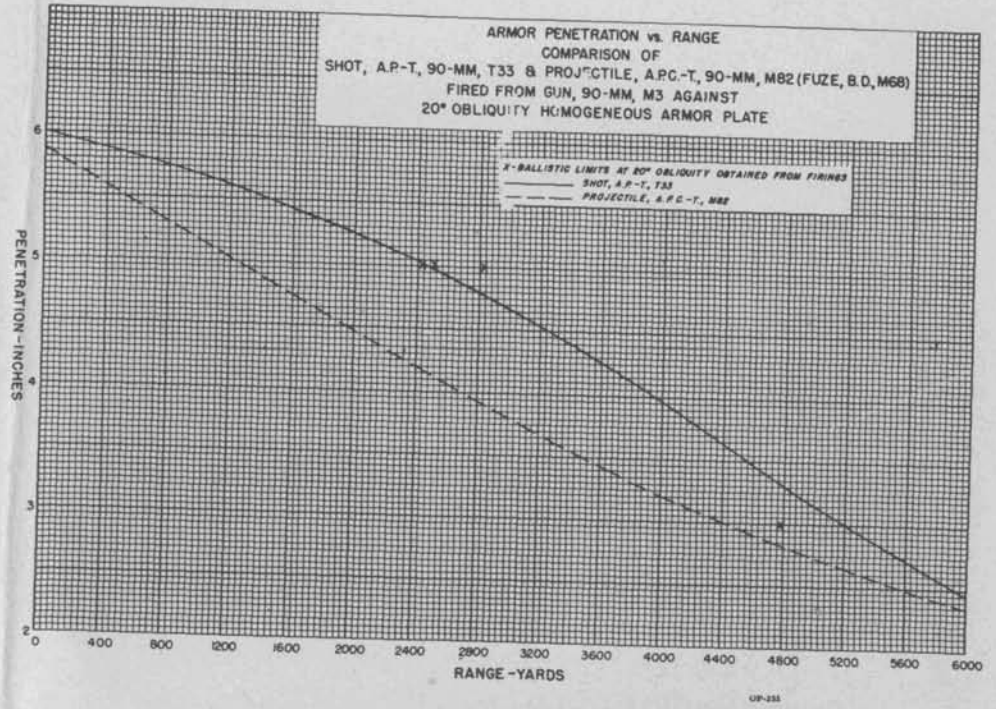
German Pz Kpfw V (Panther) Tank, before firing.



German Pz Kpfw V (Panther) Tank; Complete penetration at 500 yards with Shot, A.P., 90mm, T33.



Complete penetration of glacis plate of German Pz Kpfw V (Panther) Tank by Shot, A.P., 90mm, T33 at a range of 1000 yards.



Projectile, Fixed, A.P.C.-T., M82 (2,800 f/s M. V.) DESCRIPTION. The M82 armor piercing projectile is issued as a fixed complete round for the Gun, 90mm, M3 mounted in Heavy Tank, T26E3 and Gun Motor Carriages, M36 and M36B1. The projectile has an armor piercing cap, ballistic windshield and an Expl. "D" bursting charge which is functioned by the Fuze, B. D., M68.

Length:	
Projectile	16.40 in.
Complete Round	38.24 in.
Weight:	
Projectile	24.11 lb.
Complete Round	43.87 lb.
Muzzle Velocity	2,800 f/s.

PURPOSE. The muzzle velocity of this round is 2,800 f/s. The armor piercing cap makes this projectile especially efficient against thick face hardened armor plate. The bursting charge makes it extremely effective when penetrations are obtained. PENETRATIONS CAN BE OBTAINED ON ALL PLATES OF THE "PANTHER" AND "KING TIGER" TANKS EXCEPT FOR THE GLACIS PLATE AND THE GUN MANTLET.

FIRING DATA. a. Aiming data charts are provided for use with the fire control instruments on the Gun Motor Carriages, M36 and M36B1 and Heavy Tank, T26E3. The use of these charts provides direct fire with the following rounds:

Shot, A.P.-T., T33
Shot, H.V., A.P.-T., T30E16
Projectile, A.P.C.-T., M82
Shell, H.E., M71

b. The following aiming data charts are contained in this brochure:

A.D.C. 90-B-1, 90mm Gun, (with muzzle brake) M3 on Heavy Tank, T26E3 with Coaxial Telescope, M71C and Periscope Telescopes, M77F and M80D.

A.D.C. 90-C-3, 90-mm Gun, (without muzzle brake) M3 on Gun Motor Carriage, M36 or M36B1 with Coaxial Telescope, M76F.

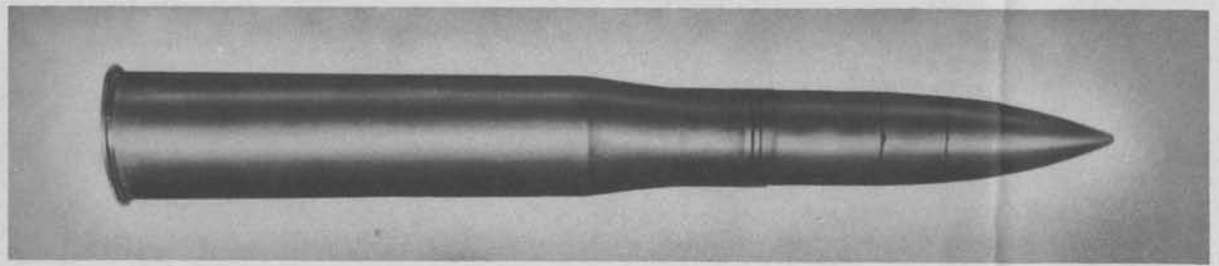
c. Firing Tables are included in this booklet.

ACCURACY. Firings for accuracy with the round loaded for a M. V. of 2,800 f/s from the M3 Gun over a range of 2,100 yards at a vertical target gave an extreme horizontal dispersion of 41 inches and 70 inches extreme vertical dispersion.

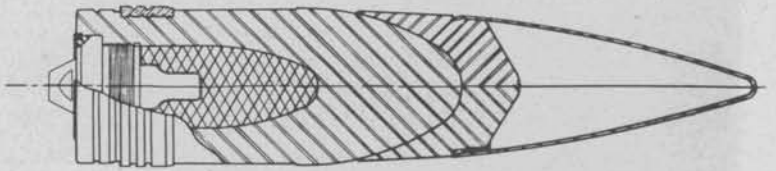
PENETRATION. Armor penetration vs. range curves for the projectile when fired against 20° and 30° obliquity homogeneous armor plate are included in this booklet. Illustrations showing the results of firings of this round against plates similar to those of the "Panther" tank are presented following this discussion.

MARKING. Special markings are painted in black on each cartridge case, container and box.

MV 2800 F/S



Projectile, fixed, A.P.C.-T, M82 for Gun, 90mm, M3.



Cross Section of Projectile, A.P.C.-T., 90mm, M82.

GUN, 90MM, M3. PROJECTILE, A.P.C.-T., M82. FUZE, B.D., M68. MUZZLE VELOCITY, 2800 F/S. WEIGHT, 24.11 LBS.

Range	Elevation	Time of Flight	Maximum Ordinate	Terminal Velocity
yards	mils	sec	feet	f/s
0	0.0	0.00	0	2800
100	0.6	0.11	0	2777
200	1.3	0.22	0	2753
300	1.9	0.33	0	2729
400	2.5	0.44	1	2706
500	3.2	0.55	1	2683
600	3.9	0.66	2	2660
700	4.5	0.77	2	2636
800	5.2	0.88	3	2612
900	5.9	1.00	4	2589
1000	6.6	1.12	5	2566
1100	7.3	1.24	6	2543
1200	8.1	1.36	7	2520
1300	8.8	1.48	8	2496
1400	9.5	1.60	10	2473
1500	10.3	1.72	12	2450
1600	11.1	1.84	14	2427
1700	11.8	1.96	16	2403
1800	12.6	2.08	18	2380
1900	13.4	2.21	20	2357
2000	14.2	2.34	22	2334
2100	15.0	2.47	24	2311
2200	15.8	2.60	27	2288
2300	16.6	2.73	30	2265
2400	17.4	2.86	33	2242
2500	18.3	3.00	36	2220
2600	19.2	3.14	39	2198
2700	20.0	3.28	43	2176
2800	20.9	3.42	47	2153
2900	21.8	3.56	51	2130
3000	22.7	3.70	55	2108
3100	23.6	3.84	59	2086
3200	24.5	3.99	64	2063
3300	25.4	4.13	69	2041
3400	26.4	4.28	74	2019
3500	27.4	4.43	79	1997
3600	28.4	4.58	84	1975
3700	29.3	4.73	90	1953

GUN, 90MM, M3. PROJECTILE, A.P.C.-T., M82. FUZE, B.D., M68. MUZZLE VELOCITY, 2800 F/S. WEIGHT, 24.11 LBS.

Range	Elevation	Time of Flight	Maximum Ordinate	Terminal Velocity
yards	mils	sec	feet	f/s
3800	30.3	4.88	96	1931
3900	31.3	5.04	102	1910
4000	32.4	5.20	109	1889
4100	33.5	5.36	116	1868
4200	34.5	5.52	123	1847
4300	35.6	5.68	130	1826
4400	36.7	5.85	138	1805
4500	37.9	6.02	146	1784
4600	39.1	6.19	154	1763
4700	40.3	6.36	163	1743
4800	41.5	6.53	172	1722
4900	42.7	6.71	182	1701
5000	44.0	6.89	192	1681
5100	45.3	7.07	202	1662
5200	46.6	7.25	213	1642
5300	47.9	7.44	224	1623
5400	49.2	7.62	235	1604
5500	50.5	7.81	247	1585
5600	51.9	8.00	259	1566

Range	Elevation	Time of Flight	Maximum Ordinate	Terminal Velocity
yards	mils	sec	feet	f/s
5700	53.2	8.19	272	1547
5800	54.6	8.39	285	1528
5900	56.1	8.59	299	1509
6000	57.5	8.79	313	1491
6100	59.0	8.99	328	1473
6200	60.5	9.20	343	1455
6300	62.0	9.41	359	1437
6400	63.6	9.62	375	1419
6500	65.2	9.84	392	1401
6600	66.8	10.06	410	1384
6700	68.5	10.28	428	1366
6800	70.2	10.50	447	1349
6900	71.9	10.73	466	1333
7000	73.6	10.96	486	1316

Note: When firing with the 90mm Gun, M3 with muzzle brake mounted in the Heavy Tank, T26E3, add 0.4 mil to all values of elevation.

When firing with the 90mm Gun, M3 without muzzle brake mounted in the Gun Motor Carriages, M36 or M36B1, add 0.3 mil to all values of elevation.

GUN, 90MM, M3. PROJECTILE, A.P.C.-T., M82. FUZE, B.D., M68. MUZZLE VELOCITY, 2800 F/S. WEIGHT, 24.11 LBS.

Range	Elevation	Time of Flight	Maximum Ordinate	Terminal Velocity
yards	mils	sec	feet	f/s
3800	30.3	4.88	96	1931
3900	31.3	5.04	102	1910
4000	32.4	5.20	109	1889
4100	33.5	5.36	116	1868
4200	34.5	5.52	123	1847
4300	35.6	5.68	130	1826
4400	36.7	5.85	138	1805
4500	37.9	6.02	146	1784
4600	39.1	6.19	154	1763
4700	40.3	6.36	163	1743
4800	41.5	6.53	172	1722
4900	42.7	6.71	182	1701
5000	44.0	6.89	192	1681
5100	45.3	7.07	202	1662
5200	46.6	7.25	213	1642
5300	47.9	7.44	224	1623
5400	49.2	7.62	235	1604
5500	50.5	7.81	247	1585
5600	51.9	8.00	259	1566

Range	Elevation	Time of Flight	Maximum Ordinate	Terminal Velocity
yards	mils	sec	feet	f/s
5700	53.2	8.19	272	1547
5800	54.6	8.39	285	1528
5900	56.1	8.59	299	1509
6000	57.5	8.79	313	1491
6100	59.0	8.99	328	1473
6200	60.5	9.20	343	1455
6300	62.0	9.41	359	1437
6400	63.6	9.62	375	1419
6500	65.2	9.84	392	1401
6600	66.8	10.06	410	1384
6700	68.5	10.28	428	1366
6800	70.2	10.50	447	1349
6900	71.9	10.73	466	1333
7000	73.6	10.96	486	1316

Note: When firing with the 90mm Gun, M3 with muzzle brake mounted in the Heavy Tank, T26E3, add 0.4 mil to all values of elevation.

When firing with the 90mm Gun, M3 without muzzle brake mounted in the Gun Motor Carriages, M36 or M36B1, add 0.3 mil to all values of elevation.



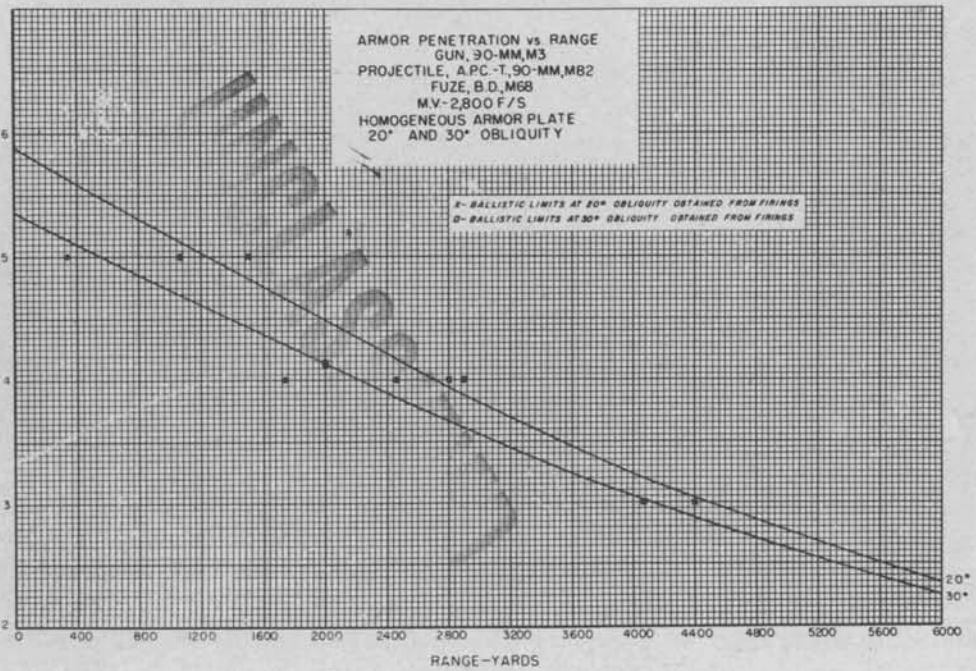
Complete penetration of Projectile, A.P.C., M82 (2800 f/s M.V.) fired against 2.5 in. of homogeneous armor plate at 55° obliquity. (Lower nose plate of "Panther" Tank is 2.4 in. at 55°.) Penetration obtained at the following ranges: Rd. 5, Point Blank; Rd. 6, 650 yards; Rd. 8, 950 yards.

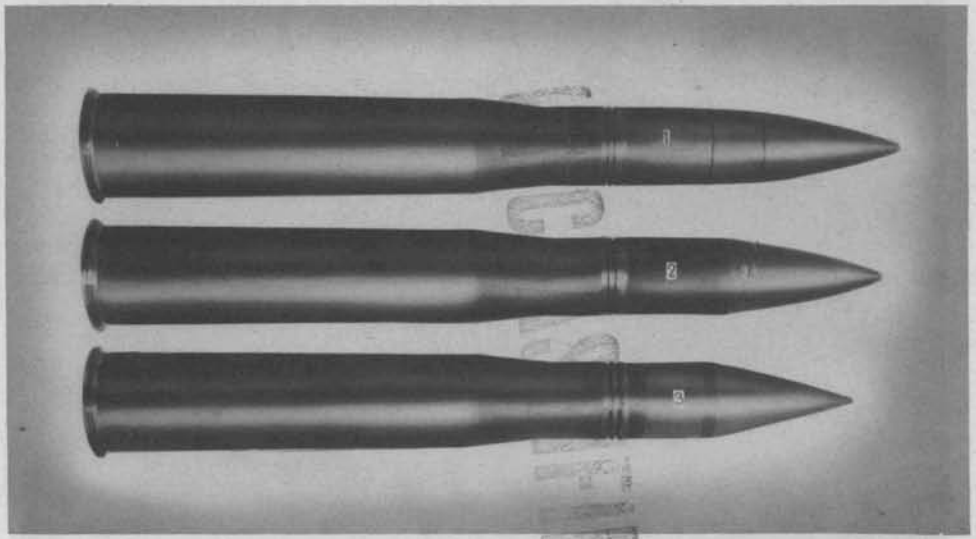


Complete penetration of Projectile, A.P.C., M82 (2800 f/s M.V.) fired against 2.5 in. of homogeneous armor plate at 55° obliquity. (Lower nose plate of "Panther" Tank is 2.4 in. at 55°.) Penetration obtained at the following ranges: Rd. 5, Point Blank; Rd. 6, 650 yards; Rd. 8, 950 yards.



Projectile, A.P.C., M82 (2800 f/s M.V.) fired against 1.5 in. of homogeneous armor plate at 50°. (Side superstructure plate of "Panther" Tank is 1.5 in. at 40°). Penetration obtained at the following ranges: Rd. 9, 4800 yards; Rd. 10, 5450 yards; Rd. 11, 5850 yards.





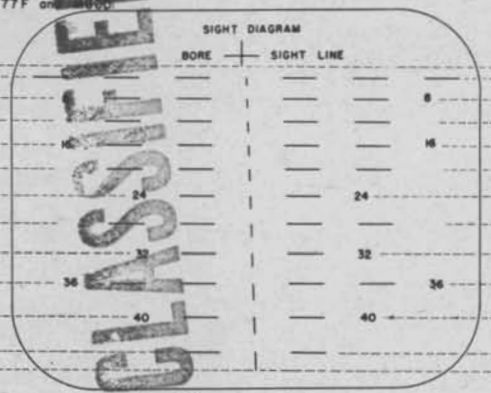
Complete rounds for 90mm Gun, M3. No. 1—Projectile, A.P.C.-T., 90mm, M82; No. 2—Shot, A.P.-T., 90mm, T33; No. 3—Shot, H.V., A.P.-T., 90mm, T30E16. All rounds assembled with Case, Cartridge, 90mm, M19.

90-mm GUN, (With muzzle brake) M3 on HEAVY TANK, T26E3 w/ COAXIAL TELESCOPE, M71C and PERISCOPE TELESCOPES, M77F on [illegible]

A.D.C. 90-B-1 (ADVANCE COPY)

SHOT, A.P-T, T33 2,800 f/s	SHOT, H.V., A.P.-T, T30E15 3,350 f/s	PROJ, A.P.C-T, M82 2,800 f/s	SHELL, H.E., M71 2,700 f/s	PROJ, A.P.C.-T, M82 2,670 f/s	ELEV. M
300	400	200	100	100	1.6
500	700	400	400	300	3.1
900	1,200	900	800	700	6.0
1,300	1,800	1,300	1,200	1,100	9.2
1,700	2,300	1,700	1,600	1,500	12.4
2,200	2,700	2,200	2,100	1,900	15.9
2,600	3,200	2,600	2,500	2,300	19.5
3,000		3,000	2,900	2,700	23.4
3,400		3,500	3,300	3,100	27.5
3,800		3,900	3,700	3,500	31.8
4,200		4,300	4,100	3,900	36.5
4,600		4,800	4,500	4,400	38.9
4,800		5,000	4,700	4,600	41.4

SIGHT DIAGRAM



TO USE CHART: GET ESTIMATED RANGE AND LOCATE IN COLUMN UNDER AMMUNITION BEING FIRED. READ SIGHT SETTING FROM SIGHT DIAGRAM.

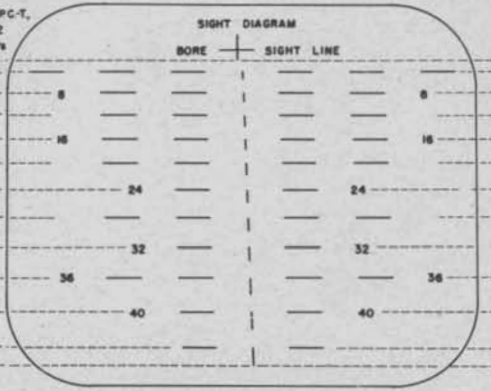
NOTE: BORE SIGHT ON THE INTERSECTION OF THE CENTER LINE, EXTENDED IF NECESSARY, AND THE HORIZONTAL PORTION OF THE BORE SIGHT CROSS.

90-mm GUN, (w/out muzzle brake) M3 on GUN MOTOR CARR., M36 or M36 B1 w/COAXIAL TELESCOPE M76F

A.D.C. 90-C-3 (ADVANCE COPY)

SHOT, A.P-T, T33 2,800 f/s	SHOT, H.V., A.P.-T, T30E15 3,350 f/s	PROJ, A.P.C-T, M82 2,800 f/s	SHELL, H.E., M71 2,700 f/s	PROJ, A.P.C-T, M82 2,670 f/s	ELEV. M
200	400	200	200	200	1.6
400	700	400	500	400	3.1
800	1,200	900	900	800	6.0
1,300	1,800	1,300	1,300	1,200	9.2
1,700	2,300	1,700	1,700	1,600	12.4
2,100	2,700	2,200	2,100	2,000	15.9
2,500	3,200	2,600	2,500	2,400	19.5
2,900		3,000	2,900	2,800	23.4
3,400		3,500	3,300	3,200	27.5
3,800		3,900	3,700	3,600	31.8
4,200		4,400	4,100	4,000	36.5
4,600		4,800	4,500	4,400	41.4
4,800		5,000	4,700	4,600	44.0

SIGHT DIAGRAM



TO USE CHART: GET ESTIMATED RANGE AND LOCATE IN COLUMN UNDER AMMUNITION BEING FIRED. READ SIGHT SETTING FROM SIGHT DIAGRAM.

NOTE: BORE SIGHT ON THE INTERSECTION OF THE CENTER LINE, EXTENDED IF NECESSARY, AND THE HORIZONTAL PORTION OF THE BORE SIGHT CROSS.