NOAA TECHNICAL MEMORANDUM NWS CR-65

THE UTILIZATION OF LONG TERM TEMPERATURE DATA IN THE DESCRIPTION OF FORECAST TEMPERATURES

Arno Perlow
WSO Columbia, MO

Scientific Services Division
Central Region Headquarters
Kansas City, MO
November 1981

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UNITED STATES DEPARTMENT OF COMMERCE
Malcolm Baldrige, Secretary

National Oceanic and Atmospheric Administration
John V. Byrne, Administrator

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Richard E. Hallgren, Director

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1. INTRODUCTION

This effort was initiated in response to a request from the Central Region Headquarters, National Weather Service, to more fully objectify the process of choosing descriptive adjectives for temperature forecasts.

The initial approach to the problem was to look at the monthly means and the distribution of temperature values around the mean. A cursory look affirmed that the range in temperature values varies a great deal from season to season. The temperature range that could be considered the "seasonal normal" has a much greater span in the winter months than during the summer season. In order to get a more positive picture of what should be considered a normal temperature range and what constitutes a significant deviation from the normal, the decision was made to look at an extensive time series of the daily maximum and minimum temperature data. A tape of daily Columbia data for the period 1900 - 1979 was made available to us by the Department of Atmospheric Science of the Universite of Missouri/Columbia. The Statistical Analysis System (SAS), on line at the University computer, was used to analyze the data.

2. METHOD OF OBJECTIFICATION

The first step involved computing the means and the standard deviation for both the daily maximum and minimum temperatures. Since the number of daily observations exceeded 28,000, the decision was made to consolidate the data by weeks, but at the same time keeping the integrity of the daily data intact. (See Table 2.)

The computed standard deviations for the maximum temperature ranged from near 13°F in the winter to around 6°F in the summer. The range was slightly larger for the minimum temperature.

The next step was to find a means of portraying the distribution around the mean in a fashion that would make it practical and understandable to the user. The most versatile approach was to first rank the maximum and minimum temperatures to the nearest 5° interval for each week of the year. The frequency of occurrence was recorded and a cumulative percentile computed. (See Table 3.)

For example, a maximum temperature of 38 degrees, recorded during the first week of the year, would be included in the group labeled "MAXGROUP" 35 (temperatures from 35 to 39). Looking at Table 3 we find that:

1. Temperatures that fit into that category occurred 90 times during the period of record.

2. They occurred 16.3 percent of the time. (The most common temperature value.)

3. Its cumulative percentile was 67.3.

Forty percent of the observed temperatures falling between 30 to 70 percentile were chosen as representing "seasonable" or near normal temperatures. Values between 30 and 5 percentile represent the "below normal" range but exclude the extremes which were defined as being below the 5 percent ranking. "Above normal" temperatures fall between the 70 and 95 percentile bracket and extreme temperature values above 95 percentile.

A graphic plot of temperature values along the prescribed boundaries was made possible by looking at all the daily maximum temperatures. If a temperature fell in any of the pre-determined ranges of 3-7, 28-32, 68-72, or 93-97 percentile, it was plotted on the graph opposite the corresponding (weekly) date. The same procedure was followed for the minimum temperature.

The finished plot graphically depicts the distribution of temperature values, giving the user a quick reference of the disposition of his temperature forecast. (Figure 1 and 2.)

Returning to the original task of assigning adjectives to temperature forecasts, simple descriptive terms were used to identify particular temperature ranges. Shading was used to make the graph easier to use. (Figures 3 and 4.)

The use of the plot enables all personnel to utilize the same descriptive adjectives in their temperature forecasts, adding a consistency and stability to the final product serving the user.

Having arrived at a preliminary forecast of both max and min temperature, the tables and graphs should be consulted to check the:

1. Mean and extremes for that period of the year. (Consult Table 2.)

2. Distribution of the forecast temperature value within the scope of all recorded values. (Table 3 or graphs.)

3. Adjective to use for temperature forecast.

Acknowledgements

My sincere appreciation goes to the staff of the Center for Environmental Assessment Services (CEAS/EDIS/NOAA) for their guidance in creating the computer program. Special thanks go to the Center Chief, Dr. Clarence Sakamoto, who made the Center's facilities open to us; to Dr. Sharon LeDuc, the Center's senior statistician, who provided the statistical guidance; and to Ms. Mary Joshua who patiently provided the programming assistance.

The computer facilities of the University of Missouri-Columbia were utilized. Computer time was paid for with funds provided by the Atmospheric Science Department, Dr. Wayne Decker, Department Chairman. The Atmospheric Science Department also provided the tape of Columbia data used in the program.

My gratitude goes to Dave Horner, Meteorologist-in-Charge (retired) of the WSO Columbia, for his encouragement and assistance.

CONVERSION TABLE

Week	starts with Julian Day
1	1
2	8
3	15
4	22
5	29
6	36
7	43
8	50
9	57
10	64
11	71
12	78
13	85
14	92
15	99
16	106
17	113
18	120
19	127
20	134
21	141
22	148
23	155
24	162
25	169
26	176
27	183
28	190
29	197
30	204
31	211
32	218
33	225
34	232
35	239
36	246
37	253
38	260
39	267
40	274
41	281
42	288
43	295
44	302
45	309
46	316
47	323
48	330
49	337
50	344
51	351
52	358

Some calendars have Julian Day printed on them.

TABLE 1

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROR OF MEAN	SUM	VARIANCE	C.V.
WK=1									
TX	553	38.00723327	13.65742691	-3.00000000	75.00000000	0.58077287	21018.000000	186.52530990	35.934
TN	553	20.81374322	12.57108864	-20.00000000	57.00000000	0.53457707	11510.000000	158.03227453	60.398
WK=2									
TX	553	38.28933092	13.50494455	-5.00000000	71.00000000	0.57428866	21174.000000	182.38352727	35.271
TN	553	20.62929476	12.55978496	-19.00000000	54.00000000	0.53409638	11408.000000	157.74819823	60.883
WK=3									
TX	553	38.70705244	14.13114958	-1.00000000	73.00000000	0.60091761	21405.000000	199.68938858	36.508
TN	553	21.28028933	13.07140057	-18.00000000	61.00000000	0.55585249	11768.000000	170.86151296	61.425
WK=4									
TX	553	38.75045208	14.57026717	-2.00000000	77.00000000	0.61959078	21429.000000	212.29268548	37.600
TN	553	19.94575045	13.45001296	-16.00000000	57.00000000	0.57195273	11030.000000	180.90284876	67.433
WK=5									
TX	553	38.52260398	13.82341845	-2.00000000	81.00000000	0.58783155	21303.000000	191.08689735	35.884
TN	553	20.25316456	12.72767703	-14.00000000	53.00000000	0.54123588	11200.000000	161.99376261	62.843
WK=6									
TX	553	40.49909584	13.63979217	1.00000000	77.00000000	0.58002296	22396.000000	186.04393034	33.679
TN	553	21.97468354	11.95777941	-10.00000000	63.00000000	0.50849650	12152.000000	142.98848835	54.416
WK=7									
TX	553	42.79204340	13.97027674	-1.00000000	78.00000000	0.59407660	23664.000000	195.16863223	32.647
TN	553	24.08860759	11.80016720	-25.00000000	58.00000000	0.50179415	13321.000000	139.24394606	48.987
WK=8									
TX	553	43.71790235	12.82518983	10.00000000	81.00000000	0.54538255	24176.000000	164.48549414	29.336
TN	553	25.33092224	10.79355360	-6.00000000	61.00000000	0.45898859	14008.000000	116.50079933	42.610
WK=9									
TX	552	46.98369565	13.45260473	12.00000000	82.00000000	0.57258939	25935.000000	180.97795510	28.633
TN	552	27.71014493	10.31092167	-14.00000000	56.00000000	0.43886197	15296.000000	106.31510561	37.210
WK=10									
TX	553	49.11211573	13.34037736	12.00000000	85.00000000	0.56729055	27159.000000	177.96566816	27.163
TN	553	29.69801085	10.13590331	-9.00000000	65.00000000	0.43102245	16423.000000	102.73653589	34.130
WK=11									
TX	553	52.92766727	13.98000038	16.00000000	90.00000000	0.59449009	29269.000000	195.44041067	26.413
TN	553	32.67088608	10.32656112	-5.00000000	62.00000000	0.43913005	18067.000000	106.63786461	31.608

TABLE 2. TEMPERATURE STATISTICS BY WEEK OF THE YEAR FOR COLUMBIA, MO

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROR OF MEAN	SUM	VARIANCE	C.V.
WK=12									
TX	553	56.36166365	14.26913077	21.00000000	92.00000000	0.60678516	31168.000000	203.60809288	25.317
TN	553	35.67992767	10.41149267	0.00000000	66.00000000	0.44274170	19731.000000	108.39917970	29.180
WK=13									
TX	553	58.09318264	13.38505640	21.00000000	88.00000000	0.56919050	32120.000000	179.15973478	23.045
TN	553	37.64195298	9.97161794	4.00000000	66.00000000	0.42403633	20816.000000	99.43316429	26.491
WK=14									
TX	553	61.72151899	12.37466980	30.00000000	88.00000000	0.52622449	34132.000000	153.13245276	20.049
TN	553	40.63652803	9.06577636	14.00000000	70.00000000	0.38551603	22472.000000	82.18830097	22.309
WK=15									
TX	553	63.00542495	11.39992561	37.00000000	93.00000000	0.48477415	34842.000000	129.95830385	18.094
TN	553	42.09403255	9.13477096	21.00000000	67.00000000	0.38844997	23278.000000	83.44404041	21.701
WK=16									
TX	553	67.50271248	11.08663560	38.00000000	91.00000000	0.47145170	37329.000000	122.91348901	16.424
TN	553	45.98010850	9.14702585	25.00000000	70.00000000	0.38897111	25427.000000	83.66808187	19.893
WK=17									
TX	553	69.02893309	10.77348606	36.00000000	91.00000000	0.45813523	38173.000000	116.06800194	15.607
TN	553	48.13381555	8.41260459	27.00000000	67.00000000	0.35774034	26618.000000	70.77191603	17.478
WK=18									
TX	553	71.13200723	10.75815864	43.00000000	93.00000000	0.45748344	39336.000000	115.73797730	15.124
TN	553	50.20795660	8.68418154	28.00000000	69.00000000	0.36928896	27765.000000	75.41500904	17.296
WK=19									
TX	553	72.08499096	9.28601542	45.00000000	93.00000000	0.39488154	39863.000000	86.23008229	12.882
TN	553	51.21157324	7.82094062	31.00000000	71.00000000	0.33258023	28320.000000	61.16711219	15.272
WK=20									
TX	553	75.01627486	9.40675574	47.00000000	92.00000000	0.40001594	41484.000000	88.48705349	12.540
TN	553	53.96925859	7.45766766	36.00000000	72.00000000	0.31713229	29845.000000	55.61680688	13.818
WK=21									
TX	553	77.60216998	7.99552382	56.00000000	94.00000000	0.34000426	42914.000000	63.92840108	10.303
TN	553	57.20253165	7.48807221	33.00000000	73.00000000	0.31842522	31633.000000	56.07122546	13.090
WK=22									
TX	553	78.78842676	7.85676183	54.00000000	101.00000000	0.33410350	43570.000000	61.72870640	9.972
TN	553	58.78300181	6.78045468	39.00000000	75.00000000	0.28833426	32507.000000	45.97456561	11.535

TABLE 2 (CONT.)

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROR OF MEAN	SUM	VARIANCE	C.V.
WK=23									
TX	553	81.56962025	7.77765864	56.00000000	102.00000000	0.33073969	45108.000000	60.49197395	9.535
TN	553	61.46292948	6.53495202	43.00000000	76.00000000	0.27789443	33989.000000	42.70559792	10.632
WK=24									
TX	553	83.09222423	7.51981640	62.00000000	101.00000000	0.31977512	45950.000000	56.54763870	9.050
TN	553	62.58569512	6.49388927	42.00000000	76.00000000	0.27614826	34610.000000	42.17059779	10.376
WK=25									
TX	553	84.84448463	7.04471043	61.00000000	105.00000000	0.29957156	46919.000000	49.62794507	8.303
TN	553	64.37251356	5.91780386	43.00000000	78.00000000	0.25165062	35598.000000	35.02040255	9.193
WK=26									
TX	553	86.76311031	7.24843405	63.00000000	104.00000000	0.30823477	47980.000000	52.53979611	8.354
TN	553	65.93128391	6.02010352	48.00000000	80.00000000	0.25600084	36460.000000	36.24164636	9.131
WK=27									
TX	553	87.81555154	6.79822897	63.00000000	106.00000000	0.28909010	48562.000000	46.21591713	7.741
TN	553	66.45207957	5.92204493	49.00000000	80.00000000	0.25183097	36748.000000	35.07061614	8.912
WK=28									
TX	553	88.67088608	6.90385595	63.00000000	113.00000000	0.29356182	49035.000000	47.66322693	7.786
TN	553	67.05967450	5.67332794	48.00000000	80.00000000	0.24125444	37084.000000	32.18664989	8.460
WK=29									
TX	553	89.00904159	6.71454116	69.00000000	111.00000000	0.28553133	49222.000000	45.08506303	7.544
TN	553	67.66365280	5.47713287	50.00000000	84.00000000	0.23291138	37418.000000	29.99898446	8.095
WK=30									
TX	553	89.84086799	6.70009685	69.00000000	111.00000000	0.28491710	49682.000000	44.89129780	7.458
TN	553	68.03074141	5.59057135	50.00000000	99.00000000	0.23773528	37621.000000	31.25448804	8.218
WK=31									
TX	553	88.91320072	6.96547303	68.00000000	108.00000000	0.29620204	49169.000000	48.51781456	7.834
TN	553	66.94394213	5.86213318	50.00000000	84.00000000	0.24928326	37020.000000	34.36460545	8.757
WK=32									
TX	553	88.04701627	7.26176925	70.00000000	110.00000000	0.30880184	48690.000000	52.73329271	8.248
TN	553	66.67450271	5.75927269	51.00000000	80.00000000	0.24490919	36871.000000	33.16922190	8.638
WK=33									
TX	553	87.69801085	6.79334817	65.00000000	108.00000000	0.28888255	48497.000000	46.14957937	7.746
TN	553	66.70162749	5.23812815	47.00000000	81.00000000	0.22274787	36886.000000	27.43798648	7.853

TABLE 2. (CONT.)

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROR OF MEAN	SUM	VARIANCE	C.V.
WK=34									
TX	553	86.12477396	7.77868588	64.00000000	105.00000000	0.33078337	47627.000000	60.50795398	9.032
TN	553	64.17540687	6.54637657	46.00000000	85.00000000	0.27838025	35489.000000	42.85504626	10.201
WK=35									
TX	553	85.96202532	7.84244797	61.00000000	104.00000000	0.33349481	47537.000000	61.50399009	9.123
TN	553	64.08318264	6.65399706	40.00000000	81.00000000	0.28295674	35438.000000	44.27567681	10.383
WK=36									
TX	553	84.05967450	8.53180651	62.00000000	103.00000000	0.36280932	46485.000000	72.79172236	10.150
TN	553	62.30560579	7.19970720	40.00000000	76.00000000	0.30616269	34455.000000	51.83578374	11.555
WK=37									
TX	553	80.53345389	8.99110179	54.00000000	101.00000000	0.38234054	44535.000000	80.83991142	11.164
TN	553	59.09764919	8.10491966	33.00000000	79.00000000	0.34465624	32681.000000	65.68972272	13.714
WK=38									
TX	553	78.67631103	9.31737699	53.00000000	97.00000000	0.39621517	43508.000000	86.81331390	11.843
TN	553	56.88788427	8.53053433	32.00000000	78.00000000	0.36275522	31459.000000	72.77001599	14.995
WK=39									
TX	553	74.54792043	9.27957279	45.00000000	99.00000000	0.39460757	41225.000000	86.11047121	12.448
TN	553	52.91139241	8.52794407	33.00000000	74.00000000	0.36264507	29260.000000	72.72583012	16.117
WK=40									
TX	553	74.28933092	9.19157095	48.00000000	96.00000000	0.39086536	41082.000000	84.48497634	12.373
TN	553	51.81012658	8.49201066	30.00000000	73.00000000	0.36111703	28651.000000	72.11424509	16.391
WK=41									
TX	553	70.95840868	9.68264952	42.00000000	92.00000000	0.41174814	39240.000000	93.75370181	13.646
TN	553	48.17179024	9.13135623	23.00000000	69.00000000	0.38830476	26639.000000	83.38166654	18.956
WK=42									
TX	553	68.74683544	10.55271077	39.00000000	89.00000000	0.44874691	38017.000000	111.35970464	15.350
TN	553	46.30922242	9.11084349	22.00000000	68.00000000	0.38743247	25609.000000	83.00746914	19.674
WK=43									
TX	553	64.45569620	11.44403241	32.00000000	91.00000000	0.48664976	35644.000000	130.96587782	17.755
TN	553	42.95340868	9.25289256	20.00000000	69.00000000	0.39347302	23756.000000	85.61602065	21.539
WK=44									
TX	553	61.07052441	11.99971690	26.00000000	89.00000000	0.51027987	33772.000000	143.99320570	19.649
TN	553	40.88969259	10.09647945	14.00000000	67.00000000	0.42934598	22612.000000	101.93889719	24.692

TABLE 2. (CONT.)

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROR OF MEAN	SUM	VARIANCE	C.V.
WK=45									
TX	553	58.16094033	11.49485363	30.00000000	84.00000000	0.48881090	32163.000000	132.13165998	19.764
TN	553	37.35443038	9.67052631	13.00000000	63.00000000	0.41123261	20657.000000	93.51907907	25.889
WK=46									
TX	553	54.42857143	12.95375194	17.00000000	81.00000000	0.55084956	30099.000000	167.79968944	23.800
TN	553	34.97106691	11.15759450	4.00000000	62.00000000	0.47446918	19339.000000	124.49191498	31.905
WK=47									
TX	553	51.22061483	11.90428958	10.00000000	80.00000000	0.50622189	28325.000000	141.71211049	23.241
TN	553	32.17721519	9.38938586	4.00000000	64.00000000	0.39927730	17794.000000	88.16056687	29.180
WK=48									
TX	553	47.16817360	11.73818863	16.00000000	77.00000000	0.49915855	26084.000000	137.78507220	24.886
TN	553	29.66365280	9.98707856	-3.00000000	61.00000000	0.42469378	16404.000000	99.74173808	33.668
WK=49									
TX	553	44.64737794	12.85074849	7.00000000	73.00000000	0.54646941	24690.000000	165.14173677	28.783
TN	553	27.56057866	10.81834699	-9.00000000	57.00000000	0.46004291	15241.000000	117.03663155	39.253
WK=50									
TX	553	40.18987342	13.10154483	1.00000000	75.00000000	0.55713436	22225.000000	171.65047698	32.599
TN	553	23.50452080	11.75676175	-15.00000000	55.00000000	0.49994836	12998.000000	138.22144692	50.019
WK=51									
TX	553	40.24231465	12.31276657	1.00000000	71.00000000	0.52359209	22254.000000	151.60422072	30.597
TN	553	23.71790235	11.27023082	-23.00000000	54.00000000	0.47925896	13116.000000	127.01810284	47.518
WK=52									
TX	553	39.81374322	11.79994900	3.00000000	72.00000000	0.50178487	22017.000000	139.23879629	29.638
TN	553	23.18987342	10.81875245	-12.00000000	53.00000000	0.46006015	12824.000000	117.04540451	46.653
WK=53									
TX	99	39.90909091	13.19870967	7.00000000	72.00000000	1.32652023	3951.0000000	174.20593692	33.072
TN	99	22.86868687	11.85511727	-12.00000000	45.00000000	1.19148412	2264.0000000	140.54380540	51.840

* Week 53 includes only the 365th day, and the 366 day during leap years.

TABLE 2. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=1

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-10	3	3	0.542	0.542
-5	4	7	0.723	1.266
0	7	14	1.266	2.532
5	10	24	1.808	4.340
10	29	53	5.244	9.584
15	43	96	7.776	17.360
20	58	154	10.488	27.848
25	56	210	10.127	37.975
30	72	282	13.020	50.993
35	90	372	16.275	67.269
40	64	436	11.573	78.843
45	56	492	10.127	88.969
50	36	528	6.510	95.479
55	15	543	2.712	98.192
60	7	550	1.266	99.458
65	2	552	0.362	99.819
70	1	553	0.181	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-25	2	2	0.362	0.362
-20	4	6	0.723	1.085
-15	11	17	1.989	3.074
-10	20	37	3.617	6.691
-5	26	63	4.702	11.392
0	41	104	7.414	18.807
5	49	153	8.861	27.667
10	66	219	11.933	39.602
15	95	314	17.179	56.781
20	102	416	18.445	75.226
25	76	492	13.743	88.969
30	33	525	5.967	94.937
35	17	542	3.074	98.011
40	7	549	1.266	99.277
45	3	552	0.542	99.819
50	1	553	0.181	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=2

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-10	1	1	0.181	0.181
-5	6	7	1.085	1.266
0	6	13	1.085	2.351
5	13	26	2.351	4.702
10	24	50	4.340	9.042
15	35	85	6.329	15.371
20	43	128	7.776	23.146
25	81	209	14.647	37.794
30	84	293	15.190	52.984
35	82	375	14.828	67.812
40	68	443	12.297	80.108
45	45	488	8.137	88.246
50	38	526	6.872	95.118
55	15	541	2.712	97.830
60	10	551	1.808	99.638
65	2	553	0.362	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-25	5	5	0.904	0.904
-20	4	9	0.723	1.627
-15	9	18	1.627	3.255
-10	16	34	2.893	6.148
-5	30	64	5.425	11.573
0	44	108	7.957	19.530
5	54	162	9.765	29.295
10	61	223	11.031	40.325
15	87	310	15.732	56.058
20	100	410	18.083	74.141
25	81	491	14.647	88.788
30	45	536	8.137	96.926
35	11	547	1.989	98.915
40	4	551	0.723	99.638
45	2	553	0.362	100.000

TABLE 3. TEMPERATURE STATISTICS BY WEEK OF THE YEAR FOR COLUMBIA, MO
MAX GROUP INCLUDES THE GIVEN TEMPERATURE AND THE NEXT HIGHER 4; e.g., 35 MEANS 35-39, INCLUSIVE.

STATISTICAL ANALYSIS SYSTEM
WK=3

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-10	1	1	0.181	0.181
-5	4	5	0.723	0.904
0	8	13	1.447	2.351
5	15	28	2.712	5.063
10	20	48	3.617	8.680
15	43	91	7.776	16.456
20	51	142	9.222	25.678
25	68	210	12.297	37.975
30	77	287	13.924	51.899
35	81	368	14.647	66.546
40	58	426	10.488	77.034
45	41	467	7.414	84.448
50	42	509	7.595	92.043
55	29	538	5.244	97.288
60	9	547	1.627	98.915
65	6	553	1.085	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-25	2	2	0.362	0.362
-20	6	8	1.085	1.447
-15	7	15	1.266	2.712
-10	27	42	4.882	7.595
-5	22	64	3.978	11.573
0	45	109	8.137	19.711
5	48	157	8.680	28.391
10	59	216	10.669	39.060
15	87	303	15.732	54.792
20	87	390	15.732	70.524
25	91	481	16.456	86.980
30	46	527	8.318	95.298
35	16	543	2.893	98.192
40	5	548	0.904	99.096
45	3	551	0.542	99.638
50	1	552	0.181	99.819
55	1	553	0.181	100.000

STATISTICAL ANALYSIS SYSTEM
WK=4

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-10	1	1	0.181	0.181
0	7	8	1.266	1.447
5	19	27	3.436	4.882
10	31	58	5.606	10.488
15	35	93	6.329	16.817
20	53	146	9.584	26.401
25	74	220	13.382	39.783
30	67	287	12.116	51.899
35	77	364	13.924	65.823
40	57	421	10.307	76.130
45	51	472	9.222	85.353
50	29	501	5.244	90.597
55	32	533	5.787	96.383
60	10	543	1.808	98.192
65	6	549	1.085	99.277
70	4	553	0.723	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-25	2	2	0.362	0.362
-20	2	4	0.362	0.723
-15	18	22	3.255	3.978
-10	20	42	3.617	7.595
-5	35	77	6.329	13.924
0	53	130	9.584	23.508
5	54	184	9.765	33.273
10	63	247	11.392	44.665
15	84	331	15.190	59.855
20	74	405	13.382	73.237
25	79	484	14.286	87.523
30	45	529	8.137	95.660
35	10	539	1.808	97.468
40	6	545	1.085	98.553
45	7	552	1.266	99.819
50	1	553	0.181	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=5

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-10	1	1	0.181	0.181
-5	3	4	0.542	0.723
0	9	13	1.627	2.351
5	13	26	2.351	4.702
10	22	48	3.978	8.680
15	35	83	6.329	15.009
20	51	134	9.222	24.231
25	92	226	16.637	40.868
30	71	297	12.839	53.707
35	64	361	11.573	65.280
40	64	425	11.573	76.854
45	57	482	10.307	87.161
50	34	516	6.148	93.309
55	28	544	5.063	98.373
60	6	550	1.085	99.458
65	1	551	0.181	99.638
70	1	552	0.181	99.819
75	1	553	0.181	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-20	6	6	1.085	1.085
-15	11	17	1.989	3.074
-10	18	35	3.255	6.329
-5	39	74	7.052	13.382
0	48	122	8.680	22.061
5	52	174	9.403	31.465
10	59	233	10.669	42.134
15	75	308	13.562	55.696
20	99	407	17.902	73.599
25	90	497	16.275	89.873
30	35	532	6.329	96.203
35	16	548	2.893	99.096
40	4	552	0.723	99.819
45	1	553	0.181	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=6

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-5	1	1	0.181	0.181
0	1	2	0.181	0.362
5	11	13	1.989	2.351
10	23	36	4.159	6.510
15	38	74	6.872	13.382
20	49	123	8.861	22.242
25	62	185	11.212	33.454
30	79	264	14.286	47.740
35	69	333	12.477	60.217
40	67	400	12.116	72.333
45	59	459	10.669	83.002
50	46	505	8.318	91.320
55	31	536	5.606	96.926
60	11	547	1.989	98.915
65	4	551	0.723	99.638
70	2	553	0.362	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-15	7	7	1.266	1.266
-10	17	24	3.074	4.340
-5	23	47	4.159	8.499
0	55	102	9.946	18.445
5	42	144	7.595	26.040
10	70	214	12.658	38.698
15	79	293	14.286	52.984
20	92	385	16.637	69.620
25	102	487	18.445	88.065
30	42	529	7.595	95.660
35	13	542	2.351	98.011
40	8	550	1.447	99.458
45	1	551	0.181	99.638
50	1	552	0.181	99.819
55	1	553	0.181	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=7

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-10	1	1	0.181	0.181
0	3	4	0.542	0.723
5	8	12	1.447	2.170
10	10	22	1.808	3.978
15	31	53	5.606	9.584
20	38	91	6.872	16.456
25	64	155	11.573	28.029
30	86	241	15.552	43.580
35	71	312	12.839	56.420
40	56	368	10.127	66.546
45	69	437	12.477	79.024
50	46	483	8.318	87.342
55	36	519	6.510	93.852
60	22	541	3.978	97.830
65	8	549	1.447	99.277
70	4	553	0.723	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-30	1	1	0.181	0.181
-25	1	2	0.181	0.362
-20	2	4	0.362	0.723
-15	7	11	1.266	1.989
-10	9	20	1.627	3.617
-5	14	34	2.532	6.148
0	26	60	4.702	10.850
5	50	110	9.042	19.892
10	56	166	10.127	30.018
15	76	242	13.743	43.761
20	117	359	21.157	64.919
25	105	464	18.987	83.906
30	58	522	10.488	94.394
35	19	541	3.436	97.830
40	6	547	1.085	98.915
45	3	550	0.542	99.458
50	3	553	0.542	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=8

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
5	2	2	0.362	0.362
10	7	9	1.266	1.627
15	19	28	3.436	5.063
20	39	67	7.052	12.116
25	76	143	13.743	25.859
30	76	219	13.743	39.602
35	82	301	14.828	54.430
40	73	374	13.201	67.631
45	67	441	12.116	79.747
50	40	481	7.233	86.980
55	35	516	6.329	93.309
60	22	538	3.978	97.288
65	12	550	2.170	99.458
70	2	552	0.362	99.819
75	1	553	0.181	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-15	1	1	0.181	0.181
-10	3	4	0.542	0.723
-5	14	18	2.532	3.255
0	33	51	5.967	9.222
5	42	93	7.595	16.817
10	58	151	10.488	27.306
15	94	245	16.998	44.304
20	98	343	17.722	62.025
25	108	451	19.530	81.555
30	62	513	11.212	92.767
35	27	540	4.882	97.649
40	3	543	0.542	98.192
45	6	549	1.085	99.277
50	2	551	0.362	99.638
55	2	553	0.362	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=9

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
5	1	1	0.181	0.181
10	5	6	0.906	1.087
15	12	18	2.174	3.261
20	31	49	5.616	8.877
25	57	106	10.326	19.203
30	69	175	12.500	31.703
35	77	252	13.949	45.652
40	71	323	12.862	58.514
45	73	396	13.225	71.739
50	46	442	8.333	80.072
55	52	494	9.420	89.493
60	24	518	4.348	93.841
65	18	536	3.261	97.101
70	13	549	2.355	99.457
75	3	552	0.543	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-20	1	1	0.181	0.181
-10	4	5	0.725	0.906
-5	6	11	1.087	1.993
0	12	23	2.174	4.167
5	33	56	5.978	10.145
10	62	118	11.232	21.377
15	78	196	14.130	35.507
20	97	293	17.572	53.080
25	131	424	23.732	76.812
30	66	490	11.957	88.768
35	34	524	6.159	94.928
40	20	544	3.623	98.551
45	6	550	1.087	99.638
50	2	552	0.362	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=10

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
5	1	1	0.181	0.181
10	7	8	1.266	1.447
15	5	13	0.904	2.351
20	14	27	2.532	4.882
25	47	74	8.499	13.382
30	72	146	13.020	26.401
35	71	217	12.839	39.241
40	71	288	12.839	52.080
45	77	365	13.924	66.004
50	59	424	10.669	76.673
55	60	484	10.850	87.523
60	29	513	5.244	92.767
65	21	534	3.797	96.564
70	11	545	1.989	98.553
75	7	552	1.266	99.819
80	1	553	0.181	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-15	1	1	0.181	0.181
-10	4	5	0.723	0.904
-5	3	8	0.542	1.447
0	12	20	2.170	3.617
5	20	40	3.617	7.233
10	37	77	6.691	13.924
15	68	145	12.297	26.221
20	114	259	20.615	46.835
25	139	398	25.136	71.971
30	72	470	13.020	84.991
35	46	516	8.318	93.309
40	21	537	3.797	97.107
45	13	550	2.351	99.458
50	2	552	0.362	99.819
60	1	553	0.181	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M :
WK=11

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
10	1	1	0.181	0.181
15	4	5	0.723	0.904
20	15	20	2.712	3.617
25	30	50	5.425	9.042
30	58	108	10.488	19.530
35	64	172	11.573	31.103
40	60	232	10.850	41.953
45	73	305	13.201	55.154
50	57	362	10.307	65.461
55	59	421	10.669	76.130
60	52	473	9.403	85.533
65	47	520	8.499	94.033
70	28	548	5.063	99.096
75	3	551	0.542	99.638
80	1	552	0.181	99.819
85	1	553	0.181	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-10	2	2	0.342	0.362
0	6	8	1.085	1.447
5	11	19	1.989	3.436
10	28	47	5.063	8.499
15	66	113	11.935	20.434
20	101	214	18.264	38.698
25	115	329	20.796	59.494
30	88	417	15.913	75.407
35	64	481	11.573	86.980
40	40	521	7.233	94.213
45	21	542	3.797	98.011
50	8	550	1.447	99.458
55	3	553	0.542	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=12

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
15	2	2	0.362	0.362
20	7	9	1.266	1.627
25	22	31	3.978	5.606
30	44	75	7.957	13.562
35	51	126	9.222	22.785
40	65	191	11.754	34.539
45	68	259	12.297	46.835
50	51	310	9.222	56.058
55	71	381	12.839	68.897
60	56	437	10.127	79.024
65	57	494	10.307	89.331
70	31	525	5.606	94.937
75	19	544	3.436	98.373
80	5	549	0.904	99.277
85	4	553	0.723	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-5	2	2	0.362	0.362
0	4	6	0.723	1.085
5	4	10	0.723	1.808
10	21	31	3.797	5.606
15	35	66	6.329	11.935
20	76	142	13.743	25.678
25	120	262	21.700	47.378
30	109	371	19.711	67.089
35	77	448	13.924	81.013
40	47	495	8.499	89.512
45	31	526	5.606	95.118
50	20	546	3.617	98.734
55	5	551	0.904	99.638
60	2	553	0.362	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=13

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
15	1	1	0.181	0.181
20	2	3	0.362	0.542
25	16	19	2.893	3.436
30	26	45	4.702	8.137
35	50	95	9.042	17.179
40	68	163	12.297	29.476
45	65	228	11.754	41.230
50	67	295	12.116	53.345
55	80	375	14.467	67.812
60	53	428	9.584	77.396
65	52	480	9.403	86.799
70	41	521	7.414	94.213
75	24	545	4.340	98.553
80	8	553	1.447	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-5	1	1	0.181	0.181
5	1	2	0.181	0.362
10	9	11	1.627	1.989
15	37	48	6.691	8.680
20	57	105	10.307	18.987
25	133	238	24.051	43.038
30	93	331	16.817	59.855
35	86	417	15.552	75.407
40	66	483	11.935	87.342
45	36	519	6.510	93.852
50	23	542	4.159	98.011
55	8	550	1.447	99.458
60	3	553	0.542	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=14

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
25	5	5	0.904	0.904
30	12	17	2.170	3.074
35	30	47	5.425	8.499
40	48	95	8.680	17.179
45	78	173	14.105	31.284
50	83	256	15.009	46.293
55	69	325	12.477	58.770
60	56	381	10.127	68.897
65	70	451	12.658	81.555
70	55	506	9.946	91.501
75	38	544	6.872	98.373
80	9	553	1.627	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
5	1	1	0.181	0.181
10	2	3	0.362	0.542
15	4	7	0.723	1.266
20	38	45	6.872	8.137
25	108	153	19.530	27.667
30	123	276	22.242	49.910
35	109	385	19.711	69.620
40	75	460	13.562	83.183
45	41	501	7.414	90.597
50	37	538	6.691	97.288
55	10	548	1.808	99.096
60	4	552	0.723	99.819
65	1	553	0.181	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M :
WK=15

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
30	8	8	1.447	1.447
35	16	24	2.893	4.340
40	41	65	7.414	11.754
45	76	141	13.743	25.497
50	84	225	15.190	40.687
55	87	312	15.732	56.420
60	78	390	14.105	70.524
65	66	456	11.935	82.459
70	47	503	8.499	90.958
75	39	542	7.052	98.011
80	7	549	1.266	99.277
85	4	553	0.723	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
15	8	8	1.447	1.447
20	36	44	6.510	7.957
25	82	126	14.828	22.785
30	106	232	19.168	41.953
35	106	338	19.168	61.121
40	88	426	15.913	77.034
45	67	493	12.116	89.150
50	49	542	8.861	98.011
55	7	549	1.266	99.277
60	4	553	0.723	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M :
WK=16

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
30	1	1	0.181	0.181
35	13	14	2.351	2.532
40	24	38	4.340	6.872
45	30	68	5.425	12.297
50	63	131	11.392	23.689
55	87	218	15.732	39.421
60	86	304	15.552	54.973
65	86	390	15.552	70.524
70	71	461	12.839	83.363
75	70	531	12.658	96.022
80	21	552	3.797	99.819
85	1	553	0.181	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
20	18	18	3.255	3.255
25	48	66	8.680	11.935
30	78	144	14.105	26.040
35	103	247	18.626	44.665
40	98	345	17.722	62.387
45	103	448	18.626	81.013
50	65	513	11.754	92.767
55	31	544	5.606	98.373
60	7	551	1.266	99.638
65	2	553	0.362	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M :
WK=17

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
30	1	1	0.181	0.181
35	3	4	0.542	0.723
40	25	29	4.521	5.244
45	21	50	3.797	9.042
50	59	109	10.669	19.711
55	83	192	15.009	34.720
60	80	272	14.467	49.186
65	92	364	16.637	65.823
70	76	440	13.743	79.566
75	77	517	13.924	93.490
80	33	550	5.967	99.458
85	3	553	0.542	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
20	4	4	0.723	0.723
25	16	20	2.893	3.617
30	70	90	12.658	16.275
35	115	205	20.796	37.071
40	108	313	19.530	56.600
45	106	419	19.168	75.769
50	74	493	13.382	89.150
55	47	540	8.499	97.649
60	13	553	2.351	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M :
WK=18

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
35	2	2	0.362	0.362
40	9	11	1.627	1.969
45	29	40	5.244	7.233
50	50	90	9.042	16.275
55	74	164	13.382	29.656
60	67	231	12.116	41.772
65	91	322	16.456	58.228
70	89	411	16.094	74.322
75	81	492	14.647	88.969
80	52	544	9.403	98.373
85	9	553	1.627	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
20	3	3	0.542	0.542
25	12	15	2.170	2.712
30	50	65	9.042	11.754
35	86	151	15.552	27.306
40	115	266	20.796	48.101
45	102	368	18.445	66.546
50	91	459	16.456	83.002
55	67	526	12.116	95.118
60	27	553	4.882	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M :
WK=19

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
40	4	4	0.723	0.723
45	18	22	3.255	3.978
50	26	48	4.702	8.680
55	67	115	12.116	20.796
60	104	219	18.807	39.602
65	111	330	20.072	59.675
70	96	426	17.360	77.034
75	70	496	12.658	89.693
80	50	546	9.042	98.734
85	7	553	1.266	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
25	7	7	1.266	1.266
30	27	34	4.882	6.148
35	86	120	15.552	21.700
40	116	236	20.976	42.676
45	120	356	21.700	64.376
50	116	472	20.976	85.353
55	56	528	10.127	95.479
60	22	550	3.978	99.458
65	3	553	0.542	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M :
WK=20

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
40	5	5	0.904	0.904
45	2	7	0.362	1.266
50	31	38	5.606	6.872
55	50	88	9.042	15.913
60	74	162	13.382	29.295
65	82	244	14.828	44.123
70	100	344	18.083	62.206
75	115	459	20.796	83.002
80	80	539	14.467	97.468
85	14	553	2.532	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
30	11	11	1.989	1.989
35	44	55	7.957	9.946
40	119	174	21.519	31.465
45	117	291	21.157	52.622
50	115	406	20.796	73.418
55	96	502	17.360	90.778
60	48	550	8.680	99.458
65	3	553	0.542	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=21

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
50	9	9	1.627	1.627
55	26	35	4.702	6.329
60	54	89	9.765	16.094
65	101	190	18.264	34.358
70	122	312	22.061	56.420
75	116	428	20.976	77.396
80	98	526	17.722	95.118
85	27	553	4.882	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
25	1	1	0.181	0.181
30	6	7	1.085	1.266
35	30	37	5.425	6.691
40	51	88	9.222	15.913
45	104	192	18.807	34.720
50	127	319	22.966	57.685
55	133	452	24.051	81.736
60	89	541	16.094	97.830
65	12	553	2.170	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=22

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
45	2	2	0.362	0.362
50	5	7	0.904	1.266
55	14	21	2.532	3.797
60	45	66	8.137	11.935
65	93	159	16.817	28.752
70	130	289	23.508	52.260
75	112	401	20.253	72.514
80	116	517	20.976	93.490
85	29	546	5.244	98.734
90	5	551	0.904	99.638
95	2	553	0.362	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
30	1	1	0.181	0.181
35	10	11	1.808	1.989
40	34	45	6.148	8.137
45	116	161	20.976	29.114
50	114	275	20.615	49.729
55	153	428	27.667	77.396
60	102	530	18.445	95.841
65	22	552	3.978	99.819
70	1	553	0.181	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=23

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
50	5	5	0.904	0.904
55	5	10	0.904	1.808
60	29	39	5.244	7.052
65	59	98	10.669	17.722
70	112	210	20.253	37.975
75	136	346	24.593	62.568
80	121	467	21.881	84.448
85	68	535	12.297	96.745
90	16	551	2.893	99.638
95	2	553	0.362	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
35	2	2	0.362	0.362
40	21	23	3.797	4.159
45	69	92	12.477	16.637
50	106	198	19.168	35.805
55	167	365	30.199	66.004
60	126	491	22.785	88.788
65	58	549	10.488	99.277
70	4	553	0.723	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=24

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
55	7	7	1.266	1.266
60	19	26	3.436	4.702
65	47	73	8.499	13.201
70	88	161	15.913	29.114
75	142	303	25.678	54.792
80	129	432	23.327	78.119
85	98	530	17.722	95.841
90	18	548	3.255	99.096
95	5	553	0.904	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
35	3	3	0.542	0.542
40	13	16	2.351	2.893
45	51	67	9.222	12.116
50	102	169	18.445	30.561
55	141	310	25.497	56.058
60	167	477	30.199	86.257
65	69	546	12.477	98.734
70	7	553	1.266	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=25

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
55	2	2	0.362	0.362
60	8	10	1.447	1.808
65	34	44	6.148	7.957
70	84	128	15.190	23.146
75	121	249	21.881	45.027
80	163	412	29.476	74.503
85	101	513	18.264	92.767
90	32	545	5.787	98.553
95	7	552	1.266	99.819
100	1	553	0.181	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
35	1	1	0.181	0.181
40	4	5	0.723	0.904
45	27	32	4.882	5.787
50	92	124	16.637	22.423
55	127	251	22.966	45.389
60	194	445	35.081	80.470
65	95	540	17.179	97.649
70	13	553	2.351	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=26

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
55	1	1	0.181	0.181
60	7	8	1.266	1.447
65	19	27	3.436	4.882
70	56	83	10.127	15.009
75	121	204	21.881	36.890
80	146	350	26.401	63.291
85	127	477	22.966	86.257
90	52	529	9.403	95.660
95	24	553	4.340	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
40	1	1	0.181	0.181
45	17	18	3.074	3.255
50	77	95	13.924	17.179
55	107	202	19.349	36.528
60	194	396	35.081	71.609
65	119	515	21.519	93.128
70	37	552	6.691	99.819
75	1	553	0.181	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=27

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
55	1	1	0.181	0.181
60	1	2	0.181	0.362
65	12	14	2.170	2.532
70	54	68	9.765	12.297
75	104	172	18.807	31.103
80	129	301	23.327	54.430
85	177	478	32.007	86.438
90	52	530	9.403	95.841
95	21	551	3.797	99.638
100	2	553	0.362	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
40	2	2	0.362	0.362
45	19	21	3.436	3.797
50	59	80	10.669	14.467
55	100	180	18.083	32.550
60	189	369	34.177	66.727
65	144	513	26.040	92.767
70	38	551	6.872	99.638
75	2	553	0.362	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=28

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
55	1	1	0.181	0.181
60	1	2	0.181	0.362
65	4	6	0.723	1.085
70	41	47	7.414	8.499
75	101	148	18.264	26.763
80	159	307	28.752	55.515
85	157	464	28.391	83.906
90	52	516	9.403	93.309
95	26	542	4.702	98.011
100	8	550	1.447	99.458
105	3	553	0.542	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
40	1	1	0.181	0.181
45	10	11	1.808	1.989
50	50	61	9.042	11.031
55	107	168	19.349	30.380
60	192	360	34.720	65.099
65	139	499	25.136	90.235
70	53	552	9.584	99.819
75	1	553	0.181	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=29

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
60	2	2	0.362	0.362
65	7	9	1.266	1.627
70	32	41	5.787	7.414
75	95	136	17.179	24.593
80	151	287	27.306	51.899
85	171	458	30.922	82.821
90	65	523	11.754	94.575
95	17	540	3.074	97.649
100	9	549	1.627	99.277
105	4	553	0.723	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
45	5	5	0.904	0.904
50	34	39	6.148	7.052
55	114	153	20.615	27.667
60	184	337	33.273	60.940
65	175	512	31.646	92.586
70	33	545	5.967	98.553
75	8	553	1.447	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=30

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
60	1	1	0.181	0.181
65	5	6	0.904	1.085
70	25	31	4.521	5.606
75	89	120	16.094	21.700
80	145	265	26.221	47.920
85	155	420	28.029	75.949
90	99	519	17.902	93.852
95	23	542	4.159	98.011
100	7	549	1.266	99.277
105	4	553	0.723	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
45	10	10	1.808	1.808
50	33	43	5.967	7.776
55	92	135	16.637	24.412
60	189	324	34.177	58.590
65	179	503	32.369	90.958
70	47	550	8.499	99.458
75	2	552	0.362	99.819
90	1	553	0.181	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=31

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
60	2	2	0.362	0.362
65	11	13	1.989	2.351
70	39	52	7.052	9.403
75	91	143	16.456	25.859
80	143	286	25.859	51.718
85	147	433	26.582	78.300
90	87	520	15.732	94.033
95	31	551	5.606	99.638
100	2	553	0.362	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
45	8	8	1.447	1.447
50	52	60	9.403	10.850
55	130	190	23.508	34.358
60	160	350	28.933	63.291
65	152	502	27.486	90.778
70	47	549	8.499	99.277
75	4	553	0.723	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=32

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
65	14	14	2.532	2.532
70	52	66	9.403	11.935
75	111	177	20.072	32.007
80	145	322	26.221	58.228
85	130	452	23.508	81.736
90	68	520	12.297	94.033
95	24	544	4.340	98.373
100	7	551	1.266	99.638
105	2	553	0.362	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
45	17	17	3.074	3.074
50	42	59	7.595	10.669
55	119	178	21.519	32.188
60	197	375	35.624	67.812
65	131	506	23.689	91.501
70	45	551	8.137	99.638
75	2	553	0.362	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=33

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
60	3	3	0.542	0.542
65	16	19	2.893	3.436
70	32	51	5.787	9.222
75	133	184	24.051	33.273
80	146	330	26.401	59.675
85	129	459	23.327	83.002
90	77	536	13.924	96.926
95	13	549	2.351	99.277
100	4	553	0.723	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
40	1	1	0.181	0.181
45	11	12	1.989	2.170
50	37	49	6.691	8.861
55	127	176	22.966	31.826
60	196	372	35.443	67.269
65	154	526	27.848	95.118
70	24	550	4.340	99.458
75	3	553	0.542	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=34

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
55	1	1	0.181	0.181
60	9	10	1.627	1.808
65	25	35	4.521	6.329
70	76	111	13.743	20.072
75	122	233	22.061	42.134
80	118	351	21.338	63.472
85	123	474	22.242	85.714
90	62	536	11.212	96.926
95	16	552	2.893	99.819
100	1	553	0.181	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
40	10	10	1.808	1.808
45	32	42	5.787	7.595
50	99	141	17.902	25.497
55	146	287	26.401	51.899
60	134	421	24.231	76.130
65	107	528	19.349	95.479
70	21	549	3.797	99.277
75	3	552	0.542	99.819
80	1	553	0.181	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=35

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
55	5	5	0.904	0.904
60	12	17	2.170	3.074
65	33	50	5.967	9.042
70	70	120	12.658	21.700
75	91	211	16.456	38.156
80	131	342	23.689	61.844
85	149	491	26.944	88.788
90	49	540	8.861	97.649
95	13	553	2.351	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
35	1	1	0.181	0.181
40	15	16	2.712	2.893
45	34	50	6.148	9.042
50	81	131	14.647	23.689
55	117	248	21.157	44.846
60	190	438	34.358	79.204
65	92	530	16.637	95.841
70	21	551	3.797	99.638
75	2	553	0.362	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=36

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
55	4	4	0.723	0.723
60	19	23	3.436	4.159
65	53	76	9.584	13.743
70	93	169	16.817	30.561
75	110	279	19.892	50.452
80	108	387	19.530	69.982
85	101	488	18.264	88.246
90	51	539	9.222	97.468
95	14	553	2.532	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
35	5	5	0.904	0.904
40	18	23	3.255	4.159
45	69	92	12.477	16.637
50	94	186	16.998	33.635
55	119	305	21.519	55.154
60	153	458	27.667	82.821
65	87	545	15.732	98.553
70	8	553	1.447	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=37

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
45	1	1	0.181	0.181
50	3	4	0.542	0.723
55	20	24	3.617	4.340
60	48	72	8.680	13.020
65	66	138	11.933	24.955
70	103	241	18.626	43.580
75	113	354	20.434	64.014
80	103	457	18.626	82.640
85	72	529	13.020	95.660
90	21	550	3.797	99.458
95	3	553	0.542	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
25	1	1	0.181	0.181
30	3	4	0.542	0.723
35	18	22	3.255	3.978
40	48	70	8.680	12.658
45	99	169	17.902	30.561
50	110	279	19.892	50.452
55	126	405	22.785	73.237
60	87	492	15.732	88.969
65	52	544	9.403	98.373
70	9	553	1.627	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=38

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
45	3	3	0.542	0.542
50	5	8	0.904	1.447
55	39	47	7.052	8.499
60	46	93	8.318	16.817
65	95	188	17.179	33.996
70	93	281	16.817	50.814
75	105	386	18.987	69.801
80	90	476	16.275	86.076
85	67	543	12.116	98.192
90	10	553	1.808	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
25	1	1	0.181	0.181
30	8	9	1.447	1.627
35	44	53	7.957	9.584
40	57	110	10.307	19.892
45	108	218	19.530	39.421
50	103	321	18.626	58.047
55	108	429	19.530	77.577
60	96	525	17.360	94.937
65	25	550	4.521	99.458
70	3	553	0.542	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=39

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
40	4	4	0.723	0.723
45	4	8	0.723	1.447
50	21	29	3.797	5.244
55	53	82	9.584	14.828
60	89	171	16.094	30.922
65	96	267	17.360	48.282
70	101	368	18.264	66.546
75	99	467	17.902	84.448
80	59	526	10.669	95.118
85	25	551	4.521	99.638
90	2	553	0.362	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
25	5	5	0.904	0.904
30	22	27	3.978	4.882
35	74	101	13.382	18.264
40	93	194	16.817	35.081
45	124	318	22.425	57.505
50	112	430	20.253	77.758
55	58	488	10.488	88.246
60	49	537	8.861	97.107
65	16	553	2.893	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=40

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
40	2	2	0.362	0.362
45	8	10	1.447	1.808
50	21	31	3.797	5.606
55	53	84	9.584	15.190
60	82	166	14.828	30.018
65	115	281	20.796	50.814
70	97	378	17.541	68.354
75	93	471	16.817	85.172
80	63	534	11.392	96.564
85	18	552	3.253	99.819
90	1	553	0.181	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
25	14	14	2.532	2.532
30	28	42	5.063	7.595
35	70	112	12.658	20.253
40	104	216	18.807	39.060
45	125	341	22.604	61.664
50	95	436	17.179	78.843
55	84	520	15.190	94.033
60	30	550	5.425	99.458
65	3	553	0.542	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=41

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
35	1	1	0.181	0.181
40	7	8	1.266	1.447
45	19	27	3.436	4.882
50	49	76	8.861	13.743
55	74	150	13.382	27.125
60	82	232	14.828	41.953
65	95	327	17.179	59.132
70	111	438	20.072	79.204
75	75	513	13.562	92.767
80	38	551	6.872	99.638
85	2	553	0.362	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
15	1	1	0.181	0.181
20	14	15	2.532	2.712
25	29	44	5.244	7.957
30	54	98	9.765	17.722
35	94	192	16.998	34.720
40	113	305	20.434	55.154
45	99	404	17.902	73.056
50	85	489	15.371	88.427
55	47	536	8.499	96.926
60	17	553	3.074	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=42

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
30	1	1	0.181	0.181
35	8	9	1.447	1.627
40	24	33	4.340	5.967
45	23	56	4.159	10.127
50	51	107	9.222	19.349
55	83	190	15.009	34.358
60	71	261	12.839	47.197
65	110	371	19.892	67.089
70	93	464	16.817	83.906
75	68	532	12.297	96.203
80	21	553	3.797	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
15	1	1	0.181	0.181
20	15	16	2.712	2.893
25	43	59	7.776	10.669
30	73	132	13.201	23.870
35	110	242	19.892	43.761
40	104	346	18.807	62.568
45	90	436	16.275	78.843
50	74	510	13.382	92.224
55	35	545	6.329	98.553
60	8	553	1.447	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=43

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
25	1	1	0.181	0.181
30	6	7	1.085	1.266
35	14	21	2.532	3.797
40	39	60	7.052	10.850
45	57	117	10.307	21.157
50	71	188	12.839	33.996
55	86	274	15.552	49.548
60	87	361	15.732	65.280
65	72	433	13.020	78.300
70	52	485	9.403	87.703
75	55	540	9.946	97.649
80	12	552	2.170	99.819
85	1	553	0.181	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
15	7	7	1.266	1.266
20	24	31	4.340	5.606
25	71	102	12.839	18.445
30	117	219	21.157	39.602
35	98	317	17.722	57.324
40	99	416	17.902	75.226
45	73	489	13.201	88.427
50	33	522	5.967	94.394
55	27	549	4.882	99.277
60	4	553	0.723	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=44

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
20	2	2	0.362	0.362
25	3	5	0.542	0.904
30	8	13	1.447	2.351
35	37	50	6.691	9.042
40	67	117	12.116	21.157
45	57	174	10.307	31.465
50	69	243	12.477	43.942
55	82	325	14.828	58.770
60	75	400	13.562	72.333
65	72	472	13.020	85.353
70	48	520	8.680	94.033
75	30	550	5.425	99.458
80	3	553	0.542	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
5	1	1	0.181	0.181
10	5	6	0.904	1.085
15	20	26	3.617	4.702
20	40	66	7.233	11.935
25	96	162	17.360	29.295
30	93	255	16.817	46.112
35	108	363	19.530	65.642
40	74	437	13.382	79.024
45	56	493	10.127	89.150
50	42	535	7.595	96.745
55	13	548	2.351	99.096
60	5	553	0.904	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=45

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
25	13	13	2.351	2.351
30	16	29	2.893	5.244
35	42	71	7.595	12.839
40	58	129	10.488	23.327
45	75	204	13.562	36.890
50	93	297	16.817	53.707
55	82	379	14.828	68.535
60	77	456	13.924	82.459
65	50	506	9.042	91.501
70	34	540	6.148	97.649
75	13	553	2.351	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
5	2	2	0.362	0.362
10	11	13	1.989	2.351
15	30	43	5.425	7.776
20	77	120	13.924	21.700
25	101	221	18.264	39.964
30	118	339	21.338	61.302
35	84	423	15.190	76.492
40	68	491	12.297	88.788
45	30	521	5.425	94.213
50	25	546	4.521	98.734
55	7	553	1.266	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=46

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
10	1	1	0.181	0.181
15	2	3	0.362	0.542
20	10	13	1.808	2.351
25	22	35	3.978	6.329
30	39	74	7.052	13.382
35	62	136	11.212	24.593
40	76	212	13.743	38.336
45	63	275	11.392	49.729
50	67	342	12.116	61.844
55	70	412	12.658	74.503
60	61	473	11.031	85.533
65	45	518	8.137	93.671
70	33	551	5.967	99.638
75	2	553	0.362	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-5	1	1	0.181	0.181
0	5	6	0.904	1.085
5	9	15	1.627	2.712
10	35	50	6.329	9.042
15	46	96	8.318	17.360
20	76	172	13.743	31.103
25	94	266	16.998	48.101
30	103	369	18.626	66.727
35	82	451	14.828	81.555
40	43	494	7.776	89.331
45	29	523	5.244	94.575
50	20	543	3.617	98.192
55	10	553	1.808	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=47

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
5	1	1	0.181	0.181
15	5	6	0.904	1.085
20	10	16	1.808	2.893
25	26	42	4.702	7.595
30	66	108	11.935	19.530
35	57	165	10.307	29.837
40	78	243	14.105	43.942
45	90	333	16.275	60.217
50	71	404	12.839	73.056
55	65	469	11.754	84.810
60	49	518	8.861	93.671
65	27	545	4.882	98.553
70	7	552	1.266	99.819
75	1	553	0.181	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-5	2	2	0.362	0.362
0	4	6	0.723	1.085
5	13	19	2.351	3.436
10	17	36	3.074	6.510
15	61	97	11.031	17.541
20	114	211	20.615	38.156
25	142	353	25.678	63.834
30	103	456	18.626	82.459
35	54	510	9.765	92.224
40	20	530	3.617	95.841
45	10	540	1.808	97.649
50	4	544	0.723	98.373
55	9	553	1.627	100.000

TABLE 3. (CONT.)

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=48

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
10	4	4	0.723	0.723
15	6	10	1.085	1.808
20	24	34	4.340	6.148
25	45	79	8.137	14.286
30	67	146	12.116	26.401
35	96	242	17.360	43.761
40	87	329	15.732	59.494
45	70	399	12.658	72.152
50	59	458	10.669	82.821
55	49	507	8.861	91.682
60	30	537	5.425	97.107
65	14	551	2.532	99.638
70	2	553	0.362	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-10	1	1	0.181	0.181
-5	2	3	0.362	0.542
0	7	10	1.266	1.808
5	26	36	4.702	6.510
10	42	78	7.595	14.105
15	84	162	15.190	29.295
20	118	280	21.338	50.633
25	112	392	20.253	70.886
30	78	470	14.105	84.991
35	45	515	8.137	93.128
40	18	533	3.255	96.383
45	14	547	2.532	98.915
50	5	552	0.904	99.819
55	1	553	0.181	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=49

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
0	2	2	0.362	0.362
5	8	10	1.447	1.808
10	6	16	1.085	2.893
15	14	30	2.532	5.425
20	26	56	4.702	10.127
25	56	112	10.127	20.253
30	88	200	15.913	36.166
35	86	286	15.552	51.718
40	73	359	13.201	64.919
45	64	423	11.573	76.492
50	50	473	9.042	85.533
55	40	513	7.233	92.767
60	31	544	5.606	98.373
65	9	553	1.627	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-15	1	1	0.181	0.181
-10	7	8	1.266	1.447
-5	7	15	1.266	2.712
0	13	28	2.351	5.063
5	36	64	6.510	11.573
10	50	114	9.042	20.615
15	83	197	15.009	35.624
20	115	312	20.796	56.420
25	102	414	18.445	74.864
30	69	483	12.477	87.342
35	43	526	7.776	95.118
40	19	545	3.436	98.553
45	6	551	1.085	99.638
50	2	553	0.362	100.000

S T A T I S T I C A L A N A L Y S I S S Y S T E M
WK=50

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-5	1	1	0.181	0.181
0	5	6	0.904	1.085
5	11	17	1.989	3.074
10	23	40	4.159	7.233
15	22	62	3.978	11.212
20	43	105	7.776	18.987
25	81	186	14.647	33.633
30	83	269	15.009	48.644
35	82	351	14.828	63.472
40	62	413	11.212	74.684
45	56	469	10.127	84.810
50	49	518	8.861	93.671
55	18	536	3.255	96.926
60	12	548	2.170	99.096
65	4	552	0.723	99.819
70	1	553	0.181	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-20	1	1	0.181	0.181
-15	6	7	1.085	1.266
-10	12	19	2.170	3.436
-5	25	44	4.521	7.957
0	32	76	5.787	13.743
5	41	117	7.414	21.157
10	65	182	11.754	32.911
15	72	254	13.020	45.931
20	103	357	18.626	64.557
25	112	469	20.253	84.810
30	53	522	9.584	94.394
35	22	544	3.978	98.373
40	6	550	1.085	99.458
45	2	552	0.362	99.819
50	1	553	0.181	100.000

TABLE 3. (CONT.)

STATISTICAL ANALYSIS SYSTEM
WK=51

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-5	1	1	0.181	0.181
0	6	7	1.085	1.266
5	9	16	1.627	2.893
10	13	29	2.351	5.244
15	23	52	4.159	9.403
20	39	91	7.052	16.456
25	77	168	13.924	30.380
30	102	270	18.445	48.825
35	104	374	18.807	67.631
40	55	429	9.946	77.577
45	44	473	7.957	85.533
50	41	514	7.414	92.948
55	27	541	4.882	97.830
60	11	552	1.989	99.819
65	1	553	0.181	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-30	1	1	0.181	0.181
-25	1	2	0.181	0.362
-15	4	6	0.723	1.085
-10	12	18	2.170	3.255
-5	20	38	3.617	6.872
0	26	64	4.702	11.573
5	43	107	7.776	19.349
10	62	169	11.212	30.561
15	92	261	16.637	47.197
20	117	378	21.157	68.354
25	97	475	17.541	85.895
30	47	522	8.499	94.394
35	21	543	3.797	98.192
40	8	551	1.447	99.638
45	2	553	0.362	100.000

STATISTICAL ANALYSIS SYSTEM
WK=52

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-5	2	2	0.362	0.362
0	2	4	0.362	0.723
5	3	7	0.542	1.266
10	10	17	1.808	3.074
15	24	41	4.340	7.414
20	60	101	10.850	18.264
25	97	198	17.541	35.805
30	88	286	15.913	51.718
35	82	368	14.828	66.546
40	62	430	11.212	77.758
45	58	488	10.488	88.246
50	34	522	6.148	94.394
55	16	538	2.893	97.288
60	13	551	2.351	99.638
65	2	553	0.362	100.000

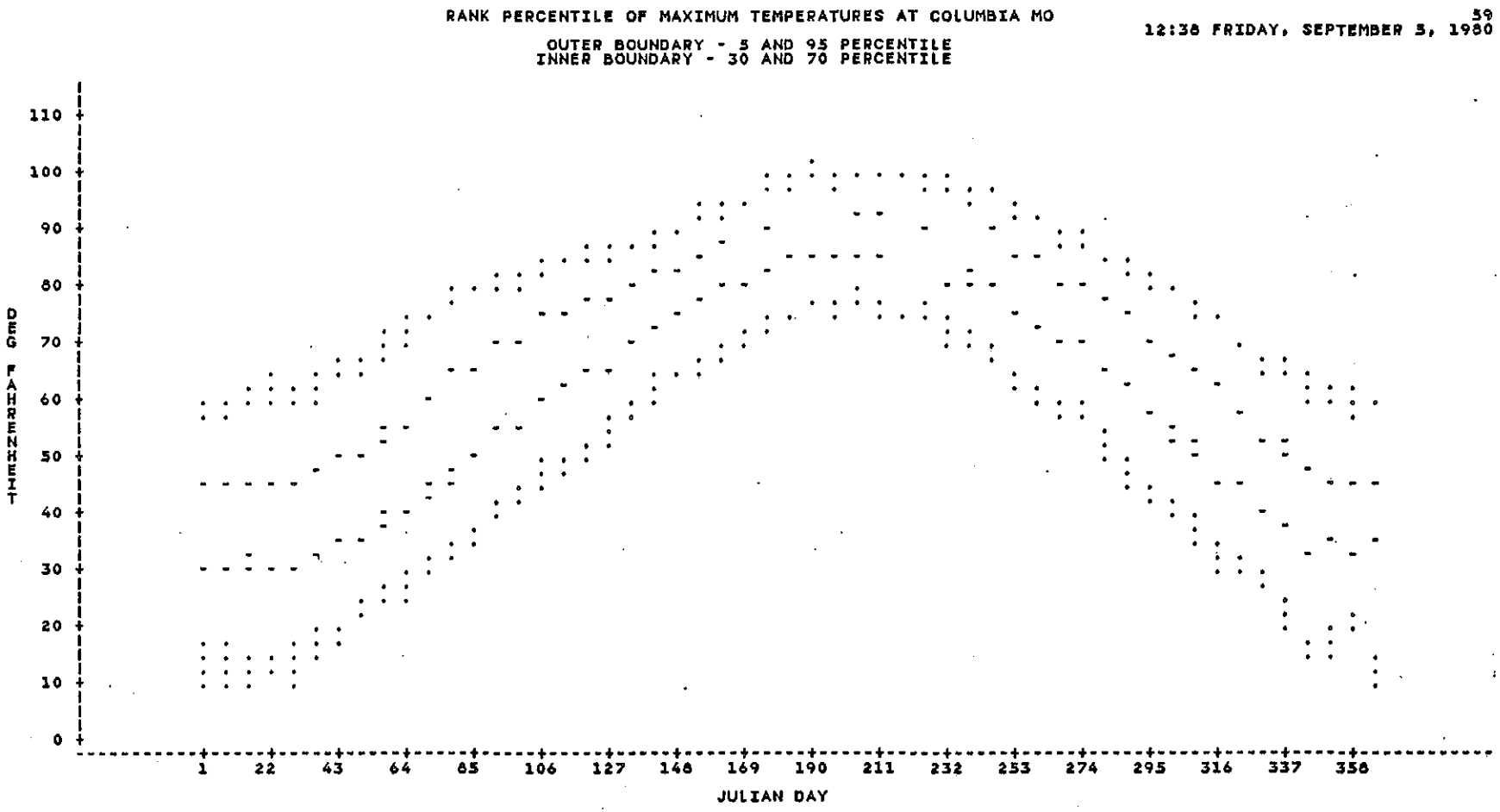
MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-20	1	1	0.181	0.181
-15	5	6	0.904	1.085
-10	9	15	1.627	2.712
-5	23	38	4.159	6.872
0	27	65	4.882	11.754
5	41	106	7.414	19.168
10	72	178	13.020	32.188
15	95	273	17.179	49.367
20	118	391	21.338	70.705
25	94	485	16.998	87.703
30	45	530	8.137	95.841
35	14	544	2.532	98.373
40	5	549	0.904	99.277
45	4	553	0.723	100.000

STATISTICAL ANALYSIS SYSTEM
WK=53

MAXGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
0	3	3	3.030	3.030
5	2	5	2.020	5.051
10	3	8	3.030	8.081
15	5	13	5.051	13.131
20	3	16	3.030	16.162
25	14	30	14.141	30.303
30	17	47	17.172	47.475
35	15	62	15.152	62.626
40	14	76	14.141	76.768
45	10	86	10.101	86.869
50	6	92	6.061	92.929
55	5	97	5.051	97.980
60	1	98	1.010	98.990
65	1	99	1.010	100.000

MINGROUP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
-20	1	1	1.010	1.010
-15	3	4	3.030	4.040
-10	2	6	2.020	6.061
-5	4	10	4.040	10.101
0	2	12	2.020	12.121
5	6	18	6.061	18.182
10	13	31	13.131	31.313
15	16	47	16.162	47.475
20	22	69	22.222	69.697
25	18	87	18.182	87.879
30	5	92	5.051	92.929
35	6	98	6.061	98.990
40	1	99	1.010	100.000

TABLE 3. (CONT.)


RANK PERCENTILE OF MAXIMUM TEMPERATURES AT COLUMBIA MO
OUTER BOUNDARY - 5 AND 95 PERCENTILE
INNER BOUNDARY - 30 AND 70 PERCENTILE
59
12:38 FRIDAY, SEPTEMBER 5, 1980
DEG FAHRENHEIT
110
100
90
80
70
60
50
40
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0
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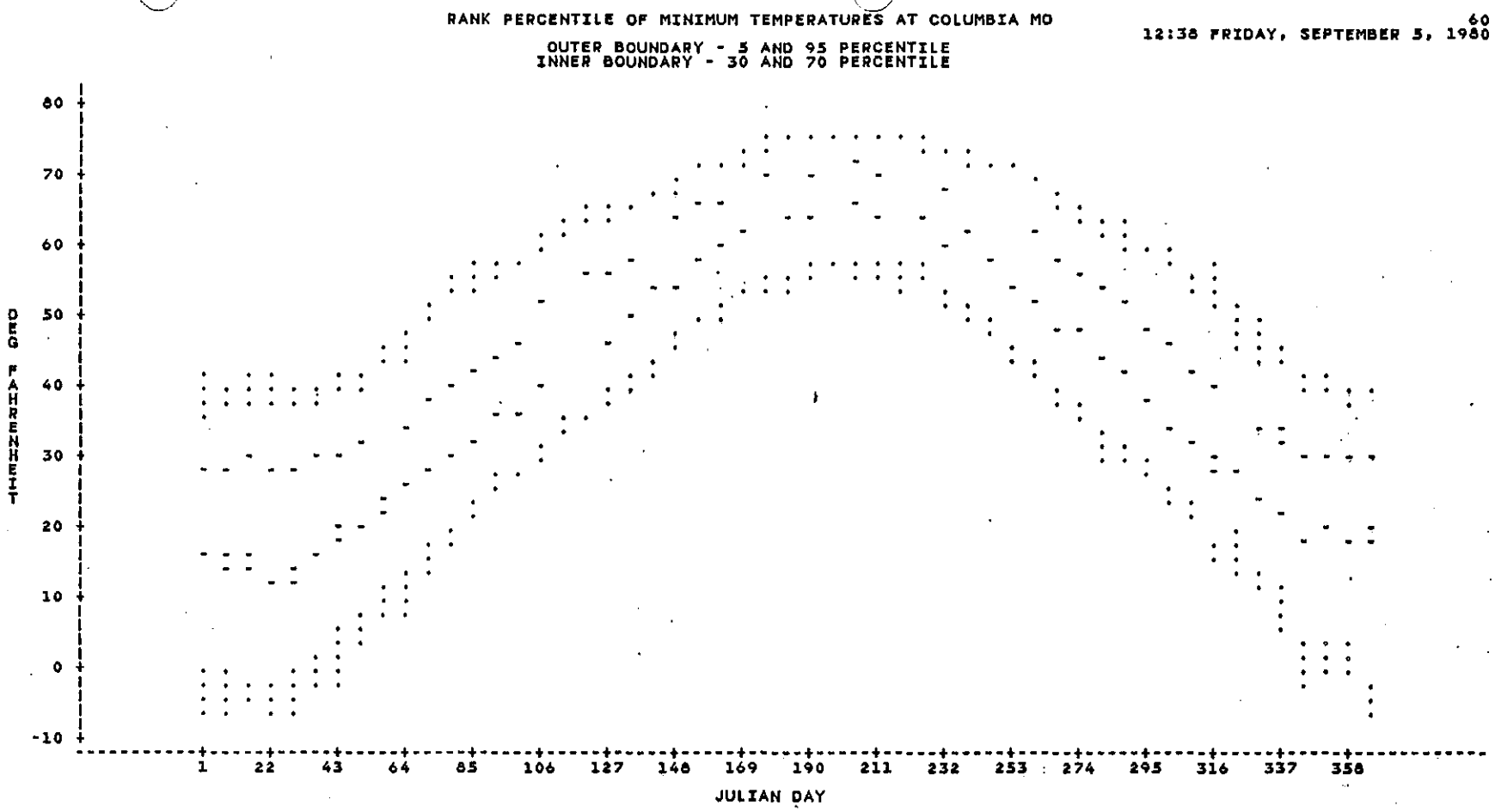
316
337
358
JULIAN DAY

Figure 1


RANK PERCENTILE OF MINIMUM TEMPERATURES AT COLUMBIA MO
OUTER BOUNDARY - 5 AND 95 PERCENTILE
INNER BOUNDARY - 30 AND 70 PERCENTILE
60
12:38 FRIDAY, SEPTEMBER 5, 1980
DEG FAHRENHEIT
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JULIAN DAY

Figure 2

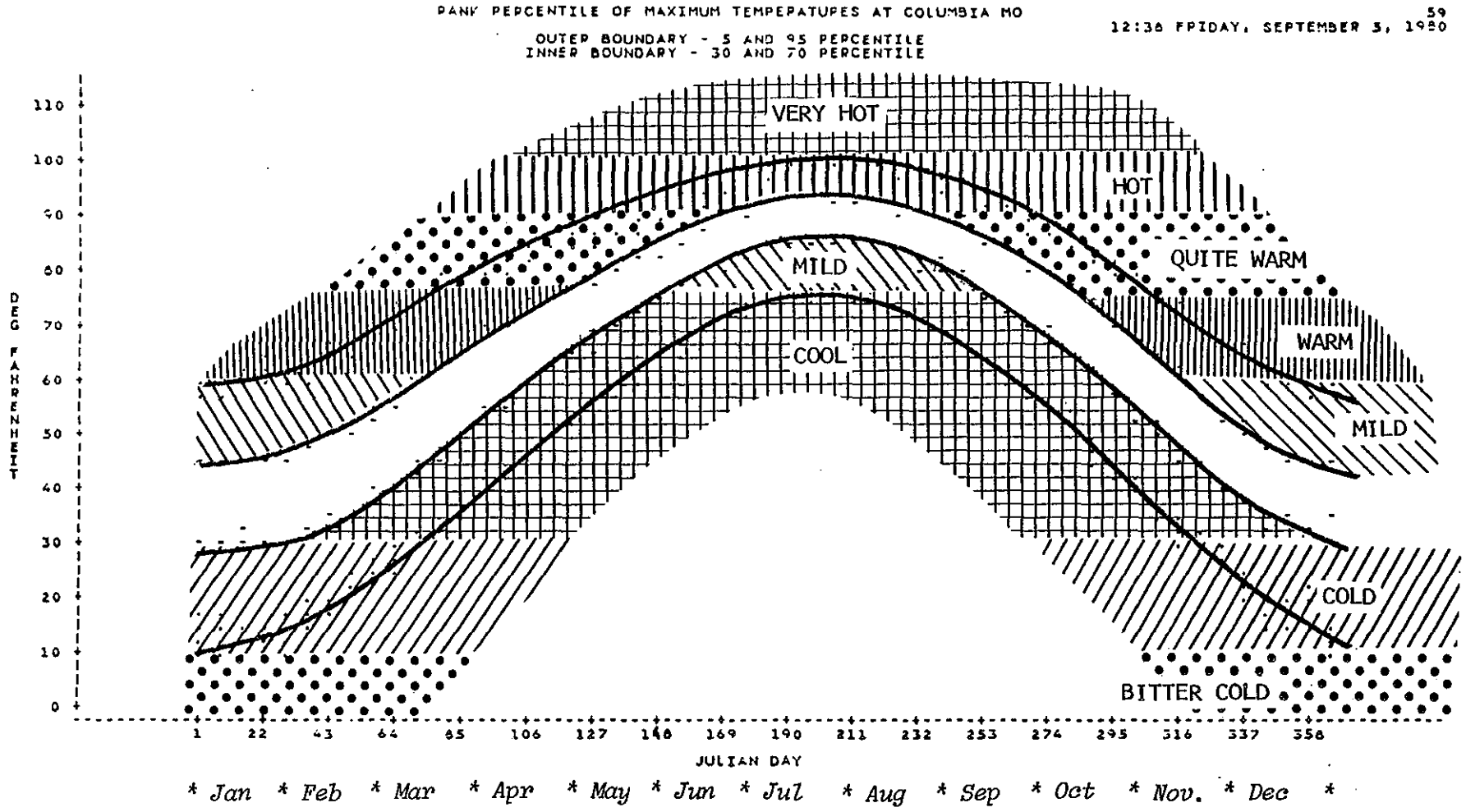

FIGURE 3

MAXIMUM TEMPERATURE ADJECTIVES

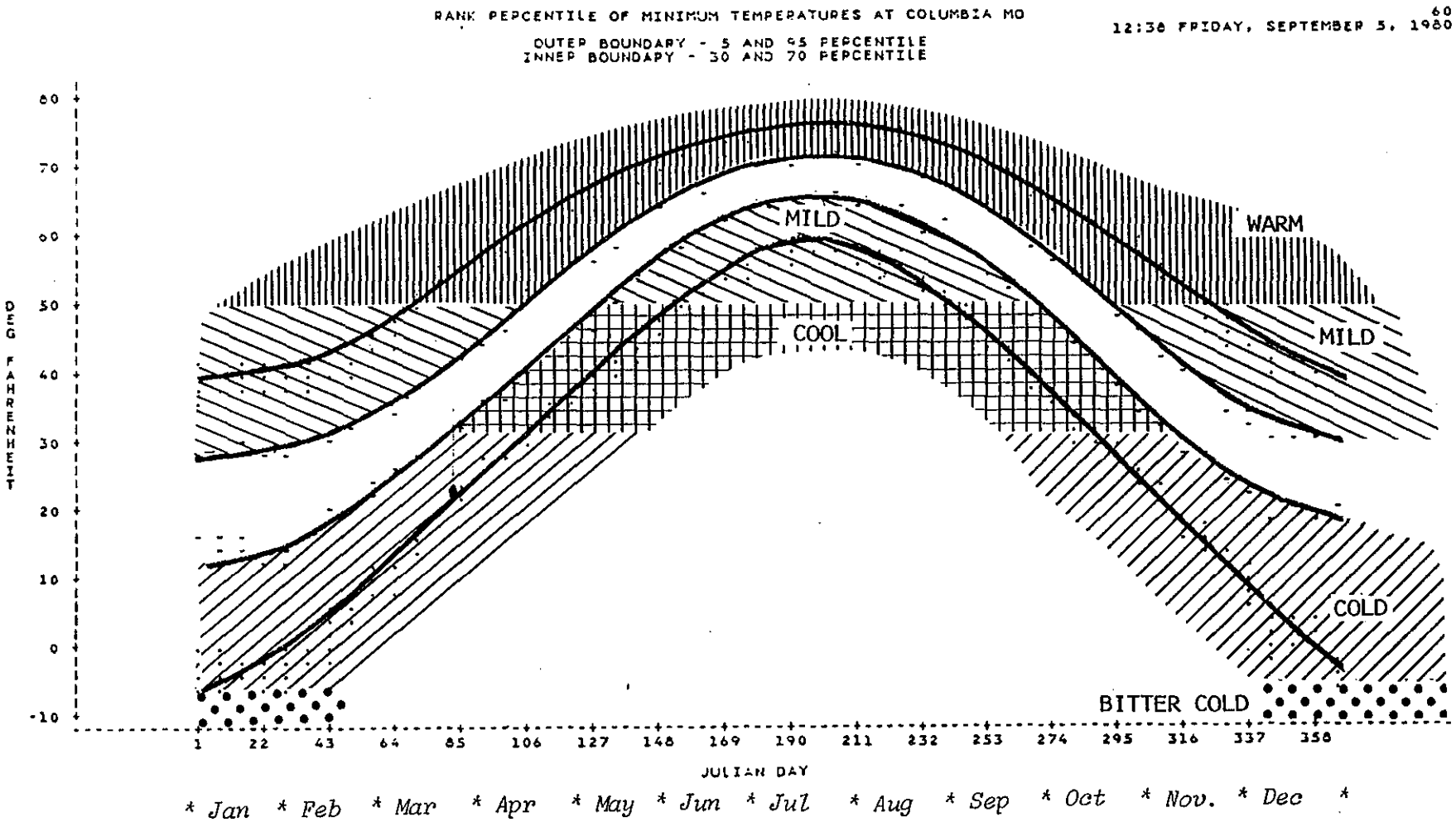

FIGURE 4
MINIMUM TEMPERATURE ADJECTIVES

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(continued from front inside cover)

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