APPENDIX D
CONVERSION OF MIXED TRAFFIC TO EQUIVALENT SINGLE AXLE LOADS FOR PAVEMENT DESIGN

D.1 GENERAL CONSIDERATIONS

Part I of this Guide outlines the fact that estimates of the amount of traffic and its characteristics play a primary role in the pavement design and analysis process Parts II and III require traffic information for design of pavement structures This Appendix provides guidelines for estimating the number of equivalent single axle loads which can be expected to be applied to a pavement during a specified design period or to estimate equivalent axle load applications that have been applied to existing pavements Although typical and historical traffic parameters are furnished in this Appendix for illustrative purposes, pavement designers and analysts are cautioned to use the best locally available data to represent specific site conditions Such traffic data should be available from the designing agency as part of its regular traffic monitoring effort As the science of pavement design and management matures, it is vital that a close working relationship exists among these groups

There are currently major initiatives underway to improve the quality of traffic data Statistically based programs for traffic monitoring are being adopted in many states Microcomputer technology is rapidly improving the ability of planners to assemble better traffic data using automatic vehicle classifiers and weigh-in-motion (WIM) installations

History has clearly shown that while it may be possible to accurately measure today's traffic, the characteristics of this traffic change over time With the exception of interruptions during petroleum shortages in recent years, a rather constant increase in traffic is evident This type of information, plus forecasts of population, land use, economic factors, etc , are used by transportation planners to forecast future travel At the local level, such forecasts are generally developed on a system basis and on most high level highways for specific corridors These should be used in the pavement design process

From 1970 to 1983, the percent of the total volume made up of passenger cars and buses (on rural Interstate highways) decreased from 77 to 63, while the percent of the traffic stream made up of 5-axle or more combinations increased from 9 to 17 Between 1970 and 1983, the total equivalent single axle loads increased by 105 percent The significant point is that if pavements had been designed in 1970, assuming a constant traffic growth for all types of vehicles, a serious underdesign of pavements would have resulted

Users of this Guide are cautioned that what are discussed are nationwide summary data Trends within a given state, or corridor within a state, may vary significantly This can happen for a number of reasons, including economic conditions, industry locational patterns, truck weight laws, enforcement intensity, equipment changes by the trucking industry, etc Pavement designers should be particularly sensitive to the changes which will likely take place on the nationwide basis as a result of the Surface Transportation Assistance Act (STAA) of 1982 As a result of this legislation, there may well be (1) significant changes in both truck weights within particular vehicle categories and shifts to different equipment (twin trailers), (2) changes in position of load application due to wider trucks, and (3) increased intensity of use on certain routes designated for these new vehicle configurations Additionally, deregulation of the trucking industry will likely change the portion of trucks traveling empty in many corridors

These discussions highlight the need for each state to be conducting a comprehensive program of traffic counting, vehicle classification, and truck weighing These changing traffic trends can be expected to have significant influences on the lives of existing pavements and on the design of new pavements

To use the pavement design procedures presented in this Guide, mixed traffic must be converted to an equivalent number of 18-kip single axle loads The procedure for accomplishing this conversion includes

(1) derivation of load equivalence factors,
(2) conversion of mixed traffic to 18-kip equivalent single axle load (ESAL) applications, and
(3) lane distribution considerations

To express varying axle loads in terms of a single design parameter, it is necessary to develop axle load equivalence factors These factors, when multiplied by the number of axle loads within a given weight category, give the number of 18-kip single axle load applications which will have an equivalent effect on the performance of the pavement structures

Load equivalency factors represent the ratio of the number of repetitions of any axle load and axle configuration (single, tandem, tridem) necessary to cause the same reduction in PSI as one application of an 18-kip single axle load Load equivalency factors are presented later in Tables D 1 through D 18 for a range of pavement structural combinations, axle configurations, and terminal serviceability values of 2 0, 2 5, and 3 0 Appendix MM of Volume 2 presents the AASHO Road Test-based equations that were used to generate these tables It also provides some support for extending the tables to tridem axle loadings

The prediction of traffic (ESAL's) for design purposes must rely on information from past traffic, modified by factors for growth or other expected changes Most states, in cooperation with FHWA, accumulate past traffic information in the form of truck weight study data W-4 tables Typical information includes (1) axle weight distributions in 2,000-lb intervals, (2) ESAL's for all trucks weighed, (3) ESAL's per 1,000 trucks weighed by truck class, (4) ESAL's for all trucks counted, and (5) percent distribution of ESAL's by truck class

To arrive at the design ESAL's, it is necessary to assume a structural number (SN) for flexible pavements or slab thickness (D) for rigid pavements, and then select the equivalence factors listed in Tables D 1 through D 18 The use of an SN of 5 0 or a D of 9 inches for the determination of 18-kip single axle equivalence factors will normally give results that are sufficiently accurate for design purposes, even though the final design may be somewhat different If in error, this assumption will usually result in an overestimation of 18-kip equivalent single axles When more accurate results are desired and the computed design is appreciably different (1 inch of PCC for rigid or 1 inch of asphalt concrete for flexible) from the assumed value, a new value should be assumed, the design 18-kip ESAL traffic (w_{18}) recomputed, and the structural design determined for the new w_{18} The procedure should be continued until the assumed and computed values are as close as desired

If the number of equivalent axle loads represents the total for all lanes and both directions of travel, this number must be distributed by direction and by lanes for design purposes Directional distribution is usually made by assigning 50 percent of the traffic to each direction, unless special considerations (such as more loaded trucks moving in one direction and more empty trucks in the other) warrant some other distribution In regard to lane distribution, most states assign 100 percent of the traffic in each direction (i e , 50 percent of the total) to the design lane Some states have developed lane distribution factors for multilane facilities The range of factors used is presented below

Number of Lanes in Both Directions	Percent of 18-kip ESAL Traffic in Design Lane
1	100
2	80–100
3	60–80
4 or more	50–75

If lane or directional distribution factors are utilized and pavements are designed on the basis of distributed traffic, consideration should be given to the use of variable cross sections Heavier structural sections in the outside lanes should be considered if warranted by the lane distribution analysis

In view of the increased emphasis on improved traffic monitoring made possible by weigh-in-motion (WIM) and automatic vehicle classification and counting, it is recommended that each state develop appropriate factors for multilane facilities

D.2 CALCULATING ESAL APPLICATIONS

When calculating ESAL's for the design of a particular project, it is convenient to convert the estimated traffic distribution into truck load factors Two methods of calculating truck load factors from W-4 information are summarized in the following paragraphs of this section

Where axle load information is available from a weigh station that can be assumed to be representative of traffic for the pavement to be designed, the truck load factor can be calculated directly For example, assume that the data in Figure D 1 illustrates the weighing of 5-axle, tractor semi-trailer trucks at a specific weigh station Traffic (load) equivalency factors are obtained from Table D 4, the number of axles represents the grouping or distribution of weights

Table D.1. Axle Load Equivalency Factors for Flexible Pavements, Single Axles and p_t of 2.0

Axle Load (kips)	Pavement Structural Number (SN)					
	1	2	3	4	5	6
2	0002	0002	0002	0002	0002	0002
4	002	003	002	002	002	002
6	009	.012	011	010	009	009
8	030	035	036	033	031	029
10	075	085	090	085	079	076
12	165	177	189	183	174	168
14	325	338	354	350	338	331
16	589	598	613	612	603	596
18	1 00	1 00	1 00	1 00	1 00	1 00
20	1 61	1 59	1 56	1 55	1 57	1 59
22	2 49	2 44	2 35	2 31	2 35	2 41
24	3 71	3 62	3 43	3 33	3 40	3 51
26	5.36	5 21	4 88	4 68	4 77	4 96
28	7 54	7 31	6 78	6 42	6 52	6 83
30	10 4	10 0	9 2	8 6	8 7	9 2
32	14 0	13 5	12 4	11 5	11 5	12 1
34	18 5	17 9	16 3	15 0	14 9	15 6
36	24 2	23 3	21 2	19 3	19 0	19 9
38	31 1	29 9	27 1	24 6	24 0	25 1
40	39 6	38 0	34 3	30 9	30 0	31 2
42	49 7	47 7	43 0	38 6	37 2	38 5
44	61 8	59 3	53 4	47 6	45 7	47 1
46	76 1	73 0	65 6	58 3	55 7	57 0
48	92 9	89 1	80 0	70 9	67 3	68 6
50	113	108	97	86	81	82

Table D.2. Axle Load Equivalency Factors For Flexible Pavements, Tandem Axles and p_t of 2.0

Axle Load (kips)	Pavement Structural Number (SN)					
	1	2	3	4	5	6
2	0000	0000	0000	0000	0000	0000
4	0003	0003	0003	0002	0002	0002
6	001	001	001	001	001	001
8	003	003	003	003	003	002
10	007	008	008	007	006	006
12	013	016	016	014	013	012
14	024	029	029	026	024	023
16	041	048	050	046	042	040
18	066	077	081	075	069	066
20	103	117	124	117	109	105
22	156	171	183	174	164	158
24	227	244	260	252	239	231
26	322	340	360	353	338	329
28	447	465	487	481	466	455
30	607	623	646	643	627	617
32	810	823	843	842	829	819
34	1 06	1 07	1 08	1 08	1 08	1 07
36	1 38	1 38	1 38	1 38	1 38	1 38
38	1 76	1 75	1 73	1 72	1 73	1 74
40	2 22	2 19	2 15	2 13	2 16	2 18
42	2 77	2 73	2 64	2 62	2 66	2 70
44	3 42	3 36	3 23	3 18	3 24	3 31
46	4 20	4 11	3 92	3 83	3 91	4 02
48	5 10	4 98	4 72	4 58	4 68	4 83
50	6 15	5 99	5 64	5 44	5 56	5 77
52	7 37	7 16	6 71	6 43	6 56	6 83
54	8 77	8 51	7 93	7 55	7 69	8 03
56	10 4	10 1	9 3	8 8	9 0	9 4
58	12 2	11 8	10 9	10 3	10 4	10 9
60	14 3	13 8	12 7	11 9	12 0	12 6
62	16 6	16 0	14 7	13 7	13 8	14 5
64	19 3	18 6	17 0	15 8	15 8	16 6
66	22 2	21 4	19 6	18 0	18 0	18 9
68	25 5	24 6	22 4	20 6	20 5	21 5
70	29 2	28 1	25 6	23 4	23 2	24 3
72	33 3	32 0	29 1	26 5	26 2	27 4
74	37 8	36 4	33 0	30 0	29 4	30 8
76	42 8	41 2	37 3	33 8	33 1	34 5
78	48 4	46 5	42 0	38 0	37 0	38 6
80	54 4	52 3	47 2	42 5	41 3	43 0
82	61 1	58 7	52 9	47 6	46 0	47 8
84	68 4	65 7	59 2	53 0	51 2	53 0
86	76 3	73 3	66 0	59 0	56 8	58 6
88	85 0	81 6	73 4	65 5	62 8	64 7
90	94 4	90 6	81 5	72 6	69 4	71 3

Table D.3. Axle Load Equivalency Factors for Flexible Pavements, Triple Axles and p_t of 2.0

Axle Load (kips)	Pavement Structural Number (SN)					
	1	2	3	4	5	6
2	0000	0000	0000	0000	0000	0000
4	0001	0001	0001	0001	0001	0001
6	0004	0004	0003	0003	0003	0003
8	0009	0010	0009	0008	0007	0007
10	002	002	002	002	002	001
12	004	.004	004	003	003	003
14	006	007	007	006	006	005
16	010	012	012	010	009	009
18	016	019	019	017	015	015
20	024	029	029	026	024	023
22	.034	.042	042	038	035	034
24	049	058	060	055	051	048
26	068	080	083	077	071	068
28	093	107	113	105	098	094
30	125	.140	149	140	131	126
32	164	182	194	184	173	167
34	213	233	248	238	225	217
36	273	294	313	303	288	279
38	346	368	390	381	364	353
40	434	456	481	473	454	443
42	538	560	587	580	561	548
44	662	682	710	705	686	673
46	807	825	852	849	831	818
48	976	992	1 015	1 014	999	987
50	1 17	1 18	1 20	1 20	1 19	1 18
52	1 40	1 40	1 42	1 42	1 41	1 40
54	1 66	1 66	1 66	1 66	1 66	1 66
56	1 95	1 95	1 93	1 93	1 94	1 94
58	2 29	2 27	2 24	2 23	2 25	2 27
60	2 67	2.64	2 59	2 57	2 60	2 63
62	3 10	3 06	2 98	2 95	2 99	3 04
64	3 59	3 53	3 41	3 37	3 42	3 49
66	4 13	4 05	3 89	3 83	3 90	3 99
68	4 73	4 63	4 43	4 34	4 42	4 54
70	5 40	5 28	5 03	4 90	5 00	5 15
72	6 15	6 00	5 68	5 52	5 63	5 82
74	6 97	6 79	6 41	6 20	6 33	6 56
76	7 88	7 67	7 21	6 94	7 08	7 36
78	8 88	8.63	8 09	7 75	7 90	8 23
80	9 98	9 69	9 05	8 63	8 79	9 18
82	11 2	10 8	10 1	9 6	9 8	10 2
84	12 5	12.1	11 2	10 6	10 8	11 3
86	13 9	13.5	12 5	11 8	11 9	12 5
88	15 5	15.0	13 8	13 0	13 2	13 8
90	17 2	16 6	15 3	14 3	14 5	15 2

Table D.4. Axle Load Equivalency Factors for Flexible Pavements, Single Axles and p_t of 2.5

Axle Load (kips)	Pavement Structural Number (SN)					
	1	2	3	4	5	6
2	0004	0004	0003	0002	0002	0002
4	003	004	004	003	002	002
6	011	017	017	013	010	009
8	032	047	051	041	034	031
10	078	102	118	102	088	080
12	168	198	229	.213	189	176
14	328	358	399	388	360	342
16	591	613	646	645	623	606
18	1 00	1 00	1 00	1 00	1 00	1 00
20	1 61	1 57	1 49	1 47	1 51	1 55
22	2 48	2 38	2 17	2 09	2 18	2 30
24	3 69	3 49	3 09	2 89	3 03	3 27
26	5 33	4 99	4 31	3 91	4 09	4 48
28	7 49	6 98	5 90	5 21	5 39	5 98
30	10 3	9 5	7 9	6 8	7 0	7 8
32	13 9	12 8	10 5	8 8	8 9	10 0
34	18 4	16 9	13 7	11 3	11 2	12 5
36	24 0	22 0	17 7	14 4	13 9	15 5
38	30 9	28 3	22 6	18 1	17 2	19 0
40	39 3	35 9	28 5	22 5	21 1	23 0
42	49 3	45 0	35 6	27 8	25 6	27 7
44	61 3	55 9	44 0	34 0	31 0	33 1
46	75 5	68 8	54 0	41 4	37 2	39 3
48	92 2	83 9	65 7	50 1	44 5	46 5
50	112	102	79	60	53	55

Table D.5. Axle Load Equivalency Factors for Flexible Pavements, Tandem Axles and p_t of 2.5

Axle Load (kips)	Pavement Structural Number (SN)					
	1	2	3	4	5	6
2	0001	0001	0001	0000	0000	0000
4	0005	0005	0004	0003	0003	0002
6	002	002	002	001	001	001
8	004	006	005	004	003	003
10	008	013	011	009	007	006
12	015	024	023	018	014	013
14	026	041	042	033	027	024
16	044	065	070	057	047	043
18	070	097	109	092	077	070
20	107	141	162	141	121	110
22	160	198	229	207	180	166
24	231	273	315	292	260	242
26	327	370	420	401	364	342
28	451	493	548	534	495	470
30	611	648	703	695	658	633
32	813	843	889	887	857	834
34	1 06	1 08	1 11	1 11	1 09	1 08
36	1 38	1 38	1 38	1 38	1 38	1 38
38	1 75	1 73	1 69	1 68	1 70	1 73
40	2 21	2 16	2 06	2 03	2 08	2 14
42	2 76	2 67	2 49	2 43	2 51	2 61
44	3 41	3 27	2 99	2 88	3 00	3 16
46	4 18	3 98	3 58	3 40	3 55	3 79
48	5 08	4 80	4 25	3 98	4 17	4 49
50	6 12	5 76	5 03	4 64	4 86	5 28
52	7 33	6 87	5 93	5 38	5 63	6 17
54	8 72	8 14	6 95	6 22	6 47	7 15
56	10 3	9 6	8 1	7 2	7 4	8 2
58	12 1	11 3	9 4	8 2	8 4	9 4
60	14 2	13 1	10 9	9 4	9 6	10 7
62	16 5	15 3	12 6	10 7	10 8	12 1
64	19 1	17 6	14 5	12 2	12 2	13 7
66	22 1	20 3	16 6	13 8	13 7	15 4
68	25 3	23 3	18 9	15 6	15 4	17 2
70	29 0	26 6	21 5	17 6	17 2	19 2
72	33 0	30 3	24 4	19 8	19 2	21 3
74	37 5	34 4	27 6	22 2	21 3	23 6
76	42 5	38 9	31 1	24 8	23 7	26 1
78	48 0	43 9	35 0	27 8	26 2	28 8
80	54 0	49 4	39 2	30 9	29 0	31 7
82	60 6	55 4	43 9	34 4	32 0	34 8
84	67 8	61 9	49 0	38 2	35 3	38 1
86	75 7	69 1	54 5	42 3	38 8	41 7
88	84 3	76 9	60 6	46 8	42 6	45 6
90	93 7	85 4	67 1	51 7	46 8	49 7

Table D.6. Axle Load Equivalency Factors for Flexible Pavements, Triple Axles and p_t of 2.5

Axle Load (kips)	Pavement Structural Number (SN)					
	1	2	3	4	5	6
2	0000	0000	0000	0000	0000	0000
4	0002	0002	0002	0001	0001	0001
6	0006	0007	0005	0004	0003	0003
8	.001	002	001	001	001	001
10	.003	004	.003	002	002	002
12	005	007	006	004	003	003
14	008	012	010	008	006	006
16	012	019	.018	013	011	010
18	018	029	028	021	017	016
20	.027	.042	042	032	027	024
22	038	058	060	048	040	036
24	053	078	084	068	057	051
26	072	103	114	095	080	072
28	098	133	151	128	109	099
30	129	169	195	170	145	133
32	169	213	.247	220	191	175
34	219	266	308	281	246	228
36	279	329	379	352	313	292
38	352	403	461	436	393	368
40	439	491	554	533	487	459
42	543	594	661	644	597	567
44	666	714	781	769	723	692
46	811	854	918	911	868	838
48	979	1 015	1 072	1 069	1 033	1 005
50	1 17	1 20	1 24	1 25	1 22	1 20
52	1 40	1 41	1 44	1 44	1 43	1 41
54	1 66	1 66	1 66	1 66	1 66	1 66
56	1 95	1 93	1 90	1 90	1 91	1 93
58	2 29	2 25	2 17	2 16	2 20	2 24
60	2 67	2 60	2 48	2 44	2 51	2 58
62	3 09	3 00	2 82	2 76	2 85	2 95
64	3 57	3 44	3 19	3 10	3 22	3 36
66	4 11	3 94	3 61	3 47	3 62	3 81
68	4 71	4 49	4 06	3 88	4 05	4 30
70	5 38	5 11	4 57	4 32	4 52	4 84
72	6 12	5 79	5 13	4 80	5 03	5 41
74	6 93	6 54	5.74	5 32	5 57	6 04
76	7 84	7 37	6 41	5 88	6 15	6 71
78	8 83	8 28	7 14	6 49	6 78	7 43
80	9 92	9 28	7 95	7 15	7 45	8 21
82	11 1	10 4	8 8	7 9	8 2	9 0
84	12 4	11 6	9 8	8 6	8 9	9 9
86	13 8	12 9	10 8	9.5	9 8	10 9
88	15 4	14 3	11 9	10 4	10 6	11 9
90	17 1	15 8	13.2	11 3	11 6	12 9

Table D.7. Axle Load Equivalency Factors for Flexible Pavements, Single Axles and p_t of 3.0

Axle Load (kips)	Pavement Structural Number (SN)					
	1	2	3	4	5	6
2	0008	0009	0006	0003	0002	0002
4	004	008	006	004	002	002
6	014	030	028	018	012	010
8	035	.070	080	055	040	034
10	082	.132	168	132	101	086
12	173	231	296	260	212	187
14	332	388	468	447	391	358
16	594	633	695	693	651	622
18	1 00	1 00	1 00	1 00	1 00	1 00
20	1 60	1 53	1 41	1 38	1 44	1 51
22	2 47	2 29	1 96	1 83	1 97	2 16
24	3 67	3 33	2 69	2 39	2 60	2 96
26	5 29	4 72	3 65	3 08	3 33	3 91
28	7 43	6 56	4 88	3 93	4 17	5 00
30	10 2	8 9	6 5	5 0	5 1	6 3
32	13 8	12 0	8 4	6 2	6 3	7 7
34	18 2	15 7	10 9	7 8	7 6	9 3
36	23 8	20 4	14 0	9 7	9 1	11 0
38	30 6	26 2	17 7	11 9	11 0	13 0
40	38 8	33 2	22 2	14 6	13 1	15 3
42	48 8	41 6	27 6	17 8	15 5	17 8
44	60 6	51 6	34 0	21 6	18 4	20 6
46	74 7	63 4	41 5	26 1	21 6	23 8
48	91 2	77 3	50 3	31 3	25 4	27 4
50	110	94	61	37	30	32

Table D.8. Axle Load Equivalency Factors for Flexible Pavements, Tandem Axles and p_t of 3.0

Axle Load (kips)	Pavement Structural Number (SN)					
	1	2	3	4	5	6
2	0002	0002	0001	0001	0000	0000
4	001	001	001	000	000	000
6	003	004	003	002	001	001
8	006	011	009	005	003	003
10	011	024	020	012	008	007
12	019	042	039	024	017	014
14	031	066	068	045	032	026
16	049	096	109	076	055	046
18	075	134	164	121	090	076
20	113	181	232	182	139	119
22	166	241	313	260	205	178
24	238	317	407	358	292	257
26	333	413	517	476	402	360
28	457	534	643	614	538	492
30	616	684	788	773	702	656
32	817	870	956	953	896	855
34	1 07	1 10	1 15	1 15	1 12	1 09
36	1 38	1 38	1 38	1 38	1 38	1 38
38	1 75	1 71	1 64	1 62	1 66	1 70
40	2 21	2 11	1 94	1 89	1 98	2 08
42	2 75	2 59	2 29	2 19	2 33	2 50
44	3 39	3 15	2 70	2 52	2 71	2 97
46	4 15	3 81	3 16	2 89	3 13	3 50
48	5 04	4 58	3 70	3 29	3 57	4 07
50	6 08	5 47	4 31	3 74	4 05	4 70
52	7 27	6 49	5 01	4 24	4 57	5 37
54	8 65	7 67	5 81	4 79	5 13	6 10
56	10 2	9 0	6 7	5 4	5 7	6 9
58	12 0	10 6	7 7	6 1	6 4	7 7
60	14 1	12 3	8 9	6 8	7 1	8 6
62	16 3	14 2	10 2	7 7	7 8	9 5
64	18 9	16 4	11 6	8 6	8 6	10 5
66	21 8	18 9	13 2	9 6	9 5	11 6
68	25 1	21 7	15 0	10 7	10 5	12 7
70	28 7	24 7	17 0	12 0	11 5	13 9
72	32 7	28 1	19 2	13 3	12 6	15 2
74	37 2	31 9	21 6	14 8	13 8	16 5
76	42 1	36 0	24 3	16 4	15 1	17 9
78	47 5	40 6	27 3	18 2	16 5	19 4
80	53 4	45 7	30 5	20 1	18 0	21 0
82	60 0	51 2	34 0	22 2	19 6	22 7
84	67 1	57 2	37 9	24 6	21 3	24 5
86	74 9	63 8	42 1	27 1	23 2	26 4
88	83 4	71 0	46 7	29 8	25 2	28 4
90	92 7	78 8	51 7	32 7	27 4	30 5

Table D.9. Axle Load Equivalency Factors for Flexible Pavements, Triple Axles and p_t of 3.0

Axle Load (kips)	Pavement Structural Number (SN)					
	1	2	3	4	5	6
2	0001	0001	0001	0000	0000	0000
4	0005	0004	0003	0002	0001	0001
6	001	001	001	001	000	000
8	003	004	002	001	001	001
10	005	008	005	003	002	002
12	007	014	010	006	004	003
14	011	023	018	011	007	006
16	016	035	030	018	013	010
18	022	050	047	029	020	017
20	031	069	069	044	031	026
22	043	090	097	065	046	039
24	059	116	132	092	066	056
26	079	145	174	126	092	078
28	104	179	223	168	126	107
30	136	218	279	219	167	143
32	176	265	342	279	218	188
34	226	319	413	350	279	243
36	286	382	491	432	352	310
38	359	456	577	524	437	389
40	447	543	671	626	536	483
42	550	643	775	740	649	593
44	673	760	889	865	777	720
46	817	894	1 014	1 001	920	865
48	984	1 048	1 152	1 148	1 080	1 030
50	1 18	1 23	1 30	1 31	1 26	1 22
52	1 40	1 43	1 47	1 48	1 45	1 43
54	1 66	1 66	1 66	1 66	1 66	1 66
56	1 95	1 92	1 86	1 85	1 88	1 91
58	2 28	2 21	2 09	2 06	2 13	2 20
60	2 66	2 54	2 34	2 28	2 39	2 50
62	3 08	2 92	2 61	2 52	2 66	2 84
64	3 56	3 33	2 92	2 77	2 96	3 19
66	4 09	3 79	3 25	3 04	3 27	3 58
68	4 68	4 31	3 62	3 33	3 60	4 00
70	5 34	4 88	4 02	3 64	3 94	4 44
72	6 08	5 51	4 46	3 97	4 31	4 91
74	6 89	6 21	4 94	4 32	4 69	5 40
76	7 78	6 98	5 47	4 70	5 09	5 93
78	8 76	7 83	6 04	5 11	5 51	6 48
80	9 84	8 75	6 67	5 54	5 96	7 06
82	11 0	9 8	7 4	6 0	6 4	7 7
84	12 3	10 9	8 1	6 5	6 9	8 3
86	13 7	12 1	8 9	7 0	7 4	9 0
88	15 3	13 4	9 8	7 6	8 0	9 6
90	16 9	14 8	10 7	8 2	8 5	10 4