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TABLES FOR COMPUTING AND PLOTTING

FLOOD FREQUENCY CURVES

TECHNICAL BULLETIN No. 3

A. COULSON

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WATER RESOURCES BRANCH
DEPARTMENT OF ENERGY, MINES AND RESOURCES
OTTAWA 1966



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TABLE 1 (continued)

TABLES FOR COMPUTING AND PLOTTING
FLOOD FREQUENCY CURVES

INTRODUCTION

The tables presented herein have been collected together to facilitate the computation and plotting of flood frequency curves according to the first asymptotic distribution of largest values (commonly known as the "Gumbel" method). The tables are used in the (1) computation of the frequency curve (2) computation of the confidence limits for the curve and (3) computation of the plotting positions of the recorded floods.

THE FREQUENCY CURVE

The frequency curve is computed from the formula:-

$$q_T = \bar{Q} + K(T,n) S_q \quad (1)$$

where q_T = the flood of recurrence interval T years;

\bar{Q} = the mean of the sample of n recorded floods;

$K(T,n)$ = the frequency factor for a recurrence interval T years and a sample size of n years;

S_q = the standard deviation of the sample of n recorded floods.

The n floods of the sample are listed and their mean and standard deviation computed from formulae (2) and (3) respectively:

$$\bar{Q} = \frac{\sum q}{n} \quad (2)$$

$$S_q = \sqrt{\frac{\sum q^2 - \bar{Q} \sum q}{n}} \quad (3)$$

The value of the frequency factor, $K(T,n)$, for the required recurrence interval, T, is then read from Table 1 and the flood, q_T , is computed from Equation (1).

CONFIDENCE LIMITS

The confidence limits in the computed flood, q_T , are computed from the formulae:

$$\text{Upper confidence limit} = q_T + t\sigma_H \quad (4)$$

$$\text{Lower confidence limit} = q_T - t\sigma_H \quad (5)$$

where t = the standard normal variate for the required level of confidence;

$$\sigma_H = \tau(T, n) \frac{S_q}{\sqrt{n}} \quad (6)$$

The value of $\tau(T, n)$ is read from Table 2 and σ_H computed from Equation (6). The required value of t is read from Table 3 and the confidence limits computed from Equations (4) and (5).

PLOTTING POSITIONS

It is usually desirable to plot the recorded floods to check the fit of the computed frequency curve. The plotting positions are computed from the formula:-

$$T = \frac{n + 1}{M} \quad (7)$$

where M = the order of magnitude of a flood in the array of recorded floods, the largest flood being assigned the value $M = 1$.

Table 4 lists all the values of T in samples ranging in size from $n = 10$ to $n = 60$ years. Also listed are values of the corresponding probability, P , computed from the formula:-

$$P = \frac{1}{T} \quad (8)$$

EXAMPLE OF THE COMPUTATION AND PLOTTING OF A FREQUENCY CURVE

To illustrate the use of the tables in the computation and plotting of a frequency curve, the flood frequency curve for the Nottawasaga River near Baxter is developed on the following pages.

Recorded Floods

Year	Month	Maximum Daily Q cfs	Q in Order of Magnitude	M	T Years
1948	March	7,170	9,430	1	19.0
1949	March	5,130	8,130	2	9.5
1950	April	8,130	7,170	3	6.3
1951	April	9,430	6,250	4	4.75
1952	April	2,560	6,190	5	3.80
1953	March	2,230	5,870	6	3.17
1954	March	6,250	5,130	7	2.71
1955	March	4,160	4,560	8	2.38
1956	April	5,870	4,160	9	2.11
1957	February	2,620	4,040	10	1.90
1958	March	1,450	3,240	11	1.73
1959	April	3,090	3,090	12	1.58
1960	April	6,190	2,620	13	1.46
1961	March	2,230	2,560	14	1.36
1962	March	3,240	2,230	15	1.27
1963	March	4,560	2,230	16	1.188
1964	April	1,680	1,680	17	1.118
1965	April	4,040	1,450	18	1.056

$$n = 18$$

$$\sum q = 80,030$$

$$\bar{q} = \frac{\sum q}{n} = 4,446 \text{ cfs}$$

$\sum q^2 = 447,338,300$ (Note: On many calculating machines q and q^2 may be accumulated simultaneously).

$$S_q = \sqrt{\frac{\sum q^2 - \bar{q} \sum q}{n}} = 2,255 \text{ cfs}$$

Frequency Curve

T	\bar{Q}	S_q	$K(T,n)$	$K(T,n) S_q$	$q = \bar{Q} + K(T,n) S_q$
10	4,446	2,255	1.649	3,718	8,164
20			2.335	5,265	9,711
50			3.223	7,268	11,714
100			3.888	8,767	13,213

Confidence Limits

For 95 per cent confidence limits, $t = 1.960$

$$\frac{S_q}{\sqrt{n}} = 531$$

T	$\tau(T,n)$	σ_H	$t\sigma_H$	q	$q + t\sigma_H$	$q - t\sigma_H$
10	2.423	1,287	2,522	8,164	10,686	5,642
20	3.108	1,650	3,234	9,711	12,945	6,477
50	4.013	2,131	4,176	11,714	15,890	7,538
100	4.697	2,494	4,888	13,213	18,101	8,325

Plotting of Frequency Curve

The recorded floods, the computed frequency curve and the 95 per cent confidence limits are plotted on extreme value probability paper in Figure 1.

The importance of computing the confidence limits is well illustrated in Figure 1. If the confidence limits had been omitted, the very good fit of the computed frequency curve to the recorded floods could give a false impression of the reliability of the curve.

ACKNOWLEDGEMENTS

Tables 1 to 4 have been collated from various published and unpublished sources. Table 1 is from Kendall (1959) and Reid (1962). Tables 2 and 4 were computed by R. O'N. Lyons, Water Resources Branch. Table 3 is contained in tables in any standard statistical text.

REFERENCES

- Kendall, G.R. 1959. Statistical analysis of extreme values. Proceedings of Symposium No. 1. Spillway Design Floods.
- Reid, M.D. 1962. Extreme value analysis table. Meteorological Branch, Department of Transport. DS No. 10-62.

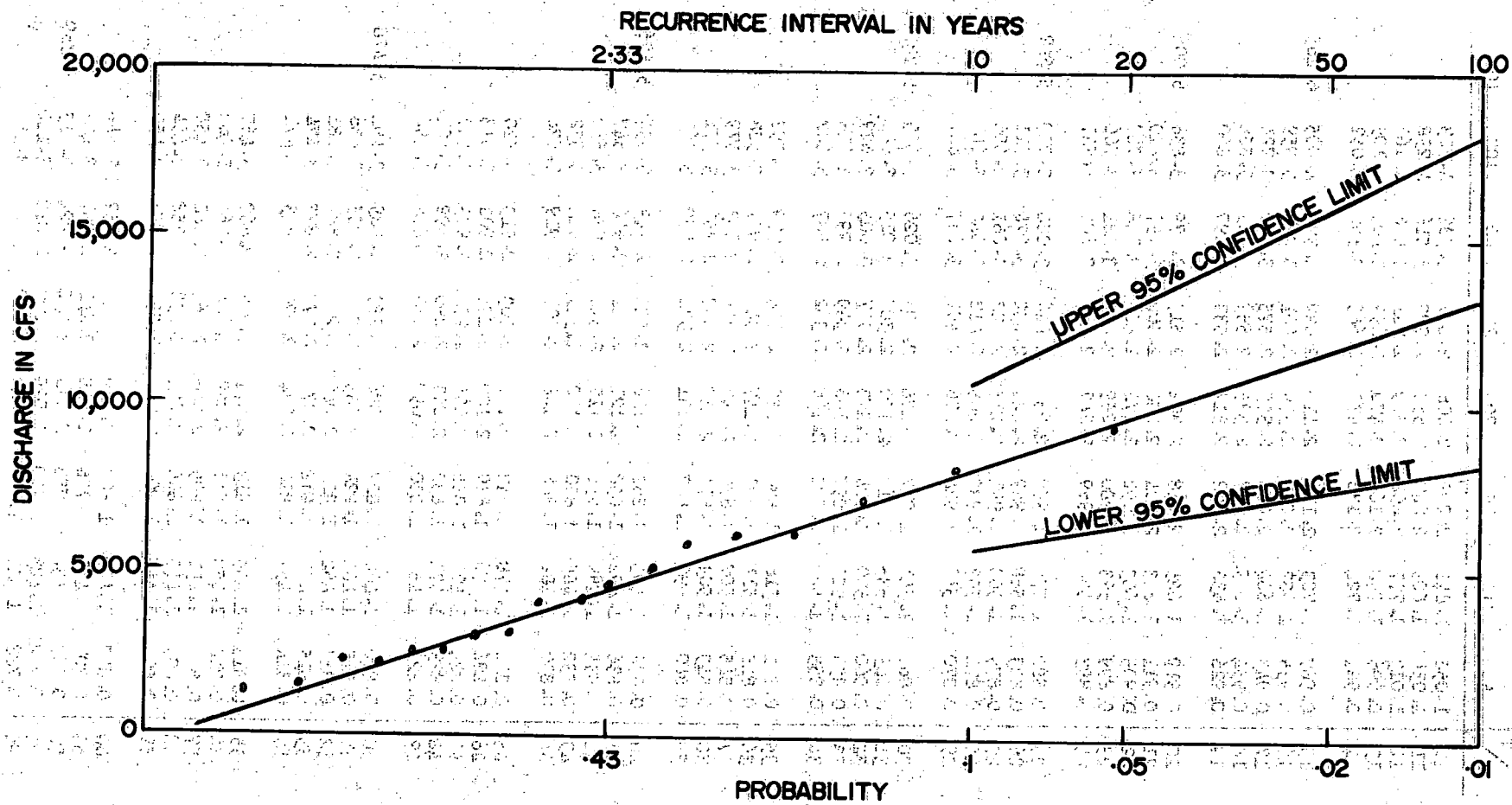


Figure 1 - Flood Frequency Curve For Nottawasaga River Near Baxter.

TABLE 1 - FREQUENCY FACTOR $K(T, n)$

$n \backslash T$	5	10	15	20	25	50	100	1000
10	1.058	1.848	2.289	2.606	2.847	3.588	4.323	
11	1.034	1.809	2.242	2.553	2.789	3.516	4.238	
12	1.013	1.777	2.202	2.509	2.741	3.456	4.166	
13	0.996	1.748	2.168	2.470	2.699	3.405	4.105	
14	0.981	1.724	2.138	2.437	2.663	3.360	4.052	
15	0.967	1.703	2.112	2.410	2.632	3.321	4.005	6.265
16	0.955	1.682	2.087	2.379	2.601	3.283	3.959	
17	0.943	1.664	2.066	2.355	2.575	3.250	3.921	
18	0.934	1.649	2.047	2.335	2.552	3.223	3.888	
19	0.926	1.636	2.032	2.317	2.533	3.199	3.860	
20	0.919	1.625	2.018	2.302	2.517	3.179	3.836	6.006
21	0.911	1.613	2.004	2.286	2.500	3.157	3.810	
22	0.905	1.603	1.992	2.272	2.484	3.138	3.787	
23	0.899	1.593	1.980	2.259	2.470	3.121	3.766	
24	0.893	1.584	1.969	2.247	2.457	3.104	3.747	
25	0.888	1.575	1.958	2.235	2.444	3.088	3.729	5.842
26	0.883	1.568	1.949	2.224	2.432	3.074	3.711	
27	0.879	1.560	1.941	2.215	2.422	3.061	3.696	
28	0.874	1.553	1.932	2.205	2.412	3.048	3.681	
29	0.870	1.547	1.924	2.196	2.402	3.037	3.667	
30	0.866	1.541	1.917	2.188	2.393	3.026	3.653	5.727
31	0.863	1.535	1.910	2.180	2.385	3.015	3.641	
32	0.860	1.530	1.904	2.173	2.377	3.005	3.629	
33	0.856	1.525	1.897	2.166	2.369	2.996	3.618	
34	0.853	1.520	1.892	2.160	2.362	2.987	3.608	
35	0.851	1.516	1.886	2.152	2.354	2.979	3.598	
36	0.848	1.511	1.881	2.147	2.349	2.971	3.588	
37	0.845	1.507	1.876	2.142	2.344	2.963	3.579	
38	0.843	1.503	1.871	2.137	2.338	2.957	3.571	
39	0.840	1.499	1.867	2.131	2.331	2.950	3.563	
40	0.838	1.495	1.862	2.126	2.326	2.943	3.554	5.576
41	0.836	1.492	1.858	2.121	2.321	2.936	3.547	
42	0.834	1.489	1.854	2.117	2.316	2.930	3.539	
43	0.832	1.485	1.850	2.112	2.311	2.924	3.532	
44	0.830	1.482	1.846	2.108	2.307	2.919	3.526	
45	0.828	1.478	1.842	2.104	2.303	2.913	3.520	
46	0.826	1.476	1.839	2.100	2.298	2.908	3.513	
47	0.824	1.474	1.836	2.096	2.294	2.903	3.507	
48	0.823	1.471	1.832	2.093	2.290	2.898	3.501	
49	0.821	1.469	1.830	2.090	2.287	2.894	3.496	
50	0.820	1.466	1.827	2.086	2.283	2.889	3.491	5.478
51	0.818	1.464	1.824	2.083	2.280	2.885	3.486	
52	0.817	1.462	1.821	2.080	2.276	2.881	3.481	
53	0.815	1.459	1.818	2.077	2.273	2.875	3.474	
54	0.814	1.457	1.816	2.074	2.270	2.873	3.471	
55	0.813	1.455	1.813	2.071	2.267	2.869	3.467	
56	0.812	1.453	1.811	2.069	2.264	2.865	3.462	
57	0.810	1.451	1.809	2.066	2.261	2.862	3.458	
58	0.809	1.449	1.806	2.064	2.258	2.858	3.454	
59	0.808	1.448	1.804	2.061	2.256	2.855	3.450	
60	0.807	1.446	1.802	2.059	2.253	2.852	3.446	
65	0.801	1.437	1.796	2.048	2.241	2.837	3.429	
70	0.787	1.430	1.788	2.038	2.230	2.824	3.413	5.359
75	0.792	1.423	1.780	2.029	2.220	2.812	3.400	
80	0.788	1.417	1.773	2.020	2.212	2.802	3.387	
85	0.785	1.413	1.767	2.013	2.205	2.793	3.376	
90	0.782	1.409	1.762	2.007	2.198	2.785	3.367	
95	0.780	1.405	1.757	2.002	2.193	2.777	3.357	
100	0.779	1.401	1.752	1.998	2.187	2.770	3.349	5.261

TABLE 2 - VALUES OF $T(T, n)$

T n	5	10	15	20	25	50	100	1000
10	1.854	2.620	3.062	3.382	3.628	4.388	5.146	
11	1.832	2.581	3.014	3.329	3.569	4.314	5.058	
12	1.812	2.549	2.974	3.284	3.520	4.252	4.984	
13	1.796	2.521	2.940	3.245	3.477	4.199	4.921	
14	1.782	2.497	2.910	3.211	3.440	4.153	4.866	
15	1.769	2.476	2.883	3.184	3.409	4.113	4.818	7.163
16	1.758	2.456	2.858	3.152	3.377	4.074	4.770	
17	1.747	2.438	2.837	3.128	3.351	4.040	4.731	
18	1.739	2.423	2.818	3.108	3.328	4.013	4.697	
19	1.732	2.410	2.803	3.090	3.308	3.988	4.668	
20	1.725	2.399	2.789	3.075	3.292	3.967	4.643	6.894
21	1.718	2.388	2.775	3.058	3.275	3.945	4.616	
22	1.712	2.378	2.763	3.044	3.259	3.925	4.593	
23	1.707	2.368	2.751	3.031	3.245	3.908	4.571	
24	1.702	2.359	2.740	3.019	3.231	3.891	4.551	
25	1.697	2.350	2.729	3.007	3.218	3.874	4.533	6.723
26	1.692	2.344	2.720	2.996	3.206	3.860	4.514	
27	1.689	2.336	2.712	2.987	3.196	3.847	4.499	
28	1.684	2.329	2.703	2.977	3.186	3.833	4.483	
29	1.681	2.323	2.695	2.968	3.176	3.822	4.469	
30	1.677	2.317	2.688	2.960	3.167	3.811	4.455	6.604
31	1.674	2.311	2.681	2.952	3.158	3.800	4.442	
32	1.672	2.306	2.675	2.945	3.150	3.789	4.430	
33	1.668	2.301	2.669	2.938	3.142	3.780	4.419	
34	1.665	2.297	2.664	2.932	3.135	3.771	4.408	
35	1.663	2.293	2.658	2.924	3.127	3.763	4.398	
36	1.661	2.288	2.653	2.919	3.122	3.755	4.388	
37	1.658	2.284	2.648	2.914	3.117	3.746	4.378	
38	1.656	2.280	2.643	2.909	3.111	3.740	4.370	
39	1.653	2.276	2.639	2.903	3.104	3.733	4.362	
40	1.652	2.272	2.634	2.897	3.099	3.726	4.353	6.446
41	1.650	2.269	2.630	2.892	3.094	3.719	4.345	
42	1.648	2.266	2.626	2.888	3.089	3.713	4.337	
43	1.646	2.262	2.622	2.883	3.084	3.706	4.330	
44	1.644	2.260	2.618	2.879	3.080	3.701	4.324	
45	1.643	2.256	2.614	2.875	3.076	3.695	4.317	
46	1.641	2.254	2.611	2.871	3.071	3.690	4.310	
47	1.639	2.252	2.608	2.867	3.067	3.685	4.304	
48	1.638	2.249	2.604	2.864	3.063	3.680	4.298	
49	1.636	2.247	2.602	2.861	3.060	3.676	4.293	
50	1.635	2.244	2.599	2.857	3.055	3.671	4.287	6.345
51	1.634	2.242	2.596	2.854	3.052	3.667	4.283	
52	1.633	2.240	2.593	2.851	3.048	3.663	4.278	
53	1.631	2.237	2.590	2.848	3.045	3.656	4.270	
54	1.630	2.235	2.588	2.845	3.042	3.654	4.267	
55	1.629	2.233	2.585	2.842	3.039	3.650	4.263	
56	1.628	2.231	2.583	2.840	3.036	3.646	4.258	
57	1.626	2.229	2.581	2.837	3.033	3.643	4.254	
58	1.625	2.227	2.578	2.835	3.030	3.639	4.250	
59	1.625	2.226	2.576	2.832	3.028	3.636	4.246	
60	1.624	2.225	2.574	2.830	3.025	3.633	4.242	
75	1.611	2.201	2.552	2.800	2.976	3.592	4.194	
100	1.599	2.181	2.525	2.769	2.959	3.549	4.142	6.119

TABLE 3 - STANDARD NORMAL VARIATE FOR PROBABILITY α

α	0.500	0.683	0.800	0.900	0.950	0.980	0.990
t	0.674	1.000	1.282	1.645	1.960	2.326	2.576

TABLE 4 - RECURRENCE INTERVALS (T) AND PROBABILITIES (P) FOR N = 10 TO N = 60

M	N = 10		N = 11		N = 12		N = 13		N = 14	
	T	P	T	P	T	P	T	P	T	P
1	11.0	.091	12.0	.083	13.0	.077	14.0	.071	15.0	.067
2	5.5	.182	6.0	.167	6.5	.154	7.0	.143	7.5	.133
3	3.67	.273	4.00	.250	4.33	.231	4.67	.214	5.0	.200
4	2.75	.364	3.00	.333	3.25	.308	3.50	.286	3.75	.267
5	2.20	.455	2.40	.417	2.60	.385	2.80	.357	3.00	.333
6	1.83	.545	2.00	.500	2.17	.462	2.33	.429	2.50	.400
7	1.57	.636	1.71	.583	1.86	.538	2.00	.500	2.14	.467
8	1.38	.727	1.50	.667	1.62	.615	1.75	.571	1.88	.533
9	1.22	.818	1.33	.750	1.44	.692	1.56	.643	1.67	.600
10	1.100	.909	1.20	.833	1.30	.769	1.40	.714	1.50	.667
11	-	-	1.091	.917	1.182	.846	1.27	.786	1.36	.733
12	-	-	-	-	1.083	.923	1.167	.857	1.25	.800
13	-	-	-	-	-	-	1.077	.929	1.154	.867
14	-	-	-	-	-	-	-	-	1.071	.933

M	N = 15		N = 16		N = 17		N = 18		N = 19	
	T	P	T	P	T	P	T	P	T	P
1	16.0	.062	17.0	.059	18.0	.056	19.0	.053	20.0	.050
2	8.0	.125	8.5	.118	9.0	.111	9.5	.105	10.0	.100
3	5.3	.188	5.7	.176	6.0	.167	6.3	.158	6.7	.150
4	4.00	.250	4.25	.235	4.50	.222	4.75	.211	5.0	.200
5	3.20	.312	3.40	.294	3.60	.278	3.80	.263	4.00	.250
6	2.67	.375	2.83	.353	3.00	.333	3.17	.316	3.33	.300
7	2.29	.438	2.43	.412	2.57	.389	2.71	.368	2.86	.350
8	2.00	.500	2.12	.471	2.25	.444	2.38	.421	2.50	.400
9	1.78	.562	1.89	.529	2.00	.500	2.11	.474	2.22	.450
10	1.60	.625	1.70	.588	1.80	.556	1.90	.526	2.00	.500
11	1.45	.688	1.55	.647	1.64	.611	1.73	.579	1.82	.550
12	1.33	.750	1.42	.706	1.50	.667	1.58	.632	1.67	.600
13	1.23	.812	1.31	.765	1.38	.722	1.46	.684	1.54	.650
14	1.143	.875	1.21	.824	1.29	.778	1.36	.737	1.43	.700
15	1.067	.938	1.133	.882	1.200	.833	1.27	.789	1.33	.750
16	-	-	1.062	.941	1.125	.889	1.188	.842	1.25	.800
17	-	-	-	-	1.059	.944	1.118	.895	1.176	.850
18	-	-	-	-	-	-	1.056	.947	1.111	.900
19	-	-	-	-	-	-	-	-	1.053	.950

TABLE 4 - RECURRENCE INTERVALS (T) AND PROBABILITIES (P) FOR N = 10 TO N = 60

M	N = 20		N = 21		N = 22		N = 23		N = 24	
	T	P	T	P	T	P	T	P	T	P
1	21.0	.048	22.0	.045	23.0	.043	24.0	.042	25.0	.040
2	10.5	.095	11.0	.091	11.5	.087	12.0	.083	12.5	.080
3	7.0	.143	7.3	.136	7.7	.130	8.0	.125	8.3	.120
4	5.2	.190	5.5	.182	5.8	.174	6.0	.167	6.2	.160
5	4.20	.238	4.40	.227	4.60	.217	4.80	.208	5.0	.200
6	3.50	.286	3.67	.273	3.83	.261	4.00	.250	4.17	.240
7	3.00	.333	3.14	.318	3.29	.304	3.43	.292	3.57	.280
8	2.62	.381	2.75	.364	2.88	.348	3.00	.333	3.12	.320
9	2.33	.429	2.44	.409	2.56	.391	2.67	.375	2.78	.360
10	2.10	.476	2.20	.455	2.30	.435	2.40	.417	2.50	.400
11	1.91	.524	2.00	.500	2.09	.478	2.18	.458	2.27	.440
12	1.75	.571	1.83	.545	1.92	.522	2.00	.500	2.08	.480
13	1.62	.619	1.69	.591	1.77	.565	1.85	.542	1.92	.520
14	1.50	.667	1.57	.636	1.64	.609	1.71	.583	1.78	.560
15	1.40	.714	1.47	.682	1.53	.652	1.60	.625	1.67	.600
16	1.31	.762	1.38	.727	1.44	.696	1.50	.667	1.56	.640
17	1.24	.810	1.29	.773	1.35	.739	1.41	.708	1.47	.680
18	1.167	.857	1.22	.818	1.28	.783	1.33	.750	1.39	.720
19	1.105	.905	1.158	.864	1.21	.826	1.26	.792	1.31	.760
20	1.050	.952	1.100	.909	1.150	.870	1.200	.833	1.25	.800
21	-	-	1.048	.955	1.095	.913	1.143	.875	1.190	.840
22	-	-	-	-	1.045	.957	1.091	.917	1.136	.880
23	-	-	-	-	-	-	1.043	.958	1.087	.920
24	-	-	-	-	-	-	-	-	1.042	.960

M	N = 25		N = 26		N = 27		N = 28		N = 29	
	T	P	T	P	T	P	T	P	T	P
1	26.0	.038	27.0	.037	28.0	.036	29.0	.034	30.0	.033
2	13.0	.077	13.5	.074	14.0	.071	14.5	.069	15.0	.067
3	8.7	.115	9.0	.111	9.3	.107	9.7	.103	10.0	.100
4	6.5	.154	6.8	.148	7.0	.143	7.2	.138	7.5	.133
5	5.2	.192	5.4	.185	5.6	.179	5.8	.172	6.0	.167
6	4.33	.231	4.50	.222	4.67	.214	4.83	.207	5.0	.200
7	3.71	.269	3.86	.259	4.00	.250	4.14	.241	4.29	.233
8	3.25	.308	3.38	.296	3.50	.286	3.62	.276	3.75	.267
9	2.89	.346	3.00	.333	3.11	.321	3.22	.310	3.33	.300
10	2.60	.385	2.70	.370	2.80	.357	2.90	.345	3.00	.333
11	2.36	.423	2.45	.407	2.55	.393	2.64	.379	2.73	.367
12	2.17	.462	2.25	.444	2.33	.429	2.42	.414	2.50	.400
13	2.00	.500	2.08	.481	2.15	.464	2.23	.448	2.31	.433
14	1.86	.538	1.93	.519	2.00	.500	2.07	.483	2.14	.467
15	1.73	.577	1.80	.556	1.87	.536	1.93	.517	2.00	.500
16	1.62	.615	1.69	.593	1.75	.571	1.81	.552	1.88	.533
17	1.53	.654	1.59	.630	1.65	.607	1.71	.586	1.76	.567
18	1.44	.692	1.50	.667	1.56	.643	1.61	.621	1.67	.600
19	1.37	.731	1.42	.704	1.47	.679	1.53	.655	1.58	.633
20	1.30	.769	1.35	.741	1.40	.714	1.45	.690	1.50	.667
21	1.24	.808	1.29	.778	1.33	.750	1.38	.724	1.43	.700
22	1.182	.846	1.23	.815	1.27	.786	1.32	.759	1.36	.733
23	1.130	.885	1.174	.852	1.22	.821	1.26	.793	1.30	.767
24	1.083	.923	1.125	.889	1.167	.857	1.21	.828	1.25	.800
25	1.040	.962	1.080	.926	1.120	.893	1.160	.862	1.20	.833
26	-	-	1.038	.963	1.077	.929	1.115	.897	1.154	.867
27	-	-	-	-	1.037	.964	1.074	.931	1.111	.900
28	-	-	-	-	-	-	1.036	.966	1.071	.933
29	-	-	-	-	-	-	-	-	1.034	.967

TABLE 4 - RECURRENCE INTERVALS (T) AND PROBABILITIES (P) FOR N = 10 TO N = 60

M	N = 30		N = 31		N = 32		N = 33		N = 34	
	T	P	T	P	T	P	T	P	T	P
1	31.0	.032	32.0	.031	33.0	.030	34.0	.029	35.0	.029
2	15.5	.065	16.0	.062	16.5	.061	17.0	.059	17.5	.057
3	10.3	.097	10.7	.094	11.0	.091	11.3	.088	11.7	.086
4	7.8	.129	8.0	.125	8.2	.121	8.5	.118	8.8	.114
5	6.2	.161	6.4	.156	6.6	.152	6.8	.147	7.0	.143
6	5.2	.194	5.3	.187	5.5	.182	5.7	.176	5.8	.171
7	4.43	.226	4.57	.219	4.71	.212	4.86	.206	5.0	.200
8	3.88	.258	4.00	.250	4.12	.242	4.25	.235	4.38	.229
9	3.44	.290	3.56	.282	3.67	.273	3.78	.265	3.89	.257
10	3.10	.323	3.20	.312	3.30	.303	3.40	.294	3.50	.286
11	2.82	.355	2.91	.344	3.00	.333	3.09	.324	3.18	.314
12	2.58	.387	2.67	.375	2.75	.364	2.83	.353	2.92	.343
13	2.38	.419	2.46	.406	2.54	.394	2.62	.382	2.69	.371
14	2.21	.452	2.29	.438	2.36	.424	2.43	.412	2.50	.400
15	2.07	.484	2.13	.469	2.20	.455	2.27	.441	2.33	.429
16	1.94	.516	2.00	.500	2.06	.485	2.12	.471	2.19	.457
17	1.82	.548	1.88	.531	1.94	.515	2.00	.500	2.06	.486
18	1.72	.581	1.78	.562	1.83	.545	1.89	.529	1.94	.514
19	1.63	.613	1.68	.594	1.74	.576	1.79	.559	1.84	.543
20	1.55	.645	1.60	.625	1.65	.606	1.70	.588	1.75	.571
21	1.48	.677	1.52	.656	1.57	.636	1.62	.618	1.67	.600
22	1.41	.710	1.45	.688	1.50	.667	1.55	.647	1.59	.629
23	1.35	.742	1.39	.719	1.43	.697	1.48	.676	1.52	.657
24	1.29	.774	1.33	.750	1.38	.727	1.42	.706	1.46	.686
25	1.24	.806	1.28	.781	1.32	.758	1.36	.735	1.40	.714
26	1.192	.839	1.23	.812	1.27	.788	1.31	.765	1.35	.743
27	1.148	.871	1.185	.844	1.22	.818	1.26	.794	1.30	.771
28	1.107	.903	1.143	.875	1.179	.848	1.21	.824	1.25	.800
29	1.069	.935	1.103	.906	1.138	.879	1.172	.853	1.21	.829
30	1.033	.968	1.067	.938	1.100	.909	1.133	.882	1.167	.857
31	-	-	1.032	.969	1.065	.939	1.097	.912	1.129	.886
32	-	-	-	-	1.031	.970	1.062	.941	1.094	.914
33	-	-	-	-	-	-	1.030	.971	1.061	.943
34	-	-	-	-	-	-	-	-	1.029	.971

TABLE 4 - RECURRENCE INTERVALS (T) AND PROBABILITIES (P) FOR N = 10 TO N = 60

N	N = 35		N = 36		N = 37		N = 38		N = 39	
	T	P	T	P	T	P	T	P	T	P
1	36.0	.028	37.0	.027	38.0	.026	39.0	.026	40.0	.025
2	18.0	.056	18.5	.054	19.0	.053	19.5	.051	20.0	.050
3	12.0	.083	12.3	.081	12.7	.079	13.0	.077	13.3	.075
4	9.0	.111	9.2	.108	9.5	.105	9.8	.103	10.0	.100
5	7.2	.139	7.4	.135	7.6	.132	7.8	.128	8.0	.125
6	6.0	.167	6.2	.162	6.3	.158	6.5	.154	6.7	.150
7	5.1	.194	5.3	.189	5.4	.184	5.6	.179	5.7	.175
8	4.50	.222	4.62	.216	4.75	.211	4.88	.205	5.0	.200
9	4.00	.250	4.11	.243	4.22	.237	4.33	.231	4.44	.225
10	3.60	.278	3.70	.270	3.80	.263	3.90	.256	4.00	.250
11	3.27	.306	3.36	.297	3.45	.289	3.55	.282	3.64	.275
12	3.00	.333	3.08	.324	3.17	.316	3.25	.308	3.33	.300
13	2.77	.361	2.85	.351	2.92	.342	3.00	.333	3.08	.325
14	2.57	.389	2.64	.378	2.71	.368	2.79	.359	2.86	.350
15	2.40	.417	2.47	.405	2.53	.395	2.60	.385	2.67	.375
16	2.25	.444	2.31	.432	2.38	.421	2.44	.410	2.50	.400
17	2.12	.472	2.18	.459	2.24	.447	2.29	.436	2.35	.425
18	2.00	.500	2.06	.486	2.11	.474	2.17	.462	2.22	.450
19	1.89	.528	1.95	.514	2.00	.500	2.05	.487	2.11	.475
20	1.80	.556	1.85	.541	1.90	.526	1.95	.513	2.00	.500
21	1.71	.583	1.76	.568	1.81	.553	1.86	.538	1.90	.525
22	1.64	.611	1.68	.595	1.73	.579	1.77	.564	1.82	.550
23	1.57	.639	1.61	.622	1.65	.605	1.70	.590	1.74	.575
24	1.50	.667	1.54	.649	1.58	.632	1.62	.615	1.67	.600
25	1.44	.694	1.48	.676	1.52	.658	1.56	.641	1.60	.625
26	1.38	.722	1.42	.703	1.46	.684	1.50	.667	1.54	.650
27	1.33	.750	1.37	.730	1.41	.711	1.44	.692	1.48	.675
28	1.29	.778	1.32	.757	1.36	.737	1.39	.718	1.43	.700
29	1.24	.805	1.28	.784	1.31	.763	1.34	.744	1.38	.725
30	1.200	.833	1.23	.811	1.27	.789	1.30	.769	1.33	.750
31	1.161	.861	1.194	.838	1.23	.816	1.26	.795	1.29	.775
32	1.125	.889	1.156	.865	1.188	.842	1.22	.821	1.25	.800
33	1.091	.917	1.121	.892	1.152	.868	1.182	.846	1.21	.825
34	1.059	.944	1.088	.919	1.118	.895	1.147	.872	1.176	.850
35	1.029	.972	1.057	.946	1.086	.921	1.114	.897	1.143	.875
36	-	-	1.028	.973	1.056	.947	1.083	.923	1.111	.900
37	-	-	-	-	1.027	.974	1.054	.949	1.081	.925
38	-	-	-	-	-	-	1.026	.974	1.053	.950
39	-	-	-	-	-	-	-	-	1.026	.975

TABLE 4 - RECURRENCE INTERVALS (T) AND PROBABILITIES (P) FOR N = 10 TO N = 60

M	N = 40		N = 41		N = 42		N = 43		N = 44	
	T	P	T	P	T	P	T	P	T	P
1	41.0	.024	42.0	.024	43.0	.023	44.0	.023	45.0	.022
2	20.5	.049	21.0	.048	21.5	.047	22.0	.045	22.5	.044
3	13.7	.073	14.0	.071	14.3	.070	14.7	.068	15.0	.067
4	10.2	.098	10.5	.095	10.8	.093	11.0	.091	11.2	.089
5	8.2	.122	8.4	.119	8.6	.116	8.8	.114	9.0	.111
6	6.8	.146	7.0	.143	7.2	.140	7.3	.136	7.5	.133
7	5.9	.171	6.0	.167	6.1	.163	6.3	.159	6.4	.155
8	5.1	.195	5.2	.190	5.4	.186	5.5	.182	5.6	.178
9	4.56	.220	4.67	.214	4.78	.209	4.89	.205	5.0	.200
10	4.10	.244	4.20	.238	4.30	.233	4.40	.227	4.50	.222
11	3.73	.268	3.82	.262	3.91	.256	4.00	.250	4.09	.244
12	3.42	.293	3.50	.286	3.58	.279	3.67	.273	3.75	.267
13	3.15	.317	3.23	.310	3.31	.302	3.38	.295	3.46	.289
14	2.93	.341	3.00	.333	3.07	.326	3.14	.318	3.21	.311
15	2.73	.366	2.80	.357	2.87	.349	2.93	.341	3.00	.333
16	2.56	.390	2.62	.381	2.69	.372	2.75	.364	2.81	.356
17	2.41	.415	2.47	.405	2.53	.395	2.59	.386	2.65	.378
18	2.28	.439	2.33	.429	2.39	.419	2.44	.409	2.50	.400
19	2.16	.463	2.21	.452	2.26	.442	2.32	.432	2.37	.422
20	2.05	.488	2.10	.476	2.15	.465	2.20	.455	2.25	.444
21	1.95	.512	2.00	.500	2.05	.488	2.10	.477	2.14	.467
22	1.86	.537	1.91	.524	1.95	.512	2.00	.500	2.05	.489
23	1.78	.561	1.83	.548	1.87	.535	1.91	.523	1.96	.511
24	1.71	.585	1.75	.571	1.79	.558	1.83	.545	1.88	.533
25	1.64	.610	1.68	.595	1.72	.581	1.76	.568	1.80	.556
26	1.58	.634	1.62	.619	1.65	.605	1.69	.591	1.73	.578
27	1.52	.659	1.56	.643	1.59	.628	1.63	.614	1.67	.600
28	1.46	.683	1.50	.667	1.54	.674	1.57	.636	1.61	.622
29	1.41	.707	1.45	.690	1.48	.651	1.52	.659	1.55	.644
30	1.37	.732	1.40	.714	1.43	.698	1.47	.682	1.50	.667
31	1.32	.756	1.35	.738	1.39	.721	1.42	.705	1.45	.689
32	1.28	.780	1.31	.762	1.34	.744	1.38	.727	1.41	.711
33	1.24	.805	1.27	.786	1.30	.767	1.33	.750	1.36	.733
34	1.20	.829	1.24	.810	1.26	.791	1.29	.773	1.32	.756
35	1.171	.854	1.20	.833	1.23	.814	1.26	.795	1.29	.777
36	1.139	.878	1.167	.857	1.194	.837	1.22	.818	1.25	.800
37	1.108	.902	1.135	.881	1.162	.860	1.189	.841	1.22	.822
38	1.079	.927	1.105	.905	1.132	.884	1.158	.864	1.184	.844
39	1.051	.951	1.077	.929	1.103	.907	1.128	.886	1.154	.867
40	1.025	.976	1.050	.952	1.075	.930	1.100	.909	1.125	.889
41	-	-	1.024	.976	1.049	.953	1.073	.932	1.098	.911
42	-	-	-	-	1.024	.977	1.048	.955	1.071	.933
43	-	-	-	-	-	-	1.023	.977	1.047	.956
44	-	-	-	-	-	-	-	-	1.023	.978

TABLE 4 - RECURRENCE INTERVALS (T) AND PROBABILITIES (P) FOR N = 10 TO N = 60

M	N = 45		N = 46		N = 47		N = 48		N = 49	
	T	P	T	P	T	P	T	P	T	P
1	46.0	.022	47.0	.021	48.0	.021	49.0	.020	50.0	.020
2	23.0	.043	23.5	.043	24.0	.042	24.5	.041	25.0	.040
3	15.3	.065	15.7	.064	16.0	.062	16.3	.061	16.7	.060
4	11.5	.087	11.8	.085	12.0	.083	12.2	.082	12.5	.080
5	9.2	.109	9.4	.106	9.6	.104	9.8	.102	10.0	.100
6	7.7	.130	7.8	.128	8.0	.125	8.2	.122	8.3	.120
7	6.6	.152	6.7	.149	6.9	.146	7.0	.143	7.1	.140
8	5.8	.174	5.9	.170	6.0	.167	6.1	.163	6.2	.160
9	5.1	.196	5.2	.191	5.3	.188	5.4	.184	5.6	.180
10	4.60	.217	4.70	.213	4.80	.208	4.90	.204	5.0	.200
11	4.18	.239	4.27	.234	4.36	.229	4.45	.224	4.55	.220
12	3.83	.261	3.92	.255	4.00	.250	4.08	.245	4.17	.240
13	3.54	.283	3.62	.277	3.69	.271	3.77	.265	3.85	.260
14	3.29	.304	3.36	.298	3.43	.292	3.50	.286	3.57	.280
15	3.07	.326	3.13	.319	3.20	.312	3.27	.306	3.33	.300
16	2.88	.348	2.94	.340	3.00	.333	3.06	.327	3.12	.320
17	2.71	.370	2.76	.362	2.82	.354	2.88	.347	2.94	.340
18	2.56	.391	2.61	.383	2.67	.375	2.72	.367	2.78	.360
19	2.42	.413	2.47	.404	2.53	.396	2.58	.388	2.63	.380
20	2.30	.435	2.35	.426	2.40	.417	2.45	.408	2.50	.400
21	2.19	.456	2.24	.447	2.29	.438	2.33	.429	2.38	.420
22	2.09	.478	2.14	.468	2.18	.458	2.23	.449	2.27	.440
23	2.00	.500	2.04	.489	2.09	.479	2.13	.469	2.17	.460
24	1.92	.522	1.96	.511	2.00	.500	2.04	.490	2.08	.480
25	1.84	.544	1.88	.532	1.92	.521	1.96	.510	2.00	.500
26	1.77	.565	1.81	.553	1.85	.542	1.88	.531	1.92	.520
27	1.70	.587	1.74	.574	1.78	.562	1.81	.551	1.85	.540
28	1.64	.609	1.68	.596	1.71	.583	1.75	.571	1.79	.560
29	1.59	.630	1.62	.617	1.66	.604	1.69	.592	1.72	.580
30	1.53	.652	1.57	.638	1.60	.625	1.63	.612	1.67	.600
31	1.48	.674	1.52	.660	1.55	.646	1.58	.633	1.61	.620
32	1.44	.696	1.47	.681	1.50	.667	1.53	.653	1.56	.640
33	1.39	.717	1.42	.702	1.45	.688	1.48	.673	1.51	.660
34	1.35	.739	1.38	.723	1.41	.708	1.44	.694	1.47	.680
35	1.31	.761	1.34	.745	1.37	.729	1.40	.714	1.43	.700
36	1.28	.783	1.31	.766	1.33	.750	1.36	.735	1.39	.720
37	1.24	.804	1.27	.787	1.30	.771	1.32	.755	1.35	.740
38	1.21	.826	1.24	.809	1.26	.792	1.29	.776	1.32	.760
39	1.179	.848	1.21	.830	1.23	.812	1.26	.796	1.28	.780
40	1.150	.870	1.175	.851	1.20	.833	1.22	.816	1.25	.800
41	1.122	.891	1.146	.872	1.171	.854	1.195	.837	1.22	.820
42	1.095	.913	1.119	.894	1.143	.875	1.167	.857	1.190	.840
43	1.070	.935	1.093	.915	1.116	.896	1.140	.878	1.163	.860
44	1.045	.957	1.068	.936	1.091	.917	1.114	.898	1.136	.880
45	1.022	.978	1.044	.957	1.067	.938	1.089	.918	1.111	.900
46	-	-	1.022	.979	1.043	.958	1.065	.939	1.087	.920
47	-	-	-	-	1.021	.979	1.043	.959	1.064	.940
48	-	-	-	-	-	-	1.021	.980	1.042	.960
49	-	-	-	-	-	-	-	-	1.020	.980

TABLE 4 - RECURRENCE INTERVALS (T) AND PROBABILITIES (P) FOR N = 10 TO N = 60

M	N = 50		N = 51		N = 52		N = 53		N = 54	
	T	P	T	P	T	P	T	P	T	P
1	51	.020	52	.019	53	.019	54	.019	55	.018
2	25.5	.039	26.0	.038	26.5	.038	27.0	.037	27.5	.036
3	17.0	.059	17.3	.058	17.7	.057	18.0	.056	18.3	.055
4	12.8	.078	13.0	.077	13.2	.075	13.5	.074	13.8	.073
5	10.2	.098	10.4	.096	10.6	.094	10.8	.093	11.0	.091
6	8.5	.118	8.7	.115	8.8	.113	9.0	.111	9.2	.109
7	7.3	.137	7.4	.135	7.6	.132	7.7	.130	7.9	.127
8	6.4	.157	6.5	.154	6.6	.151	6.8	.148	6.9	.145
9	5.7	.176	5.8	.173	5.9	.170	6.0	.167	6.1	.164
10	5.1	.196	5.2	.192	5.3	.189	5.4	.185	5.5	.182
11	4.64	.216	4.73	.212	4.82	.208	4.91	.204	5.0	.200
12	4.25	.235	4.33	.231	4.42	.226	4.50	.222	4.58	.218
13	3.92	.255	4.00	.250	4.08	.245	4.15	.241	4.23	.236
14	3.64	.274	3.71	.269	3.79	.264	3.86	.259	3.93	.255
15	3.40	.294	3.47	.288	3.53	.283	3.60	.278	3.67	.273
16	3.19	.314	3.25	.308	3.31	.302	3.38	.296	3.44	.291
17	3.00	.333	3.06	.327	3.12	.321	3.18	.315	3.24	.309
18	2.83	.353	2.89	.346	2.94	.340	3.00	.333	3.06	.327
19	2.68	.373	2.74	.365	2.79	.358	2.84	.352	2.89	.345
20	2.55	.392	2.60	.385	2.65	.377	2.70	.370	2.75	.364
21	2.43	.412	2.47	.404	2.52	.396	2.57	.389	2.62	.382
22	2.32	.431	2.36	.423	2.41	.415	2.45	.407	2.50	.400
23	2.22	.451	2.26	.442	2.30	.434	2.35	.426	2.39	.418
24	2.12	.471	2.17	.462	2.21	.453	2.25	.444	2.29	.436
25	2.04	.490	2.08	.481	2.12	.472	2.16	.463	2.20	.455
26	1.96	.510	2.00	.500	2.04	.491	2.08	.481	2.12	.473
27	1.89	.529	1.93	.519	1.96	.509	2.00	.500	2.04	.491
28	1.82	.549	1.86	.538	1.89	.528	1.93	.519	1.96	.509
29	1.76	.569	1.79	.558	1.83	.547	1.86	.537	1.90	.527
30	1.70	.588	1.73	.577	1.77	.566	1.80	.556	1.83	.545
31	1.65	.608	1.68	.596	1.71	.585	1.74	.574	1.77	.564
32	1.59	.627	1.62	.615	1.66	.604	1.69	.593	1.72	.582
33	1.55	.647	1.58	.635	1.61	.623	1.64	.611	1.67	.600
34	1.50	.667	1.53	.654	1.56	.642	1.59	.630	1.62	.618
35	1.46	.686	1.49	.673	1.51	.660	1.54	.648	1.57	.636
36	1.42	.706	1.44	.692	1.47	.679	1.50	.667	1.53	.655
37	1.38	.725	1.41	.712	1.43	.698	1.46	.685	1.49	.673
38	1.34	.745	1.37	.731	1.39	.717	1.42	.704	1.45	.691
39	1.31	.765	1.33	.750	1.36	.736	1.38	.722	1.41	.709
40	1.28	.784	1.30	.769	1.32	.755	1.35	.741	1.38	.727
41	1.24	.804	1.27	.788	1.29	.774	1.32	.759	1.34	.745
42	1.21	.824	1.24	.808	1.26	.792	1.29	.778	1.31	.764
43	1.186	.843	1.21	.827	1.23	.811	1.26	.796	1.28	.782
44	1.159	.863	1.182	.846	1.20	.830	1.23	.815	1.25	.800
45	1.133	.882	1.156	.865	1.178	.849	1.20	.833	1.22	.818
46	1.109	.902	1.130	.885	1.152	.868	1.174	.852	1.196	.836
47	1.085	.922	1.106	.904	1.128	.887	1.149	.870	1.170	.855
48	1.062	.941	1.083	.923	1.104	.906	1.125	.889	1.146	.873
49	1.041	.961	1.061	.942	1.082	.925	1.102	.907	1.122	.891
50	1.020	.980	1.040	.962	1.060	.943	1.080	.926	1.100	.909
51	-	-	1.020	.981	1.039	.962	1.059	.944	1.078	.927
52	-	-	-	-	1.019	.981	1.038	.963	1.058	.945
53	-	-	-	-	-	-	1.019	.981	1.038	.964
54	-	-	-	-	-	-	-	-	1.019	.982

TABLE 4 - RECURRENCE INTERVALS (T) AND PROBABILITIES (P) FOR N = 10 TO N = 60

M	N = 55		N = 56		N = 57		N = 58		N = 59	
	T	P	T	P	T	P	T	P	T	P
1	56.	.018	57.	.018	58.	.017	59.	.017	60.	.017
2	28.0	.036	28.5	.035	29.0	.034	29.5	.034	30.0	.033
3	18.7	.054	19.0	.053	19.3	.052	19.7	.051	20.0	.050
4	14.0	.071	14.2	.070	14.5	.069	14.8	.068	15.0	.067
5	11.2	.089	11.4	.088	11.6	.086	11.8	.085	12.0	.083
6	9.3	.107	9.5	.105	9.7	.103	9.8	.102	10.0	.100
7	8.0	.125	8.1	.123	8.3	.121	8.4	.119	8.6	.117
8	7.0	.143	7.1	.140	7.2	.138	7.4	.136	7.5	.133
9	6.2	.161	6.3	.158	6.4	.155	6.6	.153	6.7	.150
10	5.6	.179	5.7	.175	5.8	.172	5.9	.169	6.0	.167
11	5.1	.196	5.2	.193	5.3	.190	5.4	.186	5.5	.183
12	4.67	.214	4.75	.211	4.83	.207	4.92	.203	5.0	.200
13	4.31	.232	4.38	.228	4.46	.224	4.54	.220	4.62	.217
14	4.00	.250	4.07	.246	4.14	.241	4.21	.237	4.29	.233
15	3.73	.268	3.80	.263	3.87	.259	3.93	.254	4.00	.250
16	3.50	.286	3.56	.281	3.62	.276	3.69	.271	3.75	.267
17	3.29	.304	3.35	.298	3.41	.293	3.47	.288	3.53	.283
18	3.11	.321	3.17	.316	3.22	.310	3.28	.305	3.33	.300
19	2.95	.339	3.00	.333	3.05	.328	3.11	.322	3.16	.317
20	2.80	.357	2.85	.351	2.90	.345	2.95	.339	3.00	.333
21	2.67	.375	2.71	.368	2.76	.362	2.81	.356	2.86	.350
22	2.55	.393	2.59	.386	2.64	.379	2.68	.373	2.73	.367
23	2.43	.410	2.48	.404	2.52	.397	2.57	.390	2.61	.383
24	2.33	.429	2.38	.421	2.42	.414	2.46	.407	2.50	.400
25	2.24	.446	2.28	.439	2.32	.431	2.36	.424	2.40	.417
26	2.15	.464	2.19	.456	2.23	.448	2.27	.441	2.31	.433
27	2.07	.482	2.11	.474	2.15	.466	2.19	.458	2.22	.450
28	2.00	.500	2.04	.491	2.07	.483	2.11	.475	2.14	.467
29	1.93	.518	1.97	.509	2.00	.500	2.03	.492	2.07	.483
30	1.87	.536	1.90	.526	1.93	.517	1.97	.508	2.00	.500
31	1.81	.554	1.84	.544	1.87	.534	1.90	.525	1.94	.517
32	1.75	.571	1.78	.561	1.81	.552	1.84	.542	1.88	.533
33	1.70	.589	1.73	.579	1.76	.569	1.79	.559	1.82	.550
34	1.65	.607	1.68	.596	1.71	.586	1.74	.576	1.76	.567
35	1.60	.625	1.63	.614	1.66	.603	1.69	.593	1.71	.583
36	1.56	.643	1.58	.632	1.61	.621	1.64	.610	1.67	.600
37	1.51	.661	1.54	.649	1.57	.638	1.59	.627	1.62	.617
38	1.47	.679	1.50	.667	1.53	.655	1.55	.644	1.58	.633
39	1.44	.696	1.46	.684	1.49	.672	1.51	.661	1.54	.650
40	1.40	.714	1.42	.702	1.45	.690	1.48	.678	1.50	.667
41	1.37	.732	1.39	.719	1.41	.707	1.44	.695	1.46	.683
42	1.33	.750	1.36	.737	1.38	.724	1.40	.712	1.43	.700
43	1.30	.768	1.33	.754	1.35	.741	1.37	.729	1.40	.717
44	1.27	.786	1.30	.772	1.32	.759	1.34	.746	1.36	.733
45	1.24	.804	1.27	.789	1.29	.776	1.31	.763	1.33	.750
46	1.22	.821	1.24	.807	1.26	.793	1.28	.780	1.30	.767
47	1.191	.839	1.21	.825	1.23	.810	1.26	.797	1.28	.783
48	1.167	.857	1.188	.842	1.21	.828	1.23	.814	1.25	.800
49	1.143	.875	1.163	.860	1.184	.845	1.20	.830	1.22	.817
50	1.120	.893	1.140	.877	1.160	.862	1.180	.847	1.200	.833
51	1.098	.911	1.118	.895	1.137	.879	1.157	.864	1.176	.850
52	1.077	.929	1.096	.912	1.115	.897	1.135	.881	1.154	.867
53	1.057	.946	1.075	.930	1.094	.914	1.113	.898	1.132	.883
54	1.037	.964	1.056	.947	1.074	.931	1.093	.915	1.111	.900
55	1.018	.982	1.036	.965	1.055	.948	1.073	.932	1.091	.917
56	-	-	1.018	.982	1.036	.966	1.054	.949	1.071	.933
57	-	-	-	-	1.018	.983	1.035	.966	1.053	.950
58	-	-	-	-	-	-	1.017	.983	1.034	.967
59	-	-	-	-	-	-	-	-	1.017	.983

TABLE A - RECURRENCE INTERVALS (T) AND PROBABILITIES (P) FOR N = 10 TO N = 60

N = 60						
M	T	P		M	T	P
1	61.	.016		31	1.97	.508
2	30.5	.033		32	1.91	.525
3	20.3	.049		33	1.85	.541
4	15.2	.066		34	1.79	.557
5	12.2	.082		35	1.74	.574
6	10.2	.098		36	1.69	.590
7	8.7	.115		37	1.65	.607
8	7.6	.131		38	1.61	.623
9	6.8	.148		39	1.56	.639
10	6.1	.164		40	1.52	.656
11	5.5	.180		41	1.49	.672
12	5.1	.197		42	1.45	.689
13	4.69	.213		43	1.42	.705
14	4.36	.230		44	1.39	.721
15	4.07	.246		45	1.36	.738
16	3.81	.262		46	1.33	.754
17	3.59	.279		47	1.30	.770
18	3.39	.295		48	1.27	.787
19	3.21	.311		49	1.24	.803
20	3.05	.328		50	1.22	.820
21	2.90	.344		51	1.196	.836
22	2.77	.361		52	1.173	.852
23	2.65	.377		53	1.151	.869
24	2.54	.393		54	1.130	.885
25	2.44	.410		55	1.109	.902
26	2.35	.426		56	1.089	.918
27	2.26	.443		57	1.070	.934
28	2.18	.459		58	1.052	.951
29	2.10	.475		59	1.034	.967
30	2.03	.492		60	1.017	.984



Other TECHNICAL BULLETINS issued:

Technical Bulletin No. 1

E. P. Collier and A. Coulson, October 1965. Natural flow of North Saskatchewan River at Alberta - Saskatchewan boundary by the rim station method.

Discusses methods of estimating the natural flow of the North Saskatchewan River at the provincial boundary by simple regression with the flow at Rocky Mountain House and also by multiple regression techniques involving precipitation.

Technical Bulletin No. 2

R. O'N. Lyons, November 1965. LACOR - Program for streamflow correlation.

A program for the IBM 1620 computer to correlate streamflow records in terms of deviations in log units from the geometric mean of each calendar month's discharges.

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