Chain per Hour to Feet per second Chart

CHAINS PERS HOUR

CPH	Ft/sec	CPH	Ft/sec	CPH	Ft/sec	CPH	Ft/sec	CPH	Ft/sec	CPH	Ft/sec	CPH	Ft/sec	CPH	Ft/sec	CPH	Ft/sec	CPH	Ft/sec
1	0.018	26	0.477	51	0.935	76	1.393	101	1.852	126	2.31	151	2.77	176	3.23	201	3.69	226	4.14
2	0.037	27	0.495	52	0.953	77	1.412	102	1.870	127	2.33	152	2.79	177	3.25	202	3.70	227	4.16
3	0.055	28	0.513	53	0.972	78	1.430	103	1.888	128	2.35	153	2.81	178	3.26	203	3.72	228	4.18
4	0.073	29	0.532	54	0.990	79	1.448	104	1.907	129	2.37	154	2.82	179	3.28	204	3.74	229	4.20
5	0.092	30	0.550	**55**	**1.008**	80	1.467	105	1.925	130	2.38	155	2.84	180	3.30	205	3.76	230	4.22
6	0.110	31	0.568	56	1.027	81	1.485	106	1.943	131	2.40	156	2.86	181	3.32	206	3.78	231	4.24
7	0.128	32	0.587	57	1.045	82	1.503	107	1.962	132	2.42	157	2.88	182	3.34	207	3.80	232	4.25
8	0.147	33	0.605	58	1.063	83	1.522	108	1.980	133	2.44	158	2.90	183	3.36	208	3.81	233	4.27
9	0.165	34	0.623	59	1.082	84	1.540	109	1.998	134	2.46	159	2.92	184	3.37	209	3.83	234	4.29
10	0.183	35	0.642	60	1.100	85	1.558	**110**	**2.017**	135	2.48	160	2.93	185	3.39	210	3.85	235	4.31
11	0.202	36	0.660	61	1.118	86	1.577	111	2.035	136	2.49	161	2.95	186	3.41	211	3.87	236	4.33
12	0.220	37	0.678	62	1.137	87	1.595	112	2.053	137	2.51	162	2.97	187	3.43	212	3.89	237	4.35
13	0.238	38	0.697	63	1.155	88	1.613	113	2.072	138	2.53	163	2.99	188	3.45	213	3.91	238	4.36
14	0.257	39	0.715	64	1.173	89	1.632	114	2.090	139	2.55	**164**	**3.01**	189	3.47	214	3.92	239	4.38
15	0.275	40	0.733	65	1.192	90	1.650	115	2.108	140	2.57	165	3.03	190	3.48	215	3.94	240	4.40
16	0.293	41	0.752	66	1.210	91	1.668	116	2.127	141	2.59	166	3.04	191	3.50	216	3.96	241	4.42
17	0.312	42	0.770	67	1.228	92	1.687	117	2.145	142	2.60	167	3.06	192	3.52	217	3.98	242	4.44
18	0.330	43	0.788	68	1.247	93	1.705	118	2.163	143	2.62	168	3.08	193	3.54	**218**	**4.00**	243	4.46
19	0.348	44	0.807	69	1.265	94	1.723	119	2.182	144	2.64	169	3.10	194	3.56	219	4.02	244	4.47
20	0.367	45	0.825	70	1.283	95	1.742	120	2.200	145	2.66	170	3.12	195	3.58	220	4.03	245	4.49
21	0.385	46	0.843	71	1.302	96	1.760	121	2.218	146	2.68	171	3.14	196	3.59	221	4.05	246	4.51
22	0.403	47	0.862	72	1.320	97	1.778	122	2.237	147	2.70	172	3.15	197	3.61	222	4.07	247	4.53
23	0.422	48	0.880	73	1.338	98	1.797	123	2.255	148	2.71	173	3.17	198	3.63	223	4.09	248	4.55
24	0.440	49	0.898	74	1.357	99	1.815	124	2.273	149	2.73	174	3.19	199	3.65	224	4.11	249	4.57
25	0.458	50	0.917	75	1.375	100	1.833	125	2.292	150	2.75	175	3.21	200	3.67	225	4.13	250	4.58

CHAINS PERS HOUR

CPH	Ft/sec	CPH	Ft/sec	CPH	Ft/sec	CPH	Ft/sec	CPH	Ft/sec	CPH	Ft/sec	CPH	Ft/sec	CPH	Ft/sec	CPH	Ft/sec	CPH	Ft/sec
251	4.60	276	5.06	301	5.52	326	5.98	351	6.44	376	6.89	401	7.35	426	7.81	451	8.27	476	8.73
252	4.62	277	5.08	302	5.54	**327**	**6.00**	352	6.45	377	6.91	402	7.37	427	7.83	452	8.29	477	8.75
253	4.64	278	5.10	303	5.56	328	6.01	353	6.47	378	6.93	403	7.39	428	7.85	453	8.31	478	8.76
254	4.66	279	5.12	304	5.57	329	6.03	354	6.49	379	6.95	404	7.41	429	7.87	454	8.32	479	8.78
255	4.68	280	5.13	305	5.59	330	6.05	355	6.51	380	6.97	405	7.43	430	7.88	455	8.34	480	8.80
256	4.69	281	5.15	306	5.61	331	6.07	356	6.53	381	6.99	406	7.44	431	7.90	456	8.36	481	8.82
257	4.71	282	5.17	307	5.63	332	6.09	357	6.55	**382**	**7.00**	407	7.46	432	7.92	457	8.38	482	8.84
258	4.73	283	5.19	308	5.65	333	6.11	358	6.56	383	7.02	408	7.48	433	7.94	458	8.40	483	8.86
259	4.75	284	5.21	309	5.67	334	6.12	359	6.58	384	7.04	409	7.50	434	7.96	459	8.42	484	8.87
260	4.77	285	5.23	310	5.68	335	6.14	360	6.60	385	7.06	410	7.52	435	7.98	460	8.43	485	8.89
261	4.79	286	5.24	311	5.70	336	6.16	361	6.62	386	7.08	411	7.54	436	7.99	461	8.45	486	8.91
262	4.80	287	5.26	312	5.72	337	6.18	362	6.64	387	7.10	412	7.55	**437**	**8.01**	462	8.47	487	8.93
263	4.82	288	5.28	313	5.74	338	6.20	363	6.66	388	7.11	413	7.57	438	8.03	463	8.49	488	8.95
264	4.84	289	5.30	314	5.76	339	6.22	364	6.67	389	7.13	414	7.59	439	8.05	464	8.51	489	8.97
265	4.86	290	5.32	315	5.78	340	6.23	365	6.69	390	7.15	415	7.61	440	8.07	465	8.53	490	8.98
266	4.88	291	5.34	316	5.79	341	6.25	366	6.71	391	7.17	416	7.63	441	8.09	466	8.54	**491**	**9.00**
267	4.90	292	5.35	317	5.81	342	6.27	367	6.73	392	7.19	417	7.65	442	8.10	467	8.56	492	9.02
268	4.91	293	5.37	318	5.83	343	6.29	368	6.75	393	7.21	418	7.66	443	8.12	468	8.58	493	9.04
269	4.93	294	5.39	319	5.85	344	6.31	369	6.77	394	7.22	419	7.68	444	8.14	469	8.60	494	9.06
270	4.95	295	5.41	320	5.87	345	6.33	370	6.78	395	7.24	420	7.70	445	8.16	470	8.62	495	9.08
271	4.97	296	5.43	321	5.89	346	6.34	371	6.80	396	7.26	421	7.72	446	8.18	471	8.64	496	9.09
272	4.99	297	5.45	322	5.90	347	6.36	372	6.82	397	7.28	422	7.74	447	8.20	472	8.65	497	9.11
273	**5.01**	298	5.46	323	5.92	348	6.38	373	6.84	398	7.30	423	7.76	448	8.21	473	8.67	498	9.13
274	5.02	299	5.48	324	5.94	349	6.40	374	6.86	399	7.32	424	7.77	449	8.23	474	8.69	499	9.15
275	5.04	300	5.50	325	5.96	350	6.42	375	6.88	400	7.33	425	7.79	450	8.25	475	8.71	500	9.17

Chart A

$ROS\ x\ HPA\ ft^2\ =\ Intensity\ in\ BTU/S/Ft$

Feet per Second

ft/sec	0.1	0.25	0.5	1	2	3	4	5	6	7	8	9	10	12	14	16	20	22	25	30	35
0.5	18	46	92	184	367	551	735	918	1,102	1,286	1,469	1,653	1,837	2,204	2,571	2,938	3,673	4,040	4,591	5,510	6,428
1	37	92	184	367	735	1,102	1,469	1,837	2,204	2,571	2,938	3,306	3,673	4,408	5,142	5,877	7,346	8,081	9,183	11,019	12,856
2	73	184	367	735	1,469	2,204	2,938	3,673	4,408	5,142	5,877	6,612	7,346	8,815	10,285	11,754	14,692	16,162	18,365	22,039	25,712
3	110	275	551	1,102	2,204	3,306	4,408	5,510	6,612	7,713	8,815	9,917	11,019	13,223	15,427	17,631	22,039	24,242	27,548	33,058	38,567
4	147	367	735	1,469	2,938	4,408	5,877	7,346	8,815	10,285	11,754	13,223	14,692	17,631	20,569	23,508	29,385	32,323	36,731	44,077	51,423
5	184	459	918	1,837	3,673	5,510	7,346	9,183	11,019	12,856	14,692	16,529	18,365	22,039	25,712	29,385	36,731	40,404	45,914	55,096	64,279
6	220	551	1,102	2,204	4,408	6,612	8,815	11,019	13,223	15,427	17,631	19,835	22,039	26,446	30,854	35,262	44,077	48,485	55,096	66,116	77,135
7	257	643	1,286	2,571	5,142	7,713	10,285	12,856	15,427	17,998	20,569	23,140	25,712	30,854	35,996	41,139	51,423	56,566	64,279	77,135	89,991
8	294	735	1,469	2,938	5,877	8,815	11,754	14,692	17,631	20,569	23,508	26,446	29,385	35,262	41,139	47,016	58,770	64,646	73,462	88,154	102,847
9	331	826	1,653	3,306	6,612	9,917	13,223	16,529	19,835	23,140	26,446	29,752	33,058	39,669	46,281	52,893	66,116	72,727	82,645	99,174	115,702

0.1 - 35 Tons per Acre

.1 - 35 tons per Acre - Btu taken at 8,000 per lb

T/acre asstistance by R. Gobel

Intensity Btu/s/ft	Btu-ft/sec	*Fireline length 1,000's of feet* *Total Gallons per second & Loads required in center*																		
	Fireline length 1,000's ft	**0.5**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**12**	**14**	**16**	**20**	**22**	**25**	**30**	**35**
	150	8	16	32	48	64	80	96	112	128	144	160	192	224	256	320	352	400	481	561
	Loads/Aircraft	0.0	0.1	0.2	0.3	0.4	0.4	1	1	1	1	1	1	1	1	2	2	2	3	3
	250	13	27	53	80	107	133	160	187	214	240	267	320	374	427	534	587	667	801	934
	Loads/Aircraft	0.1	0.1	0.3	0.4	1	1	1	1	1	1	1	2	2	2	3	3	4	4	5
	300	16	32	64	96	128	160	192	224	256	288	320	384	448	513	641	705	801	961	1121
	Loads/Aircraft	0.1	0.2	0.4	1	1	1	1	1	1	2	2	2	2	3	4	4	4	5	6
	350	19	37	75	112	149	187	224	262	299	336	374	448	523	598	747	822	934	1121	1308
	Loads/Aircraft	0.1	0.2	0.4	1	1	1	1	1	2	2	2	2	3	3	4	5	5	6	7
	450	24	48	96	144	192	240	288	336	384	432	481	577	673	769	961	1057	1201	1442	1682
	Loads/Aircraft	0.1	0.3	1	1	1	1	2	2	2	2	3	3	4	4	5	6	7	8	9
	500	27	53	107	160	214	267	320	374	427	481	534	641	747	854	1068	1175	1335	1602	1869
	Loads/Aircraft	0.1	0.3	1	1	1	1	2	2	2	3	3	4	4	5	6	7	7	9	10
	750	40	80	160	240	320	400	481	561	641	721	801	961	1121	1281	1602	1762	2002	2403	2803
	Loads/Aircraft	0.2	0.4	1	1	2	2	3	3	4	4	4	5	6	7	9	10	11	13	16
	1,000	53	107	214	320	427	534	641	747	854	961	1068	1281	1495	1708	2136	2349	2670	3203	3737
	Loads/Aircraft	0.3	1	1	2	2	3	4	4	5	5	6	7	8	9	12	13	15	18	21
	1,250	67	133	267	400	534	667	801	934	1068	1201	1335	1602	1869	2136	2670	2936	3337	4004	4672
	Loads/Aircraft	0.4	1	1	2	3	4	4	5	6	7	7	9	10	12	15	16	19	22	26
	1,500	80	160	320	481	641	801	961	1121	1281	1442	1602	1922	2242	2563	3203	3524	4004	4805	5606
	Loads/Aircraft	0.4	1	2	3	4	4	5	6	7	8	9	11	12	14	18	20	22	27	31
	1,800	96	192	384	577	769	961	1153	1345	1538	1730	1922	2306	2691	3075	3844	4229	4805	5766	6727
	Loads/Aircraft	1	1	2	3	4	5	6	7	9	10	11	13	15	17	21	23	27	32	37
	2,500	133	267	534	801	1068	1335	1602	1869	2136	2403	2670	3203	3737	4271	5339	5873	6674	8009	9343
	Loads/Aircraft	1	1.5	3	4	6	7	9	10	12	13	15	18	21	24	30	33	37	44	52
	3,000	160	320	641	961	1281	1602	1922	2242	2563	2883	3203	3844	4485	5125	6407	7048	8009	9610	11212
	Loads/Aircraft	1	2	4	5	7	9	11	12	14	16	18	21	25	28	36	39	44	53	62
	4,000	214	427	854	1281	1708	2136	2563	2990	3417	3844	4271	5125	5980	6834	8542	9397	10678	12814	14949
	Loads/Aircraft	1.2	2	5	7	9	12	14	17	19	21	24	28	33	38	47	52	59	71	83

4 Loads = 720 Gallons | Consider Seat	**15 Loads | Consider S64**	**Aircraft Loads Calculated for 180 Gallon Buckets**
9 Loads = 1620 gallons | Consider CL415	**. 2 = % of full load**	

Intensity Btu/s/ft	Btu-ft/sec	*Fireline length 1,000's of feet* *Total Gallons per second & Loads required in center*																		
	Fireline length 1,000's ft	**0.5**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**12**	**14**	**16**	**20**	**22**	**25**	**30**	**35**
	150	8	16	32	48	64	80	96	112	128	144	160	192	224	256	320	352	400	481	561
	Loads/Aircraft	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.5	1	1	1	1	1	1	1	1	2	2	2
	250	13	27	53	80	107	133	160	187	214	240	267	320	374	427	534	587	667	801	934
	Loads/Aircraft	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.8	0.9	1	1	1	2	2	2	2	3	3	4
	300	16	32	64	96	128	160	192	224	256	288	320	384	448	513	641	705	801	961	1121
	Loads/Aircraft	0.1	0.1	0.3	0.4	0.5	0.7	0.8	0.9	1	1	1	2	2	2	3	3	3	4	5
	350	19	37	75	112	149	187	224	262	299	336	374	448	523	598	747	822	934	1121	1308
	Loads/Aircraft	0.1	0.2	0.3	0.5	0.6	0.8	0.9	1	1	1	2	2	2	2	3	3	4	5	5
	450	24	48	96	144	192	240	288	336	384	432	481	577	673	769	961	1057	1201	1442	1682
	Loads/Aircraft	0.1	0.2	0.4	0.6	0.8	1	1	1	2	2	2	2	3	3	4	4	5	6	7
	500	27	53	107	160	214	267	320	374	427	481	534	641	747	854	1068	1175	1335	1602	1869
	Loads/Aircraft	0.1	0.2	0.4	0.7	0.9	1	1	2	2	2	2	3	3	4	4	5	6	7	8
	750	40	80	160	240	320	400	481	561	641	721	801	961	1121	1281	1602	1762	2002	2403	2803
	Loads/Aircraft	0.2	0.3	0.7	1	1	2	2	2	3	3	3	4	5	5	7	7	8	10	12
	1,000	53	107	214	320	427	534	641	747	854	961	1068	1281	1495	1708	2136	2349	2670	3203	3737
	Loads/Aircraft	0.2	0.4	0.9	1	2	2	3	3	4	4	4	5	6	7	9	10	11	13	16
	1,250	67	133	267	400	534	667	801	934	1068	1201	1335	1602	1869	2136	2670	2936	3337	4004	4672
	Loads/Aircraft	0.3	0.6	1	2	2	3	3	4	4	5	6	7	8	9	11	12	14	17	19
	1,500	80	160	320	481	641	801	961	1121	1281	1442	1602	1922	2242	2563	3203	3524	4004	4805	5606
	Loads/Aircraft	0.3	0.7	1	2	3	3	4	5	5	6	7	8	9	11	13	15	17	20	23
	1,800	96	192	384	577	769	961	1153	1345	1538	1730	1922	2306	2691	3075	3844	4229	4805	5766	6727
	Loads/Aircraft	0.4	0.8	2	2	3	4	5	6	6	7	8	10	11	13	16	18	20	24	28
	2,500	133	267	534	801	1068	1335	1602	1869	2136	2403	2670	3203	3737	4271	5339	5873	6674	8009	9343
	Loads/Aircraft	0.6	1	2	3	4	6	7	8	9	10	11	13	16	18	22	24	28	33	39
	3,000	160	320	641	961	1281	1602	1922	2242	2563	2883	3203	3844	4485	5125	6407	7048	8009	9610	11212
	Loads/Aircraft	0.7	1	3	4	5	7	8	9	11	12	13	16	19	21	27	29	33	40	47
	4,000	214	427	854	1281	1708	2136	2563	2990	3417	3844	4271	5125	5980	6834	8542	9397	10678	12814	14949
	Loads/Aircraft	1	2	4	5	7	9	11	12	14	16	18	21	25	28	36	39	44	53	62

3 Loads = 720 Gallons | Consider Seat

5 Loads = 1200 Gallons | Consider CL 215

4 Loads = 1000 gallons | Consider S70i

. 2 = % of full load

Aircraft Load Calculated for 240 Gallon Buckets

Intensity Btu/s/ft	*Btu-ft/sec*	*Fireline length 1,000's of feet* *Total Gallons per second & Loads required in center*																		
	Fireline length 1,000's ft	**0.5**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**12**	**14**	**16**	**20**	**22**	**25**	**30**	**35**
	150	8	16	32	48	64	80	96	112	128	144	160	192	224	256	320	352	400	481	561
	Loads/Aircraft	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
	250	13	27	53	80	107	133	160	187	214	240	267	320	374	427	534	587	667	801	934
	Loads/Aircraft	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4
	300	16	32	64	96	128	160	192	224	256	288	320	384	448	513	641	705	801	961	1121
	Loads/Aircraft	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4
	350	19	37	75	112	149	187	224	262	299	336	374	448	523	598	747	822	934	1121	1308
	Loads/Aircraft	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5
	450	24	48	96	144	192	240	288	336	384	432	481	577	673	769	961	1057	1201	1442	1682
	Loads/Aircraft	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	1	1
	500	27	53	107	160	214	267	320	374	427	481	534	641	747	854	1068	1175	1335	1602	1869
	Loads/Aircraft	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	1	1	1
	750	40	80	160	240	320	400	481	561	641	721	801	961	1121	1281	1602	1762	2002	2403	2803
	Loads/Aircraft	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	1	1	1	1	1
	1,000	53	107	214	320	427	534	641	747	854	961	1068	1281	1495	1708	2136	2349	2670	3203	3737
	Loads/Aircraft	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	1	1	1	1	1	1	1
	1,250	67	133	267	400	534	667	801	934	1068	1201	1335	1602	1869	2136	2670	2936	3337	4004	4672
	Loads/Aircraft	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	1	1	1	1	1	1	1	2	2
	1,500	80	160	320	481	641	801	961	1121	1281	1442	1602	1922	2242	2563	3203	3524	4004	4805	5606
	Loads/Aircraft	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	1	1	1	1	1	1	1	2	2	2
	1,800	96	192	384	577	769	961	1153	1345	1538	1730	1922	2306	2691	3075	3844	4229	4805	5766	6727
	Loads/Aircraft	0.0	0.1	0.1	0.2	0.3	0.4	0.4	1	1	1	1	1	1	1	1	2	2	2	3
	2,500	133	267	534	801	1068	1335	1602	1869	2136	2403	2670	3203	3737	4271	5339	5873	6674	8009	9343
	Loads/Aircraft	0.1	0.1	0.2	0.3	0.4	1	1	1	1	1	1	1	1	2	2	2	3	3	4
	3,000	160	320	641	961	1281	1602	1922	2242	2563	2883	3203	3844	4485	5125	6407	7048	8009	9610	11212
	Loads/Aircraft	0.1	0.1	0.2	0.4	0.5	1	1	1	1	1	1	1	2	2	2	3	3	4	4
	4,000	214	427	854	1281	1708	2136	2563	2990	3417	3844	4271	5125	5980	6834	8542	9397	10678	12814	14949
	Loads/Aircraft	0.1	0.2	0.3	0.5	1	1	1	1	1	1	2	2	2	3	3	4	4	5	6

2 Loads =5300 Gallons | Consider DC10

. 2 = % of full load

S-64 Calculated for 2,650 Gallons

Intensity Btu/s/ft

Btu-ft/sec	*Fireline length 1,000's of feet* *Total Gallons per second & Loads required in center*																		
Fireline length 1,000'sft	**0.5**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**12**	**14**	**16**	**20**	**22**	**25**	**30**	**35**
1,500	80	160	320	481	641	801	961	1,121	1,281	1,442	1,602	1,922	2,242	2,563	3,203	3,524	4,004	4,805	5,606
Loads/Aircraft	0.1	0.2	0.4	1	1	1	1	1	2	2	2	2	3	3	4	4	5	6	7
2,500	133	267	534	801	1,068	1,335	1,602	1,869	2,136	2,403	2,670	3,203	3,737	4,271	5,339	5,873	6,674	8,009	9,343
Loads/Aircraft	0.2	0.3	1	1	1	2	2	2	3	3	3	4	5	5	7	7	8	10	12
5,000	267.0	533.9	1067.8	1601.7	2135.6	2669.5	3203.4	3737.3	4271.2	4805.1	5339.0	6406.8	7474.6	8542.4	10678.1	11745.9	13347.6	16017.1	18686.6
Loads/Aircraft	0.3	1	1	2	3	3	4	5	5	6	7	8	9	11	13	15	17	20	23
7,500	400	801	1,602	2,403	3,203	4,004	4,805	5,606	6,407	7,208	8,009	9,610	11,212	12,814	16,017	17,619	20,021	24,026	28,030
Loads/Aircraft	1	1	2	3	4	5	6	7	8	9	10	12	14	16	20	22	25	30	35
15,000	801	1,602	3,203	4,805	6,407	8,009	9,610	11,212	12,814	14,415	16,017	19,221	22,424	25,627	32,034	35,238	40,043	48,051	56,060
Loads/Aircraft	1	2	4	6	8	10	12	14	16	18	20	24	28	32	40	44	50	60	70
30,000	1,602	3,203	6,407	9,610	12,814	16,017	19,221	22,424	25,627	28,831	32,034	38,441	44,848	51,255	64,068	70,475	80,085	96,103	112,120
Loads/Aircraft	2	4	8	12	16	20	24	28	32	36	40	48	56	64	80	88	100	120	140
60,000	3,203	6,407	12,814	19,221	25,627	32,034	38,441	44,848	51,255	57,662	64,068	76,882	89,696	102,509	128,137	140,950	160,171	192,205	224,239
Loads/Aircraft	4	8	16	24	32	40	48	56	64	72	80	96	112	128	160	176	200	240	280
90,000	4,805	9,610	19,221	28,831	38,441	48,051	57,662	67,272	76,882	86,492	96,103	115,323	134,544	153,764	192,205	211,426	240,256	288,308	336,359
Loads/Aircraft	6	12	24	36	48	60	72	84	96	108	120	144	168	192	240	264	300	360	420
100,000	5339	10,678	21,356	32,034	42,712	53,390	64,068	74,746	85,424	96,103	106,781	128,137	149,493	170,849	213,561	234,917	266,951	320,342	373,732
Loads/Aircraft	7	13	27	40	53	67	80	93	107	120	133	160	187	214	267	294	334	400	467
200,000	10,678	21,356	42,712	64,068	85,424	106,781	128,137	149,493	170,849	192,205	213,561	256,273	298,986	341,698	427,122	469,834	533,903	640,683	747,464
Loads/Aircraft	13	27	53	80	107	133	160	187	214	240	267	320	374	427	534	587	667	801	934

COOL IT RETARD IT DOZE IT
FIRE BRIDGE
ENGINEERS MAKE IT HAPPEN

2 loads = 1600 Gallon | consider CL415

.1 = % of full load

4 loads ≅ 3000 Gallon | consider Type 1

Aircraft - 800 Gallon, SEAT

Intensity Btu/s/ft

Btu-ft/sec	*Fireline length 1,000's of feet* *Total Gallons per second & Loads required in center*																		
Fireline length 1,000's ft	**0.5**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**12**	**14**	**16**	**20**	**22**	**25**	**30**	**35**
1,500	80	160	320	481	641	801	961	1,121	1,281	1,442	1,602	1,922	2,242	2,563	3,203	3,524	4,004	4,805	5,606
Loads/Aircraft	0.1	0.1	0.2	0.3	0.4	1	1	1	1	1	1	1	1	2	2	2	3	3	4
2,500	133	267	534	801	1,068	1,335	1,602	1,869	2,136	2,403	2,670	3,203	3,737	4,271	5,339	5,873	6,674	8,009	9,343
Loads/Aircraft	0.1	0.2	0.3	1	1	1	1	1	1	2	2	2	2	3	3	4	4	5	6
5,000	267.0	533.9	1067.8	1601.7	2135.6	2669.5	3203.4	3737.3	4271.2	4805.1	5339.0	6406.8	7474.6	8542.4	10678.1	11745.9	13347.6	16017.1	18686.6
Loads/Aircraft	0.2	0.3	1	1	1	2	2	2	3	3	3	4	5	5	7	7	8	10	12
7,500	400	801	1,602	2,403	3,203	4,004	4,805	5,606	6,407	7,208	8,009	9,610	11,212	12,814	16,017	17,619	20,021	24,026	28,030
Loads/Aircraft	0.3	1	1	2	2	3	3	4	4	5	5	6	7	8	10	11	13	15	18
15,000	801	1,602	3,203	4,805	6,407	8,009	9,610	11,212	12,814	14,415	16,017	19,221	22,424	25,627	32,034	35,238	40,043	48,051	56,060
Loads/Aircraft	1	1	2	3	4	5	6	7	8	9	10	12	14	16	20	22	25	30	35
30,000	1,602	3,203	6,407	9,610	12,814	16,017	19,221	22,424	25,627	28,831	32,034	38,441	44,848	51,255	64,068	70,475	80,085	96,103	112,120
Loads/Aircraft	1	2	4	6	8	10	12	14	16	18	20	24	28	32	40	44	50	60	70
60,000	3,203	6,407	12,814	19,221	25,627	32,034	38,441	44,848	51,255	57,662	64,068	76,882	89,696	102,509	128,137	140,950	160,171	192,205	224,239
Loads/Aircraft	2	4	8	12	16	20	24	28	32	36	40	48	56	64	80	88	100	120	140
90,000	4,805	9,610	19,221	28,831	38,441	48,051	57,662	67,272	76,882	86,492	96,103	115,323	134,544	153,764	192,205	211,426	240,256	288,308	336,359
Loads/Aircraft	3	6	12	18	24	30	36	42	48	54	60	72	84	96	120	132	150	180	210
100,000	5,339	10,678	21,356	32,034	42,712	53,390	64,068	74,746	85,424	96,103	106,781	128,137	149,493	170,849	213,561	234,917	266,951	320,342	373,732
Loads/Aircraft	3	7	13	20	27	33	40	47	53	60	67	80	93	107	133	147	167	200	234
200,000	10,678	21,356	42,712	64,068	85,424	106,781	128,137	149,493	170,849	192,205	213,561	256,273	298,986	341,698	427,122	469,834	533,903	640,683	747,464
Loads/Aircraft	7	13	27	40	53	67	80	93	107	120	133	160	187	214	267	294	334	400	467

2 loads = 1, 3k load	**12 loads = 1, 747 load**
6 loads = 1 DC 10 load	**.2 = % of full load**

Aircraft - 1600 Gallon

Intensity Btu/s/ft

Btu-ft/sec	*Fireline length 1,000's of feet* *Total Gallons per second & Loads required in center*																		
Fireline length 1,000's ft	**0.5**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**12**	**14**	**16**	**20**	**22**	**25**	**30**	**35**
1,500	80	160	320	481	641	801	961	1,121	1,281	1,442	1,602	1,922	2,242	2,563	3,203	3,524	4,004	4,805	5,606
Loads/Aircraft	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	1	1	1	1	1	1	1	2	2
2,500	133	267	534	801	1,068	1,335	1,602	1,869	2,136	2,403	2,670	3,203	3,737	4,271	5,339	5,873	6,674	8,009	9,343
Loads/Aircraft	0.0	0.1	0.2	0.3	0.4	0.4	1	1	1	1	1	1	1	1	2	2	2	3	3
5,000	267.0	533.9	1067.8	1601.7	2135.6	2669.5	3203.4	3737.3	4271.2	4805.1	5339.0	6406.8	7474.6	8542.4	10678.1	11745.9	13347.6	16017.1	18686.6
Loads/Aircraft	0.1	0.2	0.4	1	1	1	1	1	1	2	2	2	2	3	4	4	4	5	6
7,500	400	801	1,602	2,403	3,203	4,004	4,805	5,606	6,407	7,208	8,009	9,610	11,212	12,814	16,017	17,619	20,021	24,026	28,030
Loads/Aircraft	0.1	0.3	1	1	1	1	2	2	2	2	3	3	4	4	5	6	7	8	9
15,000	801	1,602	3,203	4,805	6,407	8,009	9,610	11,212	12,814	14,415	16,017	19,221	22,424	25,627	32,034	35,238	40,043	48,051	56,060
Loads/Aircraft	0.3	1	1	2	2	3	3	4	4	5	5	6	7	9	11	12	13	16	19
30,000	1,602	3,203	6,407	9,610	12,814	16,017	19,221	22,424	25,627	28,831	32,034	38,441	44,848	51,255	64,068	70,475	80,085	96,103	112,120
Loads/Aircraft	1	1	2	3	4	5	6	7	9	10	11	13	15	17	21	23	27	32	37
60,000	3,203	6,407	12,814	19,221	25,627	32,034	38,441	44,848	51,255	57,662	64,068	76,882	89,696	102,509	128,137	140,950	160,171	192,205	224,239
Loads/Aircraft	1	2	4	6	9	11	13	15	17	19	21	26	30	34	43	47	53	64	75
90,000	4,805	9,610	19,221	28,831	38,441	48,051	57,662	67,272	76,882	86,492	96,103	115,323	134,544	153,764	192,205	211,426	240,256	288,308	336,359
Loads/Aircraft	2	3	6	10	13	16	19	22	26	29	32	38	45	51	64	70	80	96	112
100,000	5,339	10,678	21,356	32,034	42,712	53,390	64,068	74,746	85,424	96,103	106,781	128,137	149,493	170,849	213,561	234,917	266,951	320,342	373,732
Loads/Aircraft	2	4	7	11	14	18	21	25	28	32	36	43	50	57	71	78	89	107	125
200,000	10,678	21,356	42,712	64,068	85,424	106,781	128,137	149,493	170,849	192,205	213,561	256,273	298,986	341,698	427,122	469,834	533,903	640,683	747,464
Loads/Aircraft	4	7	14	21	28	36	43	50	57	64	71	85	100	114	142	157	178	214	249

3 loads = 1 DC 10 load

6 loads = 1 747 load

0 = less than full load

Aircraft - 3,000 Gallon

Intensity Btu/s/ft

Fireline length 1,000's of feet
Total Gallons per second & Loads required in center

Btu-ft/sec																		
Fireline length 1,000's ft	**0.5**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**12**	**14**	**16**	**20**	**22**	**25**	**30**	**35**
1,500	80	160	320	481	641	801	961	1,121	1,281	1,442	1,602	1,922	2,242	2,563	3,203	3,524	4,004	4,805	5,606
Loads/Aircraft	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	1	1	1	1	1	1	1
2,500	133	267	534	801	1,068	1,335	1,602	1,869	2,136	2,403	2,670	3,203	3,737	4,271	5,339	5,873	6,674	8,009	9,343
Loads/Aircraft	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.5	1	1	1	1	1	1	1	1	2	2	2
5,000	267.0	533.9	1067.8	1601.7	2135.6	2669.5	3203.4	3737.3	4271.2	4805.1	5339.0	6406.8	7474.6	8542.4	10678.1	11745.9	13347.6	16017.1	18686.6
Loads/Aircraft	0.1	0.1	0.3	0.4	1	1	1	1	1	1	1	2	2	2	3	3	3	4	5
7,500	400	801	1,602	2,403	3,203	4,004	4,805	5,606	6,407	7,208	8,009	9,610	11,212	12,814	16,017	17,619	20,021	24,026	28,030
Loads/Aircraft	0.1	0.2	0.4	1	1	1	1	1	2	2	2	2	3	3	4	4	5	6	7
15,000	801	1,602	3,203	4,805	6,407	8,009	9,610	11,212	12,814	14,415	16,017	19,221	22,424	25,627	32,034	35,238	40,043	48,051	56,060
Loads/Aircraft	0.2	0.4	1	1	2	2	2	3	3	4	4	5	6	6	8	9	10	12	14
30,000	1,602	3,203	6,407	9,610	12,814	16,017	19,221	22,424	25,627	28,831	32,034	38,441	44,848	51,255	64,068	70,475	80,085	96,103	112,120
Loads/Aircraft	0.4	1	2	2	3	4	5	6	6	7	8	10	11	13	16	18	20	24	28
60,000	3,203	6,407	12,814	19,221	25,627	32,034	38,441	44,848	51,255	57,662	64,068	76,882	89,696	102,509	128,137	140,950	160,171	192,205	224,239
Loads/Aircraft	1	2	3	5	6	8	10	11	13	14	16	19	22	26	32	35	40	48	56
90,000	4,805	9,610	19,221	28,831	38,441	48,051	57,662	67,272	76,882	86,492	96,103	115,323	134,544	153,764	192,205	211,426	240,256	288,308	336,359
Loads/Aircraft	1	2	5	7	10	12	14	17	19	22	24	29	34	38	48	53	60	72	84
100,000	5,339	10,678	21,356	32,034	42,712	53,390	64,068	74,746	85,424	96,103	106,781	128,137	149,493	170,849	213,561	234,917	266,951	320,342	373,732
Loads/Aircraft	1	3	5	8	11	13	16	19	21	24	27	32	37	43	53	59	67	80	93
200,000	10,678	21,356	42,712	64,068	85,424	106,781	128,137	149,493	170,849	192,205	213,561	256,273	298,986	341,698	427,122	469,834	533,903	640,683	747,464
Loads/Aircraft	3	5	11	16	21	27	32	37	43	48	53	64	75	85	107	117	133	160	187

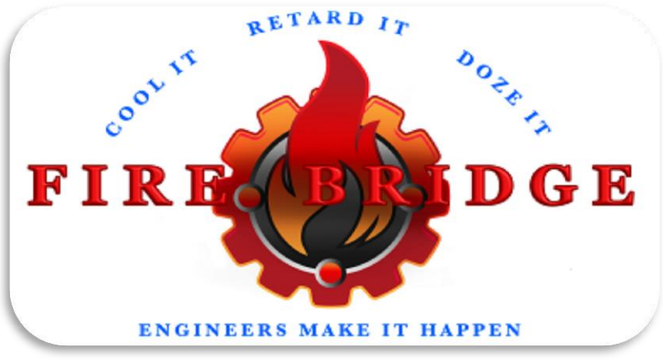
3 loads = 1 DC 10 load
4 loads approx = 1 747 load

.2 = % of full load

Aircraft - 4,000 Gallon

Fireline length 1,000's of feet
Total Gallons per second & Loads required in center

Intensity Btu/s/ft — Btu-ft/sec																			
Fireline length 1,000's ft	**0.5**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**12**	**14**	**16**	**20**	**22**	**25**	**30**	**35**
1,500	80	160	320	481	641	801	961	1,121	1,281	1,442	1,602	1,922	2,242	2,563	3,203	3,524	4,004	4,805	5,606
Loads/Aircraft	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	1
2,500	133	267	534	801	1,068	1,335	1,602	1,869	2,136	2,403	2,670	3,203	3,737	4,271	5,339	5,873	6,674	8,009	9,343
Loads/Aircraft	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.5	1	1	1	1
5,000	267.0	533.9	1067.8	1601.7	2135.6	2669.5	3203.4	3737.3	4271.2	4805.1	5339.0	6406.8	7474.6	8542.4	10678.1	11745.9	13347.6	16017.1	18686.6
Loads/Aircraft	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	1	1	1	1	1	1	1	2
7,500	400	801	1,602	2,403	3,203	4,004	4,805	5,606	6,407	7,208	8,009	9,610	11,212	12,814	16,017	17,619	20,021	24,026	28,030
Loads/Aircraft	0.0	0.1	0.1	0.2	0.3	0.4	0.4	1	1	1	1	1	1	1	1	2	2	2	3
15,000	801	1,602	3,203	4,805	6,407	8,009	9,610	11,212	12,814	14,415	16,017	19,221	22,424	25,627	32,034	35,238	40,043	48,051	56,060
Loads/Aircraft	0.1	0.1	0.3	0.4	1	1	1	1	1	1	1	2	2	2	3	3	4	4	5
30,000	1,602	3,203	6,407	9,610	12,814	16,017	19,221	22,424	25,627	28,831	32,034	38,441	44,848	51,255	64,068	70,475	80,085	96,103	112,120
Loads/Aircraft	0.1	0.3	1	1	1	1	2	2	2	3	3	3	4	5	6	6	7	9	10
60,000	3,203	6,407	12,814	19,221	25,627	32,034	38,441	44,848	51,255	57,662	64,068	76,882	89,696	102,509	128,137	140,950	160,171	192,205	224,239
Loads/Aircraft	0.3	1	1	2	2	3	3	4	5	5	6	7	8	9	12	13	15	17	20
90,000	4,805	9,610	19,221	28,831	38,441	48,051	57,662	67,272	76,882	86,492	96,103	115,323	134,544	153,764	192,205	211,426	240,256	288,308	336,359
Loads/Aircraft	0.4	1	2	3	3	4	5	6	7	8	9	10	12	14	17	19	22	26	31
100,000	5,339	10,678	21,356	32,034	42,712	53,390	64,068	74,746	85,424	96,103	106,781	128,137	149,493	170,849	213,561	234,917	266,951	320,342	373,732
Loads/Aircraft	0.5	1	2	3	4	5	6	7	8	9	10	12	14	16	19	21	24	29	34
200,000	10,678	21,356	42,712	64,068	85,424	106,781	128,137	149,493	170,849	192,205	213,561	256,273	298,986	341,698	427,122	469,834	533,903	640,683	747,464
Loads/Aircraft	1	2	4	6	8	10	12	14	16	17	19	23	27	31	39	43	49	58	68



.2 = % of full load

Aircraft - 11,000 Gallon

TONS PER ACRE BY FUEL MODEL

GR1	0.4	SH1	1.95	TU5	14
GR2	1.1	SH2	8.35	TL1	6.8
GR3	2	SH3	9.65	TL2	5.9
GR4	2.15	SH4	4.75	TL3	5.5
GR5	2.9	SH5	8.6	TL4	6.2
GR6	3.5	SH6	5.75	TL5	8.05
GR7	6.4	SH7	14.4	TL6	4.8
GR8	8.8	SH8	10.65	TL7	9.8
GR9	11	SH9	15.5	TL8	8.3
GS1	1.35	TU1	3.7	TL9	14.1
GS2	2.6	TU2	4.2	SB1	15.5
GS3	3.25	TU3	3.25	SB2	12.75
GS4	12.8	TU4	6.5	SB3	11.25
				SB4	14

Fuel Models below COMPRISE OF 3 OR MORE OF THE 1HR, 10HR, 100HR, Live Herb/Woody FUELS to contribute to total Tonage per Acre

GR3	GS3	SH4	SH9	TL1	TL6	SB2
GR8	GS4	SH5	TU1	TL2	TL7	SB3
GR9	SH1	SH6	TU2	TL3	TL8	SB4
GS1	SH2	SH7	TU3	TL4	TL9	
GS2	SH3	SH8	TU5	TL5	SB1	

Instructions for use

1. Determine the Rate of Spread in Feet per second from either field personnel or by the conversion chart on tab "Chains - Ft-sec".
2. Select "Intensity Btu(s)ft" tab, on the left side of this tab, select the appropriate rate of spread figure most closely matching the forward fire travel rate in feet per second.
3. Next select the appropriate Tons Per Acre figure on the top row, (labeled .1 , .25, .5, 1, to 35). Where these two figures intersect is the Intensity in Btu/S/Ft. Ex: 3 feet per second and 6 tons per acre show 6,612 Btu/s/ft.
4. Next select a chart that shows a Fire Intensity closest to the 6,612 Btu/s/ft as close as possible. This would be located on a Aircraft 800 Gallon or larger capacity sheet.
5. Next select the appropriate fire line length figure closest to your situation. A fire line by our example intensity herein is also 6,000 feet in length. The intersection of 7,500 and 6 would require 4,805 gallons total. Below this figure is displayed the number of loads based upon the aircraft load capacity.

The Intensity figures are calculated from the RMRS GTR-153 report from 2005 and assumes the total tons per acre for 1, 10, 100 hour, live herb, and live woody figures for the appropriate fuel model combined. The BTU/lb rating is taken as that of the report which is 8,000.

Btu absorption for the water is taken at 5,000ft msl and 50 degrees. This produces a figure of 9,365Btu/gal and is considered the median from Sea Level to 10,000 ft.

Users must take into consideration that a recommended load figure may actually exceed that which is being called for due to the fact that the figures include 1, 10, and 100 hour fuels and would further require complete consumption to generate the necessary BTU fiures. Thus it is possible that more water than what is required may be dropped. This should not be a concern although one should keep it in mind.

The Intensity figures are determined using the following formula.

$$Intensity = ROS^{fps}\ x \frac{(\ Tons^{acre} x 2{,}000\ x\ 8{,}000^{btu} lb)}{43{,}560}$$

The water determination is made from:

$$Gallons\ Req'd = \frac{Intensity\ x\ line\ length}{9365}$$

Loads required is determined by: $Loads = \frac{Gallons\ Req'd}{Aircraft\ Load\ Capacity}$