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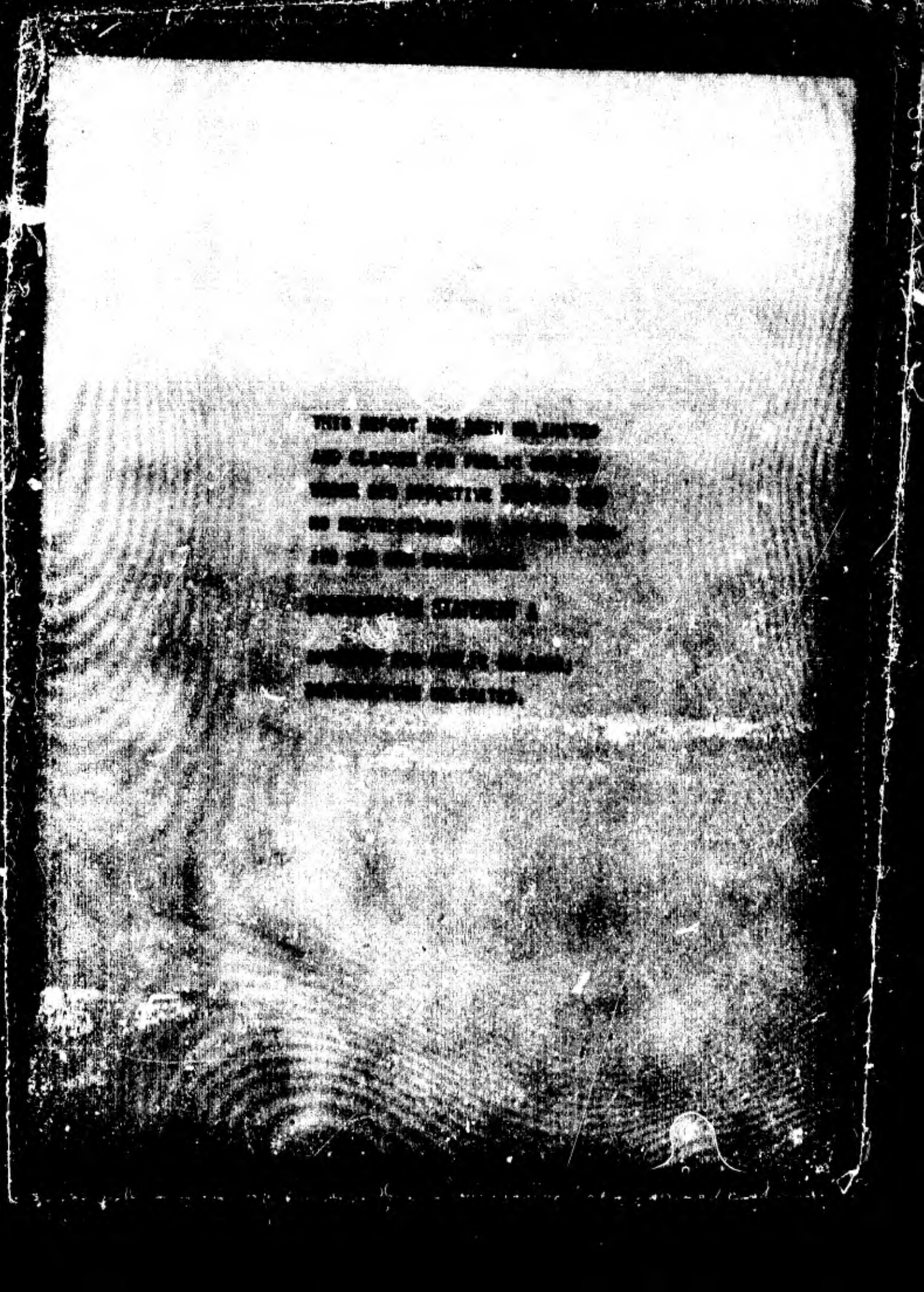

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HISTORICAL ANALYSIS OF WARTIME REPLACEMENT REQUIREMENTS; EXPERIENCE FOR SELECTED MAJOR ITEMS OF COMBAT EQUIPMENT

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26 July 1966
(Volume II)

HISTORICAL EVALUATION AND RESEARCH ORGANIZATION
2233 Wisconsin Avenue, N. W.
Washington, D. C., 20007

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HISTORICAL ANALYSIS OF WARTIME REPLACEMENT REQUIREMENTS; EXPERIENCE FOR SELECTED MAJOR ITEMS OF COMBAT EQUIPMENT

A Report prepared for the Research Analysis Corporation
under Subcontract FY 66-ARO1-1,
dated 13 December 1965

A subcontract of RAC Prime Contract DA 44-188-ARO-1

No statements or opinions expressed in this report are to be interpreted as reflecting official views of the Department of the Army, the Research Analysis Corporation, or of any official of the United States Government

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Historical Evaluation and Research Organization
2233 Wisconsin Avenue, N. W.
Washington, D. C., 20007

26 July 1966

VOLUME II

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UNIT: Fifth Army

THEATRE: Italy

TIME PERIOD: September 1943 - September 1944

DURATION: 12.25 months

ITEM		9-30 Sept 43	1-14 Oct 43	15-28 Oct 43	29 Oct-10Nov 43	11-26
Man-Day Factor		1965.	2043.	2480.	2122.	24
Casualties		4548	1713	1753	2928	19
		1	2	3	4	
1 Truck, ¼ Ton 4x4 C&R	#	.04733	.00343	.01089	.00848	
	@	2.0448	.4086	1.5402	.6148	
		(93)	(7)	(27)	(18)	
2 Truck, 2½ Ton (all types)	#	.01985	.00636	.00766	.01037	.
	@	.8575	.7589	1.0839	.7514	1.
		(39)	(13)	(19)	(22)	(
x Tank, Light	#	---	---	.00121	---	.
	@	---	---	.1711	---	.
				(3)		(
3 Tank, Medium	#	.01221	---	.00242	.00141	.
	@	.5277	---	.3423	.1025	.
		(24)		(6)	(3)	(
4 Carbine, .30, M1	#	.02443	.03524	.00968	.01178	.
	@	1.0554	4.2031	1.3691	.8538	6.
		(48)	(72)	(24)	(25)	(
5 Rifle, .30, BAR, M1918	#	.02188	.00343	.00968	.01131	.
	@	.9455	.4086	1.3691	.8197	2.
		(43)	(7)	(24)	(24)	(
6 Rifle, .30, M1	#	.07379	.09496	.00081	.00660	.
	@	3.1882	11.3252	.1141	.4781	1.
		(145)	(194)	(2)	(14)	(
7 Rifle .30, M1903 Series (less snipers)	#	.05496	.03671	---	.00518	.
	@	2.3747	4.3783	---	.375	.
		(108)	(75)		(11)	(
8 Machine Gun, .30 (all types)	#	.04885	.01615	.01008	.00754	.
	@	2.1108	1.9264	1.4261	.5464	1.
		(96)	(33)	(25)	(16)	(
9 Howitzer, 105 mm	#	---	---	.00040	.00141	.
	@	---	---	.0570	.1025	.
				(1)	(3)	(
10 Howitzer, 155 mm	#	---	---	---	.00141	--
	@	---	---	---	.1025	--
					(3)	
11 Mortar, 81mm, M1	#	.02443	.02252	.00161	---	
	@	1.0554	2.6853	.2282	---	
		(48)	(46)	(4)		
15 Generating Unit, M5	#	---	---	---	---	
	@	---	---	---	---	

#--loss per 1000 man-days
@--loss per 100 casualties

September 1944

ATTACK

43	29 Oct-10Nov 43 2122. 2928	11-26 Nov 43 2490. 1938	27 Nov-9 Dec 43 2671. 2889	10 Dec 43 - 20 Jan 44 7644. 5263	21Jan-30Mar 44 13469. 21,768	14May-10Jun 44 6583. 16,613	11Jun-22Jul 44 7813. 9442	23Jul-1 4162 108
	4	5	6	7	8	9	10	11
	.00848 .6148 (18)	--- ---	.01385 1.2807 (37)	.01426 2.0711 (109)	.04588 2.8390 (618)	.03327 1.3182 (219)	.05209 4.3105 (407)	.02 11.37 (12
	.01037 .7514 (22)	.01165 1.4964 (29)	.00824 .7615 (22)	.01243 1.8050 (95)	.03571 2.2097 (481)	.01534 .6080 (101)	.04953 4.0987 (387)	.05 21.09 (22
	--- ---	.00080 .1032 (2)	.00075 .0692 (2)	--- ---	.00260 .1607 (35)	.00972 .3852 (64)	.00602 .4978 (47)	.00 3.79 (41
	.00141 .1025 (3)	.00241 .3096 (6)	--- ---	.00262 .3800 (20)	.00928 .5742 (125)	.03600 1.4266 (237)	.01216 1.0061 (95)	.00 1.38 (15
	.01178 .8538 (25)	.05141 6.6047 (128)	--- ---	.04134 6.0042 (316)	.10001 6.1880 (1347)	.00076 .0301 (5)	.19314 15.9818 (1509)	.13 51.34 (55
	.01131 .8197 (24)	.02209 2.8380 (55)	.02059 1.9038 (55)	.01923 2.7931 (147)	.04959 3.0687 (668)	.06046 2.3957 (398)	.04582 3.7916 (358)	.01 7.01 (7
	.00660 .4781 (14)	.01044 1.3416 (26)	.00262 .2423 (7)	.09720 14.1174 (743)	.09214 5.7010 (1241)	.03357 1.3303 (221)	.32753 27.1023 (2559)	.2 108.4 (1
	.00518 .3752 (11)	.00401 .5160 (10)	.00075 .0692 (2)	.02368 3.4391 (181)	.04833 2.9906 (651)	.00410 .1625 (27)	.20978 17.3586 (1639)	.2 91.0 (
8	.00754 .5464 (16)	.00883 1.1352 (22)	.00449 .4154 (12)	.01478 2.1471 (113)	.04143 2.5634 (558)	.03539 1.4025 (233)	.03264 2.7007 (255)	.0 9.3 (1
0	.00141 .1025 (3)	.00161 .2064 (4)	.00150 .1385 (4)	--- ---	.00171 .1057 (23)	.00046 .0181 (3)	.00077 .0635 (6)	.0 .1 (2
	.00141 .1025 (3)	--- ---	--- ---	--- ---	.00044 .0276 (6)	.00152 .0602 (10)	.00090 .0741 (7)	.0 .1 (2
1	--- ---	.00120 .1548 (3)	.00150 .1385 (4)	.00118 .1710 (9)	.00520 .3262 (71)	.00365 .1445 (24)	.00448 .3707 (35)	.0 .9
	--- ---	--- ---	.00037 .0346 (1)	--- ---	.00030 .0184 (4)	--- ---	.00128 .1059 (10)	

2

NOT ENGAGED
-REST

30Mar 44	14May-10Jun 44	11Jun-22Jul 44	23Jul-19Aug 44	20Aug-16Sept 44		31Mar-13May 44
69. 768	6583. 16,613	7813. 9442	4162. 1081	3995. 3072		9670. 5363
	9	10	11	12		1
588 90 8)	.03327 1.3182 (219)	.05209 4.3105 (407)	.02955 11.3783 (123)	.04080 5.3060 (163)		.01675 3.0207 (162)
571 97 1)	.01534 .6080 (101)	.04953 4.0987 (387)	.05478 21.0916 (228)	.08110 10.5469 (324)		.01541 2.7783 (149)
260 07)	.00972 .3852 (64)	.00602 .4978 (47)	.00985 3.7928 (41)	.01051 1.3672 (42)		.00031 .0559 (3)
928 2)	.03600 1.4266 (237)	.01216 1.0061 (95)	.00360 1.3876 (15)	.00726 .9440 (29)		.00289 .5221 (28)
001 0 7)	.00076 .0301 (5)	.19314 15.9818 (1509)	.13335 51.3413 (555)	.10463 13.6068 (418)		.04891 8.8197 (473)
59 7)	.06046 2.3957 (398)	.04582 3.7916 (358)	.01826 7.0305 (76)	.01051 1.3672 (42)		.01458 2.6291 (141)
14 0 1)	.03357 1.3303 (221)	.32753 27.1023 (2559)	.28159 108.4181 (1172)	.36871 47.9492 (1473)		.02771 4.9972 (268)
33 6 1)	.00410 .1625 (27)	.20978 17.3586 (1639)	.23642 91.0268 (984)	.17797 23.1445 (711)		.00972 1.7527 (94)
43 4)	.03539 1.4025 (233)	.03264 2.7007 (255)	.02427 9.3432 (101)	.03179 4.1341 (127)		.01189 2.1443 (115)
1)	.00046 .0181 (3)	.00077 .0635 (6)	.00048 .1850 (2)	.00075 .0977 (3)		--- ---
4)	.00152 .0602 (10)	.00090 .0741 (7)	.00048 .1850 (2)	.00025 .0325 (1)		.00362 .6526 (35)
0)	.00365 .1445 (24)	.00448 .3707 (35)	.00240 .9251 (10)	.00451 .5859 (18)		.00165 .2983 (16)
0)	--- ---	.00128 .1059 (10)	.00096 .3700 (4)	.00050 .0651 (2)		.00021 .0373 (2)

2

3

UNIT: SEVENTH ARMY
THEATRE: ETO

TIME PERIOD: 5 November 1944 - 12 May 1945
DURATION: 6.75 Months

ITEM	Man-Day Factor Casualties	5-11Nov44 1463. 1700	12-18Nov44 1463. 1386	19-25Nov44 1451. 2568	26Nov-2Dec 1508. 2968	3-9Dec 44 1492. 3918	0-16Dec44 1498. 2944
Truck, ¼ Ton 4x4 C&R	#	.01777	.00137	.01172	.01658	.04424	----
	@	1.5294	.8658	.6620	1.8423	1.6845	----
		(26)	(12)	(17)	(25)	(66)	
Truck, 2½ Ton (all types)	#	.00342	.00410	.00276	.00265	.00536	.00935
	@	.2941	.4329	.1558	.1348	.2041	.4755
		(5)	(6)	(4)	(4)	(8)	(14)
Tank, Light	#	.00342	.00137	.00069	.00066	.00201	.00467
	@	.2940	.1443	.0389	.0337	.0766	.2378
		(5)	(2)	(1)	(1)	(3)	(7)
Tank, Medium	#	.00752	.00410	.00414	.00199	.02882	.01802
	@	.6471	.4329	.2336	.1011	1.0975	.9171
		(11)	(6)	(6)	(3)	(43)	(27)
Carbine, 30, M1	#	.26726	.07450	.20400	.07560	.22721	.23105
	@	23.0000	7.8644	11.5265	3.8410	8.6524	14.8098
		(391)	(109)	(296)	(114)	(339)	(436)
Rifle, .30, BAR, M1918	#	.04443	.01777	.05927	.03780	.03418	.06208
	@	3.8235	1.8759	3.3489	1.9205	1.3017	3.1590
		(65)	(26)	(86)	(57)	(51)	(93)
Rifle, .30, M1	#	.25427	.18318	.00758	.01658	.03552	.13618
	@	21.8823	19.3362	.4283	.8423	1.3527	6.9293
		(372)	(268)	(11)	(25)	(53)	(204)
Rifle, .30, M1903 Series (includes Snipers)	#	.01846	.00410	.00414	.00199	.01340	.02937
	@	1.5882	.4329	.2336	.1011	.5105	1.4946
		(27)	(6)	(6)	(3)	(20)	(44)
Machine Gun, .30 (all types)	#	.01709	.01640	.02757	.10459	.03485	.03404
	@	1.4706	1.7316	1.5576	.7412	1.3272	1.7323
		(25)	(24)	(40)	(22)	(52)	(51)
Howitzer, 105 mm	#	----	.00068	----	----	.00067	----
	@	----	.0721	----	----	.0255	----
			(1)			(1)	
Howitzer, 155 mm	#	----	----	----	----	----	----
	@	----	----	----	----	----	----
Mortar, 81 mm	#	.00273	----	.00069	----	.00469	.00200
	@	.2353	----	.0389	----	.1787	.1019
		(4)		(1)		(7)	(3)
Radio Set, SCR-300	#	.01299	.00273	.01861	.01127	.01408	.01535
	@	1.1176	.2886	1.0506	.5728	.5360	.7812
		(19)	(4)	(27)	(17)	(21)	(23)
Radio Set, SCR-608	#	----	----	----	----	.00067	----
	@	----	----	----	----	.0255	----
						(1)	
Radio Set, SCR-610	#	.00273	.00205	.00138	.00133	.00871	.00601
	@	.2353	.2164	.0778	.0674	.3318	.3057
		(4)	(3)	(2)	(2)	(13)	(9)
Power Unit (all types)	#	.00068	----	----	----	----	----
	@	.0588	----	----	----	----	----
		(1)					
Generating Unit, M5 3 KW	#	----	----	----	----	----	.00067
	@	----	----	----	----	----	.0340
							(1)

Losses per 1,000 man-days
@ Losses per 100 casualties

ATTACK

16Dec44	17-23Dec44	21-27Jan45	28Jan-3Feb	4-10Feb45	11-17Feb45	18-24Feb45	4-10Mar45	11-17Mar45	18
1498. 2944	1492. 2631	2054. 4045	1978. 2500	2224. 2345	2254. 1143	2105. 1594	1895. 1262	2257. 1175	
---- ----	.04424 2.5085 (66)	.03116 1.5822 (64)	.01163 .9200 (23)	.05980 5.6716 (133)	.03638 7.1741 (82)	.03800 5.0188 (80)	.03852 5.7845 (73)	.03013 5.7872 (68)	1
.00935 .4755 (14)	.00268 .1520 (4)	.00438 .2225 (9)	.00101 .0800 (2)	.04137 3.9232 (92)	.03416 6.7367 (77)	.05036 6.6499 (106)	.05119 7.6862 (97)	.03589 6.8936 (81)	1
.00467 .2378 (7)	.00134 .0760 (2)	.00633 .3214 (13)	.00152 .1200 (3)	.04272 .2132 (5)	.00266 .5249 (6)	---- ----	.00528 .7924 (10)	.00709 1.3617 (16)	
.01802 .9171 (27)	.00871 .4941 (13)	.02629 1.3350 (54)	.00859 .6800 (17)	.01079 1.0234 (24)	.00488 .9624 (11)	---- ----	.00633 .9509 (12)	.01152 2.2128 (26)	
.29105 .8098 (436)	.32105 18.2060 (479)	.27848 14.1409 (572)	.20779 16.4400 (411)	.96493 91.5139 (2146)	.37400 73.7533 (843)	.21805 28.7955 (459)	.15673 23.5341 (297)	.23970 46.0425 (541)	3
.06208 .1590 (93)	.02547 1.4443 (38)	.04917 2.4969 (101)	.04449 3.5200 (88)	.08498 8.0597 (189)	.05989 11.8110 (135)	.02803 3.7014 (59)	.02269 3.4073 (43)	.02260 4.3404 (51)	
.13618 .9293 (204)	.03418 1.9384 (51)	.41577 21.1125 (854)	.17391 13.7600 (344)	2.13714 202.6866 (4753)	.92414 182.3971 (2083)	.31876 42.0954 (671)	.14406 21.6323 (273)	.30616 58.8085 (691)	1
.02937 .4946 (44)	.01810 1.0262 (27)	.00925 .4697 (19)	.00910 .7200 (18)	.01664 1.5778 (37)	.04525 8.9239 (102)	.00618 .8156 (13)	---- ----	.07931 15.2340 (179)	
.03404 .7323 (51)	.04491 2.5466 (67)	.06134 3.1122 (126)	.02882 2.2800 (57)	.02878 2.7292 (64)	.01242 2.4497 (28)	.02898 3.8269 (61)	.01478 2.2187 (28)	.01595 3.0638 (36)	
---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	.00048 .0627 (1)	---- ----	---- ----	
---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	.00190 .2509 (4)	.00053 .0792 (1)	.00044 .0851 (1)	
.00200 .1019 (3)	.00402 .2280 (6)	.00828 .4199 (17)	.00152 .1200 (3)	.00764 .7249 (17)	.00222 .4374 (5)	.00855 1.1292 (18)	.00369 .5547 (7)	.00310 .5957 (7)	
.01535 .7812 (23)	.01877 1.0642 (28)	.02142 1.0868 (44)	.01719 1.3600 (34)	? ? ?	CASUALTY REPORT COVERED TEN DAY PERIOD FROM 11 to 20 Feb	.02565 3.3877 (54)	.02164 3.2488 (41)	---- ----	
---- ----	---- ----	.00049 .0247 (1)	---- ----	? ?		.00143 .1882 (3)	---- ----	---- ----	
.00601 .3057 (9)	.00670 .3800 (10)	.00097 .0494 (2)	.00202 .1600 (4)	? ? ?		.00855 1.1292 (18)	.00369 .5547 (7)	---- ----	
---- ----	---- ----	---- ----	---- ----	? ? ?		---- ---- ----	.00053 .0792 (1)	---- ----	
.00067 .0340 (1)	---- ----	---- ----	---- ----	---- ----	---- ----	.00048 .0627 (1)	.00106 .1585 (2)	---- ----	

5	18-24Mar45	25-31Mar45	1-7 Apr 45	8-14Apr 45	15-21Apr45	22-28Apr45	29Apr-5May	24-30Dec44	31Dec-
	2502. 4734	2362. 2828	2030. 1439	2056. 2979	1974. 3454	2083. 2430	2136. 1375	1687. 1240	17 29
	.02078 1.0984 (52)	.03345 2.7935 (79)	.02808 3.9611 (57)	.04086 2.8197 (84)	.06282 3.5900 (124)	.06193 5.3086 (129)	.05009 7.7818 (107)	.00771 1.0484 (13)	.0 .7 (
	.02278 1.2041 (57)	.02710 2.2631 (64)	.02759 3.8916 (56)	.02529 1.7456 (52)	.03647 2.0845 (72)	.04657 3.9918 (97)	.12406 19.2727 (265)	.00474 .6452 (8)	-- --
	---- ----	.00169 .1414 (4)	.00492 .6949 (10)	.00681 .4700 (14)	.00760 .4343 (15)	.01056 .9054 (22)	.00328 .5091 (7)	.00237 .3226 (4)	.0 .1
	.00799 .4225 (20)	.01524 1.2730 (36)	.01921 2.7102 (39)	.00876 .6042 (18)	.02128 1.2160 (42)	.01632 1.3992 (34)	.01685 2.6182 (36)	.00593 .8065 (10)	-- --
	.06635 3.5065 (166)	.12828 10.7143 (303)	.22906 32.3141 (465)	.11430 7.8886 (235)	.19098 10.9149 (377)	.11714 10.0412 (244)	.09223 14.3273 (197)	.18139 24.6774 (306)	.2 15.8 (4
	.01439 .7605 (36)	.03006 2.5106 (71)	.02808 3.9611 (57)	.01313 .9063 (27)	.02482 1.4186 (49)	.02400 2.0576 (50)	.01826 2.8364 (39)	.01660 2.2581 (28)	. 1. (
	.03357 1.7744 (84)	.18205 15.2051 (430)	---- ----	.14786 10.2048 (304)	.11094 6.3405 (219)	3.24820 278.4362 (6766)	.00562 .8727 (12)	.05276 7.1774 (89)	.0 5.3 (
	.00520 .2746 (13)	.00804 .6719 (19)	.00837 1.1814 (17)	.00827 .5707 (17)	.00405 .2316 (8)	.01104 .9465 (23)	.00094 .1455 (2)	.01245 1.6935 (21)	. 1.
	.01079 .5708 (27)	.01736 1.4498 (41)	.03941 5.5594 (80)	.02919 2.0141 (60)	.01317 .7528 (26)	.03601 3.0864 (75)	.01405 2.1818 (30)	.03794 5.1613 (64)	. .
	---- ----	---- ----	---- ----	---- ----	.00051 .0290 (1)	.00096 .0823 (2)	.00047 .0727 (1)	---- ----	- -
	---- ----	.00042 .0354 (1)	.00049 .0695 (1)	.00049 .0336 (1)	---- ----	.00192 .1646 (4)	---- ----	---- ----	- -
	.00120 .0634 (3)	.00212 .1768 (5)	.00197 .2780 (4)	.00438 .3021 (9)	.00304 .1737 (6)	.00192 .1646 (4)	.00749 1.1636 (16)	.00237 .3226 (4)	- -
	.01878 .9928 (47)	---- ----	.02167 3.0577 (44)	.02529 1.7456 (52)	.02685 1.5345 (53)		.02294 3.5636 (49)	.00948 1.2903 (16)	. .
	---- ----	---- ----	---- ----	---- ----	---- ----		---- ----	---- ----	. .
	.00440 .2324 (11)	---- ----	.00443 .6254 (9)	.00389 .2685 (8)	.00355 .2027 (7)		.00234 .3636 (5)	.00059 .0806 (1)	. .
	.00200 .1056 (5)	---- ----	---- ----	.00097 .0671 (2)	.00101 .0579 (2)		.00047 .0727 (1)	---- ----	- -
	.00080 .0422 (2)	.00127 .1061 (3)	---- ----	---- ----	---- ----	.00096 .0823 (2)	.00187 .2909 (4)	---- ----	

CASUALTY REPORT COVERED TEN DAY PERIOD FROM 21 to 30 April

DEFENSE		WITHDRAWAL		LIMITED	SURRENDER	
24-30Dec44	31Dec-6Jan	7-13Jan45	14-20Jan45	25Feb-3Mar	6-12May45	
1687. 1240	1754. 2900	1273. 4071	1813. 4177	1947. 1362	2191. 1142	
.00771 1.0484 (13)	.01311 .7931 (23)	.10369 3.2424 (132)	.02482 1.0773 (45)	.02671 3.8179 (52)	.05568 10.6830 (122)	1
.00474 .6452 (8)	---- ----	.02121 .6632 (27)	.00993 .4309 (18)	.05547 7.9295 (108)	.15061 28.8967 (330)	2
.00237 .3226 (4)	.00285 .1724 (5)	.00864 .2702 (11)	.00221 .0958 (4)	---- ----	.00365 .7005 (8)	x
.00593 .8065 (10)	---- ----	.02042 .6387 (26)	.01986 .8619 (36)	.00719 1.0279 (14)	.00822 1.5762 (18)	3
.18139 24.6774 (306)	.26169 15.8276 (459)	.25137 7.8605 (320)	.16713 7.2540 (303)	.15562 22.2467 (303)	.06298 12.0841 (138)	4
.01660 2.2581 (28)	.01995 1.2069 (35)	.03771 1.1791 (48)	.05130 2.2265 (93)	.04520 6.4611 (88)	.02419 4.6410 (53)	5
.05276 7.1774 (89)	.08780 5.3103 (154)	.07698 2.4073 (98)	.04302 1.8674 (78)	.11351 16.2561 (221)	.00685 1.3135 (15)	6
.01245 1.6935 (21)	.02052 1.2414 (36)	.05263 1.6458 (67)	.00055 .0239 (1)	.00154 .2203 (3)	---- ----	7
.03794 5.1613 (64)	.01368 .8276 (24)	.12333 3.8565 (157)	.03916 1.6998 (71)	.02979 4.2584 (58)	.01871 3.5902 (41)	8
---- ----	---- ----	---- ----	.00055 .0239 (1)	---- ----	---- ----	9
---- ----	---- ----	---- ----	---- ----	.00051 .0734 (1)	.00046 .0876 (1)	10
.00237 .3226 (4)	---- ----	.01493 .4667 (19)	.00662 .2873 (12)	.00873 1.2482 (17)	.00091 .1751 (2)	11
.00948 1.2903 (16)	.00513 .3103 (9)	.01807 .5650 (23)	.01489 .6464 (27)	.02671 3.8179 (52)	.01780 3.4151 (39)	12
---- ----	.00057 .0345 (1)	.00157 .0491 (2)	---- ----	.00205 .2937 (4)	---- ----	13
.00059 .0806 (1)	.00114 .0690 (2)	.01728 .5404 (22)	.00496 .2155 (9)	.00719 1.0279 (14)	.00091 .1751 (2)	14
---- ----	---- ----	.00079 .0246 (1)	.00110 .0479 (2)	.00051 .0734 (1)	---- ----	xx
---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	15

UNIT: 45th Infantry Division
THEATER: Italy

TIME PERIOD: 10 September 1943 - 25 June 1944
DURATION: 298 Days/9.75 Months

		10Sept-20Oct 43	1Nov-31Dec43	29Jan-2Feb 44	ATTACK 23May-3June 44	DEFENSE 3Feb-4Mar44
Man-Day Factor		624.	884.5	76.7	180.	455.2
Casualties		1733	2207	73	1892	2898
1 Truck, ¼ Ton 4x4 C&R	#	.05929	.03392		.06111	.13401
	@	2.1350	1.3593		.5814	2.1049
		(37)	(30)		(11)	(61)
2 Truck, 2½ Ton (all types)	#	.01282	.01470		.03889	.00879
	@	.4616	.5890		.3700	.1380
		(8)	(13)		(7)	(4)
3 Tank, Medium *	#	.01282				.04613
	@	.4616				.7246
		(8)				(21)
4 Carbine, .30, M1	#				.16667	.23945
	@				1.5856	3.7612
					(30)	(109)
5 Rifle, .30 BAR, M1918	#				.06667	.22188
	@				.6342	3.4852
					(12)	(101)
6 Rifle, .30, M1	#				.23333	.68981
	@				2.2199	10.8351
					(42)	(314)
7 Rifle, .30, M1903 Series	#				.04444	.10984
	@				.4228	1.7253
					(8)	(50)
8 Machine Gun, .30 (all types)	#				.05000	.31634
	@				.4757	4.9689
					(9)	(144)
9 Howitzer, 105 mm	#	.00320			.00555	
	@	.1154			.0528	
		(2)			(1)	
10 Howitzer, 155 mm	#					
	@					
11 Mortar, 81 mm	#				.01669	.04174
	@				.1586	.6556
					(3)	(19)
12 Radio Set, SCR-300	#					
	@					
13 Radio Set, SCR-608	#					
	@					
14 Radio Set, SCR-610	#					.04174
	@					.6556
						(19)
15 Generating Unit	#					.00879
	@					.1380
						(4)

#--loss per 1000 man-days
@--loss per 100 casualties

*Loss records incomplete

1944 CK -3June 44). 2	DEFENSE 3Feb-4Mar44 455.2 2898	REST 21-31Oct43 169.8 7	REST, RESERVE, AT SEA 1-28Jan44 415.4 60	L/Engaged ATTACK, DEFENSE 5Mar-15Apr44 658.3 616	REST 16Apr-18May44 495. 376	LIGHTLY ENGAGED 19-22May44 60. 70	PURSUIT, RESERVE 4-25Jun44 255. 255
5111 314 1)	.13401 2.1049 (61)		.03852 26.6667 (16)	.00304 .3247 (2)	.00404 .5319 (2)	.04999 4.2857 (3)	.15686 15.6863 (40)
3889 700 7)	.00879 .1380 (4)		.01204 8.3333 (5)	.00304 .3247 (2)	.00404 .5319 (2)	.01666 1.4286 (1)	.05882 5.8823 (15)
	.04613 .7246 (21)						
667 356 0)	.23945 3.7612 (109)				.02222 2.9255 (11)	.06666 5.7143 (4)	.30588 30.5882 (78)
667 342 2)	.22188 3.4852 (101)				.01818 2.3936 (9)	.01666 1.4286 (1)	.19608 19.6078 (50)
333 99 2)	.68981 10.8351 (314)				.03030 3.9894 (15)	.08333 7.1429 (5)	.05490 5.4902 (14)
444 28)	.10984 1.7253 (50)				.01616 2.1277 (8)	.01666 1.4286 (1)	.05490 5.4902 (14)
000 57)	.31634 4.9689 (144)				.00202 .2659 (1)	.01666 1.4286 (1)	.03137 3.1372 (8)
555 28)							
							.01569 1.5686 (4)
669 86)	.04174 .6556 (19)			.00152 .1623 (1)	.00202 .2659 (1)		.00392 .3921 (1)
				.17925 19.1558 (118)	.02020 2.6596 (10)		.08627 8.6274 (22)
					.01010 1.3298 (5)		.06274 6.2745 (16)
	.04174 .6556 (19)			.00608 .6493 (4)	.01414 1.8617 (7)		.14510 14.5098 (37)
	.00879 .1380 (4)			.00152 .1623 (1)	.00202 .2659 (1)		

THEATER: FRANCE DURATION: 108Days/3.5Months
TIME PERIOD: 15August-30November 1944

d	REST pr44 16Apr-18May44	LIGHTLY ENGAGED 19-22May44	PURSUIT, RESERVE 4-25Jun44	ATTACK 15-21Aug44	ATTACK 1-31Oct44	PURSUIT/REST 22Aug-30Sept44	LEngATTACK 1-30Nov44
3	495. 376	60. 70	255. 255	112. 310	439. 1946	600. 141	476. 628
4	.00404 .5319 (2)	.04999 4.2857 (3)	.15686 15.6863 (40)	.08036 2.9032 (9)	.05467 1.2333 (24)	.04833 20.5674 (29)	.10294 7.8025 (49)
4	.00404 .5319 (2)	.01666 1.4286 (1)	.05882 5.8823 (15)	.04464 1.6129 (5)	.03872 .8736 (17)	.01000 4.2553 (6)	.06933 5.2548 (33)
	.02222 2.9255 (11)	.06666 5.7143 (4)	.30588 30.5882 (78)	.43750 15.8064 (49)	.18451 4.1624 (81)	.53000 225.5319 (318)	
	.01818 2.3936 (9)	.01666 1.4286 (1)	.19608 19.6078 (50)	.15179 5.4839 (17)	.15034 3.3916 (66)	.07500 31.9149 (45)	
	.03030 3.9894 (15)	.08333 7.1429 (5)	.05490 5.4902 (14)			.07667 32.6241 (46)	
	.01616 2.1277 (8)	.01666 1.4286 (1)	.05490 5.4902 (14)		.02733 .6166 (12)	.00667 2.8369 (4)	
	.00202 .2659 (1)	.01666 1.4286 (1)	.03137 3.1372 (8)		.02050 .4625 (9)	.04833 20.5674 (29)	
			.01569 1.5686 (4)				
2	.00202 .2659 (1)		.00392 .3921 (1)	.00893 .3226 (1)			
5	.02020 2.6596 (10)		.08627 8.6274 (22)			.09167 39.0070 (55)	
	.01010 1.3298 (5)		.06274 6.2745 (16)			.07167 30.4964 (43)	
8	.01414 1.8617 (7)		.14510 14.5098 (37)			.15500 65.9574 (93)	
2	.00202 .2659 (1)					.00167 .7092 (1)	

UNIT: 28th Division
THEATER: ETO

TIME PERIOD: 1 August-27 December 1944
DURATION: 151 Days/5 Months

ATTACK

		1-15Aug44	19-26Aug44	27Aug-2Sep 44	3-10 Sep44	12-26Sep44	6-8 Oct 4
Man-day Factor		229.	110.	119.	121.	189.	49.
Casualties		3418	147	153	135	1776	59
1 Truck, ¼ Ton 4x4 C&R	#	.06987	.04545	.01681	---	.15873	---
	@	.4681	3.4014	1.3072	---	1.6892	---
		(16)	(5)	(2)		(30)	
2 Truck, 2½ Ton (all types)	#	.01310	.00909	.01681	---	.01058	---
	@	.0878	.6803	1.3072	---	.1126	---
		(3)	(1)	(2)		(2)	
3 Tank, Medium	#						
	@						
4 Carbine, .30, M1	#		.36364	.10084	.25620	.59788	
	@		27.2109	7.8431	22.9630	6.3626	
			(40)	(12)	(31)	(113)	
5 Rifle, .30, BAR, M1918	#	.18777		.00840		.46032	.48980
	@	1.2580		.6536		4.8986	40.6780
		(43)		(1)		(87)	(24)
6 Rifle, .30, M1	#						
	@						
7 Rifle, .30, M1903 Series (Sniper only)	#					.00529	
	@					.0563	
						(1)	
8 Machine Gun, .30 (all types)	#	.06987	.07273			.22222	.04082
	@	.4681	5.4422			2.3649	3.3898
		(16)	(8)			(42)	(2)
9 Howitzer, 105 mm	#						
	@						
10 Howitzer, 155 mm	#						
	@						
11 Mortar, 81 mm, M1	#	.02183				.02645	
	@	.1463				.2815	
		(5)				(5)	
12 Radio Set, SCR-300	#	.23581	.01818			.04762	
	@	1.5799	1.3605			.5068	
		(54)	(2)			(9)	
13 Radio Set SCR-608	#						
	@						
14 Radio Set SCR-610	#	.03493		.01681		.04233	
	@	.2340		1.3072		.4504	
		(8)		(2)		(8)	
15 Generating Unit	#						
	@						

#--loss per 1000 man-days
@--loss per 100 casualties

1

ATTACK

DEFENS

0 Sep44 121. 135	12-26Sep44 189. 1776	6-8 Oct 44 49. 59	2-3 Nov 44 31. 559	10 Nov 44 15. 644		27-30Sep44 48. 132	1 Oct 44 16. 100	9-22Oct44 230. 58	27(
--- ---	.15873 1.6892 (30)	--- ---	.03226 .1789 (1)	.06667 .1553 (1)		.04167 1.5151 (2)	--- ---	.02609 10.3448 (6)	
--- ---	.01058 .1126 (2)	--- ---	--- ---	--- ---		--- ---	--- ---	.00435 1.7241 (1)	
			.29033 1.6100 (9)						
25620 9630 31)	.59788 6.3626 (113)								
	.46032 4.8986 (87)	.48980 40.6780 (24)	.03226 .1789 (1)	.73333 1.7081 (11)		.10417 3.7879 (5)	.12500 2.0000 (2)	.00870 3.4483 (2)	
	.00529 .0563 (1)			.06667 .1553 (1)			.06250 1.0000 (1)	.03913 15.5172 (9)	
	.22222 2.3649 (42)	.04082 3.3898 (2)		.33333 .7764 (5)		.02083 .7576 (1)	.06250 1.0000 (1)		
	.02645 .2815 (5)								
	.04762 .5068 (9)								
	.04233 .4504 (8)								

DEFENSE					WITHDRAWAL IN CONTACT		PATROL & TRAIN
44 .)	9-22Oct44 230. 58	27Oct-1Nov 99. 44 60	11-20Nov44 159. 435	1-15Dec44 Records Burned	4-9 Nov44 91. 1683	16-27 Dec44 126. 3524	21-30N 17 3
-- --	.02609 10.3448 (6)	--- ---	.05031 1.8391 (8)	--- ---	.12088 .6536 (11)	.46825 5.2497 (185)	.05 32.25 (10
-- --	.00435 1.7241 (1)	--- ---	.01258 .4598 (2)	--- ---	.02198 .1188 (2)	146825 1.6742 (59)	-- --
					.18681 1.0101 (17)		
			.15094 5.5172 (24)		.01099 .0594 (1)		.00 3.22 (1
2500 00)	.00870 3.4483 (2)	.01010 1.6667 (1)	.21384 7.8161 (34)		.50549 2.3767 (46)	1.07143 3.8309 (135)	.0 35.4 (1
250 00)	.03913 15.5172 (9)		.05660 2.0690 (9)				.0 54.8 (1
250 00)			.16981 6.2069 (27)		.41758 2.2579 (38)	.57143 2.0431 (72)	.0 19.3 (6
						.09524 .3405 (12)	
							.00 3.2 (1
			.07547 2.7586 (12)		.09890 .5348 (9)	.11905 .4256 (15)	

PATROLLING & TRAINING		NOT ENGAGED - REST		NOT ENGAGED - MOVING		
21-30Nov44 172. 31		16-18Aug44 45. 5		11 Sep 44 15. 13	2-5 Oct 44 64. 53	23-26Oct44 65. 16
.05814 32.2581 (10)		--- ---		--- ---	--- ---	.01538 6.2500 (1)
--- ---		--- ---		--- ---	--- ---	--- ---
.00581 3.2258 (1)		.46666 420.00 (21)			.20313 24.5283 (13)	
.06395 35.4839 (11)		1.99999 1800.00 (90)			.01563 1.8868 (1)	
.09884 54.8387 (17)						.03077 12.5000 (2)
.03488 19.3548 (6)		.02222 20.00 (1)				
.00581 3.2258 (1)						
		.06666 60.00 (3)				
		.06666 60.00 (3)				
		.04444 40.00 (2)				
		.02222 20.00 (1)				

4

UNIT: 7th Infantry Division
THEATER: Okinawa

TIME PERIOD: 1 April - 30 June 1945
DURATION: 91 Days/3 Months

ATTACK

Man-Day Factor Casualties		1-10 Apr 123. 619	11-15 Apr 59. 475	16-30 Apr 167. 1415	1-5 May 55. 510	6-11 May 48. 324	22-30 Ma 120. 547
1 Truck, ¼ Ton 4x4 C&R	#	.01626		.02994	.01818		
	@	.3340		.3534	.1961		
		(2)		(5)	(1)		
2 Truck, 2½ Ton (all types)	#	.00813	.03390				
	@	.1666	.4211				
		(1)	(2)				
3 Tank, Medium	#	.04064		.02994		.02083	.00833
	@	.8350		.3534		.3086	.1828
		(5)		(5)		(1)	(1)
4 Carbine, .30, M1	#		.16949				
	@		2.1053				
			(10)				
5 Rifle, .30, BAR M1918	#		.05085	.01796			.02499
	@		.6315	.2120			.5484
			(3)	(3)			(3)
6 Rifle, .30, M1	#		.05085				
	@		.6315				
			(3)				
7 Rifle, .30, M1903 Series	#						
	@						
8 Machine Gun, .30 (all types)	#	.00813	.01695	.01198			
	@	.1666	.2105	.1413			
		(1)	(1)	(2)			
9 Howitzer, 105 mm	#	.00813			.01818		
	@	.1666			.1961		
		(1)			(1)		
10 Howitzer, 155 mm	#						
	@						
11 Mortar, 81 mm, M1	#						
	@						
12 Radio Set, SCR-300	#	.01626		.01198			
	@	.3340		.1413			
		(2)		(2)			
13 Radio Set, SCR-608	#						
	@						
14 Radio Set, SCR-610	#						
	@						
15 Generating Unit	#						
	@						
x Tank, Light	#	.03252					
	@	.6680					
		(4)					

4

1

ATTACK					NOT ENGAGED - REST		OTHER MOP-UP
6-11 May 48. 324	22-30 May 120. 547	31May-10Jun 128. 609	11-20 Jun 109. 855		12-21 May 116. 202		21-30 Jun 109. 352
			.01834 .2339 (2)		.04310 2.4752 (5)		.02752 .8523 (3)
		.00781 .1642 (1)			.02586 1.4851 (3)		
.02083 .3086 (1)	.00833 .1828 (1)		.00917 .1170 (1)		.03448 1.9802 (4)		
	.02499 .5484 (3)						

UNIT: 96th Division
THEATER: Pacific

TIME PERIOD: 1 April - 22 June 1945
DURATION: 83 Days/2.75 Months

ATTACK

		1-14 Apr 437.57 2100	15-20 Apr 79.53 690	21-30 Apr 130.42 934	11-19 May 132.34 1041	20-30 May 149.17 955	31May-9Ju 128.30 312
Man-day Factor Casualties							
1 Truck, ¼ Ton 4x4 C&R	# @	.01371 .2857 (6)	.01257 .1449 (1)	.03067 .4283 (4)	.03022 .3842 (4)	--- ---	.02338 .9615 (3)
2 Truck, 2½ Ton (all types)	# @	.02057 .4286 (9)	--- ---	--- ---	--- ---	--- ---	.03895 1.6026 (5)
3 Tank, Medium	# @	.01600 .3333 (7)	.03772 .4348 (3)	.03067 .4283 (4)	.03022 .3842 (4)	--- ---	--- ---
4 Carbine, .30, M1	# @	.00457 .0952 (2)			.00756 .0961 (1)		
5 Rifle, .30, BAR, M1918	# @	.02514 .5238 (11)			.03778 .4803 (5)	.09385 1.4660 (14)	
6 Rifle, .30, M1	# @				.04534 .5764 (6)		
7 Rifle, .30, M1903 Series	# @						
8 Machine Gun, .30 (all types)	# @	.03199 .6667 (14)	.03772 .4348 (3)	.00767 .1071 (1)	.01511 .1921 (2)	.02011 .3141 (3)	
9 Howitzer, 105 mm	# @	.00457 .0952 (2)					
10 Howitzer, 155 mm	# @						
11 Mortar, 81 mm, M1	# @	.01371 .2857 (6)	.03772 .4348 (3)		.06045 .7685 (8)		
12 Radio Set, SCR-300	# @	.04342 .9048 (19)	.01257 .1449 (1)	.01534 .2142 (2)	.01511 .1921 (2)	.04022 .6283 (6)	.03118 1.2820 (4)
13 Radio Set, SCR-608	# @	.00229 .0476 (1)					
14 Radio Set, SCR-610	# @	.01828 .3810 (8)	.01257 .1449 (1)	.03067 .4283 (4)	--- ---	.01341 .2094 (2)	.00779 .3205 (1)
15 Generating Unit, ½ kw	# @				.00756 .0961 (1)		
x Tank, Light	# @	.00229 .0476 (1)	--- ---	--- ---	--- ---	--- ---	

D: 1 April - 22 June 1945
83 Days/2.75 Months

ATTACK								NOT ENGAGED - REST
15-20 Apr 79.53 690	21-30 Apr 130.42 934	11-19 May 132.34 1041	20-30 May 149.17 955	31May-9Jun 128.30 312	10-22 Jun 157.75 998			1-10 May 142.455 446
.01257 .1449 (1)	.03067 .4283 (4)	.03022 .3842 (4)	--- ---	.02338 .9615 (3)	.02536 .4008 (4)			.00702 .2242 (1)
--- ---	--- ---	--- ---	--- ---	.03895 1.6026 (5)	.01268 .2004 (2)			.00702 .2242 (1)
.03772 .4348 (3)	.03067 .4283 (4)	.03022 .3842 (4)	--- ---	--- ---	.03170 .5010 (5)			--- ---
		.00756 .0961 (1)						
		.03778 .4803 (5)	.09385 1.4660 (14)					
		.04534 .5764 (6)						
.03772 .4348 (3)	.00767 .1071 (1)	.01511 .1921 (2)	.02011 .3141 (3)					
.03772 .4348 (3)		.06045 .7685 (8)						
.01257 .1449 (1)	.01534 .2142 (2)	.01511 .1921 (2)	.04022 .6283 (6)	.03118 1.2820 (4)	.06339 1.0020 (10)			
					.01268 .2004 (2)			
.01257 .1449 (1)	.03067 .4283 (4)	--- ---	.01341 .2094 (2)	.00779 .3205 (1)	.03170 .5010 (5)			
		.00756 .0961 (1)			.00634 .1002 (1)			
--- ---	--- ---	--- ---	--- ---	--- ---	--- ---			--- ---

1

2

UNIT: 25th Infantry Div

THEATER: KOREA

TIME PERIOD: 17 September 1950-30 June 1951

DURATION: 9.5 Months

ITEM		17-30Sep50	7-16Nov50	24-26Nov50	15-23Jan51	25Jan-15Fe
Man-Day Factor		206.6	152.2	48.0	140.6	356.1
Casualties		833	97	50	3	458
1 Truck, ¼ Ton 4x4 C&R	#	.05324	.60447	.14583	.11380	.20500
	@	1.3205	94.8454	14.0000	533.3388	15.9389
		(11)	(92)	(7)	(16)	(73)
2 Truck, 2½ Ton (all types)	#	.01452	.11826	.68750	.06401	.08986
	@	.3601	18.5567	66.0000	300.0031	6.9869
		(3)	(18)			(32)
3 Tank, Medium	#	.01936	----	----	.01422	.02247
	@	.4802	----	----	66.6673	1.7467
		(4)			(2)	(8)
5 Rifle, .30, BAR, M1918	#	.04840				
	@	1.2005				
		(10)				
6 Rifle, .30, M1C (sniper)	#					
	@					
8 Machine Gun, .30 (all types)	#	.03872	.02628			
	@	.9604	4.1237			
		(8)	(4)			
9 Howitzer, 105 mm	#					
	@					
11 Mortar, 81 mm	#	.01452	.03285			
	@	.3601	5.1546			
		(3)	(5)			
12 Radio Set, SCR-300	#	.00484	.03942	.41667		
	@	.1200	6.1857	40.0000		
		(1)	(6)	(20)		
13 Radio Set, SCR-608	#	.01936				
	@	.4802				
		(4)				
14 Radio Set, SCR-610	#	.06776				
	@	1.6807				
		(14)				

#--loss per 1000 man-days
@--loss per 100 casualties

1

ATTACK

51	25Jan-15Feb	16-19Feb51	7Mar-2Apr51	3-10Apr 51	11-22Apr51	20-31May51	1-30Jun51			10Oct-2Nov
	356.1 458	63.9 160	427.9 762	147.7 169	207.2 426	215.0 377	346.1 558			519.1 8º
	.20500 15.9389 (73)	.20344 8.1250 (13)	.03973 2.2310 (17)	.05416 4.7337 (8)	.03861 1.8779 (8)	.09767 5.5701 (21)	.11846 7.3477 (41)			.10403 60.6742 (54)
	.08986 6.9869 (32)	.25039 10.000 (16)	.02571 1.4436 (11)	.03385 2.9586 (5)	.10618 5.1643 (22)	--- ---	.04623 2.8674 (16)			.09825 57.3034 (51)
	.02247 1.7467 (8)	--- ---	.00701 .3937 (3)	.01354 1.1834 (2)	.01930 .9390 (4)	.04186 2.3873 (9)	.03756 2.3297 (13)			.00963 5.6180 (5)
			.01870 1.0499 (8)		.00965 .4695 (2)	.01395 .7957 (3)	.00867 .5376 (3)			
		.09390 3.7500 (6)				.02326 1.3262 (5)				.00770 4.4944 (4)
										.00193 1.1236 (1)

DEFENSE

10Oct-2Nov50	27-28Nov50	6-7Dec50	11-13Dec50	15-31Dec50	5 Jan51	9-14Jan51*	20Feb-6Mar51	28Apr-1
519.1 89	30.85 838	28.9 1	45.0 0	261.9 13	15.5 13	91.9 6	239.2 27	397.7 65
.10403 60.6742 (54)	.45381 1.6706 (14)	.93426 (27)	.08889 (4)	.02291 46.1538 (6)	---	.02176 33.3333 (2)	.03344 29.6296 (8)	.1559 93.93[illegible]4 (62)
.09825 57.3034 (51)	.12966 .4773 (4)	.79585 (23)	1.17778 (53)	.01909 38.4615 (5)	---	.17410 266.6667 (16)	.00836 7.4074 (2)	.1005 60.6061 (40)
.00963 5.6180 (5)	--- ---	.51903 (15)	.17778 (8)	.00382 7.6923 (1)	--- ---	.01088 16.6667 (1)	--- ---	.0100 6.0606 (4)
		4.22145 (122)						
		.93426 (27)	.08889 (4)	.02673 53.8461 (7)				.0100 6.0606 (4)
	.29173 1.0740 (9)	.76124 (22)	.11111 (5)					
		.62284 (18)						
.00770 4.4944 (4)								.05783 34.8485 (23)
.00193 1.1236 (1)							.01254 11.1111 (3)	
								.01257 7.5758 (5)

*[illegible]o regiments were in a "not engaged--rest" posture and one regim[illegible] was conducting a rear-guard action during 9-14 January 51. Divisi[illegible] losses for both postures are shown by the computations here.

NO

WITHDRAWAL IN CONTACT

an51*	20Feb-6Mar 51	28Apr-19Ma	29Nov-5Dec 50	8-10Dec50	14Dec50	1-4Jan51	23-27Apr51			3-6Nov
9	239.2 27	397.7 66	99.5 703	43.8 0	15.1 1	62.5 56	85.4 466			65.1 52
176 33)	.03344 29.6296 (8)	.15590 93.9394 (62)	.82412 11.6643 (82)	.54794 (24)	--- ---	.16000 17.8571 (10)	.16393 3.0043 (14)			.061 7.692 (4)
410 67 6)	.00836 7.4074 (2)	.10058 60.6061 (40)	.30151 4.2674 (30)	.50228 (22)	--- ---	.11200 12.5000 (7)	.05855 1.0730 (5)			.015 1.923 (1)
088 67)	--- ---	.01006 6.0606 (4)	.03015 .4267 (3)	--- ---	--- ---	--- ---	--- ---			--- ---
			.16080 2.2760 (16)							
		.01006 6.0606 (4)	1.13568 16.0740 (113)				.16393 3.0041 (14)			
			.12060 1.7070 (12)							
				.04561 (2)						
		.05783 34.8485 (23)	.60301 8.5349 (60)	.50228 (22)						
	.01254 11.1111 (3)		.05025 .7112 (5)							
		.01257 7.5758 (5)								

st" posture and one regimen
9-14 January 51. Division
computations here.

4

ONTACT				NOT ENGAGED				
50	1-4Jan51	23-27Apr51		3-6Nov50	17-23Nov50	6-8Jan51	24Jan51	21-30Jan51
	62.5 56	85.4 466		65.1 52	112.9 9	46.1 0	16. 0	180.4 0
	.16000 17.8571 (10)	.16393 3.0043 (14)		.06144 7.6923 (4)	.05314 66.6667 (6)	.06508 (3)		.10532 (19)
	.11200 12.5000 (7)	.05855 1.0730 (5)		.01536 1.9231 (1)	.02657 33.3333 (3)			.11641 (21)
	--- ---	--- ---		--- ---		.06508 (3)		.04989 (9)
		.16393 3.0041 (14)						

1st Infantry Division - Spread Sheet/Consolidation
21 March - 8 April 1943
NATOUSA (Gafsa and El Quettar)

		E-L-A-P-S-E-D D-A-Y-S 19 Days ATTACK
Man-Day Factor Casualties*		302.915
1 Truck, ¼ Ton 4x4 C&R	#	.06603 (20)
2 Truck, 2½ Ton (all types)	#	.06603 (20)
3 Tank, Medium		
4 Carbine, .30, M1	#	.01321 (4)
5 Rifle, .30, BAR, M1918	#	.07593 (23)
6 Rifle, .30, M1	#	.26741 (81)
7 Rifle, .30, M1903 Series	#	.13865 (42)
8 Machine Gun, .30 (all types)	#	.09244 (28)
9 Howitzer, 105 mm	#	.02971 (9)
10 Howitzer, 155 mm	#	.01981 (6)
11 Mortar, 81 mm	#	.03301 (10)
12 Radio Set, SCR-300	#	
13 Radio Set, SCR-608		
14 Radio Set, SCR-610		.00330 (1)
15 Generating Units		

*Due to the absence of daily personnel casualty figures, the losses of equipment per hundred casualties could not be computed.

#--loss per 1000 man-days

WARTIME REPLACEMENT REQUIREMENTS

45th Infantry Division--Consolidation (Transportation and Artillery Equipment Only)

10 September 1943 - 25 June 1944

ITALY

		E - L - A - P - S - E - D D - A - Y - S			
		119 Days ATTACK	30 Days DEFENSE	140 Days OTHER	289 Days TOTAL
Man-Day Factor		1765.2	455.2	2053.5	4273.9
Casualties		5905	2898	1384	10187
1 Truck, ¼ Ton 4x4 C&R	#	.04419	.13401	.03068	.04960
	@	1.3209	2.1049	4.5520	2.0811
		(78)	(61)	(63)	(212)
2 Truck, 2½ Ton (all types)	#	.01586	.00879	.01217	.01334
	@	.4742	.1380	1.8064	.5595
		(28)	(4)	(25)	(57)
3 Tank, Medium*	#				
	@				
		(8)	(21)		(29)
4 Carbine, .30, M1			SEE		
5. Rifle, .30, BAR, M1918			SIGNAL AND ORDNANCE		
6 Rifle, .30, M1			CONSOLIDATION		
			FOR		
7 Rifle, .30, M1903 Series			3 FEBRUARY -		
8 Machine Gun, .30 (all types)			25 JUNE 1944		
9 Howitzer, 105 mm	#	.00170			.00070
	@	.0508			.0294
		(3)			(3)
10 Howitzer, 155 mm	#			.00195	.00094
	@			.2890	.0393
				(4)	(4)
11 Mortar, 81 mm			SEE		
12 Radio Set, SCR-300			SIGNAL AND ORDNANCE		
			CONSOLIDATION		
13 Radio Set, SCR-608			FOR		
14 Radio Set, SCR-610			3 FEBRUARY -		
15 Generating Unit			25 JUNE 1944		

*Not computed due to incomplete loss records.

#--loss per 1000 man-days

WARTIME REPLACEMENT REQUIREMENTS

45th Infantry Division--Consolidation (Ordnance and Signal Equipment Only)
3 February - 25 June 1944
ITALY

		E - L - A - P - S - E - D D - A - Y - S				
		12 Days ATTACK	30 Days DEFENSE	101 Days OTHER	143 Days TOTAL/OrdEq	127 Days TOTAL/SigEqip*
Man-Day Factor Casualties		180. 1892	455.2 2898	1468.3 1317	2103.5 6107	1863.5 4145
1 Truck, ¼ Ton 4x4 C&R		SEE TRANSPORTATION AND ARTILLERY CONSOLIDATION FOR 10SEPTEMBER 1943 - 25 JUNE 1944				
2 Truck, 2½ Ton (all types)						
3 Tank, Medium						
4 Carbine, .30, M1	# @	.16667 1.5856 (30)	.23945 3.7612 (109)	.06334 7.0615 (93)	.11029 3.7989 (232)	
5 Rifle, .30, BAR, M1918	# @	.06667 .6342 (12)	.22188 3.4852 (101)	.04086 4.5558 (60)	.08244 2.8328 (173)	
6 Rifle, .30, M1	# @	.23333 2.2199 (42)	.68981 10.8351 (314)	.02316 2.5816 (34)	.18540 6.3861 (390)	
7 Rifle, .30, M1903 Series	# @	.04444 .4228 (8)	.10984 1.7253 (50)	.01566 1.7464 (23)	.03851 1.3263 (81)	
8 Machine Gun, .30 (all types)	# @	.05000 .4757 (9)	.31634 4.9689 (144)	.00681 .7593 (10)	.07749 2.6691 (163)	
9 Howitzer, 105 mm		SEE TRANSPORTATION AND ARTILLERY CONSOLIDATION FOR 10 SEPTEMBER 1943 - 25 JUNE 1945				
10 Howitzer, 155 mm						
11 Mortar, 81 mm	# @	.01667 .1586 (3)	.04174 .6556 (19)	.00204 .2278 (3)	.01188 .4094 (25)	
12 Radio Set, SCR-300	# @			.10216 11.3895 (150)		.08049 3.6188 (150)
13 Radio Set, SCR-608	# @			.01430 1.5945 (21)		.01127 .5066 (21)
14 Radio Set, SCR-610	# @		.04174 .6556 (19)	.03269 3.6446 (48)		.03595 1.6164 (67)
15 Generating Unit	# @		.00879 .1380 (4)	.00136 .1519 (2)		.00322 .1447 (6)

#-loss per 1000 man-day
@-loss per 100 casualties

*The total man-day factor and casualties for signal equipment and generating units were calculated by using the factors and casualties for the period of the reported

WARTIME REPLACEMENT REQUIREMENTS

45th Infantry Division--Consolidation
15 August - 31 October 1944
FRANCE

		E-L-A-P-S-E-D D-A-Y-S			
		38 Days ATTACK	40 Days OTHER	78 Days TOTAL	
Man-Day Factor		551.	600.	1151.	
Casualties		2256	141	2397	
1 Truck, ¼ Ton 4x4 C&R	#	.05989	.04833	.05387	
	@	1.4628	20.5674	2.5866	
		(33)	(29)	(62)	
2 Truck, 2½ Ton (all types)	#	.03993	.01000	.02433	
	@	.9752	4.2553	1.1681	
		(22)	(6)	(28)	
3 Tank, Medium*	#				
	@				
4 Carbine, .30, M1	#	.23593	.53000	.38923	
	@	5.7624	2255319	18.6900	
		(130)	(318)	(448)	
5 Rifle, .30, BAR, M1918	#	.15063	.07500	.11121	
	@	3.6791	31.9149	5.3400	
		(83)	(45)	(128)	
6 Rifle, .30, M1	#		.07667	.03996	
	@		32.6241	1.9191	
			(46)	(46)	
7 Rifle, .30, M1903 Series	#	.02178	.00667	.01390	
	@	.5319	2.8369	.6675	
		(12)	(4)	(16)	
8 Machine Gun, .30 (all types)	#	.01633	.04833	.03301	
	@	.3989	20.5674	1.5853	
		(9)	(29)	(38)	
9 Howitzer, 105 mm	#				
	@				
10 Howitzer, 155 mm	#				
	@				
11 Mortar, 81 mm	#	.00181		.00087	
	@	.0443		.0417	
		(1)		(1)	
12 Radio Set, SCR-300	#		.09167	.04778	
	@		39.0071	2.2945	
			(55)	(55)	
13 Radio Set, SCR-608	#		.07167	.03736	
	@		30.4964	1.7939	
			(43)	(43)	
14 Radio Set, SCR-610	#		.15500	.08080	
	@		65.9574	3.8798	
			(93)	(93)	
15 Generating Unit	#		.00167	.00087	
	@		.7092	.0417	
			(1)	(1)	

*Loss records incomplete

#--loss per 1000 man-days
@--loss per 100 casualties

6th Armored Division

The 6th Armored Division in Europe was the subject of an officially-sponsored unit history which obviously was compiled with access to the unit's records. Because of the nature of this history, it was not possible to associate personnel casualties and equipment losses directly with describable, discrete periods of combat. A preliminary search did not reveal any primary documentation at the Federal Record Center. If more time were to be made available, a more thorough search could be made. Casualties and losses for the entire combat career of the Division were recorded in the history referred to. From the narrative it is possible to arrive at some reasonably trustworthy figures (expressed as days of combat or activity) under rubrics which resemble those used in other parts of this study.

Defense	109
Reserve and Rest	15
Attack - light	10
Attack - mixed	131
Attack - heavy	12

These figures must be viewed with caution, since they are derived from a history which was prepared for the edification of the troops, but they seem to represent with some accuracy the combat experience of one armored division in Europe. It is interesting to note that the unit's time spent in various attack postures is only slightly greater than that spent in all other postures--153 days for attack, 124 days for defense, reserve, and rest. If this study develops mathematical ratios among the several combat postures, they will be used to distribute the losses of the 6th Armored Division within the standard matrix of the study. It is emphasized, however, that the groupings are very general in nature. The "Attack-mixed" category, for example, includes alternating periods of light and heavy activity, pursuit, and counterattack.

The spread sheet developed for this unit does not subdivide into time periods. The losses, casualties, and man-days are calculated to cover the entire period of the division's WWII activity. Since periodic strength reports were not available, the strength of an armored division as given in the T/O of January 1945 is used. This will tend to decrease the "1000 man-day factor" if, as was likely, strength averaged less than T/O.

UNIT: 6th Armored Division (T/O strength - 10670)

TIME PERIOD: 28 July 1944 - 30 April 1945

THEATER: EUROPE

DURATION: 277 Days

	Man-Day Factor Casualties		2856. 5704
1	Truck, ¼ Ton 4x4 C&R	# @	.08158 4.0848 /61/ (233)
2	Truck, 2½ Ton (all types)	# @	.03081 1.5428 /26/ (88)
3	Tank, Medium	# @	.05637 2.8226 /93/ (161)
x	Tank, Light	# @	.01891 .9467 /13/ (54)
	Aircraft, Liaison, L-4	# @	.00280 .1402 /1/ (8)

NOTE: The above losses were shown as aggregates, with no separation as to cause or repairability. Later tables make these differentiations, but the numbers do not balance. The table entitled "Non-Battle Vehicular Casualties" does include the entry "Worn Out through Fair Wear and Tear"; these figures are shown in brackets above. It is not clear, however, whether these figures are included in, or are in addition to, the other figures. For purposes of this study, it is assumed that the former case is true and that the general condition of use in combat, rather than direct enemy action, produced the loss.

#--loss per 1000 man-days
@--loss per 100 casualties

WARTIME REPLACEMENT REQUIREMENTS

28th Infantry Division--Consolidation
1 August - 27 December 1944
ETO

		E - L - A - P - S - E - D D - A - Y - S				
		61 Days ATTACK	50 Days DEFENSE	18 Days WITHDRAWAL	22 Days OTHER	151 Days TOTAL
Man-Day Factor		863.	552.	217.	361.	1993.
Casualties		6891	785	5207	118	12301
1 Truck, ¼ Ton 4x4 C&R	#	.06373	.02898	.90323	.03047	.13949
	@	.7981	2.0382	3.7642	9.3220	2.2600
		(55)	(16)	(196)	(11)	(278)
2 Truck, 2½ Ton (all types)	#	.00927	.00543	.28111	---	.03613
	@	.1161	.3822	1.1715	---	.5853
		(8)	(3)	(61)		(72)
3 Tank, Medium	#	.01043	---	.07834	---	.01305
	@	.1306	---	.3265	---	.2114
		(9)		(17)		(26)
4 Carbine, .30, M1	#	.22711	.04348	.00461	.09695	.12845
	@	2.8443	3.0573	.0192	29.6610	2.0811
		(196)	(24)	(1)	(35)	(256)
5 Rifle, .30, BAR M1918	#	.19351	.07971	.83410	.28255	.24787
	@	2.4234	5.6051	3.4761	86.4407	4.0159
		(167)	(44)	(181)	(102)	(494)
6 Rifle, .30, M1	#					
	@					
7 Rifle, .30, M1903 Series (snipers only)	#	.00232	.03442	---	.05263	.02007
	@	.0290	2.4204	---	16.1017	.3252
		(2)	(19)		(19)	(40)
8 Machine Gun, .30 (all types)	#	.08459	.05254	.50691	.01939	.10988
	@	1.0600	3.6943	2.1125	5.9322	1.7803
		(73)	(29)	(110)	(7)	(219)
9 Howitzer, 105 mm	#	---	---	.05530	---	.00602
	@	---	---	.2305	---	.0976
				(12)		(12)
10 Howitzer, 155 mm	#	---	---	---	.00277	.00050
	@	---	---	---	.8475	.0081
					(1)	(1)
11 Mortar, 81 mm	#	.01159	.02174	.11060	.00821	.02459
	@	.1451	1.5287	.4609	2.5424	.3983
		(10)	(12)	(24)	(3)	(49)
12 Radio Set, SCR-300	#	.07532	---	---	.00831	.03412
	@	.9433	---	---	2.5424	.5528
		(65)			(3)	(68)
13 Radio Set, SCR-608	#	---	---	---	.00554	.00100
	@	---	---	---	1.6949	.0163
					(2)	(2)
14 Radio Set, SCR-610	#	.02086	---	---	.00270	.00953
	@	.2612	---	---	.8475	.1545
		(18)			(1)	(19)
15 Generating Units	#					
	@					

#--loss per 1000 man-days

WARTIME REPLACEMENT REQUIREMENTS

7th Infantry Division - Consolidation
1 April - 30 June 1945
OKINAWA

		E-L-A-P-S-E-D D-A-Y-S			
		71 Days ATTACK	10 Days REST	10 Days MOP-UP	91 Days TOTAL
Man-Day Factor		809.	116.	109.	1034
Casualties		5354	202	352	5908
1 Truck, ¼ Ton 4x4 C&R	#	.01236	.04310	.02752	.01741
	@	.1868	2.4752	.8523	.3047
		(10)	(5)	(3)	(18)
2 Truck, 2½ Ton (all types)	#	.00494	.02586	----	.00677
	@	.0747	1.4851	----	.1185
		(4)	(3)		(7)
3 Tank, Medium	#	.01607	.03448	----	.01644
	@	.2428	1.9802	----	.2877
		(13)	(4)		(17)
4 Carbine, .30, M1	#	.01236	----	----	.00967
	@	.1868	----	----	.1693
		(10)			(10)
5 Rifle, .30, BAR, M1918	#	.01112	----	----	.00870
	@	.1681	----	----	.1523
		(9)			(9)
6 Rifle, .30, M1	#	.00371	----	----	.00290
	@	.0560	----	----	.0508
		(3)			(3)
7 Rifle, .30, M1903 Series	#				
	@				
8 Machine Gun, .30 (all types)	#	.00494	----	----	.00387
	@	.0747	----	----	.0677
		(4)			(4)
9 Howitzer, 105 mm	#	.00247	----	----	.00193
	@	.0373	----	----	.0339
		(2)			(2)
10 Howitzer, 155 mm	#				
	@				
11 Mortar, 81 mm	#				
	@				
12 Radio Set, SCR-300	#	.00494	----	----	.00387
	@	.0747	----	----	.0677
		(4)			(4)
13 Radio Set, SCR-608	#				
	@				
14 Radio Set, SCR-610	#				
	@				
15 Generating Units	#				
	@				
x Tank, Light	#	.00494	----	----	.00387
#--loss per 1000 man-days	@	.0747	----	----	.0677
@--loss per 100 casualties		(4)			

WARTIME REPLACEMENT REQUIREMENTS

96th Infantry Division - Consolidation
1 April - 22 June 1945
OKINAWA

			E-L-A-P-S-E-D		D-A-Y-S
			73 Days ATTACK	10 Days OTHER	83 Days TOTAL
	Man-Day Factor		1215.	142.4	1357.4
	Casualties		7030	446	7476
1	Truck, ¼ Ton 4x4 C&R	#	.01811	.00702	.01694
		@	.3129	.2242	.3076
			(22)	(1)	(23)
2	Truck, 2½ Ton (all types)	#	.01317	.00702	.01252
		@	.2276	.2242	.2274
			(16)	(1)	(17)
3	Tank, Medium	#	.01893	----	.01694
		@	.3272	----	.3076
			(23)		(23)
4	Carbine, .30, M1	#			
		@			
5	Rifle, .30, BAR, M1918	#	.02469	----	.02210
		@	.4267	----	.4013
			(30)		(30)
6	Rifle, .30, M1	#			
		@			
7	Rifle, .30, M1903 Series	#			
		@			
8	Machine Gun, .30 (all types)	#	.01893	----	.01694
		@	.3272	----	.3076
			(23)		(23)
9	Howitzer, 105 mm	#	.00165	----	.00147
		@	.0284	----	.0267
			(2)		(2)
10	Howitzer, 155 mm	#			
		@			
11	Mortar, 81 mm	#	.01399	----	.01252
		@	.2418	----	.2274
			(17		(17)
12	Radio Set, SCR-300	#	.03621	----	.03241
		@	.6259	----	.5885
			(44)		(44)
13	Radio Set, SCR-608	#	.00247	----	.00221
		@	.0427	----	.0401
			(3)		(3)
14	Radio Set, SCR-610	#	.01728	----	.01547
		@	.2987	----	.2809
			(21)		(21)
15	Generating Units	#			
		@			

#--loss per 1000 man-days
@--loss per 100 casualties

WARTIME REPLACEMENT REQUIREMENTS

2nd Infantry Division -- Consolidation/Spread Sheet
26-30 November 1950
KOREA

E - L - A - P - S - E - D D - A - Y - S

		5 Days DEFENSE--WITHDRAWAL IN CONTACT
Man-Day Factor Casualties		65.3 5441
1 Truck, ¼ Ton 4x4 C&R	# @	5.20674 6.2488 (340)
2 Truck, 2½ Ton (all types)	# @	3.49158 4.1904 (228)
3 Tank, Medium	# @	.90352 1.0844 (59)
4 Carbine, .30, M1	# @	
5 Rifle, .30, BAR, M1918	# @	3.46095 4.1536 (226)
6 Rifle, .30, M1	# @	50.64318 60.7793 (3307)
7 Rifle, .30, M1903 Series	# @	
8 Machine Gun, .30 (all types)	# @	.53599 .6433 (35)
9 Howitzer, 105 mm	# @	.75038 .9006 (49)
10 Howitzer, 155 mm	# @	.16845 .2022 (11)
11 Mortar, 81 mm	# @	.24502 .2941 (16)
12 Radio Set, SCR-300	# @	2.95559 3.5471 (193)
13 Radio Set, SCR-608	# @	
14 Radio Set, SCR-610	# @	

4

1

10 Howitzer, 155 mm	# @	.16845 .2022 (11)
11 Mortar, 81 mm	# @	.24502 .2941 (16)
12 Radio Set, SCR-300	# @	2.95559 3.5471 (193)
13 Radio Set, SCR-608	# @	
14 Radio Set, SCR-610	# @	
15 Generating Units	# @	
APC M-39	# @	.19908 .2389 (13)
SCR-506	# @	.09188 .1103 (6)
SCR-510	# @	.13782 .1654 (9)
SCR-536	# @	5.0689 6.0834 (331)

#--loss per 1000 man-days
@--loss per 100 casualties

2

WARTIME REPLACEMENT REQUIREMENTS

25th Infantry Division - Consolidation
17 September 1950 - 30 June 1951
KOREA

E - L - A - P - S - E - D D - A - Y - S

		151 Days ATTACK	102 Days DEFENSE	20 Days WITHDRAWAL	25 Days MOVEMENT NOT ENGAGED	10 Days REST NOT ENGAGED	308 Days TOTAL
Man-Day Factor		2311.3	1630.05	306.3	240.1	180.4	4668.15
Casualties		3893	1053	1226	61	0	6233
1 Truck, ¼ Ton 4x4 C&R	#	.13283	.10859	.42442	.13328	.10532	.14245
	@	7.8859	16.8091	10.6036	52.4590	----	10.6690
		(307)	(177)	(130)	(32)	(19)	(665)
2 Truck, 2½ Ton (all types)	#	.07139	.11901	.20894	.10412	.11641	.10047
	@	4.2384	18.4236	5.2202	40.9836	----	7.5245
		(165)	(194)	(64)	(25)	(21)	(469)
3 Tank, Medium	#	.01947	.02086	.00979	.04998	.04989	.02206
	@	1.1559	3.2289	.2447	19.6721	----	1.6525
		(45)	(34)	(3)	(12)	(9)	(103)
4 Carbine, .30, M1	#						
	@						
Rifle, .30, BAR, M1918	#	.00433	.07484	.05224	----	----	.03170
	@	.2569	11.5859	1.3051	----	----	2.3745
		(10)	(122)	(16)			(148)
Rifle, .30, M1C (Sniper)	#	.00692	.02577	.41463	----	----	.03963
	@	.4110	3.9886	10.3589	----	----	2.9681
		(16)	(42)	(127)			(185)
Rifle, .30, M1903 Series	#						
	@						
Machine Gun, .30 (all types)	#	.00519	.02209	.03918	----	----	.01285
	@	.3082	3.4188	.9788	----	----	.9626
		(12)	(36)	(12)			(60)
Howitzer, 105 mm	#			.00653			.00043
	@			.1631			.0321
				(2)			(2)
10 Howitzer, 155 mm	#						
	@						
11 Mortar, 81 mm	#	.00346	.01104				.00557
	@	.2055	1.7094				.4171
		(8)	(18)				(26)
12 Radio Set, SCR-300	#	.01644	.01656	.26771	----	----	
	@	.9761	2.5641	6.6884	----	----	
		(38)	(27)	(82)			
13 Radio Set, SCR-608	#	.00173	.00245	.01632	----	----	.00278
	@	.1027	.3799	.4078	----	----	.2086
		(4)	(4)	(5)			(13)

2

		(165)	(194)	(64)	(25)	(21)	(469)
3 Tank, Medium	#	.01947	.02086	.00979	.04998	.04989	.02206
	@	1.1559	3.2289	.2447	19.6721	----	1.6525
		(45)	(34)	(3)	(12)	(9)	(103)
4 Carbine, .30, M1	#						
	@						
5 Rifle, .30, BAR, M1918	#	.00433	.07484	.05224	----	----	.03170
	@	.2569	11.5859	1.3051	----	----	2.3745
		(10)	(122)	(16)			(148)
6 Rifle, .30, M1C (Sniper)	#	.00692	.02577	.41463	----	----	.03963
	@	.4110	3.9886	10.3589	----	----	2.9681
		(16)	(42)	(127)			(185)
7 Rifle, .30, M1903 Series	#						
	@						
8 Machine Gun, .30 (all types)	#	.00519	.02209	.03918	----	----	.01285
	@	.3082	3.4188	.9788	----	----	.9626
		(12)	(36)	(12)			(60)
9 Howitzer, 105 mm	#			.00653			.00043
	@			.1631			.0321
				(2)			(2)
10 Howitzer, 155 mm	#						
	@						
11 Mortar, 81 mm	#	.00346	.01104				.00557
	@	.2055	1.7094				.4171
		(8)	(18)				(26)
12 Radio Set, SCR-300	#	.01644	.01656	.26771	----	----	.03149
	@	.9761	2.5641	6.6884	----	----	2.3584
		(38)	(27)	(82)			(147)
13 Radio Set, SCR-608	#	.00173	.00245	.01632	----	----	.00278
	@	.1027	.3799	.4078	----	----	.2086
		(4)	(4)	(5)			(13)
14 Radio Set, SCR-610	#	.00606	.00307	----	----	----	.00407
	@	.3596	.4748	----	----	----	.3048
		(14)	(5)				(19)
15 Generating Units	#						
	@						

#--loss per 1000 man-days
@--loss per 100 casualties

UNIT: 77th Infantry Division

THEATRE: VESLE/ARGONNE

TIME PERIOD: 11 Aug - 11 Nov 1918

DURATION: 93 Days

ITEM		11Aug - 25Sept 1918 # 805.046 @ 4178	26Sept - 11Nov 1918* # 822.55 @ 4235
Chauchat (BAR)	#	.13415	.63096
	@	2.5850	12.2550
		(108)	(519)
Rifle, 1917	#	.20123	.54951
	@	3.8775	10.6730
		(162)	(452)
Rifle w/telesght	#	----	.00729
	@	----	.1417
			(6)
Rifle, Springfield w/telesght	#	----	.00365
	@	----	.0708
			(3)
Rifle, Gernade Launcher	#	.02360	.62732
	@	.4548	12.1842
		(19)	(516)
Machine Gun, Hotchkiss	#	.01615	.04863
	@	.3112	.9445
		(13)	(40)
Gun, 75 mm	#	.04969	.01945
	@	.9574	.3778
		(40)	(16)
Howitzer, 155 mm	#	.01615	.00243
	@	.3112	.0472
		(13)	(2)

*Equipment losses were recorded from combat records for September 26-30 and October 20-29; records for October 1-19 and October 30 - November 11 were not available. The Division was in Corps Reserve from October 16-30;because losses recorded in the October 20-29 report were of such large quantity it is probable that the majority of the losses occurred during the October 1-15 battle period. Casualty figures were reported for the entire September 26 - November 11 period.

#--loss per 1000 man-days
@--loss per 100 casualties

UNIT: FIRST ARMY
THEATRE: ETO

TIME PERIOD: 1 August 1944 - 22 February 1945
DURATION: 195 Days - Attack / 11 Days - Withdrawal

Spread Sheet/Consolidation

ITEM		ATTACK 1 Aug - 15 Dec, 27 Dec - 22 Feb	WITHDRAWAL 16 - 26 Dec	TOTAL
Man-Day Factor		56402.541	3678.389	60080.930
Casualties		97881	20438	118319
1 Truck, ¼ Ton 4x4 C&R	#	.05211	.21613	.06215
	@	3.0026	3.8898	3.1559
		(2939)	(795)	(3734)
2 Truck, 2½ Ton (all types)	#	.01580	.17562	.02558
	@	.9103	3.1608	1.2990
		(891)	(646)	(1537)
3 Tank, Medium	#	.01468	.07558	.01841
	@	.8459	1.3602	.9348
		(828)	(278)	(1106)
4 Carbine, .30, M1	#	.11492	1.10157	.17533
	@	6.6223	19.8258	8.9031
		(6482)	(4052)	(10534)
5 Rifle, .30, BAR, M1918	#	.04665	.18214	.05494
	@	2.6880	3.2782	2.7899
		(2631)	(670)	(3301)
6 Rifle, .30, M1	#	.22861	1.21276	.28886
	@	13.1731	21.8270	14.6680
		(12894)	(4461)	(17355)
7 Rifle, .30, M1903 Series (less Snprs)	#	.00165	.00598	.00191
	@	.0950	.1076	.0972
		(93)	(22)	(115)
8 Machine Gun, .30 (all types)	#	.03704	.26968	.05128
	@	2.1342	4.8537	2.6040
		(2089)	(992)	(3081)
9 Howitzer, 105 mm	#	.00082	.01821	.00188
	@	.0470	.3278	.0955
		(46)	(67)	(113)
10 Howitzer, 155 mm	#	.00023	.00272	.00038
	@	.0133	.0489	.0194
		(13)	(10)	(23)
11 Mortar, 81 mm	#	.00408	.03860	.00636
	@	.2350	.6948	.3229
		(230)	(142)	(382)
12 Radio Set, SCR-300	#			
	@			
13 Radio Set, SCR-608	#			
	@			
14 Radio Set, SCR-610	#			
	@			
15 Generating Unit, M5	#	.00023	.00843	.00073
	@	.0133	.1517	.0372
		(13)	(31)	(44)
7a Rifle, .30, M1903A4 (Snpr)	#	.00631	.02420	.00741
	@	3637	4355	3761

4

1

2

[illegible], .30, BAR, M1918	#	.04665	.18214	.05494
	@	2.6880	3.2782	2.7899
		(2631)	(670)	(3301)
6 Rifle, .30, M1	#	.22861	1.21276	.28886
	@	13.1731	21.8270	14.6680
		(12894)	(4461)	(17355)
7 Rifle, .30, M1903 Series (less Snprs)	#	.00165	.00598	.00191
	@	.0950	.1076	.0972
		(93)	(22)	(115)
8 Machine Gun, .30 (all types)	#	.03704	.26968	.05128
	@	2.1342	4.8537	2.6040
		(2089)	(992)	(3081)
9 Howitzer, 105 mm	#	.00082	.01821	.00188
	@	,0470	.3278	.0955
		(46)	(67)	(113)
10 Howitzer, 155 mm	#	.00023	.00272	.00038
	@	.0133	.0489	.0194
		(13)	(10)	(23)
11 Mortar, 81 mm	#	.00408	.03860	.00636
	@	.2350	.6948	.3229
		(230)	(142)	(382)
12 Radio Set, SCR-300	#			
	@			
13 Radio Set, SCR-608	#			
	@			
14 Radio Set, SCR-610	#			
	@			
15 Generating Unit, M5	#	.00023	.00843	.00073
	@	.0133	.1517	.0372
		(13)	(31)	(44)
7a Rifle, .30, M1903A4 (Snpr)	#	.00631	.02420	.00741
	@	.3637	.4355	.3761
		(356)	(89)	(445)
xx Gun, 155 mm	#	.00007	.00054	.00010
	@	.0041	.0098	.0051
		(4)	(2)	(6)

See attached NOTE.

loss per 1000 man-days
@ loss per 100 casualties

2

NOTE: Because First Army losses were consolidated for the entire 1 August 1944 - 22 February 1945 period, the loss per 1000 man/days and per 100 casualties according to combat postures was computed by extrapolation of figures from First United States Army, Report of Operations, Annex #9: Ordnance Section, using the period 16 December through 26 December as one of withdrawal in contact, and the remaining six and one-half months as a general attack posture. (See attached computations.)

In the First United States Army, Report of Operations, Vol. I, p. 128, it is reported that the losses resulting from the German counteroffensive (16 December 1944 - 2 January 1945) included "1,284 machine guns of various types and caliber, 542 mortars, 1344 trucks ¼ ton, 4x4 and 237 tanks. Not all of these losses were the result of being overrun as there was some evidence of unnecessary discarding or abandoning of equipment particularly among inexperienced troops." These figures are not fully consistent with those computed by the method described above; they include, however, loss for a seven day period in a general counteroffensive posture. Thus, on an order of magnitude basis, the computation method is generally confirmed.

WARTIME REPLACEMENT REQUIREMENTS

Fifth Army--Consolidation

9 September 1943 - 16 September 1944

ITALY

E - L - A - P - S - E - D D - A - Y - S

		329 Days ATTACK	44 Days REST	373 Days TOTAL
Man-Day Factor		57,437.	9670.	67,107.
Casualties		73,008	5363	78,371
1 Truck, ¼ Ton 4x4 C&R	#	.03170	.01675	.02955
	@	2.4942	3.0207	2.5303
		(1821)	(162)	(1983)
2 Truck, 2½ Ton (all types)	#	.03064	.01541	.02845
	@	2.4106	2.7783	2.4358
		(1760)	(149)	(1909)
3 Tank, Medium	#	.00975	.00289	.00876
	@	.7670	.5221	.7503
		(560)	(28)	(588)
4 Carbine, .30, M1	#	.07742	.04891	.07332
	@	6.0911	8.8197	6.2778
		(4447)	(473)	(4920)
5 Rifle, .30, BAR, M1918	#	.03303	.01458	.03037
	@	2.5983	2.6291	2.6004
		(1897)	(141)	(2038)
6 Rifle, .30, M1*	#	.13575	.02771	.12018
	@	10.6797	4.9972	10.2908
		(7797)	(268)	(8065)
7 Rifle, .30, M1903 Series* (less Snipers)	#	.07659	.00972	.06695
	@	6.0254	1.7527	5.7330
		(4399)	(94)	(4493)
8 Machine Gun, .30 (all types)	#	.02770	.01189	.02542
	@	2.1792	2.1443	2.1768
		(1591)	(115)	(1706)
9 Howitzer, 105 mm	#	.00085	---	.00073
	@	.0671	---	.0625
		(49)		(49)
10 Howitzer, 155 mm	#	.00050	.00362	.00095
	@	.0397	.6526	.0817
		(29)	(35)	(64)
11 Mortar, 81 mm	#	.00474	.00165	.00429
	@	.3726	.2983	.3675
		(272)	(16)	(288)
12 Radio Set, SCR-300	#			
	@			
13 Radio Set, SCR-608	#			
	@			
14 Radio Set, SCR-610	#			
	@			
15 Generating Units, M5	#	.00037	.00021	.00034

1

4 Carbine, .30, M1	#			
	@	6.0911	8.8197	6.2778
		(4447)	(473)	(4920)
5 Rifle, .30, BAR, M1918	#	.03303	.01458	.03037
	@	2.5983	2.6291	2.6004
		(1897)	(141)	(2038)
6 Rifle, .30, M1*	#	.13575	.02771	.12018
	@	10.6797	4.9972	10.2908
		(7797)	(268)	(8065)
7 Rifle, .30, M1903 Series* (less Snipers)	#	.07659	.00972	.06695
	@	6.0254	1.7527	5.7330
		(4399)	(94)	(4493)
8 Machine Gun, .30 (all types)	#	.02770	.01189	.02542
	@	2.1792	2.1443	2.1768
		(1591)	(115)	(1706)
9 Howitzer, 105 mm	#	.00085	---	.00073
	@	.0671	---	.0625
		(49)		(49)
10 Howitzer, 155 mm	#	.00050	.00362	.00095
	@	.0397	.6526	.0817
		(29)	(35)	(64)
11 Mortar, 81 mm	#	.00474	.00165	.00429
	@	.3726	.2983	.3675
		(272)	(16)	(288)
12 Radio Set, SCR-300	#			
	@			
13 Radio Set, SCR-608	#			
	@			
14 Radio Set, SCR-610	#			
	@			
15 Generating Units, M5	#	.00037	.00021	.00034
	@	.0288	.0373	.0293
		(21)	(2)	(23)
* Consolidated Rifles	#	.21234	.03743	.18713
	@	16.7050	6.7499	16.0238
		(12,196)	(362)	(12,558)
x Tank, Light	#	.00411	.00031	.00356
	@	.3233	.0559	.3050
		(236)	(3)	(239)

#--loss per 1000 man-days @--loss per 100 casualties

2

WARTIME REPLACEMENT REQUIREMENTS

Seventh Army - Consolidation
5 November 1944 - 12 May 1945

		ETO E-L-A-P-S-E-D D-A-Y-S				
		147 Days ATTACK	14 Days DEFENSE	14 Days WITHDRAWAL	14 Days OTHER	189 Days TOTAL
Man-Day Factor		40277.	3441.	3086.	4138.	50942.
Casualties		51418	4140	8248	2504	66310
1 Truck, ¼ Ton 4x4 C&R	#	.03394	.00959	.05736	.04205	.03437
	@	2.6586	.7971	2.1460	6.9489	2.6406
		(1367)	(33)	(177)	(174)	(1751)
2 Truck, 2½ Ton (all types)	#	.02910	.00232	.01458	.10585	.03264
	@	2.2794	.1932	.5456	17.4920	2.5079
		(1172)	(8)	(45)	(438)	(1663)
3 Tank, Medium	#	.01187	.00291	.02009	.00773	.01142
	@	.9296	.2415	.7517	1.2780	.8777
		(478)	(10)	(62)	(32)	(582)
4 Carbine, .30, M1	#	.23388	.22232	.20188	.10657	.22082
	@	18.3204	18.4783	7.5533	17.6118	16.9643
		(9420)	(765)	(623)	(441)	(11249)
5 Rifle, .30, BAR, M1918	#	.03503	.01831	.04569	.03407	.03447
	@	2.7442	1.5217	1.7095	5.6310	2.6482
		(1411)	(63)	(141)	(141)	(1756)
6 Rifle, .30, M1	#	.45852	.07062	.05703	.05703	.37539
	@	35.9174	5.8696	2.1338	9.4249	28.8388
		(18468)	(243)	(176)	(236)	(19123)
7 Rifle, .30, M1903 Series (includes Snipers)	#	.01490	.01656	.02203	.00072	.01429
	@	1.1669	1.3768	.8244	.1198	1.0979
		(600)	(57)	(68)	(3)	(728)
8 Machine Gun, .30 (all types)	#	.02532	.02557	.07388	.02392	.02817
	@	1.9837	2.1256	2.7643	3.9537	2.1641
		(1020)	(88)	(228)	(99)	(1435)
9 Howitzer, 105 mm	#	.00017	----	.00032	----	.00016
	@	.0136	----	.0121	----	.0121
		(7)		(1)		(8)
10 Howitzer, 155 mm	#	.00032	----	----	.00048	.00029
	@	.0253	----	----	.0799	.0226
		(13)			(2)	(15)
11 Mortar, 81 mm	#	.00353	.00116	.01004	.00459	.00385
	@	.2762	.0966	.3758	.7588	.2956
		(142)	(4)	(31)	(19)	(196)
12 Radio Set, SCR-300	#	.01383	.00726	.01620	.02199	.01419
	@	1.0833	.6039	.6062	3.6342	1.0903
		(557)	(25)	(50)	(91)	(723)
13 Radio Set, SCR-608	#	.00012	.00029	.00065	.00097	[illegible]
	@	.0097	.0242	.0242	.1597	[illegible]
		(5)	(1)	(2)	(4)	[illegible]
14 Radio Set, SCR-610	#	.00283	.00087	.01004	.00387	[illegible]
	@	.2217	.0725	.3758	.6390	.2473
		(114)	(3)	(31)	(16)	(164)
15 Generating Unit, M5	#	.00037	----	.00097	----	.00035
	@	.0292	----	.0364	----	.0271
		(15)		(3)		(18)
16 Tank, Light	#	.00362	.00262	.00486	.00193	.00349

	@	.9296 (478)	.2415 (10)	.7517 (62)	1.2760 (32)	.6777 (582)
rbine, .30, M1	# @	.23388 18.3204 (9420)	.22232 18.4783 (765)	.20188 7.5533 (623)	.10657 17.6118 (441)	.22082 16.9643 (11249)
ifle, .30, BAR, M1918	# @	.03503 2.7442 (1411)	.01831 1.5217 (63)	.04569 1.7095 (141)	.03407 5.6310 (141)	.03447 2.6482 (1756)
ifle, .30, M1	# @	.45852 35.9174 (18468)	.07062 5.8696 (243)	.05703 2.1338 (176)	.05703 9.4249 (236)	.37539 28.8388 (19123)
ifle, .30, M1903 Series (includes Snipers)	# @	.01490 1.1669 (600)	.01656 1.3768 (57)	.02203 .8244 (68)	.00072 .1198 (3)	.01429 1.0979 (728)
achine Gun, .30 (all types)	# @	.02532 1.9837 (1020)	.02557 2.1256 (88)	.07388 2.7643 (228)	.02392 3.9537 (99)	.02817 2.1641 (1435)
owitzer, 105 mm	# @	.00017 .0136 (7)	---- ----	.00032 .0121 (1)	---- ----	.00016 .0121 (8)
owitzer, 155 mm	# @	.00032 .0253 (13)	---- ----	---- ----	.00048 .0799 (2)	.00029 .0226 (15)
ortar, 81 mm	# @	.00353 .2762 (142)	.00116 .0966 (4)	.01004 .3758 (31)	.00459 .7588 (19)	.00385 .2956 (196)
adio Set, SCR-300	# @	.01383 1.0833 (557)	.00726 .6039 (25)	.01620 .6062 (50)	.02199 3.6342 (91)	.01419 1.0903 (723)
adio Set, SCR-608	# @	.00012 .0097 (5)	.00029 .0242 (1)	.00065 .0242 (2)	.00097 .1597 (4)	.00024 .0181 (12)
adio Set, SCR-610	# @	.00283 .2217 (114)	.00087 .0725 (3)	.01004 .3758 (31)	.00387 .6390 (16)	.00322 .2473 (164)
enerating Unit, M5	# @	.00037 .0292 (15)	---- ----	.00097 .0364 (3)	---- ----	.00035 .0271 (18)
Tank, Light	# @	.00362 .2839 (146)	.00262 .2174 (9)	.00486 .1819 (15)	.00193 .3195 (8)	.00349 .2684 (178)

loss per 1000 man-days
loss per 100 casualties

2

WARTIME REPLACEMENT REQUIREMENTS

Tenth Army--Spread Sheet/Consolidation
1 April - 30 June 1945

Okinawa

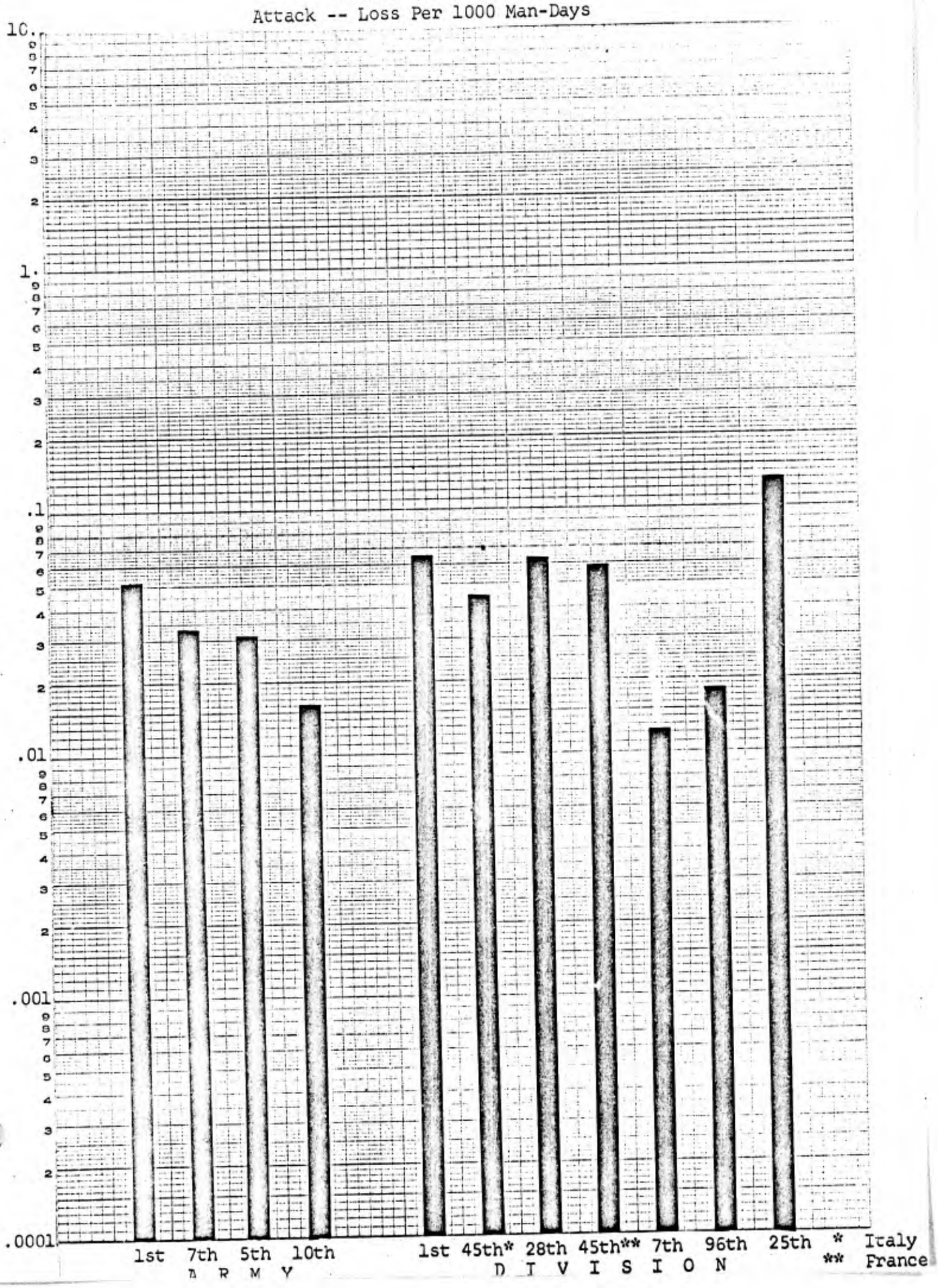
E - L - A - P - S - E - D D - A - Y - S

			91 Days ATTACK
	Man-Day Factor		13,983.631
	Casualties		39,420
1	Truck, ¼ Ton 4x4 C&R	#	.01602
		@	.5682
			(224)
2	Truck, 2½ Ton (all types)	#	.01008
		@	.3577
			(141)
3	Tank, Medium	#	.01051
		@	.3729
			(147)
4	Carbine, .30, M1	#	.12765
		@	4.5282
			(1,785)
5	Rifle, .30, BAR, M1918	#	.09489
		@	3.3663
			(1,327)
6	Rifle, .30, M1	#	.11263
		@	3.9954
			(1,575)
7	Rifle, .30, M1903 Series	#	.00322
		@	.1142
			(45)
8	Machine Gun, .30 (all types)	#	.01309
		@	.4642
			(183)
9	Howitzer, 105 mm	#	.00079
		@	.0279
			(11)
10	Howitzer, 155 mm	#	.00014
		@	.0051
			(2)
11	Mortar, 81 mm, M1	#	.00350
		@	.1243
			(49)
12	Radio Set, SCR-300	#	
		@	
13	Radio Set, SCR-608	#	
		@	
14	Radio Set, SCR-610	#	
		@	
15	Generating Unit, M5	#	.00021
		@	.0076
			(3)
x	Tank, Light	#	.00029
		@	.0101

#--loss per 1000 man-days
@--loss per 100 casualties

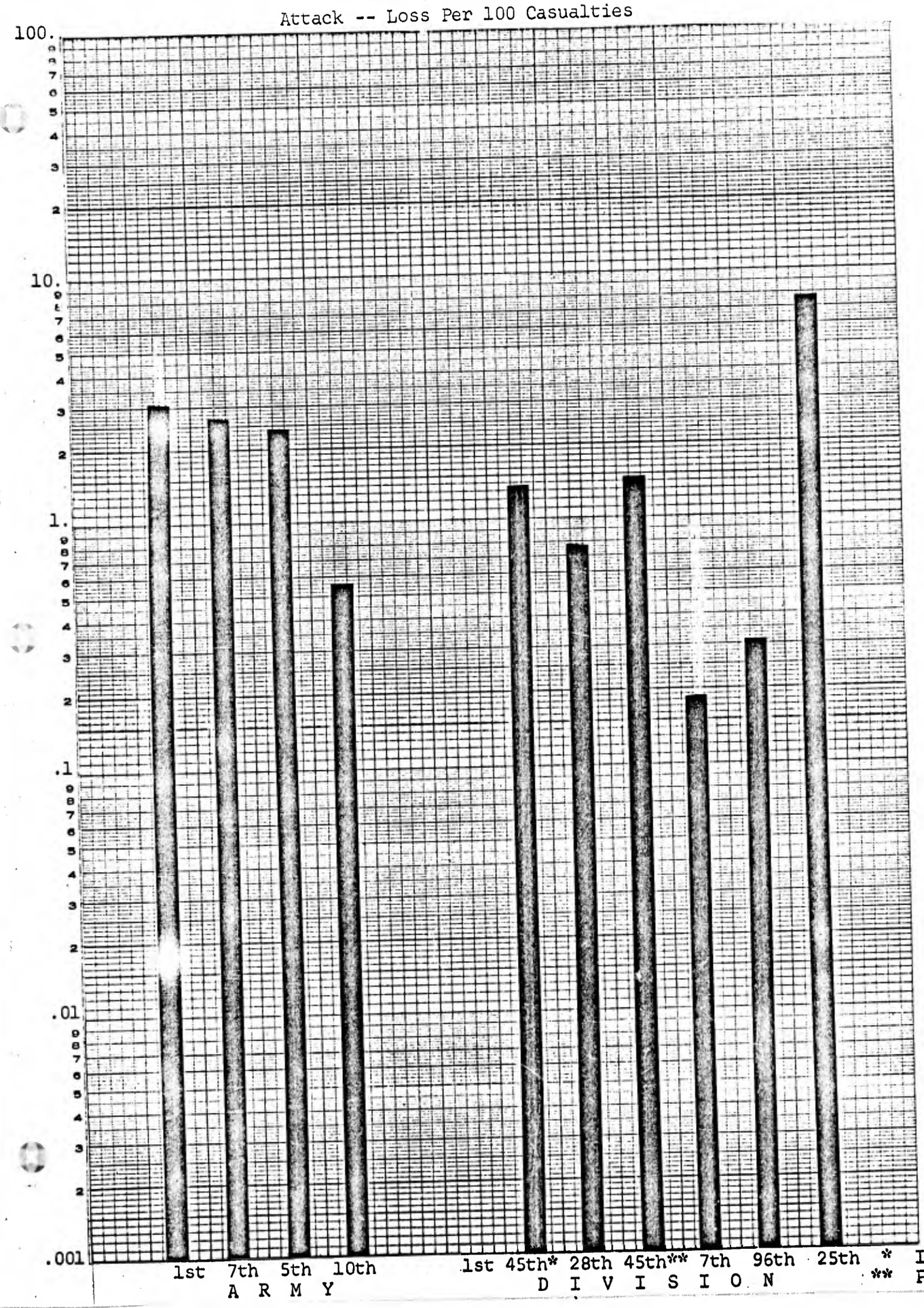
Truck, ¼ Ton 4x4

Attack -- Loss Per 1000 Man-Days

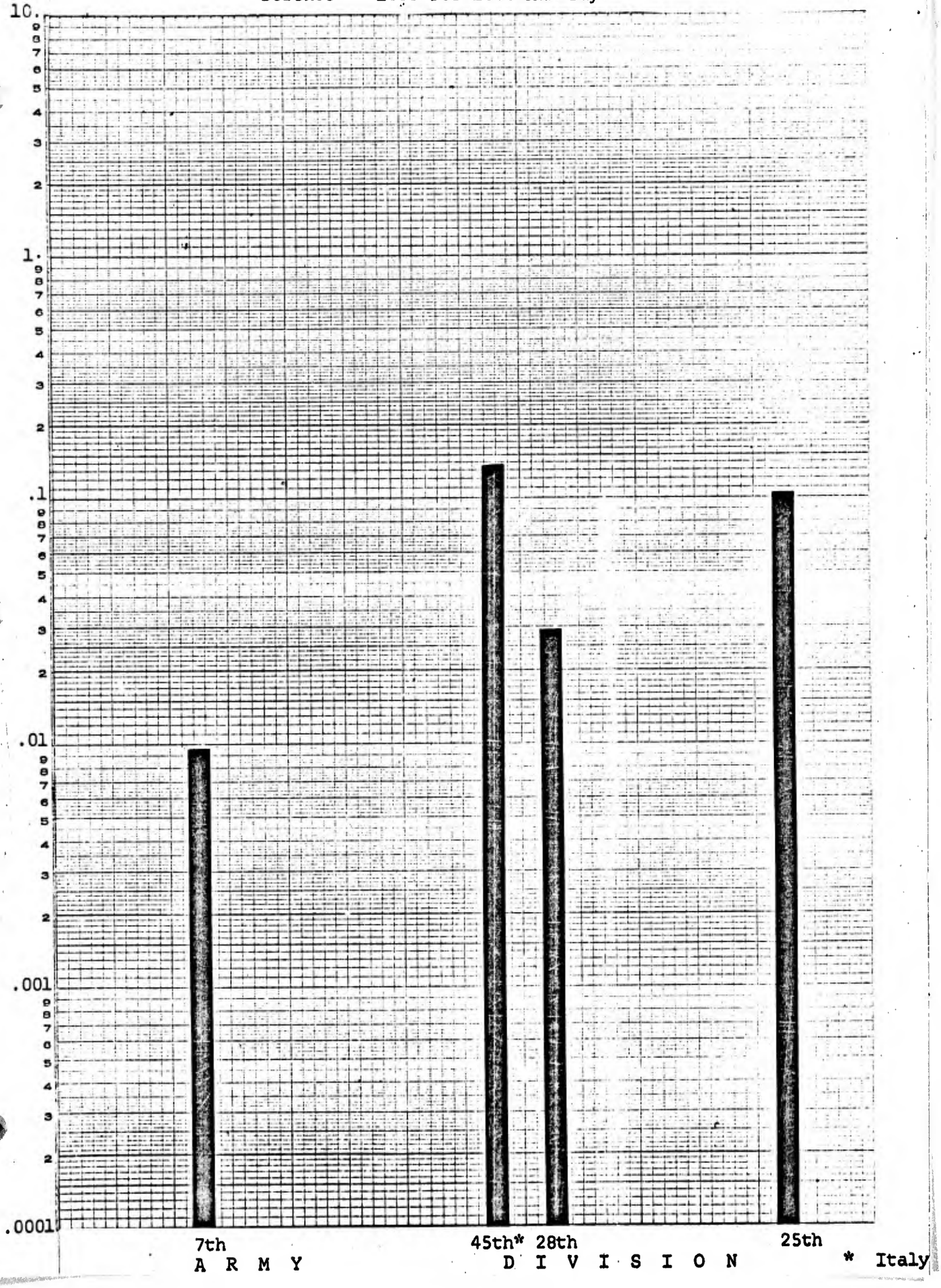


Truck, ¼ Ton 4x4

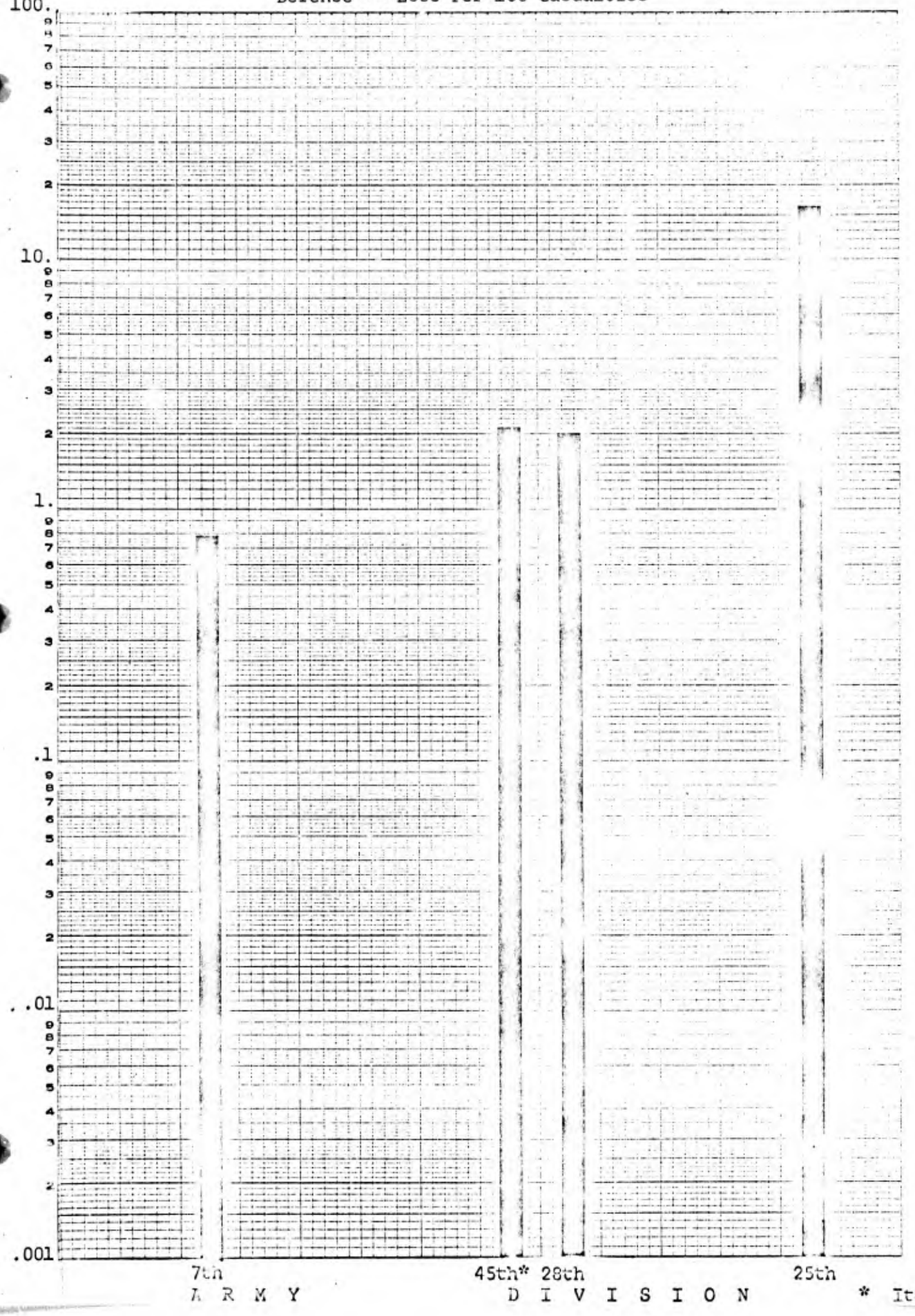
Attack -- Loss Per 100 Casualties



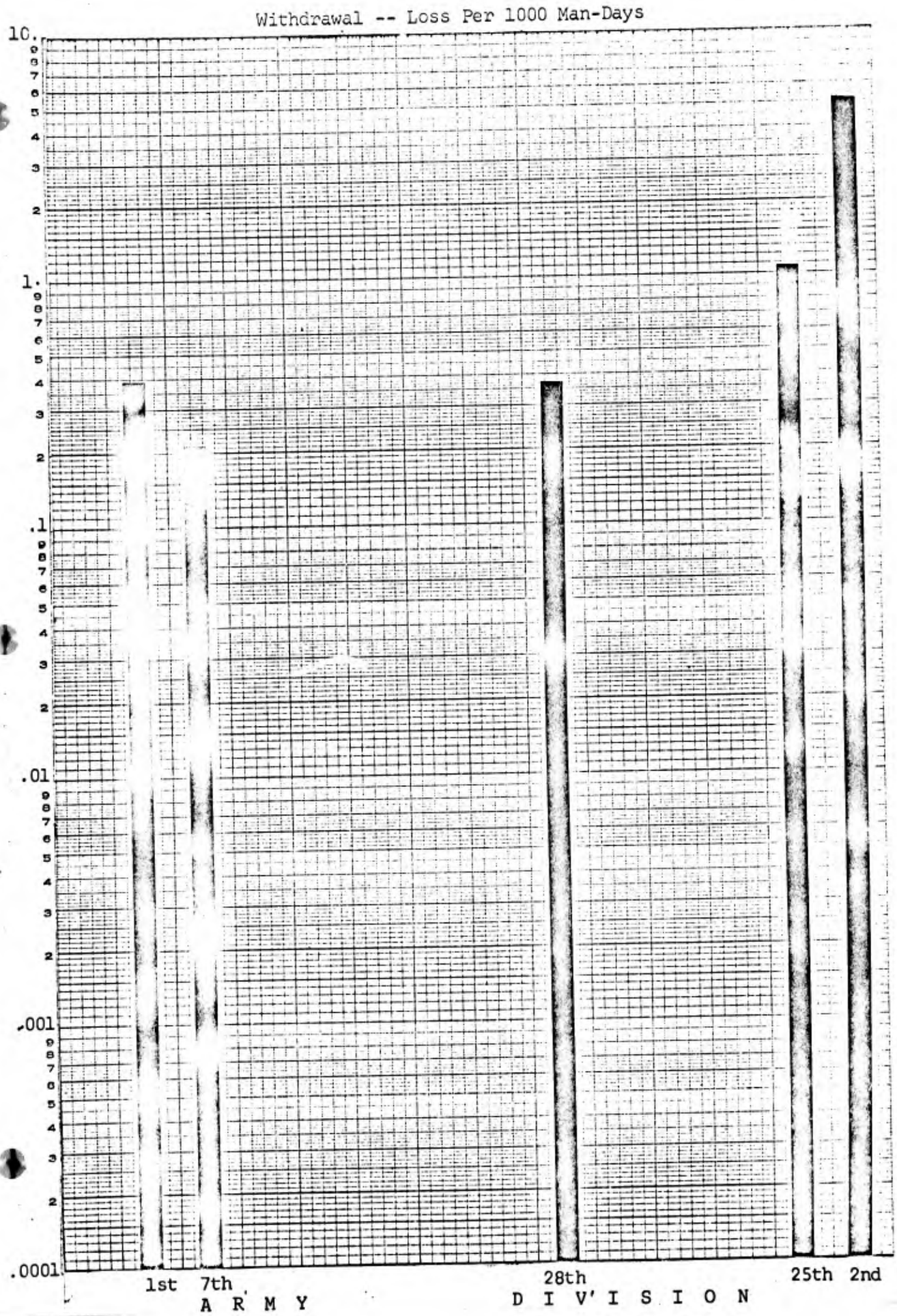
Truck, ¼ Ton 4x4
Defense -- Loss Per 1000 Man-Days



Truck, ¼ Ton 4x4
Defense -- Loss Per 100 Casualties

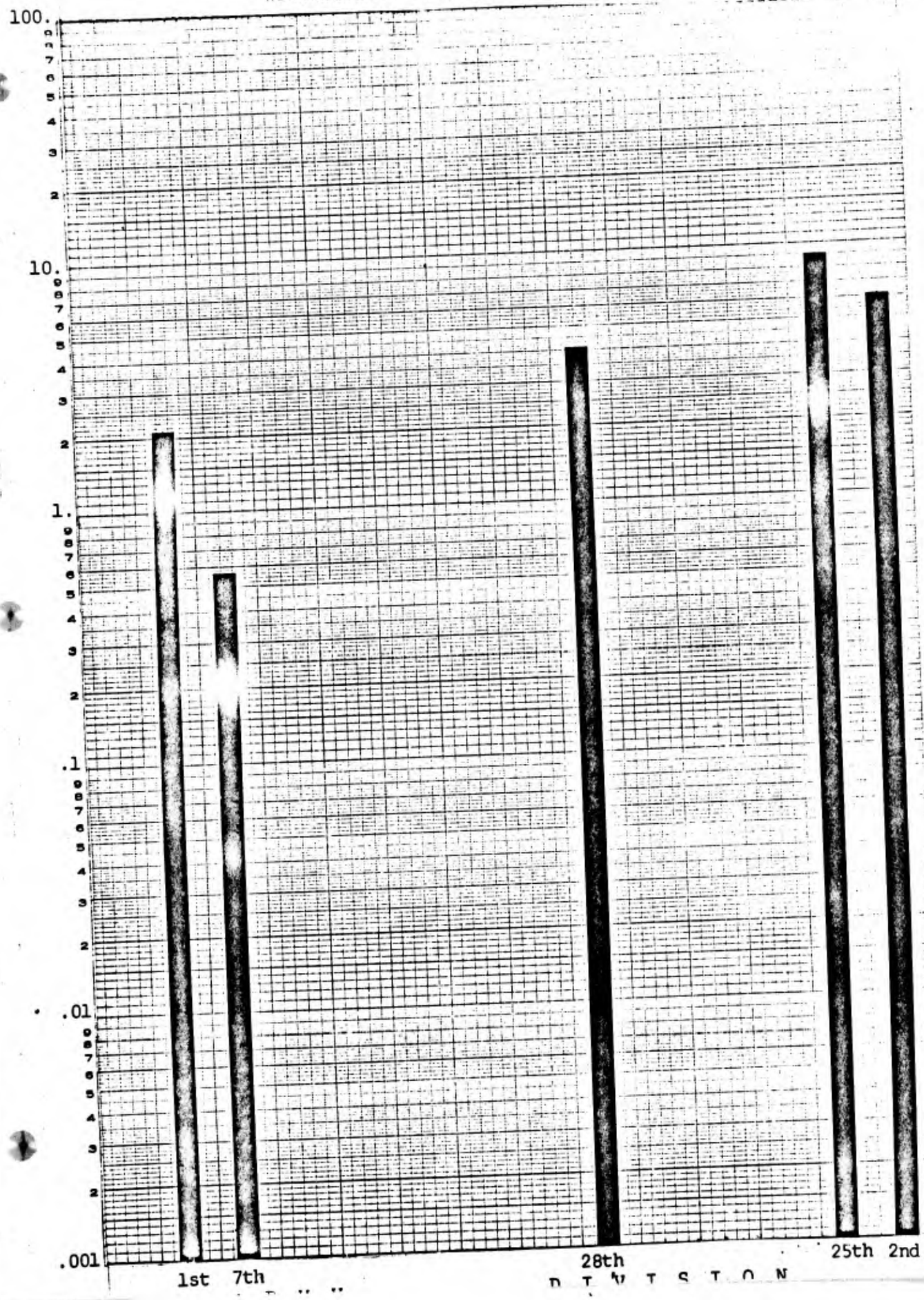


Truck, ¼ Ton 4x4

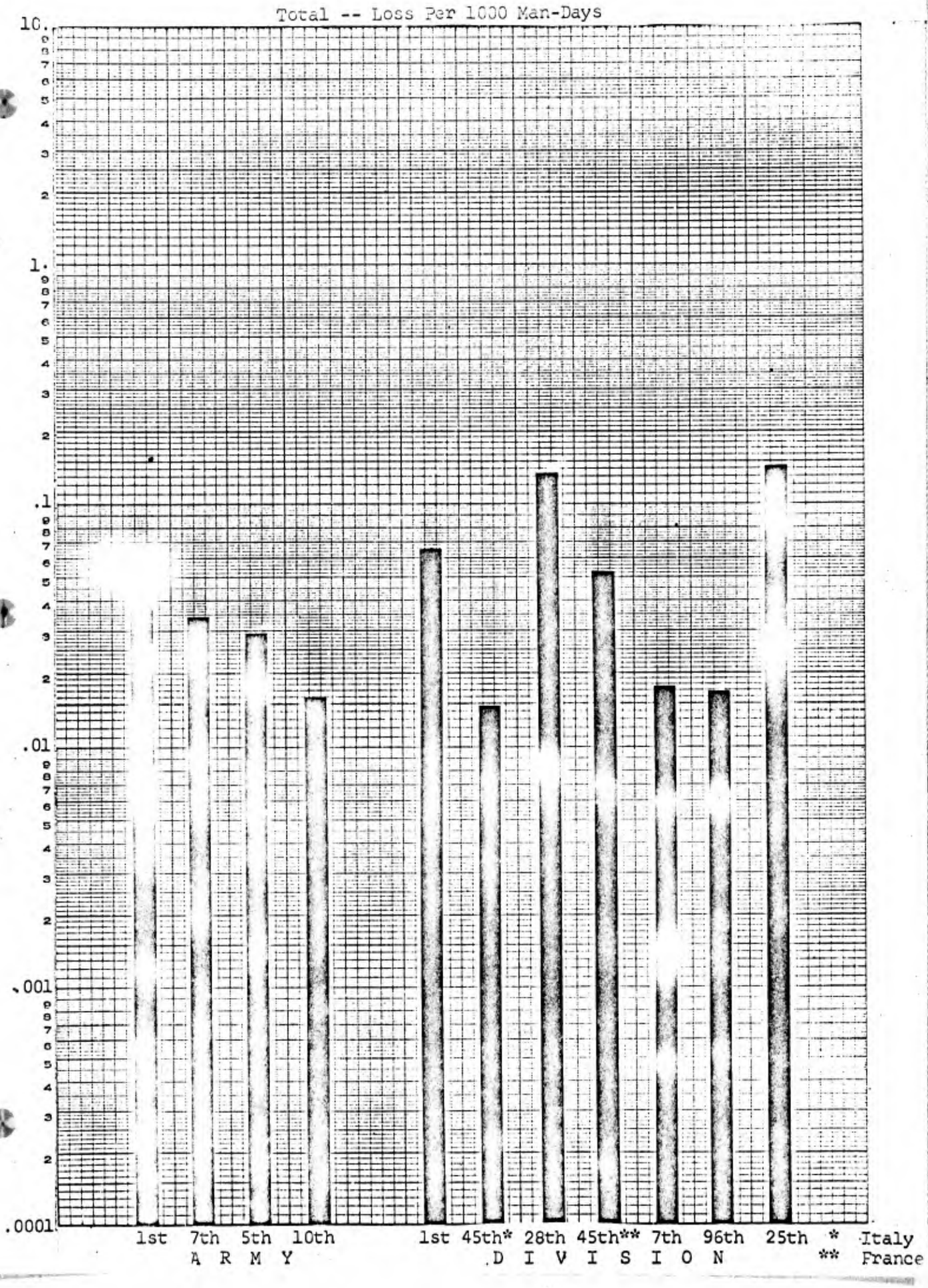


Truck, ¼ Ton 4x4

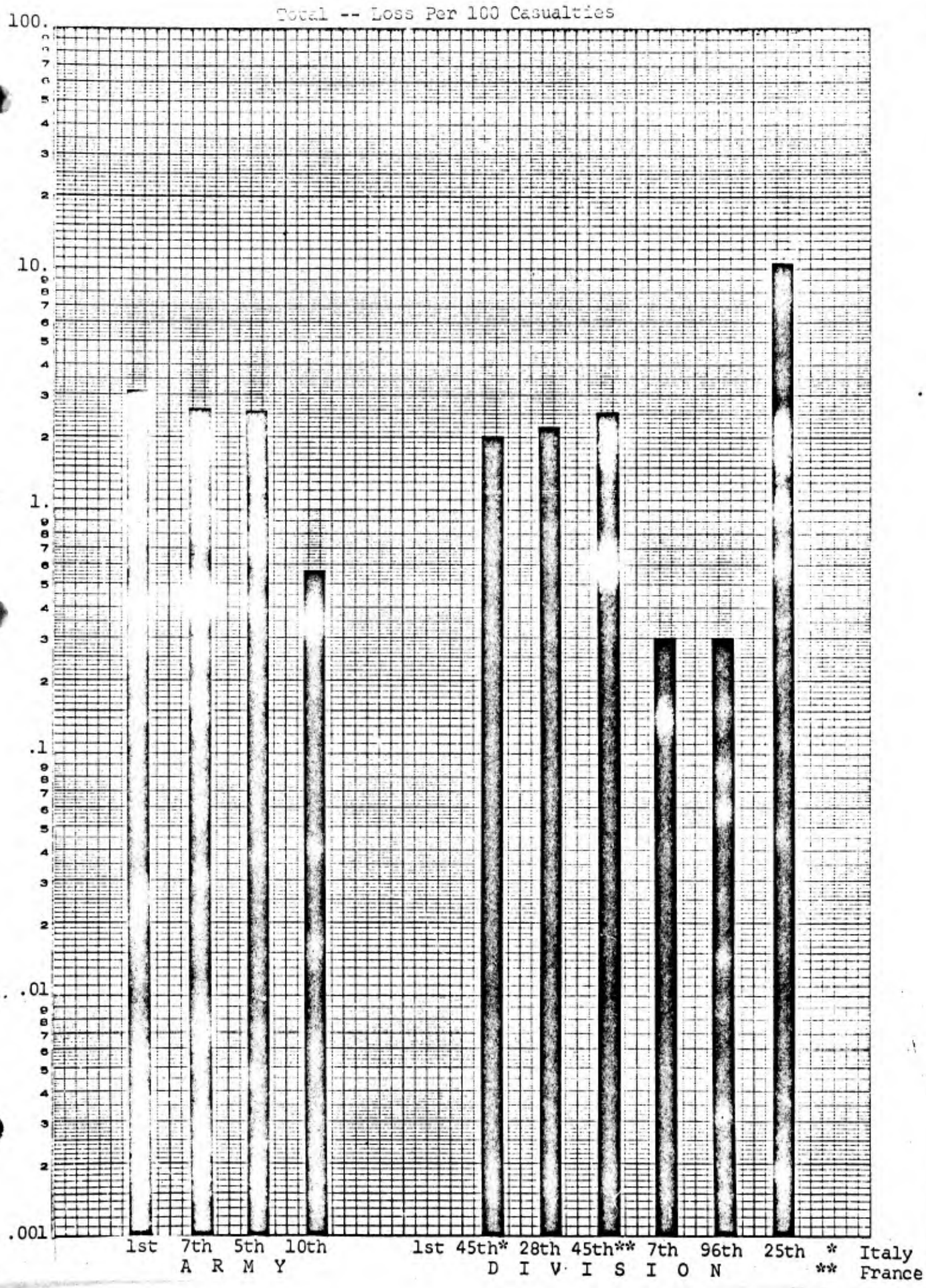
Withdrawal -- Loss Per 100 Casualties



Truck, ¼ Ton 4x4

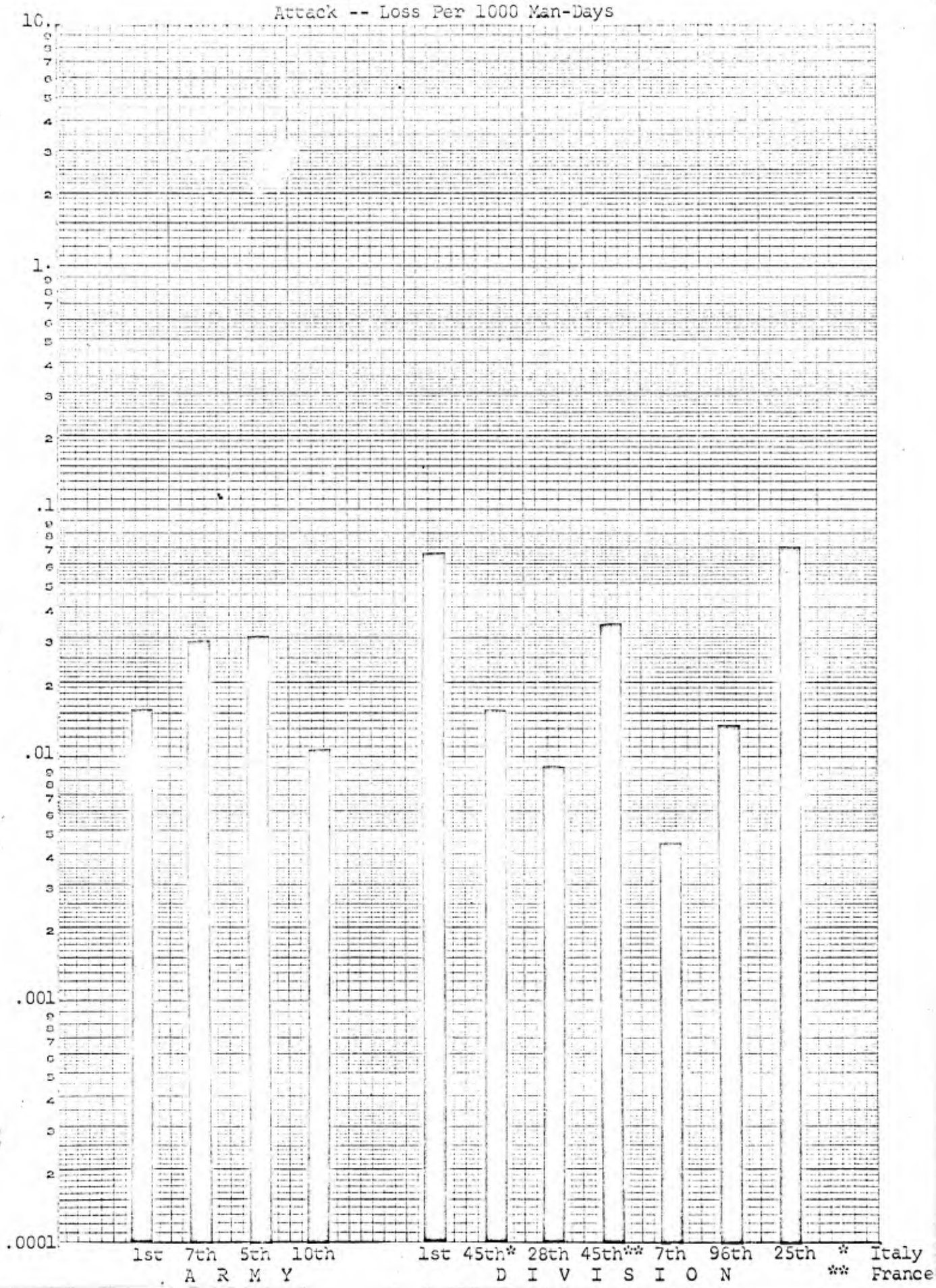


Truck, ¼ Ton 4x4



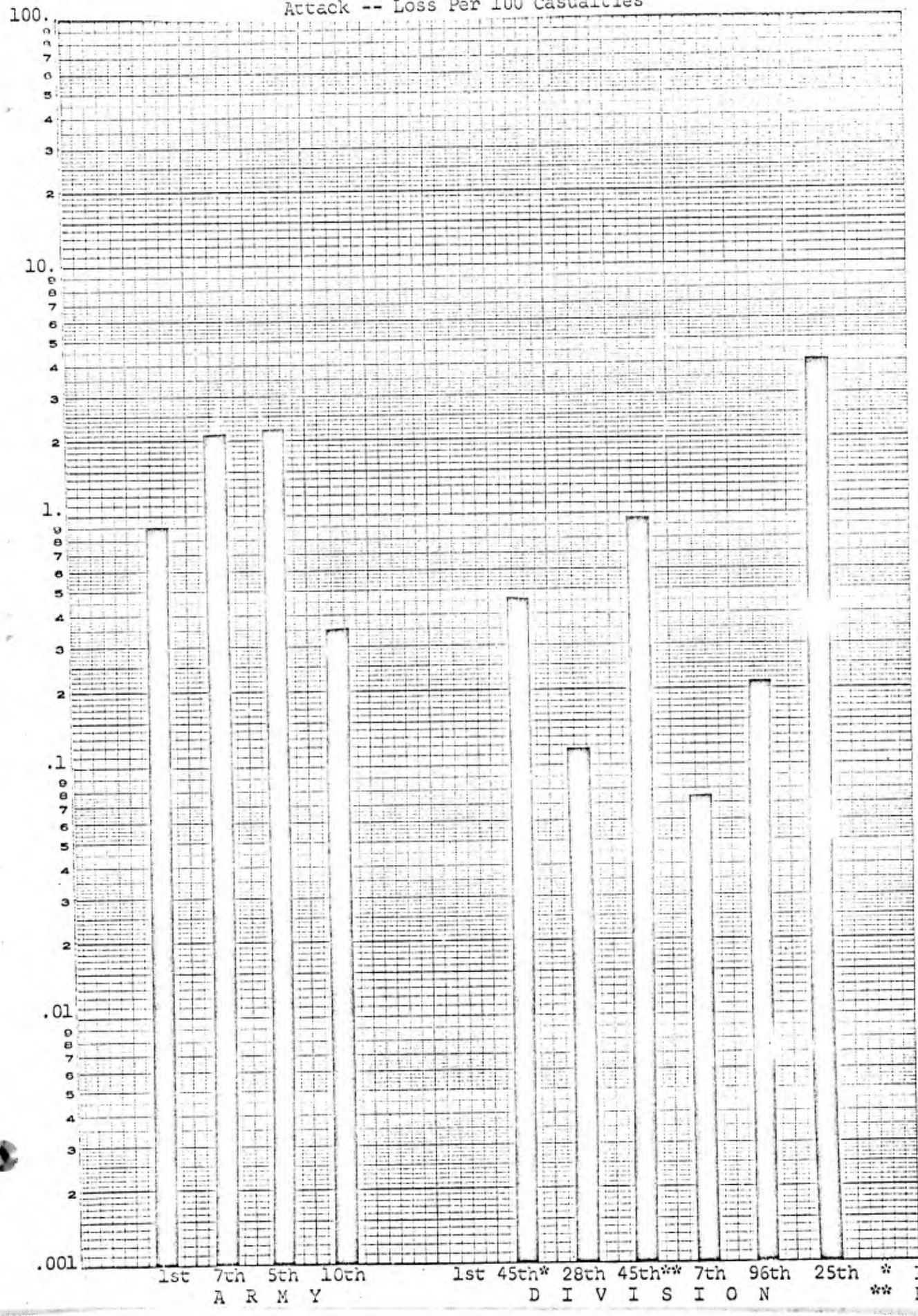
Truck, 2½ Ton (all types)

Attack -- Loss Per 1000 Man-Days

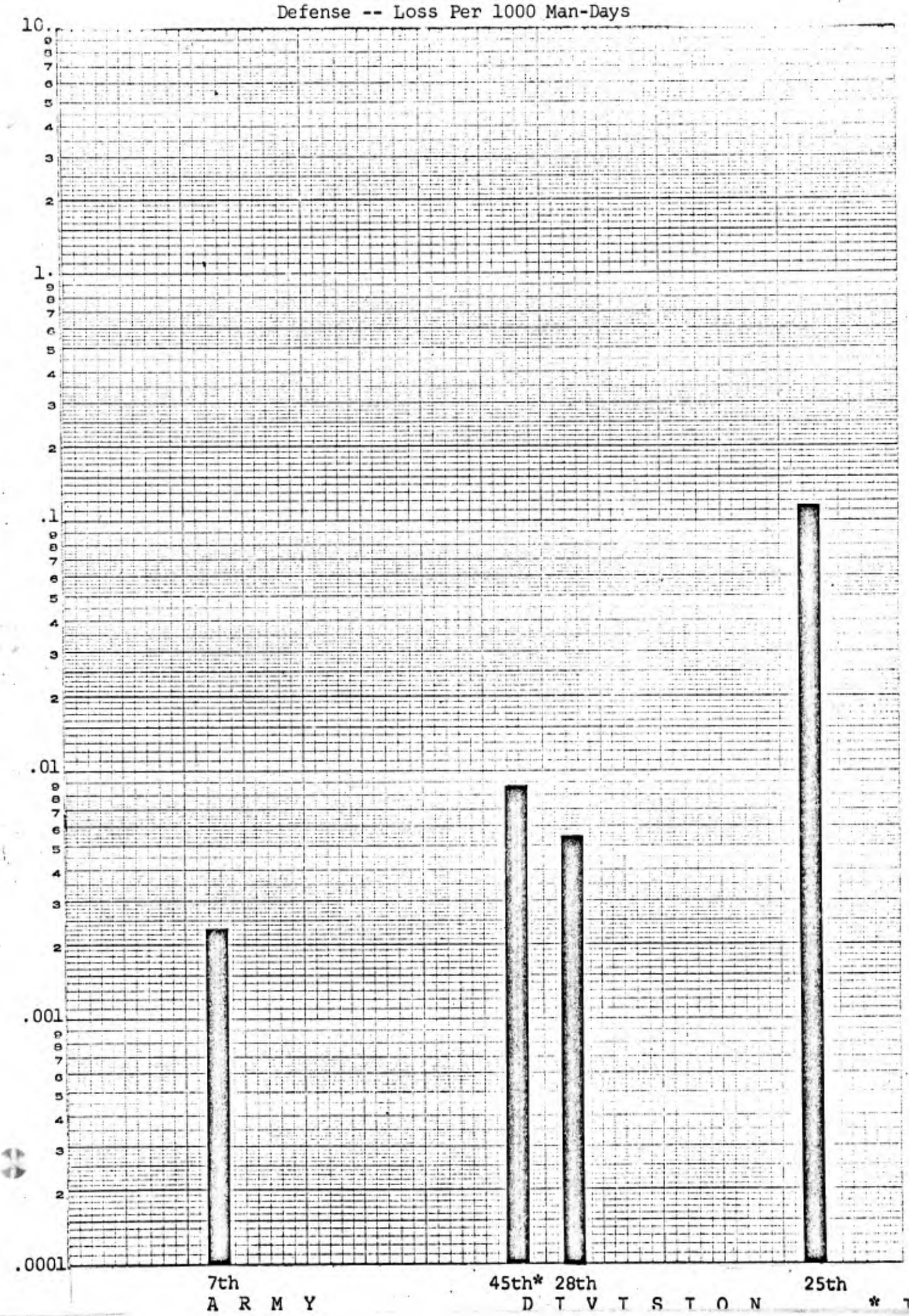


Truck, 2½ Ton (all types)

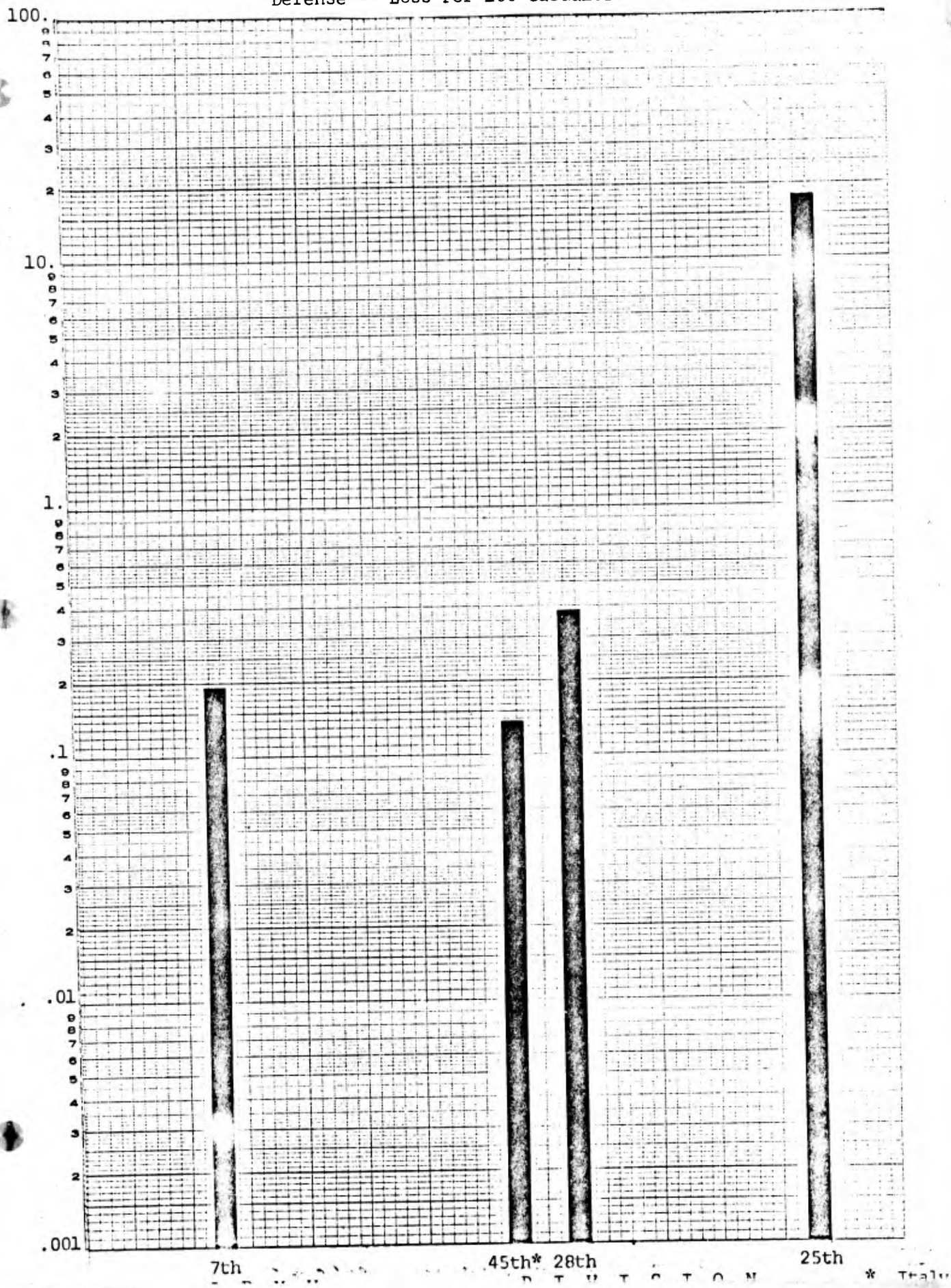
Attack -- Loss Per 100 Casualties



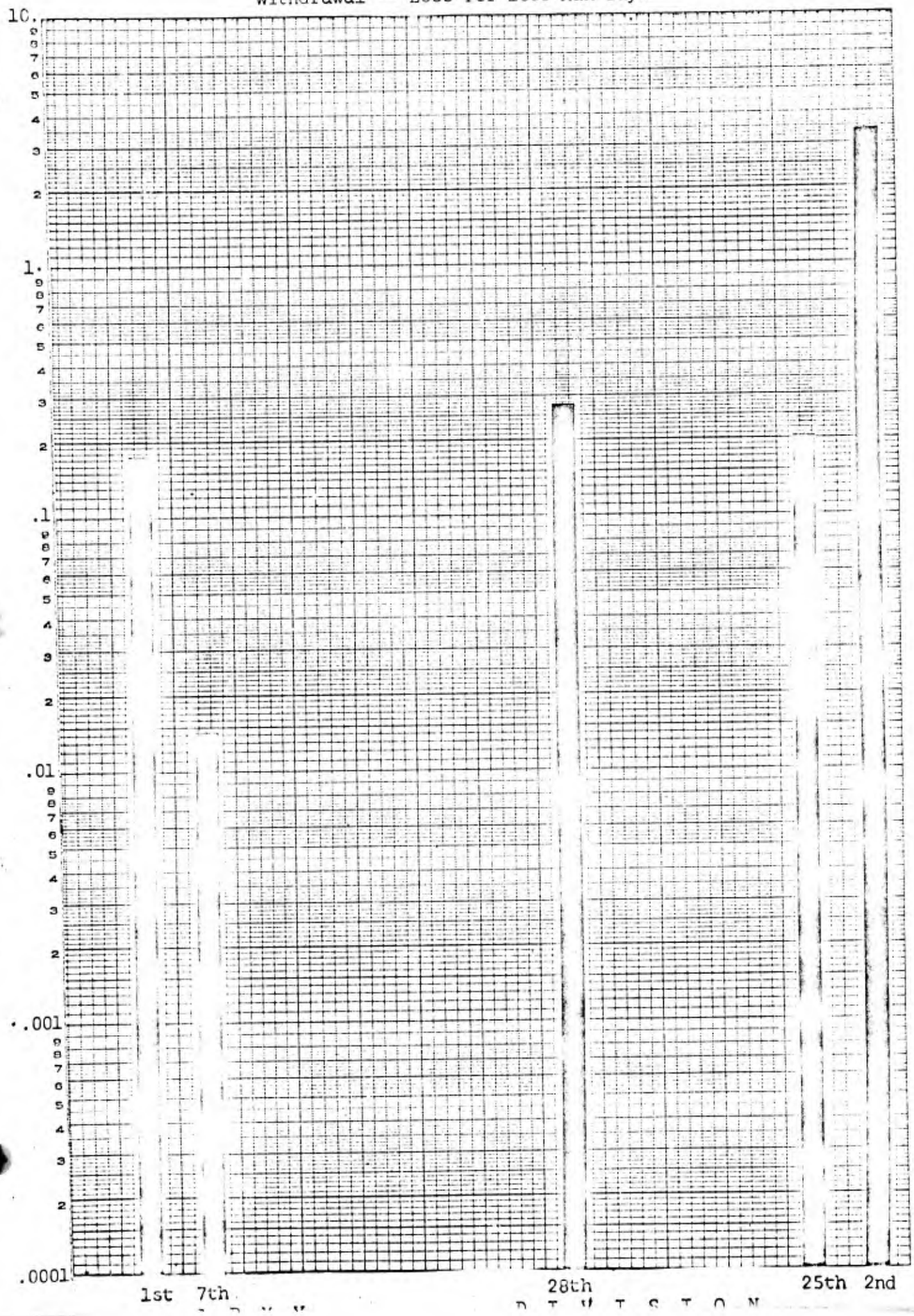
Truck, 2½ Ton (all types)
Defense -- Loss Per 1000 Man-Days



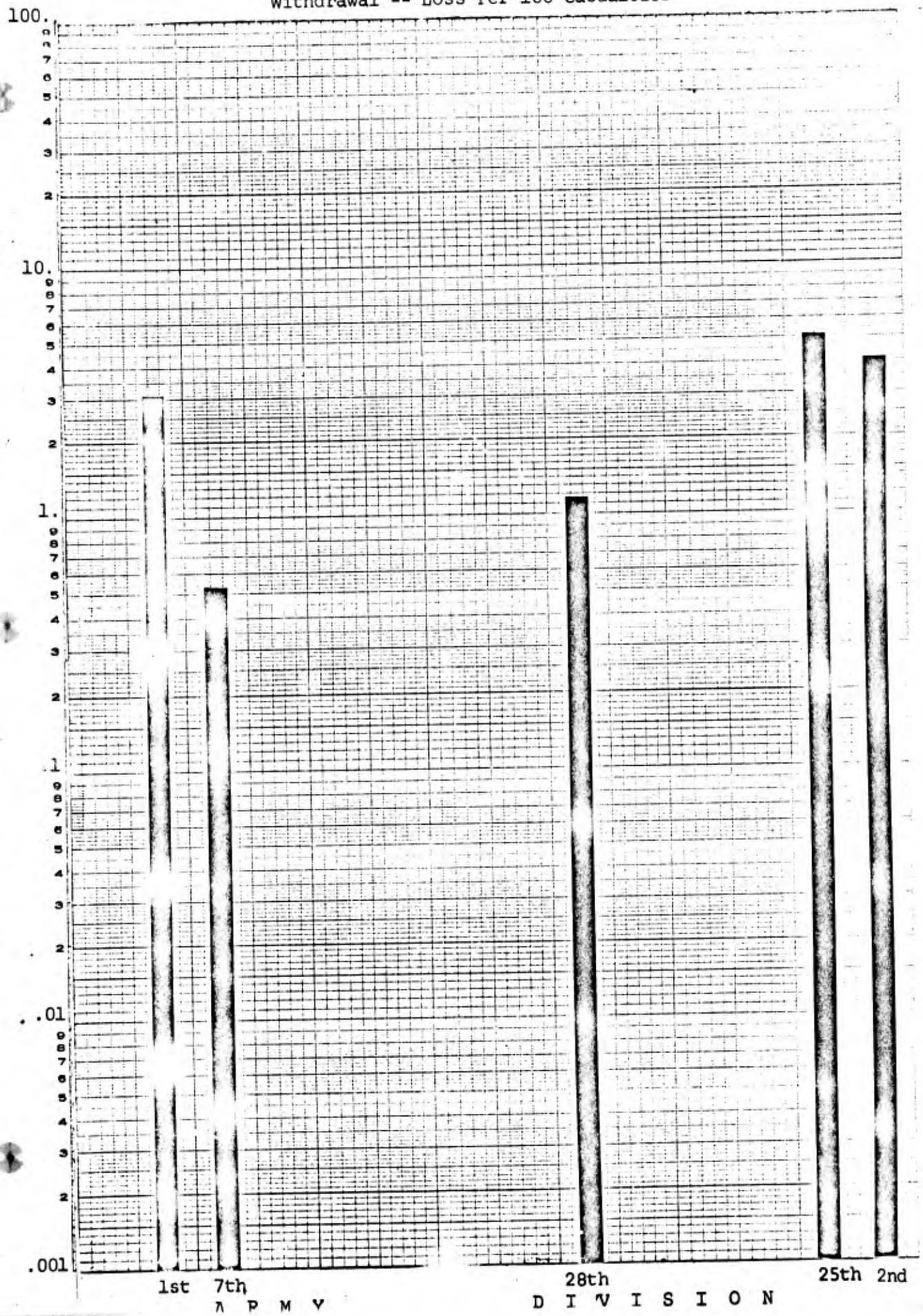
Truck, 2½ Ton (all types)
Defense -- Loss Per 100 Casualties



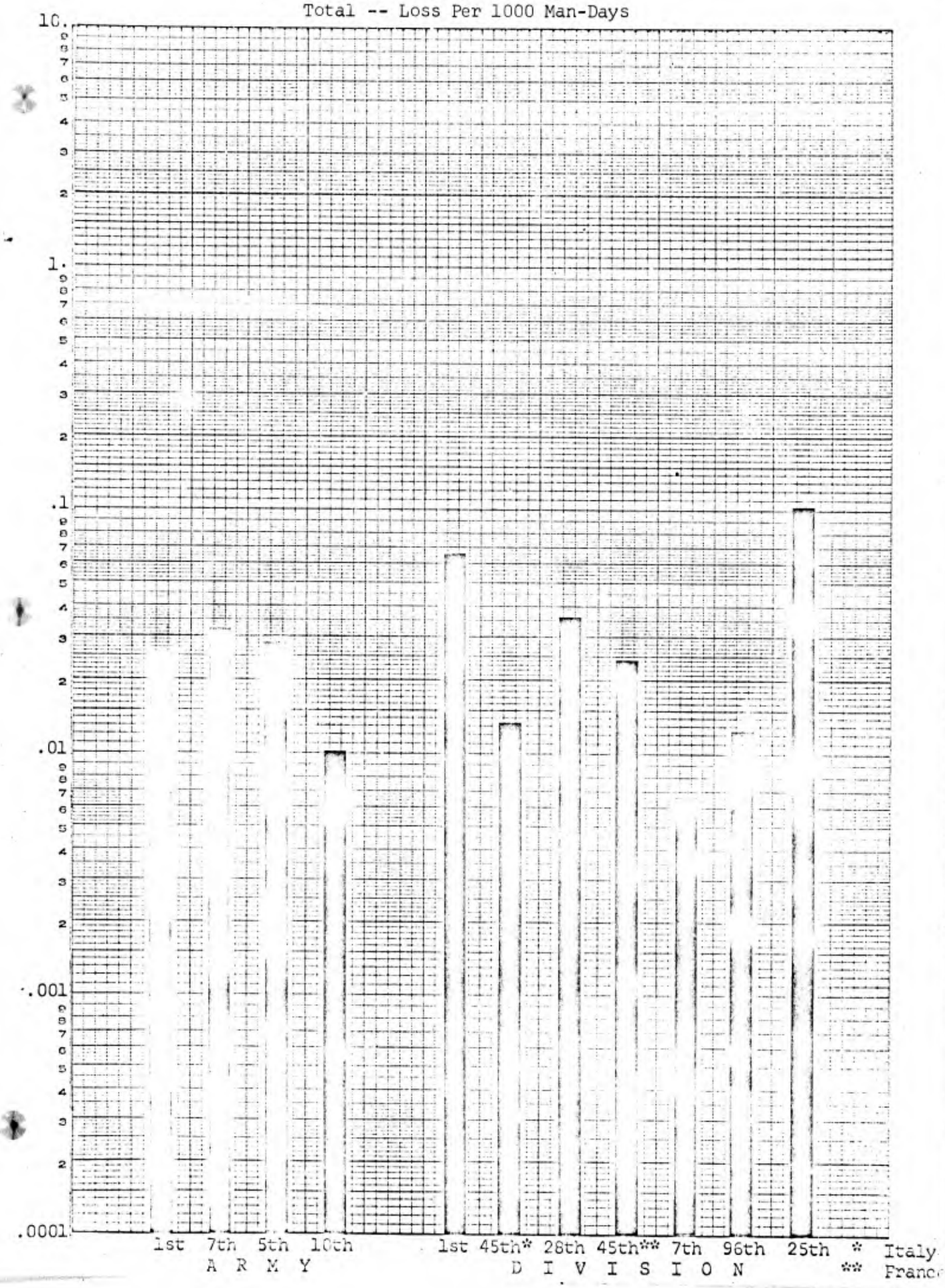
Truck, 2½ Ton (all types)
Withdrawal -- Loss Per 1000 Man-Days



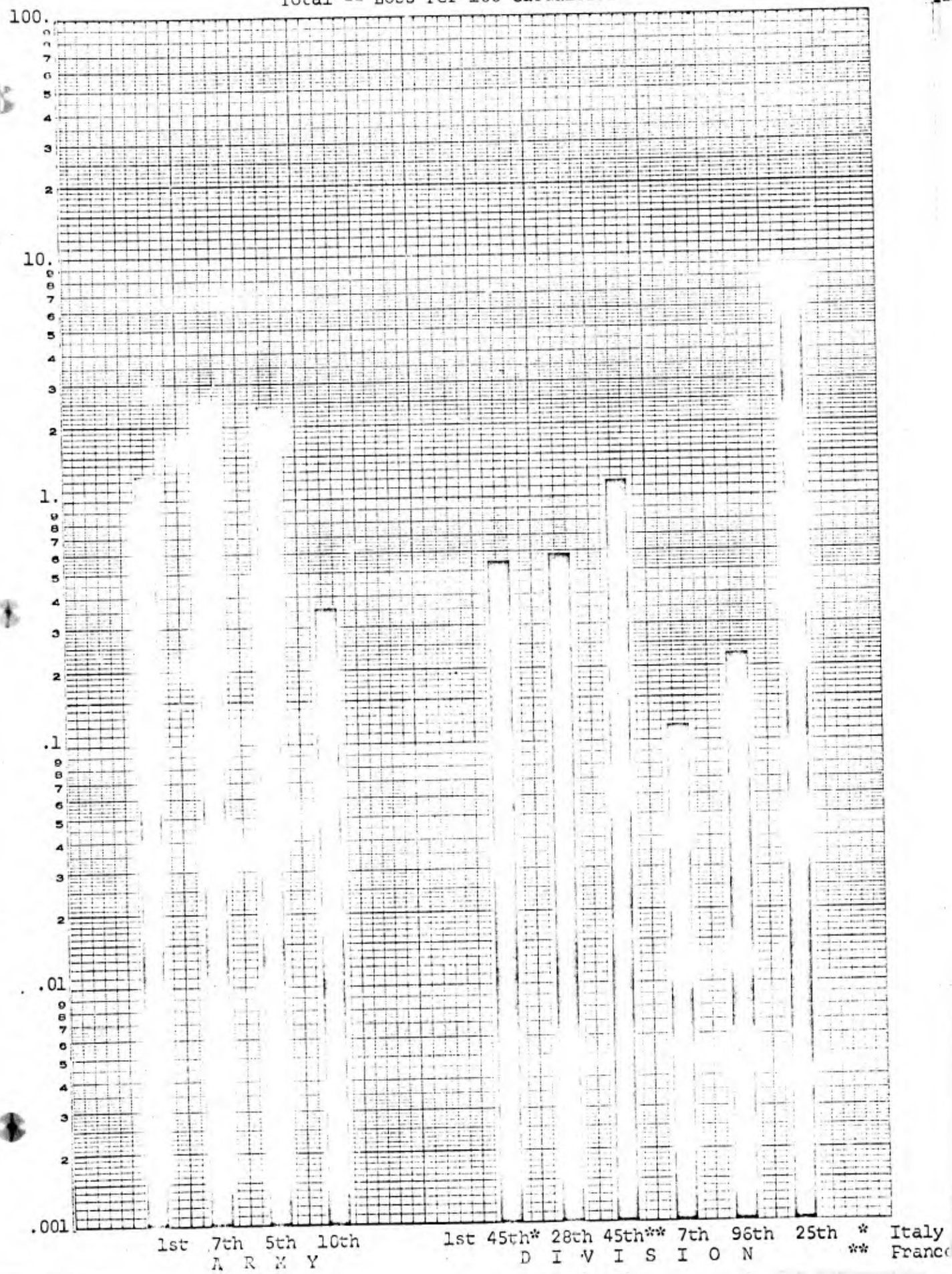
Truck, 2½ Ton (all types)
Withdrawal -- Loss Per 100 Casualties

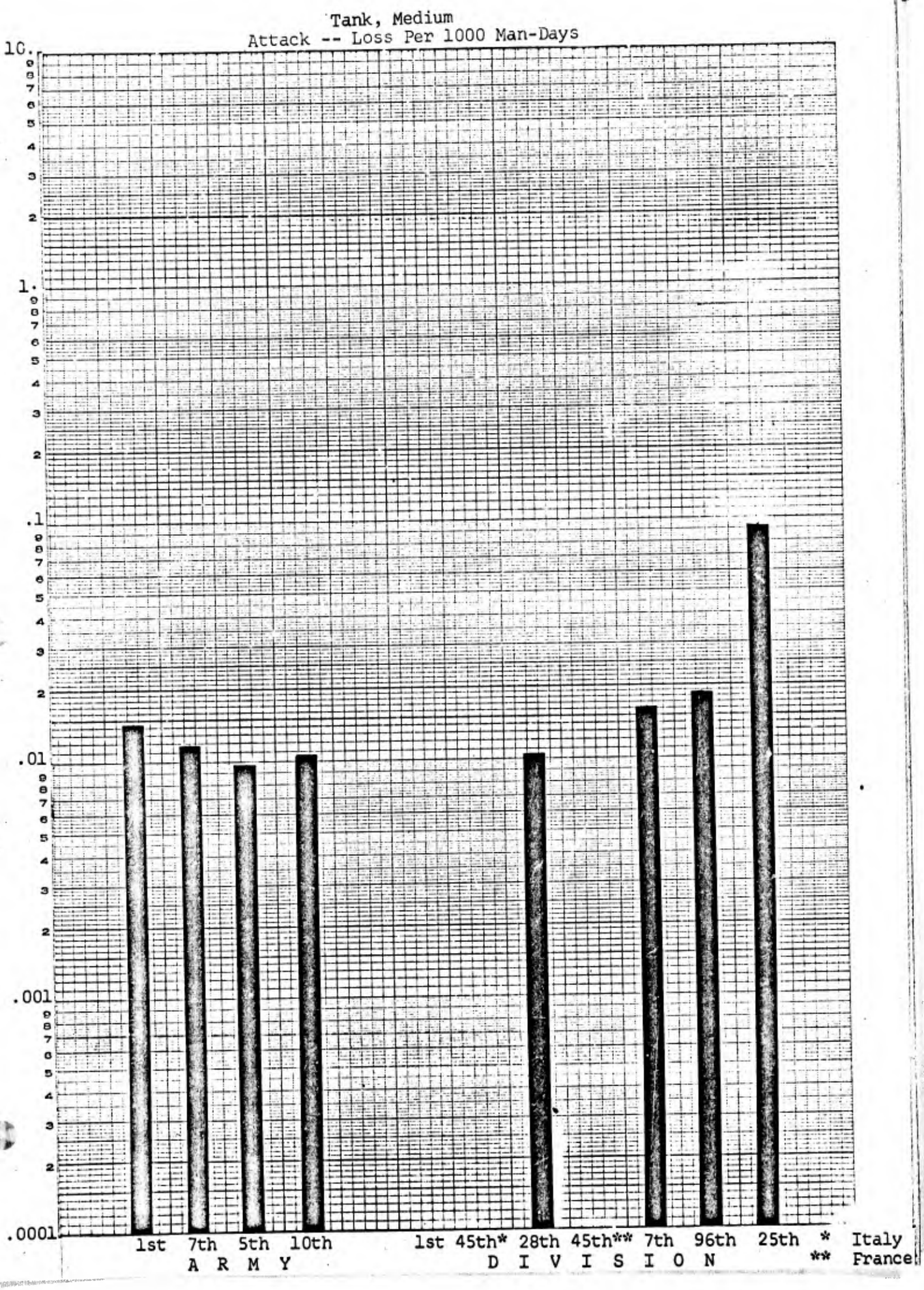


Truck, 2½ Ton (all types)
Total -- Loss Per 1000 Man-Days



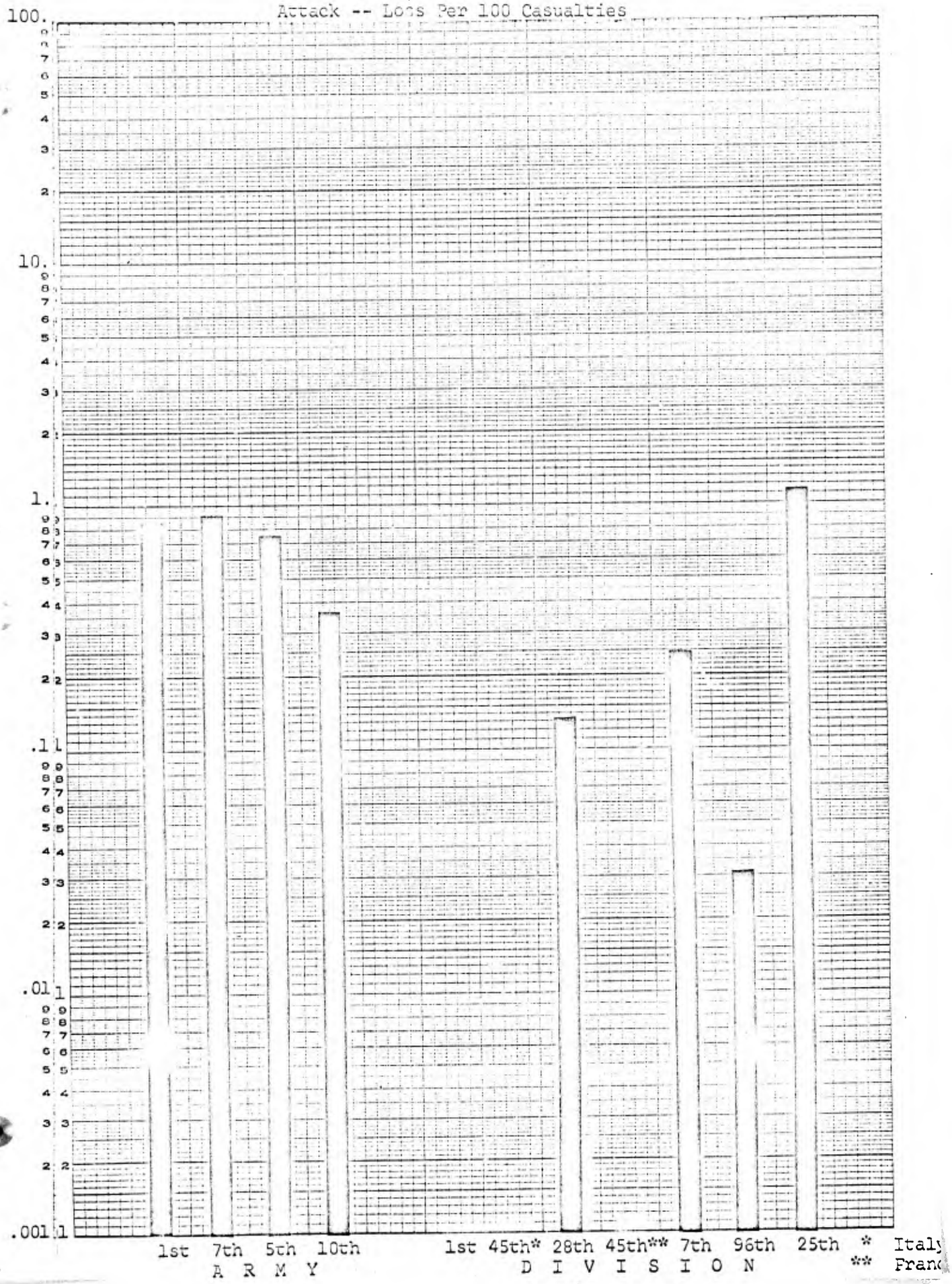
Truck, 2½ Ton (all types)
Total -- Loss Per 100 Casualties



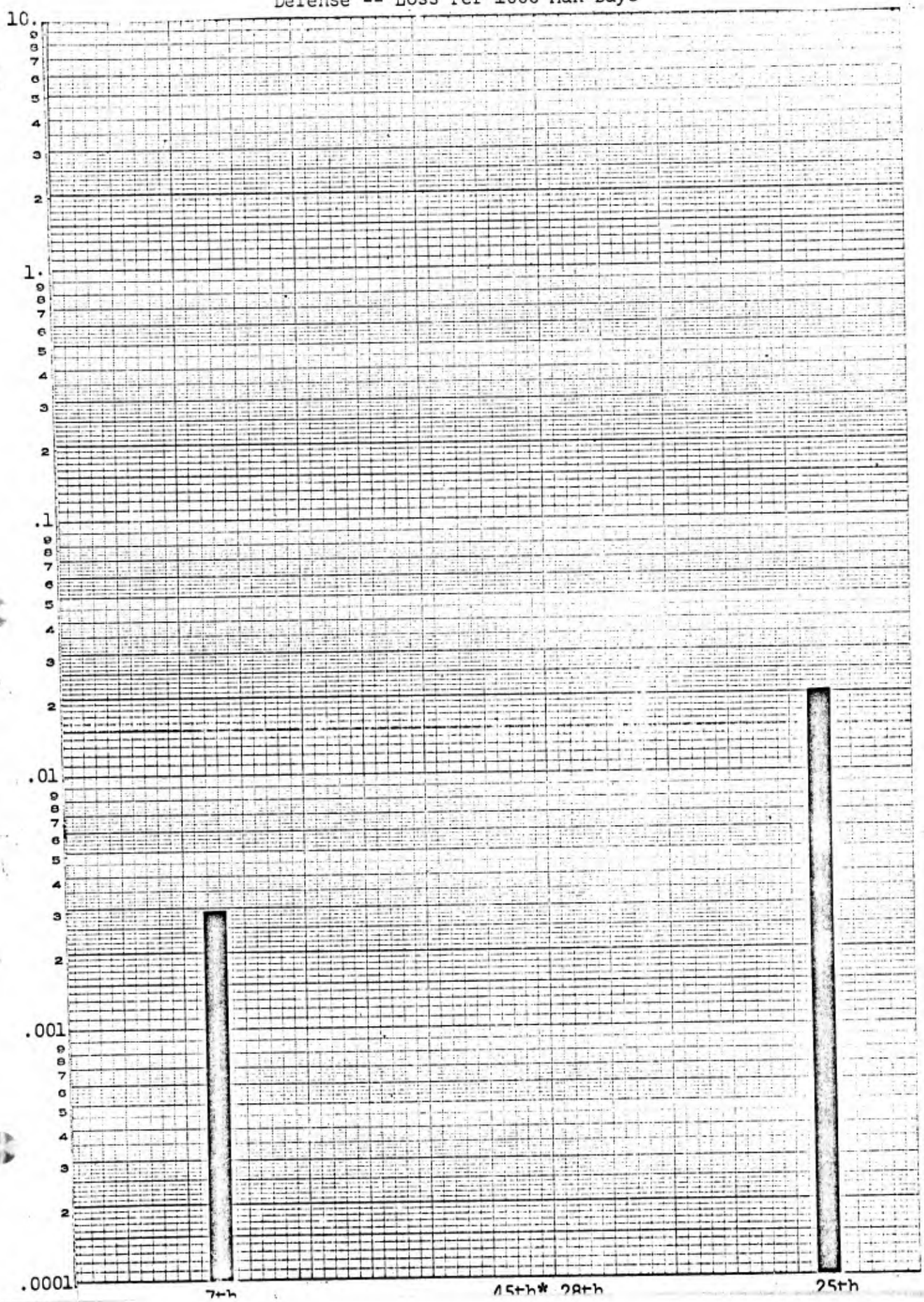

Tank, Medium
Attack -- Loss Per 1000 Man-Days
10.
1.
.1
.01
.001
.0001
1st
7th
5th
10th
A R M Y
1st
45th*
28th
45th**
7th
96th
25th
D I V I S I O N
* Italy
** France

Tank, Medium

Attack -- Loss Per 100 Casualties

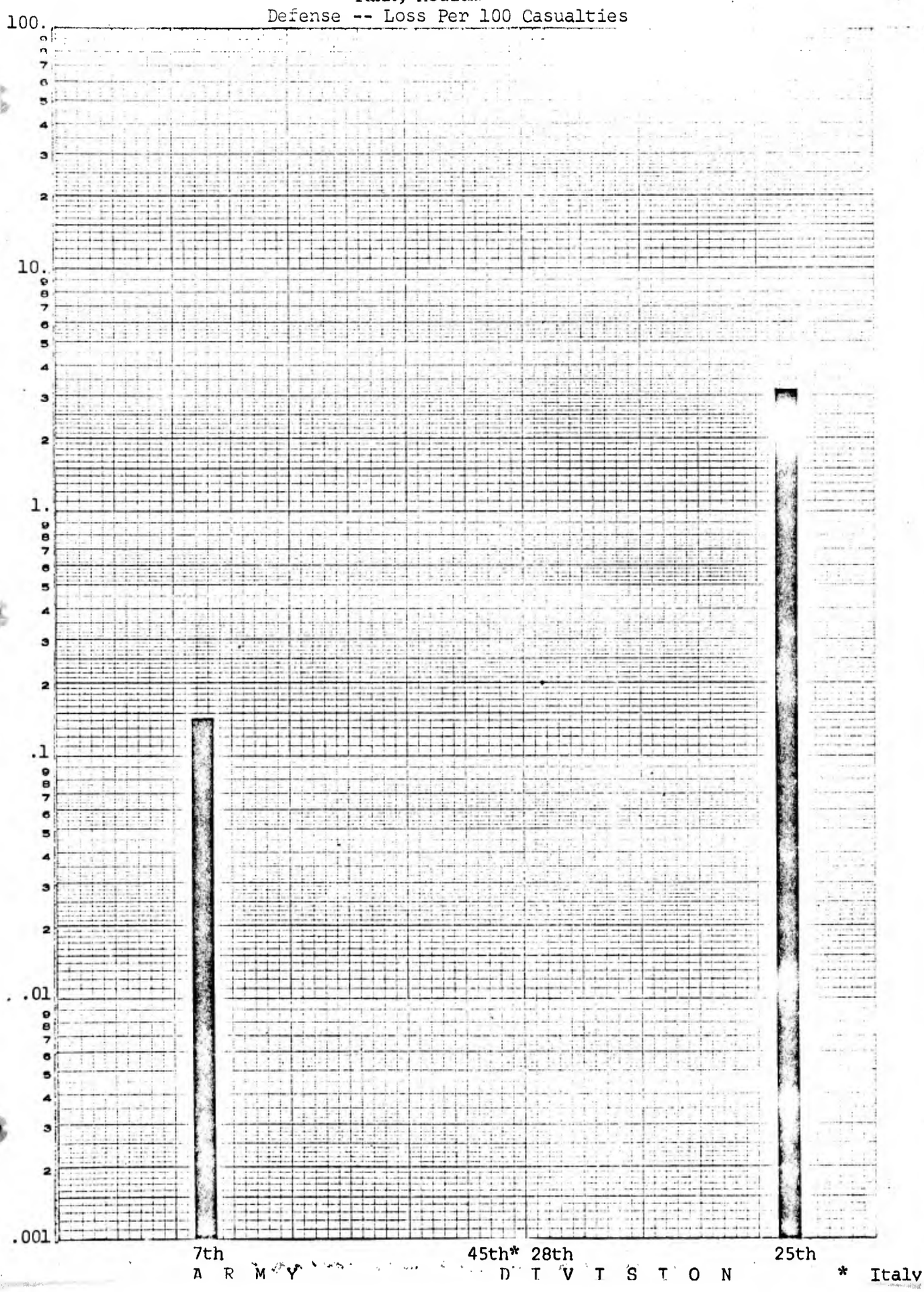


Tank, Medium
Defense -- Loss Per 1000 Man-Days



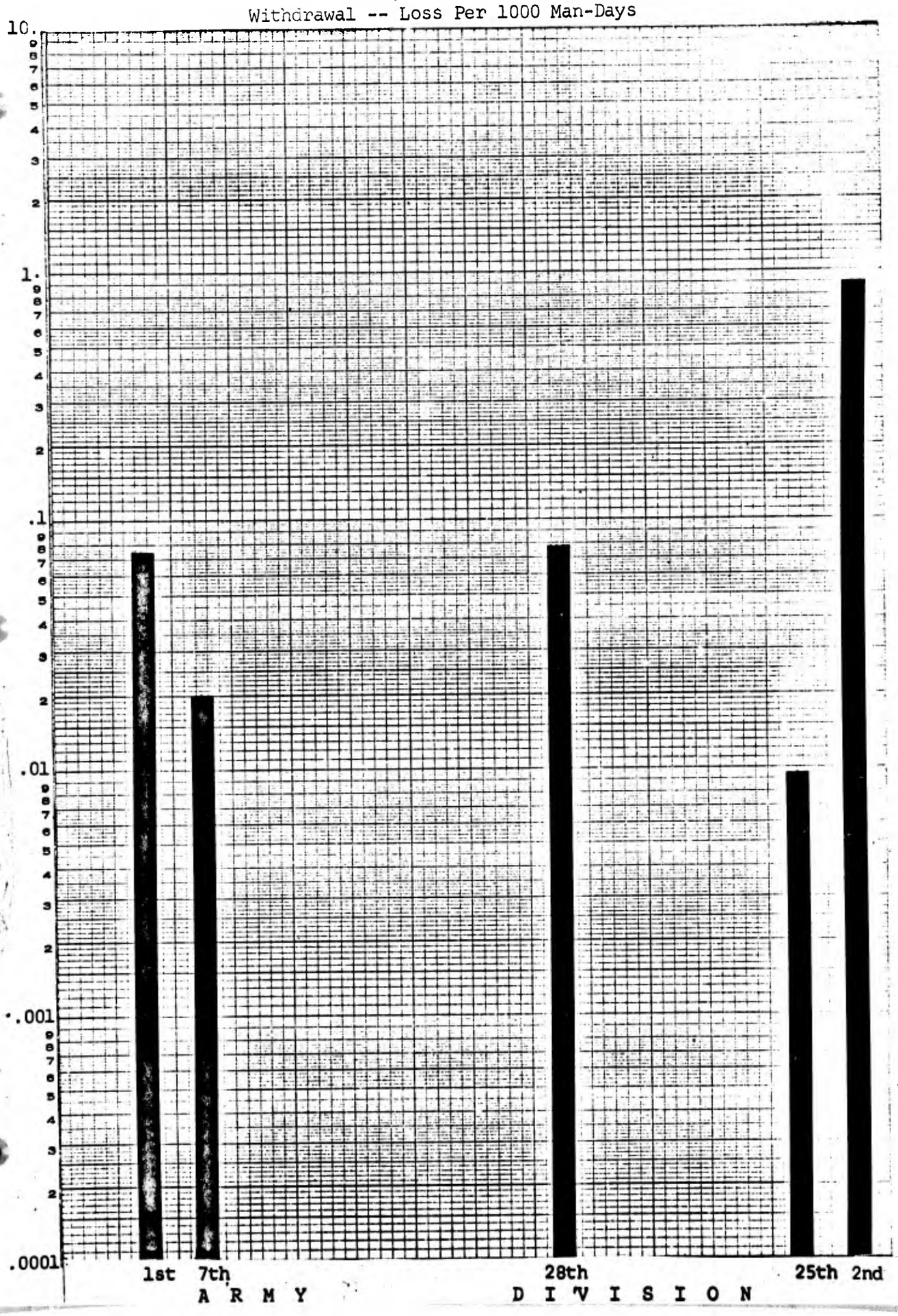
Tank, Medium

Defense -- Loss Per 100 Casualties



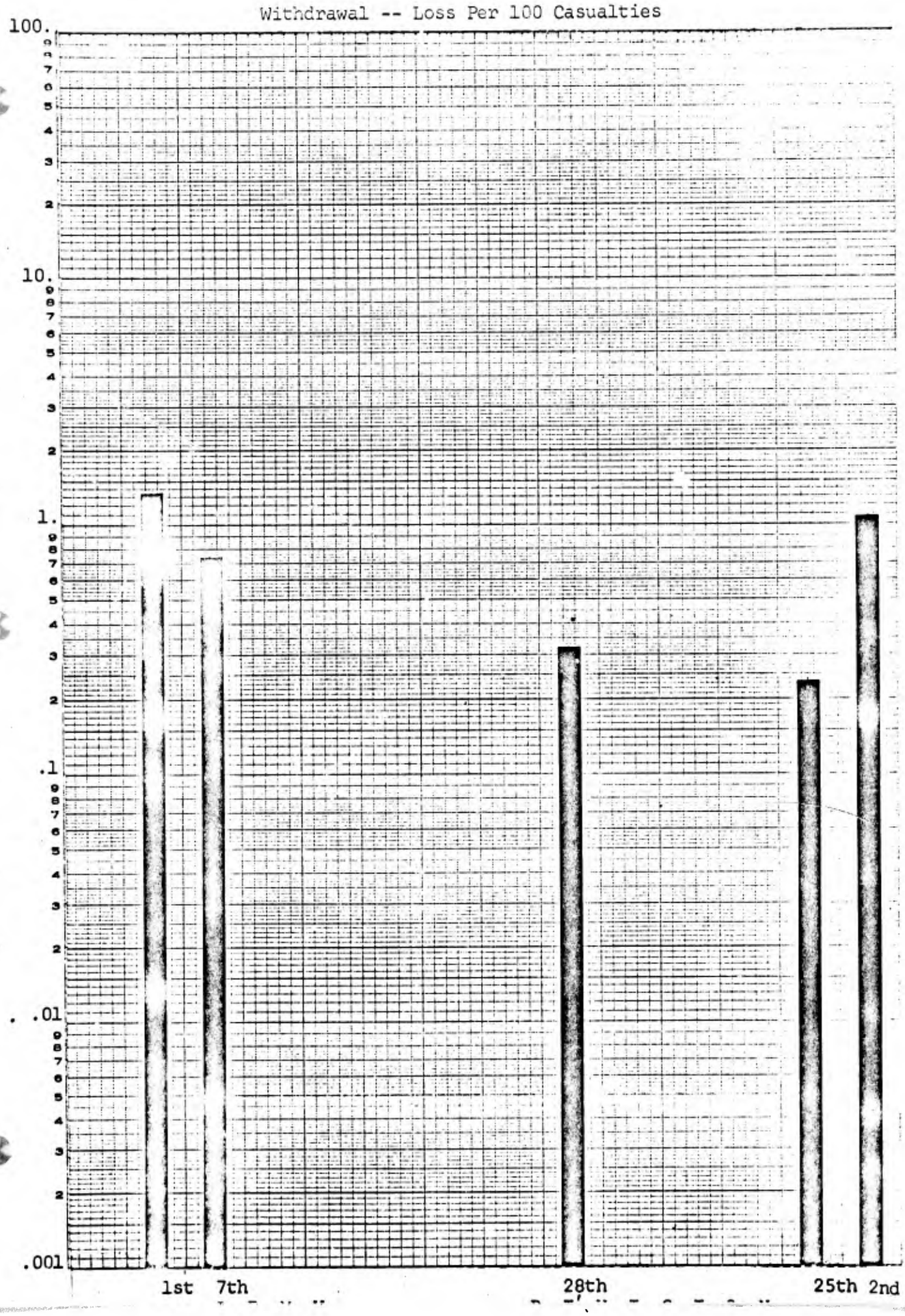
Tank, Medium

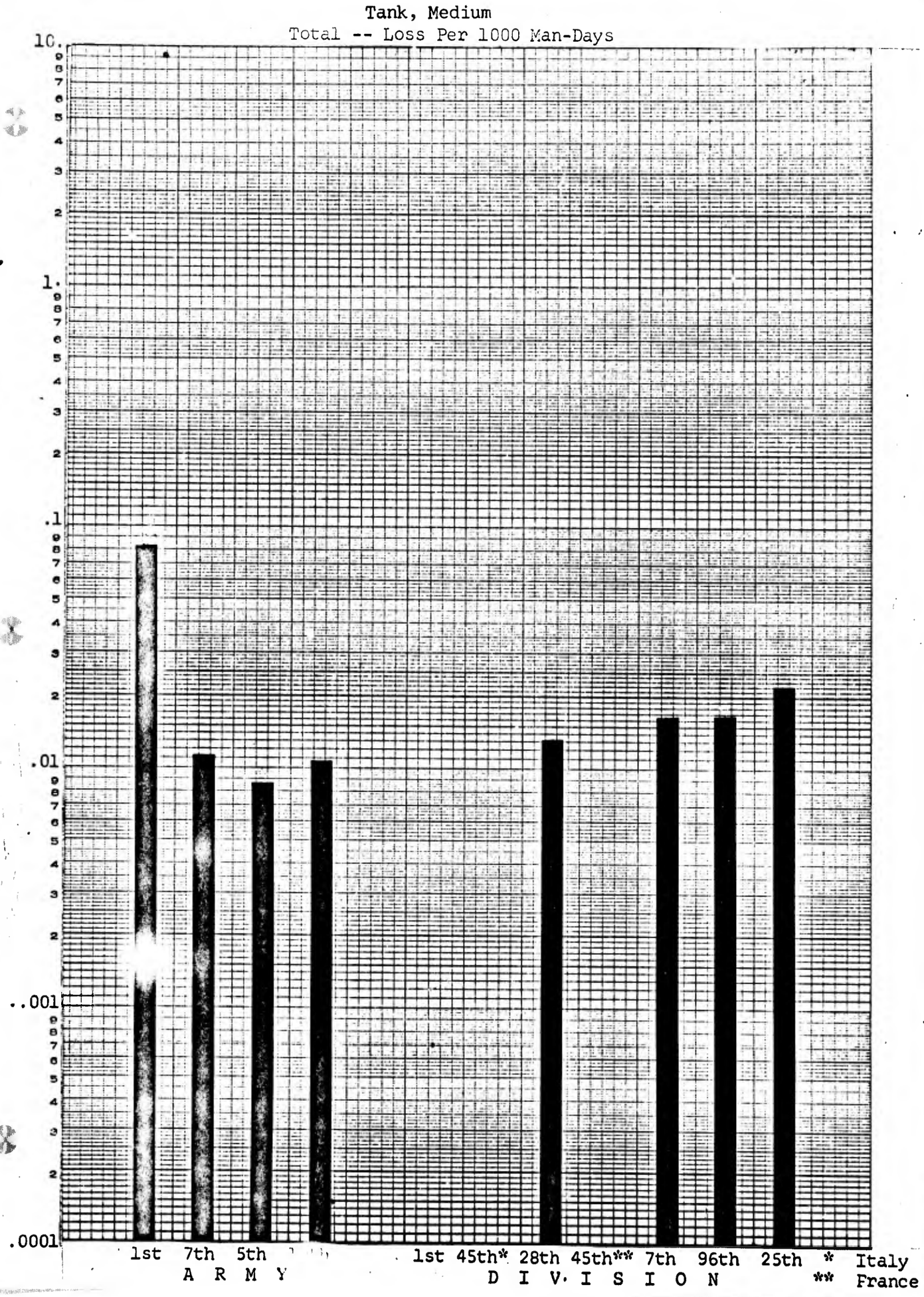
Withdrawal -- Loss Per 1000 Man-Days



Tank, Medium

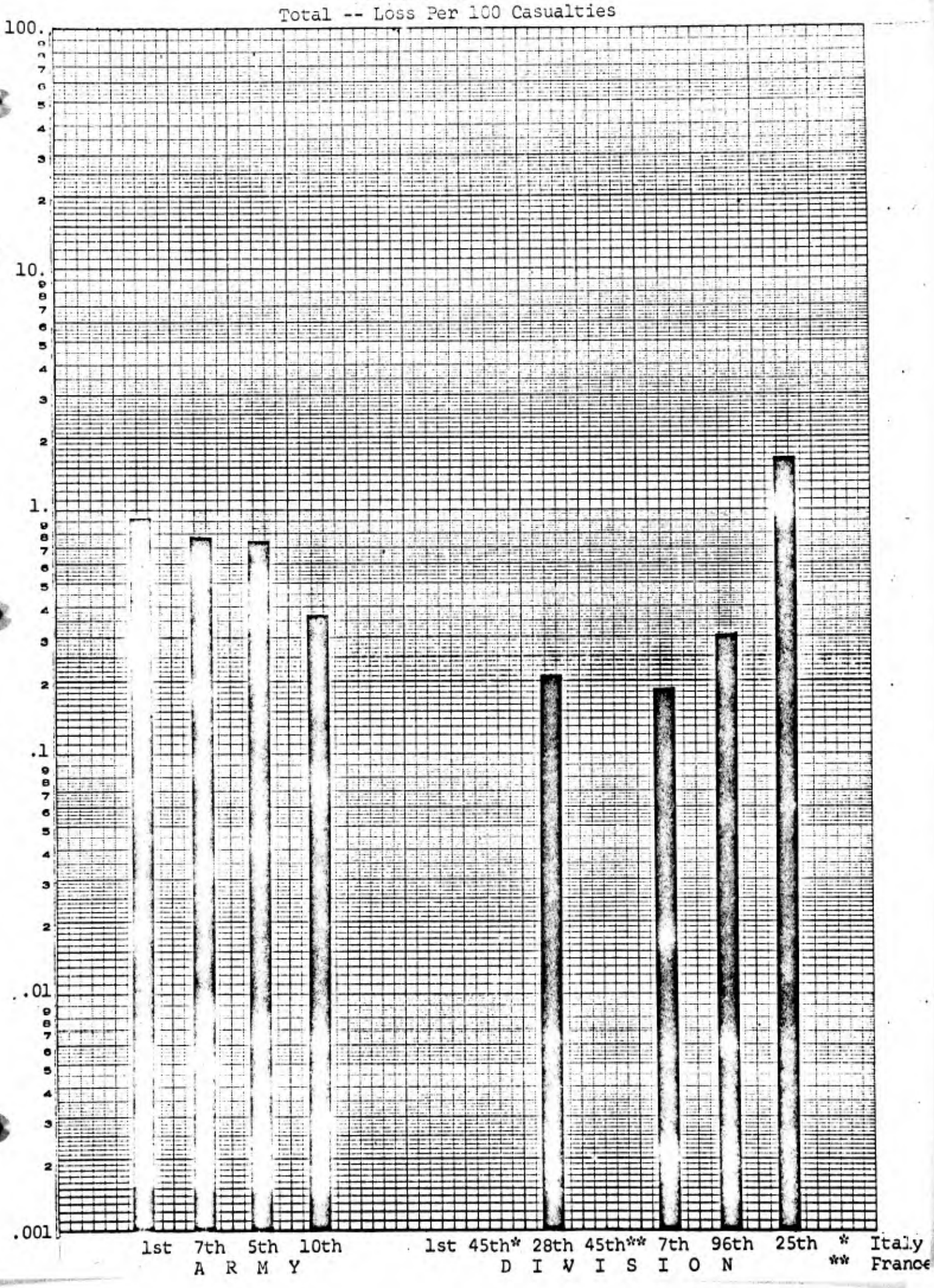
Withdrawal -- Loss Per 100 Casualties




Tank, Medium
Total -- Loss Per 1000 Man-Days
10.
1.
.1
.01
..001
.0001
1st
7th
5th
ARMY
1st
45th*
28th
45th**
7th
96th
25th
DIVISION
*
**
Italy
France

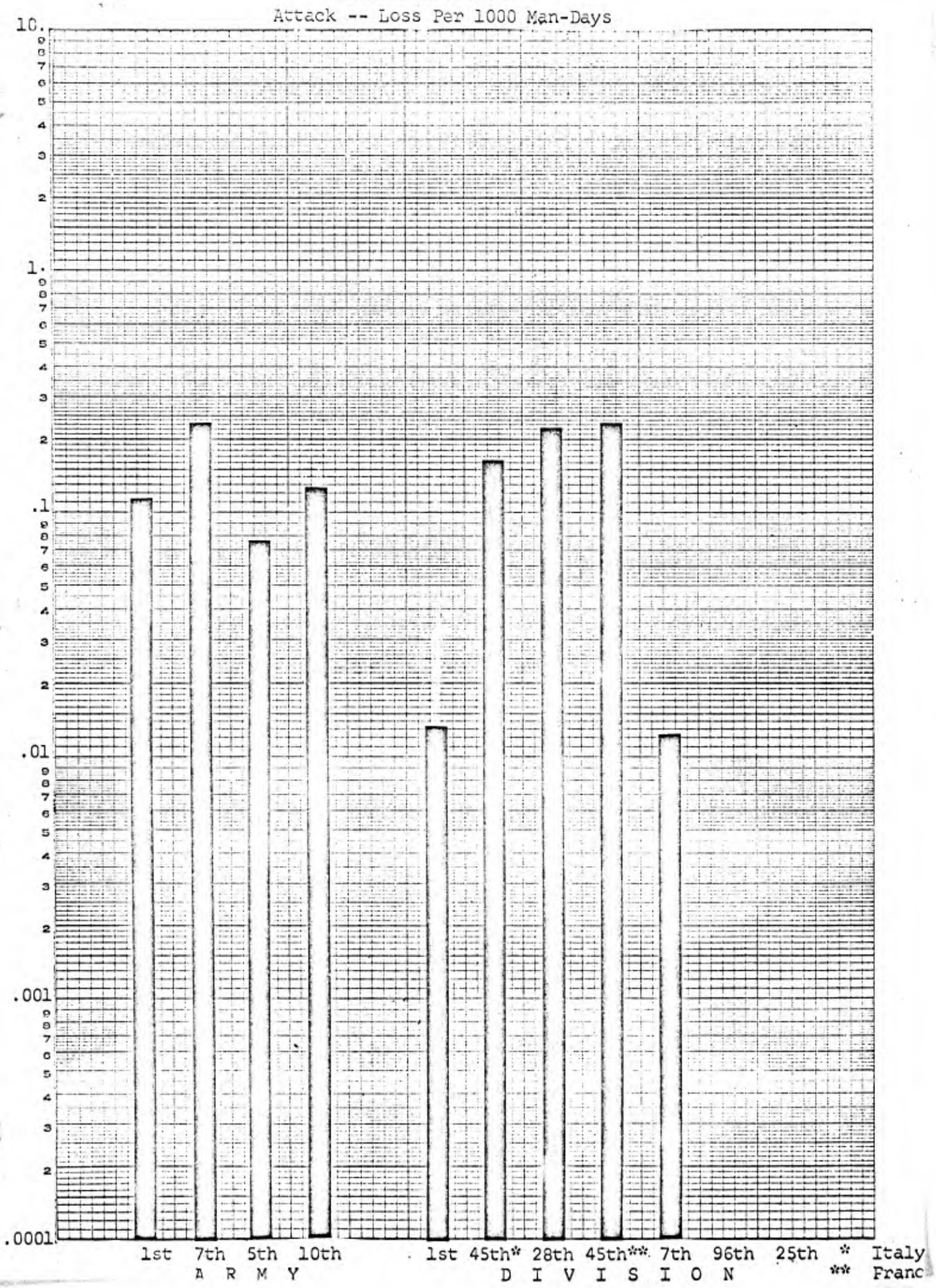
Tank, Medium

Total -- Loss Per 100 Casualties



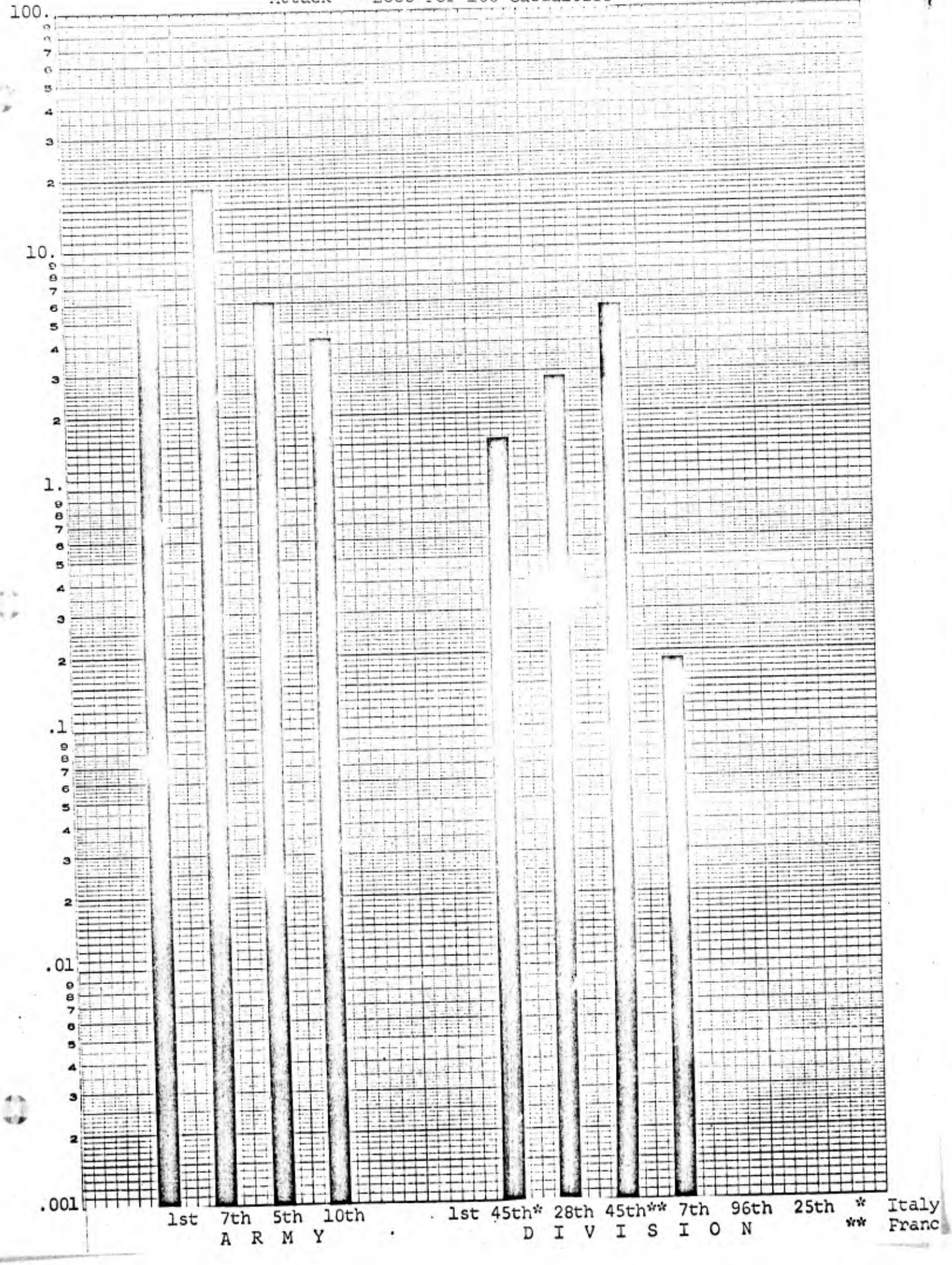
Carbine, .30, M1

Attack -- Loss Per 1000 Man-Days



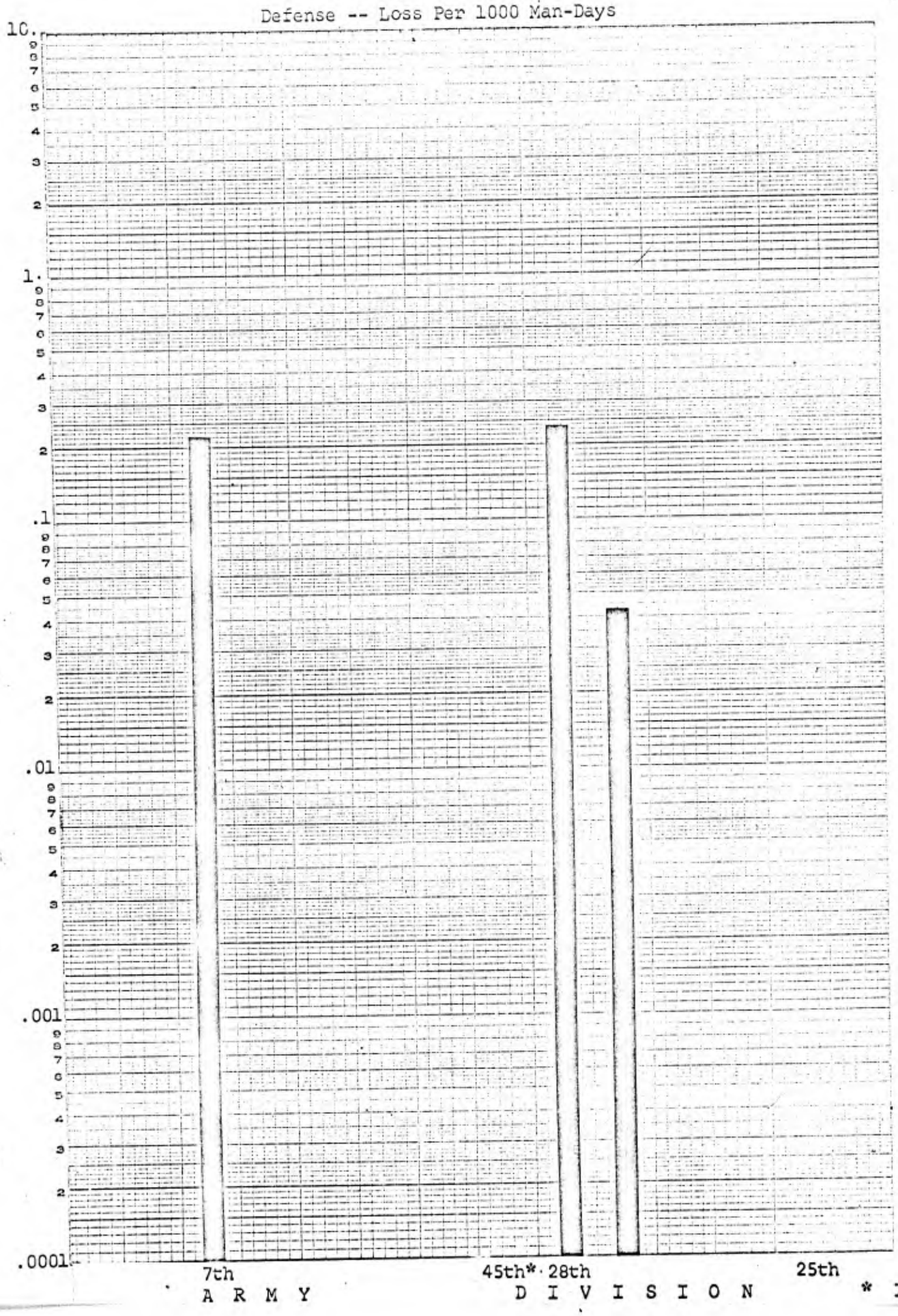
Carbine, .30 M1

Attack -- Loss Per 100 Casualties



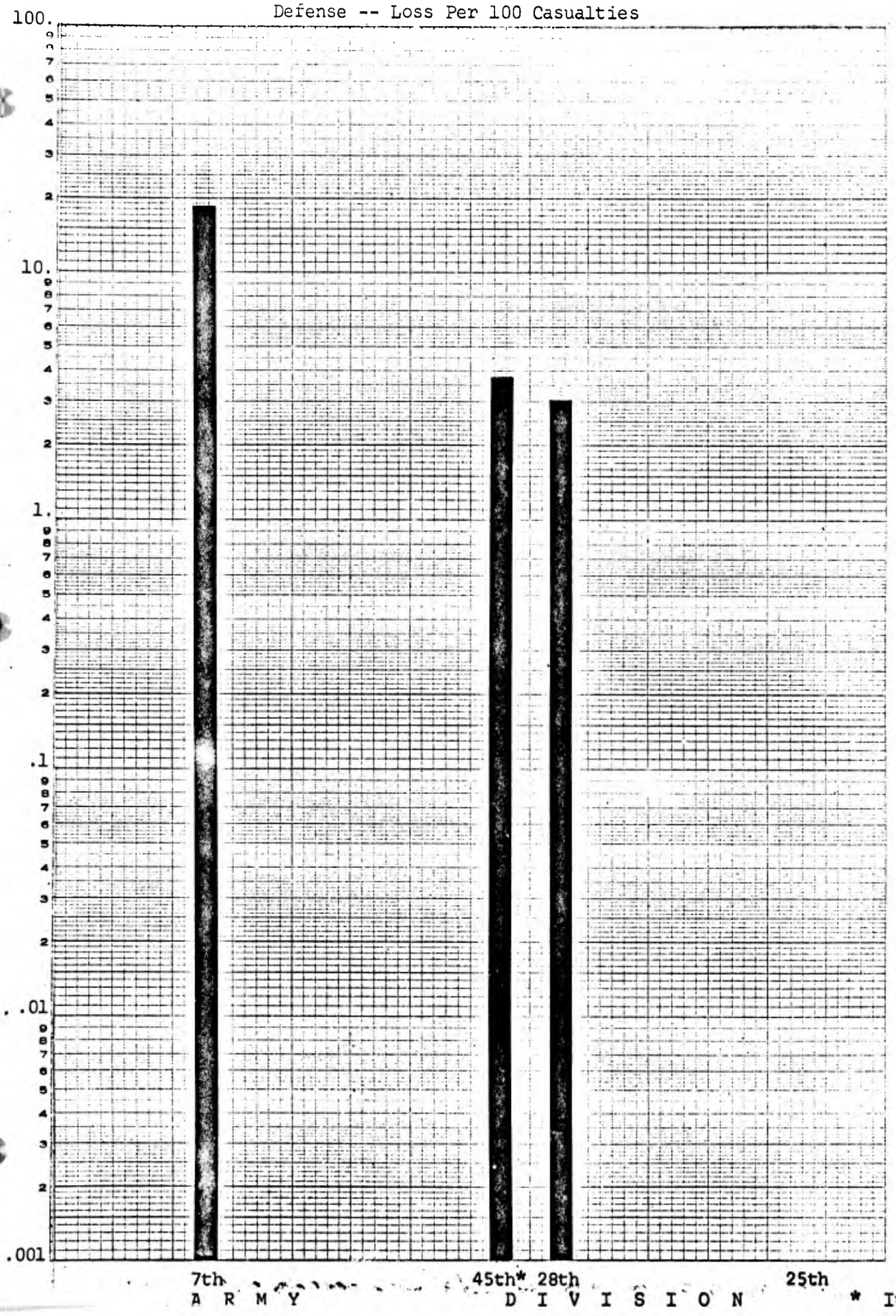
Carbine, .30, M1

Defense -- Loss Per 1000 Man-Days



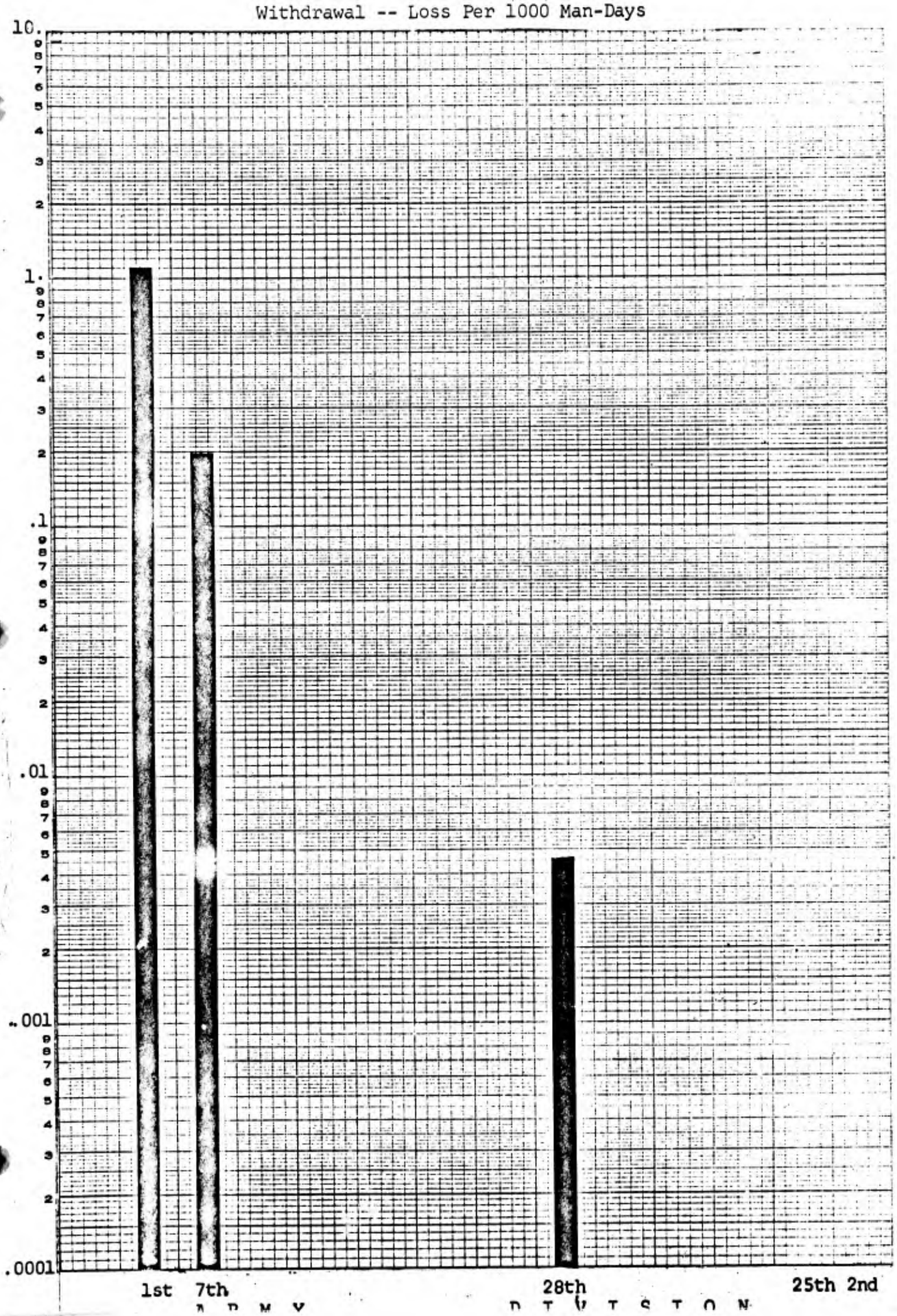
Carbine, .30 M1

Defense -- Loss Per 100 Casualties



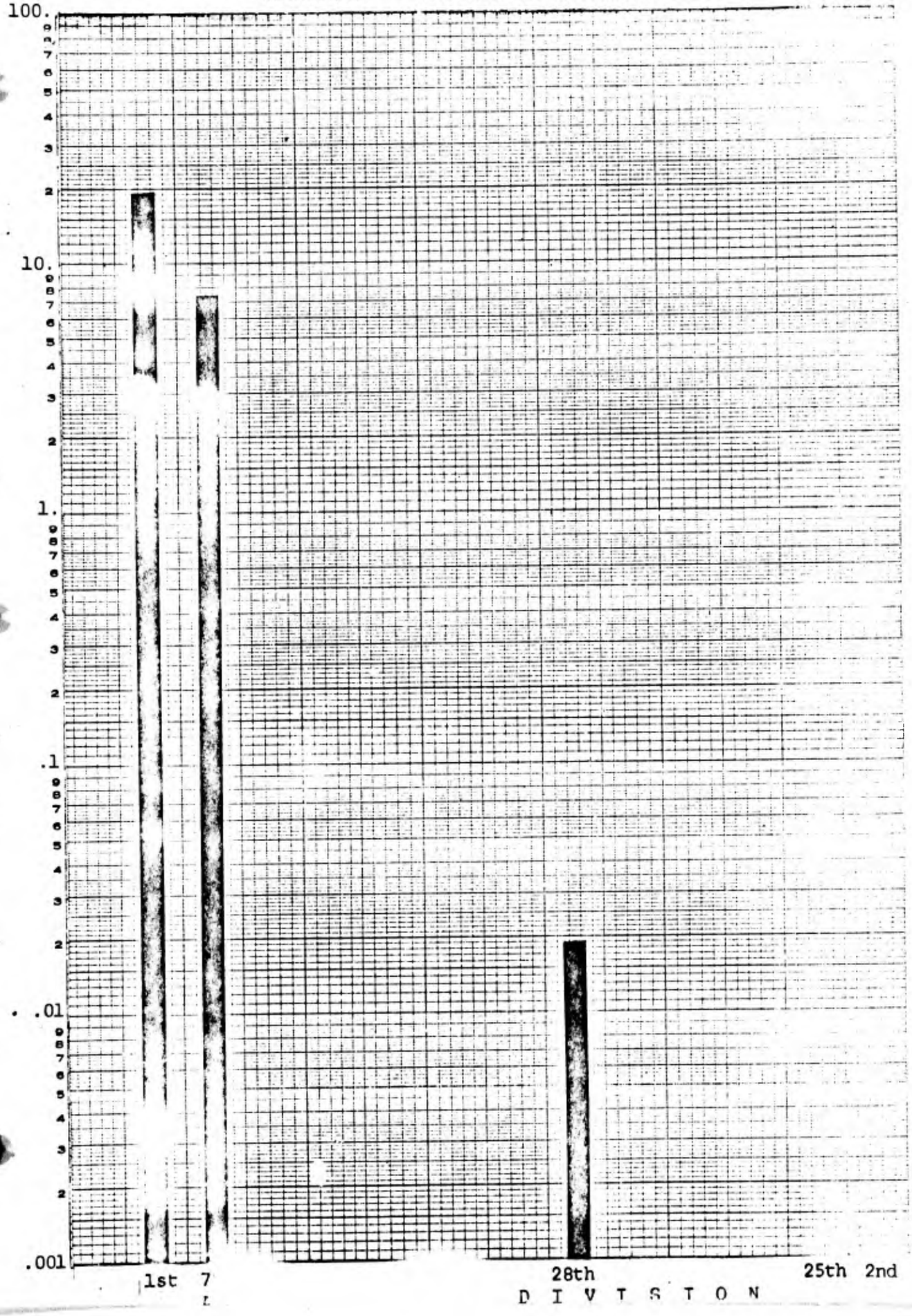
Carbine. .30 M1

Withdrawal -- Loss Per 1000 Man-Days

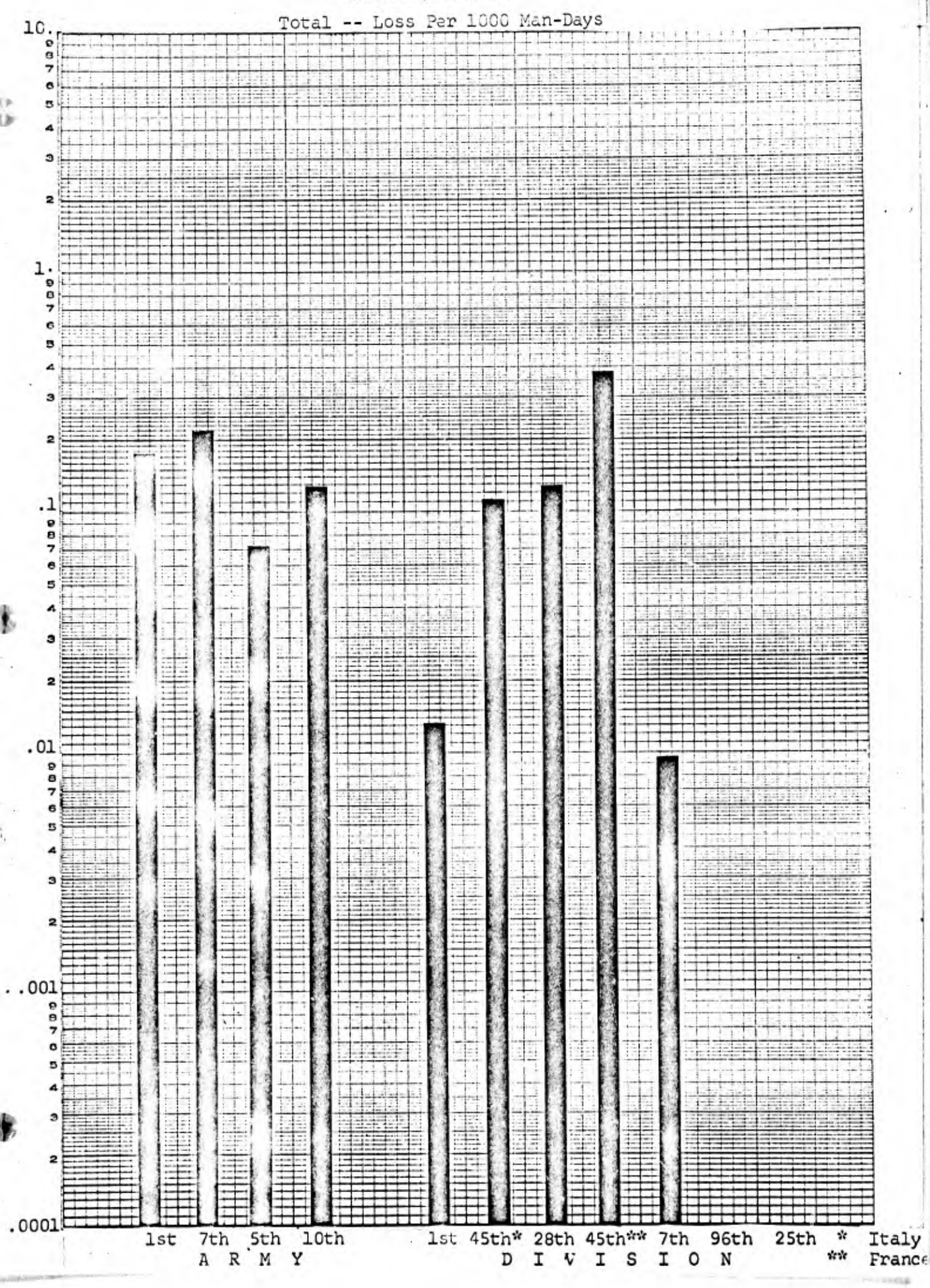


Carbine, .30, M1

Withdrawal -- Loss Per 100 Casualties

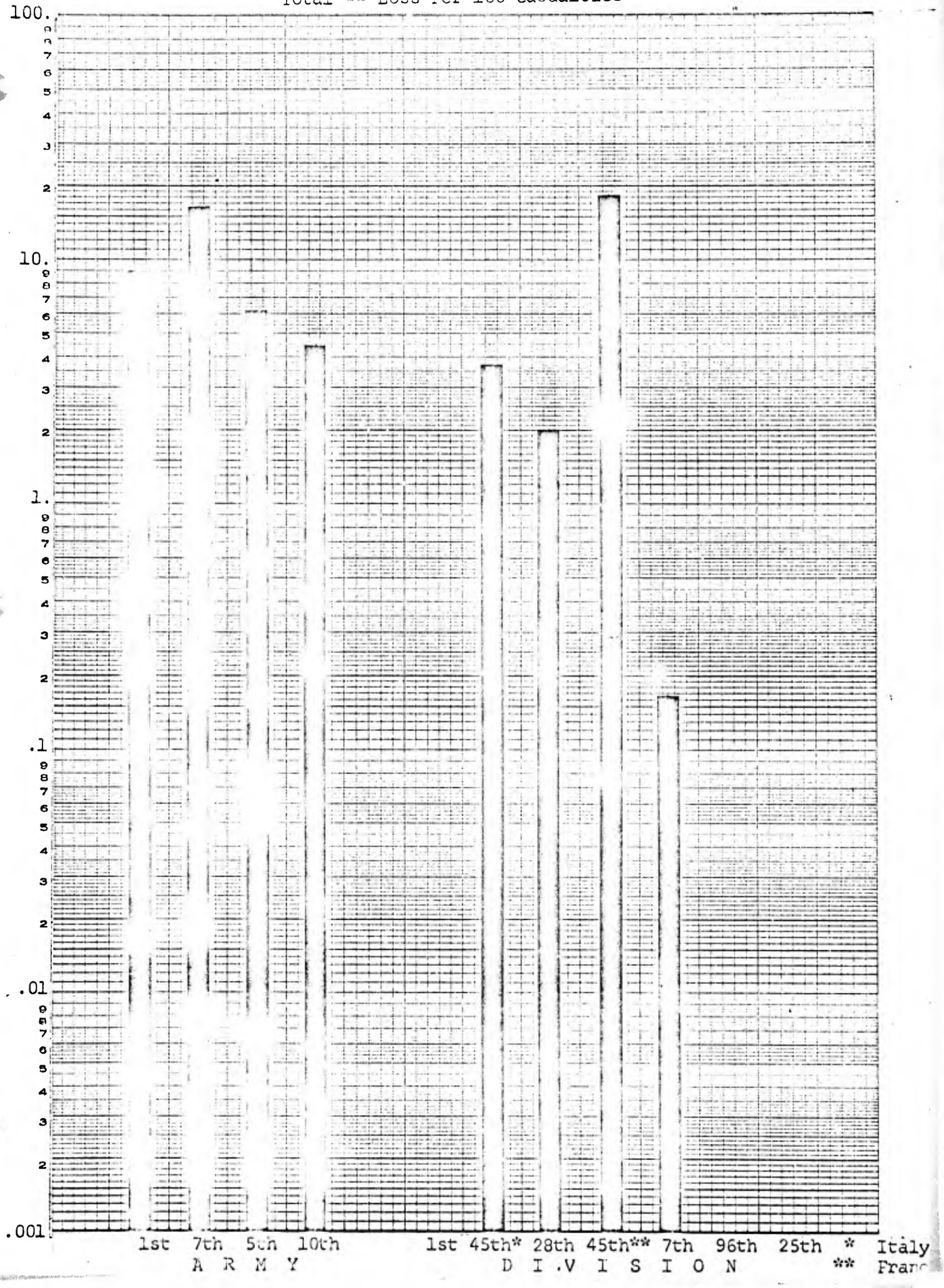


Carbine, .30, M1



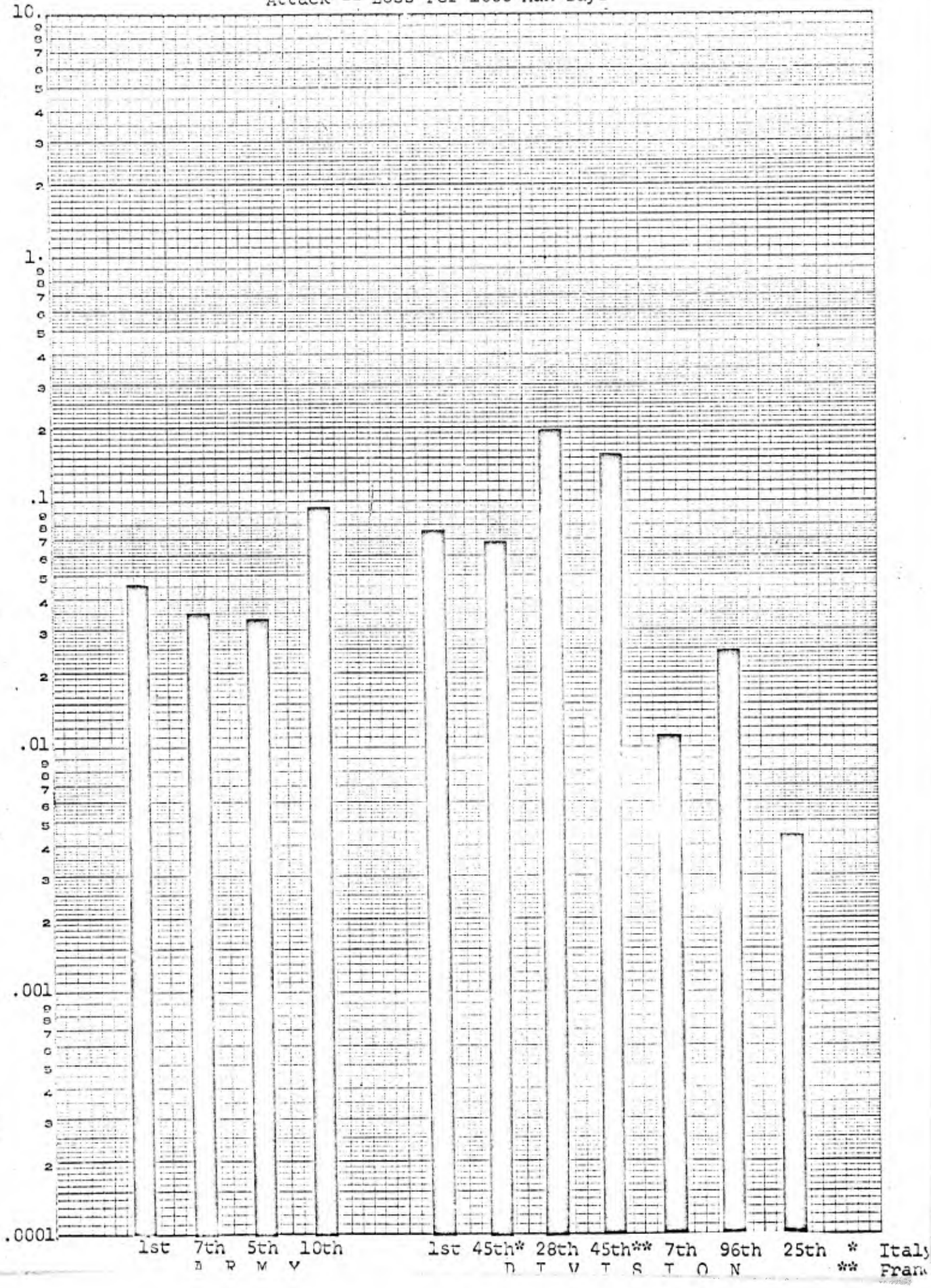
Carbine, .30, M1

Total -- Loss Per 100 Casualties



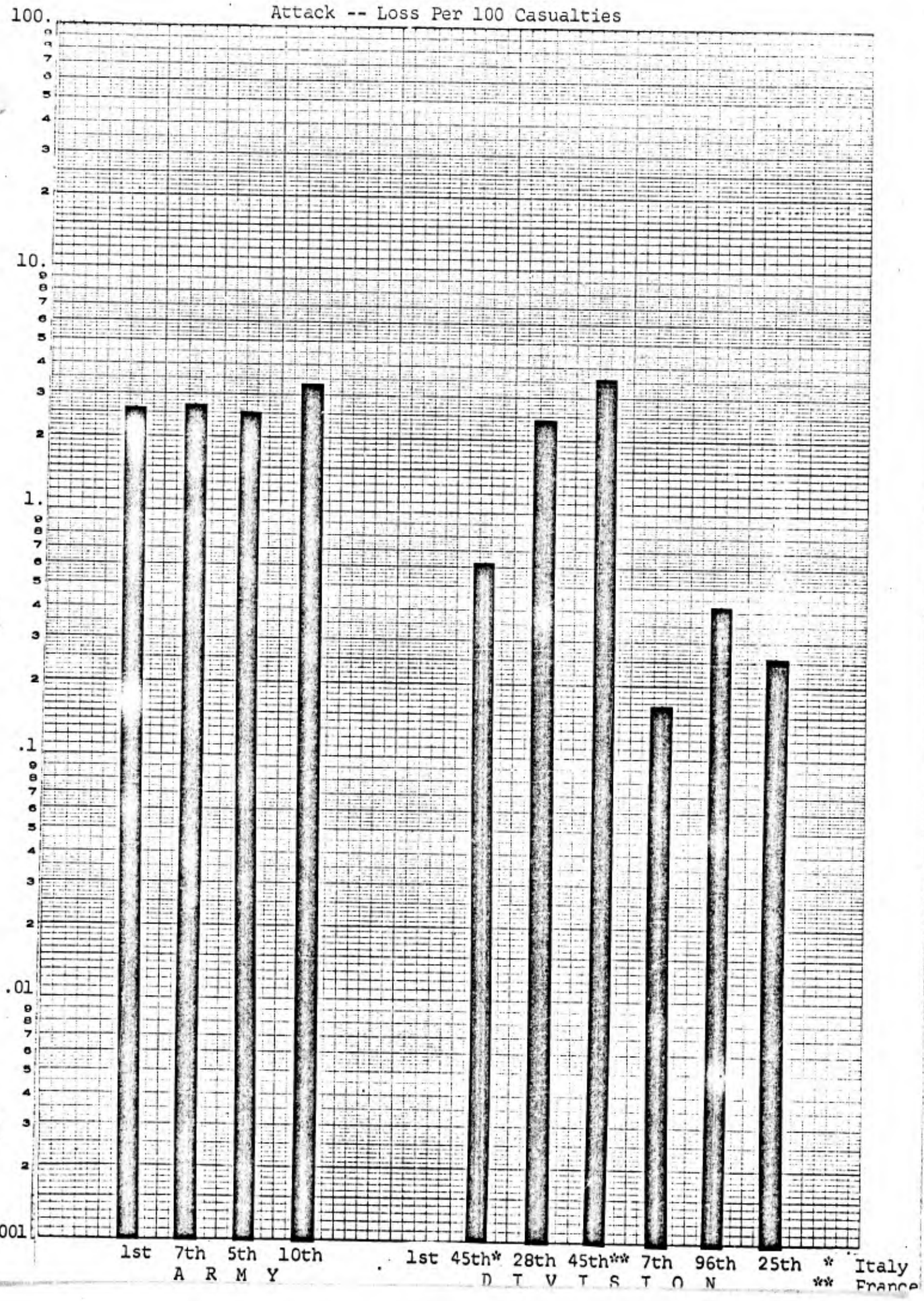
Rifle, .30, BAR M1918

Attack -- Loss Per 1000 Man-Days



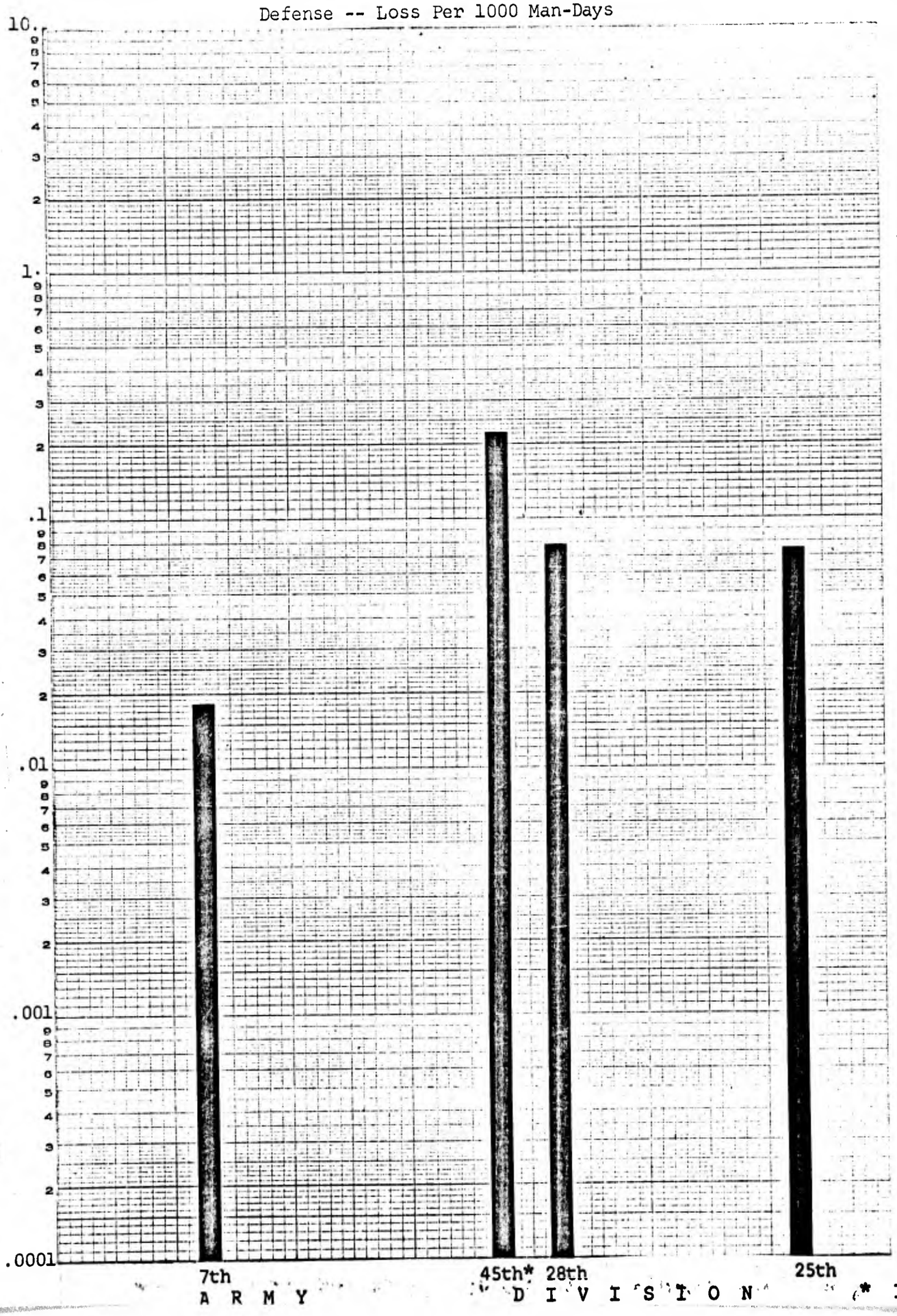
Rifle, .30, BAR, M1918

Attack -- Loss Per 100 Casualties



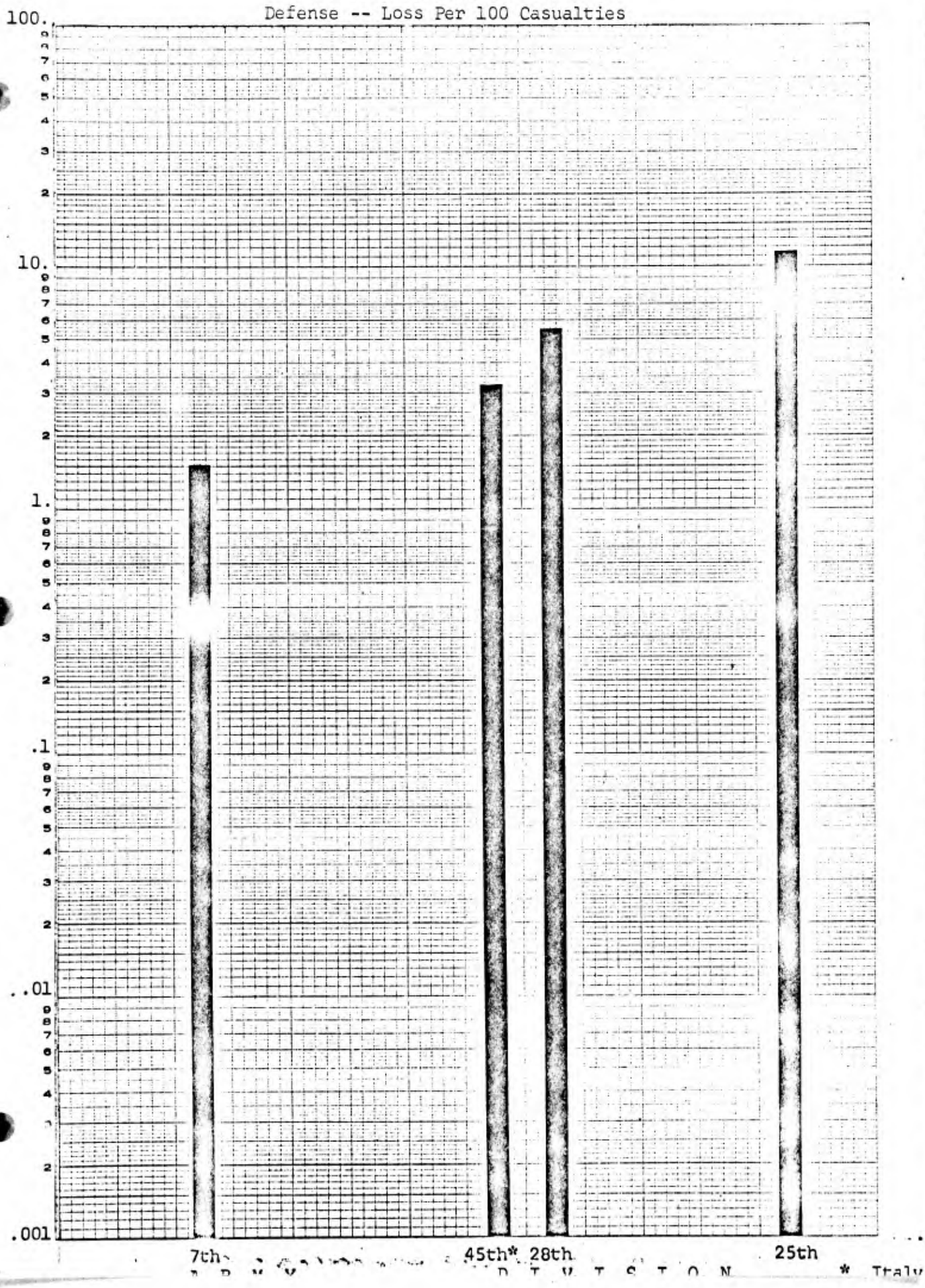
Rifle, .30, BAR, M1918

Defense -- Loss Per 1000 Man-Days



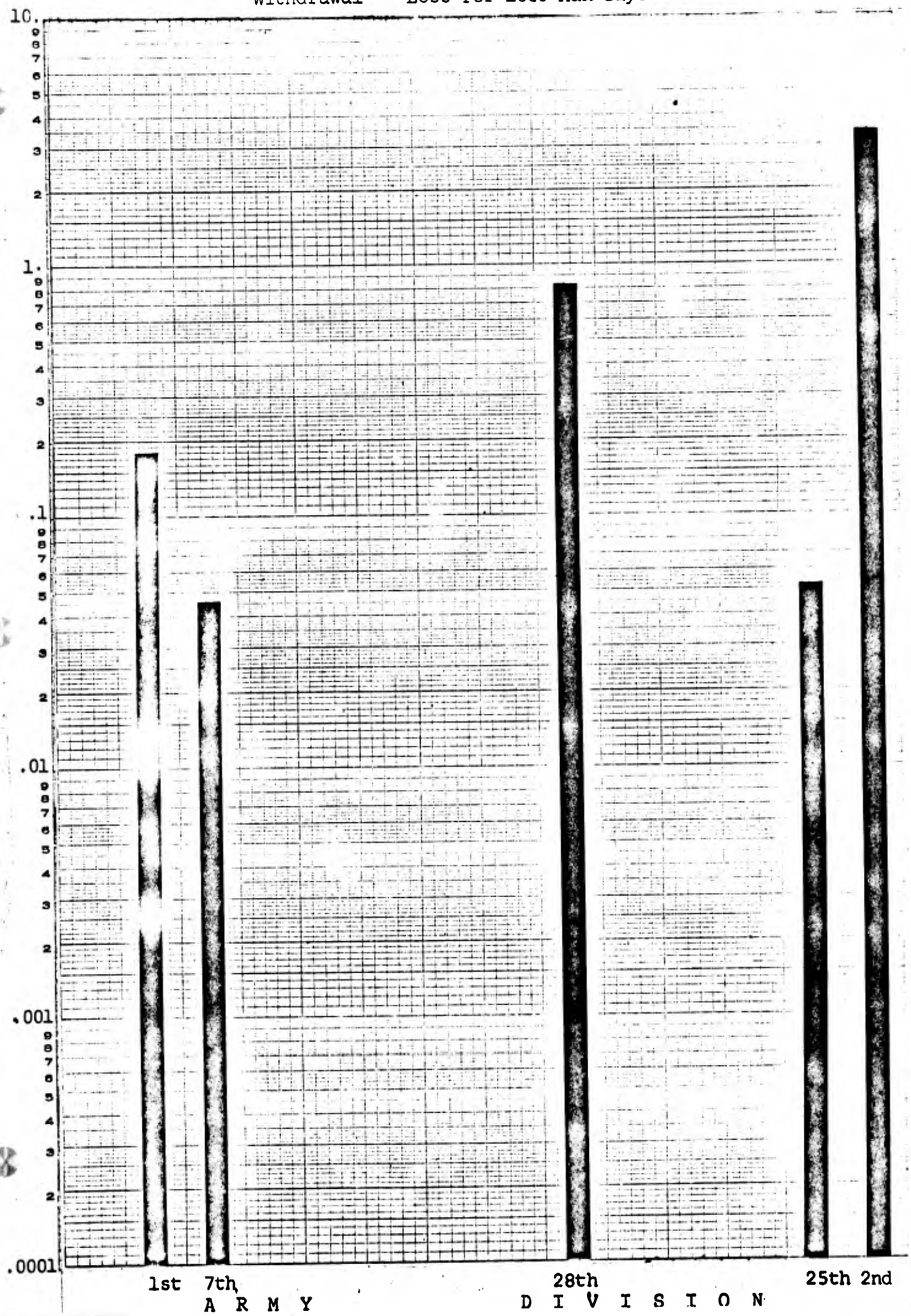
Rifle, .30, BAR, M1918

Defense -- Loss Per 100 Casualties



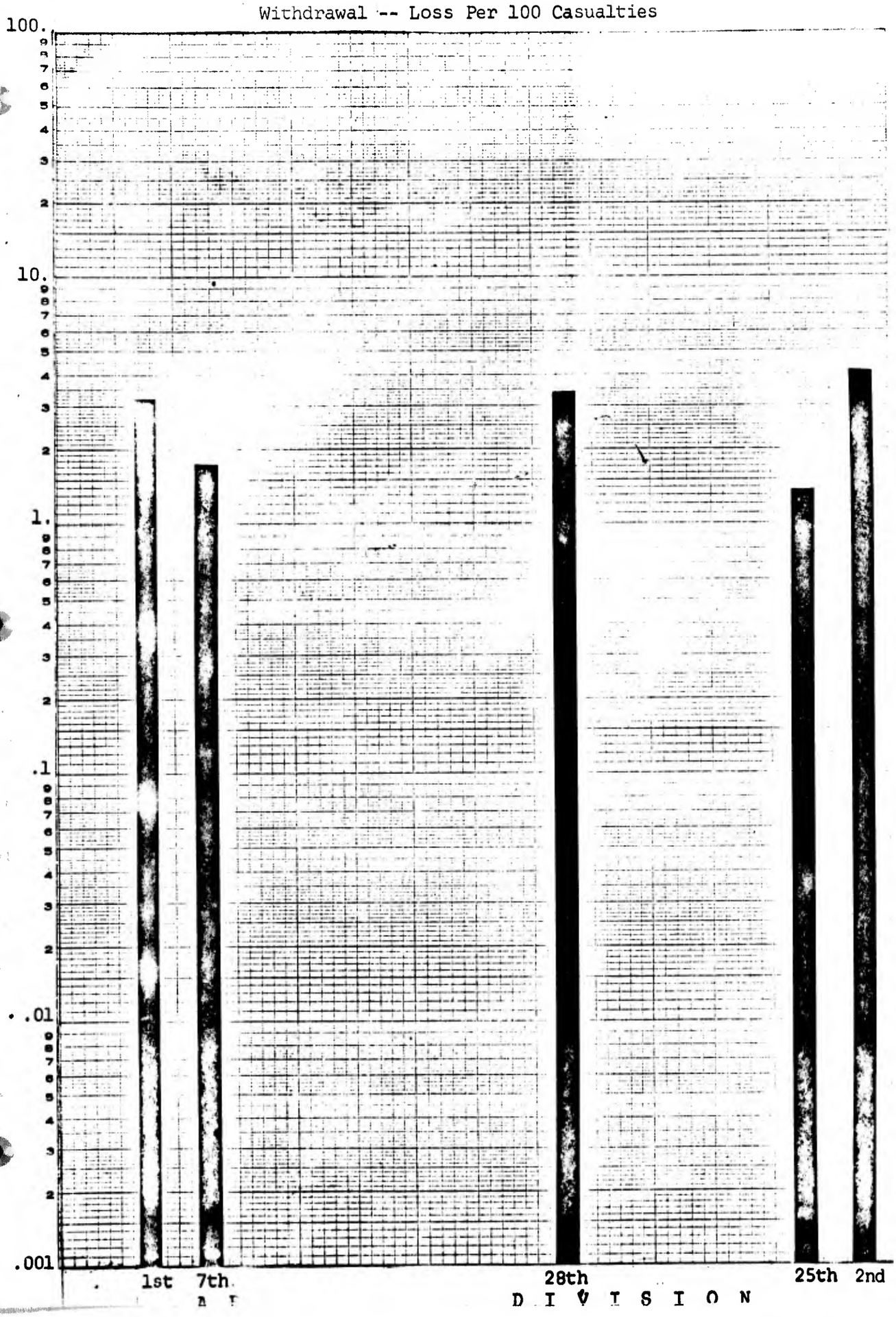
Rifle, .30, BAR, M1918

Withdrawal -- Loss Per 1000 Man-Days



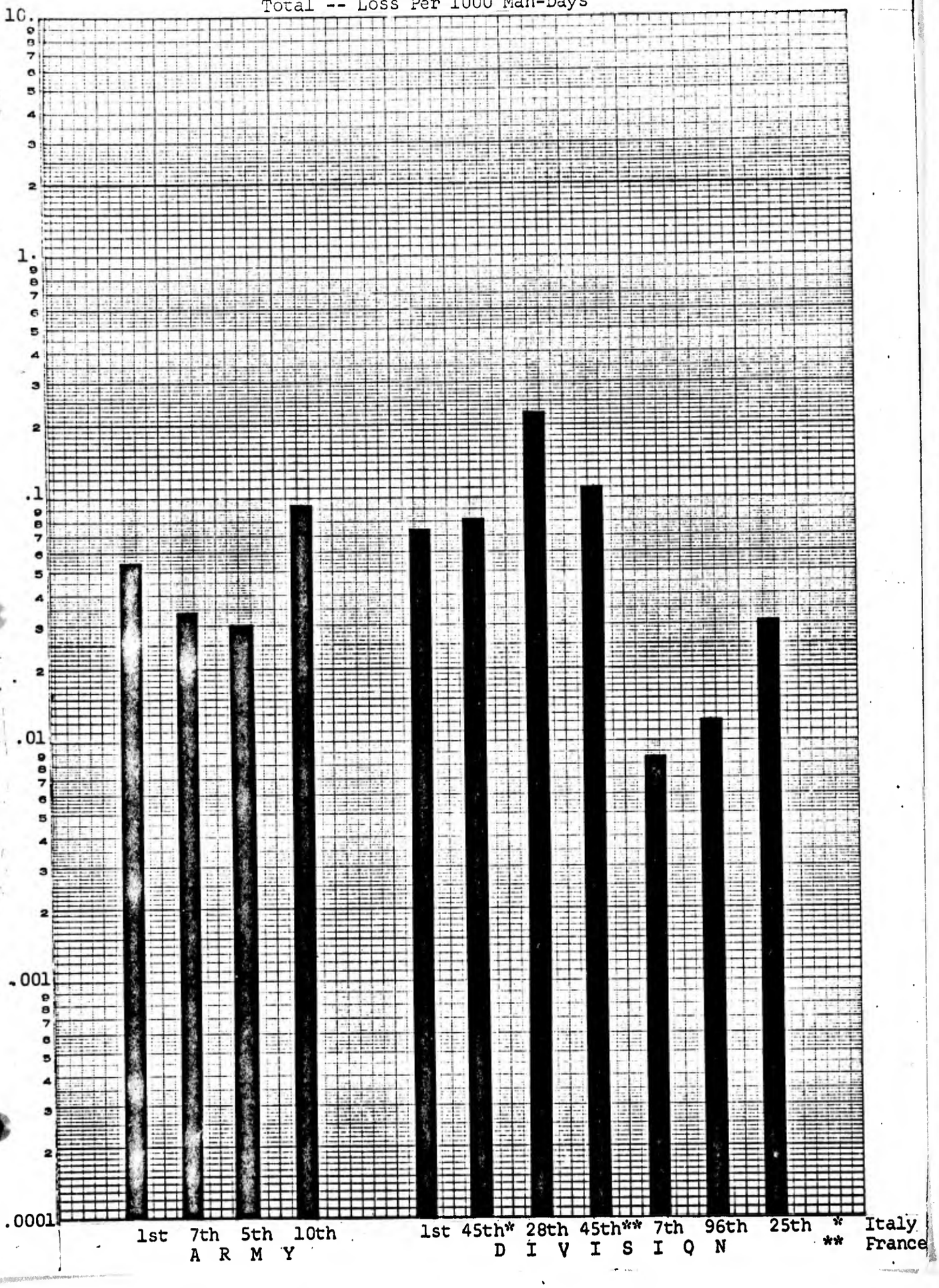
Rifle, .30, BAR, M1918

Withdrawal -- Loss Per 100 Casualties

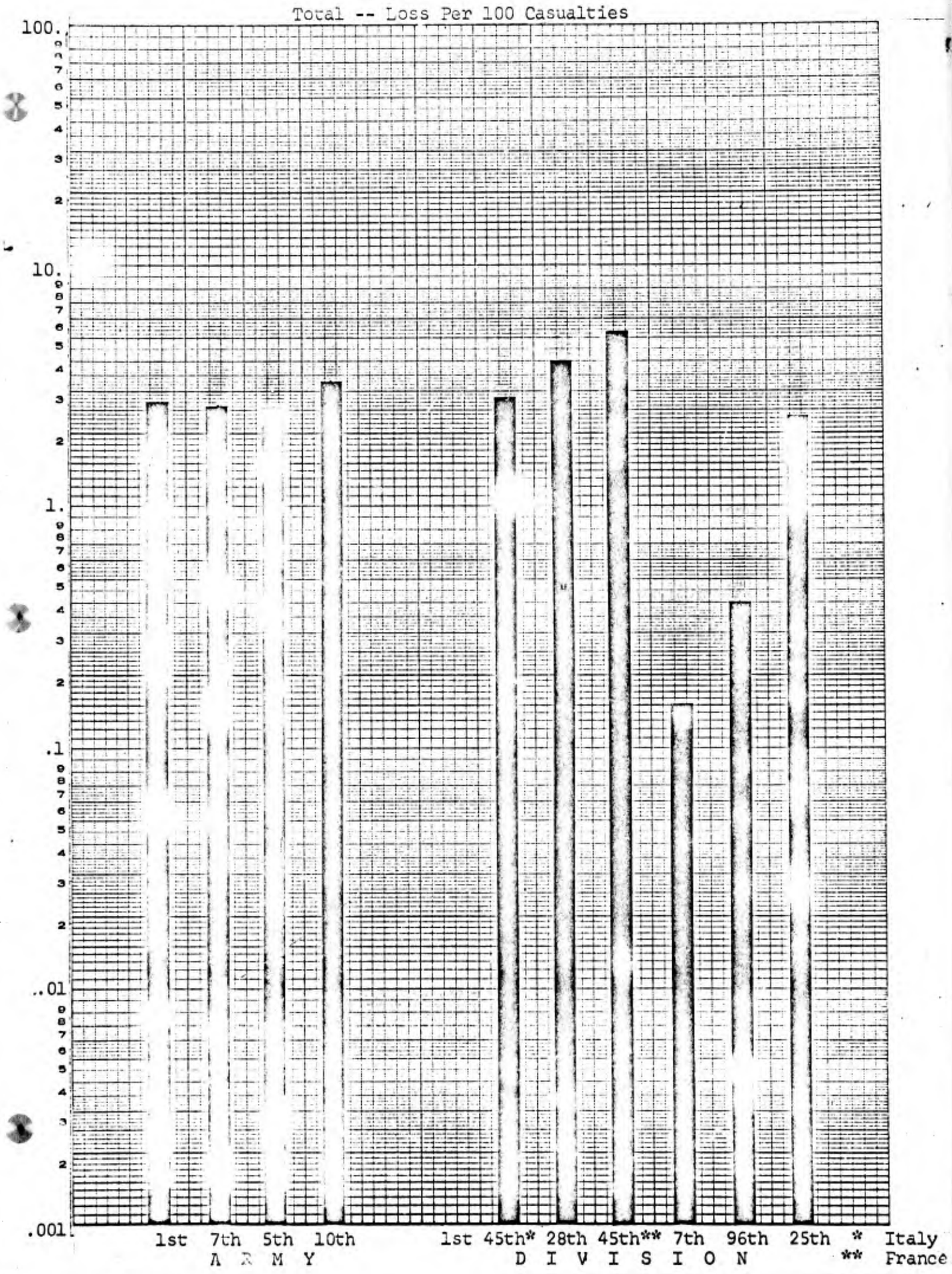


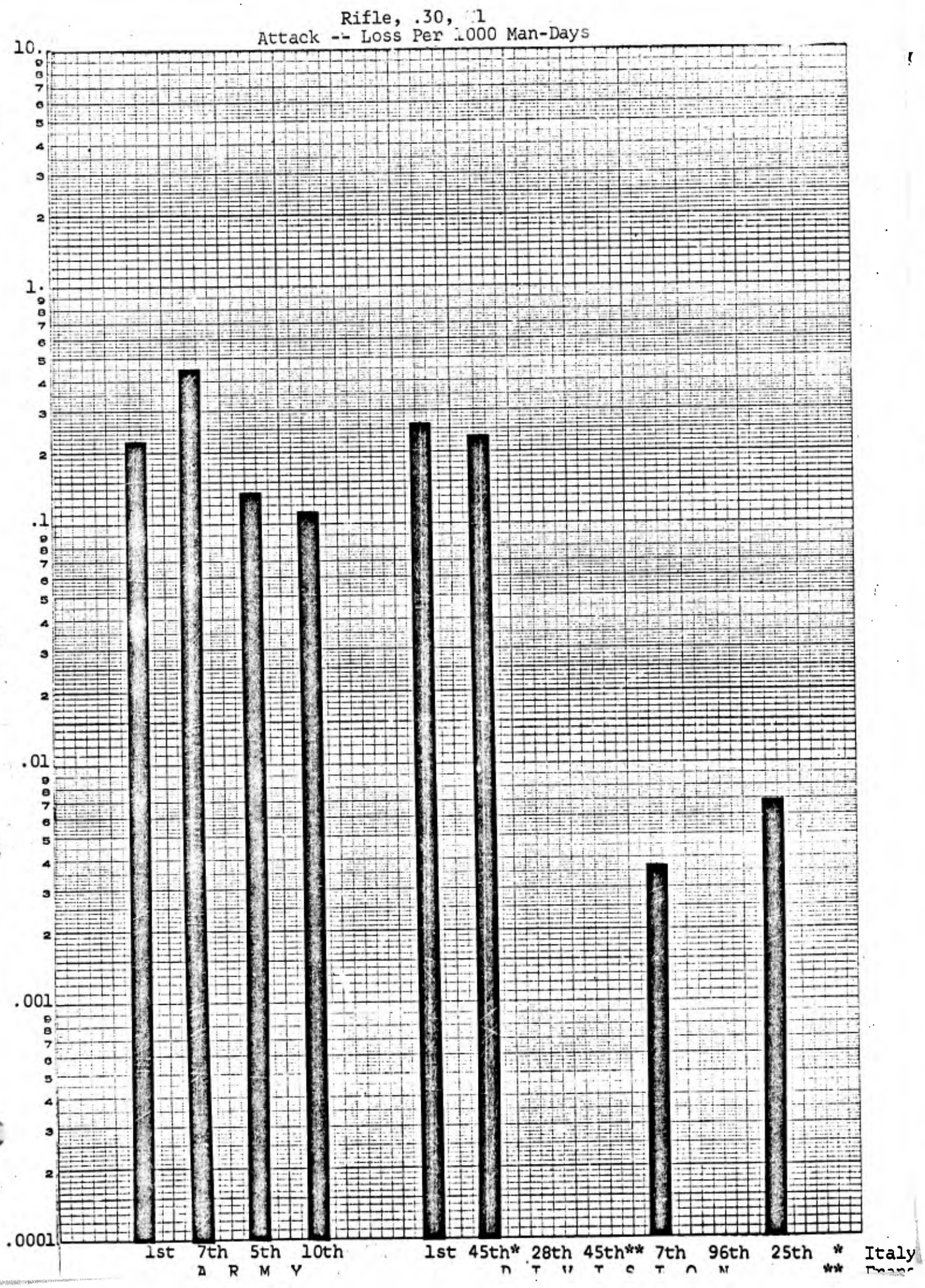
Rifle, .30 BAR, M1918

Total -- Loss Per 1000 Man-Days

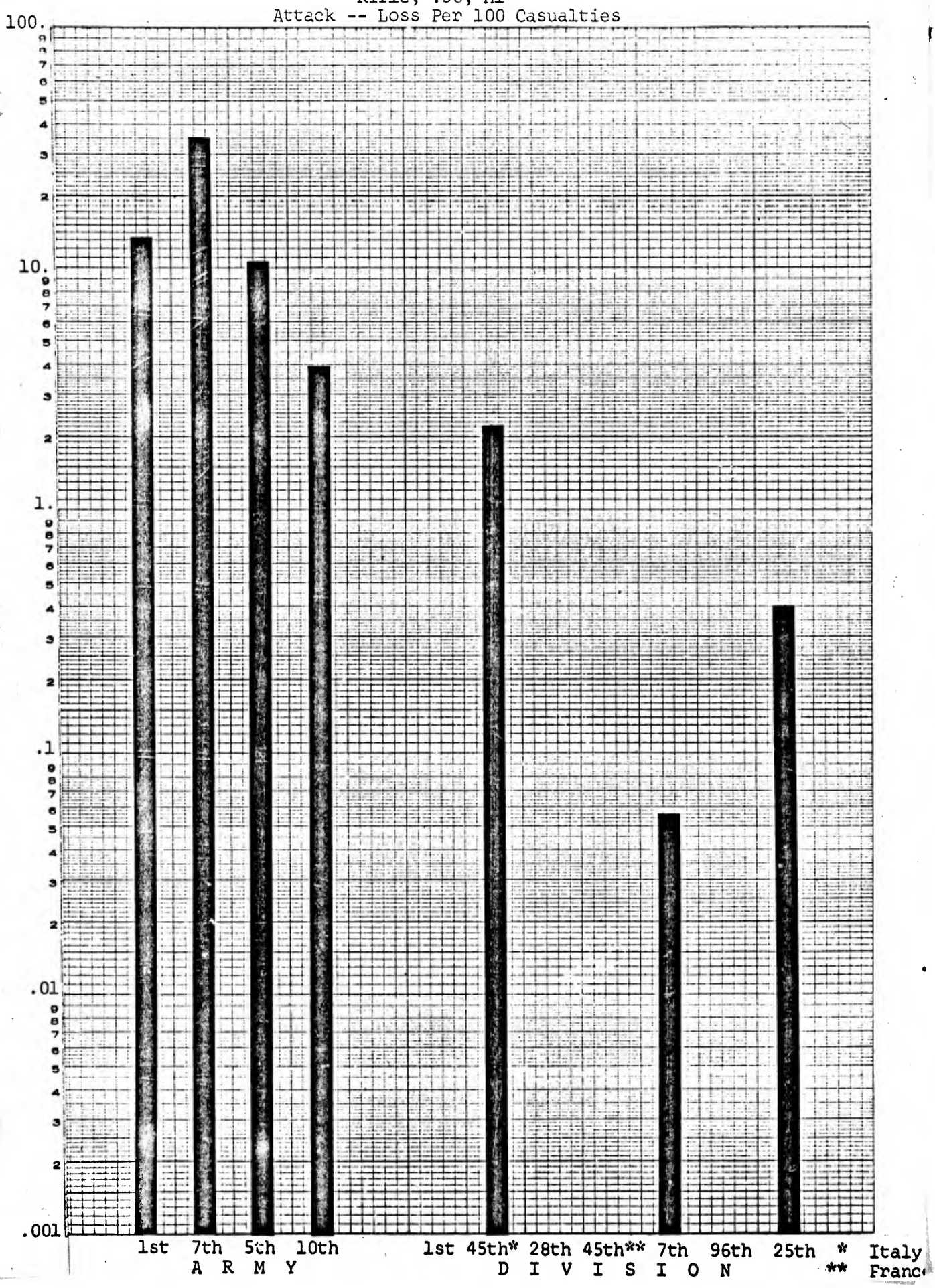


Rifle, .30, BAR, M1918



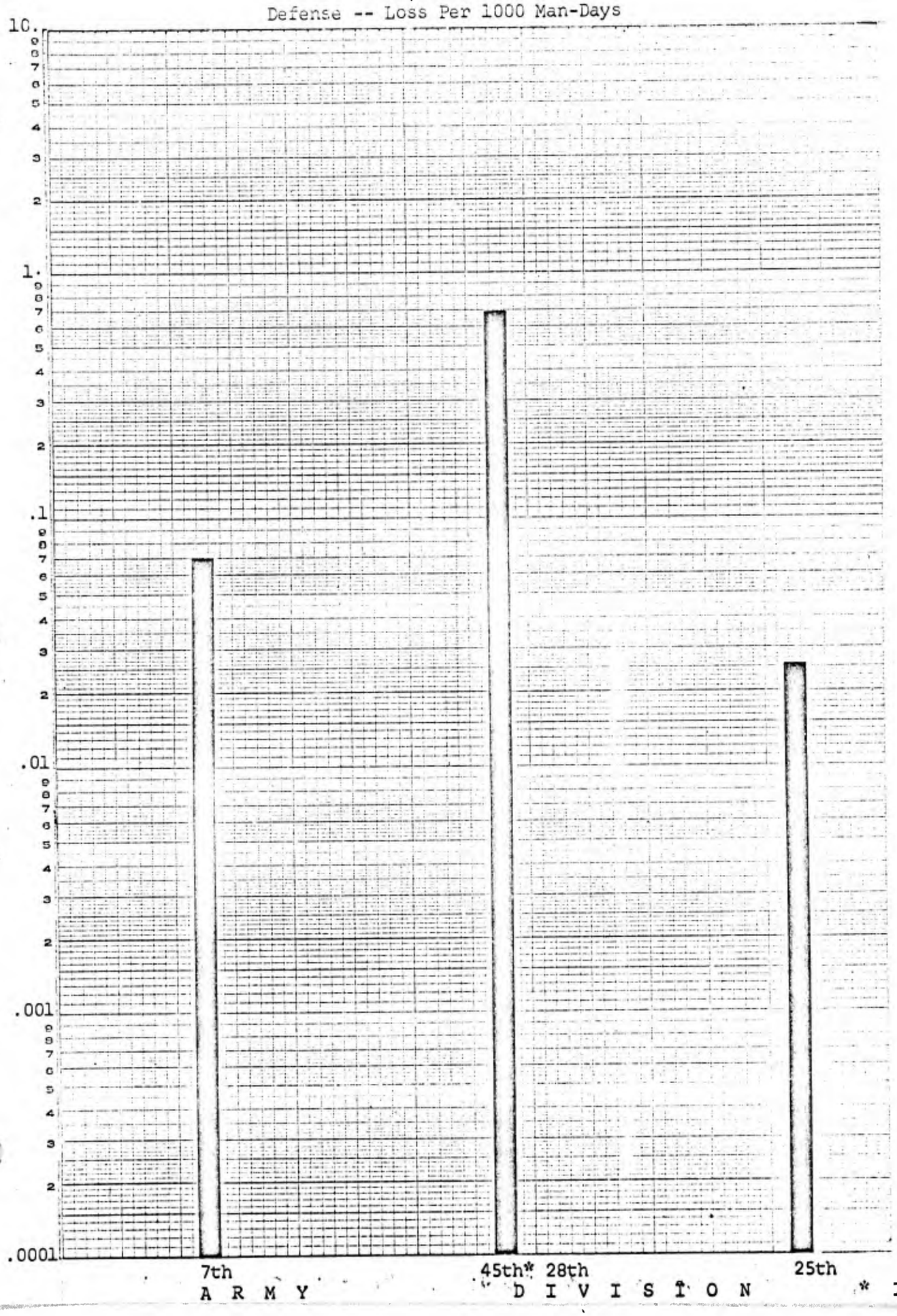

Rifle, .30, 1
Attack -- Loss Per 1000 Man-Days
10.
1.
.1
.01
.001
.0001
1st
7th
5th
10th
1st
45th*
28th
45th**
7th
96th
25th
*
Italy
ARMY
DIVISION
**

Rifle, .30, M1
Attack -- Loss Per 100 Casualties



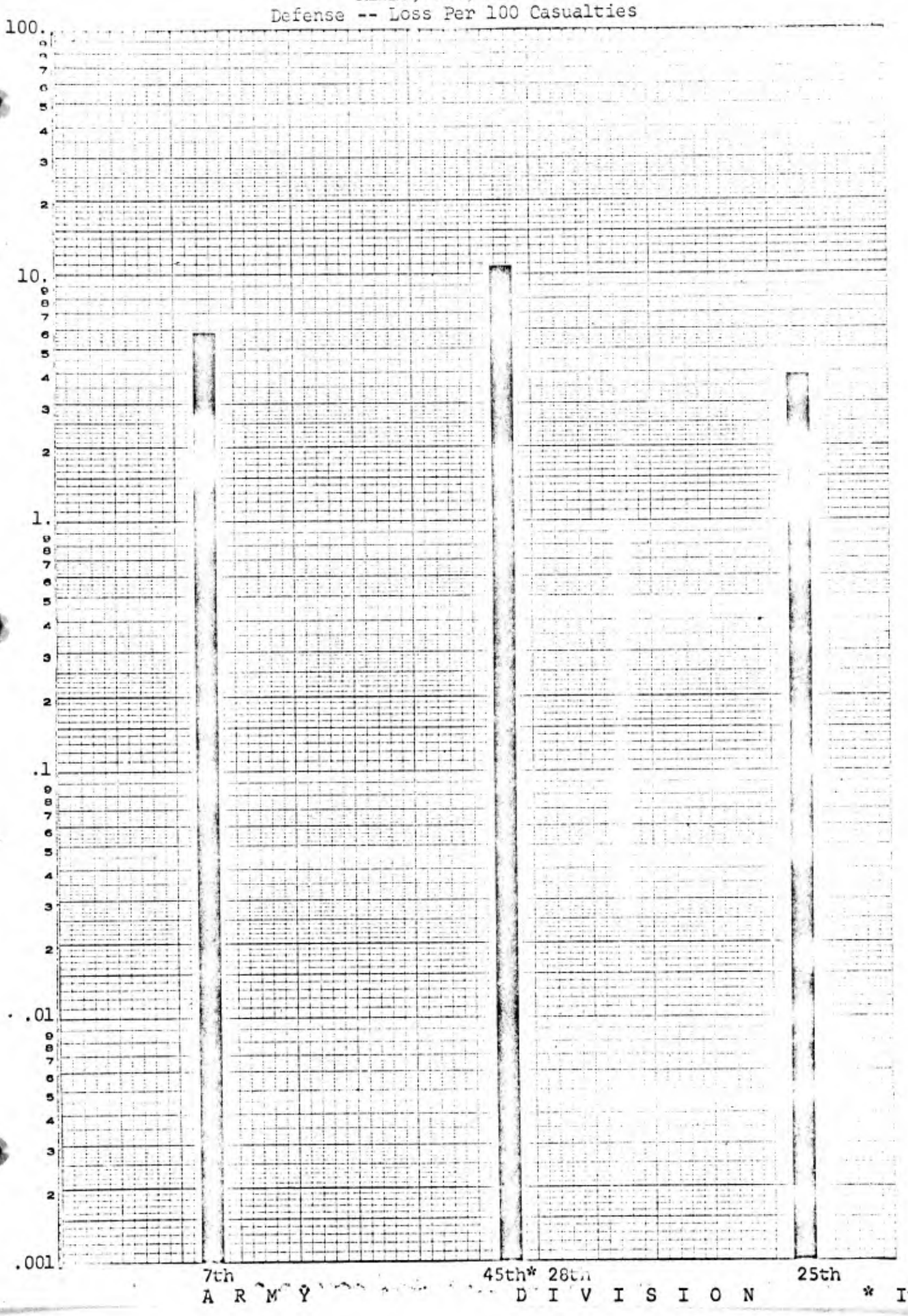
Rifle, .30 M1

Defense -- Loss Per 1000 Man-Days



Rifle, .30, M1

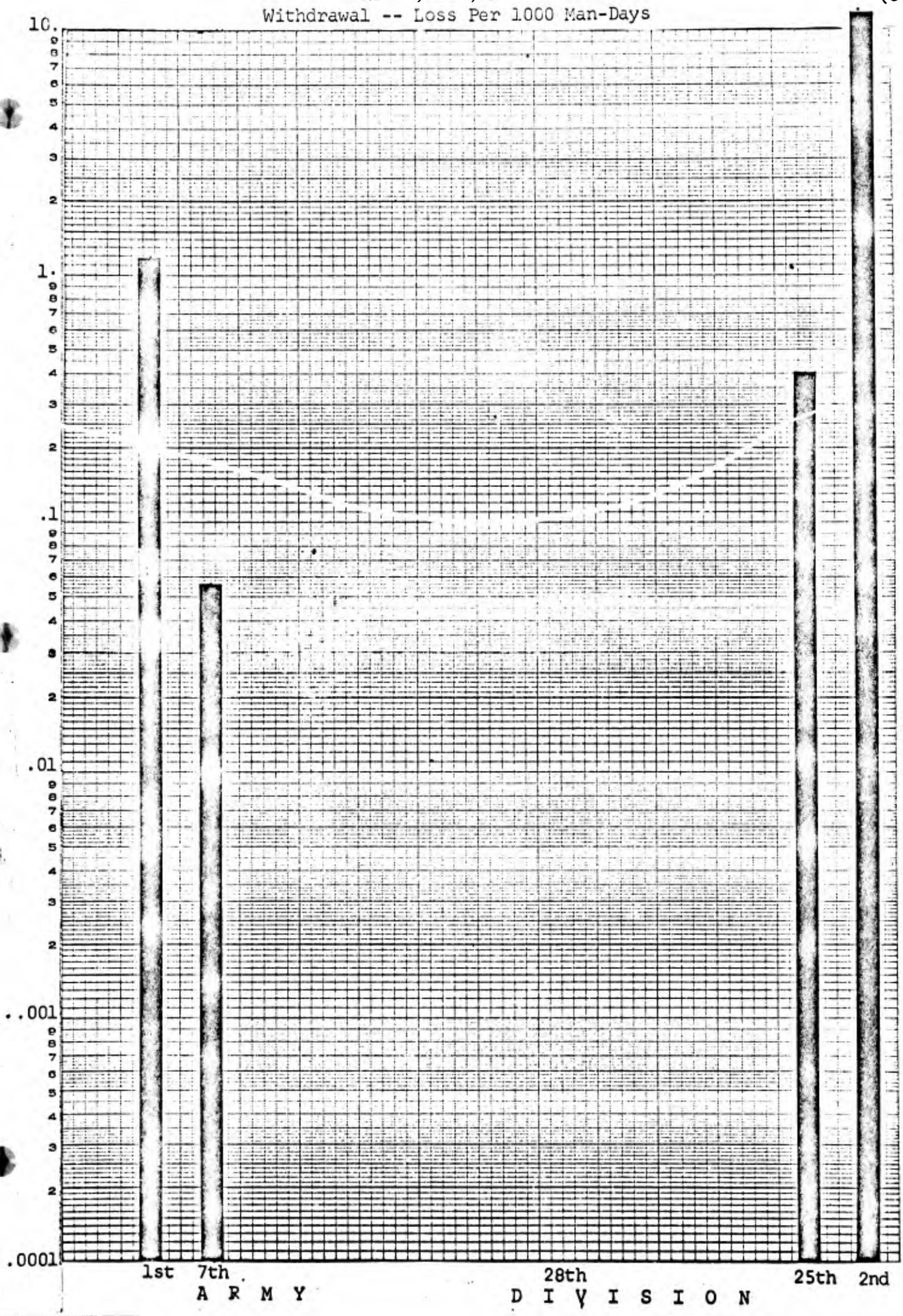
Defense -- Loss Per 100 Casualties



Rifle, .30, M1

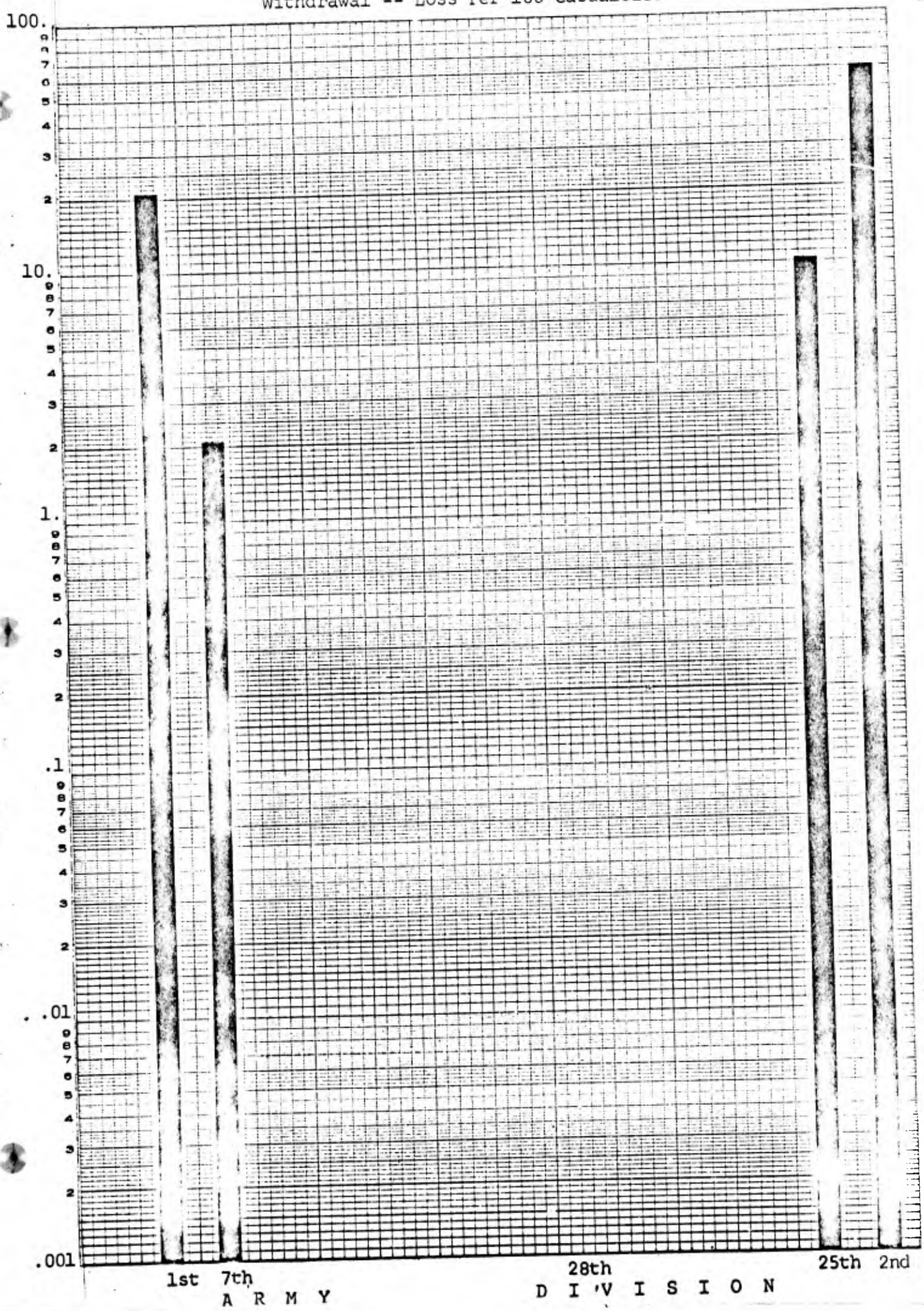
Withdrawal -- Loss Per 1000 Man-Days

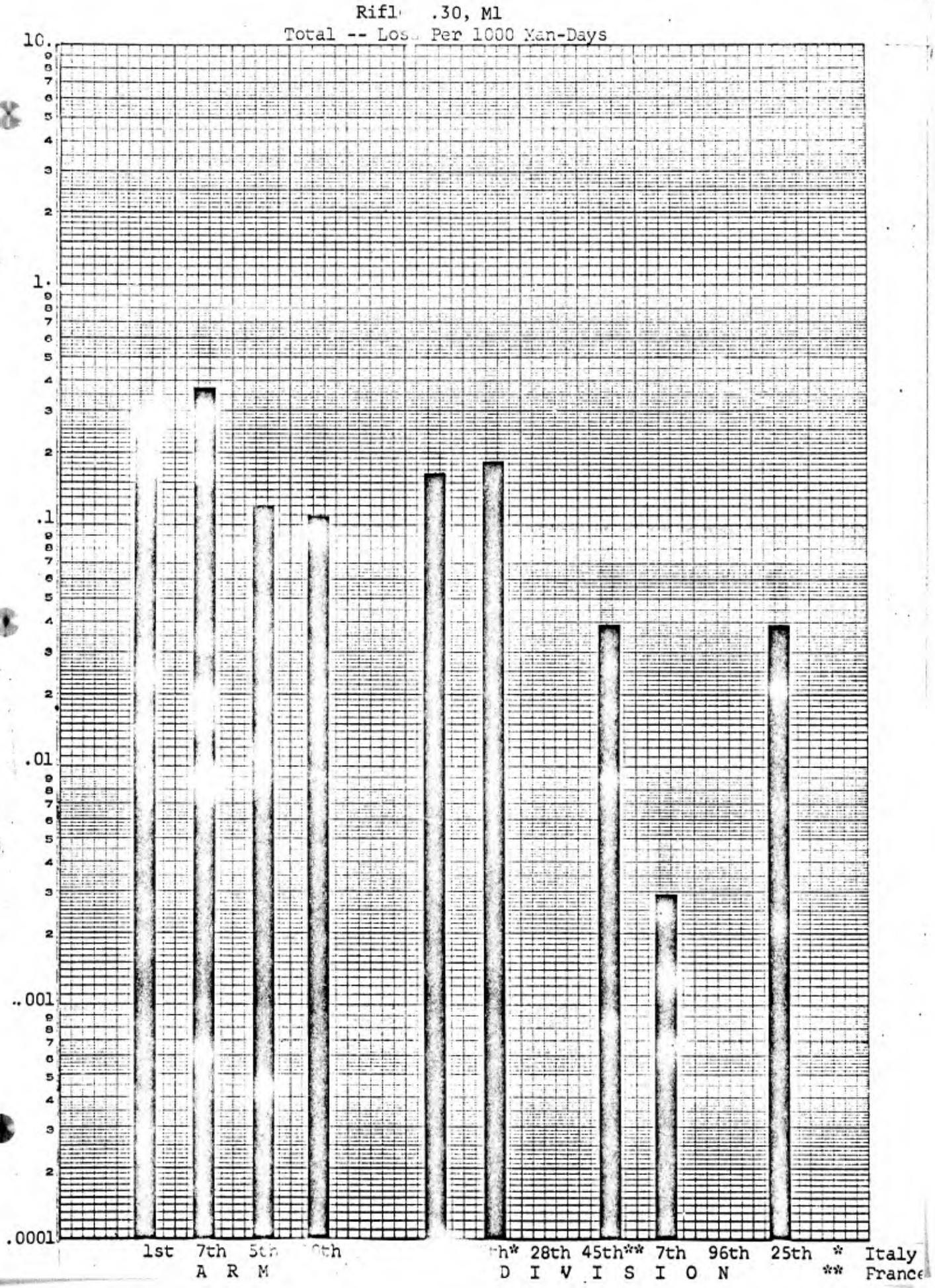
(50.64)



Rifle, .30, M1

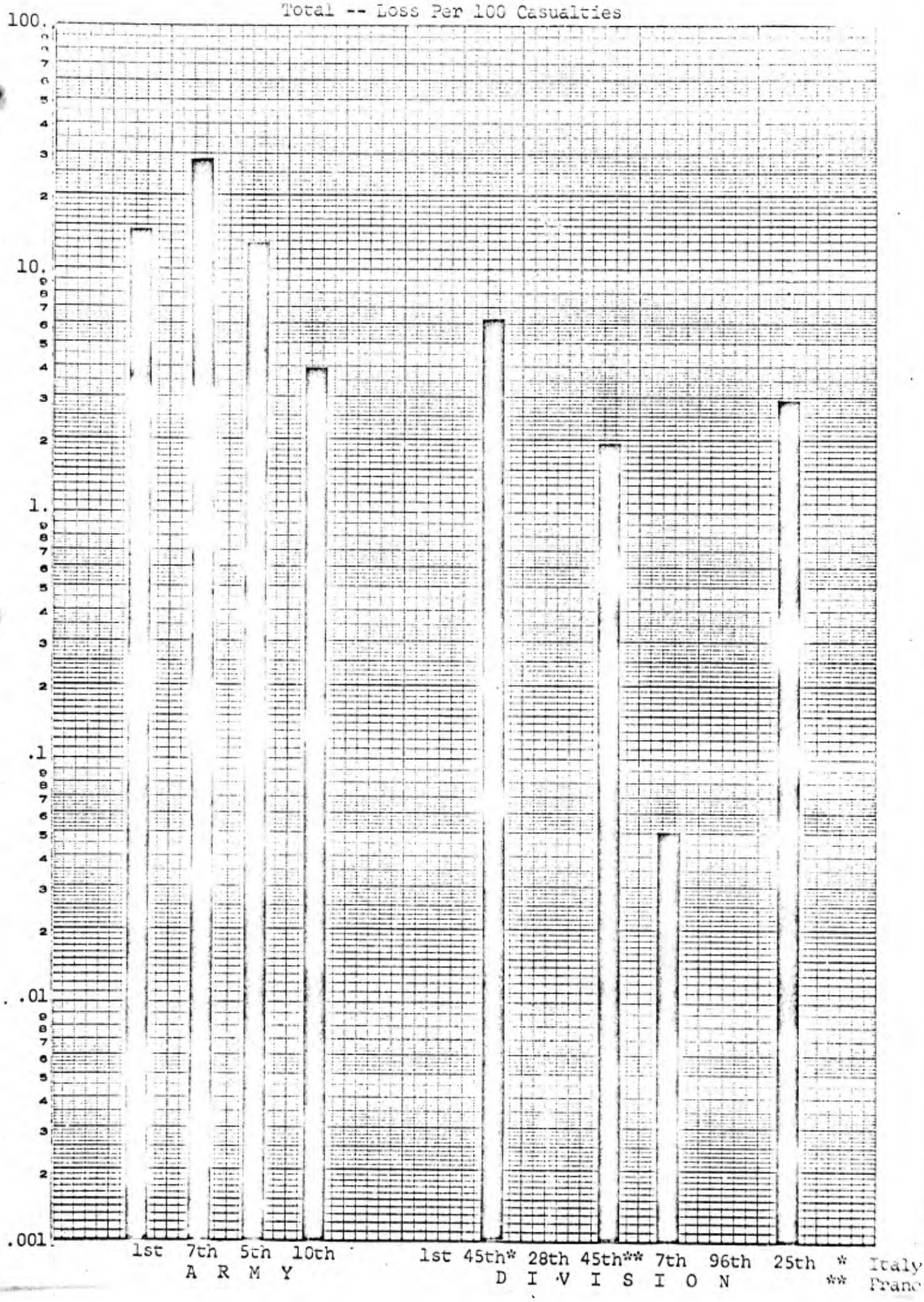
Withdrawal -- Loss Per 100 Casualties



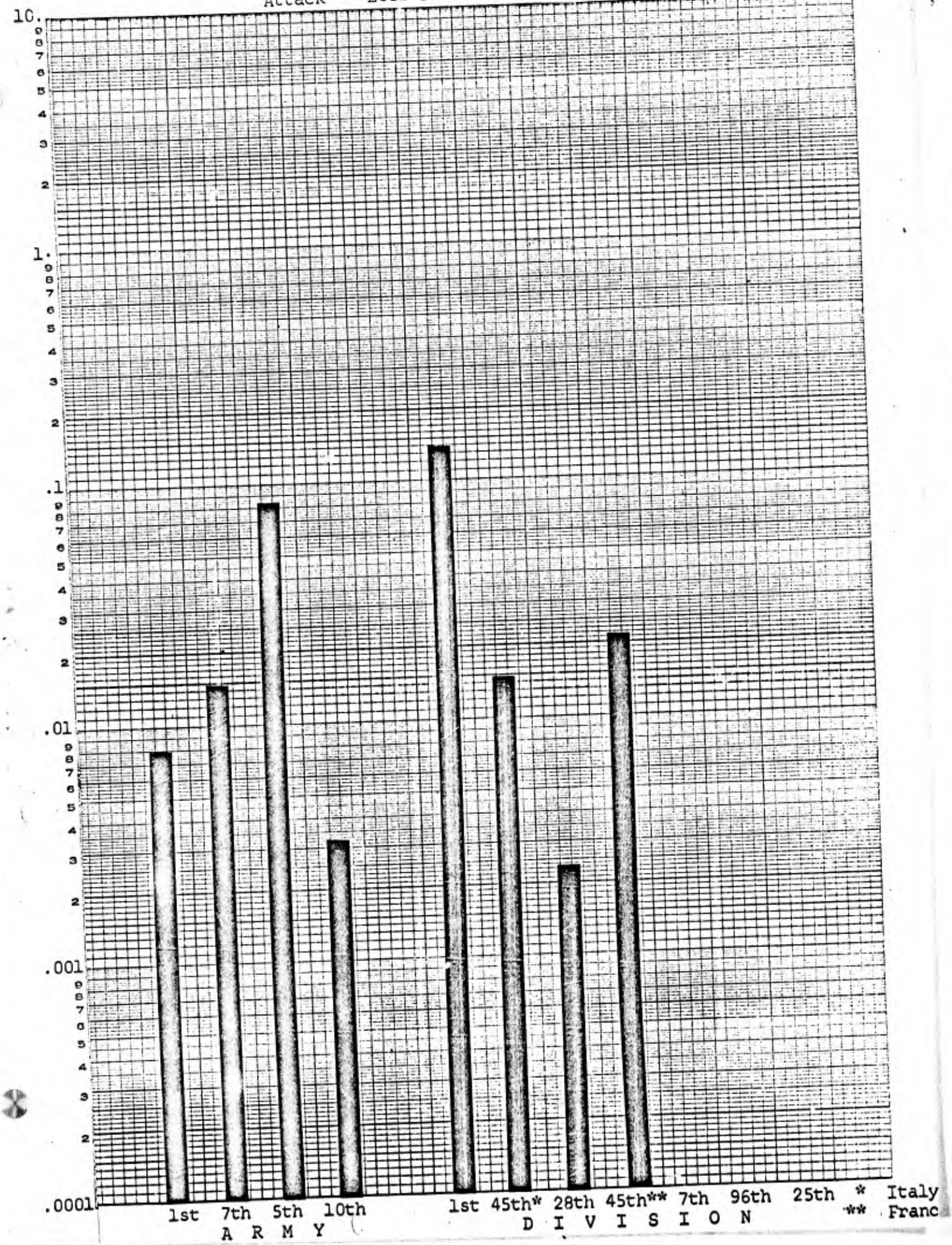

Rifl .30, M1
Total -- Los Per 1000 Man-Days
10.
1.
.1
.01
.001
.0001
1st
7th
5th
th
th*
28th
45th**
7th
96th
25th
*
Italy
**
France
A R M
D I V I S I O N

Rifle, .30, M1

Total -- Loss Per 100 Casualties

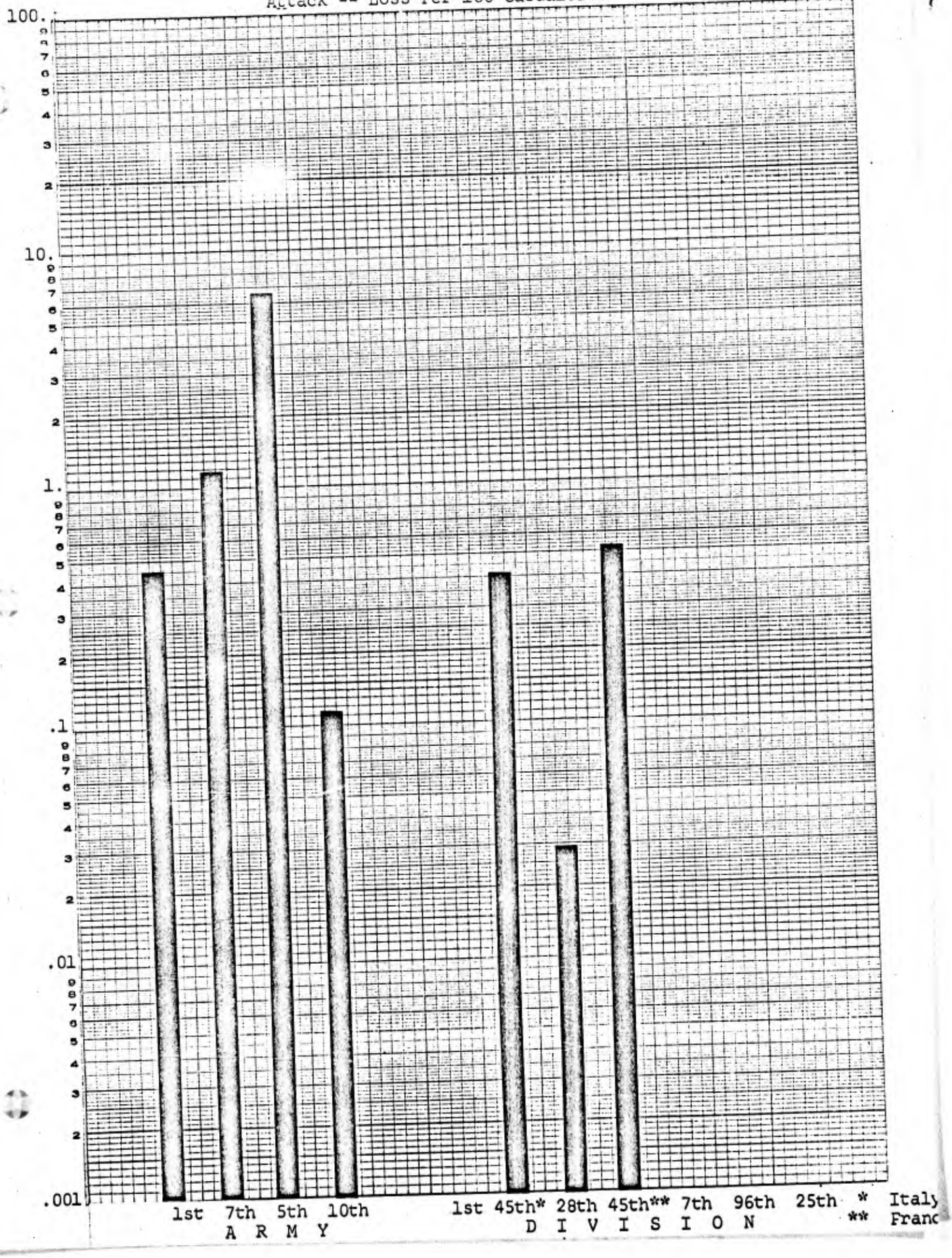


Rifle, .30, M1903 Series
Attack -- Loss Per 1000 Man-Days



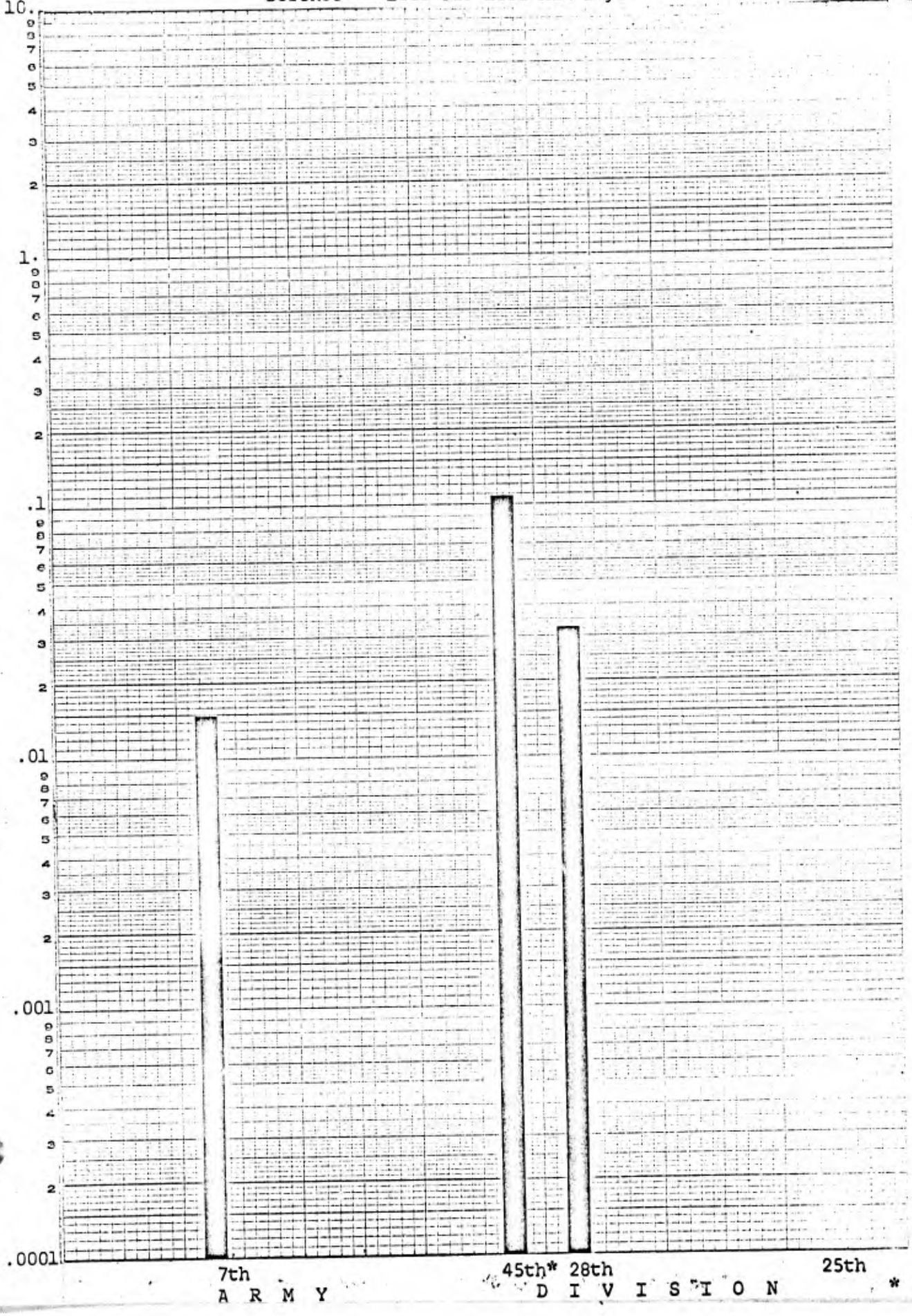
Rifle, .30. M1903 Series

Attack -- Loss Per 100 Casualties



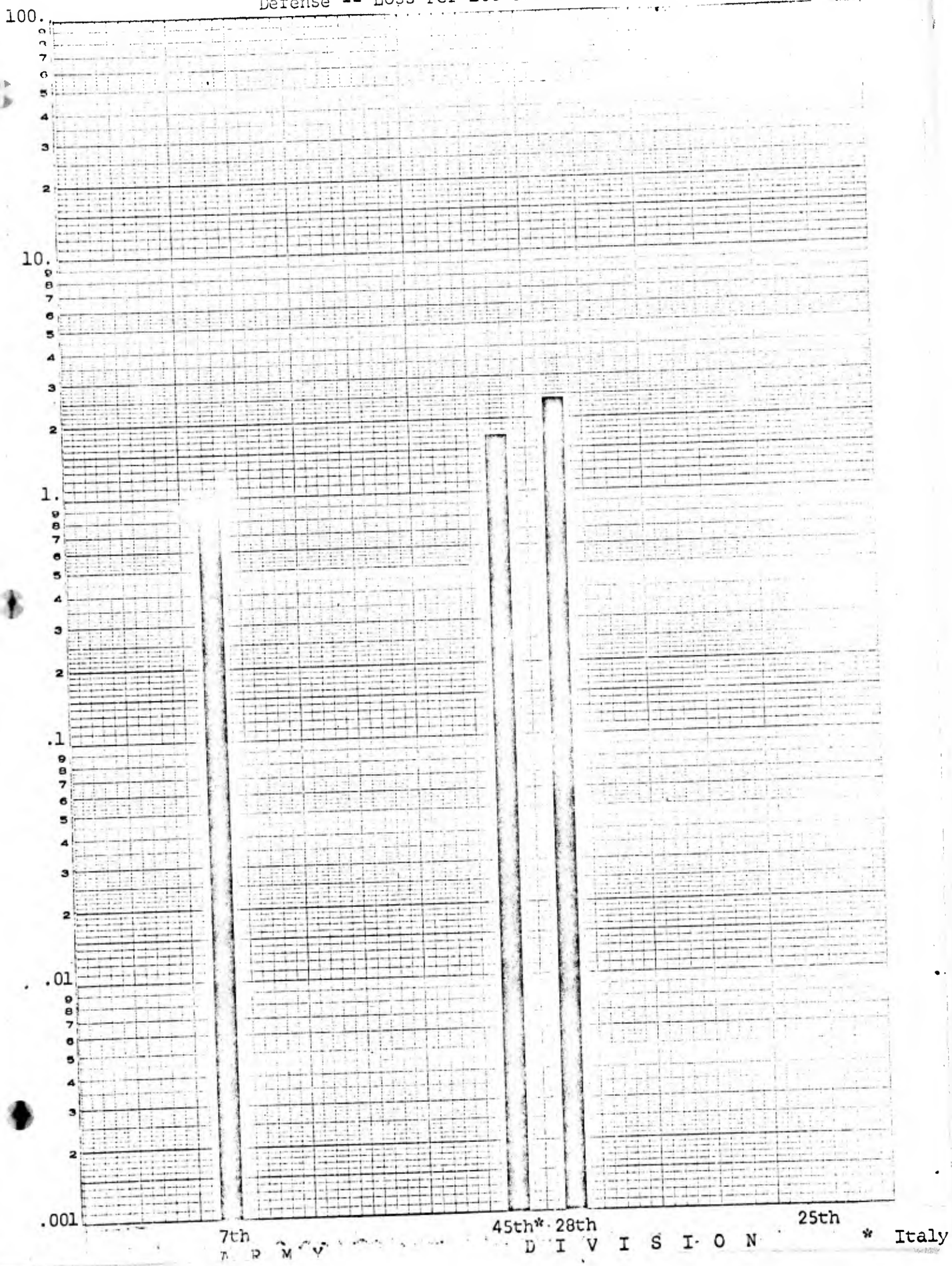
Rifle, .30, M1903 Series

Defense -- Loss Per 1000 Man-Days



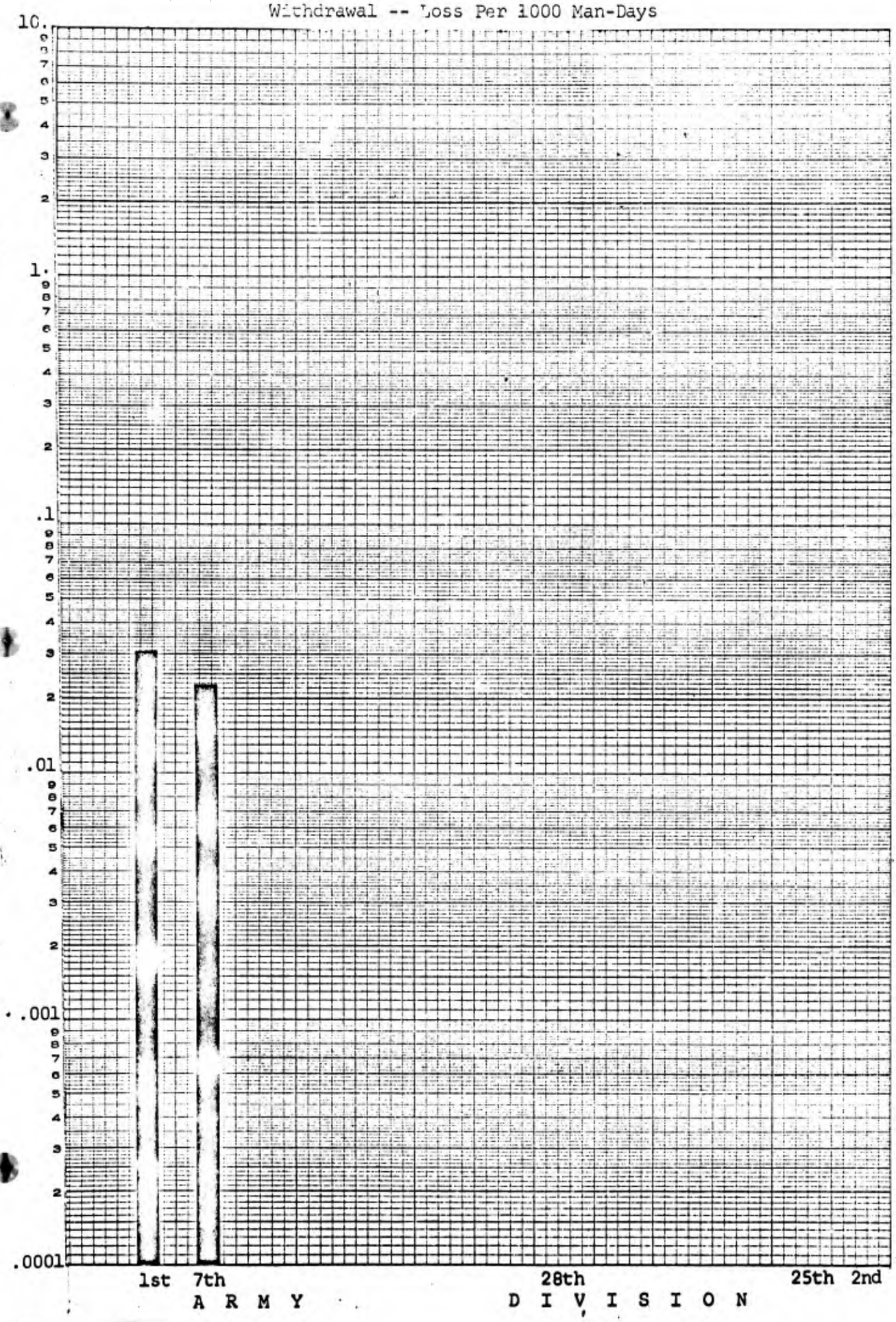
Rifle, .30, M1903 Series

Defense -- Loss Per 100 Casualties



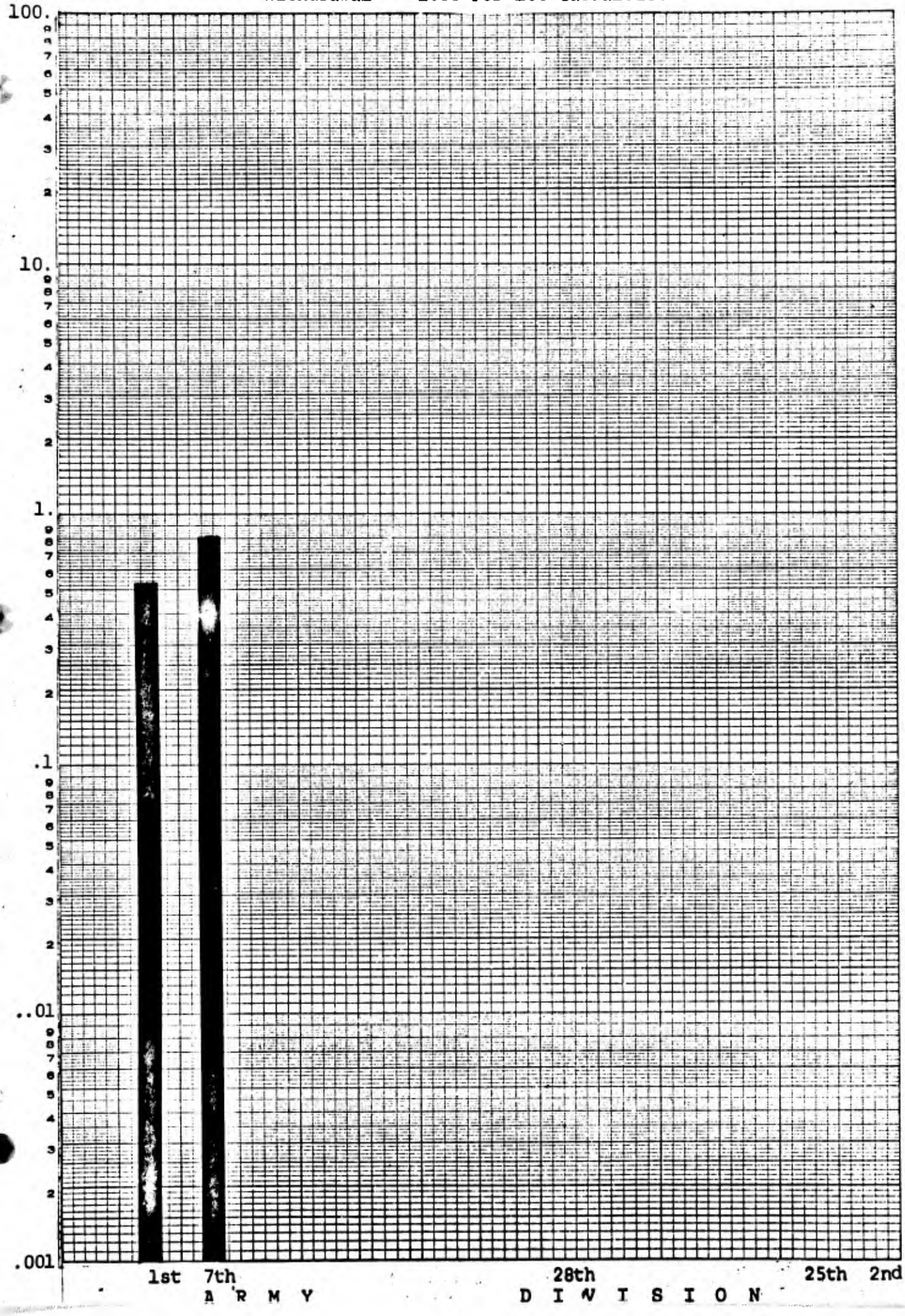
Rifle, .30, M1903 Series

Withdrawal -- Loss Per 1000 Man-Days

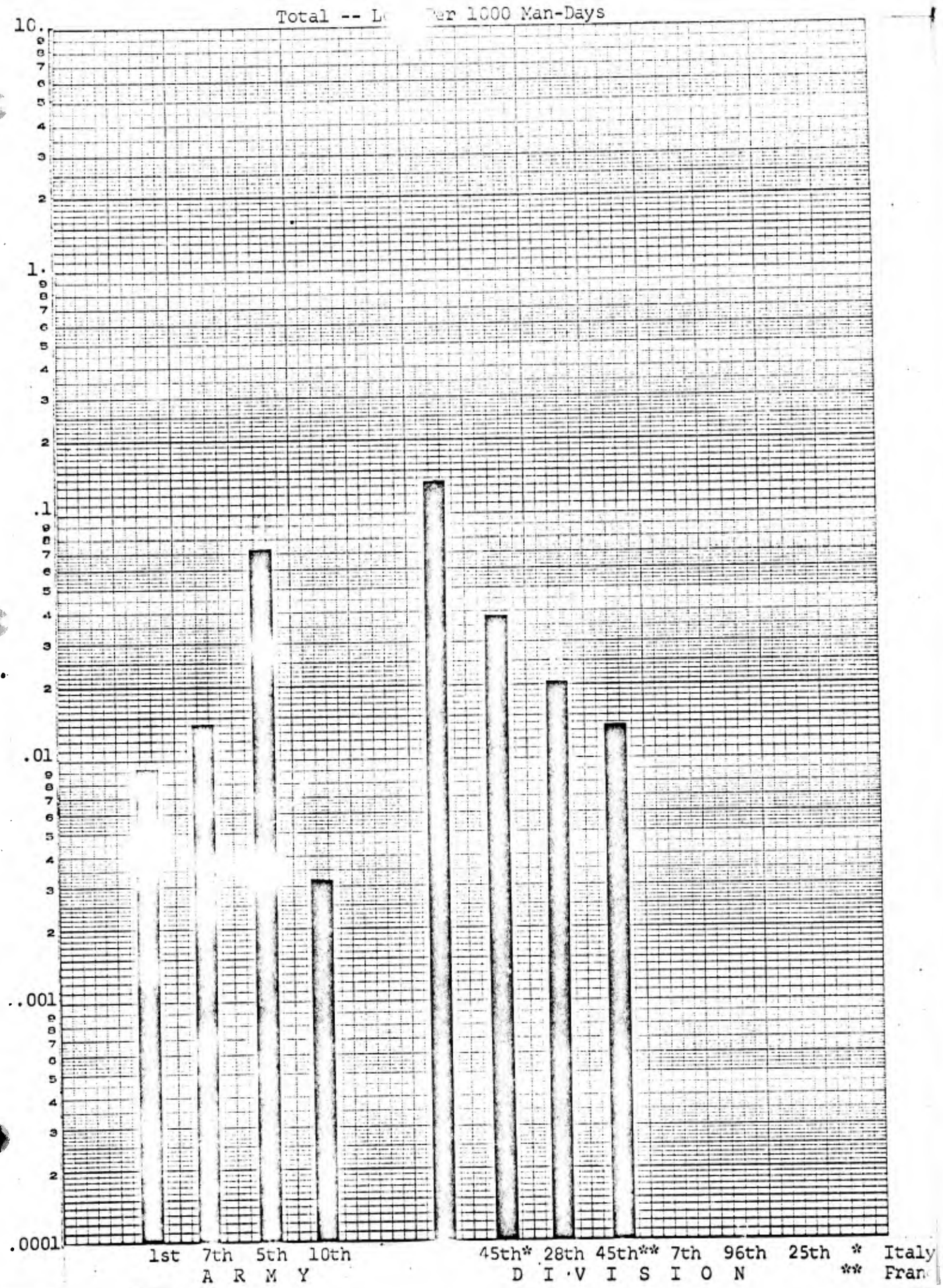


Rifle, .30, M1903 Series

Withdrawal -- Loss Per 100 Casualties

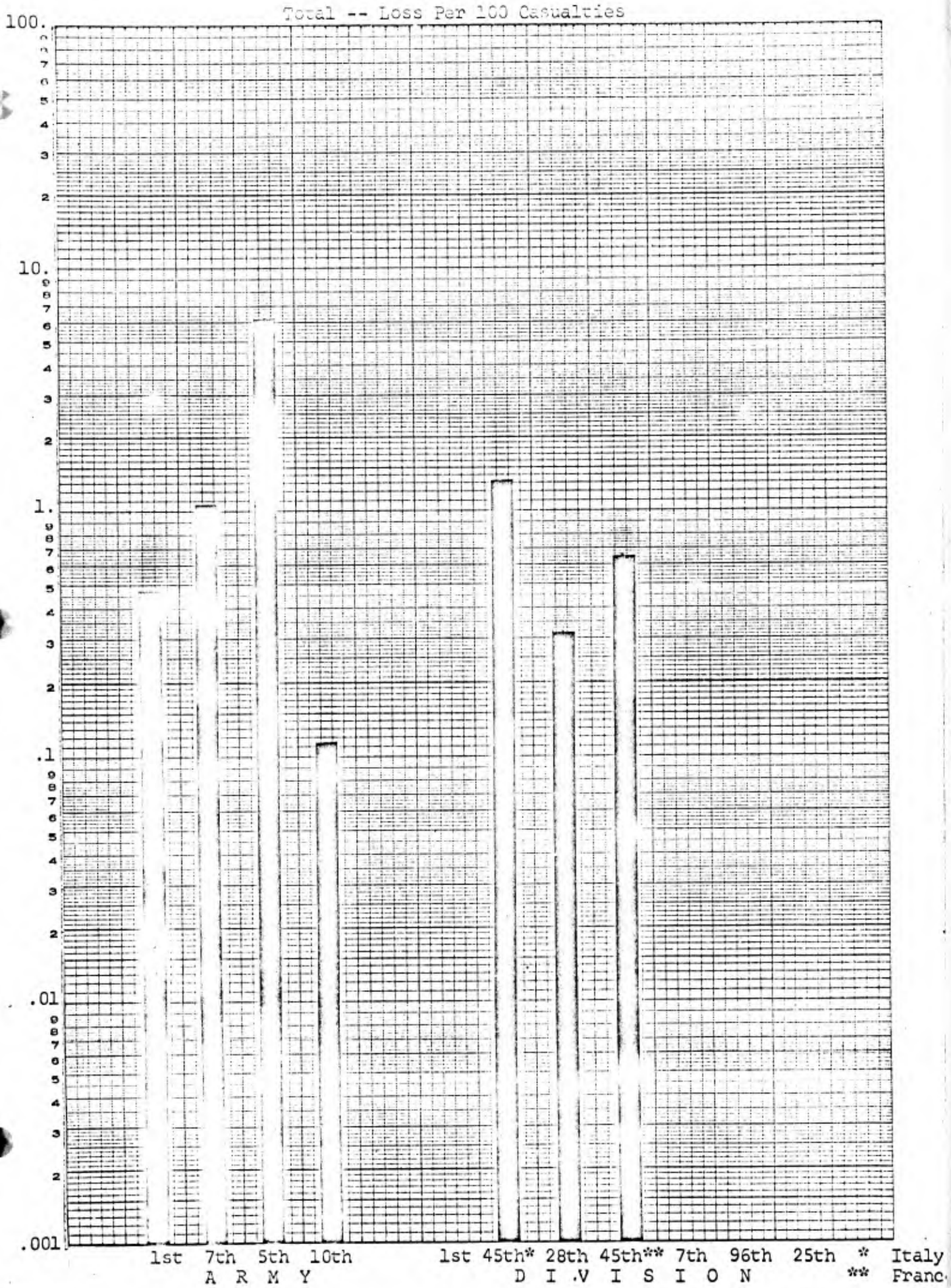


Rifle, .30, M1903 Series



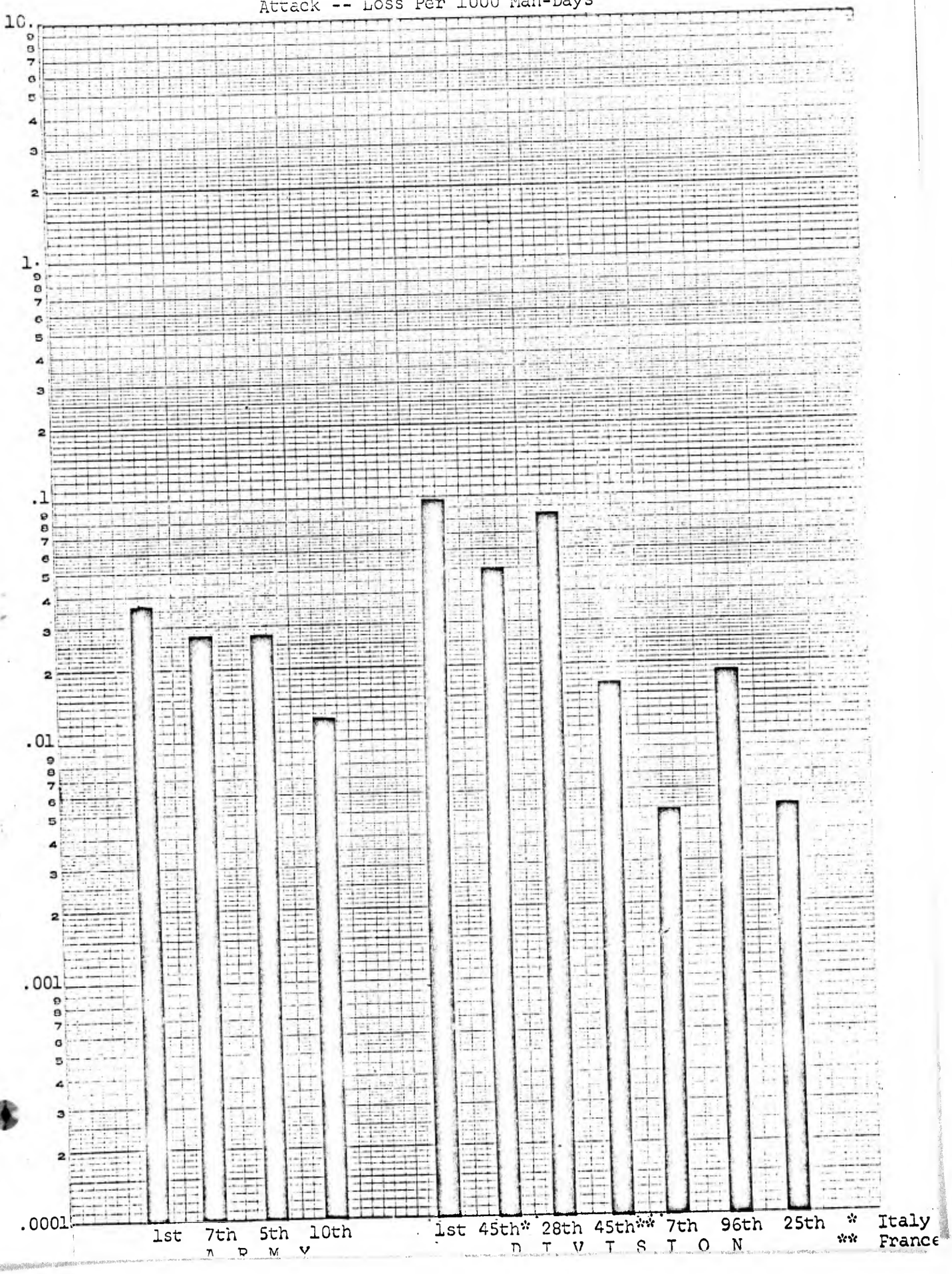
Rifle, .30, M1903 Series

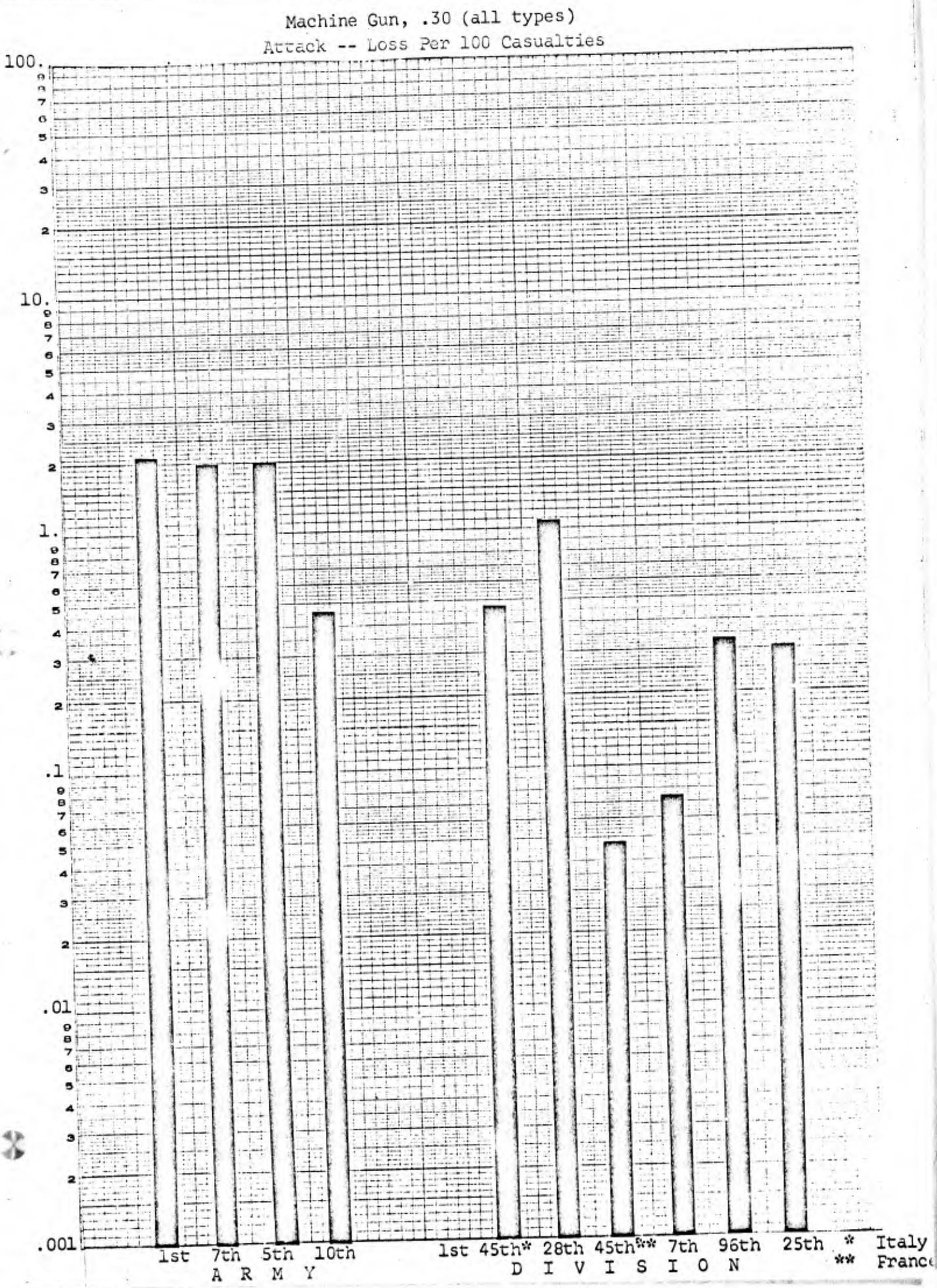
Total -- Loss Per 100 Casualties



Machine Gun, .30 (all types)

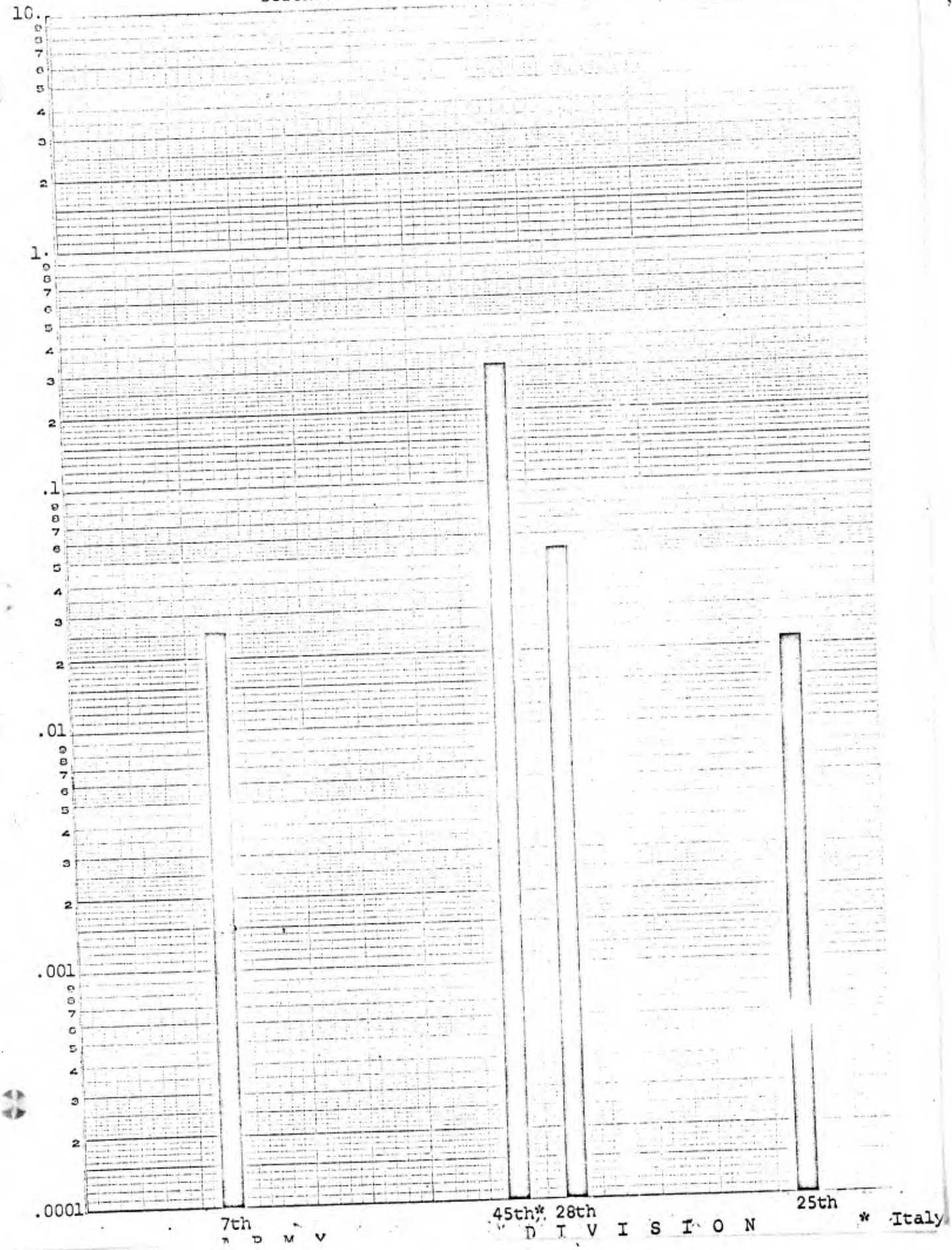
Attack -- Loss Per 1000 Man-Days




Machine Gun, .30 (all types)
Attack -- Loss Per 100 Casualties
100.
10.
1.
.1
.01
.001
1st
7th
5th
10th
A R M Y
1st
45th*
28th
45th**
7th
96th
25th
D I V I S I O N
* Italy
** France

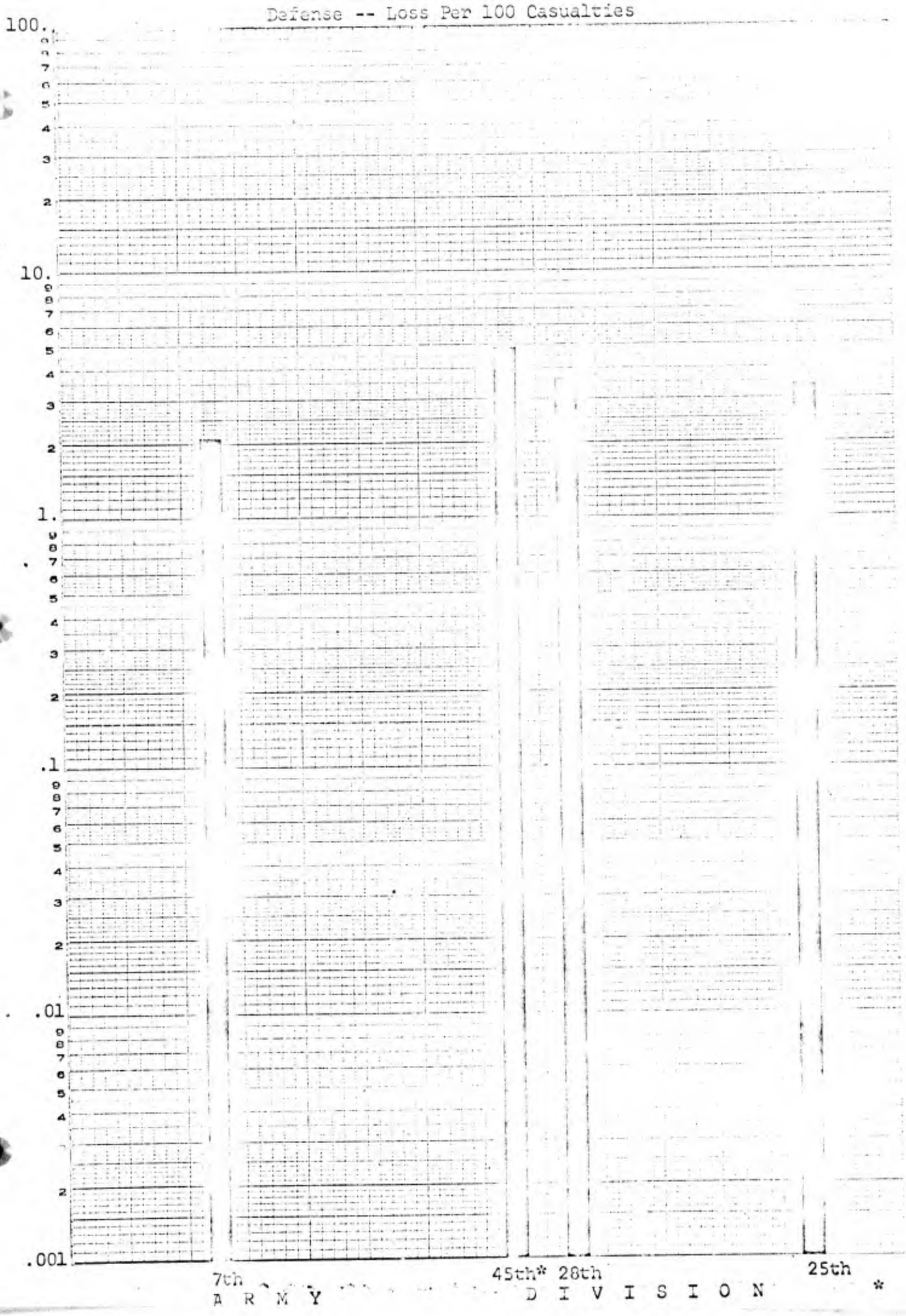
Machine Gun, .30 (all types)

Defense -- Loss Per 1000 Man-Days



Machine Gun, .30 (all types)

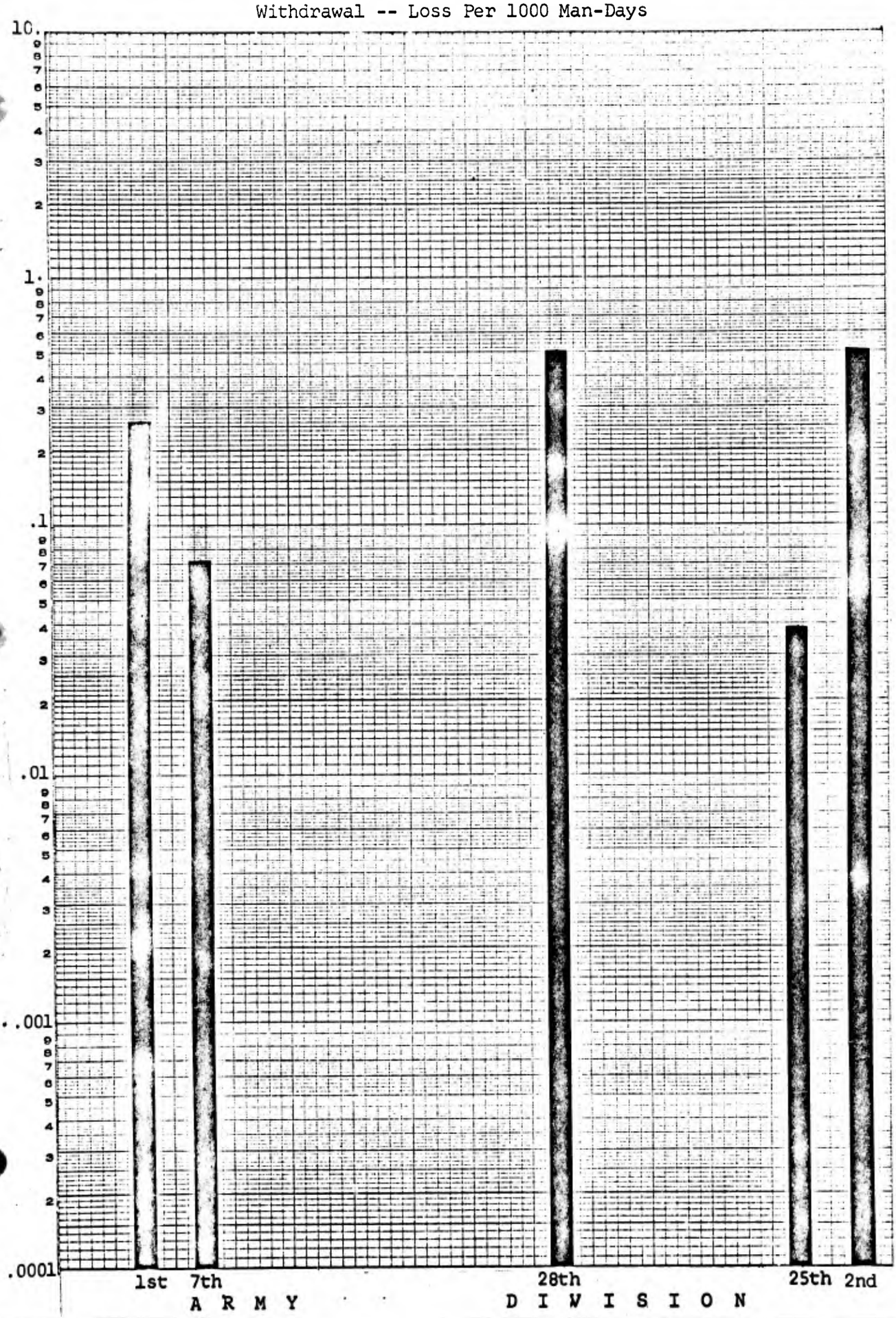
Defense -- Loss Per 100 Casualties



* Ital

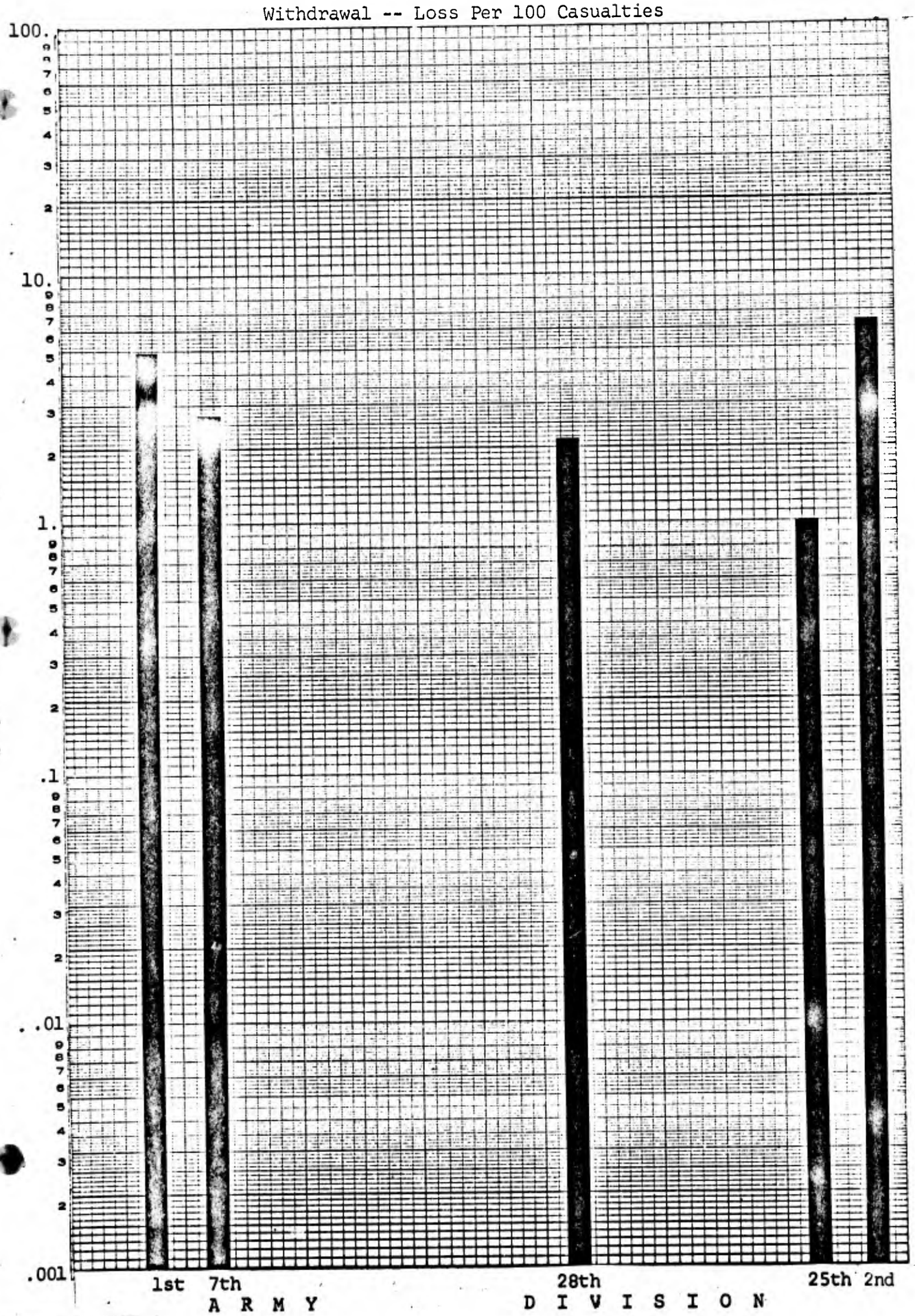
Machine Gun, .30 (all types)

Withdrawal -- Loss Per 1000 Man-Days



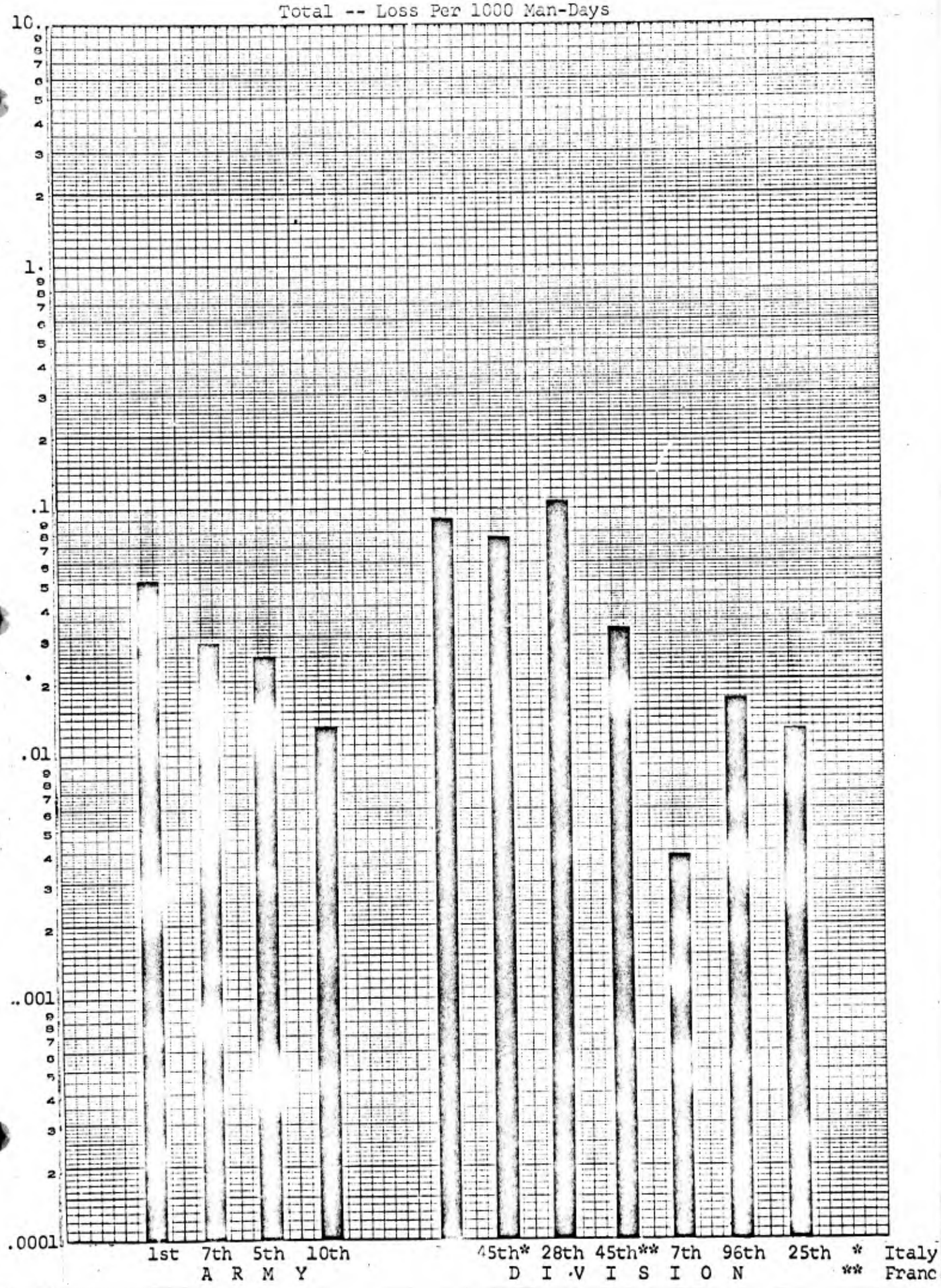
Machine Gun, .30 (all types)

Withdrawal -- Loss Per 100 Casualties



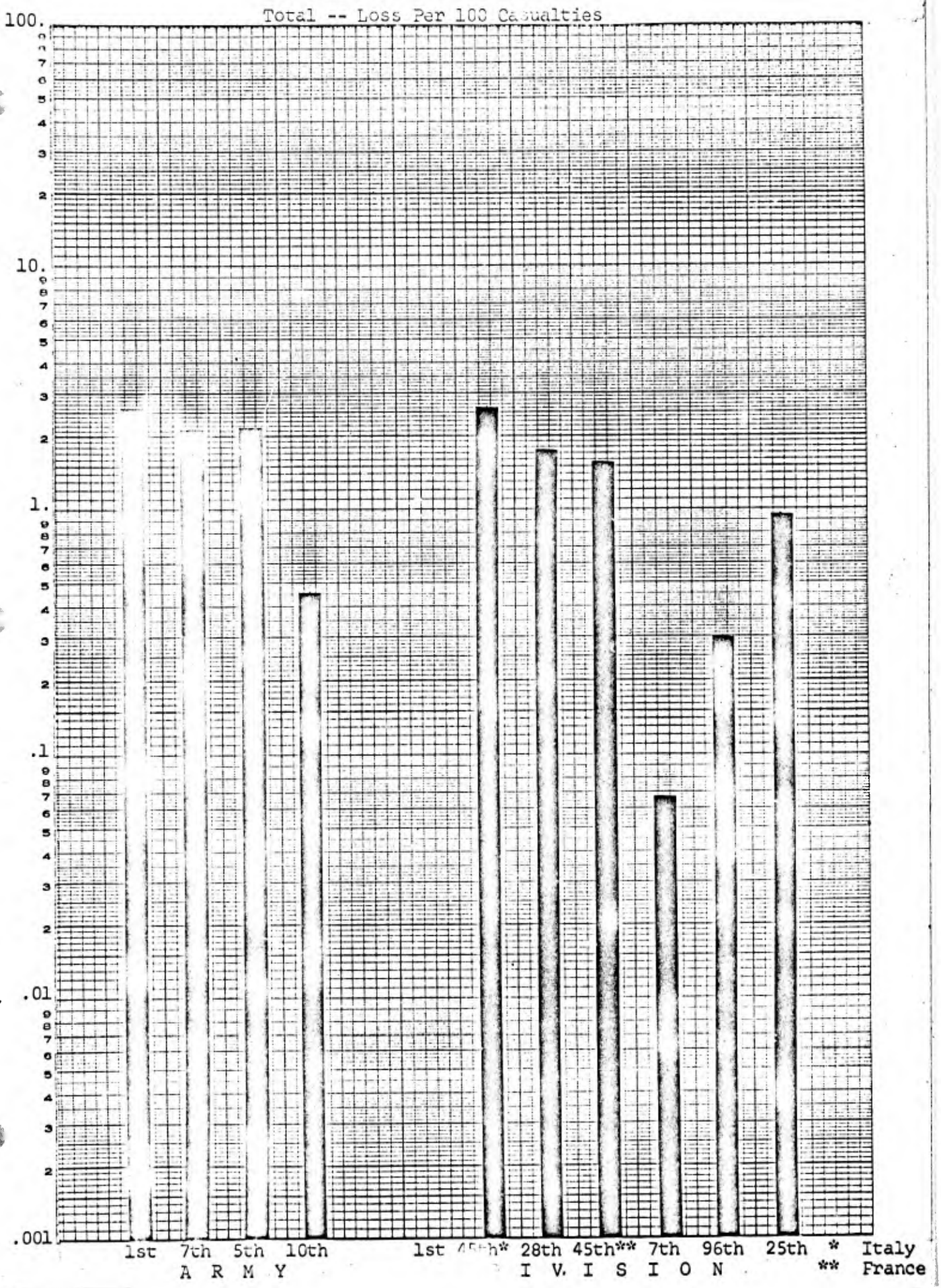
Machine Gun, .30 (all types)

Total -- Loss Per 1000 Man-Days



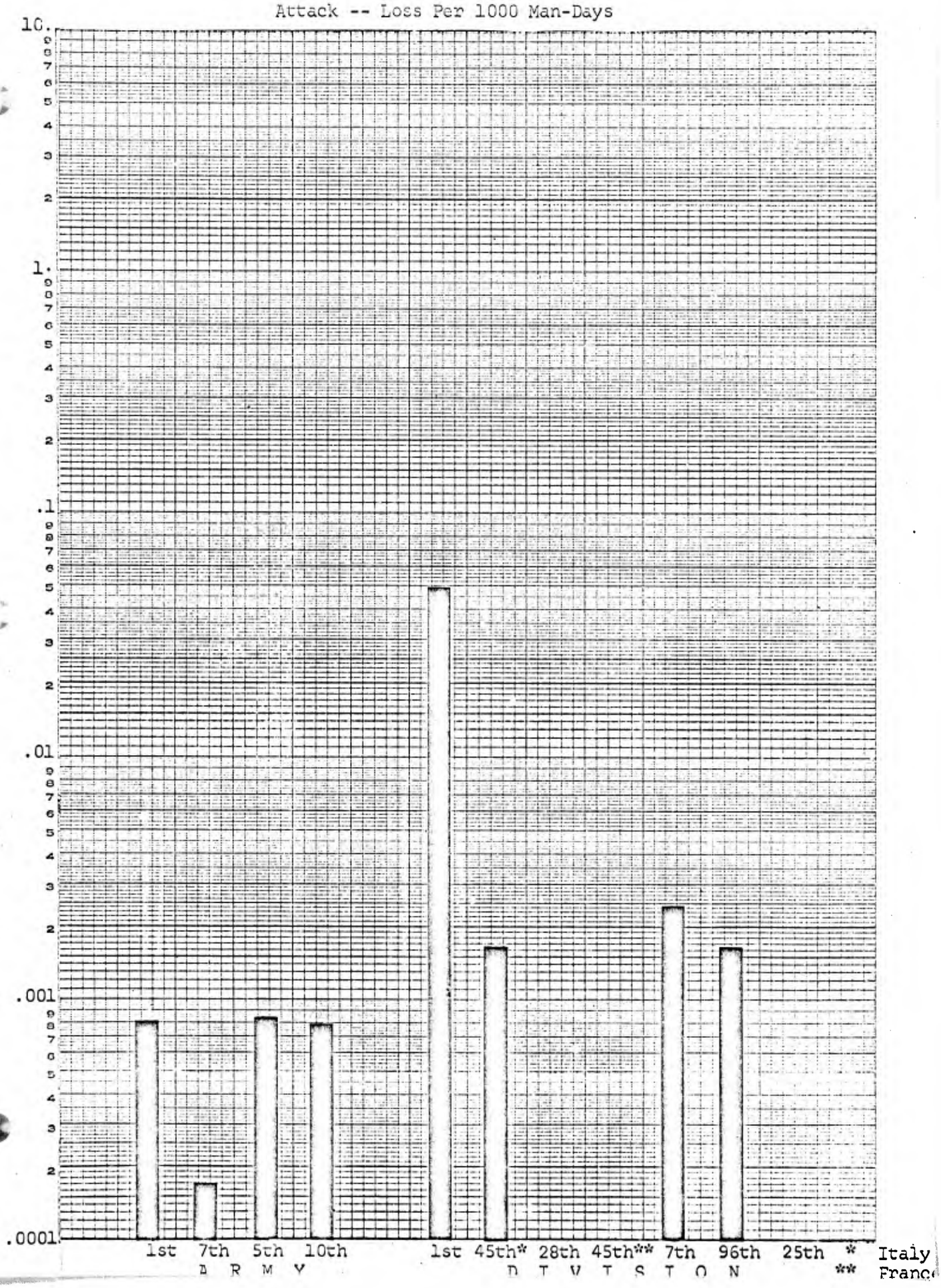
Machine Gun, .30 (all types)

Total -- Loss Per 100 Casualties



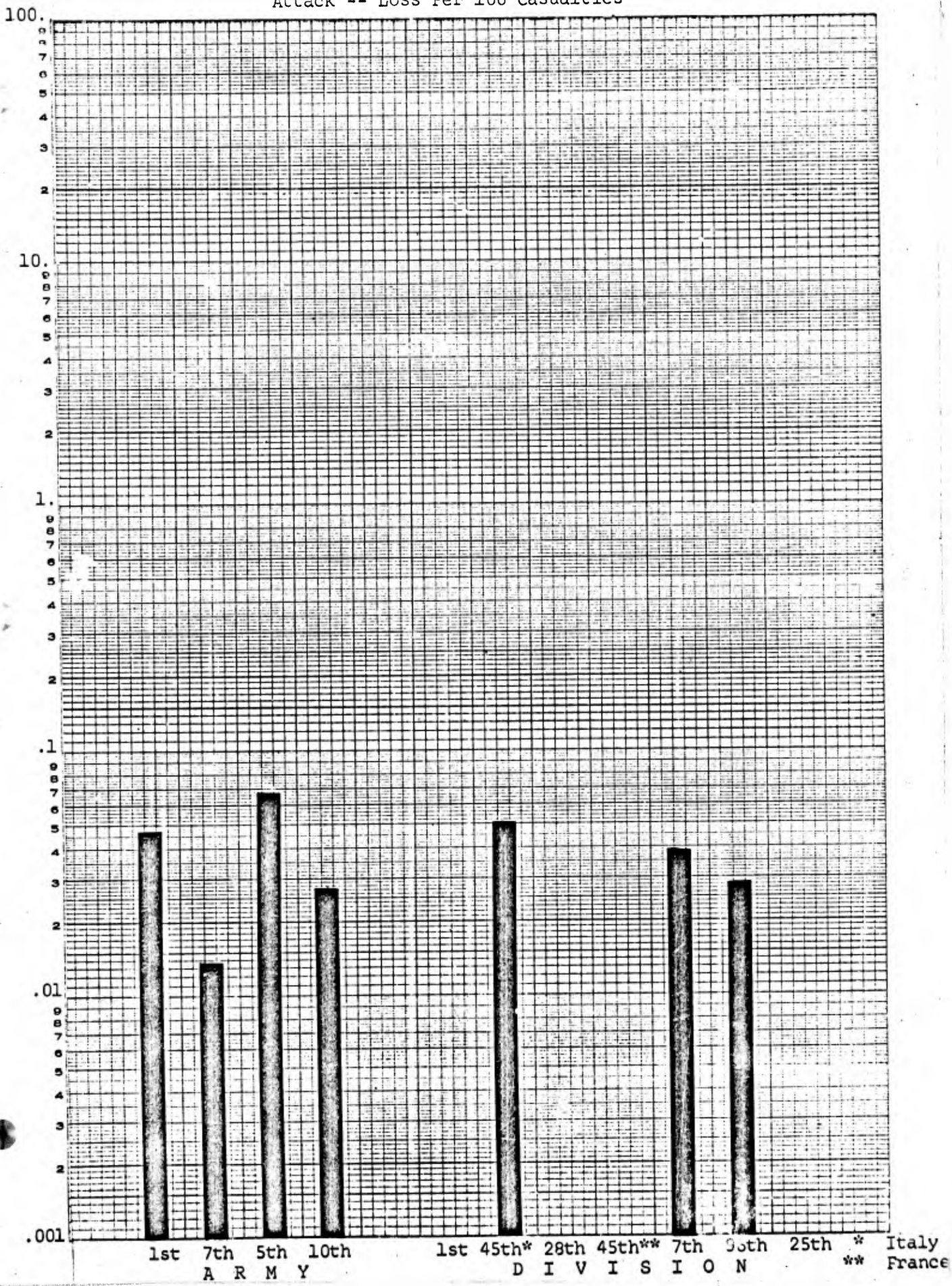
Howitzer, 105 mm

Attack -- Loss Per 1000 Man-Days



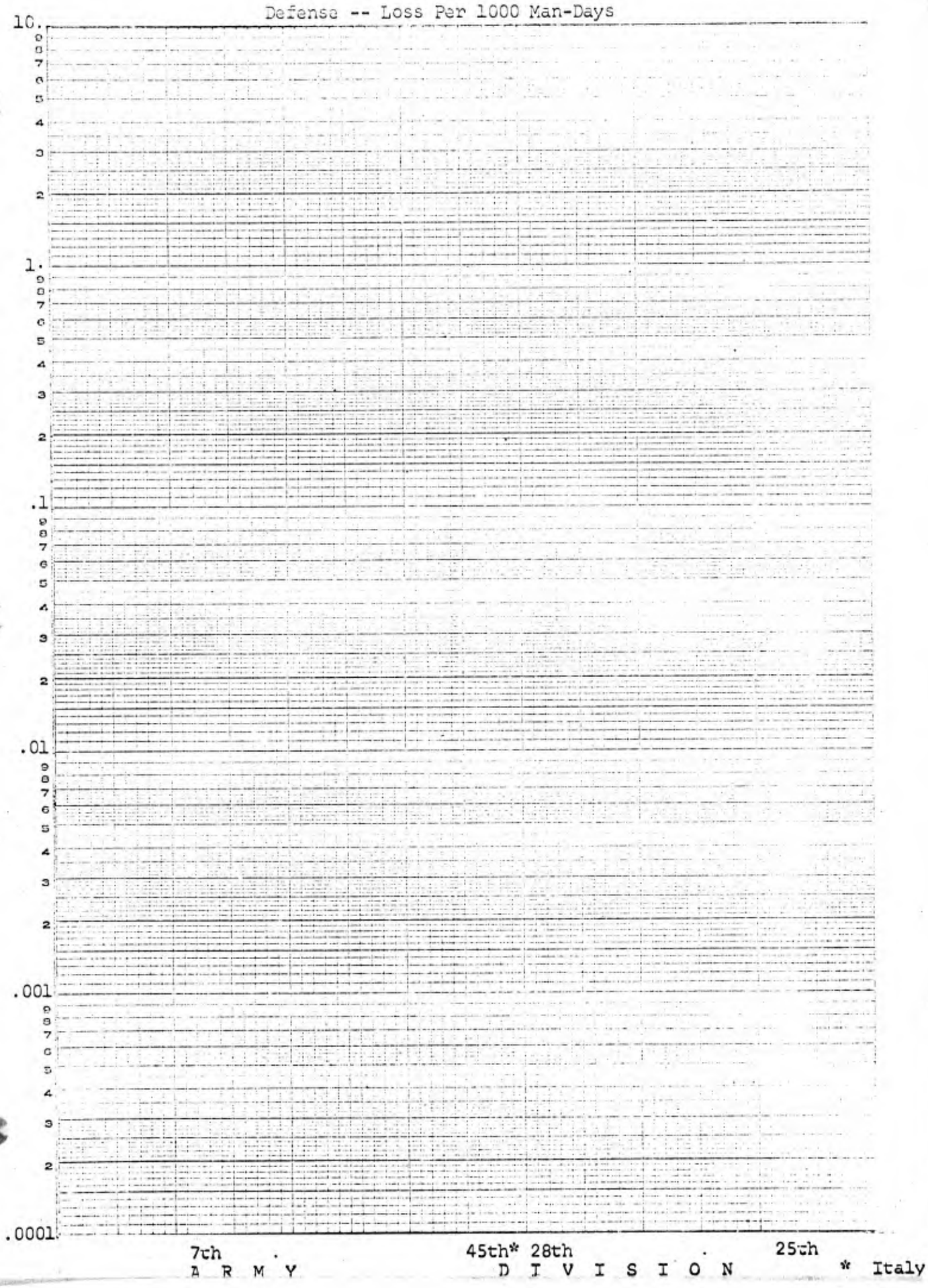
Howitzer, 105 mm

Attack -- Loss Per 100 Casualties



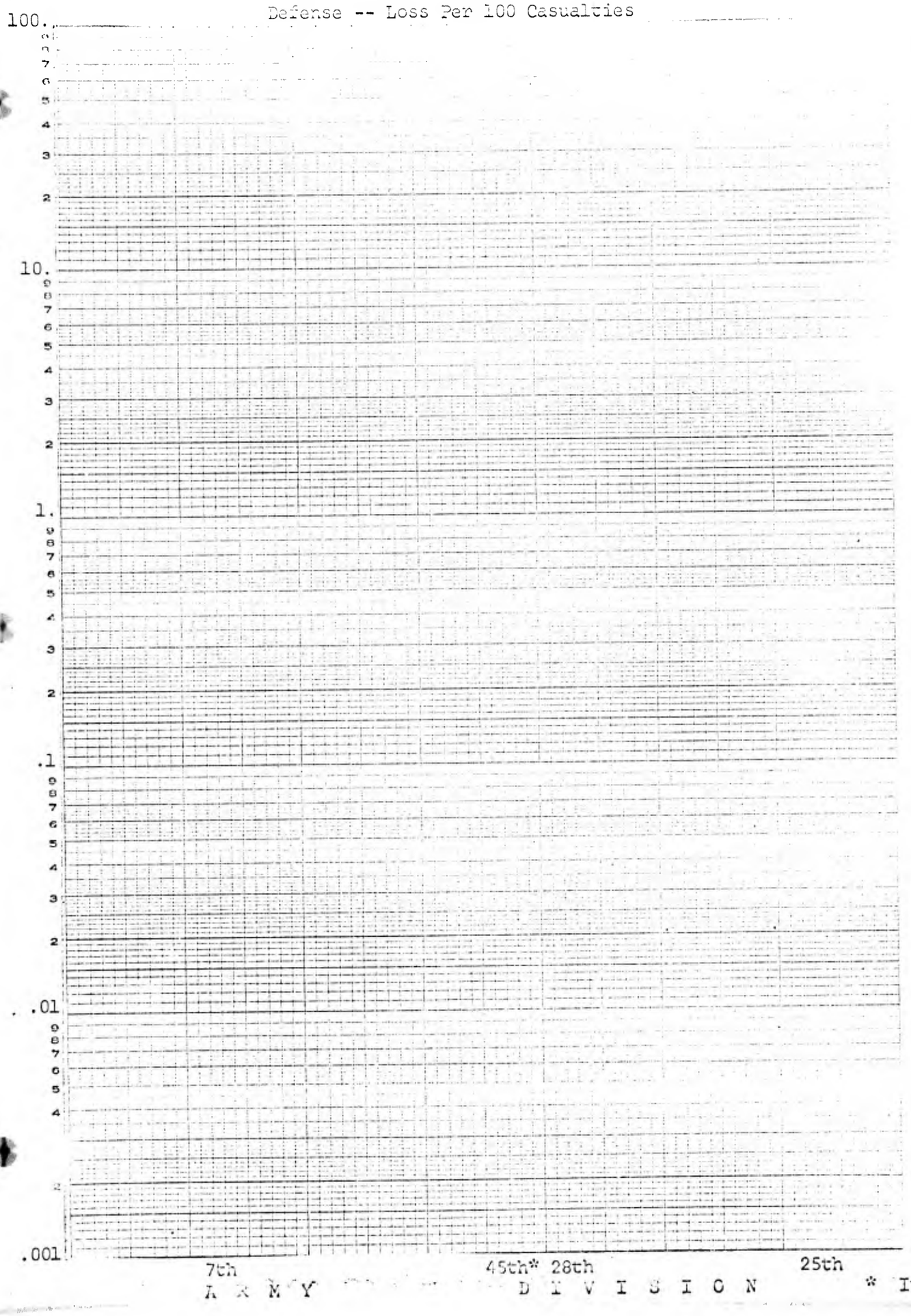
Howitzer, 105 mm

Defense -- Loss Per 1000 Man-Days



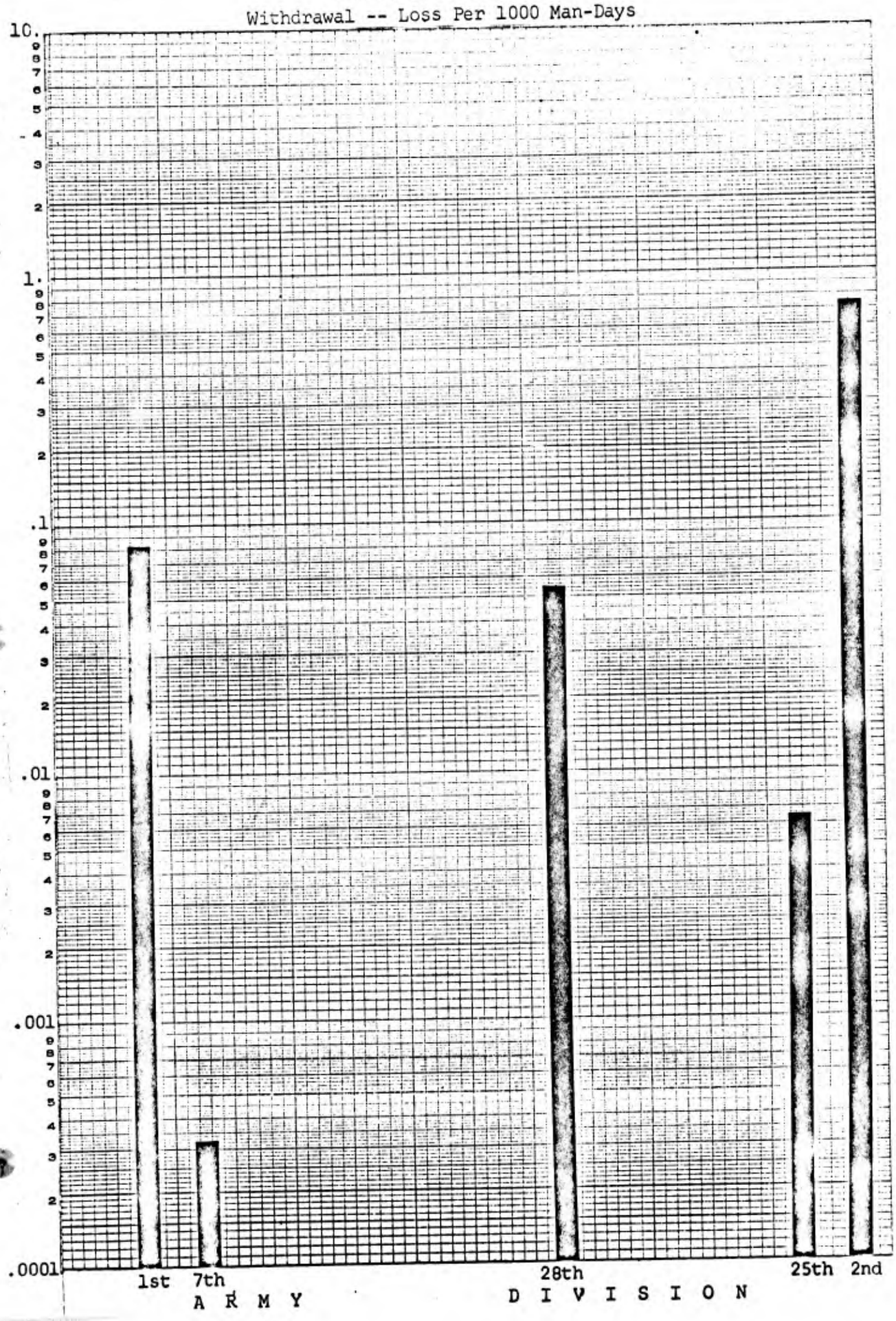
Howitzer, 105 mm

Defense -- Loss Per 100 Casualties



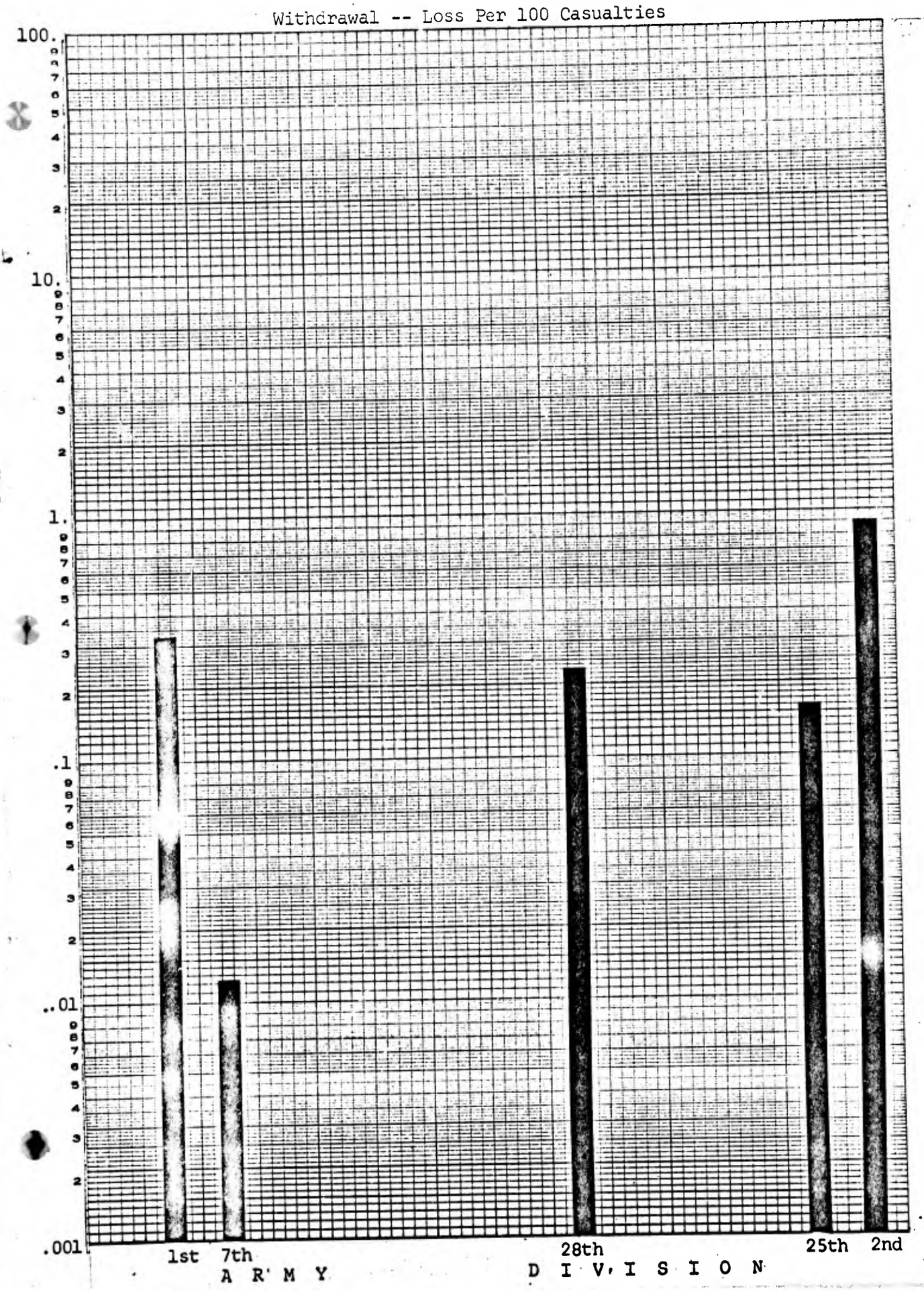
Howitzer, 105 mm

Withdrawal -- Loss Per 1000 Man-Days



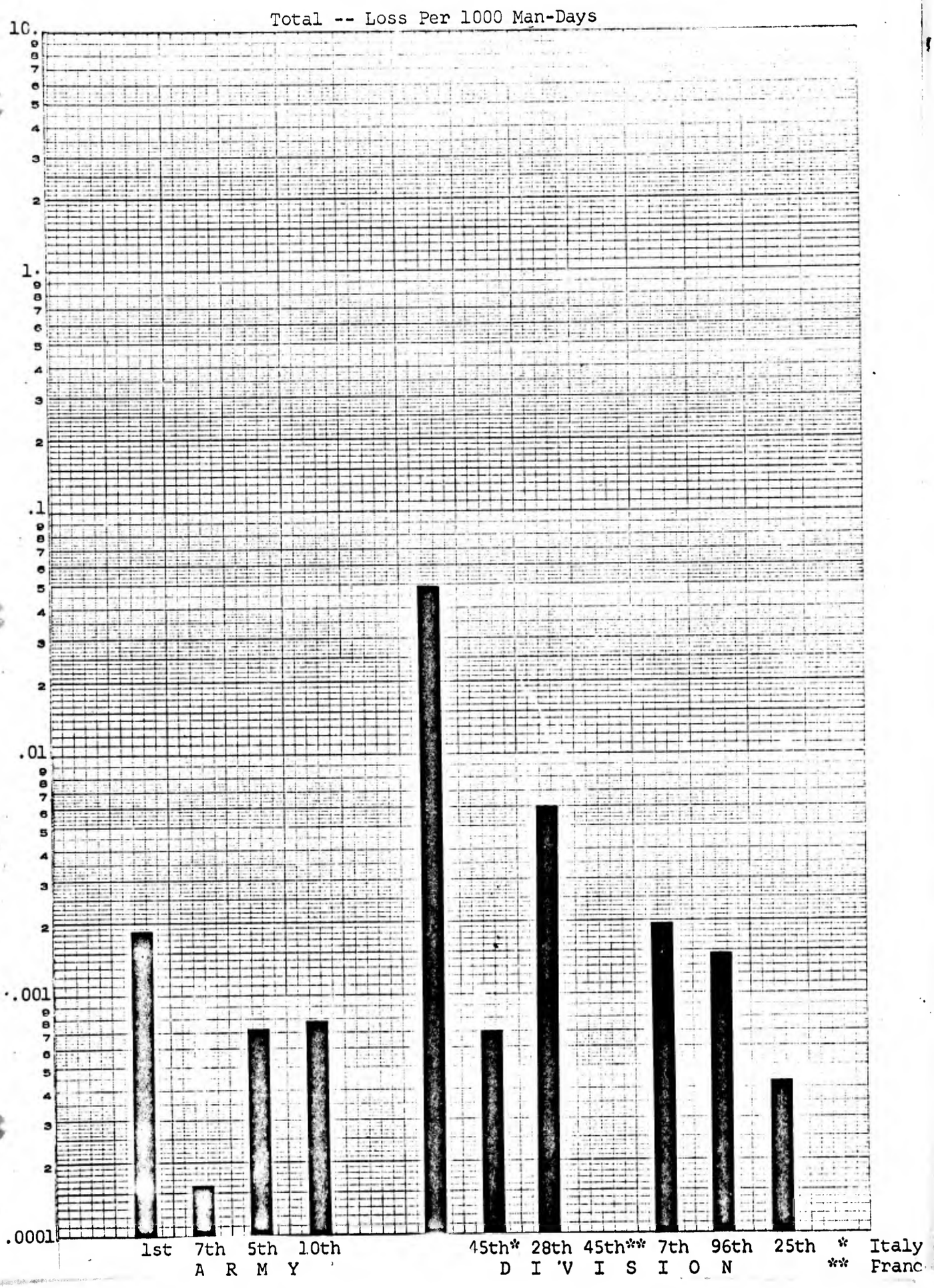
Howitzer, 105 mm

Withdrawal -- Loss Per 100 Casualties



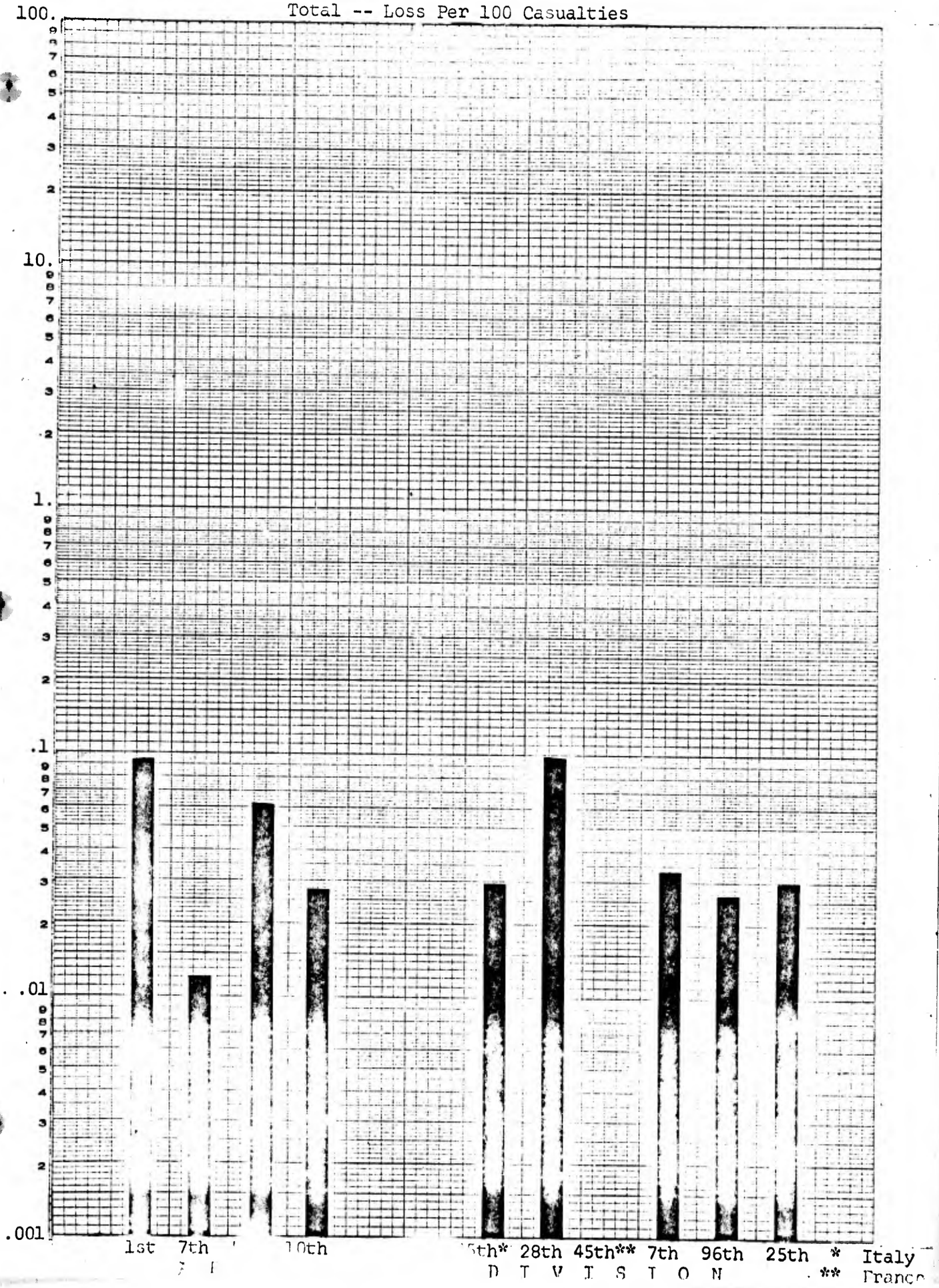
Howitzer, 105 mm

Total -- Loss Per 1000 Man-Days



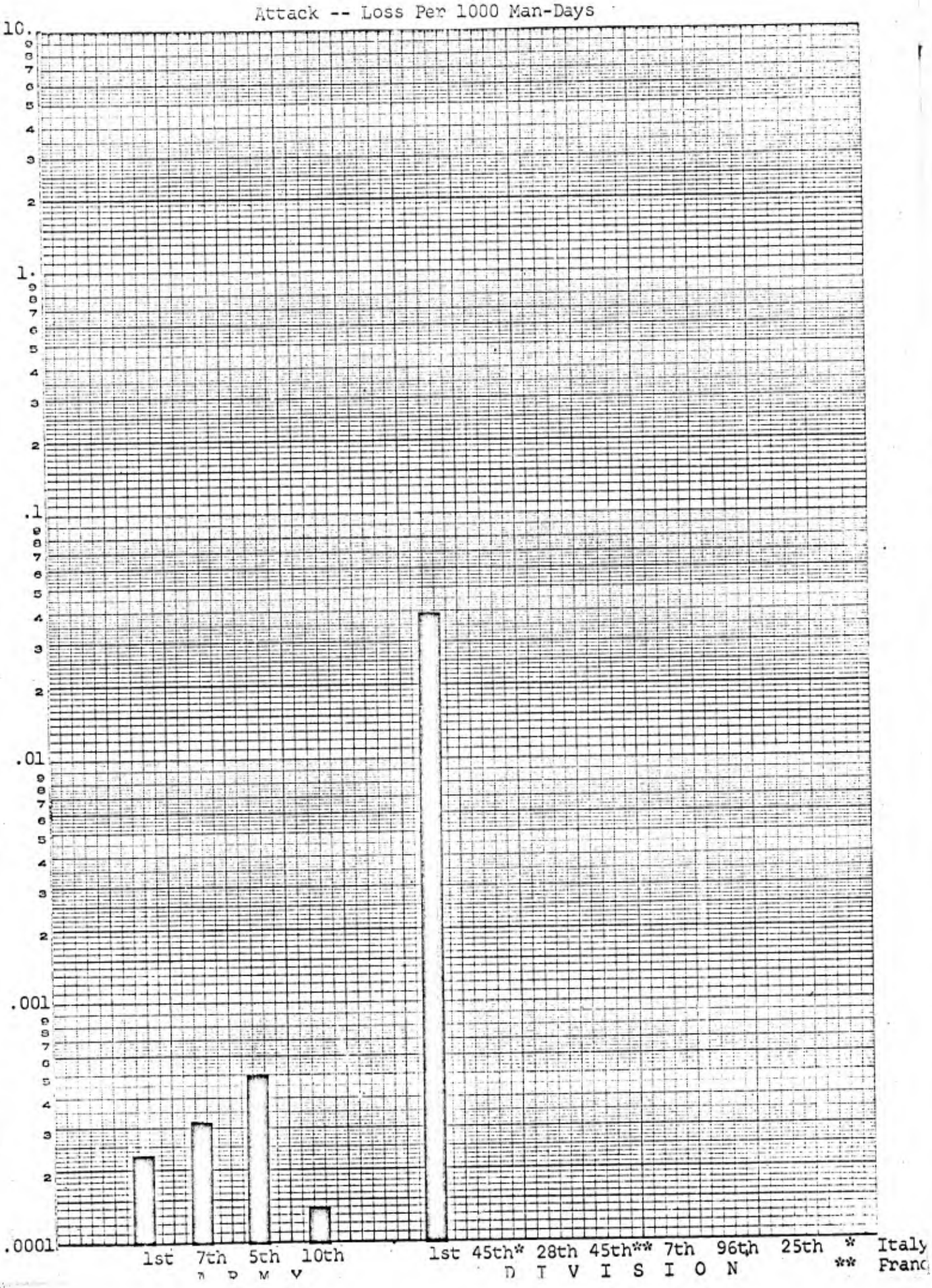
Howitzer, 105 mm

Total -- Loss Per 100 Casualties



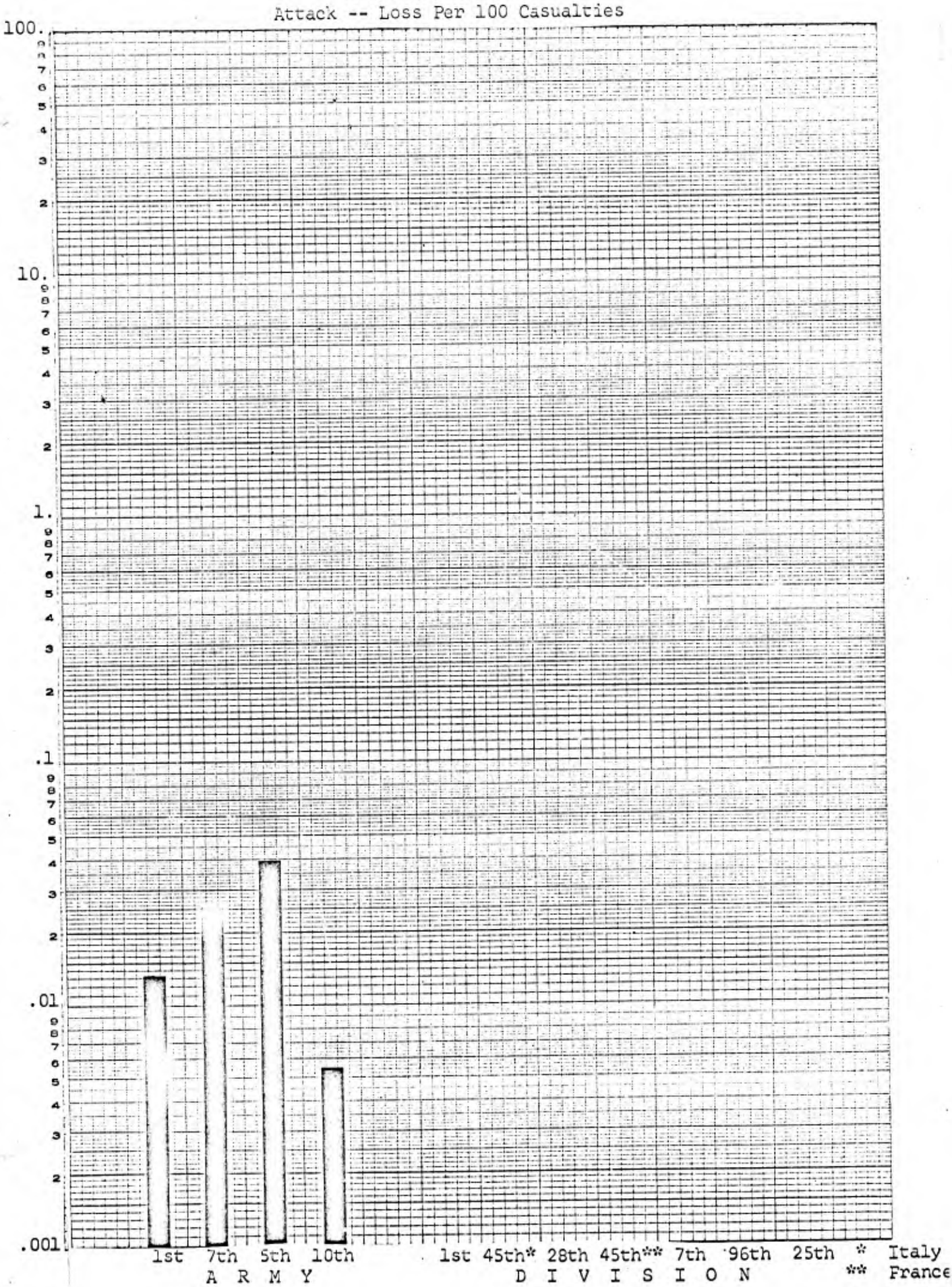
Howitzer, 155 mm

Attack -- Loss Per 1000 Man-Days



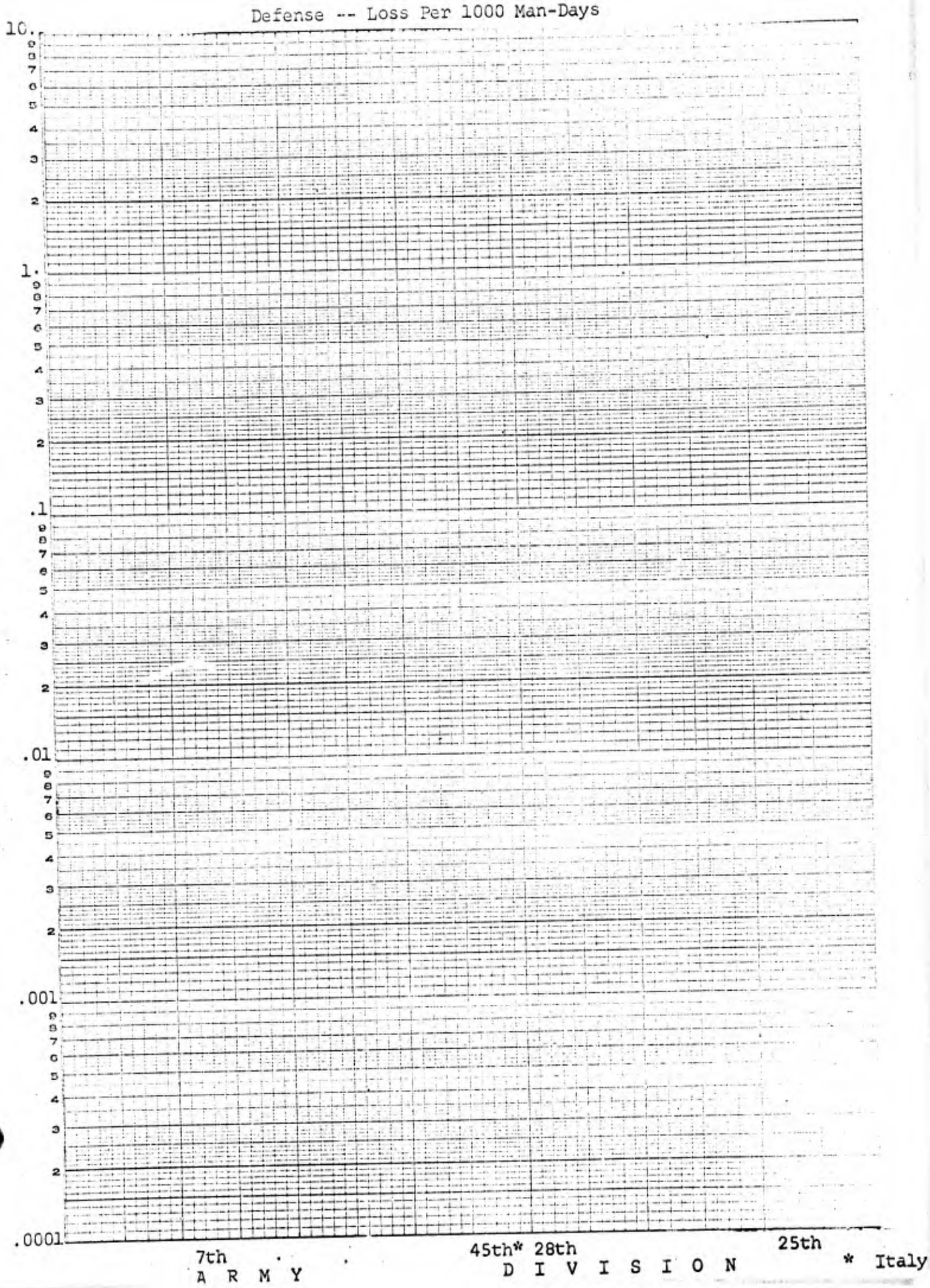
Howitzer, 155 mm

Attack -- Loss Per 100 Casualties



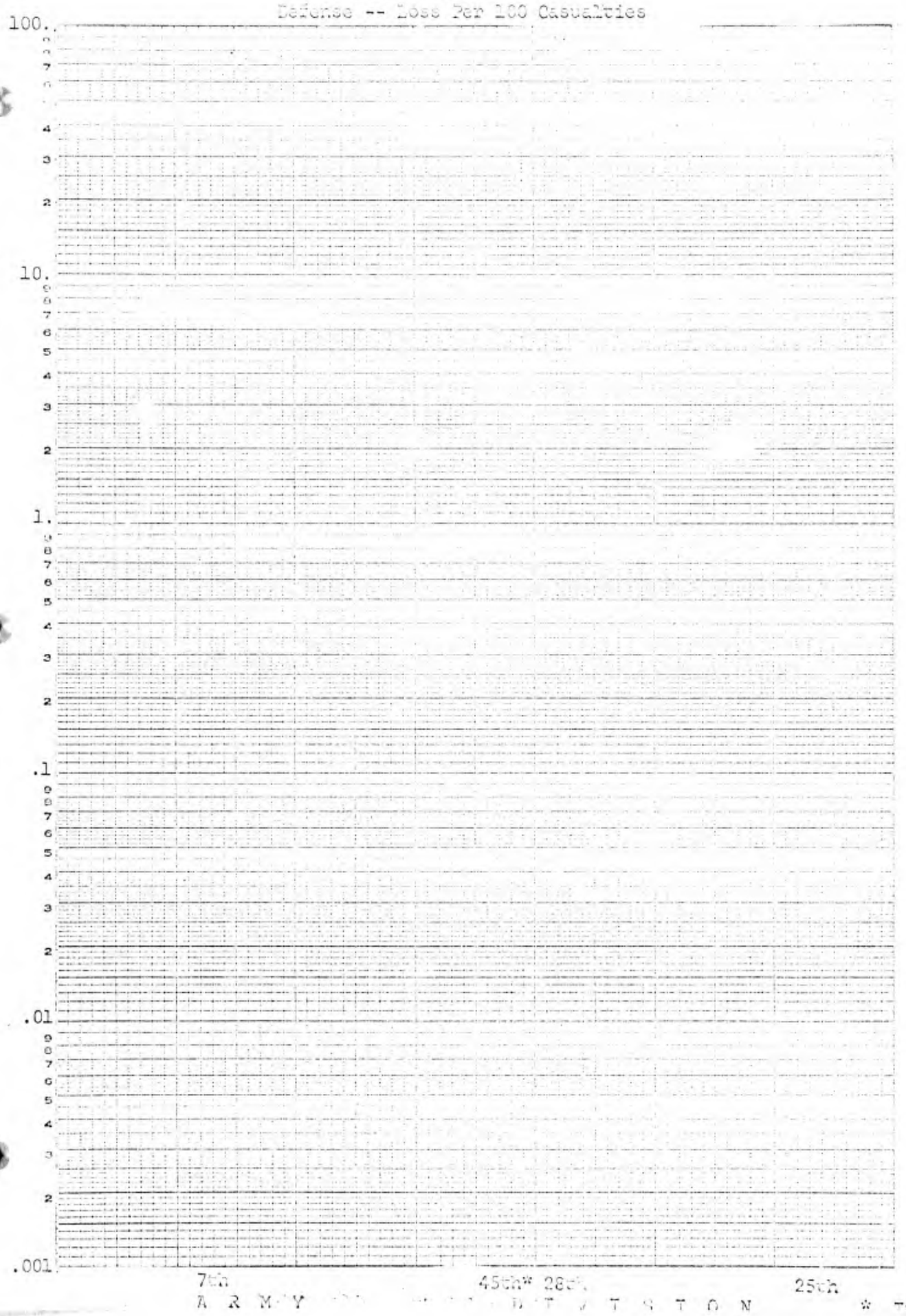
Howitzer, 155 mm

Defense -- Loss Per 1000 Man-Days



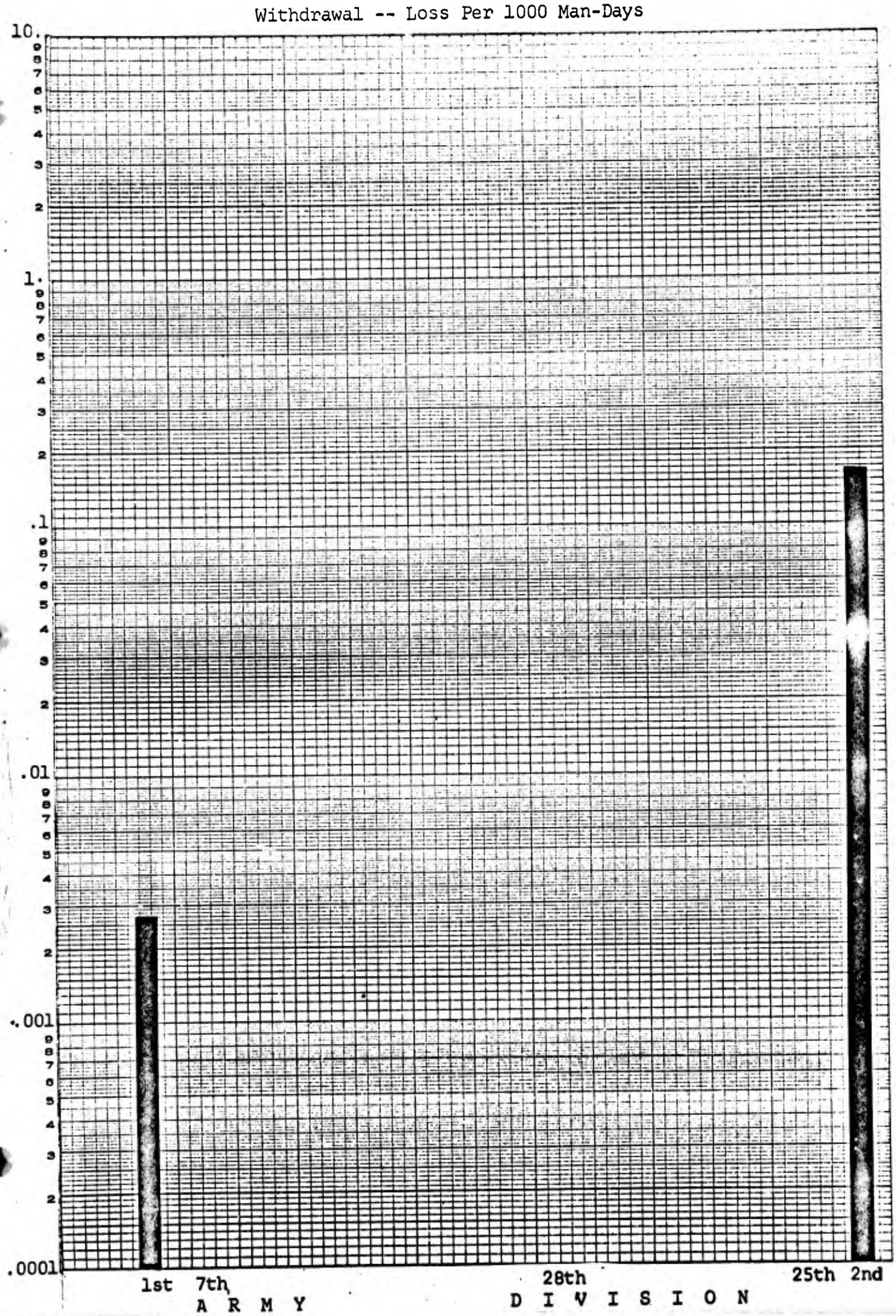
Howitzer, 155 mm

Defense -- Loss Per 100 Casualties



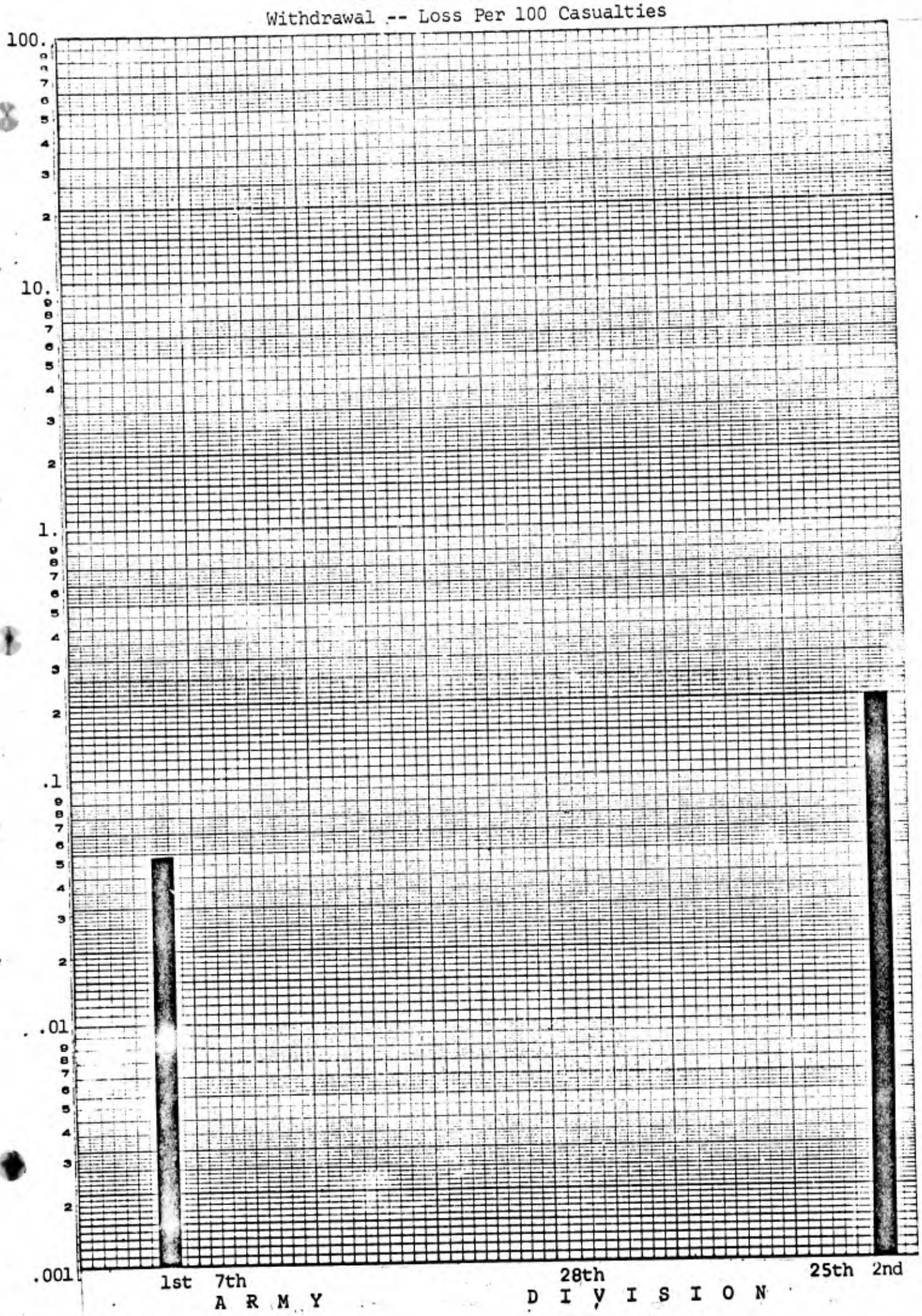
Howitzer, 155 mm

Withdrawal -- Loss Per 1000 Man-Days



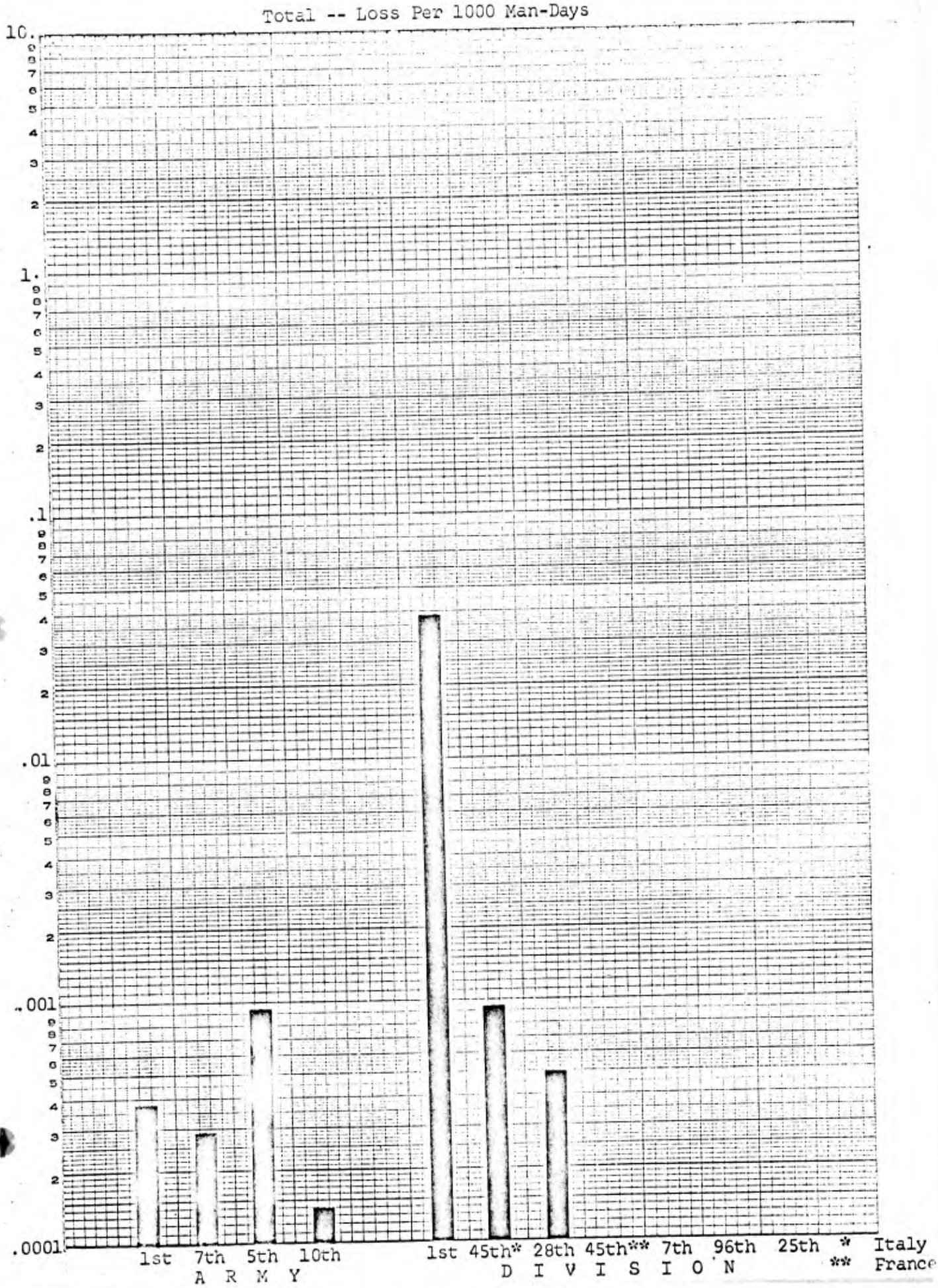
Howitzer 155 mm

Withdrawal -- Loss Per 100 Casualties



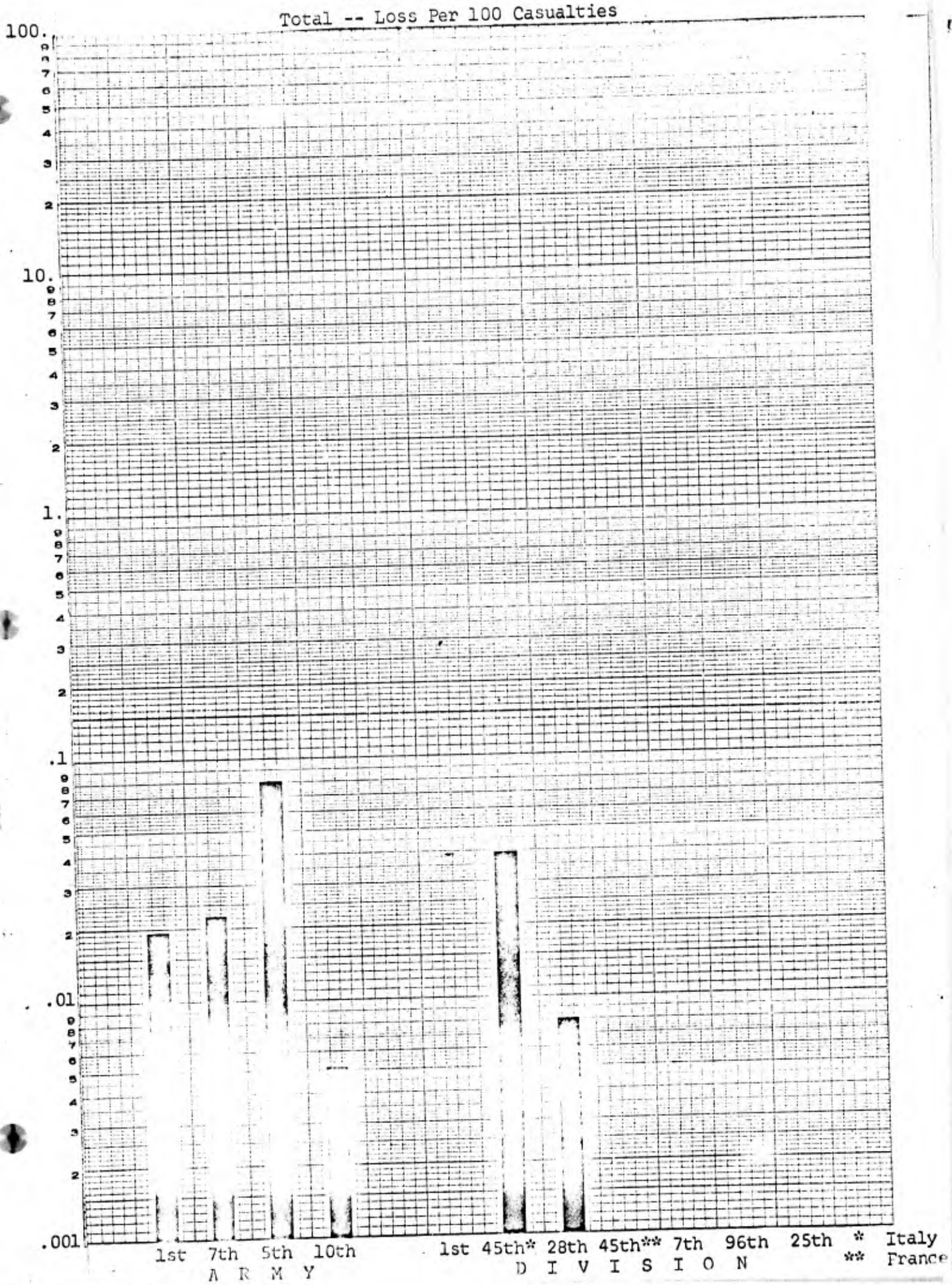
Howitzer, 155 mm

Total -- Loss Per 1000 Man-Days



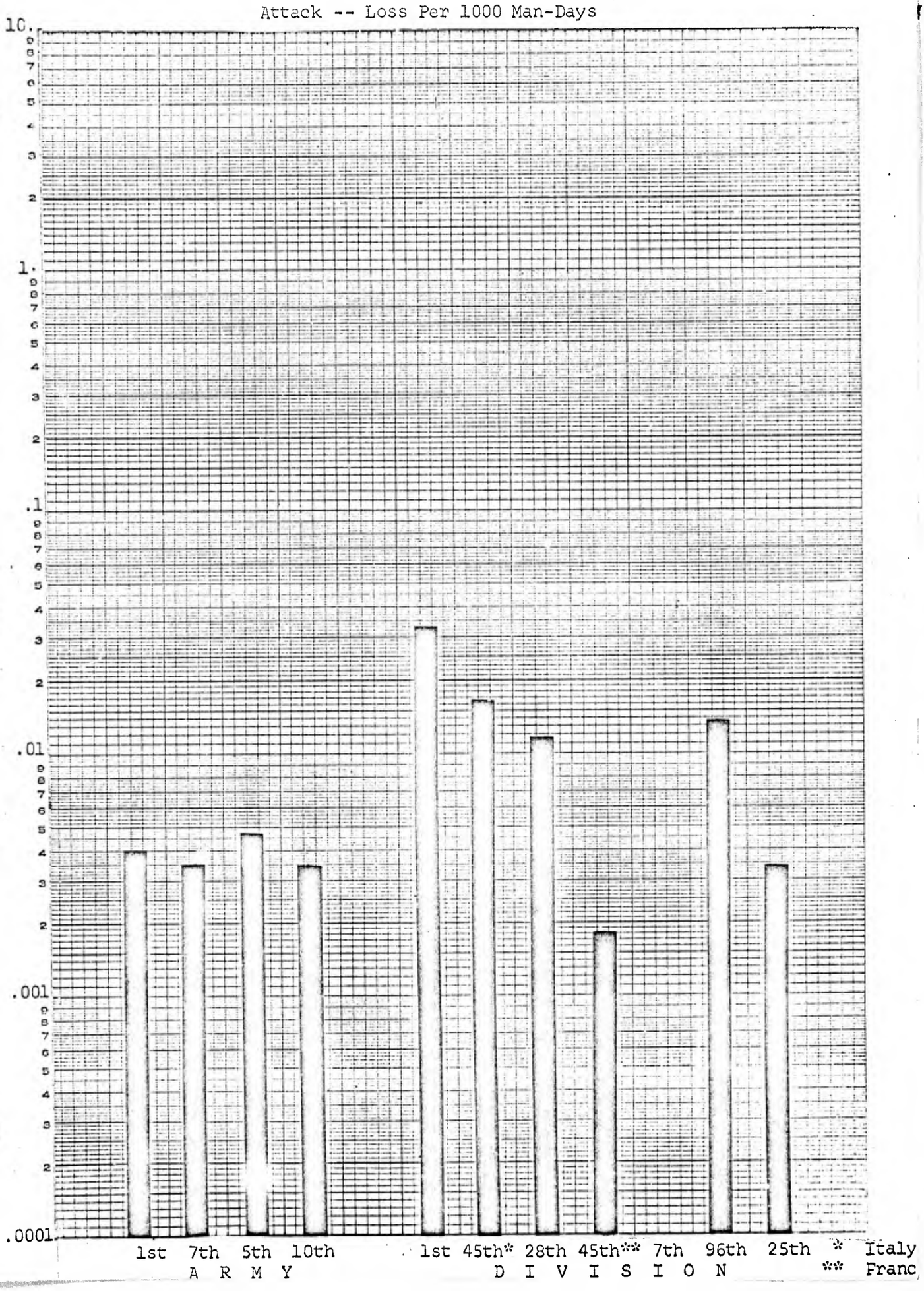
Howitzer, 155 mm

Total -- Loss Per 100 Casualties



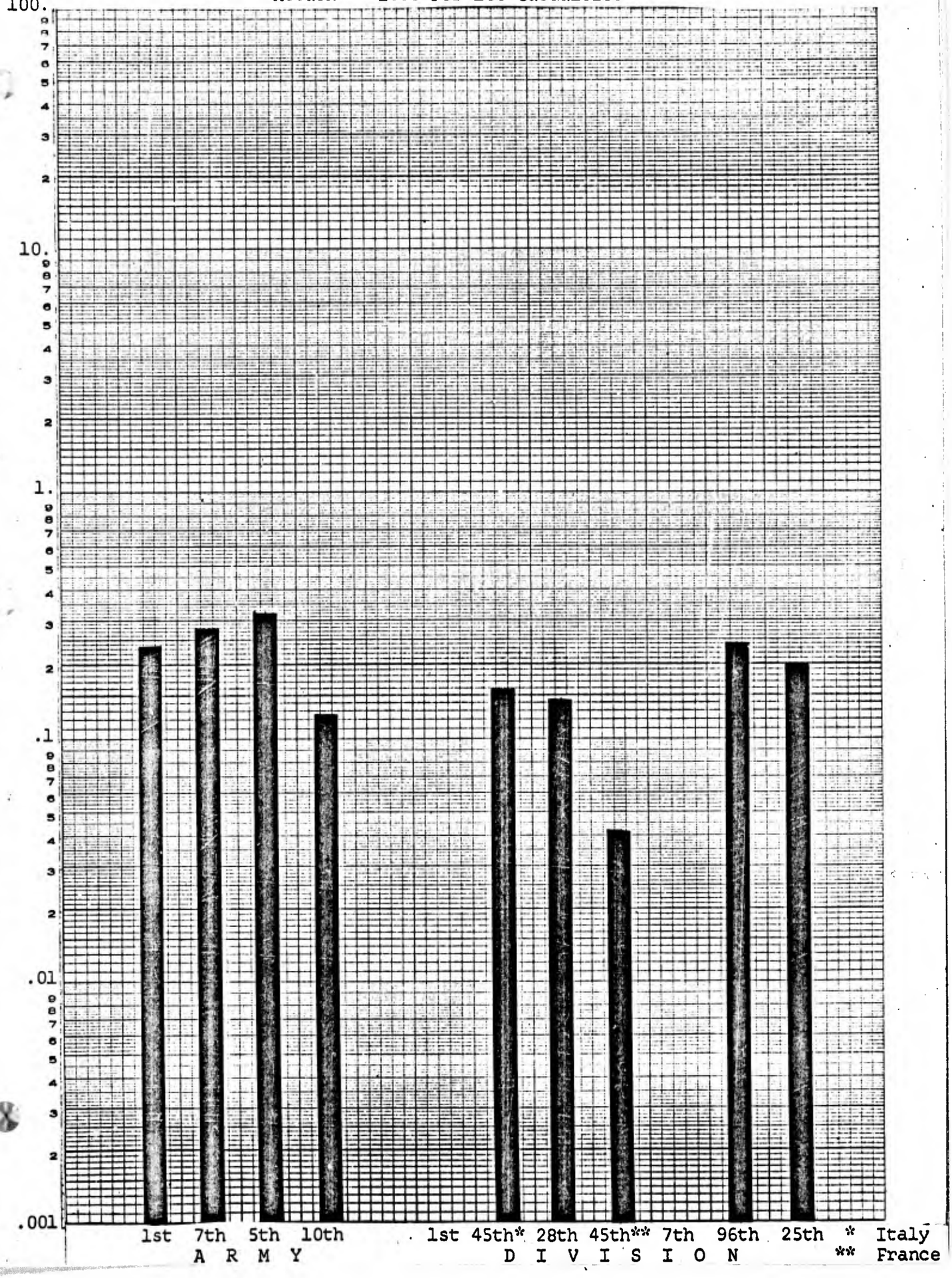
Mortar, 81 mm

Attack -- Loss Per 1000 Man-Days



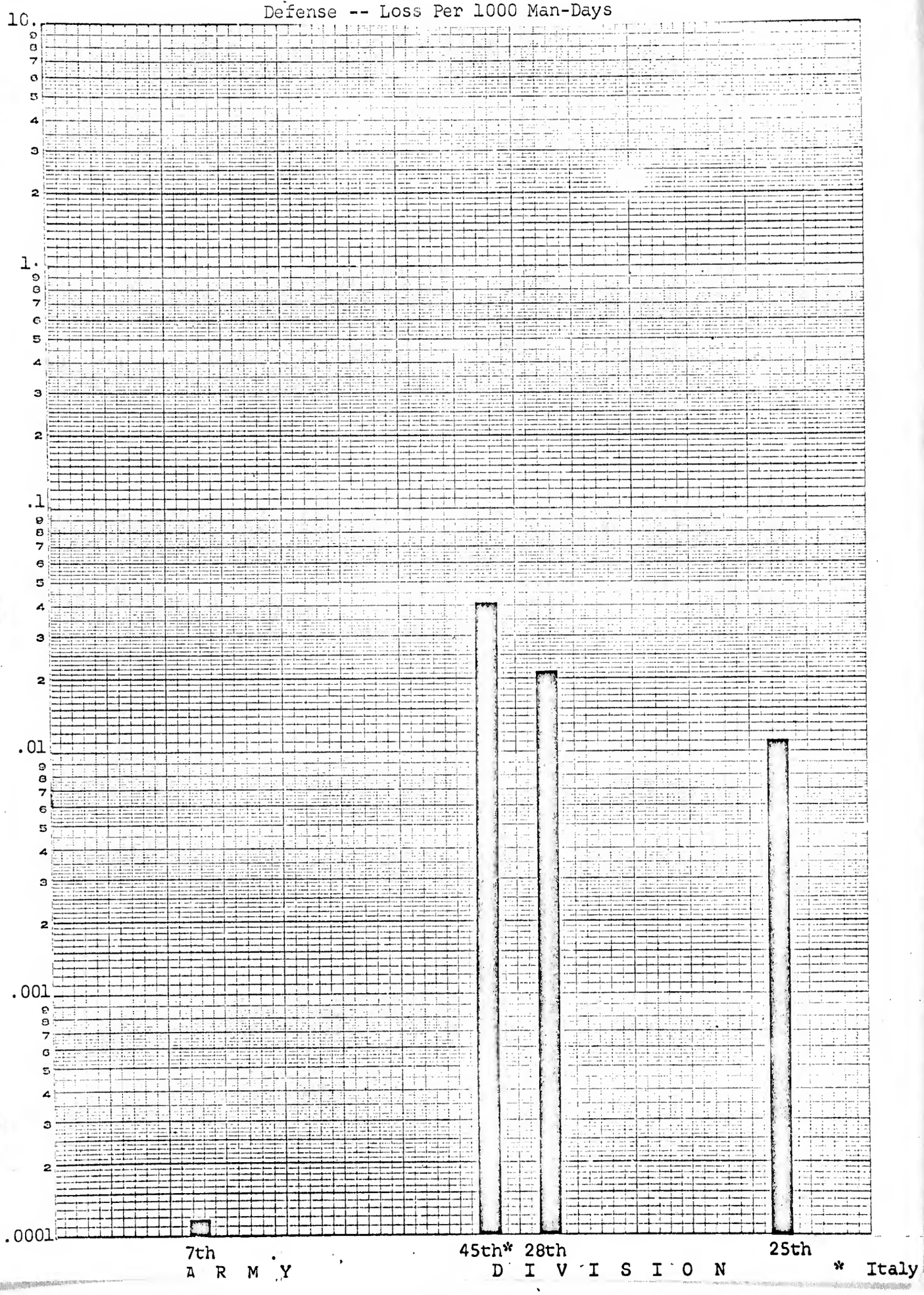
Mortar, 81 mm

Attack -- Loss Per 100 Casualties



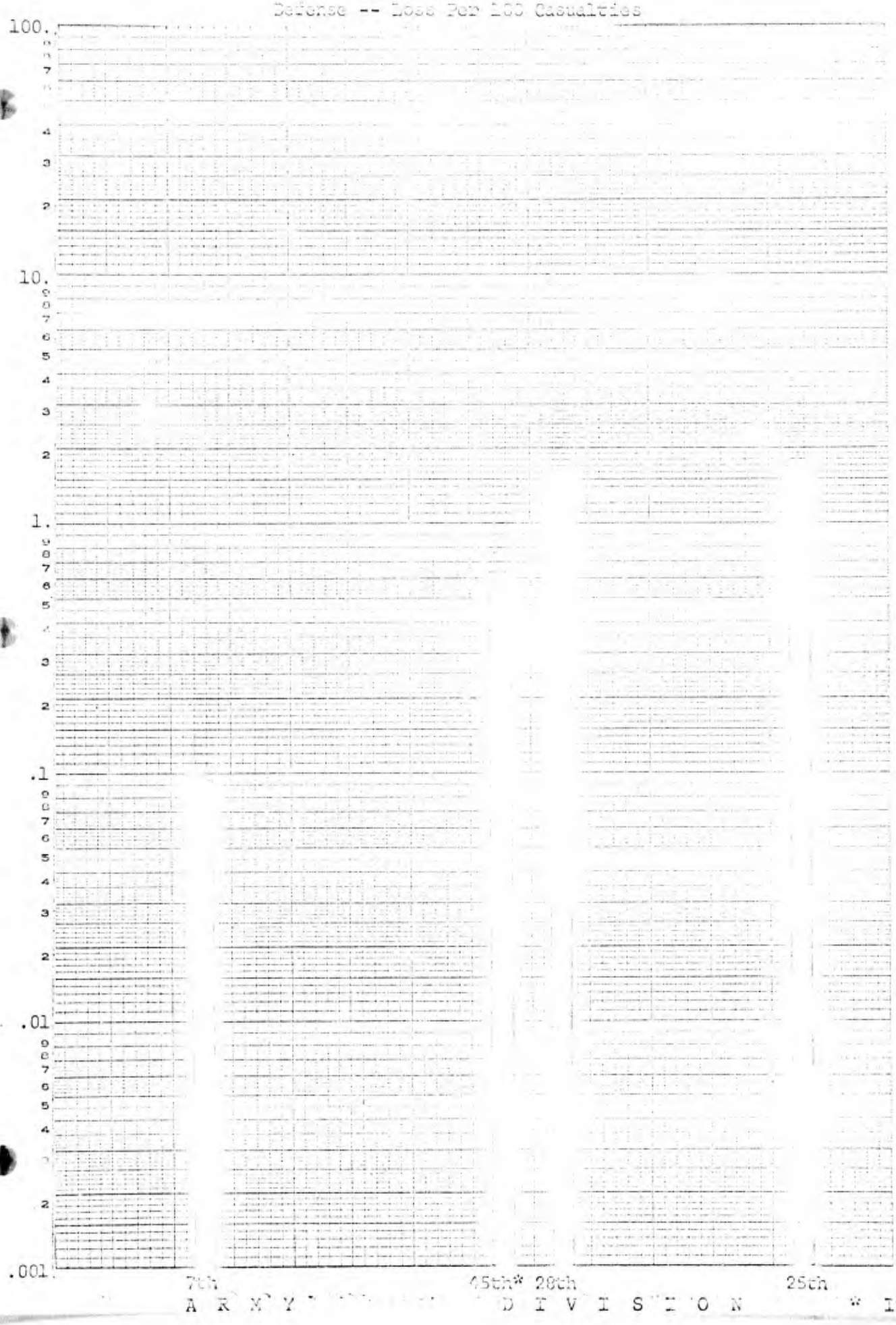
Mortar, 81 mm

Defense -- Loss Per 1000 Man-Days



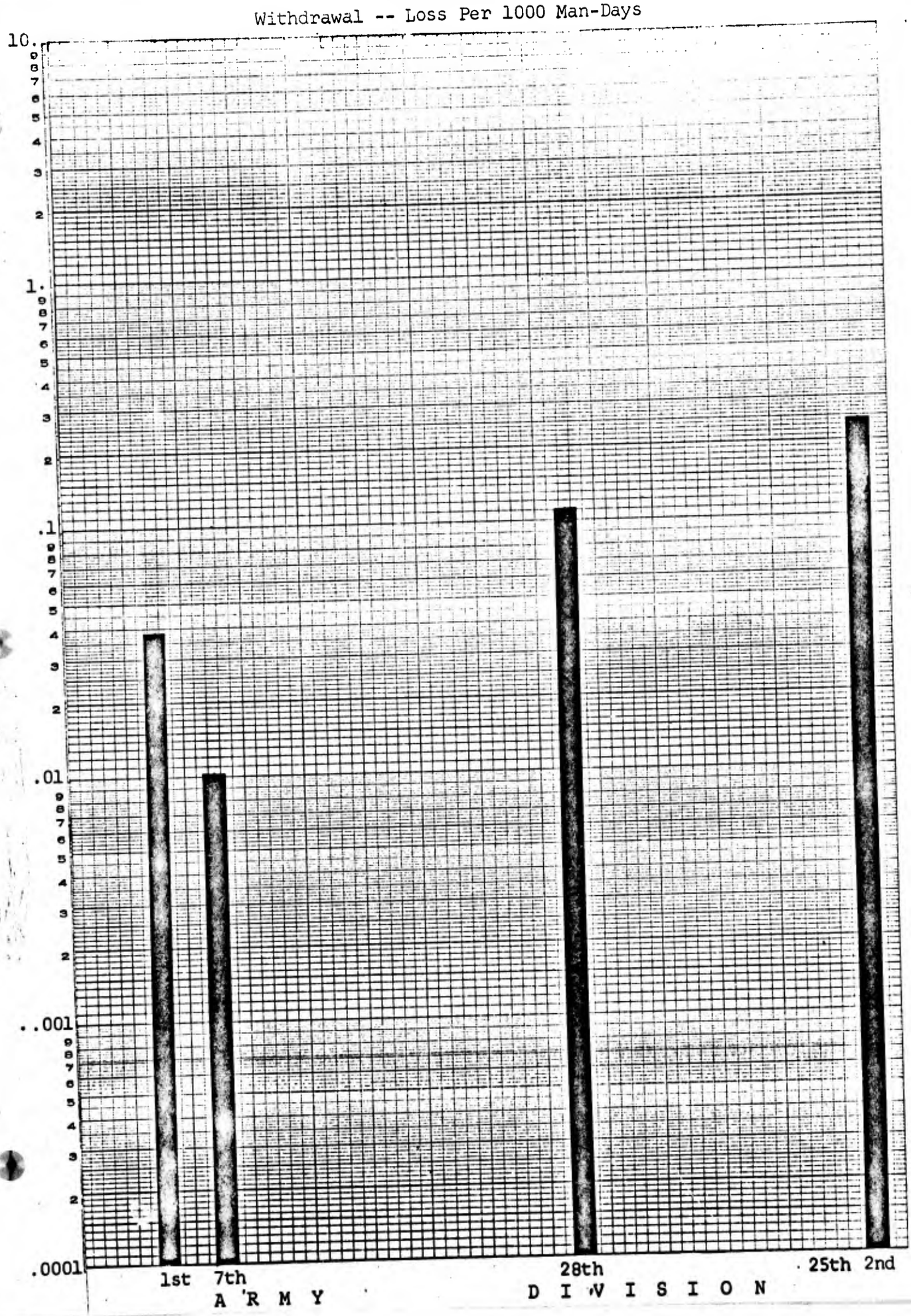
Mortar, 81 mm

Defense -- Loss Per 100 Casualties



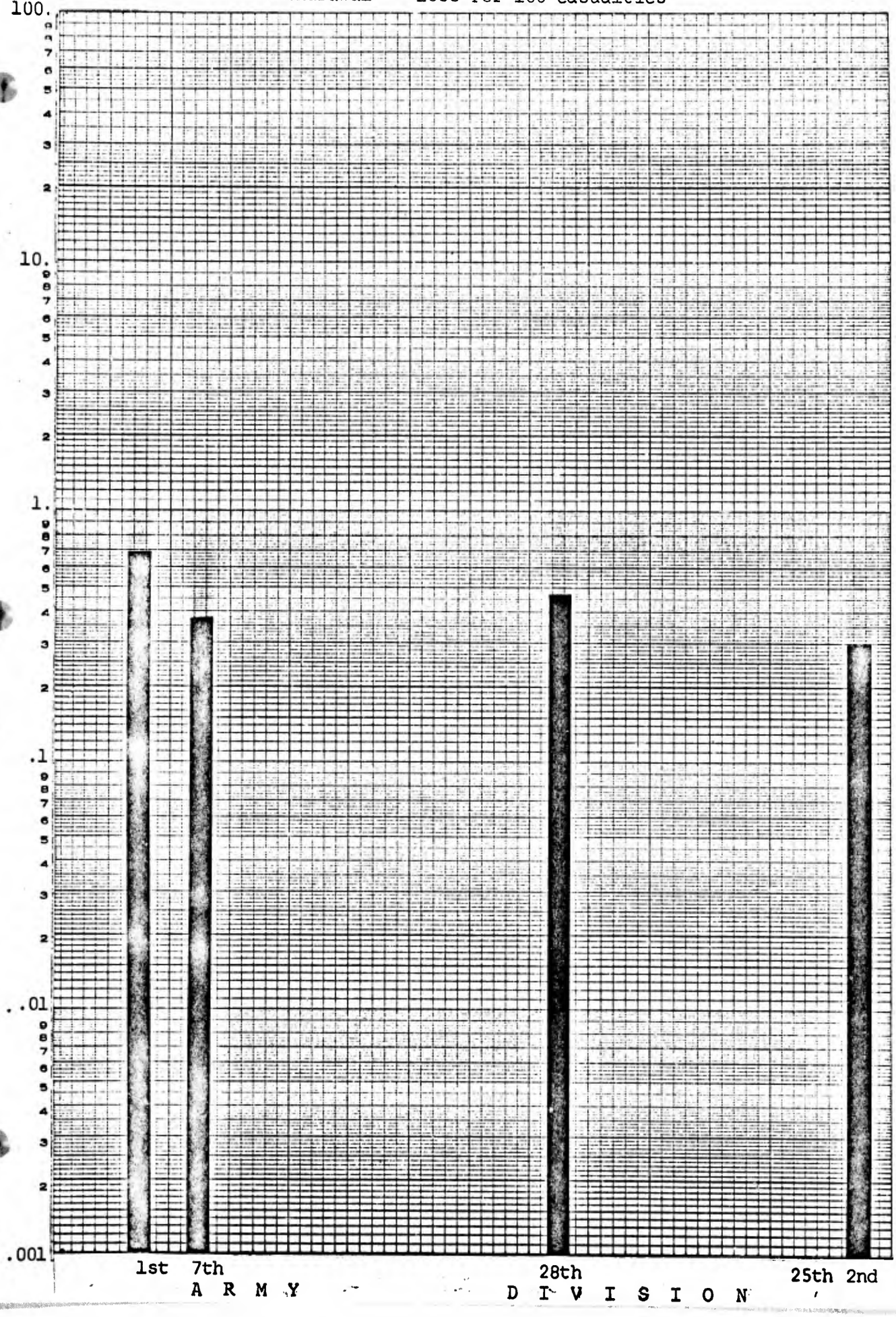
Mortar, 81 mm

Withdrawal -- Loss Per 1000 Man-Days



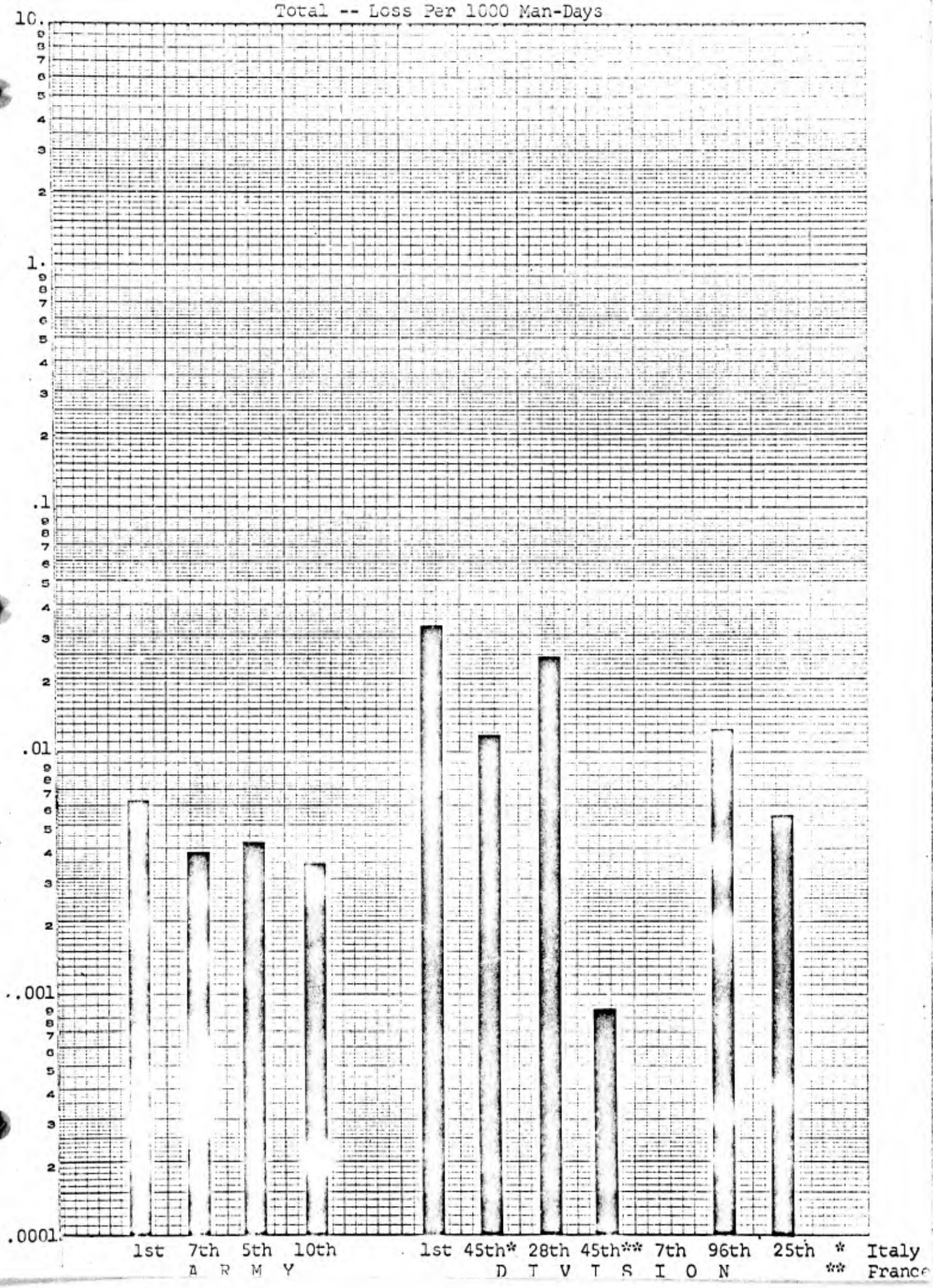
Mortar, 81 mm

Withdrawal -- Loss Per 100 Casualties



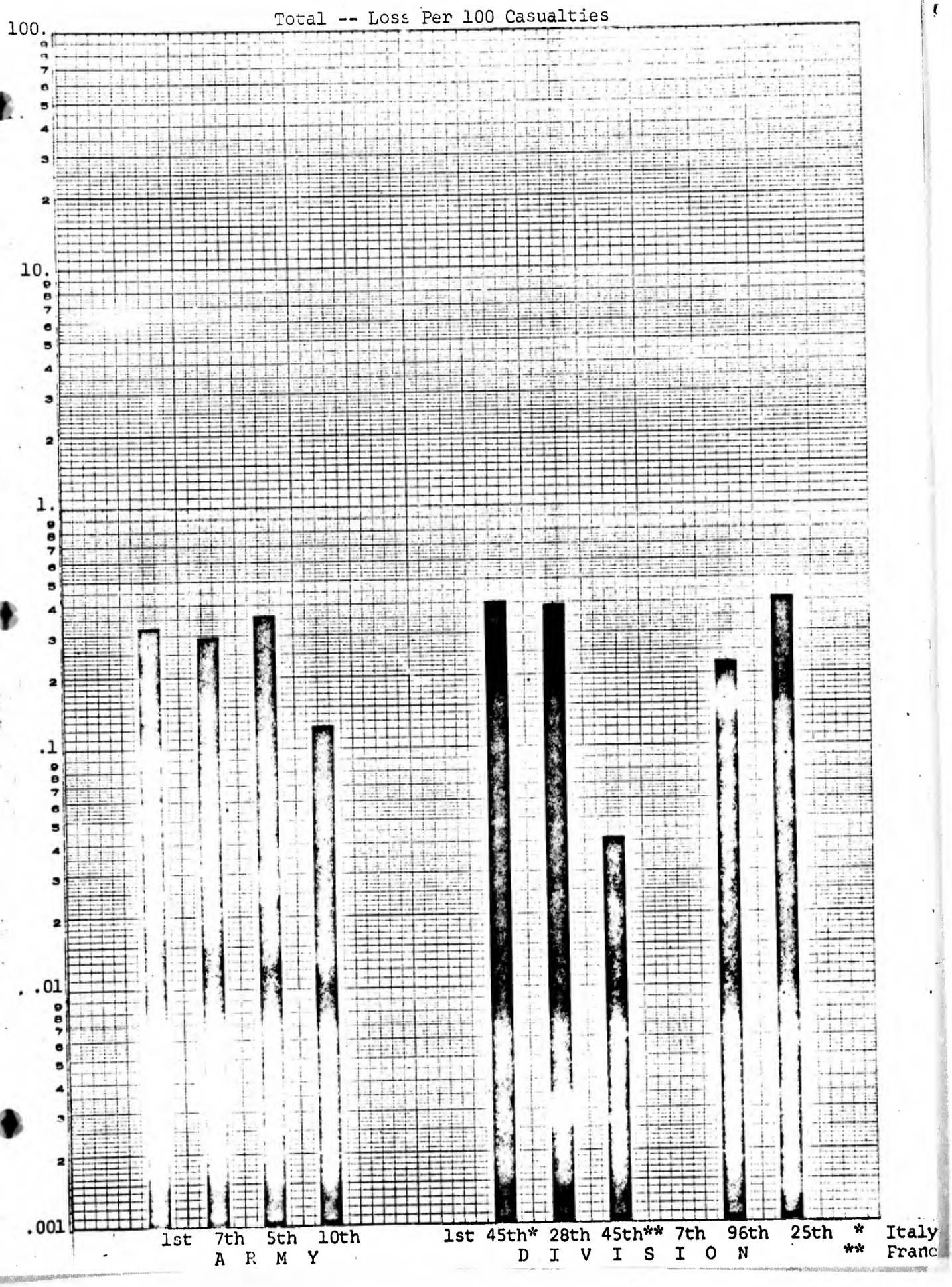
Mortar, 81 mm

Total -- Loss Per 1000 Man-Days



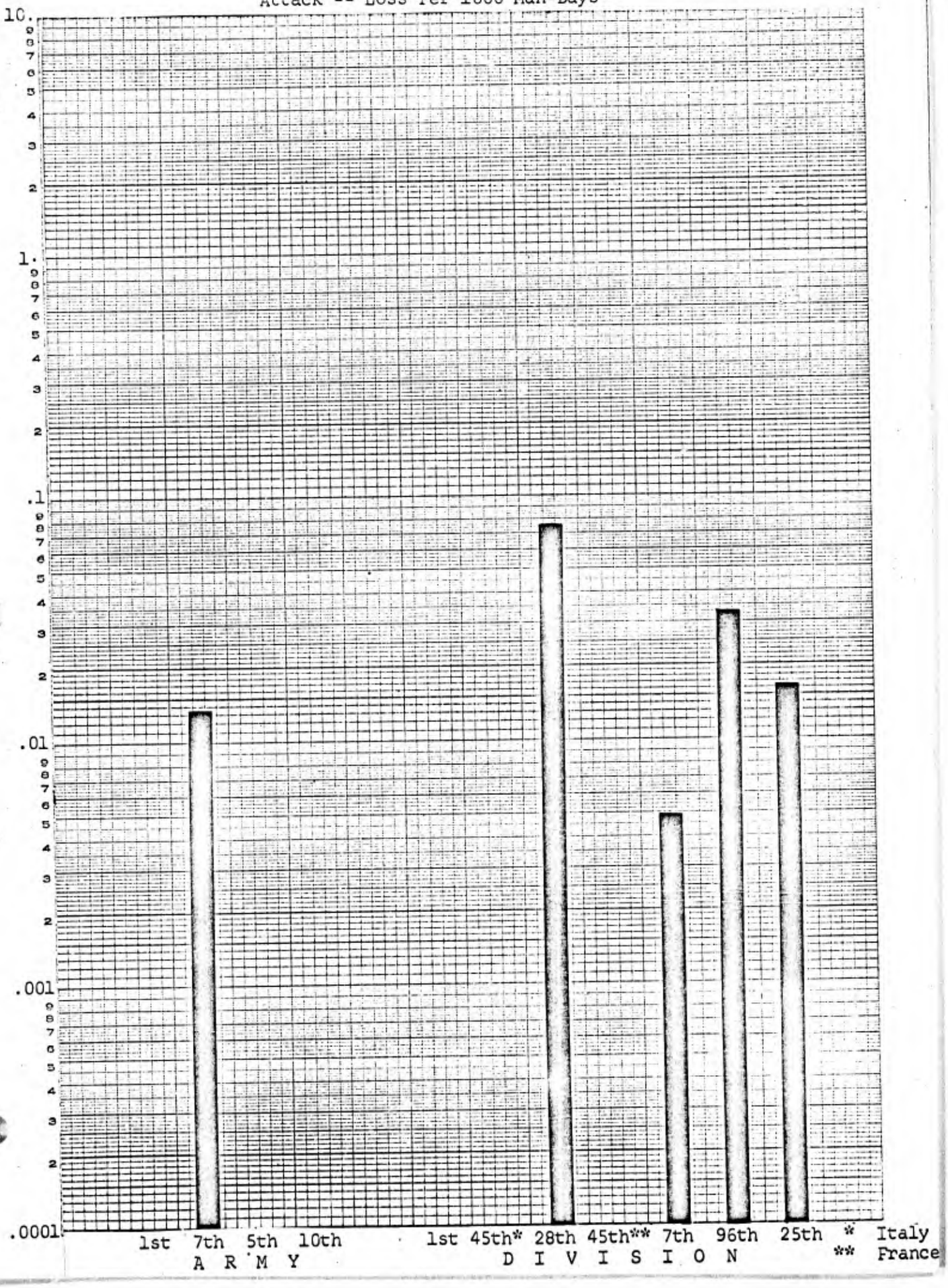
Mortar, 81 mm

Total -- Loss Per 100 Casualties



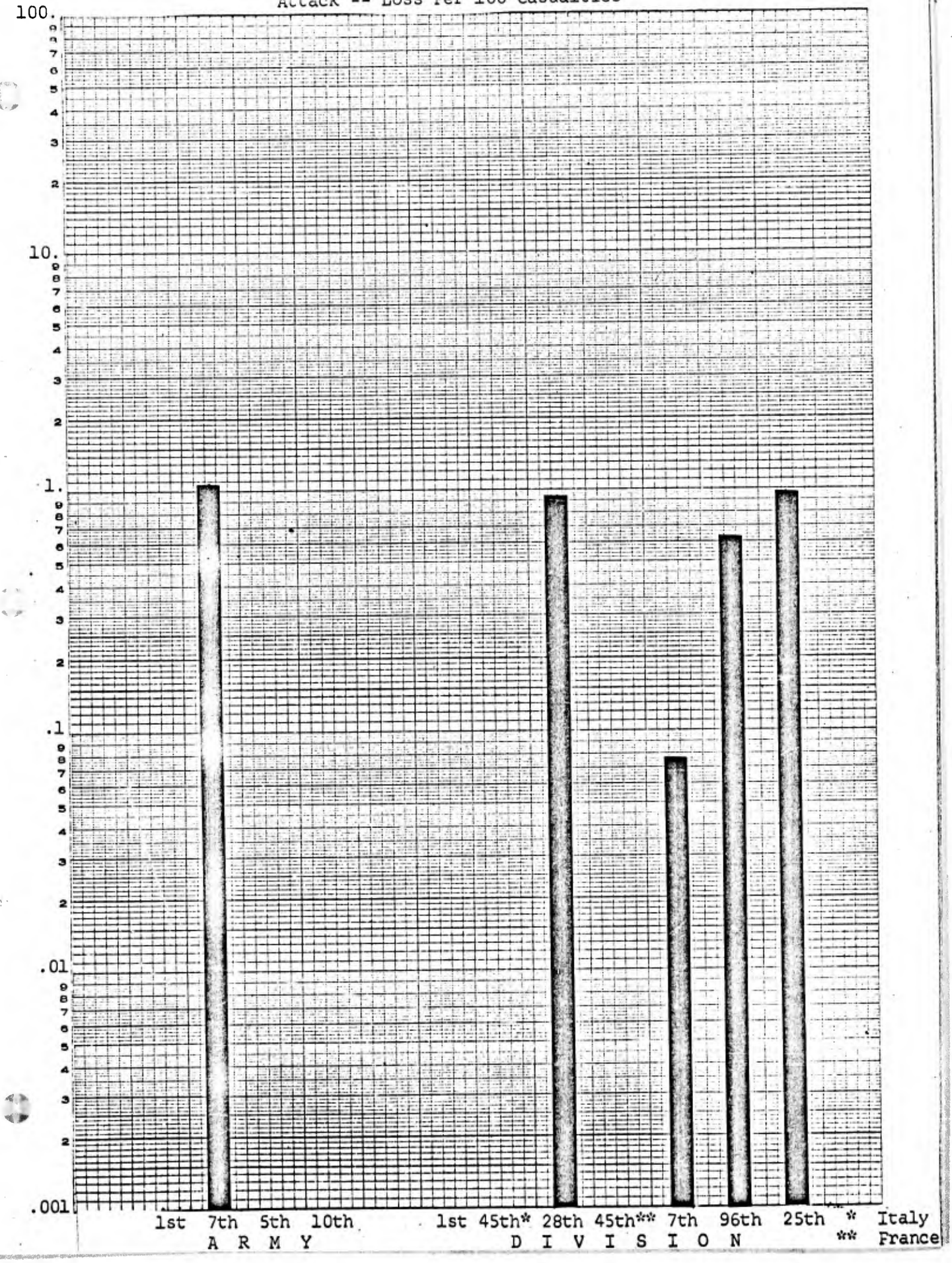
Radio Set, SCR-300

Attack -- Loss Per 1000 Man-Days



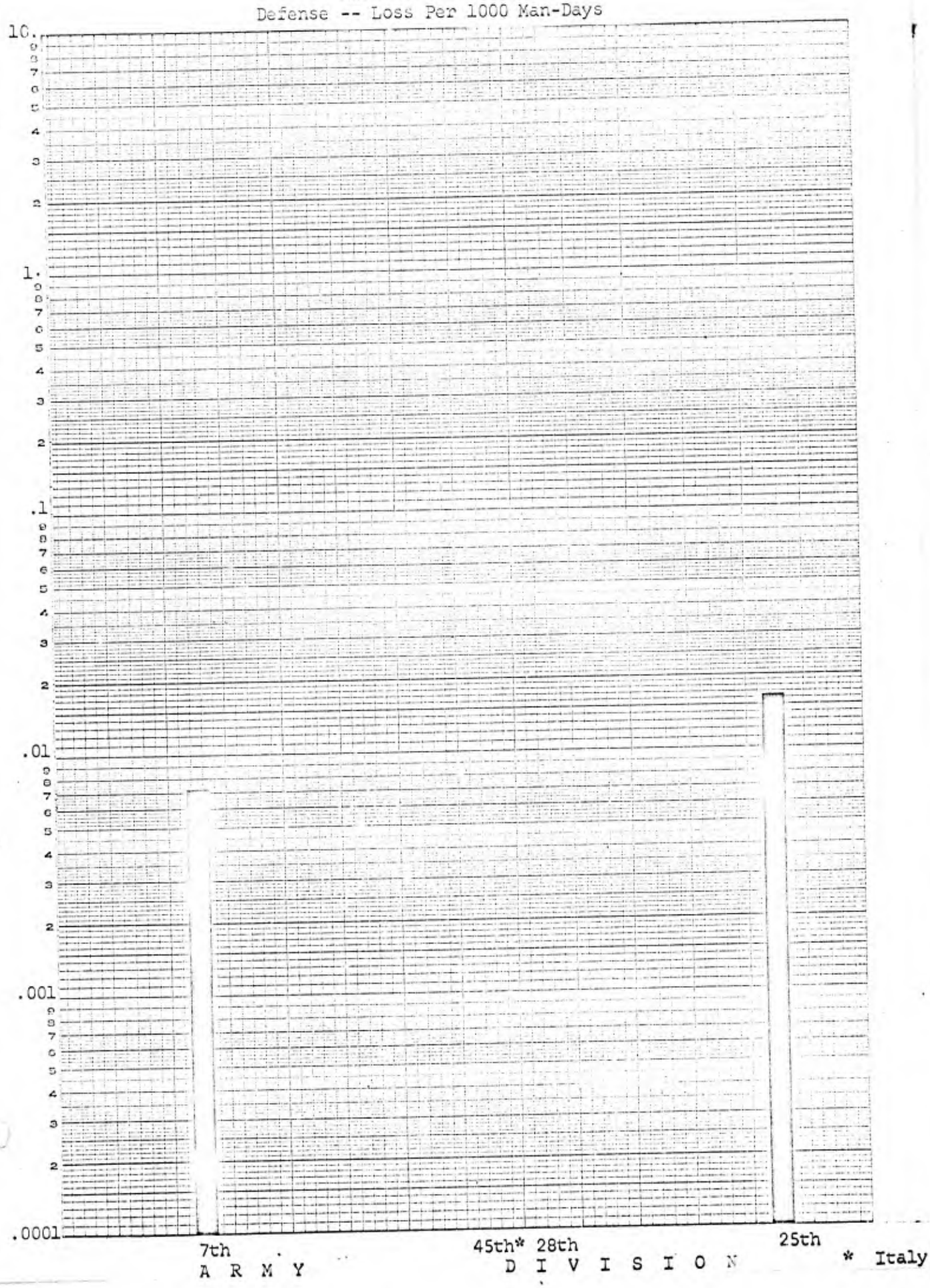
Radio Set, SCR-300

Attack -- Loss Per 100 Casualties



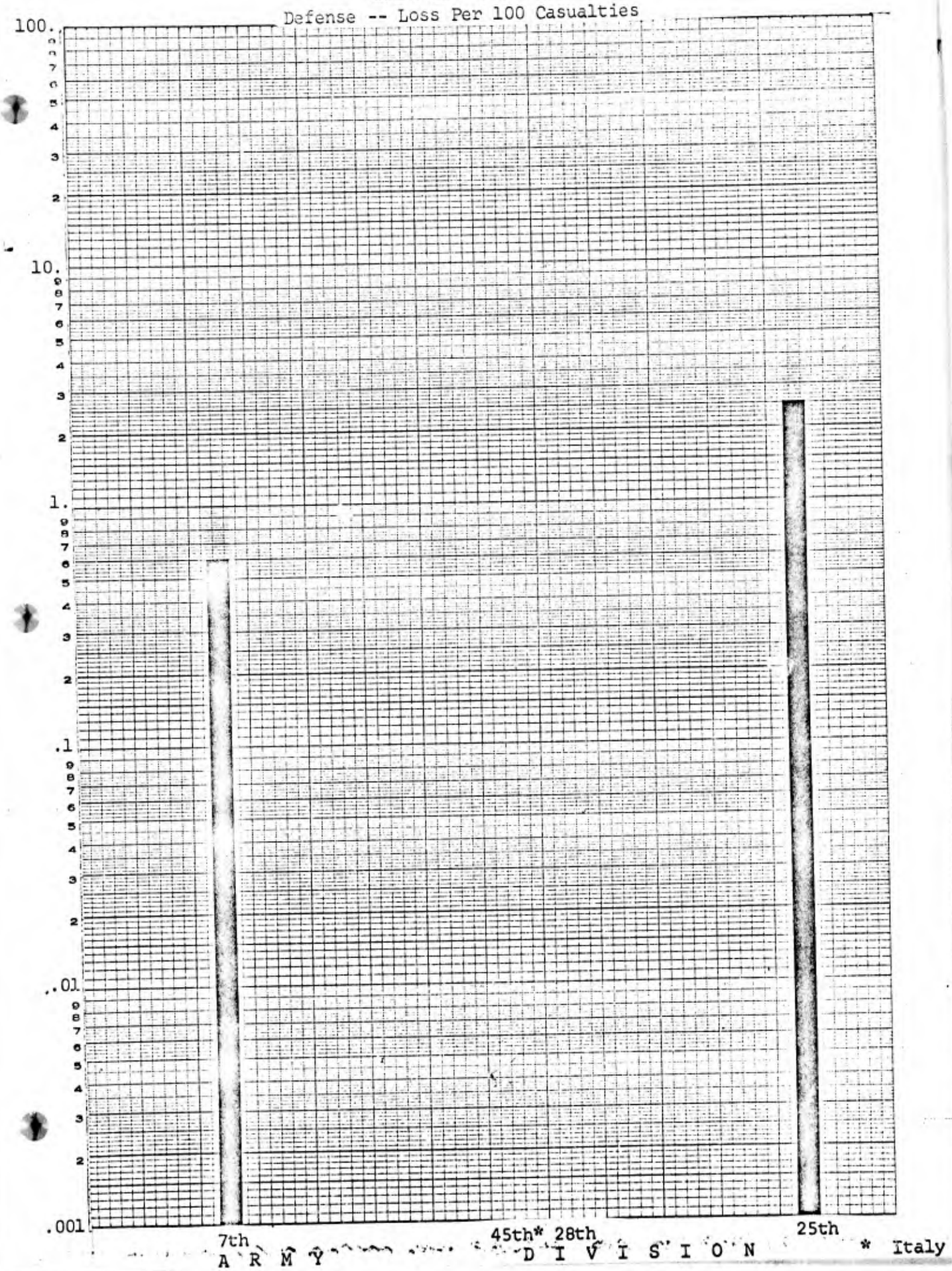
Radio Set, SCR-300

Defense -- Loss Per 1000 Man-Days



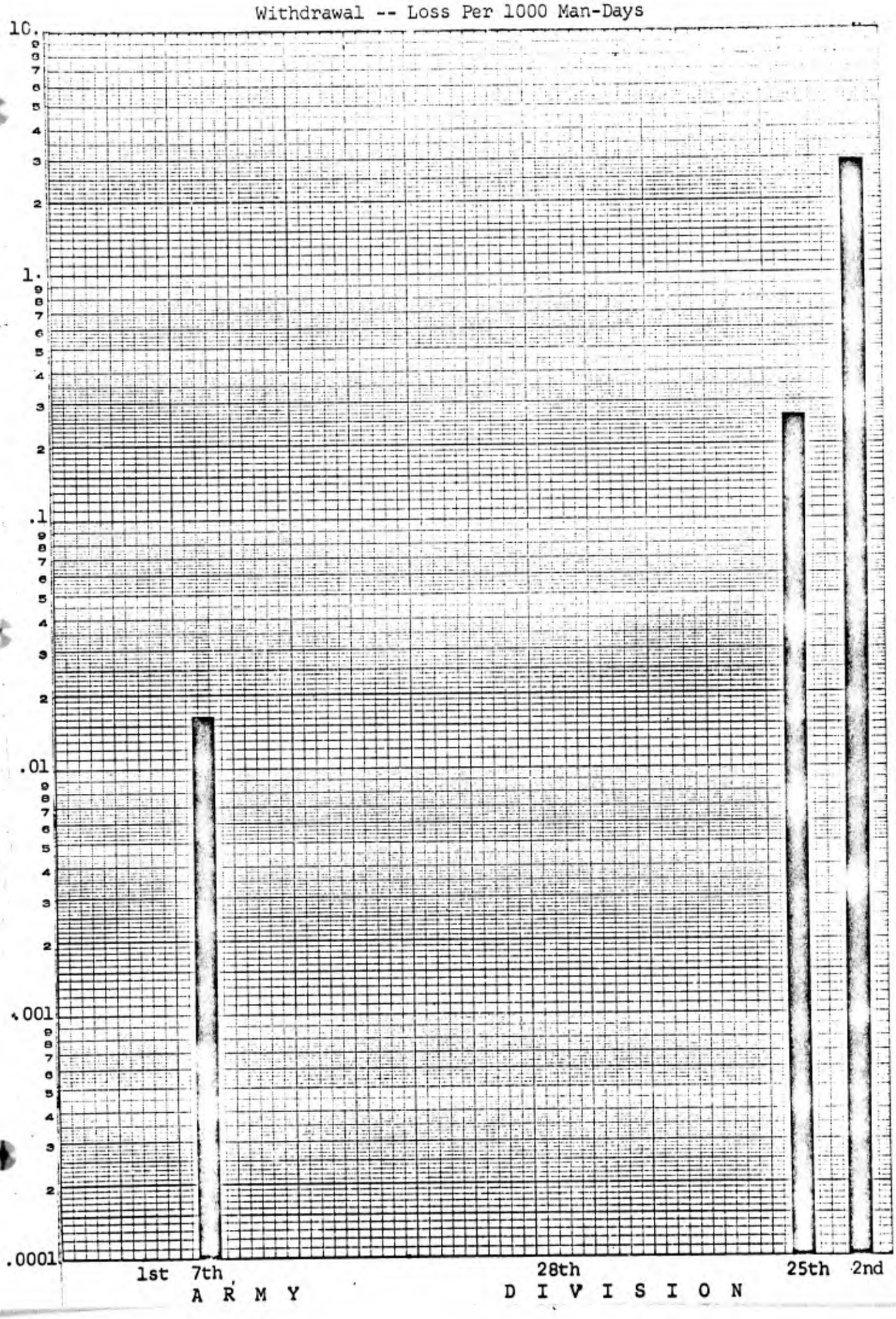
Radio Set SCR-300

Defense -- Loss Per 100 Casualties



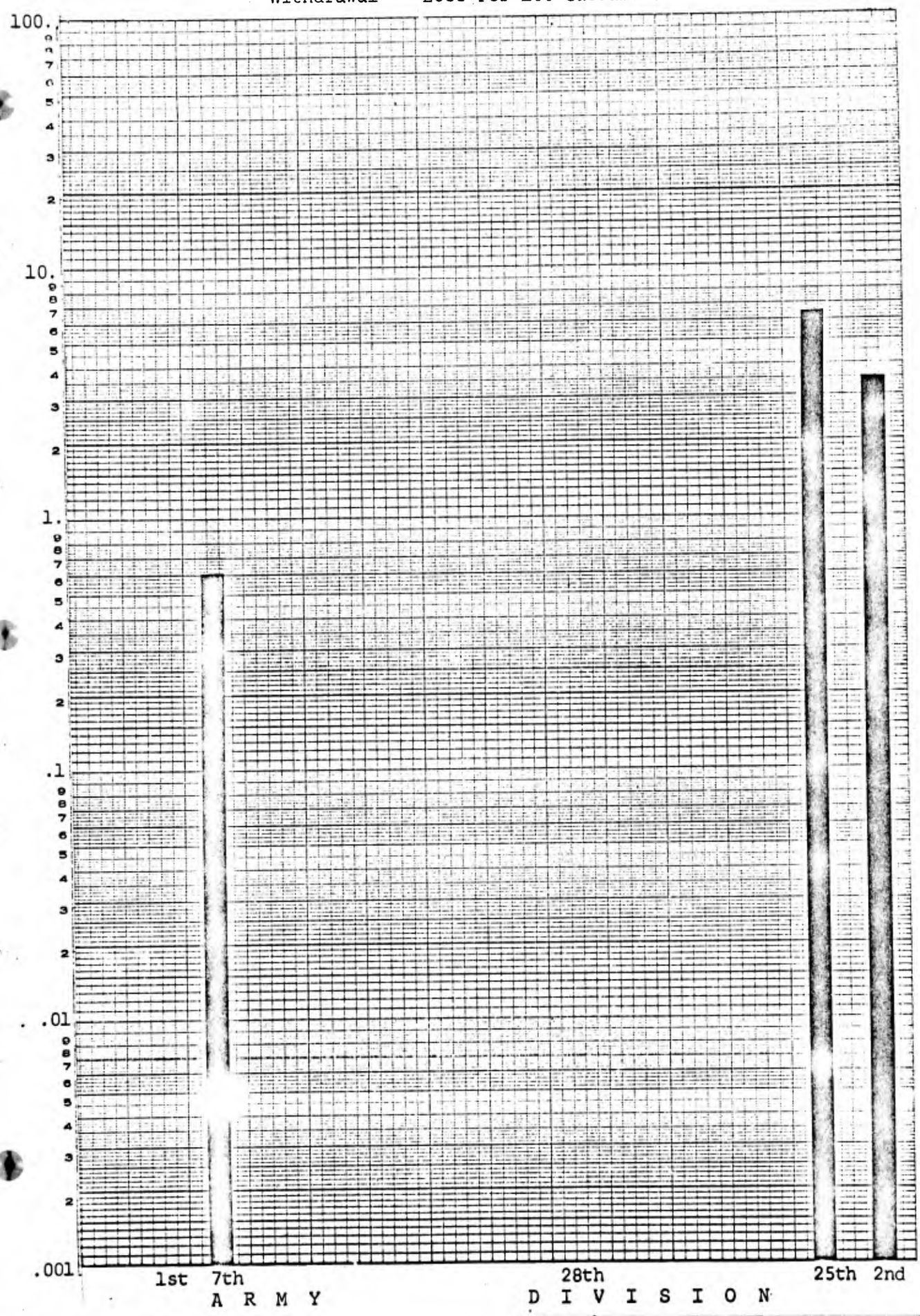
Radio Set, SCR-300

Withdrawal -- Loss Per 1000 Man-Days



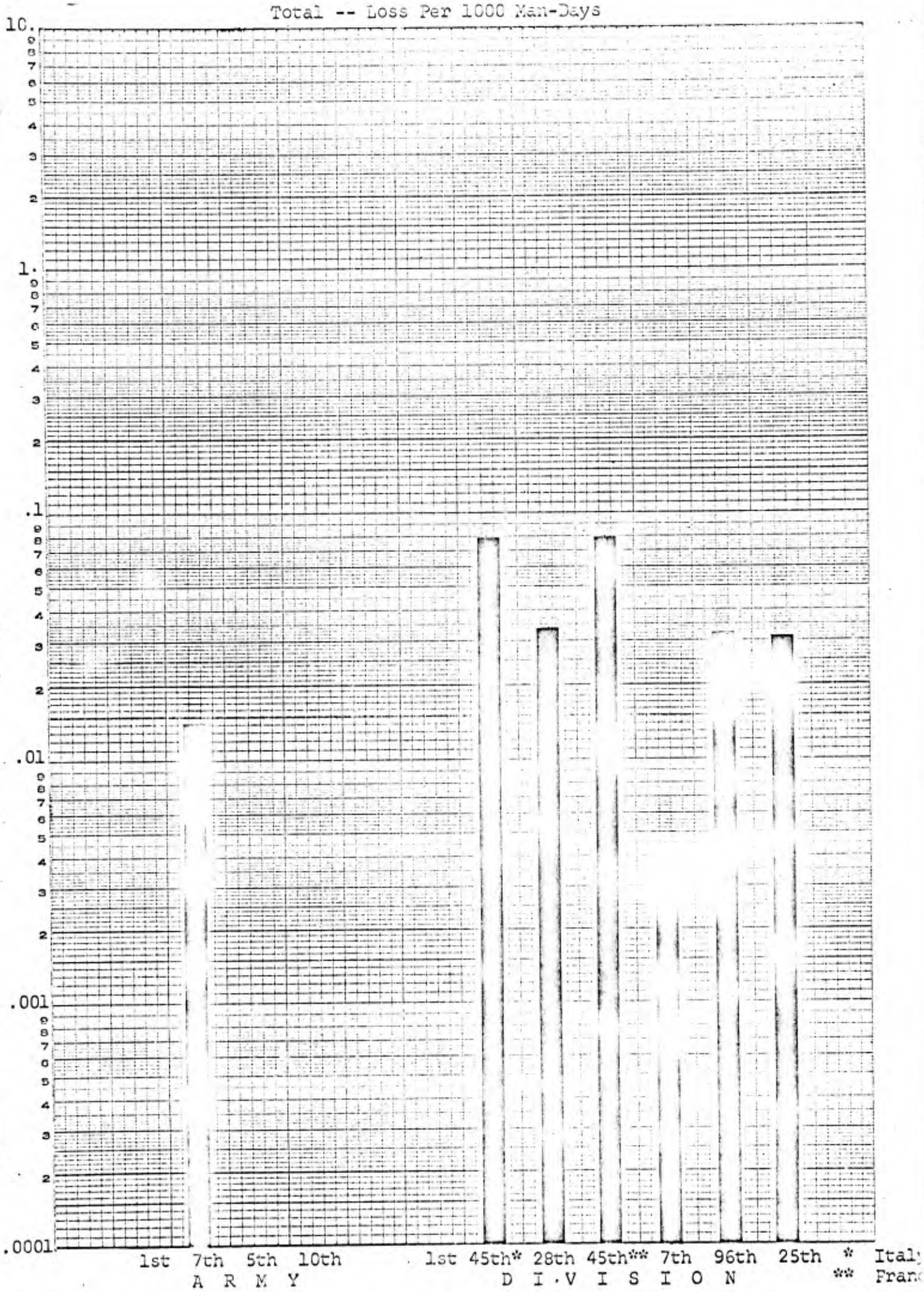
Radio Set, SCR-300

Withdrawal -- Loss Per 100 Casualties



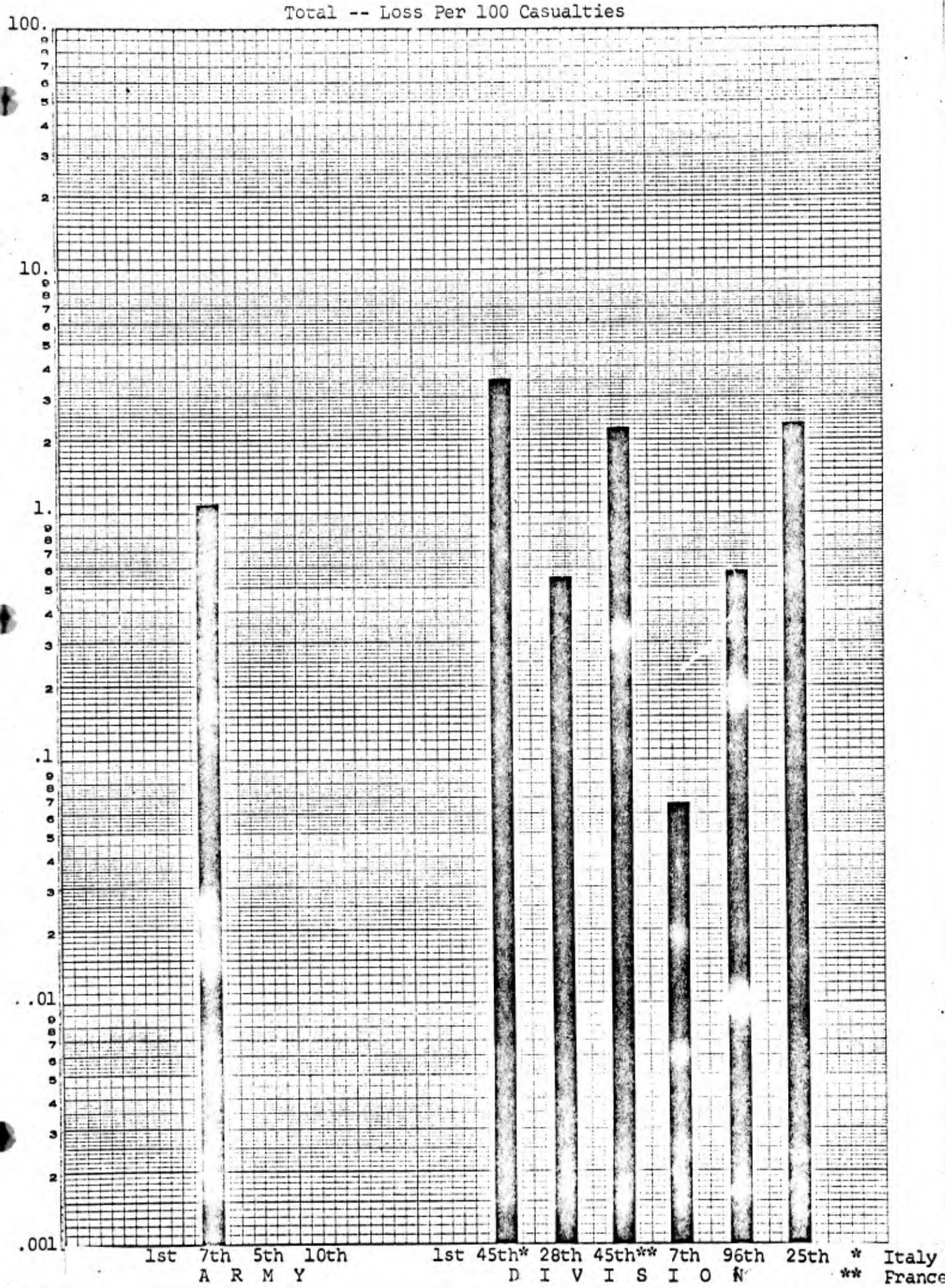
Radio Set, SCR-300

Total -- Loss Per 1000 Man-Days



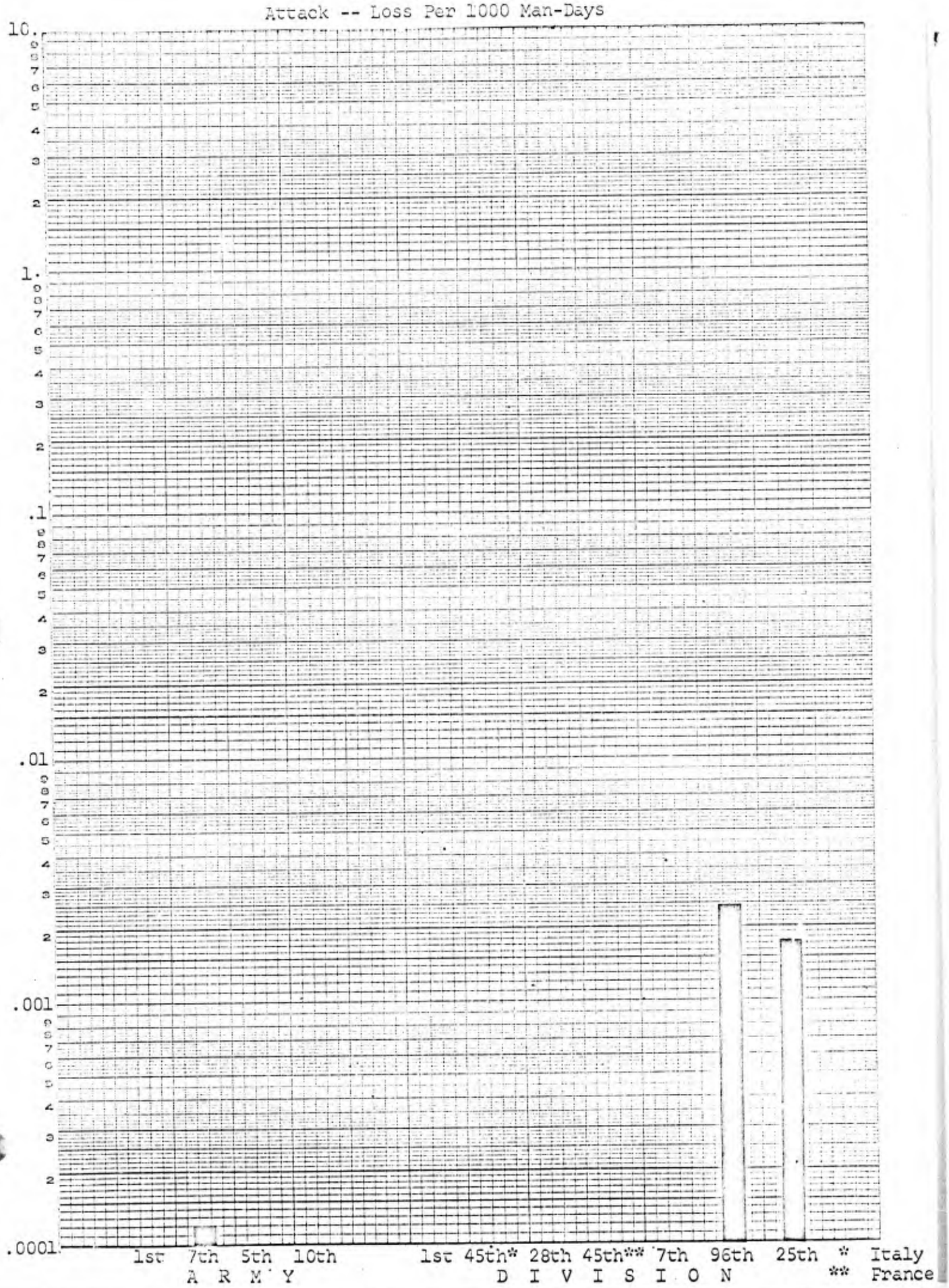
Radio Set SCR-300

Total -- Loss Per 100 Casualties



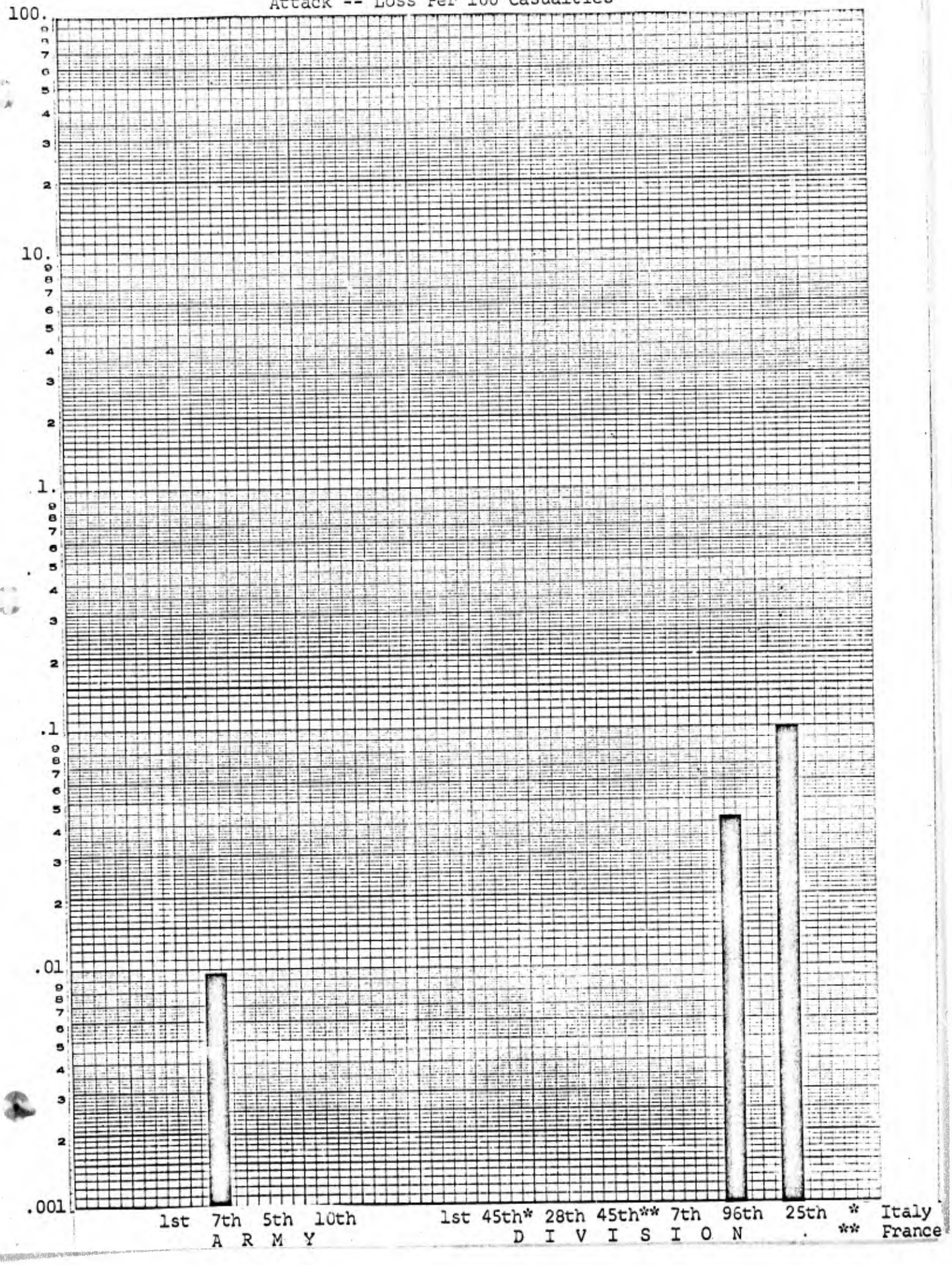
Radio Set, SCR-608

Attack -- Loss Per 1000 Man-Days



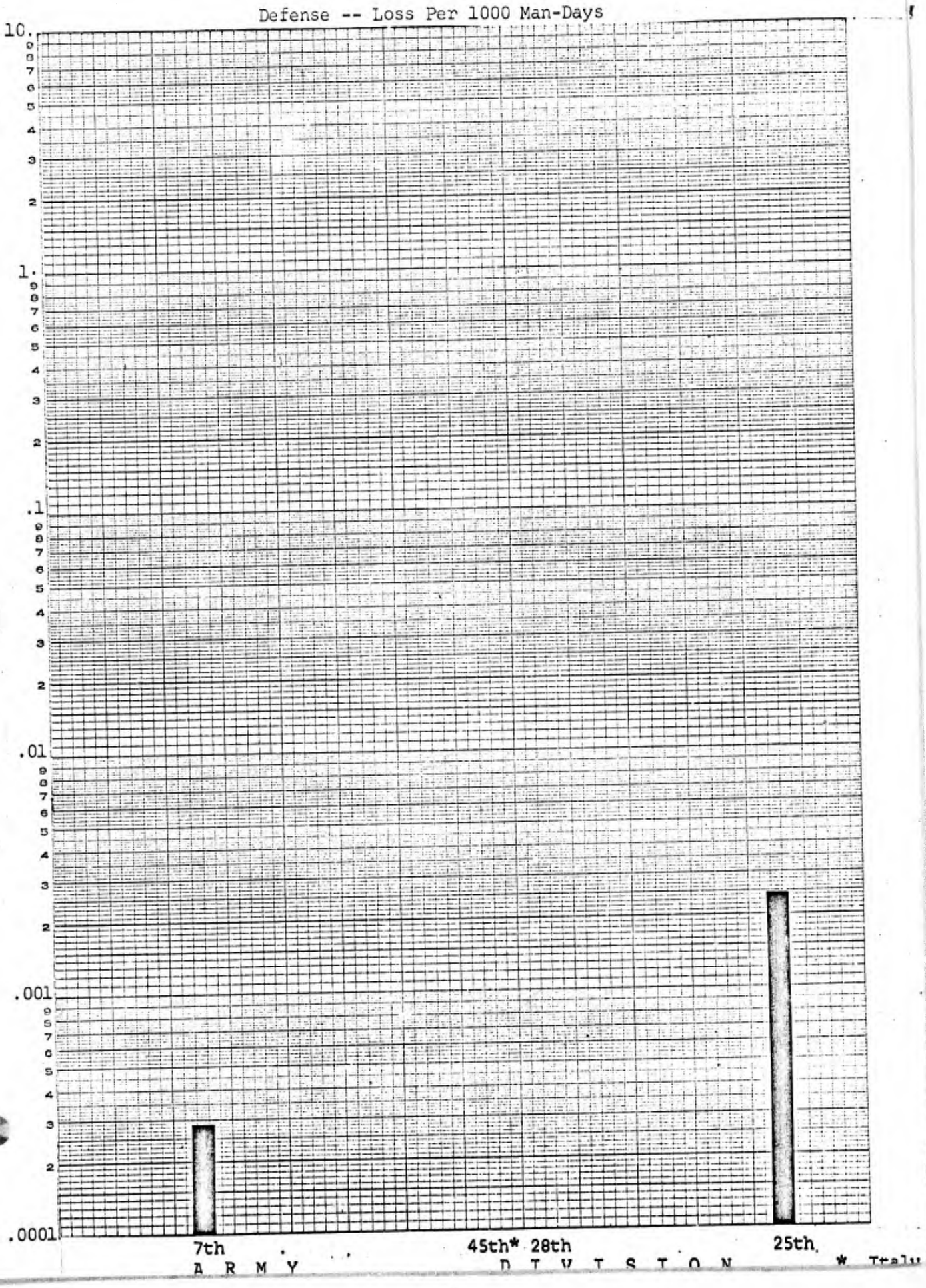
Radio Set, SCR-608

Attack -- Loss Per 100 Casualties



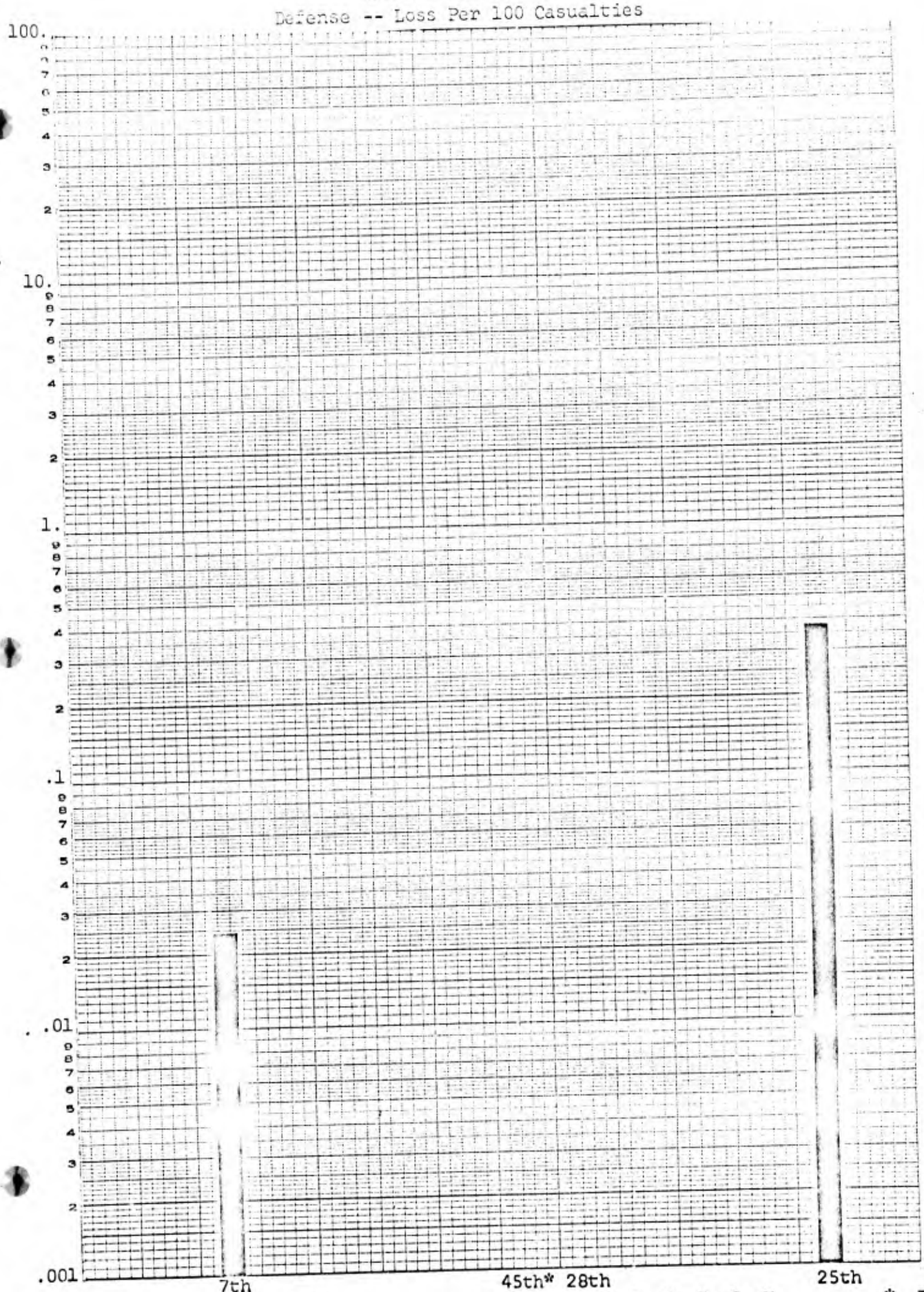
Radio Set, SCR-608

Defense -- Loss Per 1000 Man-Days



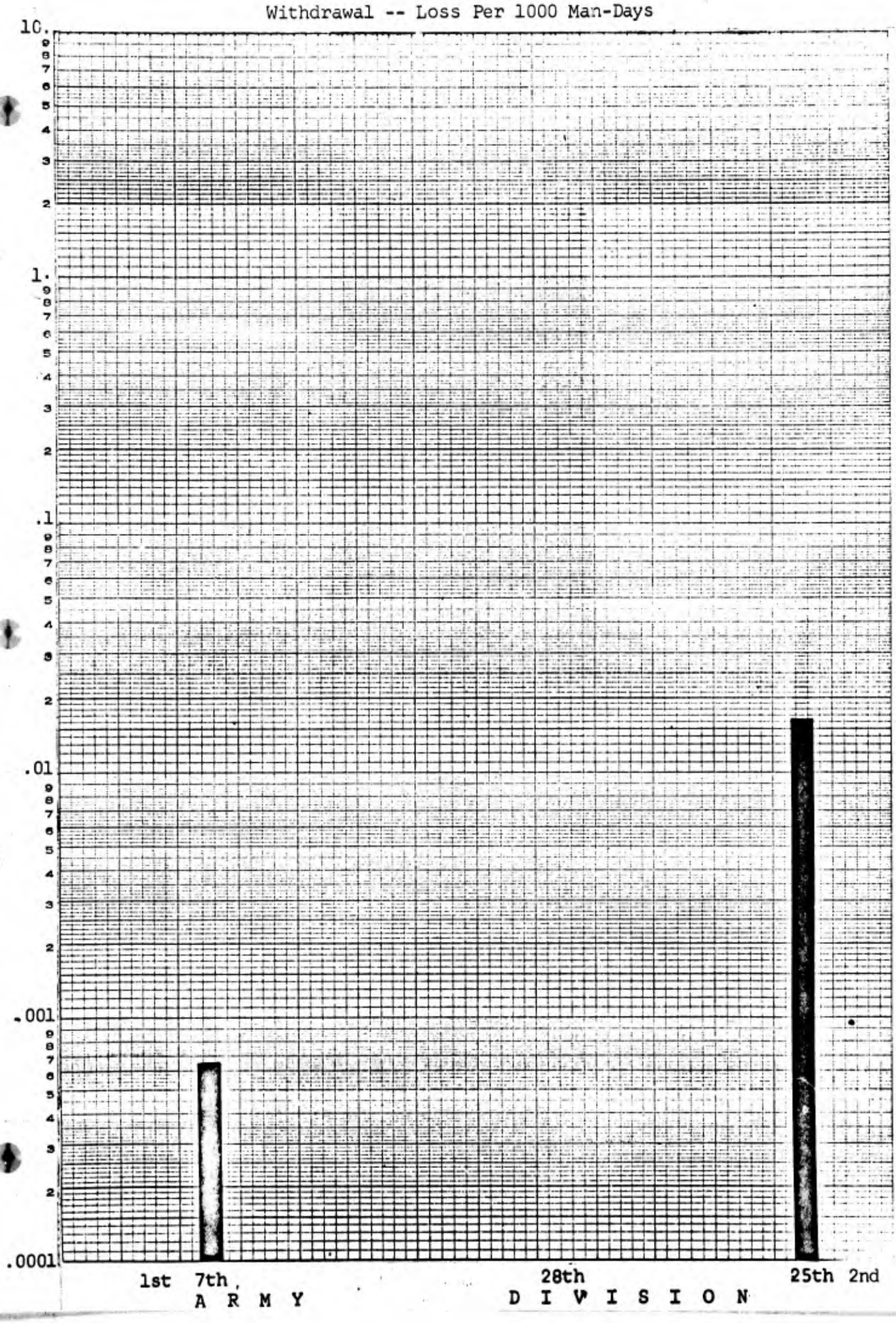
Radio Set, SCR-608

Defense -- Loss Per 100 Casualties



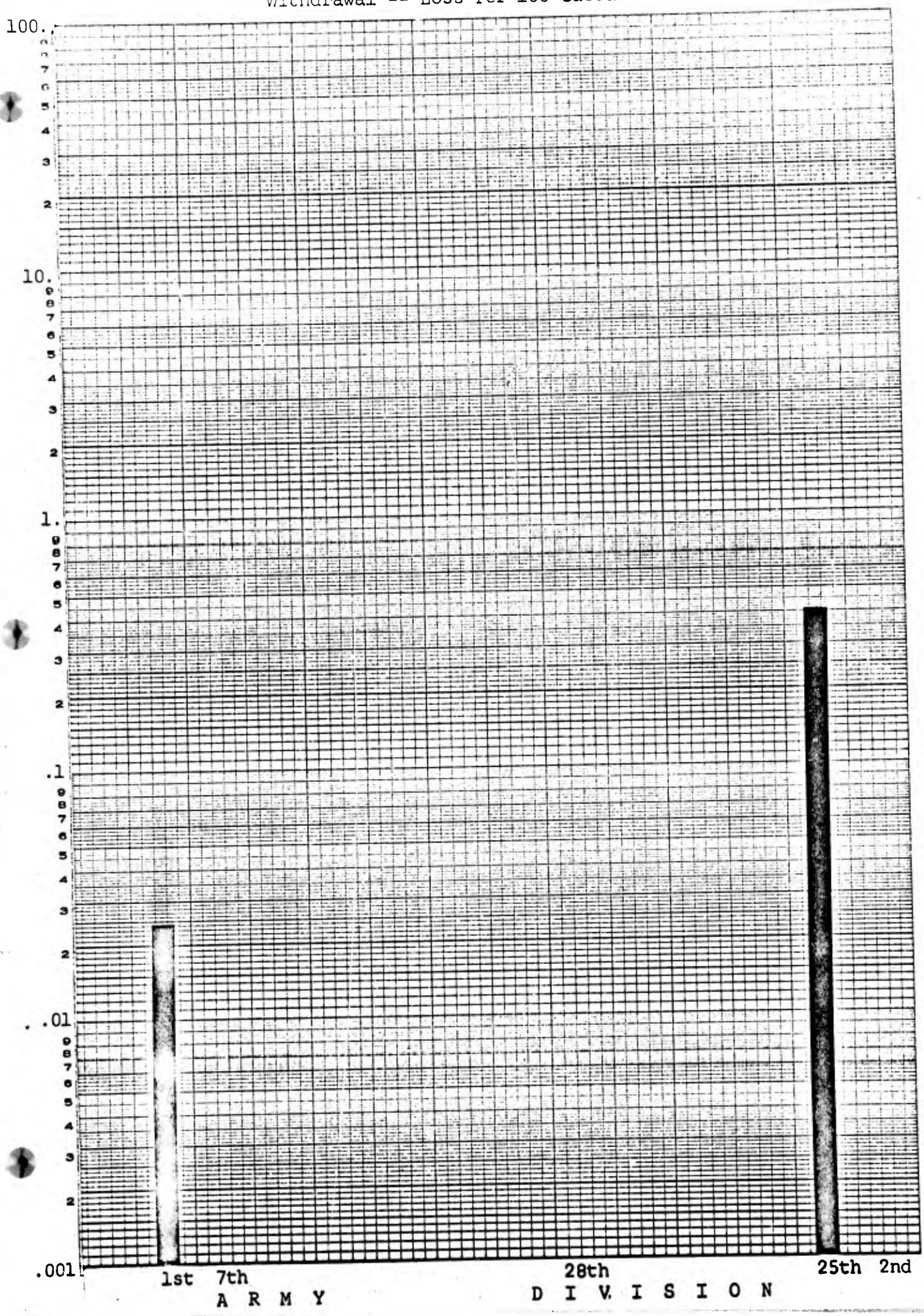
Radio Set, SCR-608

Withdrawal -- Loss Per 1000 Man-Days



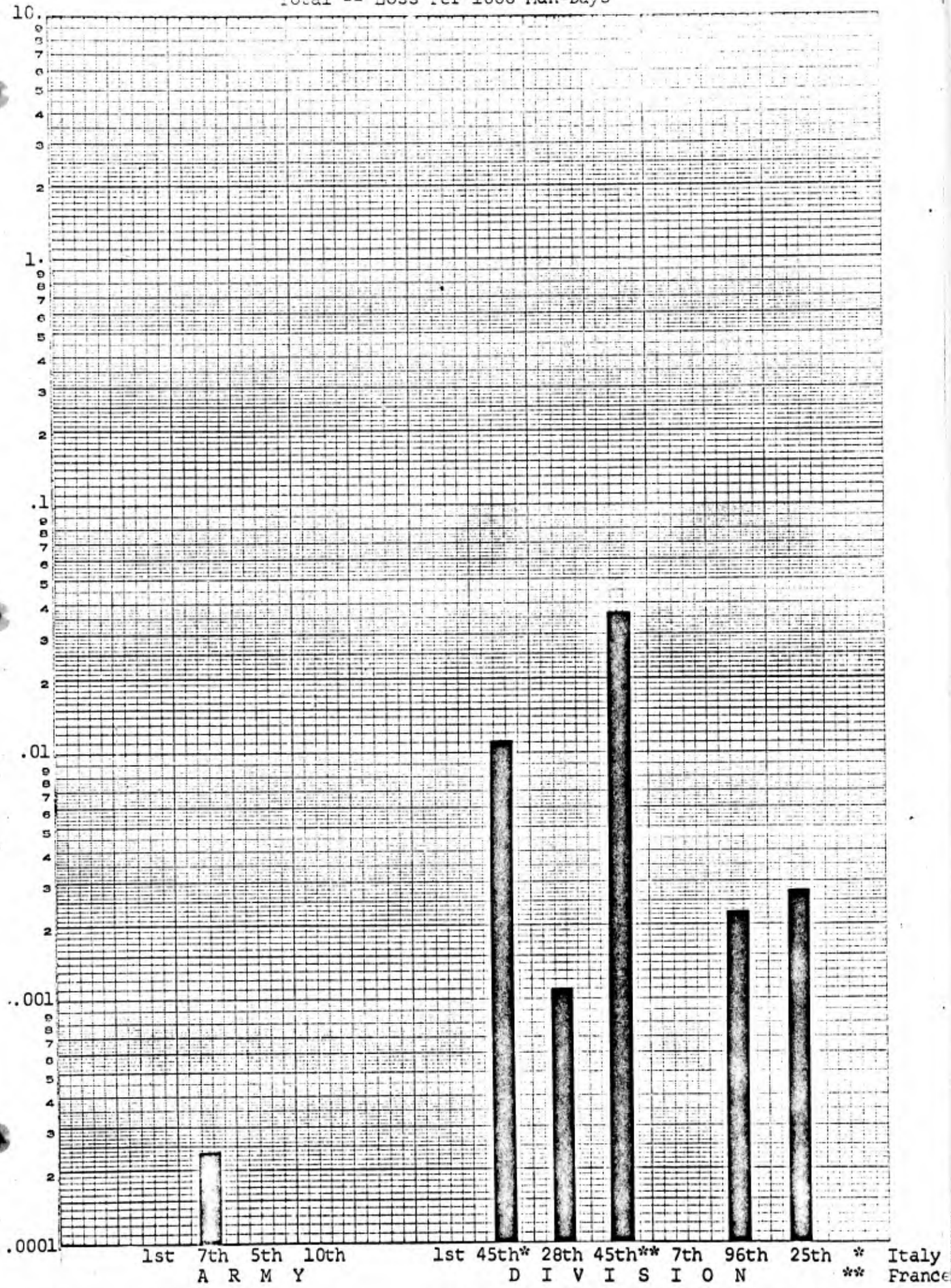
Radio Set, SCR-608

Withdrawal -- Loss Per 100 Casualties



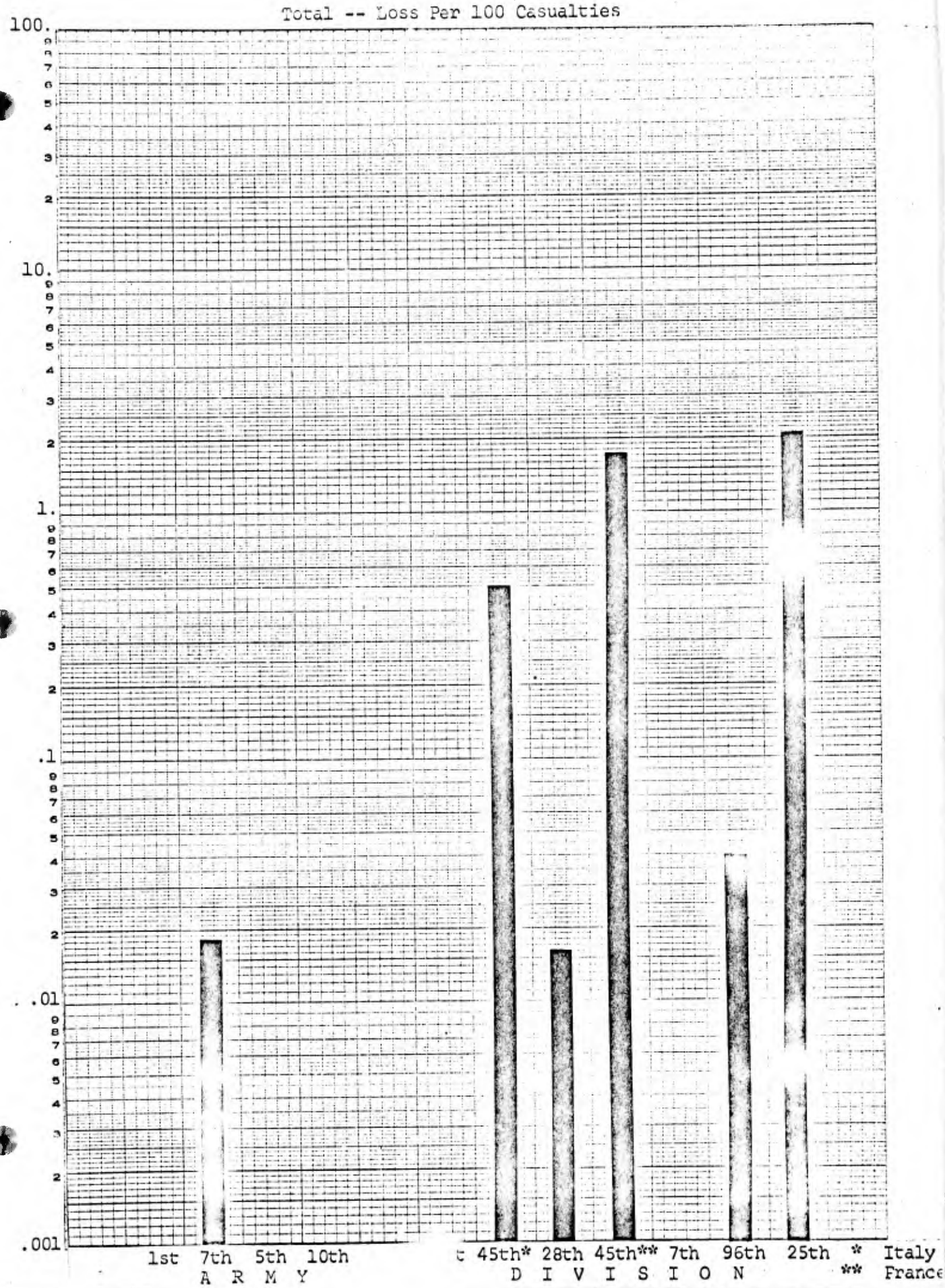
Radio Set, SCR-608

Total -- Loss Per 1000 Man-Days



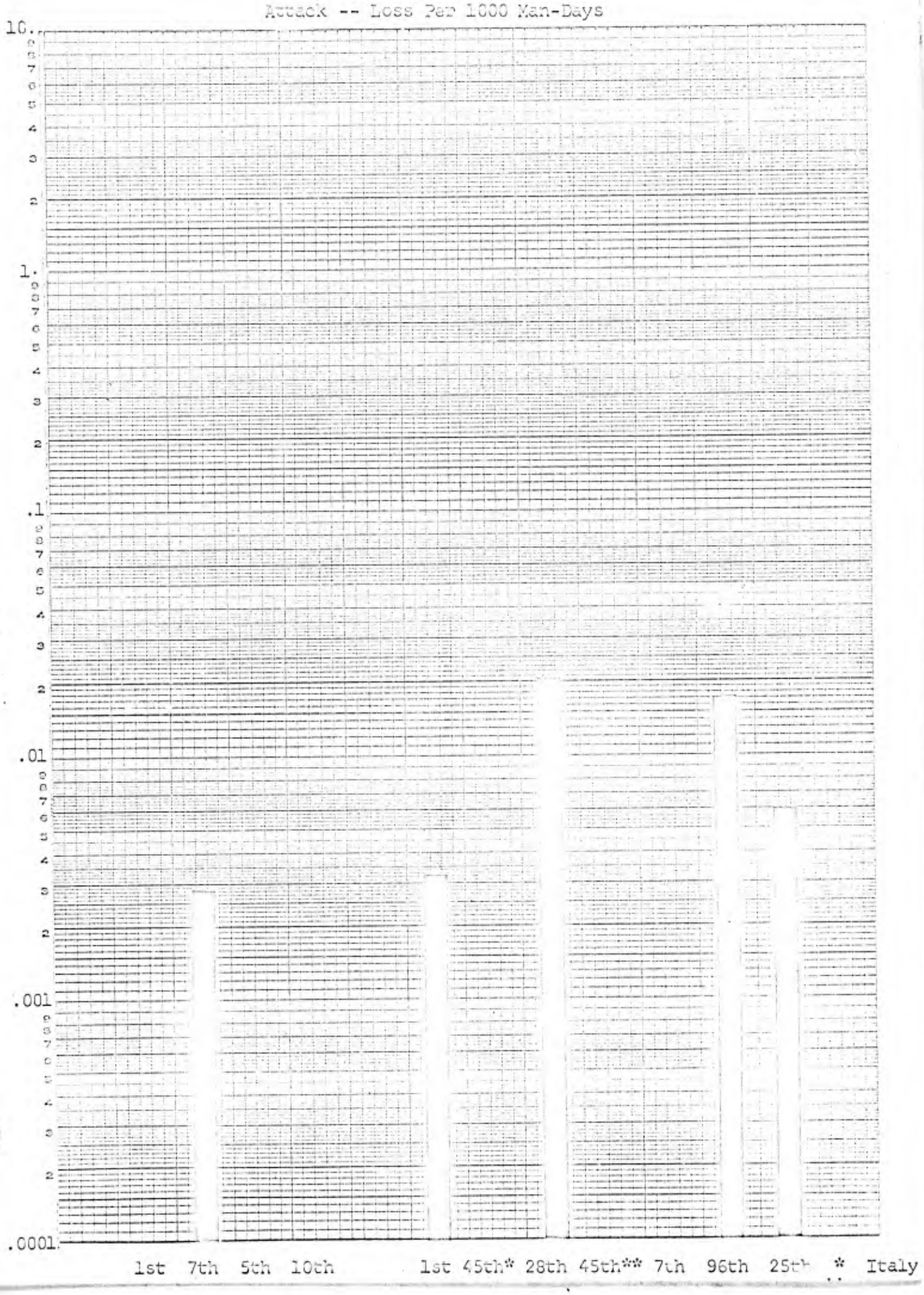
Radio Set, SCR-608

Total -- Loss Per 100 Casualties



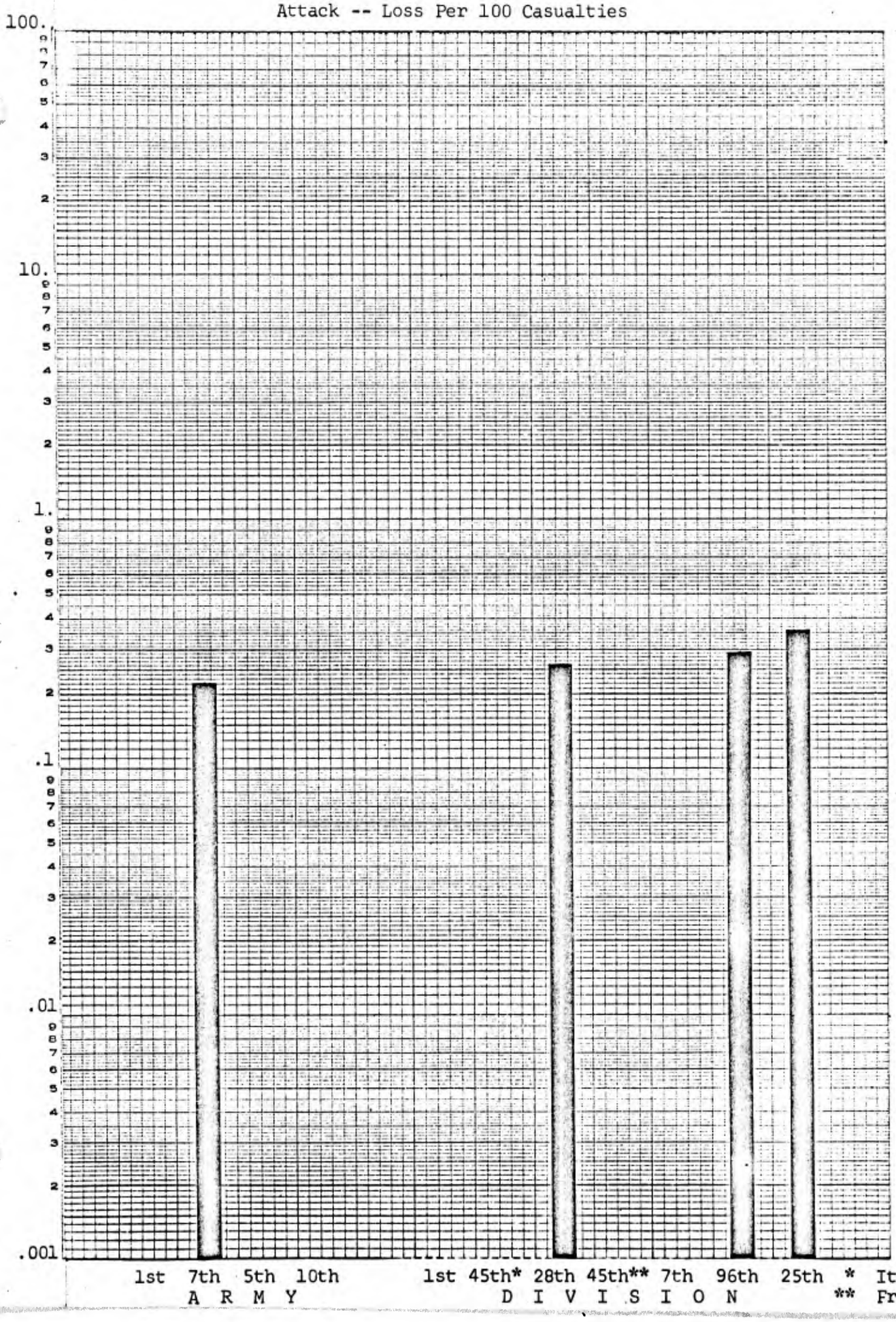
Radio Set, SCR-610

Attack -- Loss Per 1000 Man-Days



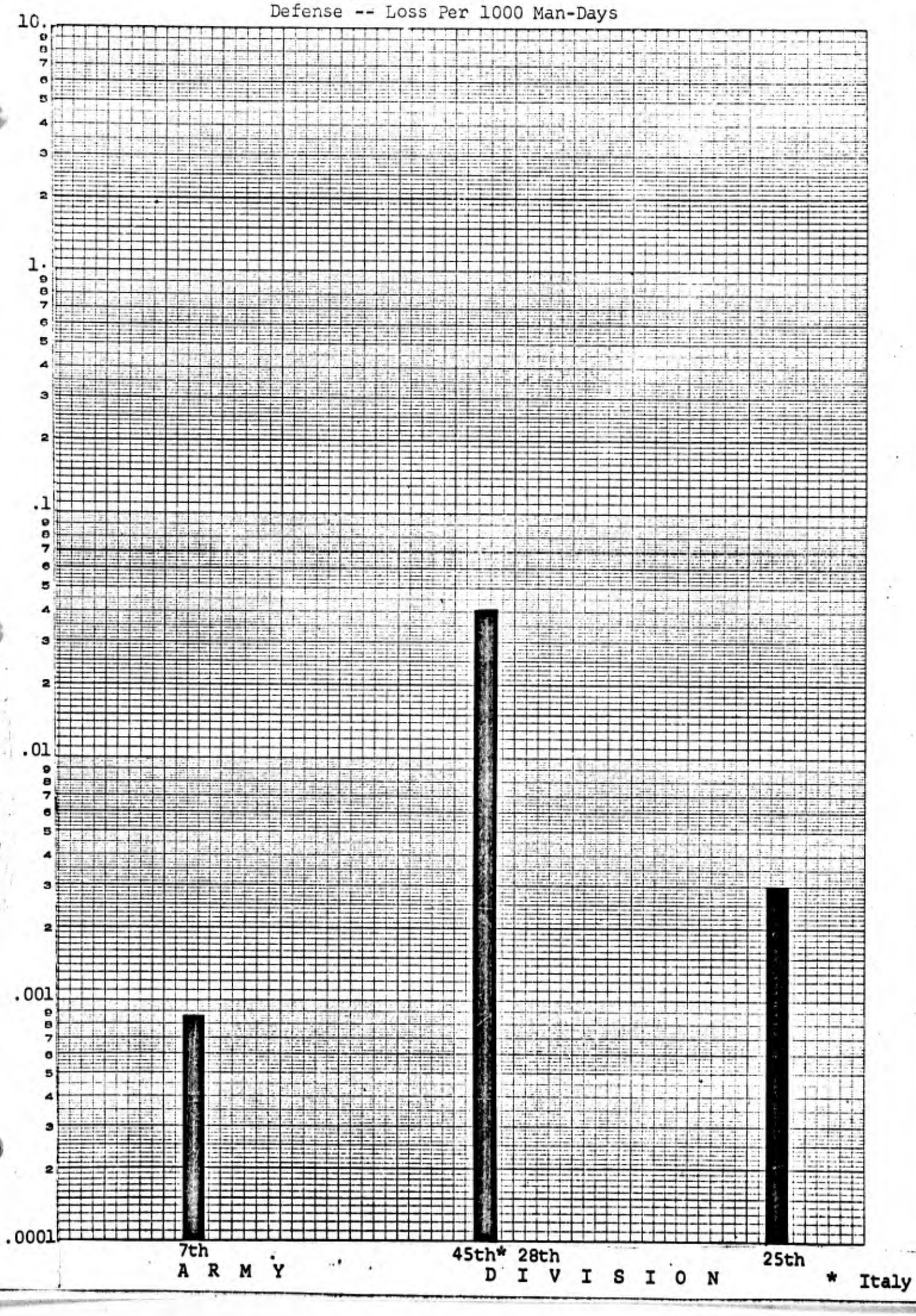
Radio Set, SCR-610

Attack -- Loss Per 100 Casualties



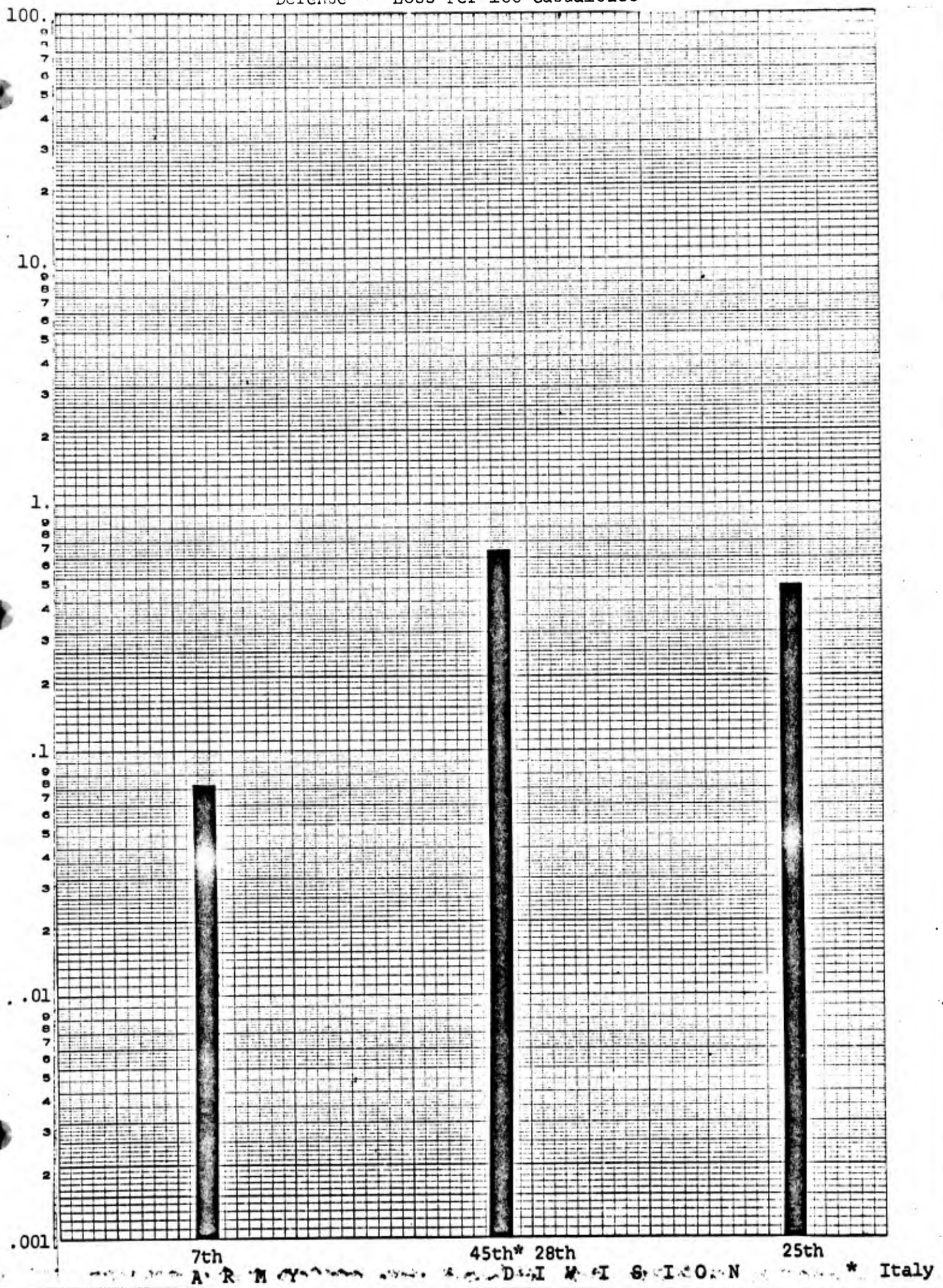
Radio Set, SCR-610

Defense -- Loss Per 1000 Man-Days



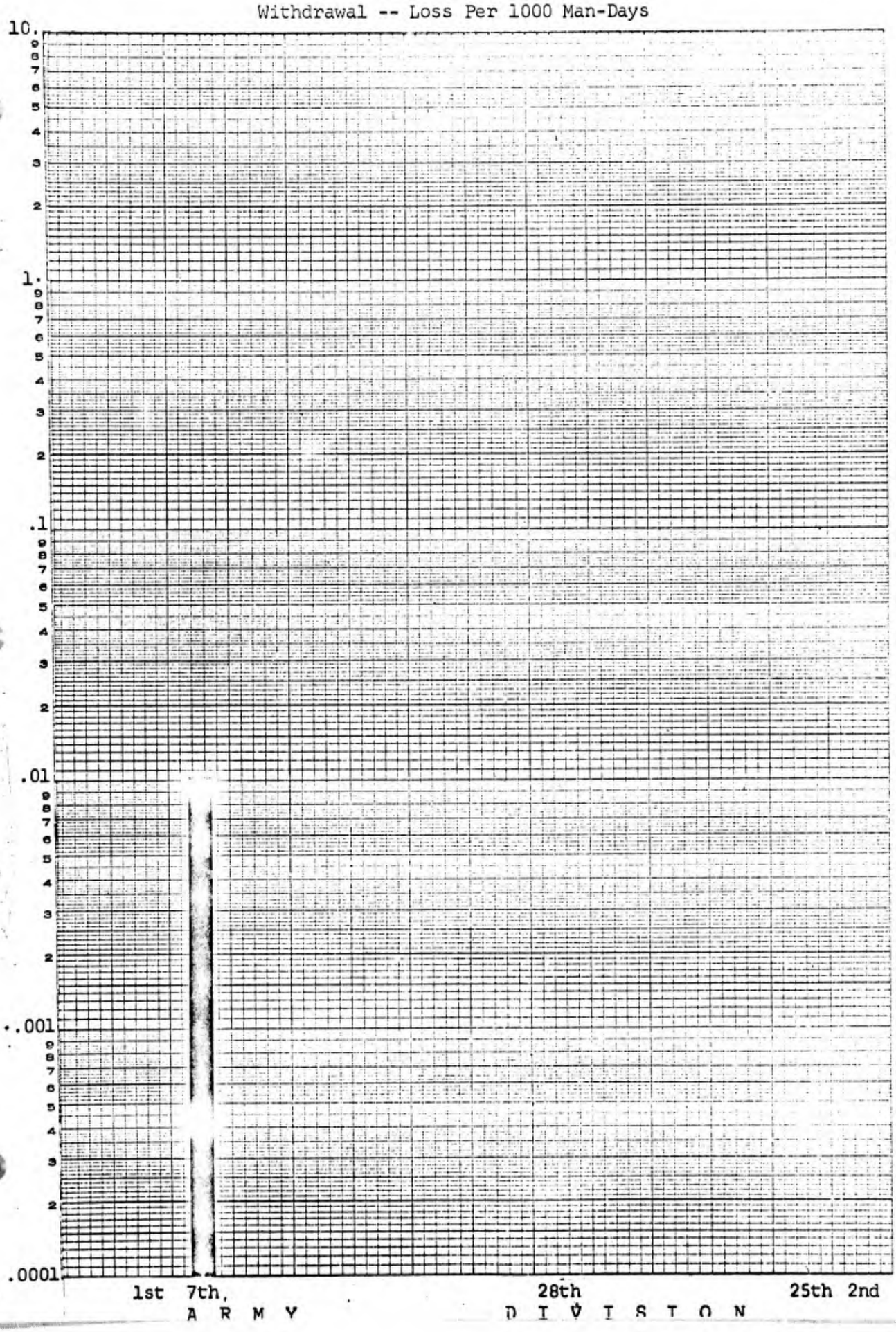
Radio Set, SCR-610

Defense -- Loss Per 100 Casualties



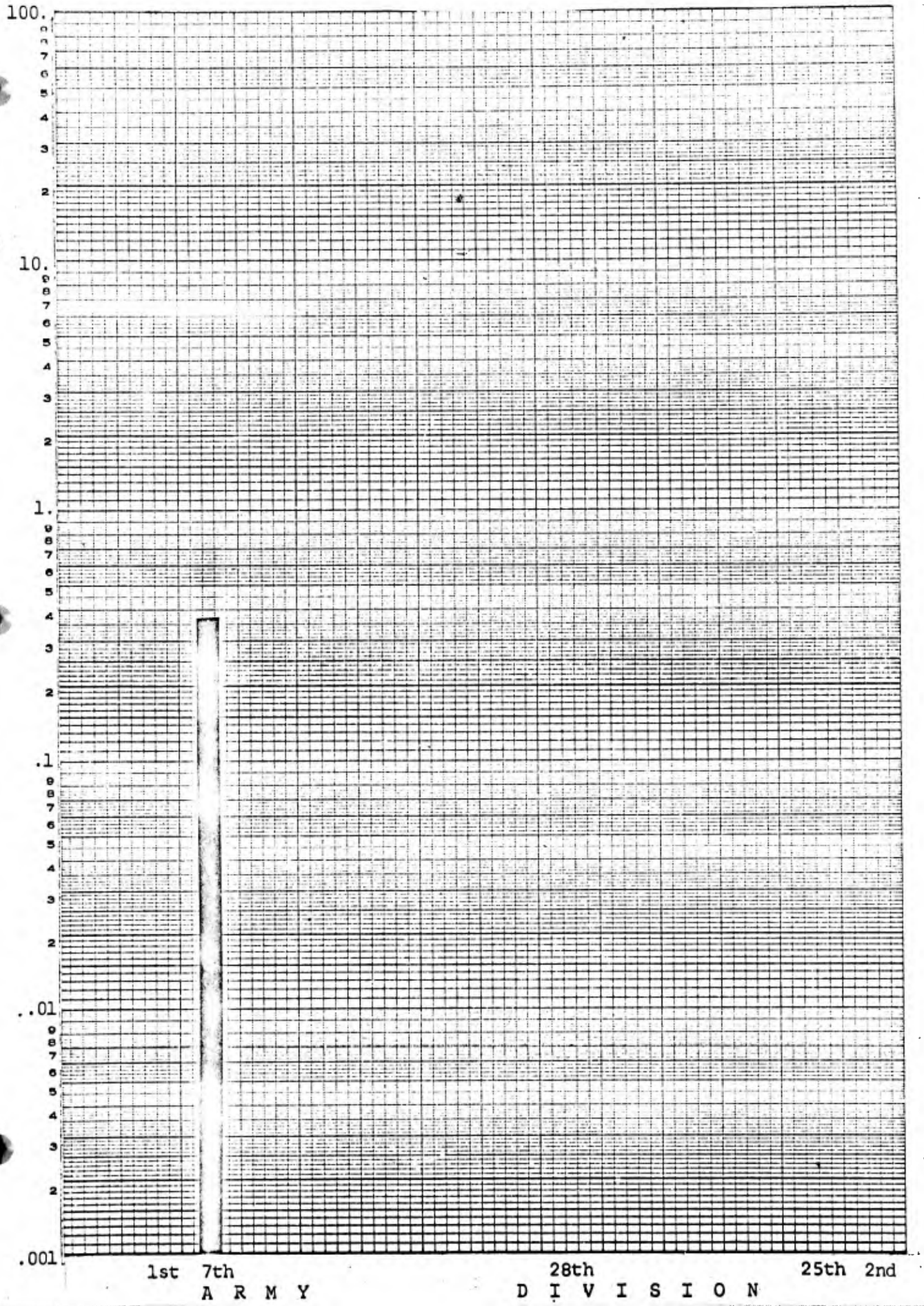
Radio Set, SCR-610

Withdrawal -- Loss Per 1000 Man-Days



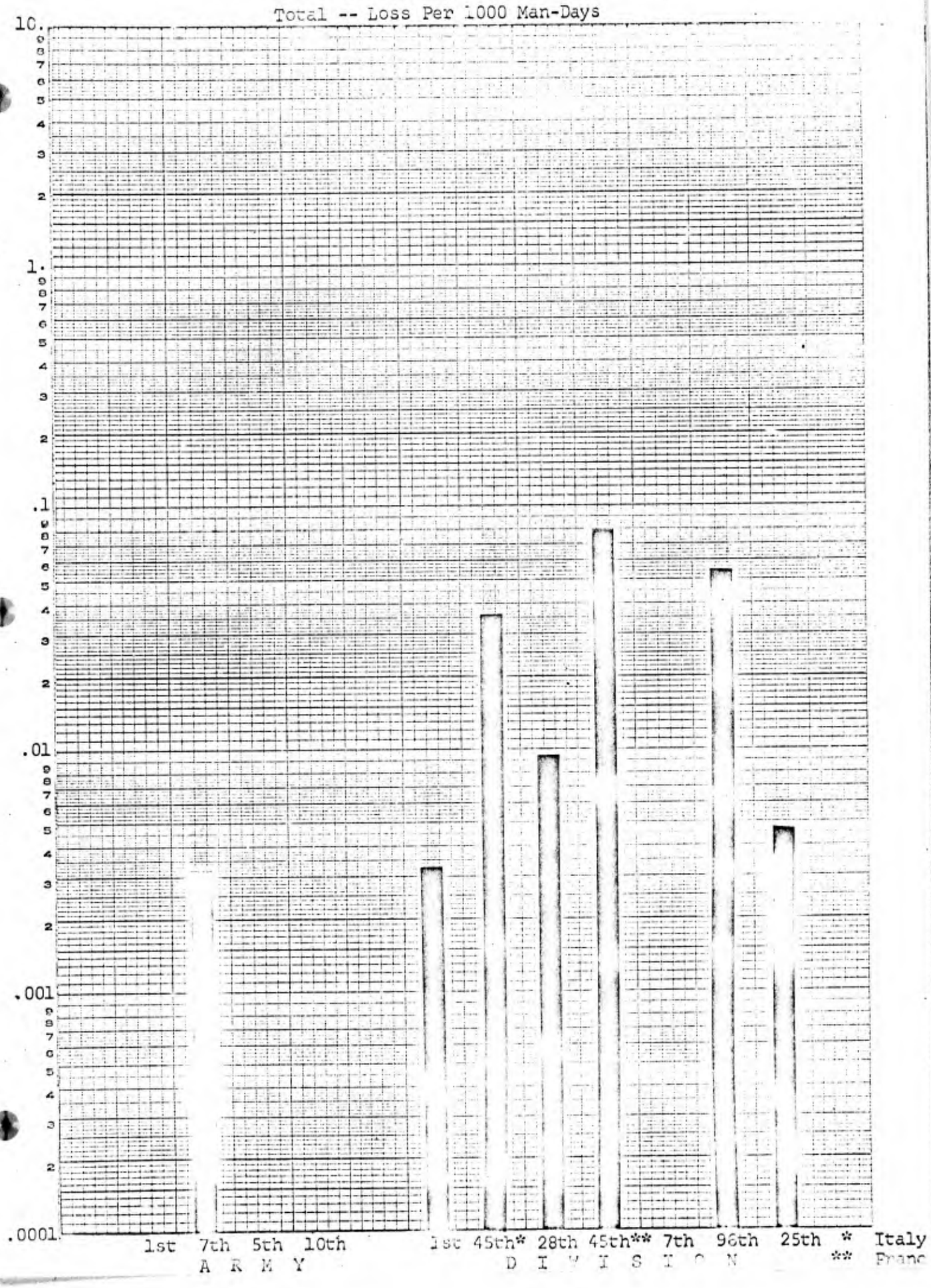
Radio Set, SCR-610

Withdrawal -- Loss Per 100 Casualties



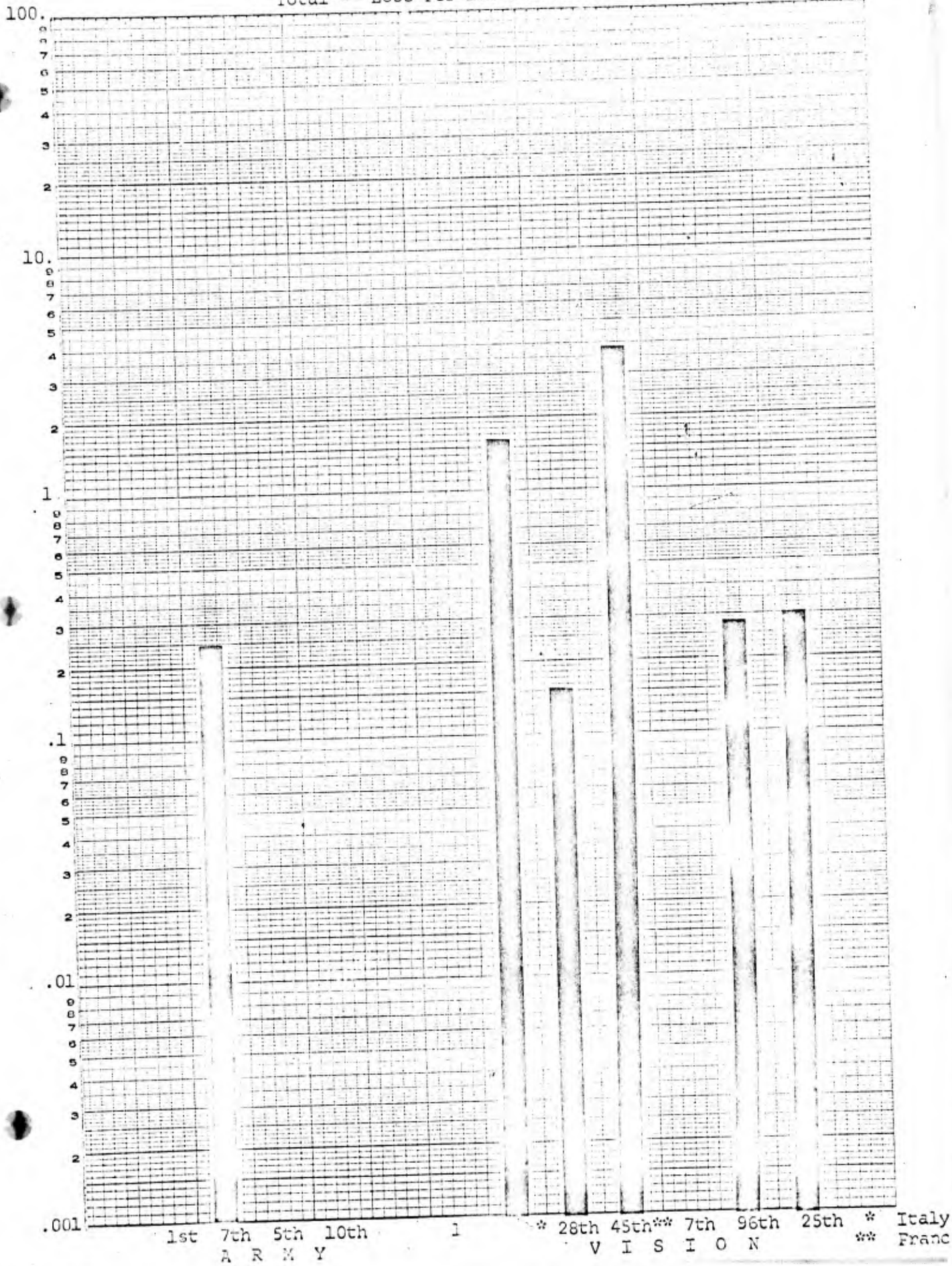
Radio Set, SCR-610

Total -- Loss Per 1000 Man-Days



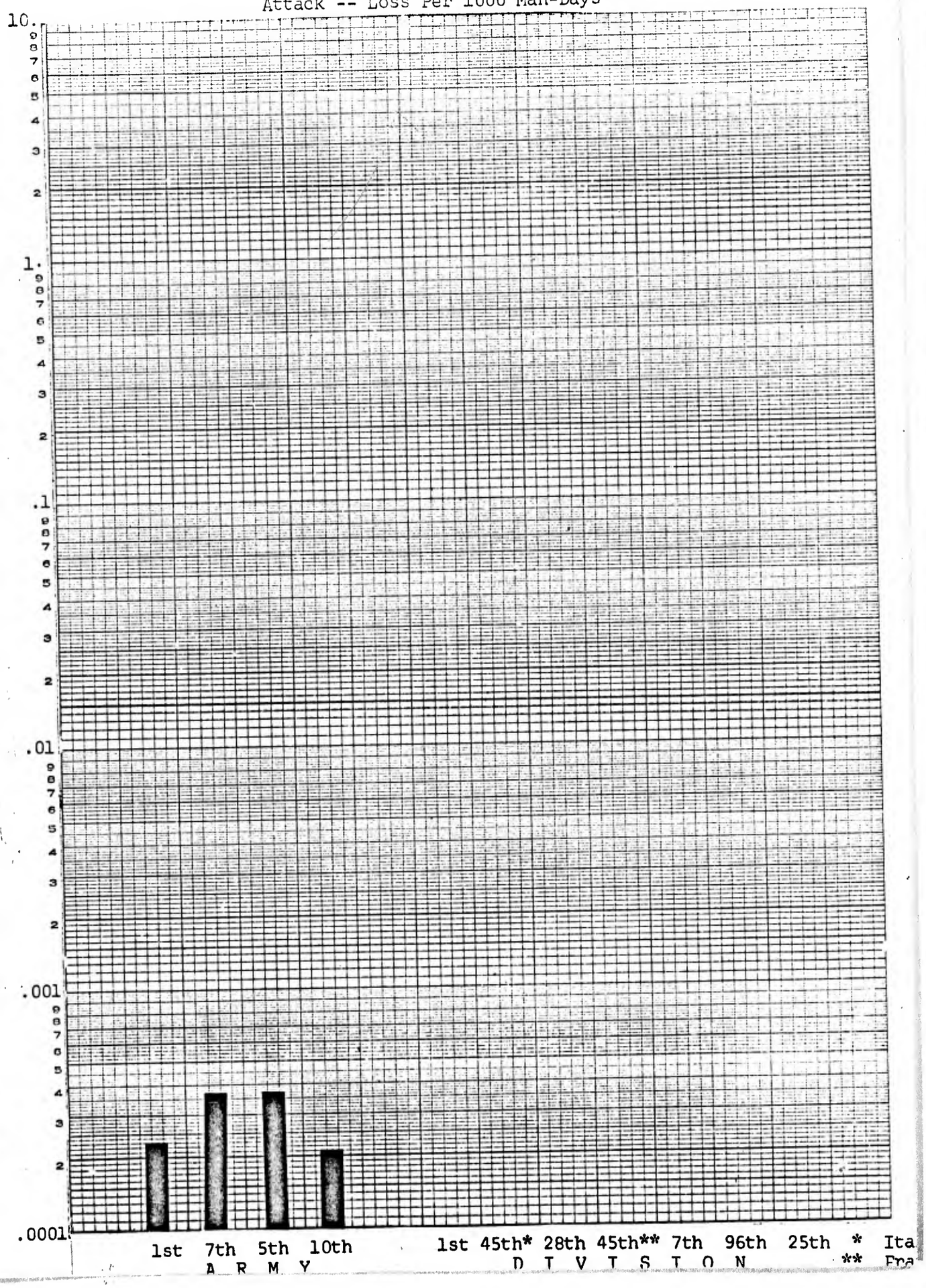
Radio Set, SCR-610

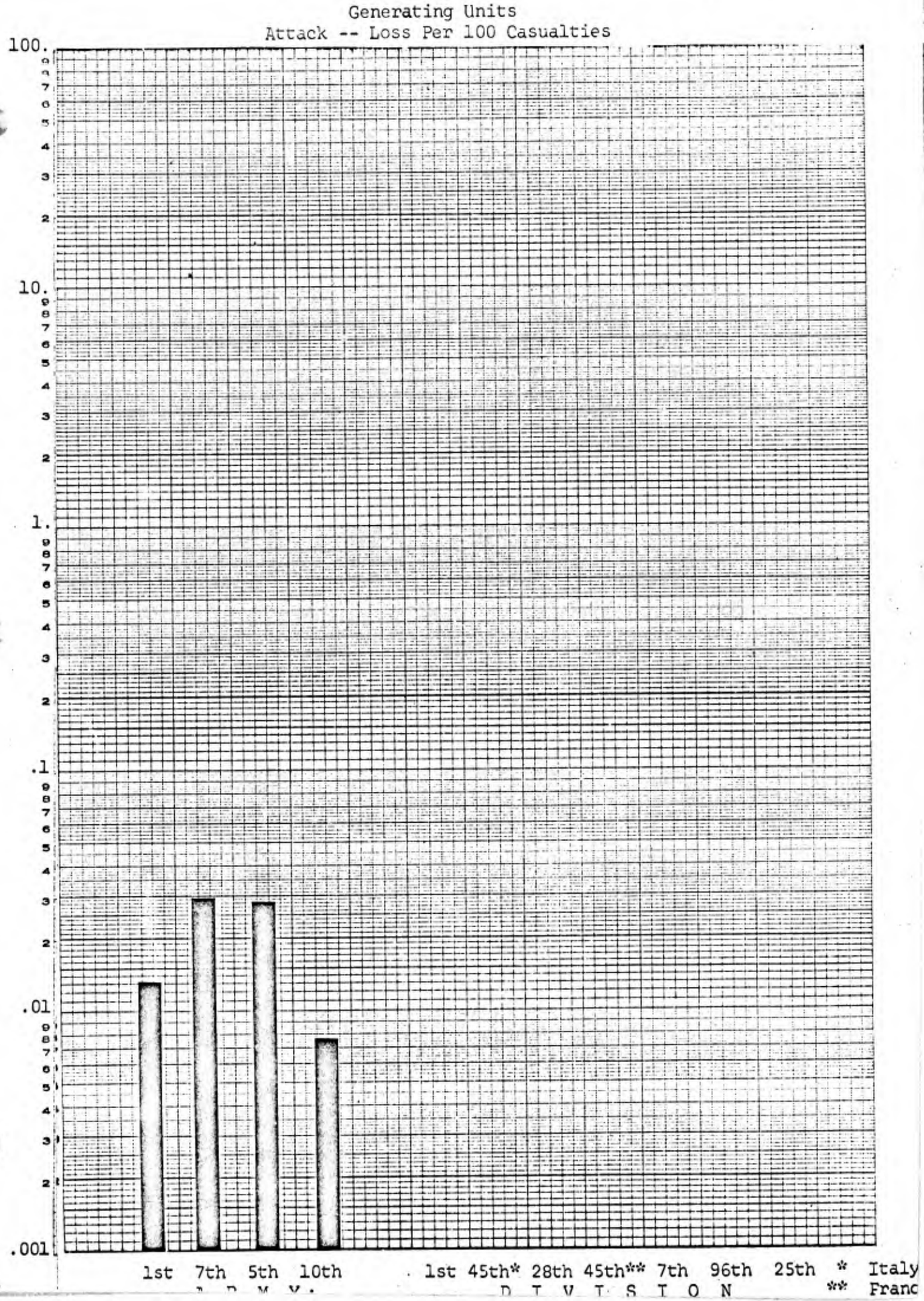
Total -- Loss Per 100 Casualties



Generating Units

Attack -- Loss Per 1000 Man-Days




Generating Units
Attack -- Loss Per 100 Casualties
100.
10.
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7th
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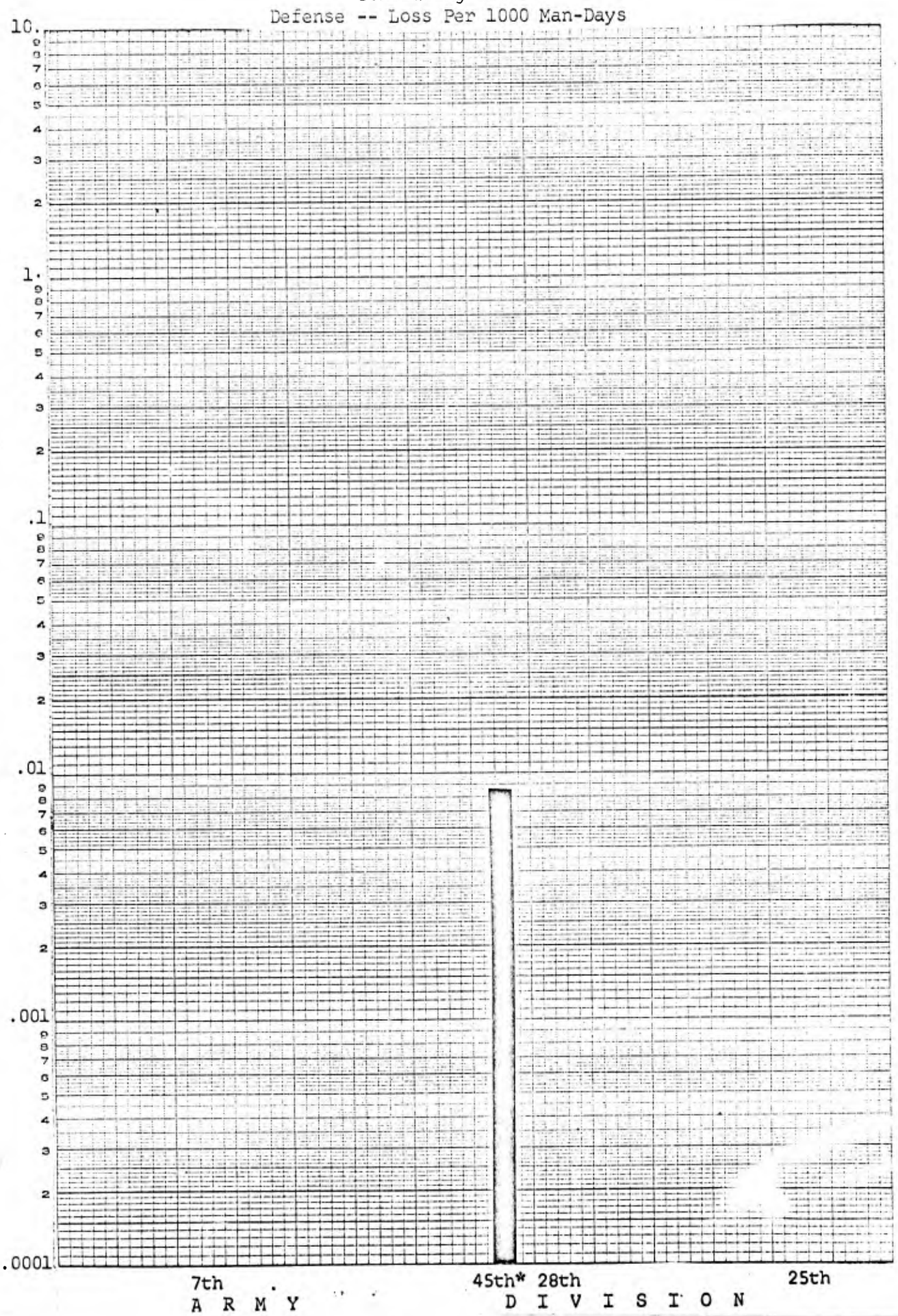
1st
45th*
28th
45th**
7th
96th
25th
* Italy
** Franc

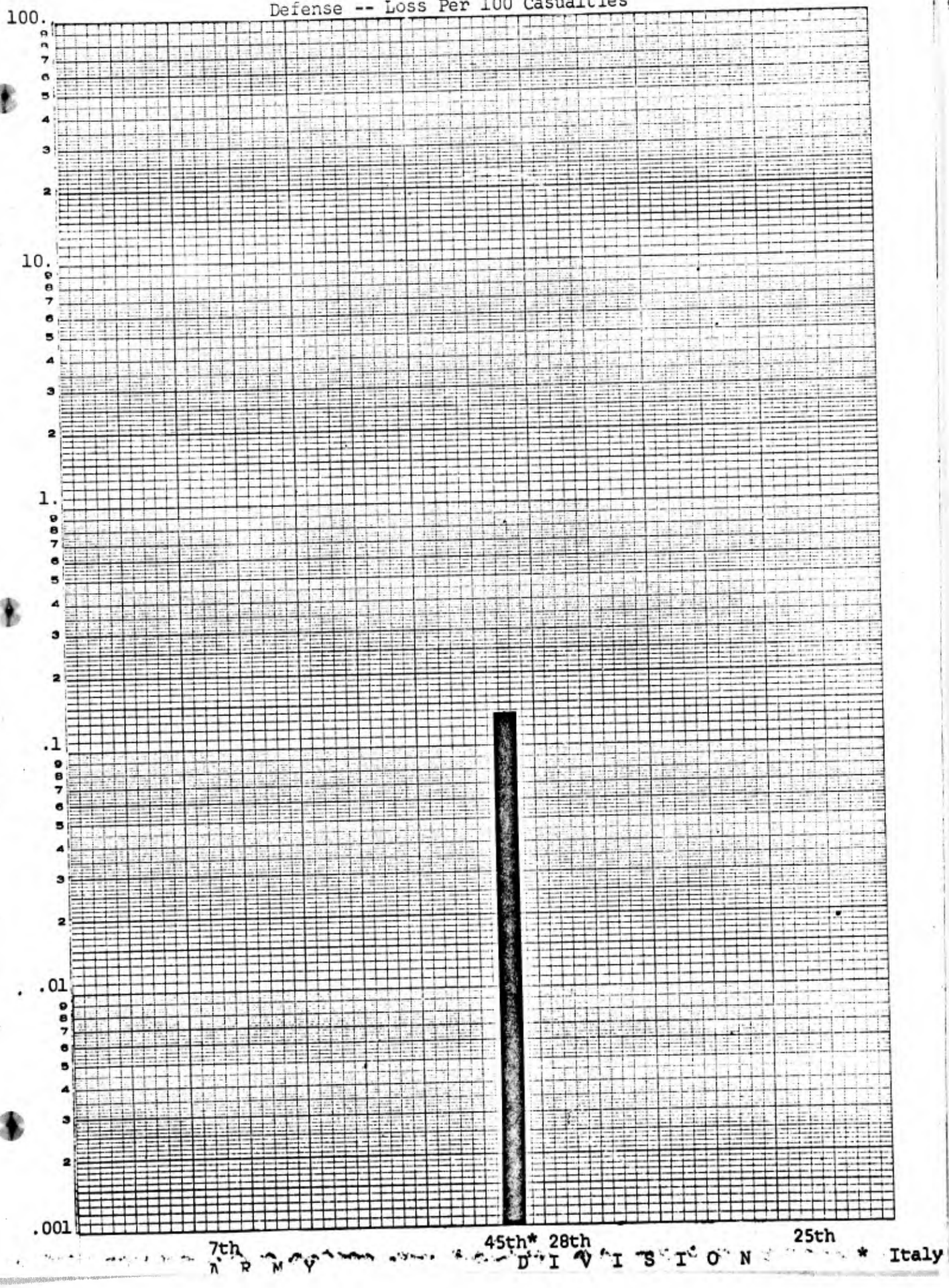
Generating Units

Defense -- Loss Per 1000 Man-Days



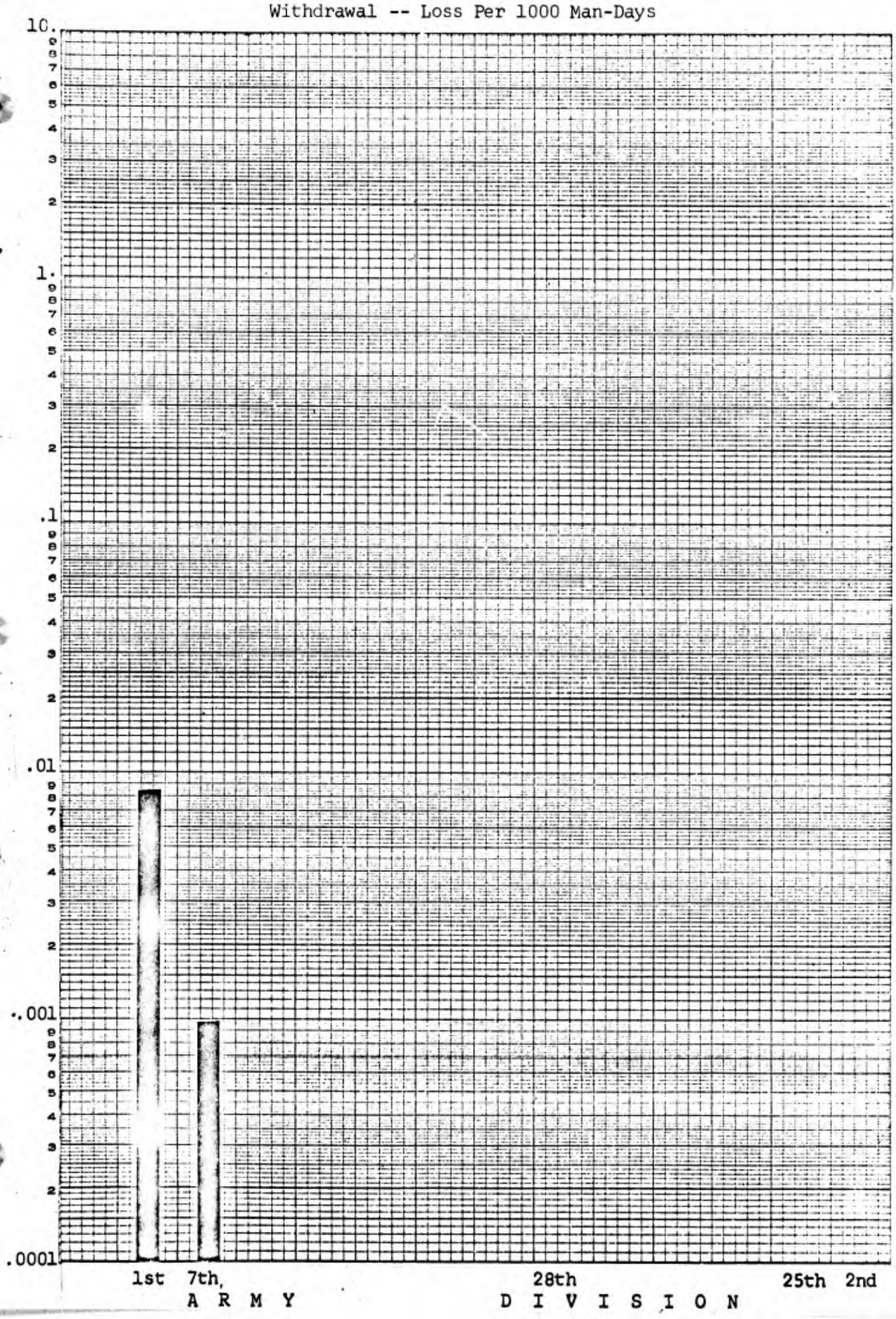
Generating Units

Defense -- Loss Per 100 Casualties



Generating Unit

Withdrawal -- Loss Per 1000 Man-Days



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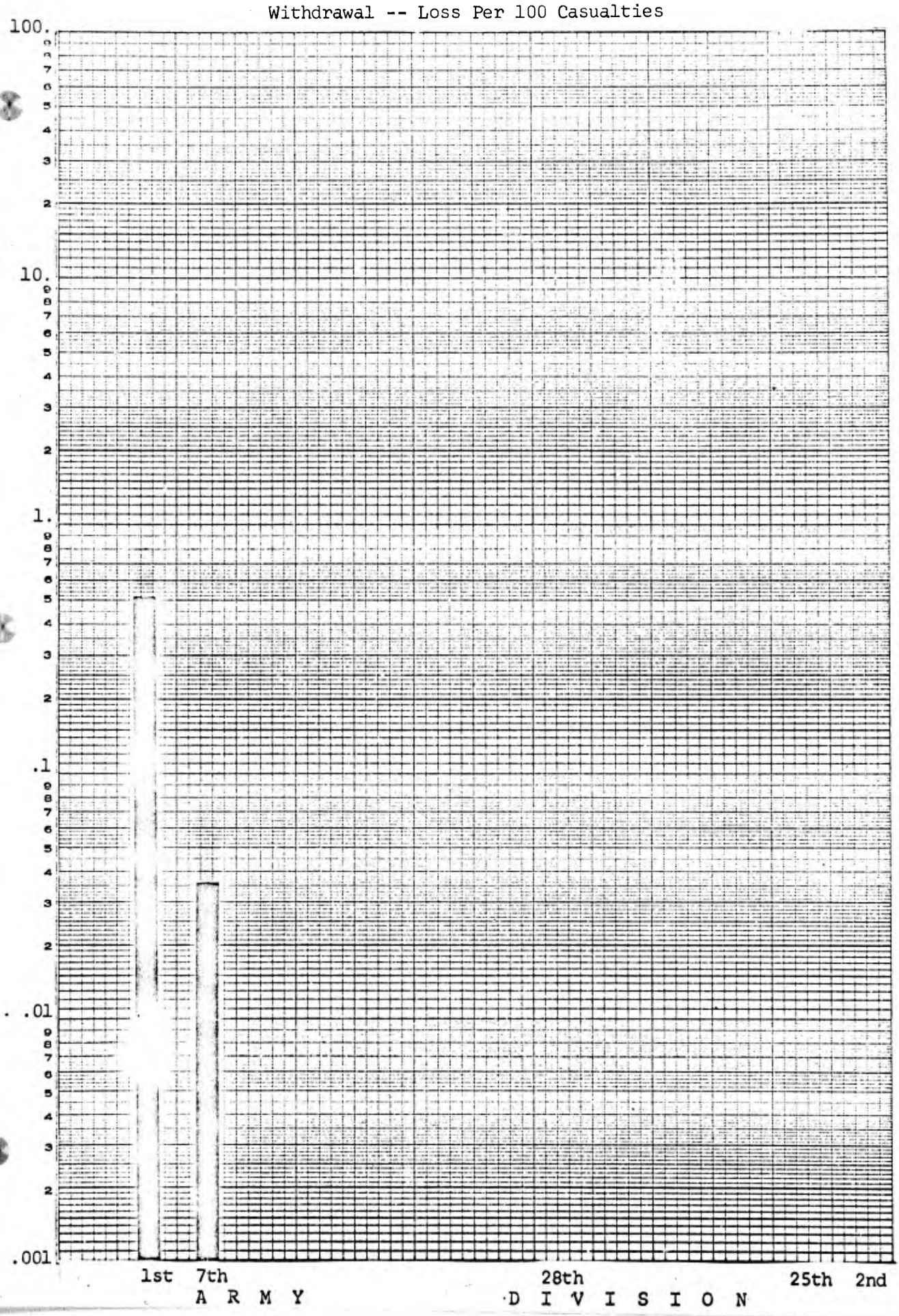
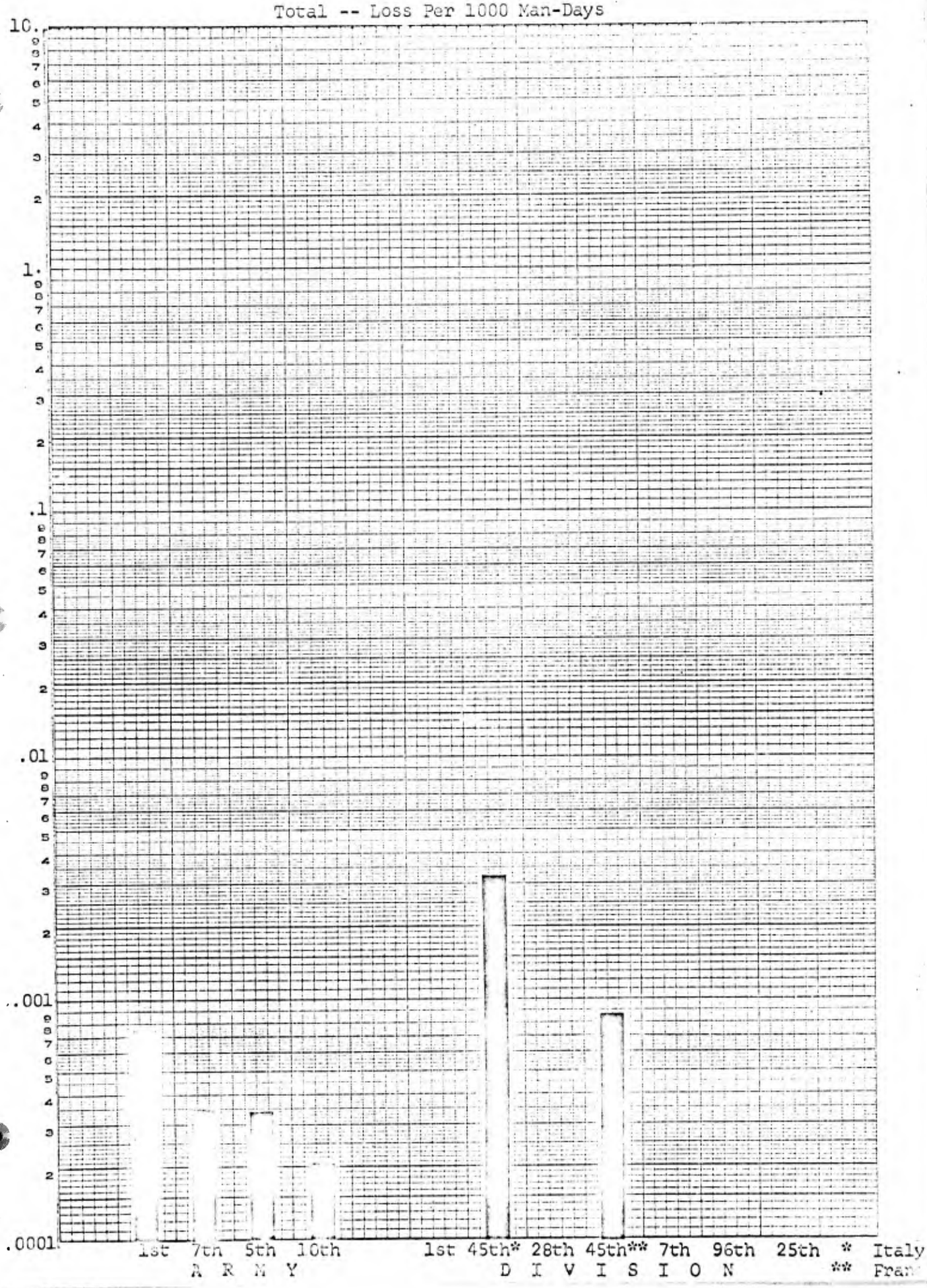
Withdrawal -- Loss Per 100 Casualties



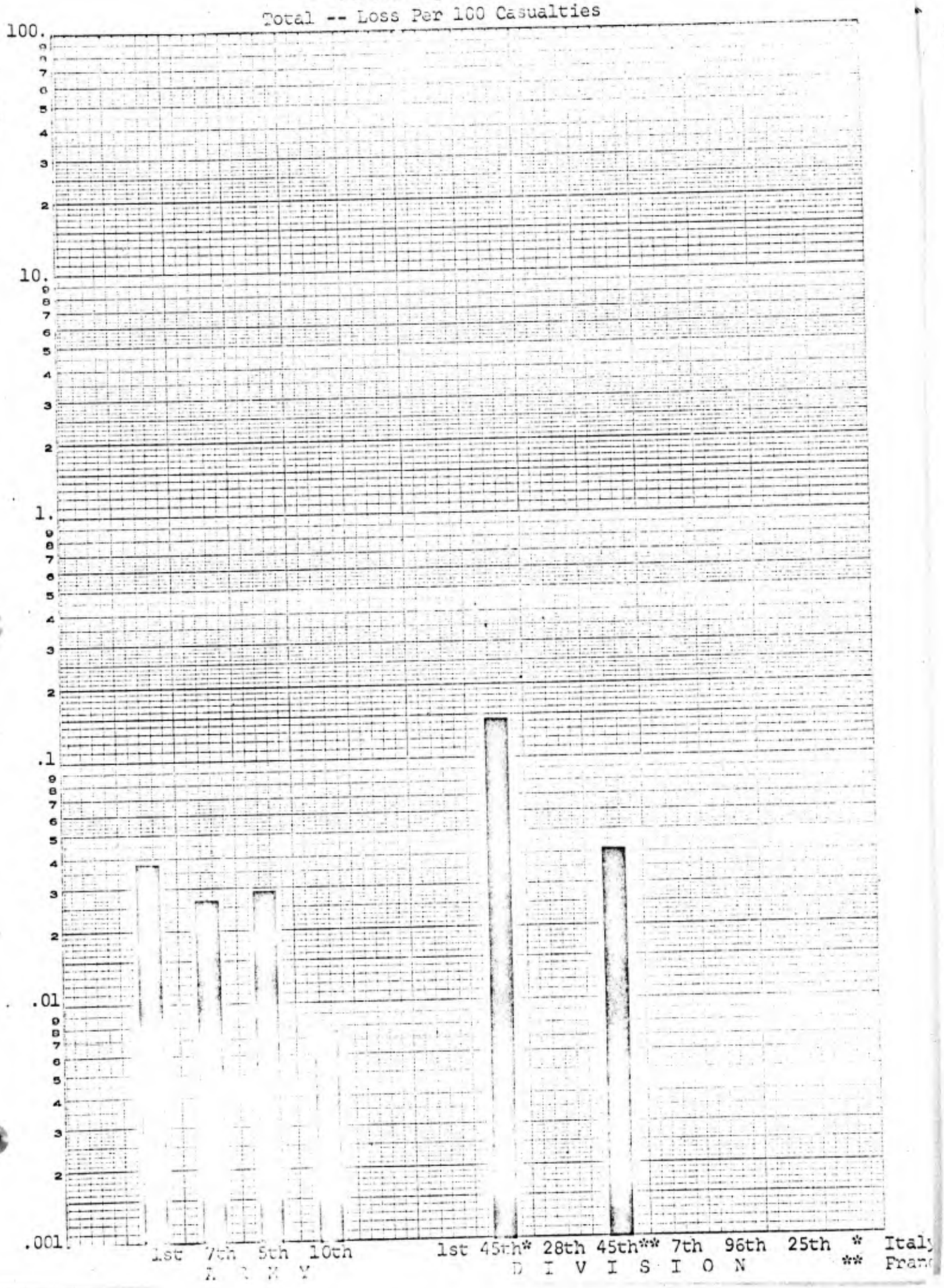
Generating Units

Total -- Loss Per 1000 Man-Days



Generating Units

Total -- Loss Per 100 Casualties



Enclosure D-1

SPECIAL ASPECTS OF COMBAT OPERATIONS IN EUROPE IN WORLD WAR II

While there were substantial geographical and other differences between the four European theaters of operation for which we have assembled some data (North European Plain, North European Hill Region, Italy, and Mediterranean-Tunisia), there were several common factors. The most important was the nature of the enemy armed forces,which had a sophistication and weapons technology making them at least fully comparable in combat capability to US forces in most significant characteristics, such as weaponry, tactical doctrine, and leadership. Furthermore, this enemy fought with determination, resourcefulness and great skill.

Among the important characteristics of German combat operations which affected the intensity of combat, and equipment loss, rates were the following: use of carefully prepared field fortifications, even when hastily constructed; skillful delaying operation tactics; excellent employment of artillery (although less effective than newly developed American artillery doctrine) in all combat postures, including effective counterbattery doctrine; frequent counterattacks in defense and retrograde operations; considerable superiority of German tanks in quality, but inferiority in numbers; leadership imbued with the understanding of the value of tactical and strategic improvisation in order to achieve surprise.

In all of the operations under consideration, the overall Allied (and particularly US) force strength was substantially superior to that of the enemy and (with the exception of Tunisia) enjoyed clear-cut air superiority. Despite marked differences in terrain and population density, the operational areas were inhabited by a highly civilized population (again with the partial exception of Tunisia), and communications nets were good, except in the most mountainous regions. The climate was temperate, and fairly damp, particularly in Northwest Europe.

The Tunisian operation data in the report is brief, and the records incomplete. In addition to the significance of the German ability to operate reasonably effectively in the air, it is also worth noting that US forces were still very inexperienced in modern war, while the Germans were extremely battle-wise. This factor played some part in all subsequent operations in the West, but became relatively less significant as more and more American units gained experience.

The First US Army operated on the North European Plain, and in the fringe of the North European Hill Region. This was the area which was most favorable to modern mobile tactics of the sort introduced by the Germans with their blitzkrieg. Thus it was the area where the Allies concentrated their greatest offensive effort, and where the Germans concentrated their efforts to defend the German homeland. This led to very intensive combat during most of the First Army's operations, particularly during the period for which we include data. Not unexpectedly, therefore, the general equipment loss rates were higher in this army's operations than in those of the other two armies operating in Europe which are considered in this report. Also, it was in this area where a determined and resourceful foe could be expected to undertake counteroffensive action that could be most damaging. This suggests, therefore, that any future operations against a highly competent enemy, in such relatively open country, will require prior provisions for the possibility of large-scale emergency replacement of equipment.

The Seventh US Army operated in country that was, on the average, considerably more rugged than that of the First Army. Thus, so long as other operational areas were available, it would be expected that both sides would not make as intensive an effort in this region. And, since defense was relatively easier, equipment loss rates in both defense and withdrawal would be likely to be less severe than in more open country. If, on the other hand, it should in future operations become necessary to push home attacks in such an area, which would thus require an intensification and strengthening of the defensive effort, loss rates would be likely to become higher, and might, despite modern doctrinal developments, approach those of World War I.

In Italy the Fifth Army encountered terrain that was, on the average, considerably more rugged than that in Northwest Europe. As a result, the Germans, exercising economy of forces, deliberately empoloyed the terrain for delaying purposes, without any attempt--save for the special circumstances at Anzio--to establish impenetrable defenses to be held at all costs. This meant, then, that Allied attack loss rates would be high, but not so high as

they could have been if the defense had been stronger. The result was generally moderate conflict, interspersed with periods of intense conflict during periods of Allied offensives. The most intensive period of combat for the Fifth Army was that in which the VI Corps was involved, for a little more than a month after its initial landings at Anzio, where the Germans made determined efforts to eliminate the beachhead.

Enclosure D-2

SPECIAL ASPECTS OF TENTH ARMY OPERATIONS ON OKINAWA

The last battle of the war in the Pacific was fought under circumstances which made it somewhat different from earlier encounters with the Japanese. There had been earlier landings in which the Japanese did not man strong defenses on and immediately behind the beaches, but this often can be attributed to the need to defend extensive areas with modest forces or to the achievement of a measure of surprise by American forces. In Okinawa the Thirty-second Imperial Army had the forces to build and man strong beach defenses; positions were indeed built, but the command elected not to occupy them. The beaches and, to some degree the comparatively wild and unsettled northern part of the island, were abandoned to the assaulting forces. The defenders chose to make their stand in the south and away from the most likely landing beaches, on ground which offered the best opportunity for a strong static defense. Several years of industrious preparation had transformed the ground into a fantastically complex system of caves, tunnels, and emplacements tied into a highly effective fire support pattern. The island was reputed to be the site of a major artillery school and the volume and accuracy of Japanese artillery fire, as compared with earlier experience, tended to confirm this.

After landing virtually unopposed on 1 April, 1945, the principal assault turned south and soon encountered the forward elements of the main defense. By 4 April the attacking forces were facing well-prepared positions, covered by wire and minefields and supported by heavy machine gun, mortar, and artillery fire. The Japanese showed great skill in the use of their 47 mm antitank guns. The main thrust of the attack was across corridors and into prepared positions. Maneuver, except in a most restricted local sense, was not possible. The battle became a repetitious pattern of close assault with high casualties, hurried consolidation, and Japanese counterattack. If the counterattack did not come by day there was almost certain to be an infiltration attempt at night. The defenses were not uniformly strong in personnel throughout their depth, but long-range fire coverage was consistently heavy. The Japanese tended to occupy themselves with the

immediate foreground of the position. Counter-battery fire, or fire against installations and communications, was not a prominent element of the defense, although not completely absent. The defenders exhibited their expected willingness to die on the ground rather than abandon or surrender a position and only late in the campaign did their morale flag to the point where this was not the case.

In many cases a local defense point would be based on a hill, the interior of which was a honeycomb of tunnels. The heaviest sort of preparatory fire would usually force the defenders into the interior of the position; when the fire lifted they again manned the positions at the tunnel ends and took advancing US infantry under fire. The mutual fire and personnel support plans of these positions had been carefully developed and it was routine to expect counterattack by fire and fresh troops when an attack was making any real progress. This progress, in turn, was slow and painful since each tunnel mouth and cave had to be taken under direct assault and destroyed or sealed with heavy explosives.

It was against this sort of defense the attackers operated from early April until late May. The center of the defense system was an imposing hill to which there were no easy approaches. The broken terrain pattern limited visibility and direct fire range for the attack, since the Japanese usually controlled some higher point. The road system of Okinawa was of the primitive quality to be expected. Combat engineers developed the net adequately to support minimum military needs except in periods of extended rain, several of which were encountered. During these times logistics tended to control operations. The total effect was to make the burden on vehicles somewhat greater than would otherwise have been the case, but this was more than offset, in the comparative sense, by the relatively short distances between beaches, supply points, and forward units.

In summary, the fighting for Okinawa was characterized by a particularly vicious type of close combat where the bulk of the casualties were taken by assault infantry and their weapons. Tanks were particular targets, since they operated purely in an infantry support role. Distances were short and transport problems were limited to those posed by relatively short periods of heavy rain and a measure of fairly high humidity. There were no other extremes of climate or temperature with significant impact on equipment

Enclosure D-3

SPECIAL ASPECTS OF COMBAT OPERATIONS IN KOREA

General

As pointed out in Section III of the report, the records suggest that in its operational aspects the war in Korea was very much different in nature from the operations in World War II. In addition to the obvious relevance of a new political environment, and the first impact of anything like mutual nuclear deterrence, this operational difference was due to the difference in the quality of the enemy perhaps even more than the difference in the nature of the situation. There were other factors as well.

Since the exact relevance of this issue to the overall purposes of the study is not yet clear, and since both time and funds were limited, HERO did not devote to this topic the resources in time and effort that it undoubtedly deserves. The following discussions, however, are relevant to the discussion in the report, and would provide a start toward the kind of investigation which may be desirable to ascertain the extent to which the differing natures of wars, and the differences in quality of opponents, may affect equipment as well as personnel casualties.

Experience of the 25th Division

The 25th Division was engaged in operations within the Pusan perimeter when, on 15 September, 1950, the Inchon landing "loosened up" the general nature of the war. When the North Korean forces began withdrawal on 19 September, the Division began to move, at first against rather stubborn resistance. Progress increased with time and by 30 September a breakthrough had been achieved. Fighting was characterized by a series of small but stiff encounters as the NK forces withdrew. Mine fields, blown bridges and cratered roads impeded progress.

The Division came to rest after a week of such fighting in an area north of the 38th Parallel. A period of counter-guerrilla operations occupied the Division for the month of October. Rain, fog, haze, and heavy cloud cover aided the enemy. Early in November the Division began movement to the north. Small enemy groups fought delaying actions and laid ambushes, adding to these efforts land mines, blown bridges, and landslides.

Between 19 - 21 November the Division moved to the extreme north, some 175 miles over very poor roads. After jumping off on the 24th, against light opposition, the Division encountered strong resistance on the 27th. On 29 November the withdrawal began. Supply and equipment losses mounted. The G-4 of the Division commented that little judgment was used in the destruction or abandonment of supplies and equipment, although in his view morale remained high. In any event, the withdrawal continued until the Imjin River was reached, impeded by a flood of refugees, and extreme cold weather. The latter half of December was spent in a new defensive position.

The Chinese New Year's offensive again forced a withdrawal when a ROK division was penetrated on the right flank of the Division. By the end of the month the Division was again on the offensive. There were periods in reserve and of relatively light activity until the attack was resumed on 16 February. The Division took up positions along the south bank of the Han River. Spring thaws and rain made road conditions poor. On March 7 the Division crossed the river under mortar and automatic weapons fire and played its part in the following offensive. Resistance was light to moderate until early April. There began then a see-saw period of attack and defense with another period of withdrawal sandwiched in. Until the end of June the operational pattern was one of attack, patrol and defense as both sides moved to stabilize on favorable positions.

The history of the 25th Division for the period covered here was one of varied experience, covering many combat postures at several levels of intensity. In some ways its history may be regarded as average, if not typical.

The enemy faced by the 25th, initially North Korean and later Chinese Communist, used tactics which suited their state of equipment and natural characteristics. They were indefatigable diggers. Their organization of defensive infantry fires was good. On the attack they continued to press home in the face of large casualties. On the defensive they were cunning and tenacious. Their use of artillery was quite primitive, and far less effective than that of the UN forces. They were proficient in their use of mines and

booby traps, and employed them freely. They destroyed bridges and roads as a matter of practice. At night they were effective. The Communist forces often attacked blindly against heavy fire. Their logistics systems, particularly in exploitation of a penetration or a local victory, was primitive.

Korea is not a gentle country in which to fight. It is extremely hilly; roads were primitive in 1950, and rail communications poor. The climate is hot and humid in summer, extremely cold in winter. There are periods of heavy rain and snowfall. Rains and thaws make the maintenance of roads and emplacements a heavy chore with little respite. There are extensive periods of fog and haze.

Experience of the 2nd Division

The 9th Infantry Regiment - August, 1950

The 2nd Division was stationed at Fort Lewis, Washington, when it was alerted for duty in Korea. Its situation at the time was typical of a unit in fairly routine training and garrison duties during that part of the year when routine personnel transfers are increased by the departure of senior officers and non-commissioned officers for extended periods of schooling. The Division faced and solved in admirable fashion the host of problems involved in getting up to strength, re-equipping, loading, and sailing for foreign duty. The availability of shipping, among other factors, required piece-meal departures. As a result, units arrived as regimental combat teams and were committed as required by a tense situation. There is, as a result, no coherent body of documentation at the division level for the period 6 - 31 August 1950. Units did report from time to time, usually in incomplete fashion. Equipment loss reports were incomplete and irregular, but some significant information can be extracted from the record. This information is recorded here in the hope that it may be useful in comparison to losses sustained by units fighting under similar exterior physical conditions, but not in a unit situation like that experienced by, for example, the 9th Infantry.

Elements of the 9th Infantry and 15th Field Artillery sailed from the Puget Sound area on 17, 18, and 19 July and reached Pusan on the 31st. On 6 August 1/9, 1 platoon of 4.2 mortars, and Battery A, 15th FA were fed into the lines. On 8 August with further units in hand, the 9th RCT (less 3rd Bn) resumed the attack against light resistance from North Korean troops entrenched on high ground. What follows is a brief description of typical 2nd Division operations for the remainder of August, 1950.

9 - Morning counterattack on RCT 9 (-) by NK troops. Beaten off, followed by 9th Inf attack against increasing resistance from hasty defensive positions.

10 - NK counterattack; 1/9 maintained advance, others held up.

11 - NK troops thought to be an elite unit again attacked; 3/9, an all-Negro unit, was ambushed while on the move at 0100. Two companies were cut off. Remainder of battalion withdrew; it appears that personnel from these units were reassigned to other 9th Inf elements.

12 - Two battalions of the 9th Inf were assigned the task of clearing and keeping open the MSR under control of 24th Division. For a period of 16 days fighting was described as "heavy" as NK forced tried to regain control of the MSR. Losses from heat and WIA were high.

For the remainder of the period fighting was intense as the NK forces struggled to hold short of the Naktong River. US air support increased in availability and effectiveness. There were several heavy rains which, added to the basic nature of the Korean road system, decreased the mobility advantage of US units. RCT 23 first appears in the record on 15 August; the 2d Division was complete in Korea on the 24th. On that date the Division took over the Naktong sector previously held by the 24th Division with 9th and 38th up; the 23rd returned to the Division on August 28. The North Korean forces prepared for counterattack as the Division established a wide-front defensive position.

The general exterior conditions of operations involved hot, humid weather with occasional heavy rains. The road net was primitive. The terrain, while not mountainous, is hilly and offers good opportunities for digging in and gives fair concealment. Natural cover is fair. The units of the 2nd Division were faced with rapid entry into combat immediately after a long and enervating sea voyage. Troop units had not had the opportunity to live and train together to the degree desirable because of the late input of fillers.

The 9th Infantry was in some sort of action for 24 days in August. Not all elements were engaged every day, but the average intensity of combat, and the unfavorable conditions faced by the regiment, produce a body of experience which should be examined--fragmentary though it may be. The following table compares the experience of several 2nd Division units:

UNIT	Off	Enl	KIA	WIA	MIA	TOTAL	NB CAS	DAYS/ACTION
9th Inf	145	2761	105	550	177	827	419	24
23rd Inf	151	3311	14	51	-	65	115	15
38th Inf	152	3450	12	26	2	40	59	10
37 FA	47	580	3	26				
15 FA	42	590	10	15				
82 AAA	41	721		44		4	6	11
72 Tk	44	643					10	3

A tank status report of September 2 shows that the 72 Tk Bn had lost 1 M-26 tank and 2 M-4. An additional 5 M-4 had been damaged but were repaired and returned to service. The 9th and 23rd Infantry had lost 1 M-4 each to enemy action. In another fragmentary report we see that the 39th FA Bn had lost 3 2½ T trucks, burned on the MSR by North Korean troops; 82nd AAA had lost 1 M-16 and 1 M-39.

On September 4, a staff officer, while making a road reconnaissance, got the following vehicle and weapon loss data from the 38th Inf:

2½ T Truck 7
3/4 T Truck 3
¼ T Truck 9
Pistols 15
Rifles, M-1 14
BAR 11
57 RR 3
75 RR 1
MG 50 cal 3
MG 30 cal, light 3
MG 30 cal, hvy 6

A partial tank status report of the same date gives the following information on the 72nd Tank Bn:

M4A3E8 - 16 operational, 1 non-operational, 6 lost in combat
M26 - 12 operational, 7 non-operational, 1 lost in combat
(The "non-operational" figure does not include combat loss)

"C" Co, 72nd Tank Bn, was detached from the parent unit during the period but it was reported that it lost 3 tanks, type unknown. The organic tank company of the 23rd Inf reported 2 losses of M4 tanks; other units reported no loss.

Losses of ¼ T trucks were given in an undated pencilled note, attached to a G-4 Journal near the end of the period:

9th Inf	5
15th FA	6
Div Hq	3
37th FA	1
2nd MP Co	2
72 Tk Bn	1
2nd Rcn Co	1
23rd Inf	1
Total	20

In the G-4 journal of the 2nd Division there is a message dated 1 September, 1950, signed by (Colonel) John G. Hill, Commanding Officer, 9th Infantry, which reads:

"CG, 2d Inf Div (attn G-4)

"Units of the 9th Inf coming out have very little equipment, particularly automatic weapons. BARs, machine guns both 30 and 50 caliber, and mortars; also recoilless rifles are almost a total loss.

"It is requested that immediate steps be taken to get this equipment laid down for two battalions so that as fast as strength builds up the weapons will be available so we may fight again."

It is recognized that the above account does not lead to any quantification of casualties and losses which can be compared with other experience. The account is included in this report despite this fact, in the belief that it gives valuable insights into the conditions produced when a green organization is committed to heavy action in a difficult environment. The 9th Infantry gave an excellent account of itself under most difficult conditions. As a result of such conditions, a large requirement for replacement of materiel was generated. As was to be the case later with the Division at Kunu-ri, an abnormal situation produced temporary peaks in demand. The effect of such demands on the supply system is discussed elsewhere in this report.

The Ordeal at Kunu-ri

The losses sustained by the 2nd Division in its period of defense and withdrawal in contact, 26-30 November, 1950, were by far the largest developed in this study on the basis of the "per 1000 man/day" computation, and the personnel casualty rate was also the highest encountered in the study, although of course only for a very short period. The following narrative describes the

general tactical situation, major events, and surrounding conditions of this engagement. It must be recognized that this experience was in many ways unique and inferences should be made with great care. The battle does, nevertheless, represent the extreme high end of the loss spectrum and the fact that these losses did indeed occur should not be allowed to escape notice. Such concentrated losses at the division level are bound to have significant impact at some point in the replacement system.

Tactical Situation. After clearing South Korea of North Korean forces in September 1950 and reorganizing along the 38th Parallel, Eighth US Army in October launched an offensive aimed at the Yalu River. Second Infantry Division, attached to IX Corps, began moving north November 5, 1950 with the 25th Infantry and 1st Cavalry Divisions on its left and Republic of Korea (ROK) II Corps on its right. By November 25 the division had progressed north of Kunu-ri against stiffening resistance.

Shortly before 2400 November 25 the entire division front was attacked in great strength by an enemy identified as Chinese Communist Forces (CCF). Throughout November 26-27 the division held off constant heavy assaults to enable the two divisions on its left to withdraw from advanced and exposed positions. On November 27 ROK II Corps collapsed and 2nd Division refused its right flank but was unable to prevent movement of large CCF elements past this flank.

The division was ordered November 28 to withdraw southward, a movement begun by pulling out service and support elements and slightly contracting the division front. On November 29 the Division CP moved to 6 miles south of Kunu-ri while its infantry regiments maintained a sharp rearguard action. The Division CP was overrun during the night and the division commander ordered a withdrawal of some 5 miles toward Sunchon over a single road. It was not known at the time that the CCF already had cut this route near its southern end and set up road blocks.

The division, less the 23d Inf Regt, the 15th FA Bn, one company of the 72d Tk Bn, and some odds and ends, which had been left north of Kunu-ri to cover the 25th Inf Div's withdrawal, started south at 1330 November 30. It made its way through a 5-mile guantlet of fire from hills on both sides of the road. The road itself not only was impeded by CCF roadblocks, but hit and skidding vehicles blocked it along its length and made it all but impassable except on foot.

North of Kunu-ri the 23d Inf and its attachments, plus the disorganized and demoralized Turkish Brigade, elected to move out

by a route west of that taken by the division. Faced with the triple difficulty of holding off the CCF attack while organizing to leave, hauling 18 105 mm howitzers over the narrow and tricky road, and finding transportation for the troops, the infantry and artillery commanders agreed on a unique expedient. They decided to cover the withdrawal with the fires of the guns, then destroy them and use their prime-movers to haul troops. In 22 minutes the 18 pieces fired 3206 rounds. Then their crews thermited the tubes, from which the paint had already melted, removed sights and locks, and abandoned 17 of the pieces; one was somehow extricated. The unprecedented artillery fire apparently subdued the attackers; the 23d and its accompanying units got out without further loss.

Surrounding Conditions. The enemy. The attack was conducted by a CCF force that ultimately was built up to an estimated five divisions and attained positions on the front, both flanks, and rear of 2nd Inf Div.

Weather. Very cold with occasional snow. The roads and tracks were icy and the ground frozen so that foxholes could not be dug.

Road net. The Kunu-ri-Sunchon road is a two-lane, gravel surfaced, winding mountain road dominated almost along its length by high ridges on both sides.

Equipment. Maintenance of motor vehicles in all categories had been inadequate for some time prior to the five days of battle and movement because of a chronic shortage of parts. In addition to a number of vehicles sent to Army maintenance centers for lack of parts prior to the action, 39 general purpose and 47 tracked vehicles awaiting parts at the Division ordnance company had to be abandoned because they could not be moved.

LOSS COMPARISON
--ARMIES

		FIRST ARMY--NW EUROPE Total Strength: 60,080,930 Total Casualties: 118,319 Duration: 206 Days/6.75 Months 1 August 1944-22 February 1945		SEVENTH ARMY--NW EUROPE Total Strength: 50,942,000 Total Casualties: 66,310 Duration: 6.75 Months 5 November 1944-12 May 1945	
		CUMULATIVE LOSS	MONTHLY AVERAGE	CUMULATIVE LOSS	MONTHLY AVERAGE
1 Truck, ¼ Ton 4x4	#	.06215		.03437	
	@	3.1559		2.6406	
		(3734)	(553.19)	(1751)	(259.41)
2 Truck, 2½ Ton (all types)	#	.02558		.03264	
	@	1.2990		2.5079	
		(1537)	(227.71)	(1663)	(246.37)
3 Tank, Medium	#	.01841		.01142	
	@	.9348		.8777	
		(1106)	(163.85)	(582)	(86.22)
4 Carbine, .30, M1	#	.17533		.22082	
	@	8.9031		16.9643	
		(10534)	(1560.61)	(11249)	(1666.52)
5 Rifle, .30, BAR, M1918	#	.05494		.03447	
	@	2.7899		2.6482	
		(3301)	(489.04)	(1756)	(260.15)
6 Rifle, .30, M1	#	.28886		.37539	
	@	14.6680		28.8388	
		(17355)	(2571.14)	(19123)	(2833.04)
7 Rifle, .30, M1903 Series (includes Snprs)	#	.00932		.01429	
	@	.4733		1.0979	
		(560)	(82.96)	(728)	(107.85)
8 Machine Gun, .30 (all types)	#	.05128		.02817	
	@	2.6040		2.1641	
		(3081)	(456.45)	(1435)	(212.60)
9 Howitzer, 105 mm	#	.00188		.00016	
	@	.0955		.0121	
		(113)	(16.74)	(8)	(1.19)
10 Howitzer, 155 mm	#	.00038		.00029	
	@	.0194		.0226	
		(23)	(3.41)	(15)	(2.22)
11 Mortar, 81 mm	#	.00636		.00385	
	@	.3229		.2956	
		(382)	(56.59)	(196)	(29.04)
12 Radio Set, SCR-300	#			.01419	
	@			1.0903	
				(723)	(107.11)
13 Radio Set, SCR-608	#			.00024	
	@			.0181	
				(12)	(1.78)
14 Radio Set, SCR-610	#			.00322	
	@			.2473	
				(164)	(24.30)
15 Generating Unit	#	.00073		.00035	
	@	.0372		.0271	
		(44)	(6.52)	(18)	(2.67)
x Tank, Light	#	.00436		.00349	
	@	.2214		.2684	
		(262)	(38.81)	(178)	(26.37)

#=loss per 1000 man-days

FIFTH ARMY--ITALY Total Strength: 67,107,000 Total Casualties: 78,371 Duration: 373 Days/12.25 Months 9 September 1943-16 September 1944		TENTH ARMY--PACIFIC Total Strength: 13,983,631 Total Casualties: 39,420 Duration: 91 Days/3 Months 1 April-30 June 1945	
CUMULATIVE LOSS	MONTHLY AVERAGE	CUMULATIVE LOSS	MONTHLY AVERAGE
.02955 2.5303 (1983)	(161.88)	.01602 .5682 (224)	(74.67)
.02845 2.4358 (1909)	(155.84)	.01008 .3577 (141)	(47.00)
.00876 .7503 (588)	(48.00)	.01051 .3729 (147)	(49.00)
.07332 6.2778 (4920)	(401.63)	.12765 4.5282 (1785)	(595.00)
.03037 2.6004 (2038)	(166.38)	.09489 3.3663 (1327)	(442.33)
.12018 10.2908 (8065)	(658.37)	.11263 3.9954 (1575)	(525.00)
.07360 6.3021 (4939)	(403.18)	.00322 .1142 (45)	(15.00)
.02542 2.1768 (1706)	(139.26)	.01309 .4642 (183)	(61.00)
.00073 .0625 (49)	(4.00)	.00079 .0279 (11)	(3.67)
.00095 .0817 (64)	(5.22)	.00014 .0051 (2)	(.67)
.00429 .3675 (288)	(23.51)	.00350 .1243 (49)	(16.33)
.00034 .0293 (23)	(1.88)	.00021 .0076 (3)	(1.00)
.00356 .3050 (239)	(19.51)	.00029 .0101 (4)	(1.33)

2

LOSS DENSITY COMPARISON
(in % per day of T/A)

FIRST ARMY

	T/A*	195 Days ATTACK	11 Days WITHDRAWAL	206 Days TOTAL		T/A*
1 Truck, ¼ Ton 4x4	10,267	2939 .1468%	795 .704%	3734 .1765%		6,805
2 Truck, 2½ Ton (all types)	17,024	891 .0268%	646 .345%	1537 .0438%		9,746
3 Tank, Medium	1,133	828 .375%	278 2.230%	1106 .474%		532
4 Carbine, .30, M1	167,800	6482 .0198%	4052 .219%	10534 .0305%		73,639
5 Rifle, .30, BAR, M1918	2,200	2631 .613%	670 2.768%	3301 .728%		2,939
6 Rifle, .30, M1	99,000	12894 .0668%	4461 .409%	17355 .085%		54,000
7 Rifle, .30, M1903 Series	8,208	93 .0058%	22 .024%	115 .0068%		16,68
8 Machine Gun, .30 (all types)	4,280	2089 .250%	992 2.107%	3081 .349%		2,63
9 Howitzer, 105 mm	735	46 .0321%	67 .828%	113 .0746%		3
10 Howitzer, 155 mm	238	13 .028%	10 .382%	23 .0469%		2
11 Mortar, 81 mm	515	230 .229%	142 2.507%	382 .3601%		4
12 Radio Set, SCR-300						
13 Radio Set, SCR-608						
14 Radio Set, SCR-610						
15 Generating Unit, M5	443	13 .015%	31 .636%	44 .0482%		
x Tank, Light	820	204 .1276%	57 .631%	261 .1545%		

T ARMY

FIFTH ARMY

11 Days WITHDRAWAL	206 Days TOTAL			T/A*	329 Days ATTACK	373 Days TOTAL			
795 .704%	3734 .1765%			6,805	1821 .0813%	1983 .0781%			
646 .345%	1537 .0438%			9,746	1760 .0549%	1909 .0525%			
278 2.230%	1106 .474%			532	560 .319%	588 .296%			
4052 .219%	10534 .0305%			73,639	4447 .0183%	4920 .0179%			
670 2.768%	3301 .728%			2,939	1897 .196%	2038 .186%			
4461 .409%	17355 .085%			54,000	7797 .0439%	8065 .0400%			
22 .024%	115 .0068%			16,684	4399 .0801%	4493 .0722%			
992 2.107%	3081 .349%			2,636	1591 .183%	1706 .173%			
67 .828%	113 .0746%			328	49 .0454%	49 .0401%			
10 .382%	23 .0469%			211	29 .0417%	64 .0813%			
142 2.507%	382 .3601%			430	272 .192%	288 .179%			
31 .636%	44 .0482%			595	21 .0107%	23 .0103%			
57 .631%	261 .1545%			329	236 .218%	239 .195%			

per 1000 man-days per 100 casualties		ATTACK	DEFENSE	WITHDRAWAL	TOTAL
ruck, ¼ Ton 4x4	# @	.03345 2.1809	.00959 .7971	.13675 3.0179	.03552 2.2238
ruck, 2½ Ton (all types)	# @	.02517 1.4895	.00232 .1932	.09510 1.8532	.02419 1.6510
ank, Medium	# @	.01170 .7289	.00291 .2415	.04784 1.0556	.01228 .7339
arbine, .30, M1(1)	# @	.10923 6.6005	.11116 9.2392	.65173 13.6896	.12168 7.0478
ifle, .30, BAR, M1918	# @	.05240 2.8492	.01831 1.5217	.11392 2.4939	.05357 2.8512
ifle, .30, M1(1)	# @	.17656 11.4517	.03532 2.9348	.62044 11.4469	.17734 10.8434
ifle, .30, M1903 Series(1)	#	.02223 1.7045	.00828 .6884	.01401 .4660	.01981 1.6233
achine Gun, .30 (all types)	# @	.02579 1.6903	.02557 2.1256	.17038 3.8090	.02949 1.8523
owitzer, 105 mm	# @	.00066 .0389	.00927(2) .3890(2)	.00927 .1699	.00089 .0495
owitzer, 155 mm	# @	.00030 .0209	.00205(3) .3665(3)	.00152 .0305	.00041 .0296
ortar, 81 mm	# @	.00396 .2520	.00459(3) .7588(3)	.02432 .5353	.00450 .2776
adio Set, SCR-300(4)	# @	.01383 1.0833	.00726 .6039	.01620 .6062	.01419 1.0903
adio Set, SCR-608(4)	# @	.00012 .0097	.00029 .0242	.00065 .0242	.00024 .0181
adio Set, SCR-610(4)	# @	.00283 .2217	.00087 .0725	.01004 .3758	.00322 .2473
enerating Unit, M5	# @	.00030 .0197	.00021(3) .0373(3)	.00470 .0941	.00041 .0253
ank, Light	# @	.00291 .2256	.00262 .2174	.02036 .4608	.00292 .2010

Based on assumption that Seventh Army figures included First French Army for all except withdrawal.

Data unavailable. Factor for man-days based on withdrawal; factor for casualties based on attack rate x 10.

Based upon data for "rest" and "other" postures of Fifth and Seventh Armies.

DIVISION MEAN VALUES[1] - WW II Only

loss per 1000 man-days loss per 100 casualties		ATTACK[2]	DEFENSE[3]	WITHDRAWAL[3]	TOTAL[4]	
ruck, ¼ Ton 4x4	# @	.04405 .8153	.02898 2.0382	.90323 3.7642	.05982 1.9375	
ruck, 2½ Ton (all types)	# @	.02487 .3736	.00543 .3822	.28111 1.1715	.02065 .7003	
ank, Medium	# @	.01339 .2090		.07834 .3265	.02192 .7673	
arbine, .30, M1[5]						
ifle, .30, BAR, M1918	# @	.08709 1.4663	.07971 5.6051	.83410 3.4761	.09446 2.5485	
ifle, .30, M1[5]						
ifle, .30, M1903 Series[5]						
achine Gun, .30 (all types)	# @	.04454 .4673	.05254 3.6943	.50691 2.1125	.04824 1.4820	
owitzer, 105 mm	# @	.00888 .0388		.05530 .2305	.00253 .0469	
owitzer, 155 mm	# @	.01129[5] .8475[6]	.00195[6] .2890[6]		.0072 .0236	
ortar, 81 mm	#	.01541 .1473	.03174 1.0922	.11060 .4609	.01247 .2692	
adio Set, SCR-300[7]	# @	.03882 .5477			.03973 1.4245	
adio Set, SCR-608[7]	# @	.00247 .0427			.01296 .5892	
adio Set, SCR-610[7]	# @	.01907 .2800	.04174 .6556		.03544 1.4829	

4

1

5 Rifle, .30, BAR, M1918	# @	.08709 1.4663	.07971 5.6051	.83410 3.4761	.09446 2.5485	
6 Rifle, .30, M1 (5)						
7 Rifle, .30, M1903 Series (5)						
8 Machine Gun, .30 (all types)	# @	.04454 .4673	.05254 3.6943	.50691 2.1125	.04824 1.4820	
9 Howitzer, 105 mm	# @	.00888 .0388		.05530 .2305	.00253 .0469	
10 Howitzer, 155 mm	# @	.01129 (6) .8475 (6)	.00195 (6) .2890 (6)		.0072 .0236	
11 Mortar, 81 mm	#	.01541 .1473	.03174 1.0922	.11060 .4609	.01247 .2692	
12 Radio Set, SCR-300 (7)	# @	.03882 .5477			.03973 1.4245	
13 Radio Set, SCR-608 (7)	# @	.00247 .0427			.01296 .5892	
14 Radio Set, SCR-610 (7)	# @	.01907 .2800	.04174 .6556		.03544 1.4829	
15 Generating Unit, M5 (8)	# @				.00205 .0932	

(1) Data is spotty and, due to reporting practices, not reliable.
(2) Includes 1st Division, 1000/man-day factor only, where data is available.
(3) 28th Division only. 45th Division defense data is an extreme case at Anzio.
(4) Includes 6th Armored Division data where available. This column is most reliable of this consolidation.
(5) Figures unreliable below Army level.
(6) Includes some data shown as "other" posture.
(7) All signal data is particularly unreliable.
(8) Reporting practices make all data invalid except total.

2

Enclosure E-5

TENTATIVE MATHEMATICAL FORMULAE FOR PREDICTING MATERIEL LOSSES IN WAR

(Based upon a study by Edward S. Gilfillan, Jr.)*

Six categories of materiel were chosen for study. One of these was the jeep. The next was made up of all types of 2½ ton trucks. The third was all types of .30 caliber rifles except the BAR and the carbine. The fourth was the carbine, all models. The fifth was made up of all .30 caliber machine guns too heavy to be hand fired. The sixth was made up of all 60 and 81 mm mortars.

It was decided that the end form of the mathematical expressions should be:

$$m_j = M_j \left(- \frac{1}{n} \frac{dn}{dt} + A_j \right) e^{\sum_k (a_{jk} u_{jk} + b_j)}$$

where m_j is the fraction of the materiel of the jth kind lost per day, M_j is a constant, specific to that particularly kind of materiel to be determined from the data, n is the instantaneous number of troops in the military unit, t is the time in days, A_j is a constant representing attrition of this specific item of materiel in the absence of casualties (the A_j were estimated at the beginning of the study from consideration of the nature of the materiel--they were not afterward changed; on this more below), and a_j and b_j are constants to be determined from the data subject to the condition

$$\sum_i (a_j u_{ij} + b_j) = o$$

---

*Previously submitted to RAC.

It should be noted here that acceptance of this formula commits one to nothing; the criterion of value is how well it fits the data and this is subject to the objective test applied below.

Casualties are taken as the sum of killed, wounded, and missing.

The independent variables considered are intensity of combat, defined as the negative of the derivative of the logarithm of the number of troops with respect to the time in days, the difficulty of the terrain on a scale on which the terrain of the Motoyama Plateau of Iwo Jima is taken as ten (fortifications are considered part of the difficulty of terrain; in estimating terrain weather is considered to be ideal), the precipitation (rain or snow) in inches of water per month (the instantaneous value, the average over the past three days, or the annual average is taken, whichever is the largest), the temperature at noonday in degrees F, the length of daylight in hours, and the age of the unit in months of combat. These are given in Table 1.

Six auxiliary variables, each a function of the corresponding independent variable only, are now defined as follows:

$u_1 = -1000 \frac{d \log n}{dt}$ n = number of troops

u_2 = terrain difficulty (scale of 10)

$u_3 = 10 \left(\frac{w}{2} - \log \frac{w}{2} - 1 \right)$ w is inches of water per month

$u_4 = \frac{1}{360} (t - 40)^2$ t in degrees F.

$u_5 = 10 \left(1 - \frac{h}{18} \right)^2$ h is length of daylight in hours

$u_6 = 10\, e^{-\frac{L}{3}}$ L is months of combat experience

These formulae are empirical; the intent is to express the difficulty imposed by the independent variable on combat in approximately equal units. The validity of the formulae, if any, derives from improved fit of the final formulae with the data over the fit when no correlation with combat conditions is attempted. The constants found by the above methods and entering the final formulae are listed in Tables I and II.

Table I

Values of Constants Entering the Formulae

Item	M	A	b
Jeep	.20	.0015	-.009
2½ ton truck	.20	.0015	-.023
Rifle	.15	.0005	.019
Carbine	.21	.0005	.065
Machine gun	.78	.0010	-.006
Mortar	.29	.0010	-.006

Table II

Correlation Coefficients

Materiel	Intensity	Terrain	Precipitation	Temperature	Daylight	Inexperience
Jeep	.01	.01	.04	.03	.00	.02
2½ ton truck	.11	.05	.11	.05	.03	.10
Rifle	-.08	-.06	-.07	-.05	+.01	-.01
Carbine	.00	-.01	.00	-.02	-.01	-.01
30 Cal. machine gun	-.01	+.03	.09	.07	-.01	-.01
Mortar	.03	.00	.00	.03	.01	.03

HISTORICAL EVALUATION AND RESEARCH ORGANIZATION

2233 Wisconsin Avenue, N.W., Washington, D. C. 20007 • Area Code 202 / 337-0116

ERRATA--VOLUME II

Historical Analysis of Wartime Replacement Requirements; Experience for Selected Major Items of Combat Equipment

1. Replace Enclosure B-11 (First Army Consolidation) with Attachment 1, herewith.

2. Correct Enclosures to conform to values shown on corrected Enclosure B-11:

C-1-a	C-5-a	C-8-e
C-1-b	C-5-b	C-8-f
C-1-e	C-5-e	C-9-a
C-1-f	C-5-f	C-9-b
C-2-a	C-6-a	C-9-e
C-2-b	C-6-b	C-9-f
C-2-e	C-6-e	C-10-a
C-2-f	C-6-f	C-10-b
C-3-a	C-7-a	C-10-e
C-3-b	C-7-b	C-10-f
C-3-e	C-7-e	C-11-a
C-3-f	C-7-f	C-11-b
C-4-a	C-7-g	C-12-e
C-4-b	C-7-h	C-12-f
C-4-e	C-8-a	C-13-e
C-4-f	C-8-b	C-14-e
		C-14-f

3. Replace Enclosure C-13-f (bar graph, SCR 608, Withdrawal, per 100 casualties) with Attachment 2, herewith.

4. Replace Enclosure E-2 (Loss Density Comparison) with Attachment 3, herewith.

5. Replace Enclosure E-3 (Army Mean Values) with Attachment 4, herewith.

6. In Enclosure E-5 (Tentative Mathematical Formulae), delete the last sentence in the second full paragraph ("These are given in Table 1.").

UNIT: FIRST ARMY
THEATER: ETO

TIME PERIOD: 1 August 1944 - 22 February 1945
DURATION : 195 Days - Attack / 11 Days - Withdrawal

Spread Sheet/Consolidation (Corrected)		ATTACK 1 Aug-15 Dec 27 Dec-22 Feb	WITHDRAWAL 16 - 26 Dec	TOTAL
Man-Day Factor		56402.541	3678.389	60080.930
ITEM Casualties		97881	20438	
1. Truck, ¼ Ton 4x4 C&R	#	.03996	.40235	.06215
	@	2.3028	7.2414	3.1559
		(2254)	(1480)	(3734)
2. Truck, 2½ Ton (all types)	#	.01422	.19981	.02558
	@	.8194	3.5962	1.2990
		(802)	(735)	(1537)
3. Tank, Medium	#	.01489	.07231	.01841
	@	.8582	1.3015	.9348
		(840)	(266)	(1106)
4. Carbine, .30, M1	#	.13287	.82645	.17533
	@	7.6562	14.8725	8.9031
		(7494)	(3040)	(10534)
5. Rifle, .30, BAR, M1918	#	.04702	.17644	.05494
	@	2.7094	3.1755	2.7899
		(2652)	(649)	(3301)
6. Rifle, .30, M1	#	.22479	1.27121	.28886
	@	12.9535	22.8790	14.6680
		(12679)	(4676)	(17355)
7. Rifle, .30, M1903 Series (all types)	#	.00835	.02420	.00935
	@	.4812	.4355	.4733
		(471)	(89)	(560)
8. Machine Gun, .30 (all types)	#	.03743	.26370	.05128
	@	2.1567	4.7461	2.6040
		(2111)	(970)	(3081)
9. Howitzer, 105 mm	#	.00073	.01957	.00188
	@	.0419	.3523	.0955
		(41)	(72)	(113)
10. Howitzer, 155 mm	#	.00025	.00245	.00038
	@	.0143	.0440	.0194
		(14)	(9)	(23)
11. Mortar, 81 mm	#	.00426	.03860	.00636
	@	.2452	.6948	.3229
		(240)	(142)	(382)
12. Radio Set, SCR-300	#		.28817	
	@		5.1864	
			(1060)	
13. Radio Set, SCR-608	#		.00054	
	@		.0098	
			(2)	
14. Radio Set, SCR-610	#		.24603	
	@		4.4280	
			(905)	
15. Generating Unit, M5	#	.00023	.00843	.00073
	@	.0133	.1517	.0372
		(13)	(31)	(44)
X. Tank, Light	#	.00362	.01550	.00434
	@	.2084	.2789	.2206
		(204)	(57)	(261)
XX. Gun, 155 mm	#	.00007	.00054	.00010

1

		(12679)	(4676)	(17555)
7. Rifle, .30, M1903 Series (all types)	#	.00835	.02420	.00935
	@	.4812	.4355	.4733
		(471)	(89)	(560)
8. Machine Gun, .30 (all types)	#	.03743	.26370	.05128
	@	2.1567	4.7461	2.6040
		(2111)	(970)	(3081)
9. Howitzer, 105 mm	#	.00073	.01957	.00188
	@	.0419	.3523	.0955
		(41)	(72)	(113)
10. Howitzer, 155 mm	#	.00025	.00245	.00038
	@	.0143	.0440	.0194
		(14)	(9)	(23)
11. Mortar, 81 mm	#	.00426	.03860	.00636
	@	.2452	.6948	.3229
		(240)	(142)	(382)
12. Radio Set, SCR-300	#		.28817	
	@		5.1864	
			(1060)	
13. Radio Set, SCR-608	#		.00054	
	@		.0098	
			(2)	
14. Radio Set, SCR-610	#		.24603	
	@		4.4280	
			(905)	
15. Generating Unit, M5	#	.00023	.00843	.00073
	@	.0133	.1517	.0372
		(13)	(31)	(44)
X. Tank, Light	#	.00362	.01550	.00434
	@	.2084	.2789	.2206
		(204)	(57)	(261)
XX. Gun, 155 mm	#	.00007	.00054	.00010
	@	.0041	.0098	.0051
		(4)	(2)	(6)

See attached NOTE.

loss per 1000 man-days
@ loss per 100 casualties

2

NOTE: Because First Army losses were consolidated for the entire 1 August 1944 - 22 February 1945 period, the loss per 1000 man/days and per 100 casualties according to combat postures was computed by extrapolation of figures from First United States Army, Report of Operations, Annex #9: Ordnance Section, using the period 16 December through 26 December as one of withdrawal in contact, and the remaining six and one-half months as a general attack posture. (See attached computations.)

After this computation was made, figures for First Army losses of major items for the period 16-25 December were discovered in Appendix 3, Annex 2, of the First Army Report of Operations, 1 August 44 to 22 February 45. Although this is not so complete or so precise as the Ordnance Annex, and is in some respects inconsistent with the text of the Report proper (page 128, Vol I), it contains an otherwise unavailable breakdown of losses during most of the withdrawal period.

Since the German Offensive did not end until late on 26 December, it is believed desirable to correct these report figures by adding 10%. (See attached Comparison of Computations and Partial Report of Major Battle Losses.)

Except where obviously erroneous, or where no figures are given, the corrected report figures have been used to show the withdrawal losses for the First Army on the Spread Sheet/Consolidation. The computation figures are retained, however, and are shown in comparison with the report figures for two reasons:

(1) Although further search will probably reveal the T/A figures for First Army, these were not discovered in the time available for this report; thus the computation was necessary to ascertain these T/A figures as closely as possible.

(2) The comparison of the computations and the corrected report figures reveals a surprisingly close correlation. Of the 12 items in which comparisons are possible, 5 are within 10%, 8 are within 12%, 9 within 16%, and all 12 within 40%. Of the three largest deviations, one (1903 rifles) is in a relatively unimportant, special purpose item. The other two (¼ ton and 2½ ton trucks) are fully explicable in terms of circumstances of combat not accounted for in the computation process. (This was the rapidity of movement during the period of August-September, and the relative lack of movement in November, January, and February, although all these months were lumped together to obtain monthly averages.) Thus the discrepancies shown between the calculations and the reported figures may provide a useful starting point for further investigation leading to closer approximation of wearout losses of vehicles due to distances traveled.

Computation of Withdrawal Losses for First Army, 16

	A	B	C	D	E	F	G
	Total Lost 1 Aug-22 Feb	Total % of T/A Lost	TIA*	% Lost in Dec	Number Lost in Dec	Number Lost in Aug-Nov & Jan-Feb	Monthly Average
					(CxD)	(A-E)	(1/6 F)
1. Truck, ¼ Ton	3734	34.2	10,918	10.76	1175	2559	427
2. Truck, 2½ Ton	1537	10.7	14,364	4.36	626	911	152
3. Tank, Medium	1106	97.5	1,134	34.15	387	719	120
4. Carbine	10534	7.18	146,713	2.8	4108	6426	1071
5. Rifle, .30 BAR	3301	150.3	2,196	42.4	931	2370	395
6. Rifle, .30 M1	17355	17.54	98,945	5.5	5442	11913	1985
7. Rifle, .30 M 1903	560	6.66	8,408	1.99	167	393	66
8. Machine Gun	3081	71.9	4,285	28.0	1200	1881	314
9. Howitzer, 105 mm	113	15.38	741	9.9	73	40	7
10. Howitzer, 155 mm	23	9.68	238	4.7	11	12	2
11. Mortar, 81 mm	382	74.2	515	32.2	166	216	36
15. Generating Unit, M5	44	9.87	446	7.1	32	12	2
X. Tank, Light	262	31.9	821	9.36	77	185	31
XX. Gun, 155 mm	6	4.9	122	1.64	2	4	.67

* $\frac{TIA}{100} = \frac{\text{Total Lost}}{\text{Total \% Lost}}$

1

val Losses for First Army, 16 - 26 December 1944

	E	F	G	H	I	J
t c	Number Lost in Dec	Number Lost in Aug-Nov & Jan-Feb	Monthly Average	Proportionate Loss for 1-15 and 27-31 Dec	Loss for 16-26 Dec	Loss for 1 Aug-15 Dec & 27 Dec-22 Feb
	(CxD)	(A-E)	(1/6 F)	(2/3 G)	(E-H)	(A-I) or (F+H)
5	1175	2559	427	284	891	2843
6	626	911	152	101	525	1012
5	387	719	120	80	307	799
	4108	6426	1071	714	3394	7140
	931	2370	395	263	668	2633
5	5442	11913	1985	1322	4120	13235
99	167	393	66	44	123	437
0	1200	1881	314	210	990	2091
9	73	40	7	5	68	45
7	11	12	2	1	10	13
2	166	216	36	24	142	240
1	32	12	2	1	31	13
36	77	185	31	20	57	205
.64	2	4	.67	0	2	4

2

Comparison of Computations
and Partial Report of
Major Battle Losses

First Army, December, 1944

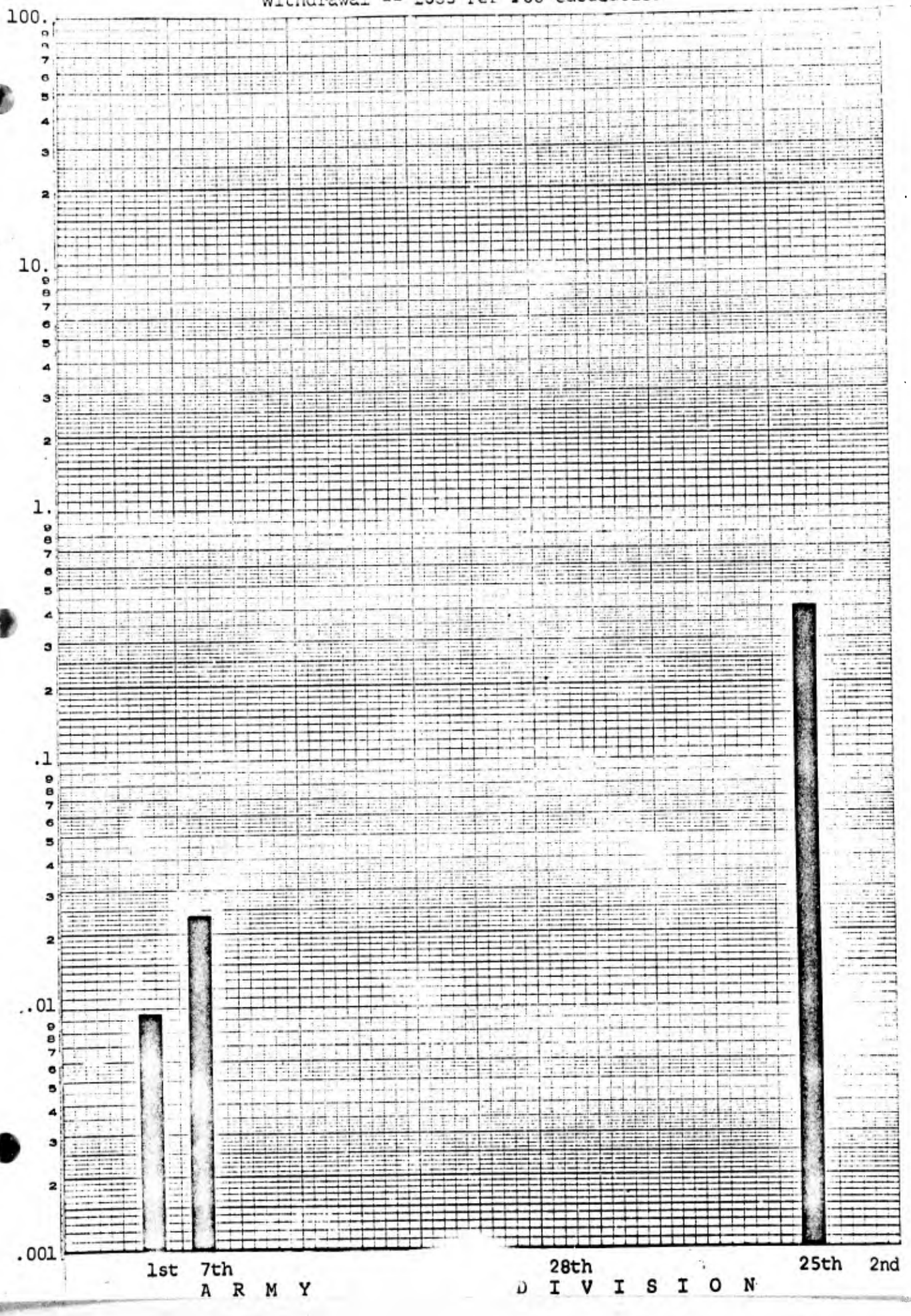
	Computations 16-26 Dec	Partial Report 16-25 Dec	Corrected Report 16-26 Dec	% Deviation from Corrected Comp.
1. Truck, ¼ Ton	891	1345	1480	-39.8
2. Truck, 2½ Ton	525	668	735	-28.6
3. Tank, Medium	307	242	266	+15.4
4. Carbine	3394	2764	3040	+11.6
5. Rifle, .30 BAR,M1918	668	590	649	+ 2.9
6. Rifle, .30 M1	4120	4251	4676	-11.9
7. Rifle, .30 M1903	123	81	89	+38.2
8. Machine gun, .30	990	882	970	+ 2.1
9. Howitzer, 105 mm	68	65	72	- 5.6
10. Howitzer, 155 mm	10	8	9	+11.1
11. Mortar, 81 mm	142	193*	---	---
12. SCR 300	---	964	1060	---
13. SCR 603	---	2	2	---
14. SCR 610	---	823	905	---
15. Generating Unit M-5	31	---	---	---
X. Tank, Light	57	47	52	+ 9.6
XX. Gun, 155 mm	2	2	2	0.0

*Ordnance report shows a total of 166 lost in all of December. Report figure is presumed erroneous.

Attachment 2

Radio Set, SCR-608

Withdrawal -- Loss Per 100 Casualties



LOSS DENSITY COMPARISON
(in % per day of T/A)

(Corrected)

	FIRST ARMY					FIFTH ARMY		
	T/A*	195 Days ATTACK	11 Days WITHDRAWAL	206 Days TOTAL		T/A*	329 Days ATTACK	373 Days TOTAL
1 Truck, ¼ Ton 4x4	10,918	2 .1[illegible]%	1480 1.233%	3734 .166%		6,805	1821 .0813%	1983 .0781%
2 Truck, 2½ Ton (all types)	14,364	802 .0286%	735 .465%	1573 .052%		9,746	1760 .0549%	1909 .0525%
3 Tank, Medium	1,134	840 .380%	266 2.152%	1106 .474%		532	560 .319%	588 .296%
4 Carbine, .30, M1	146,713	7494 .0262%	3040 .188%	10534 .0348%		73,639	4447 .0183%	4920 .0179%
5 Rifle, .30, BAR, M1918	2,196	2652 .619%	649 2.687%	3301 .764%		2,939	1897 .196%	2038 .186%
6 Rifle, .30, M1	98,945	12679 .086%	4676 .430%	17355 .085%		54,000	7797 .0439%	8065 .0400%
7 Rifle, .30, M1903 Series	8,408	471 .029%	89 .0962%	560 .032%		16,684	4399 .0801%	4493 .0722%
8 Machine Gun, .30 (all types)	4,285	2111 .252%	970 2.053%	3081 .349%		2,636	1591 .183%	1706 .173%
9 Howitzer, 105 mm	741	41 .029%	72 .891%	113 .0746%		328	49 .0454%	49 .0401%
zer, 155 mm	238	14 .0302%	9 .344%	23 .047%		211	29 .0417%	64 .0813%
, 81 mm	515	240 .239%	142 2.507%	382 .360%		430	272 .192%	288 .179%

6 Rifle, .30, M1	98,945	12679 .066%	4676 .430%	17355 .085%			.0439%	.0400%
7 Rifle, .30, M1903 Series	8,408	471 .029%	89 .0962%	560 .032%		16,684	4399 .0801%	4493 .0722%
8 Machine Gun, .30 (all types)	4,285	2111 .252%	970 2.053%	3081 .349%		2,636	1591 .183%	1706 .173%
9 Howitzer, 105 mm	741	41 .029%	72 .891%	113 .0746%		328	49 .0454%	49 .0401%
10 Howitzer, 155 mm	238	14 .0302%	9 .344%	23 .047%		211	29 .0417%	64 .0813%
11 Mortar, 81 mm	515	240 .239%	142 2.507%	382 .360%		430	272 .192%	288 .179%
12 Radio Set, SCR-300			1060					
13 Radio Set, SCR-608			2					
14 Radio Set, SCR-610			905					
15 Generating Unit, M5	446	13 .015%	31 .631%	44 .048%		595	21 .0107%	23 .0103%
x Tank, Light	821	209 .130%	52 .575%	261 .154%		329	236 .218%	239 .195%

*TOTAL AUTHORIZATION

2

ARMY MEAN VALUES - WWII ONLY

(Corrected)

#--per 1000 man-days @--per 100 casualties		ATTACK	DEFENSE	WITHDRAWAL	TOTAL
1 Truck, ¼ Ton 4x4	#	.03041	.00959	.22986	.03552
	@	2.0059	.7971	4.7434	2.2238
2 Truck, 2½ Ton (all types)	#	.02478	.00232	.10720	.02419
	@	1.4668	.1932	2.0708	1.6510
3 Tank, Medium	#	.01175	.00291	.04484	.01228
	@	.7320	.2415	1.0266	.7339
4 Carbine, .30, M1(1)	#	.11744	.11116	.51280	.12168
	@	6.8960	9.2392	11.2131	7.0478
5 Rifle, .30, BAR, M1918	#	.05251	.01831	.10898	.05357
	@	2.8546	1.5217	2.4423	2.8512
6 Rifle, .30, M1(1)	#	.17559	.03532	.66499	.17734
	@	11.3956	2.9348	12.5175	10.8434
7 Rifle, .30, M1903 Series(1)	#	.02781	.00828	.02311	.01981
	@	1.8011	.6884	.6299	1.6233
8 Machine Gun, .30 (all types)	#	.02589	.02557	.16880	.02949
	@	1.6959	2.1256	3.7550	1.8523
9 Howitzer, 105 mm	#	.00064	.00995(2)	.00995	.00089
	@	.0376	.3760(2)	.1822	.0495
0 Howitzer, 155 mm	#	.00031	.00205(3)	.00123	.00041
	@	.0212	.3665(3)	.0220	.0296
1 Mortar, 81 mm	#	.00396	.00459(3)	.02432	.00450
	@	.2520	.7588(3)	.5353	.2776
2 Radio Set, SCR-300	#	.01383	.00726	.15219	.01419
	@	1.0833	.6039	2.8963	1.0903
3 Radio Set, SCR-608	#	.00012	.00029	.00060	.00024
	@	.0097	.0242	.0170	.0181
4 Radio Set, SCR-610	#	.00283	.00087	.12804	.00322
	@	.2217	.0725	2.4019	.2473
5 Generating Unit, M5	#	.00030	.00021(3)	.00470	.00041
	@	.0197	.0373(3)	.0941	.0253

Attachment 4

4

1

2

	@	2.8546	1.9217	[illegible]			
6 Rifle, .30, M1(1)	#	.17559	.03532	.66499	17734		
	@	11.3956	2.9348	12.5175	10.8434		
7 Rifle, .30, M1903 Series(1)	#	.02781	.00828	.02311	.01981		
	@	1.8011	.6884	.6299	1.6233		
8 Machine Gun, .30 (all types)	#	.02589	.02557	.16880	.02949		
	@	1.6959	2.1256	3.7550	1.8523		
9 Howitzer, 105 mm	#	.00064	.00995(2)	.00995	.00089		
	@	.0376	.3760(2)	.1822	.0495		
10 Howitzer, 155 mm	#	.00031	.00205(3)	.00123	.00041		
	@	.0212	.3665(3)	.0220	.0296		
11 Mortar, 81 mm	#	.00396	.00459(3)	.02432	.00450		
	@	.2520	.7588(3)	.5353	.2776		
12 Radio Set, SCR-300	#	.01383	.00726	.15219	.01419		
	@	1.0833	.6039	2.8963	1.0903		
13 Radio Set, SCR-608	#	.00012	.00029	.00060	.00024		
	@	.0097	.0242	.0170	.0181		
14 Radio Set, SCR-610	#	.00283	.00087	.12804	.00322		
	@	.2217	.0725	2.4019	.2473		
15 Generating Unit, M5	#	.00030	.00021(3)	.00470	.00041		
	@	.0197	.0373(3)	.0941	.0253		
x Tank, Light	#	.00291	.00262	.01018	.00292		
	@	.2064	.2174	.2304	.2010		

(1) Based on assumption that Seventh Army figures included First French Army for all except withdrawal.

(2) Data unavailable. Factor for man-days based on withdrawal; factor for casualties based on attack rate x 10.

(3) Based upon data for "rest" and " other" postures of Fifth and Seventh Armies.

2