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Aboveground Airblast

Hemispherical Surface Burst

Charge weight..... 55 pounds TNT
Range to target..... 25 feet

Peak incident overpressure..... 22.67 psi
Normally reflected pressure..... 70.44 psi
Time of arrival..... 8.068 msec
Positive phase duration..... 7.066 msec
Incident impulse..... 44.54 psi-msec
Reflected impulse..... 112.1 psi-msec
Shock front velocity..... 1702 feet/sec
Peak dynamic pressure..... 10.2 psi
Peak particle velocity..... 806.3 feet/sec
Shock density..... 0.1454 lb/cubic foot
Specific heat ratio..... 1.401
Decay coefficient α (msec), where
 $P(t)=P_{so}*[1-(t-t_a)/t_o]*\exp[-(t-t_a)/\alpha]$ 3.386

Time msec	Incident Pressure psi	Incident Impulse psi-msec	Reflected Pressure psi	Reflected Impulse psi-msec
8.068	22.67	0	70.44	0
8.1	22.35	0.7285	69.14	2.259
8.15	21.87	1.834	67.18	5.666
8.2	21.39	2.915	65.27	8.977
8.25	20.93	3.973	63.41	12.19
8.3	20.47	5.008	61.61	15.32
8.35	20.02	6.02	59.85	18.36
8.4	19.58	7.01	58.13	21.31
8.45	19.15	7.979	56.47	24.17
8.5	18.73	8.926	54.85	26.95
8.55	18.32	9.852	53.27	29.66
8.6	17.91	10.76	51.73	32.28
8.65	17.51	11.64	50.24	34.83
8.7	17.12	12.51	48.78	37.3
8.75	16.74	13.36	47.37	39.71
8.8	16.37	14.18	45.99	42.04
8.85	16	14.99	44.65	44.31
8.9	15.64	15.78	43.35	46.51
8.95	15.29	16.56	42.08	48.64
9	14.94	17.31	40.85	50.72
9.05	14.6	18.05	39.65	52.73
9.1	14.27	18.77	38.48	54.68
9.15	13.94	19.48	37.34	56.58
9.2	13.62	20.17	36.24	58.42
9.25	13.31	20.84	35.17	60.2
9.3	13.01	21.5	34.12	61.93
9.35	12.7	22.14	33.1	63.61
9.4	12.41	22.77	32.12	65.24
9.45	12.12	23.38	31.15	66.83
9.5	11.84	23.98	30.22	68.36
9.55	11.56	24.57	29.31	69.85
9.6	11.29	25.14	28.43	71.29
9.65	11.02	25.7	27.57	72.69
9.7	10.76	26.24	26.73	74.05
9.75	10.51	26.77	25.92	75.36
9.8	10.26	27.29	25.13	76.64
9.85	10.01	27.8	24.36	77.88
9.9	9.773	28.29	23.61	79.08
9.95	9.537	28.77	22.89	80.24

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10	9.307	29.25	22.18	81.37
10.05	9.081	29.71	21.49	82.46
10.1	8.86	30.15	20.83	83.52
10.15	8.643	30.59	20.18	84.54
10.2	8.431	31.02	19.55	85.53
10.25	8.224	31.44	18.94	86.5
10.3	8.02	31.84	18.34	87.43
10.35	7.821	32.24	17.76	88.33
10.4	7.625	32.62	17.2	89.2
10.45	7.434	33	16.66	90.05
10.5	7.247	33.37	16.13	90.87
10.55	7.064	33.72	15.61	91.66
10.6	6.884	34.07	15.11	92.43
10.65	6.709	34.41	14.62	93.17
10.7	6.537	34.74	14.15	93.89
10.75	6.368	35.07	13.69	94.59
10.8	6.203	35.38	13.25	95.26
10.85	6.042	35.69	12.81	95.91
10.9	5.884	35.99	12.39	96.54
10.95	5.729	36.28	11.98	97.15
11	5.578	36.56	11.59	97.74
11.05	5.429	36.83	11.2	98.31
11.1	5.284	37.1	10.83	98.86
11.15	5.142	37.36	10.46	99.4
11.2	5.003	37.62	10.11	99.91
11.25	4.867	37.86	9.77	100.4
11.3	4.734	38.1	9.438	100.9
11.35	4.604	38.34	9.116	101.4
11.4	4.476	38.56	8.803	101.8
11.45	4.352	38.78	8.499	102.2
11.5	4.23	39	8.204	102.6
11.55	4.11	39.21	7.918	103.1
11.6	3.994	39.41	7.64	103.4
11.65	3.879	39.61	7.371	103.8
11.7	3.768	39.8	7.11	104.2
11.75	3.658	39.98	6.856	104.5
11.8	3.551	40.16	6.611	104.9
11.85	3.447	40.34	6.372	105.2
11.9	3.345	40.51	6.141	105.5
11.95	3.245	40.67	5.916	105.8
12	3.147	40.83	5.699	106.1
12.05	3.051	40.99	5.488	106.4
12.1	2.958	41.14	5.283	106.6
12.15	2.866	41.28	5.085	106.9
12.2	2.777	41.42	4.893	107.2
12.25	2.69	41.56	4.707	107.4
12.3	2.604	41.69	4.526	107.6
12.35	2.521	41.82	4.351	107.8
12.4	2.439	41.94	4.181	108.1
12.45	2.36	42.06	4.017	108.3
12.5	2.282	42.18	3.858	108.5
12.55	2.206	42.29	3.704	108.6
12.6	2.131	42.4	3.554	108.8
12.65	2.058	42.51	3.41	109
12.7	1.987	42.61	3.269	109.2
12.75	1.918	42.71	3.134	109.3
12.8	1.85	42.8	3.002	109.5
12.85	1.784	42.89	2.875	109.6
12.9	1.719	42.98	2.752	109.8
12.95	1.656	43.06	2.633	109.9
13	1.595	43.14	2.517	110
13.05	1.535	43.22	2.406	110.2

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13.1	1.476	43.3	2.298	110.3
13.15	1.418	43.37	2.193	110.4
13.2	1.362	43.44	2.092	110.5
13.25	1.308	43.51	1.995	110.6
13.3	1.254	43.57	1.9	110.7
13.35	1.202	43.63	1.809	110.8
13.4	1.151	43.69	1.72	110.9
13.45	1.102	43.75	1.635	111
13.5	1.053	43.8	1.553	111
13.55	1.006	43.85	1.473	111.1
13.6	0.9601	43.9	1.396	111.2
13.65	0.9152	43.95	1.321	111.3
13.7	0.8714	43.99	1.25	111.3
13.75	0.8287	44.03	1.18	111.4
13.8	0.787	44.07	1.113	111.4
13.85	0.7464	44.11	1.049	111.5
13.9	0.7068	44.15	0.9861	111.5
13.95	0.6682	44.18	0.9259	111.6
14	0.6306	44.22	0.8678	111.6
14.05	0.594	44.25	0.8118	111.7
14.1	0.5583	44.28	0.7578	111.7
14.15	0.5235	44.3	0.7057	111.8
14.2	0.4896	44.33	0.6555	111.8
14.25	0.4566	44.35	0.6071	111.8
14.3	0.4244	44.37	0.5605	111.8
14.35	0.3931	44.39	0.5156	111.9
14.4	0.3627	44.41	0.4724	111.9
14.45	0.333	44.43	0.4308	111.9
14.5	0.3041	44.45	0.3907	111.9
14.55	0.276	44.46	0.3522	112
14.6	0.2487	44.47	0.3151	112
14.65	0.2221	44.49	0.2795	112
14.7	0.1962	44.5	0.2453	112
14.75	0.171	44.51	0.2123	112
14.8	0.1466	44.51	0.1807	112
14.85	0.1228	44.52	0.1504	112
14.9	0.09967	44.53	0.1212	112
14.95	0.0772	44.53	0.09325	112
15	0.05537	44.53	0.06642	112
15.05	0.03417	44.54	0.0407	112.1
15.1	0.01357	44.54	0.01605	112.1
15.13	0	44.54	0	112.1

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