Statistical Analysis of Climatological Data to Characterize Erosion Potential: 1. Precipitation Events in Western Oregon



Special Report 686

Agricultural Experiment Station Oregon State University Corvallis, Oregon August 1983



STATISTICAL ANALYSIS OF CLIMATOLOGICAL DATA TO CHARACTERIZE EROSION POTENTIAL: 1. PRECIPITATION EVENTS IN WESTERN OREGON

> Barbara G. Brown Jonathan D. Istok Richard W. Katz Allan H. Murphy

AUTHORS: Barbara G. Brown, Richard W. Katz, and Allan H. Murphy are members of the Department of Atmospheric Sciences. Jonathan D. Istok is a member of the Department of Soil Science, Oregon State University, Corvallis. ABSTRACT

Periods of precipitation with certain combinations of characteristics (e.g., high intensity rainfall on saturated soil) can lead to appreciable soil loss in western Oregon. In order to assign realistic probabilities to the occurrence of these periods for use in predicting long-term erosion rates, a soil erosion-specific definition of a precipitation event is applied to more than 31 years of hourly wet season precipitation data from Portland, Salem, and Eugene, Oregon. The values of mine characteristics (duration, magnitude, average intensity, maximum intensity, hours between events, and four measures of antecedent rainfall) that are associated with each event are examined.

The statistical analysis of the precipitation event characteristics includes consideration of the marginal distributions and order and return statistics of the individual characteristics as well as joint and conditional distributions of several pairs of characteristics. The order and return statistics provide information about extreme values of individual characteristics, whereas the probabilities of occurrence of some combinations of characteristics are estimated by the joint distributions. Examination of the conditional distributions suggests the types of relationships that exist among the characteristics. The results of these analyses provide general information regarding the types of precipitation events that occur in western Oregon as well as estimates of specific probabilities that are important in the modeling and forecasting of soil erosion in this region.

ACKNOWLEDGMENTS

The development of a computer-accessible precipitation data base was a prerequisite for the research described in this report. The difficult and painstaking task of developing the data base was carried out by Bruce A. Peterson. His contribution is gratefully acknowledged.

The authors also would like to thank Dr. Moyle Harward, Professor Emeritus of Soil Science, Oregon State University, for his role in initiating this study, and Dr. Larry Boersma, Professor of Soil Science, Oregon State University, for his general direction and continuing support of this research.

This study was supported by funds provided by the STEEP (Solutions to Environmental and Economic Problems) program and by the Oregon Agricultural Experiment Station. STEEP is administered by the Science and Education Administration, Cooperative Research, United States Department of Agriculture.

CONTENTS

<u>Sec</u>	tion Number and <u>Title</u>	Page
	CONTENTS	i
	FIGURES	iii
	TABLES	vii
1.	INTRODUCTION , ,	1
2.	PRECIPITATION DATA	4
3.	SELECTION OF PRECIPITATION EVENT DEFINITION3.1 Background3.2 Analysis of the Precipitation Redord3.3 Evaluation of the Hydrologic Response to Precipitation	5 5 7 16
4.	ANALYSIS APPROACH	23
5.	MARGINAL DISTRIBUTIONS OF PRECIPITATION EVENT CHARACTERISTICS5.1 Duration5.2 Magnitude5.3 Average Intensity5.4 Maximum Intensity5.5 Hours Between Events5.6 Antecedent Rainfall	25 28 30 33 40 44 44
6.	JOINT DISTRIBUTIONS OF PRECIPITATION EVENT CHARACTERISTICS 6.1 Magnitude and Antecedent Rainfall 6.2 Average Intensity and Antecedent Rainfall 6.3 Average Intensity and Duration 6.4 Maximum Intensity and Antecedent Rainfall 6.5 Maximum Intensity and Duration 6.6 Maximum Intensity and Magnitude	52 53 55 57 57 60 60
7.	CONDITIONAL DISTRIBUTIONS OF PRECIPITATION EVENT CHARACTERISTICS	64 66 68 70 70 70

CONTENTS (continued)

Sec	ction Number and Title	Page
8.	SUMMARY AND CONCLUSIONS	75
	REFERENCES	77
	<pre>APPENDICES Table of Contents A. Data Base Description B. Order Statistics C. Return Statistics D. Joint Distributions of Precipitation Event Characteristics E. Conditional Distributions of Precipitation Event Characteristics .</pre>	79 79 83 85 141 223 269

FIGURES

Number	<u>Title</u>	Page
1	Schematic example of the application of a precipitation event definition with maximum intensity (I_m) and separation time (S_t) as the control variables. See text for further explanation	9
2	Illustration of the calculation of five precipitation event characteristics for the events in Figure 1 defined using $S_t = 6$ hours and $I_m = 0.01$ in/hr	11
3	Exceedance probabilities for the values of the precipita- tion event characteristics at Salem computed using several different event definitions. The results for events de- fined using five values of S_t (1,2,6,12, and 24 hours) are shown in each graph. The characteristics and values of I_m for each of the graphs are (a) magnitude (I_m =0.01 in/hr); (b) magnitude (I_m =0.03 in/hr); (c) duration (I_m =0.01 in/hr); (d) duration (I_m =0.03 in/hr); (e) maxi- mum intensity (I_m =0.01 in/hr); and (f) maximum intensity (I_m =0.03 in/hr).	13
4	Box plots of duration for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events	26
5	Duration order statistics at Portland, Salem, and Eugene	29
6	Duration return statistics at Portland, Salem, and Eugene	31
7	Box plots of magnitude for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events	32
8	Magnitude order statistics at Portland, Salem, and Eugene	34
9	Magnitude return statistics at Portland, Salem, and Eugene	35
10	Box plots of average intensity for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events	36

FIGURES (continued)

Number	<u>Title</u>	Page
11	Average intensity order statistics at Portland, Salem, and Eugene	38
12	Average intensity return statistics at Portland, Salem, and Eugene	39
13	Box plots of maximum intensity for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events	41
14	Maximum intensity order statistics at Portland, Salem, and Eugene	42
15	Maximum intensity return statistics at Portland, Salem, and Eugene	43
16	Box plots of hours between events for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events	45
17	Box plots of magnitude for previous 12 hours (MAG12) for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events	47
18	Box plots of magnitude for previous 48 hours (MAG48) for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events	48
19	Box plots of magnitude for previous 168 hours (MAG168) for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events	49
20	Box plots of magnitude for year prior to event (YRMAG) for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events	51
21	Quantile values of the conditional distributions of mag- nitude given duration, at Salem	65
22	Quantile values of the conditional distributions of average intensity given duration, at Salem	67
23	Quantile values of the conditional distributions of average intensity given magnitude, at Salem. Only every second point is plotted	69

FIGURES (continued)

Number		<u>Title</u>		Page
24	Quantile values of t average intensity gi	the conditional dist iven maximum intensi	ributions of ty, at Salem	• • 71
25	Quantile values of t maximum intensity gi	the conditional distriven duration, at Sa	ributions of lem	•• 72
26	Quantile values of t maximum intensity gi every second point i	the conditional distriven magnitude, at Sa s plotted	ributions of alem. Only	73

v



TABLES

Number	<u>Title</u>	Page
1	Definitions of calculated characteristics of precipi- tation events	10
2	Computed values of ID for several characteristic depths of surface storage (D) for four of the experimental watersheds	18
3	Time-to-peak (T_p) , recession time (T_r) , and time-of-concen- tration (T_c) calculated from flow records and watershed characteristics. Time for water table decline (WT) was calculated from well records	20
4	Joint frequency distribution of magnitude and magnitude for previous 168 hours (MAG168) at Salem. The top number in each entry is the joint frequency and the lower number is the joint relative frequency (n=3500)	54
5	Joint frequency distribution of average intensity and magnitude for previous 168 hours (MAG168) at Salem. The top number in each entry is the joint frequency and the lower number is the joint relative frequency (n=3500)	56
6	Joint frequency distribution of average intensity and duration at Salem. The top number in each entry is the joint frequency and the lower number is the joint rela- tive frequency (n=3500)	58
7	Joint frequency distribution of maximum intensity and magnitude for previous 168 hours (MAG168) at Salem. The top number in each entry is the joint frequency and the lower number is the joint relative frequency (n=3500)	59
8	Joint frequency distribution of maximum intensity and duration at Salem. The top number in each entry is the joint frequency and the lower number is the joint rela- tive frequency (n=3500)	61
9	Joint frequency distribution of maximum intensity and magnitude at Salem. The top number in each entry is the joint frequency and the lower number is the joint rela- tive frequency (n=3500)	62
	이 같은 것 같은	

STATISTICAL ANALYSIS OF CLIMATOLOGICAL DATA TO CHARACTERIZE EROSION POTENTIAL: . PRECIPITATION EVENTS IN WESTERN OREGON

Barbara G. Brown, Jonathan D. Istok, Richard W. Katz, and Allan H. Murphy

1. INTRODUCTION

Measurements conducted over a five-year period on small agricultural watersheds have identified several combinations of rainfall characteristics, soil temperature, and soil moisture status that control the timing and amount of soil loss in western Oregon (Harward <u>et al.</u>, 1980). Two examples of such combinations of factors are (a) a rainfall of high intensity and (b) rainfall which occurs when the soil is frozen or saturated from previous rains. To assign realistic probabilities to the occurrence of these conditions, it is first necessary to identify them in the available longterm climatic records. The interpretation of short-term erosion measurements and of comparisons between experimental sites can be enhanced by such analyses.

A cooperative research project was initiated in 1980 between the Departments of Soil Science and Atmospheric Sciences at Oregon State University. The project has three primary objectives:

- (a) To determine the combinations of rainfall characteristics, antecedent soil water status, and occurrence of frozen soil which result in soil loss;
- (b) To utilize statistical techniques to identify critical conditions in the long-term climatic records; and
- (c) To obtain the probabilities of occurrence of some weather events that are important with regard to soil erosion, particularly those events that represent the combined effects of high rainfall intensity, soil saturation, and freezing air temperatures.

The purpose of this report is to summarize the results of analyses of long-term precipitation records for three stations (Portland, Salem, and Eugene) in western Oregon. Similar analyses of precipitation events at two eastern Oregon and Washington stations (Pendleton, Oregon, and Walla Walla, Washington) will be summarized in a separate report. Evaluations of freezing temperature events and the characteristics of joint precipitation and freezing temperature events at the five stations will be presented in future reports.

The approach that has been taken in the study of precipitation records has been to first expend considerable effort in selecting a definition of a precipitation event that is compatible with soil hydrologic processes. Once this definition was chosen, the probabilities of occurrence of events that have significant effects on soil erosion could easily be determined from a record of such events. Furthermore, the characteristics of such events could be examined and related to one another. These evaluations provide useful information regarding the types of precipitation events that are observed in western Oregon and the frequency of occurrence of extreme events.

The report consists of eight sections and five appendices. Section 2 contains a brief description of the precipitation data base. A thorough discussion of the analyses undertaken in the process of selecting an appropriate precipitation event definition is presented in Section 3 and the approach taken in the analysis of the precipitation event data is outlined in Section 4. Section 5 contains a description of the marginal distributions of several precipitation event characteristics as well as of the return statistics for the characteristics and the order statistics for extreme values of the characteristics. Joint and conditional distributions of important combinations of event characteristics are described in Sections 6 and 7, respectively, and a summary of the results and analyses is presented in Section 8. A large amount

of time was devoted to the development of a computer-accessible precipitation event data base; this data base is described in Appendix A. Many of the results of the study are presented in tabular form in the remaining appendices. These results are quite extensive but are provided in this report in the hope that they may serve as a useful reference in the future.

2. PRECIPITATION DATA

The basic precipitation data consist of hourly values of precipitation amount for three National Weather Service (NWS) stations in Oregon: (a) Portland, (b) Salem, and (c) Eugene. The period of record for which data are available is approximately 31½ years at each station, from mid-1948 to December 31, 1979. The resolution of the hourly precipitation values is to the nearest hundredth of an inch, with a minimum value of 0.01 inches. Because of the importance of winter rainfall to hydrologic processes in fall-planted western Oregon lands, the data used in all of the analyses described in this report were restricted to the wet season (October to May). These data were obtained from the National Climatic Center (NCC) in a standard NCC tape format.

As part of the analysis, described in Sections 3 and 4, a new "precipitation event" data base was formed for each station. This step was accomplished by combining the hourly data using a specific definition of a precipitation event. A more complete description of the data and how the data may be accessed is presented in Appendix A.

3. SELECTION OF PRECIPITATION EVENT DEFINITION

3.1 Background

Precipitation data are usually collected and reported as a chronological series of rainfall magnitudes observed for time periods such as hours or days. However, for many applications, the individual values are not of interest. Instead, a more relevant data set may be a condensed form of the original data, consisting of a series of "precipitation events."

Precipitation events can be defined using a set of threshold values of one or more control variables. For example, we may (hypothetically) only be interested in periods of time (events) during which precipitation is recorded for more than eight consecutive hours; the control variable in this case would be precipitation duration. Control variables are used to isolate and combine portions of the precipitation series into discrete units that represent the events of interest. Some examples of control variables are minimum or maximum rainfall intensity, duration, and magnitude. The choice of control variables should result from a conceptual model of the relevant hydrologic processes. For the purposes of estimating runoff from western Oregon lands it would be desirable in selecting a precipitation event definition to consider some aspects of the response of a soil profile to rainfall.

After the important control variables and their threshold values have been identified, the precipitation record can be analyzed and the events of interest isolated. Associated with each event are several characteristics such as magnitude, duration, and intensity, which can be calculated from the original series of observations. Then the probabilities of occurrence of precipitation events that are relevant for soil erosion may be estimated, for example, by selecting those events that are characterized by certain ranges of magnitude or duration.

This approach has not been commonly used in practice. Instead, probability estimates of event characteristics for a wide range of hydrologic settings have often been obtained from a single set of magnitude- (or intensity-) duration-frequency relationships developed from rainfall records using a basic event definition. The resulting tables, curves, or empirical equations have then been assumed to represent the frequency distributions of the characteristics of more complex events and have routinely been used in estimating runoff and sediment production for purposes of hydrologic design. An important objection to this approach is that the time required for a soil profile or a watershed to respond to changes in rainfall amount or intensity is not considered. Thus, two precipitation events separated by a small unit of time, say one hour, may have estimated return periods that are very different (Nguyen and Rousselle, 1981) even though the soil may not have had time to adjust its response between the two events. This situation occurs because the infiltration of water held in surface detention and the increase in infiltration capacity as the profile drains are relatively slow processes. On a larger scale, the response of a watershed to sequences of wet and dry periods is primarily controlled by the time required for overland flow to reach the channel margins and by the hydraulic characteristics of the channel.

Because no general procedure is available for identifying a suitable precipitation event definition for use in rainfall-runoff modeling, an initial study was conducted to provide information regarding the type of precipitation event definition that would be most appropriate for this application. The objective of this initial study was to identify a procedure for selecting combinations of control variables and critical values of the variables which would define the precipitation events that are important to the hydrologic processes of runoff and erosion in western

Oregon. This study consisted of two separate investigations. The first of these was an extensive analysis of the 31½-year record of hourly precipitation magnitudes at Salem, Oregon. The second investigation was an evaluation of the results of studies related to the response of hydrologic systems to precipitation events. These studies are discussed in Sections 3.2 and 3.3, respectively.

3.2 Analysis of the Precipitation Record

The analysis of the wet season (October to May) hourly precipitation data for Salem followed two basic steps. First, the precipitation data were combined into precipitation events using several different definitions. Second, some characteristics of the events formulated under different definitions were compared with one another. The results of these comparisons provided an indication of which definitions would be most appropriate with regard to soil erosion applications.

Two control variables were used to divide the continuous $31\frac{1}{2}$ -year precipitation record into precipitation events. These variables are (a) maximum rainfall intensity and (b) separation time (hours between events). Maximum rainfall intensity, I_m , was chosen because of the interaction of rainfall intensity, infiltration rate, and runoff. Separation time, S_t , was chosen because of the importance of antecedent rainfall and the internal drainage of the soil profile in determining the hydrologic response of a watershed to subsequent rainfall events. In this initial study, combinations of three values of I_m (0.01, 0.02, and 0.03 in/hr), and five values of S_t (1, 2, 6, 12, and 24 hours) were used as control variables to divide the record of hourly rainfall values into precipitation events. An event was defined as a series of hours for which (a) the maximum number of consecutive dry hours is less than S_t and (b) the maximum hourly rainfall is greater than or equal to I_m .

Some examples of the implementation of this definition are illustrated in Figure 1. For example, consider the case of $I_m = 0.01$ in/hr and $S_t =$ 1 hour. Utilization of this definition creates nine events in the 90-hour record shown. An increase in the value of S_t results in the combination of some events into one event, whereas an increase in the value of I_m excludes some events.

The event definitions were applied to the Salem hourly precipitation data and several characteristics were calculated for each of the precipitation events defined. These characteristics include the event duration, magnitude, average intensity, hours between events, and maximum intensity. These characteristics are defined as follows: The <u>duration</u> is the length of the event in hours, from the first hour to the last hour. The <u>magnitude</u> is the total amount of precipitation that occurred during the event, summed over all hours. The <u>average intensity</u> is the average rate of precipitation per hour. It should be noted that

magnitude = (average intensity) x (duration).

(1)

<u>Hours between events</u> is the total number of dry hours separating the beginning of the event from the end of the previous event. Note that the value of this variable must be greater than or equal to S_t . Finally, <u>maximum intensity</u> is the maximum rainfall during any one hour within the event. A summary of these definitions is given in Table 1 and an example of the computation of the values of the characteristics is presented in Figure 2.

The analysis of the precipitation event characteristics for each event definition included the estimation of "exceedance probabilities" for the characteristics magnitude, duration, and maximum intensity. An exceedance probability for a particular characteristic is defined as the probability of occurrence of an event for which a specified value of the characteristic



Figure 1. Schematic example of the application of a precipitation event definition with maximum intensity (I_m) and separation time (S_t) as the control variables. See text for further explanation.

Table 1. Definitions of calculated characteristics of precipitation events

 F_k = index of first hour of event k in a given year L_k = index of last hour of event k in a given year p_i = precipitation recorded during hour i in a given year

<u>Variable Name</u>	Definition	<u>Units</u>	Formula
Duration	Length of event from first hour to last.	hrs	$D_{k} = (L_{k}+1) - F_{k}$
Magnitude	Total amount of precipita- tion during the event.	in	M _k = i ^{∑k} p _i F _k p _i
Average Intensity	Average precipitation intensity during the event.	in/hr	$I_k = \frac{M_k}{D_k}$
Hours Between Events	Number of hours separating the event from the previous event.	hrs	$HB_{k} = F_{k} - (L_{k-1}+1)$
Maximum Intensity	Maximum hourly precipitation intensity during the event.	in/hr	$IMAX_{k} = \max \{p_{i}\}$ $F_{k} \leq i \leq L_{k}$ $F_{k} = 1$
Magnitude for Previous 12 Hours	Total amount of precipitation during the 12 hours preceding the event.	in	$M12_{k} = \sum_{i=F_{k}-12}^{F_{k}-1} P_{i}$
Magnitude for Previous 48 Hours	Total amount of precipitation during the 48 hours preceding the event.	in	$M48_{k} = \frac{\sum_{i=F}^{k} P_{i}}{i=F_{k-48}}$
Magnitude for Previous 168 Hours	Total amount of precipitation during the 168 hours preceding the event.	in	$M168_{k} = \sum_{\Sigma}^{F_{k}-1} p_{i}$ i=F_{k}-168
Magnitude for Year Preceding the Event	Total amount of precipitation during the year (wet season) before this event.	in	$MYR_{k} = \sum_{i=1}^{k-1} M_{i}$



Figure 2. Illustration of the calculation of five precipitation event characteristics for the events in Figure 1 defined using $S_t = 6$ hours and $I_m = 0.01$ in/hr.

is exceeded. The estimated values of the exceedance probabilities for precipitation events defined using several values of I_m and S_t are presented in Figure 3. In that figure, the estimated exceedance probabilities for precipitation event magnitude, duration, and maximum intensity are plotted on logarithmic scales. Lines are drawn through the outermost points only.

The results in Figure 3 indicate that the exceedance probabilities for precipitation event magnitude depend only slightly on the value of I_m . However, they depend a great deal on the value of S_t. The estimated probability of occurrence of an event with a magnitude greater than 1.0 inches increases from 2 to 22 percent as S_t increases from 1 to 24 hours (Figures 3a and 3b). Similarly, variations in the value of S_t produce large changes in the estimated exceedance probabilities for precipitation event duration. For example, the length of an event which is exceeded 10 percent of the time is about 1 hour when S_t = 2, whereas it is 20 hours when S_t = 24 (Figures 3c and 3d). The effect of varying S_t on the estimated exceedance probabilities for maximum intensity (Figures 3e and 3f) is quite small. The largest effects of changing the value of I_m are on the maximum intensity curve for S_t = 1, because the probability distribution for maximum intensity strongly depends on whether low intensity events ($I_m = 0.01$ in/hr) are included in the probability calculations. Otherwise, changing $I_{\rm m}$ appears to have little effect.

Clearly the interpretation of precipitation event characteristics such as duration or average rainfall intensity becomes less certain and, at some point, the characteristics become physically meaningless, as S_t increases. In Figure 1, for example, the average intensity for the single event defined using $S_t = 24$ hr is 0.013 in/hr, whereas the average intensity for the nine events defined using $S_t = 1$ and $I_m = 0.01$ in/hr ranges between 0.010 and 0.059 in/hr.



Figure 3. Exceedance probabilities for the values of the precipitation event characteristics at Salem computed using several different event definitions. The results for events defined using five values of S_t (1,2,6,12, and 24 hours) are shown in each graph. The characteristics and values of I_m for each of the graphs are (a) magnitude (I_m =0.01 in/hr); (b) magnitude (I_m =0.03 in/hr); (c) duration (I_m =0.01 in/hr); (d) duration (I_m =0.03 in/hr); (e) maximum intensity (I_m =0.01 in/hr); and (f) maximum intensity (I_m =0.03 in/hr).











3.3 Evaluation of the Hydrologic Response to Precipitation

An alternative approach to the selection of S_t is to consider the way in which hydrologic systems respond to precipitation events. In particular, consider the following simplified description of rainfall-runoff relationships on a small watershed. As rain falls, it is divided among several segments of the hydrologic system: channel precipitation, interception by vegetation, infiltration into the soil, and temporary detention in surface depressions. Overland flow occurs when the net rate of rainfall exceeds the infiltration rate for a sufficient length of time so that the detention storage of the soil is exceeded. Maximum runoff occurs (for a rainfall of uniform intensity) when all portions of the watershed are contributing to channel flow. After the termination of rainfall, runoff and overland flow continue for awhile as surface and channel storage are depleted. Evapotranspiration is active and infiltration continues, eventually reducing surface detention to zero. Soil water in the unsaturated zone reaches the water tables and stream channels causing an initial increase and then a gradual decrease in water table levels. As the water table declines, the infiltration capacity of the soil is increased. This process will progress further before the next precipitation event and the watershed will be closer to the conditions that existed before the event if the time between events is relatively large rather than small.

The combined effects outlined above could be described as the watershed's "memory" of the rainfall event. In this sense, the time separating precipitation events could be considered to be the amount of time the system has had to "recover" from the effects of a rainfall "pulse." If the recovery time for a watershed could be uniquely determined, then that time could be used, on a physical basis, as the value of the control variable St in the precipitation event definition. Intuitively, it seems that precipitation events defined in this manner may have occurrence probabilities that would more closely

represent the occurrence probabilities of runoff events because some hydrologic measure has been included in the event definition. To explore this possibility, five infiltration, overland flow, and soil drainage indices were calculated to provide estimates of St. The necessary field data were obtained from records for five agricultural watersheds in western Oregon (Harward <u>et al.</u>, 1980).

One estimate of S_t is the amount of time required for the infiltration of water held in surface detention (ID). Surface detention can be characterized by the average depth of small depressions (Gayle and Skaggs, 1978). The range in calculated values of ID for four of the five watersheds, based on several characteristic depths of surface detention (D) is from 0.04 to 6.3 hours (Table 2). When D is small, most of the surface water is available for runoff and when rainfall ceases, surface detention is reduced to zero fairly quickly. When D is large, some of the surface water is stored before runoff begins and a longer period of time is required to return surface storage to its initially higher level when rainfall ceases. By defining events using a value of S_t that is greater than ID, it would be possible to ensure that surface storage on a watershed at the start of an event is similar for all events in the record.

A second set of estimates of S_t was obtained from hydrograph analysis. Time-to-peak, recession time, and time-of-concentration were calculated from flow records and watershed characteristics. These three variables collectively describe a few components of the complex response of a watershed to a precipitation event. Time-of-concentration (T_c) represents the time required for the surface runoff from the most remote part of the drainage basin to reach the watershed outlet. If two runoff-producing precipitation events were to occur less than T_c apart, the response of the watershed to

		ID	
D	$Infiltrometer^{\dagger}$	Small plots [†]	Field Observations‡
-1387-		hrs	• • • • • • • • • • • • •
2.5	0.04	0.42	0.10
10.0	0.16	1.6	0.39
25.0	0.38	4.2	0.98
2.5	0.04	0.63	0.16
10.0	0.16	2.5	0.63
25.0	0.40	6.3	1.6
2.5	0.04	0.63	0.16
10.0	0.16	2.5	0.63
25.0	0.40	6.3	1.6
2.5	0.04	0.42	0.10
10.0	0.18	1.6	0.39
25.0	0.44	4.2	0.98
	D -mm- 2.5 10.0 25.0 2.5 10.0 25.0 2.5 10.0 25.0 2.5 10.0 25.0	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

Table 2. Computed values of ID for several characteristic depths of surface storage (D) for four of the experimental watersheds

[†]Data from Harward <u>et al.</u>, 1980.

[‡]Based on unpublished field data from Department of Soil Science, Oregon State University. the second event would be different than its response to the first event. This is because the initial hydraulic characteristics of the channel would be different at the beginning of the two events. This effect is best illustrated by a few calculations using a form of Manning's equation. The relative effects of hydraulic radius and Manning's friction factor on T_c can be seen in Table 3. Estimated values of T_c at the five watersheds range between 0.01 and 0.31 hours. By defining precipitation events using a value of S_t that is greater than T_c , it is possible to ensure that any overland flow generated by the previous event has reached the channel outlet or has been temporarily stored in surface depressions. For a given watershed, the shape of the hydrographs for precipitation events defined using a separation time of S_t would depend on whether T_c were greater or less than S_t .

Time-to-peak (T_p) is defined as the length of time between the centroid of the hyetograph and the peak discharge at the watershed outlet. Recession time (T_r) is defined as the length of time between peak discharge and the cessation of direct runoff. Calculated mean values of ${\rm T}_p$ and ${\rm T}_r$ for the five watersheds range between 2 and 7 and 4 and 10 hours, respectively (Table 3). The physical interpretation of T_p and T_r is not entirely clear because they result from the interaction of watershed characteristics and the time distribution of rainfall during a storm. However, these parameters are useful for obtaining estimates of the time required for small watersheds to respond to changes in rainfall intensity. For example, consider the data from watershed If the rainfall record were divided into precipitation events using a 4. value of S_t that was less than 5 hours, then the watershed discharge would still be increasing (because of rainfall from a previous event) at the beginning of many of the events. Similarly, if a value less than 3 hours were chosen for S_t , then the watershed discharge at the beginning of many

<u>.</u>		Channel	Average	Hydraulic	Manning's							WT [§]
Watershed	Area	length L	channel slope, S	radius R	friction factor, n	T _c ⁺	Ţ _r ‡	^o T _r	Τ _P	σт _р	U	D
<u></u>	ha	m	m/m	m					-hrs			
1	0.5	125	0.061	0.06	0.01 0.03	0.009	4.7	1.5	2.0	1.0	9	19
				0.03	0.01 0.03	0.015 0.044						
2	1.4	170	0.037	0.08	0.01 0.03	0.013	6.5	3.7	6.3	4.6	6	70
				0.04	0.01 0.03	0.021 0.063						
3	2.4	205	0.037	0.16	0.01 0.03	0.010 0.030	5.9	2.8	5.0	4.0	5	51
		an An an Anna An An Anna An		0.08	0.01 0.03	0.016 0.048						
4	6.0	450	0.037	0.14	0.01 0.03	0.024 0.072	4.6	4.7	2.8	2.6	9	69
				0.07	0.01 0.03	0.038 0.115						
5	285.0)	2560	0.031	0.50	0.01 0.03	0.065 0.192	9.5	7.5	7.1	3.5		
				0.25	0.01 0.03	0.102 0.305						
$\overline{T}_{c} = \frac{L}{P^{2/3}}$.n 5_1/2 (sec	conds)						<u>, , , , , , , , , , , , , , , , , , , </u>				
i N	•							1. A.				

Table 3. Time-to-peak (T_p) , recession time (T_r) , and time-of-concentration (T_c) calculated from flow records and watershed characteristics. Time for water table decline (WT) was calculated from well records.

 \ddagger_{T} and \overline{T}_{p} are the arithmetic mean values of T_{r} and T_{p} , and σ_{T}_{r} and σ_{T}_{p} are the standard deviations of T_{r} and T_{p} , respectively.

[§]U and D are the arithmetic mean values of WT for wells located in upslope and toeslope positions, respectively.

events would still contain a component of direct runoff resulting from the previous precipitation event.

A final class of estimates of S_t was developed from measured rates of water table decline for shallow (1.5 m depth) wells located on watersheds 1, 2, 3, and 4. The available data were classified by two slope positions, U and D, which were located in upper and lower landscape positions, respectively. The time necessary for the water table to fall 25 cm following the end of a rainfall event is designated WT. The significance of this variable is that it indicates the rate of internal drainage and hence the rate of increase in infiltration capacity of the soil after a precipitation event. If a value of S_t that is much smaller than WT were used in the precipitation event definition, then events which occur in midwinter when these soils are wet would arrive so closely in time that the soil would not have time to recover the infiltration capacity that existed before the previous storm. Calculated values of WT for the lower slope positions at the four watersheds range between 20 and 70 hours (Table 3). These times are greater than the values for the upper slope positions. This is because the channel margins of these watersheds are wide and relatively flat which allows a greater amount of surface storage. If we wished to have the infiltration capacity increase between two rainfall events (resulting from a falling water table), it would be appropriate to choose ${\rm S}_{\rm t}$ in the range of 20 to 70 hours for watersheds of this size. Selecting a value of $S_t \cong WT$ would be a reasonable approach to characterizing precipitation in regions where poor soil drainage or subsurface stormflow (also called interflow) have large impacts on runoff production.

In summary, runoff may result from short bursts of high intensity rainfall, prolonged low intensity rain, rainfall when the soil is saturated from a previous storm, and combinations of these and other conditions. The critical factor in several cases is the time response of the watershed, a factor which

is controlled by the surface storage, infiltration, and drainage characteristics of the soil as well as by the geometry of the watershed and the hydraulic properties of the channel. Based on the information in Tables 2 and 3, a separation time, S_t , of 6 hours was chosen for use in the definition of the precipitation events described in the remainder of this report. Because the value of I_m did not have a major influence on the distributions of the precipitation event characteristics (except for maximum intensity), a value of 0.01 in/hr was assigned to I_m .

4. ANALYSIS APPROACH

Precipitation event data bases were created for each of the three stations, Portland, Salem, and Eugene, using the definition of a precipitation event selected in Section 3.3. That is, for each station, precipitation events were formulated by grouping together each series of hours for which the maximum number of consecutive dry hours was less than six. The application of this definition ($I_m = 0.01$ in/hr, $S_t = 6$ hours) is demonstrated in Figure 1. The precipitation event data bases consist of all of the precipitation events satisfying the event definition that occurred within the $31\frac{1}{2}$ -year series of hourly precipitation magnitudes described in Section 2. This resulted in a total of 3645 events at Portland, 3500 at Salem, and 3154 at Eugene.

Several characteristics associated with each precipitation event were calculated from the hourly precipitation amounts. These precipitation event characteristics are listed and defined in Table 1 and an example of the computation of the values of five of the characteristics is presented in Figure 2. Several of the characteristics listed in Table 1 were not considered during the process of selecting a precipitation event definition. These additional characteristics are the precipitation magnitudes for the 12, 48, and 168 hours prior to the beginning of the event and the total precipitation magnitude over all hours in the wet season prior to the beginning of the event. These characteristics were computed as measures of antecedent rainfall and of the amount of moisture in the soil at the beginning of an event. As such, they can be useful in estimating the range in amounts or types of soil loss expected with events of varying duration, intensity, or magnitude, associated with particular levels of antecedent rainfall. Several types of analyses were applied to the precipitation event data. First, the marginal frequency distribution of each characteristic at each site was examined. Also, the extreme events and return statistics for each characteristic were computed. Next, the frequency distributions of combinations of characteristics (joint distributions) were evaluated to provide estimates of the probabilities of occurrence of some significant events (e.g., the probability of a high intensity precipitation event being preceded by a large amount of precipitation in the past 48 hours). Finally, the conditional distributions of some pairs of characteristics (e.g., average intensity given duration) were examined to investigate the existence of relationships between some characteristics. These analyses are described in Sections 5, 6, and 7.

5. MARGINAL DISTRIBUTIONS OF PRECIPITATION EVENT CHARACTERISTICS

The distributions of the individual precipitation event characteristics are described in this section in terms of (a) marginal empirical frequency distributions; (b) order statistics, or extreme values; and (c) return statistics. Useful information may be obtained from the examination of each of these summaries. For example, the marginal distributions provide general descriptions of the distributional properties of the characteristics, and the order statistics allow estimation of the values of characteristics of the extreme events expected in a 31-year period.

The marginal distributions of the precipitation event characteristics are summarized using diagrams known as box plots (Tukey, 1977). These diagrams provide a simple and useful way of displaying and comparing distributional data. Each point on a box plot represents a particular quantile value of interest. An example showing three box plots (the distributions of duration at Portland, Salem, and Eugene, Oregon) is given in Figure 4. As illustrated in this figure, a box surrounds the region from the lower quartile (the 0.25th quantile) to the upper quartile (the 0.75th quantile), the region which contains the middle half of the observations. The length of this region (the interquartile range) provides an estimate of the variability of the characteristic. The line extending from the upper end of each box represents the upper tail of the distribution and, in this case, contains points marking the 0.90th and 0.99th quantile values (the values of some different quantiles may be presented for other characteristics). Typically, lines also would extend from the bottoms of the boxes, depicting the lower tails of the distributions. However, in this case the distributions are quite positively skewed so that the lower tails are very short and are barely distinguishable from the boxes.



Figure 4. Box plots of duration for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.
Another way of describing the distributions of precipitation event characteristics is through the order statistics; that is, the values of the characteristic resequenced from largest to smallest (smallest to largest in the case of hours between events). These statistics can be used to obtain estimates of the extreme values of precipitation event characteristics that could be expected to occur in a 31-year (rounded from 31_{2} -year) period. The values of the characteristics of the most intense, longest lasting, and highest magnitude precipitation events are often of the most interest for soil erosion applications.

The numbers and types of extreme events that can be expected to occur in a given year, as opposed to the 31-year extreme events estimated by the order statistics, are also of interest. These extreme events can be estimated using return statistics. The return statistics for a given precipitation event characteristic are the values of that characteristic that could be expected to occur once, twice, or more often in a given year. Estimation of the return statistics for a particular precipitation event characteristic is accomplished by ordering the events from largest to smallest according to the value of the characteristic (smallest to largest for hours between events) and then listing the characteristics of every 31st event.

The marginal distributions, order statistics, and return statistics for each of the nine precipitation event characteristics at Portland, Salem, and Eugene, Oregon, are described in the following subsections. Because of the large number of tables required for the presentation of the order statistics and return statistics, these tables are located in Appendices B and C,

respectively. The lists of order statistics in Appendix B include the values of all of the characteristics of the events associated with the 100 largest values of a given characteristic, for all characteristics and stations. All of the return statistics for all of the characteristics and stations are listed in Appendix C.

5.1 Duration

The marginal distributions of precipitation event duration at Portland, Salem, and Eugene are illustrated in Figure 4. As shown in this figure, the box plots of duration for the three stations are quite similar. The shapes of the box plots indicate that the distributions are positively skewed, with heavy upper tails. That is, there were a few events at each station that lasted many hours whereas the majority of the events were of fairly short duration. The boxes enclose the region from 2 hours to 14 or 15 hours. Hence, 25 percent of the events lasted 2 hours or less, while 50 percent lasted between 2 and 14 or 15 hours. Only 25 percent lasted longer than 14 or 15 hours.

The duration order statistics are shown graphically in Figure 5. The values displayed in this figure are the durations of the 100 longest-lasting precipitation events at each station. The curves for the three stations in Figure 5 are quite similar to one another, except that the curve for Portland is somewhat below the curves for the other stations. The first order statistic at each station is quite large. However, the values of the following few order statistics rapidly decrease from this value until about the 15th statistic. At that point, the rate of decrease stabilizes and there is a more gradual decline in the value of duration for the subsequent order statistics. A complete listing of the first 100 duration order statistics is presented in Appendix B. The tables in that appendix contain all of the precipitation event characteristics associated with each of the 100 longest-lasting events.



Figure 5. Duration order statistics at Portland, Salem, and Eugene.

Figure 6 presents the first 100 duration return statistics for Portland, Salem, and Eugene. These are the 31st, 62nd, 93rd, etc., largest duration values at the three stations. The first statistic is the duration of an event expected to occur once a year, the second is the duration of an event expected to occur twice a year, ..., and the 100th statistic is the duration of an event expected to occur 100 times per year. Again, the curves for the three stations are quite similar. As was suggested by the box plots, there are a few very large values of duration, but most of the duration return statistics are in a fairly narrow range of smaller values. All of the values beyond the tenth return statistic are less than 25 hours, whereas the first ten statistics range up to nearly 70 hours. A complete listing of the characteristics of the events associated with all of the duration return statistics is presented in Appendix C.

5.2 Magnitude

The box plots representing the distributions of precipitation event magnitude at Portland, Salem, and Eugene are displayed in Figure 7. As was the case for the distributions of duration, these distributions are positively skewed, with relatively few very large magnitude values and relatively many small values. Although the general shapes of the three box plots are similar, there are several differences among them. First, the length of the box increases from Portland to Salem and from Salem to Eugene. This result is due to increasing values of the upper quartiles at the three sites. Similarly, the value of the 0.90th quantile increases from Portland to Salem and from Salem to Eugene. In general, the distribution of magnitude at Eugene appears to have a greater "spread" than the distributions at Portland and Salem.



Figure 6. Duration return statistics at Portland, Salem, and Eugene.

ω



Figure 7. Box plots of magnitude for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.

The magnitude order and return statistics are shown graphically in Figures 8 and 9. The curves displayed in these figures exhibit the same basic behavior as the curves for the duration order and return statistics (Figures 5 and 6). That is, after a few very large values for the first statistics and a sharp decline at the beginning, the curves level off or stabilize into trends with gradual downward slopes. Some of the differences among the marginal distributions of magnitude at the three stations are demonstrated by the curves of order statistics. For example, the values of the magnitude order statistics at Eugene are larger than the corresponding values at Salem, which are also larger than the corresponding values at Portland.

A complete list of the magnitude order statistics is presented in Appendix B and the return statistics are listed in Appendix C. Additional information regarding the magnitude values of extreme precipitation events ranked on the values of duration, average intensity, or other characteristics, may be obtained directly from the order statistics for those characteristics, which are also presented in Appendix B. Furthermore, the joint frequencies of occurrence of various combinations of values of magnitude and other precipitation event characteristics are presented and discussed in Section 6.

5.3 Average Intensity

Figure 10 contains the box plots depicting the marginal distributions of average intensity at Portland, Salem, and Eugene. These distributions are positively skewed, as were the distributions of duration and magnitude. However, the skewness of the average intensity distributions is not as extreme as it was for the other two characteristics since the regions below the boxes (which contain 25 percent of the observed values) cover a reasonable portion of the range of possible average intensity values. The positively skewed nature of





Figure 9. Magnitude return statistics at Portland, Salem, and Eugene.

з З



the distributions indicates that some precipitation events can be expected to have very large values of average intensity but that low intensity events can be expected most frequently. Also note that the length of the box for the Eugene distribution is greater than the lengths of the boxes for the distributions at Portland and Salem. As was the case for the distributions of magnitude, the Eugene distribution of average intensity apparently has greater spread than the distributions at the other stations.

Figures 11 and 12 present plots of the first 100 average intensity order and return statistics. The curves in these figures have the same shapes as the order and return statistic curves for the characteristics duration and magnitude. As would be expected based on the box plots (Figure 10), the curve of the average intensity order statistics at Eugene is above the curves for the other two stations. This ordering also holds for the first 50 return statistics.

There are several potential applications of the information presented in this section regarding the precipitation event characteristic average intensity, a characteristic which is used to describe the time distribution of rainfall during a precipitation event. For example, by comparing the statistical distributions of average intensity with a measured value of soil infiltration rate, it is possible to estimate the probability of infiltration being exceeded. This can be accomplished using the return statistics of average intensity listed in Appendix C. Furthermore, the difference between the average intensity for a precipitation event and the infiltration rate of a soil is a measure of the rate of runoff production. When this information is combined with the magnitude of an event, then the rainfall excess (i.e., the amount of rainfall that can move downslope as runoff) can be calculated. The rainfall excess for extreme events can be estimated using the tables of order statistics for magnitude (presented in Appendix B), which also contain the values of average intensity and other



Figure 11. Average intensity order statistics at Portland, Salem, and Eugene.



Figure 12. Average intensity return statistics at Portland, Salem, and Eugene.

precipitation event characteristics for the extreme events. The probability of occurrence of precipitation events with particular amounts of rainfall excess can be obtained from the tables of the joint frequency distributions of magnitude and average intensity which are discussed in Section 6 and presented in Appendix D.

5.4 Maximum Intensity

The box plots of the distributions of maximum intensity at Portland, Salem, and Eugene are displayed in Figure 13. As is demonstrated by these plots, the distributions of maximum intensity are very skewed. The plots indicate that at least 25 percent of the events at each station had a maximum intensity of only 0.01 in/hr (the 0.25th quantile value) whereas 1 percent of the events at Eugene had a maximum intensity that was greater than or equal to 0.40 in/hr (the 0.99th quantile value). In fact, the maximum intensity values ranged as high as 0.90 in/hr at Portland (Figure 14). The box plots at the three stations have similar shapes but dissimilar sizes. The box for the Eugene distribution is larger than the box for the Salem distribution, which also is larger than the box for the Portland distribution. This is true of the lengths of the upper tails as well.

The curves of maximum intensity order and return statistics are shown in Figures 14 and 15. In general, the shapes of these curves are similar to the shapes of the curves for the other precipitation event characteristics. One exception is that the values of the first few order statistics for Salem and Eugene do not decline rapidly. Instead, the early trends are gradual. The order statistic curve for Eugene is above the curves for Portland and Salem, as is the curve for the first 50 return statistics at Eugene. Appendix B contains tables of the maximum intensity order statistics. The maximum intensity return statistics are listed in Appendix C.



Figure 13. Box plots of maximum intensity for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.



Figure 14. Maximum intensity order statistics at Portland, Salem, and Eugene.



Figure 15. Maximum intensity return statistics at Portland, Salem, and Eugene.

5.5 Hours Between Events

The precipitation event characteristic hours between events (separation time) measures the amount of time that has elapsed since the end of the previous event. As discussed in Section 3, this characteristic provides some information about the extent to which changes in soil and watershed properties have progressed since the last occurrence of precipitation. For this reason, hours between events is more useful when it is considered in conjunction with other precipitation event characteristics. For example, hours between events could be used in a scheme to classify extreme events ranked by magnitude (Appendix B).

The box plots of hours between events for Portland, Salem, and Eugene are shown in Figure 16. The plots for the three stations are quite similar to one another in that all three distributions are very skewed. This indicates that most (about 75 percent) of the wet season precipitation events in western Oregon are separated by less than 50 hours. However, a few (25 percent) are separated by longer periods of time, including some events that have very large separation times.

Figures displaying the order and return statistics of hours between events are not included here. However, the order statistics are fully listed in Appendix B. The return statistics of hours between events are presented in Appendix C.

5.6 Antecedent Rainfall

Because several interacting factors that vary with time have an effect on watershed runoff, it is generally not satisfactory to simply use precipitation magnitude as a predictor of the runoff produced by individual precipitation events. However, runoff estimates can often be improved by considering additional influencing factors such as rainfall intensity, initial soil moisture conditions, and the time of year. The soil moisture condition exisiting at



Figure 16. Box plots of hours between events for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.

the start of a precipitation event has been shown to be an important factor in controlling runoff from western Oregon lands (Lowery <u>et al.</u>, 1982). Although it is not possible to determine the initial soil moisture condition directly from historical precipitation records, this factor can be represented in the analysis of precipitation events in the form of characteristics which can be computed from the historical data.

In this study, four characteristics were defined as measures of initial soil moisture. These characteristics, all measures of antecedent rainfall, are (a) precipitation magnitude for the previous 12 hours (MAG12); (b) precipitation magnitude for the previous 48 hours (MAG48); (c) precipitation magnitude for the previous 168 hours (MAG168); and (d) the total amount of precipitation for the portion of the year (wet season) before the beginning of the event (YRMAG). Box plots depicting the marginal distributions of these characteristics at Portland, Salem, and Eugene are shown in Figures 17-20.

The box plots for MAG12 (Figure 17) indicate that the distributions of this characteristic are extremely skewed. In fact, the minimum, 0.25th quantile, and median values for this variable are all zero, whereas the 0.99th quantile values range up to 0.43 inches. Some of this skewness is caused by the way the precipitation events were defined. Because any precipitation occurrences that were separated by 6 hours or less were combined into a single event, any precipitation included in MAG12 must have occurred between 7 and 12 hours before the event. Since this is a small block of time, it is not surprising that many of the MAG12 values are zero.

The distributions of MAG48 and MAG168, shown in Figures 18 and 19, also are skewed, but are not as extremely skewed as the distributions of MAG12. The box plots for the three sites are quite similar except that the 0.90th and 0.99th quantile values for Eugene are larger than the values for Salem, which are also larger than the values for Portland. The median values for MAG48



Figure 17. Box plots of magnitude for previous 12 hours (MAG12) for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.



Figure 18. Box plots of magnitude for previous 48 hours (MAG48) for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.



Figure 19. Box plots of magnitude for previous 168 hours (MAG168) for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.

are near 0.15 inches and the median values for MAG168 are around 0.80 inches.

Figure 20 contains the box plots for the distributions of YRMAG. For each event, the value of YRMAG is the sum of the magnitudes of all of the events which preceded it in the wet season. Thus, the lower quantile values of YRMAG generally represent the value of YRMAG for events that occur early in the season (i.e., events preceded by relatively small amounts of precipitation), whereas the upper quantiles generally represent the value of YRMAG for events that occur late in the season. Although it is not possible, based on the information presented in Figure 20, to identify exactly which portion of the season is represented by each quantile, the data are useful for indicating the distribution of precipitation events throughout the wet season. The following general comments can be made about the distributions of YRMAG: (a) in contrast to the distributions of the other precipitation event characteristics, the distributions of YRMAG are not very skewed; and (b) the snread of the distribution of YRMAG is greater for Eugene than for the other two sites.

The order and return statistics for the antecedent rainfall characteristics are presented in the appendices. Appendix B contains the order statistics of MAG12, MAG48, MAG168, and YRMAG. The return statistics for these variables are presented in Appendix C. Additional information about the values of antecedent rainfall for extreme events ranked by magnitude, duration, and other precipitation event characteristics can be obtained directly from the order statistics for those characteristics, presented in Appendix B. Furthermore, joint frequencies of occurrence for combinations of antecedent rainfall and other precipitation event characteristics are discussed in Section 6 and tables of the joint frequencies are presented in Appendix D.



Figure 20. Box plots of magnitude for year prior to event (YRMAG) for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.

6. JOINT DISTRIBUTIONS OF PRECIPITATION EVENT CHARACTERISTICS

The joint frequency distributions of pairs of precipitation event characteristics can be used to obtain estimates of the probabilities of occurrence of events that have particular combinations of values of the two characteristics. For example, it may be of interest to know how frequently large magnitude events occur when the soil is already saturated. The probability of occurrence of this type of event could be estimated from a table of the joint frequency distribution of magnitude and one of the antecedent rainfall characteristics (e.g., MAG48).

Joint frequency distributions are formulated by first dividing the range of values of the characteristics of interest into several categories (in this case, the ranges of all of the precipitation event characteristics were divided into ten categories). Then a matrix can be formed whose columns represent the categories of one characteristic, Y say, and whose rows represent the categories of the other characteristic, X say. The entries in the matrix are the joint frequencies, f_{ij} , where f_{ij} is the number of times the value of X was in category i <u>and</u> the value of characteristic Y was in category j. The joint relative frequencies, p_{ij} , are calculated by dividing the joint frequencies by the total number of events. Total row and column frequencies (which represent the marginal distributions of the row and column variables) are calculated by summing across the rows and columns, respectively, of the joint frequency table.

The joint frequency distributions of several pairs of precipitation event characteristics are discussed in the following subsections. Because of the large number of tables required to present all of the joint frequency distributions of interest at all three sites (Portland, Salem, and Eugene),

only some of the tables for Salem are presented in this section. However, a complete set of tables of the joint distributions of interest at all three sites is presented in Appendix D.

6.1 Magnitude and Antecedent Rainfall

The joint frequency distribution of magnitude and MAG168 is presented in Table 4. Two numerical values are contained in each entry in this table. These are the joint frequency (f_{ij}) and the joint relative frequency (p_{ij}) of each pair of categories. For example, the entries in the second row and third column of Table 4 are 32 and 0.0091. This means that 32 of the 3500 Salem precipitation events had magnitudes that were between 0.50 and 0.75 inches <u>and</u> had between 0.50 and 1.00 inches of precipitation during the 168 hours preceding the event. The joint relative frequency of this pair of categories is 0.0091 (= 32/3500). The entries in the "ROW TOTALS" column are the marginal row frequencies. They are the sums of the joint frequencies and joint relative frequencies across the table. For example, the second set of entries in the "ROW TOTALS" column, 741 and 0.2117, are the total number and overall relative frequency of occurrence of events that had a value of MAG168 that was between 0.50 and 1.00 inches. Similarly, the "COLUMN TOTALS" are the marginal column frequencies.

The highest frequencies in Table 4 are in the upper left corner, the region of the table representing low values of magnitude and low values of MAG168. However, for most applications, this is not the portion of Table 4 (and other joint frequency tables) that is of most interest. For forecasting runoff, the important parts of Table 4 would be the regions where the combined effects of magnitude and MAG168 are large (e.g., where MAG168 is large and magnitude is medium to large). By setting threshold values of both characteristics it is possible to estimate the probabilities of occurrence of particular types of events.

Table 4. Joint frequency distribution of magnitude and magnitude for previous 168 hours (MAG168) at Salem. The top number in each entry is the joint frequency and the lower number is the joint relative frequency (n=3500).

LOWER BOUNDS FOR				LOWER E	BOUNDS FO	OR INTERV	ALS OF				
INTERVALS OF					MAGN (INCHE	NITUDE S X 100)	I				
MAGNITUDE LAST 168 HOURS (INCHES X 100)	0	25	50	75	100	125	150	175	200	225 AND ABOVE	ROW TOTALS
0	889 .2540	168 .0480	76 .0217	30 .0086	23 .0066	20 .0057	13 .0037	10 .0029	.0023	14 .0040	1251 .3574
50	512 .1463	122 .0349	32 .0091	25 .0071	15 .0043	7 .0020	9 .0026	3 .0009	2 .0006	14 .0040	7 4 1 .2117
100	302 .0863	69 .0197	35 .0100	27 .0077	14 .0040	7 .0020	.0020	1 .0003	3 .0009	9 .0026	474 .1354
150	173 .0494	61 .0174	34 .0097	21 .0060	12 .0034	5 .0014	2 .0006	3 .0009	4 .0011	10 .0029	325
200	152 .0434	44 .0126	20 .0057	12 .0034	5 .0014	7 .0020	0 0.0000	6 .0017	1 .0003	3 .0009	250 .0714
250	95 .0271	25 .0071	17 .0049	10 .0029	4 .0011	4 .0011	0.0000	1 .0003	2 .0006	5 .0014	163 .0466
300	53 .0151	16 .0046	11 .0031	10 .0029	0.0000	0 0.0000	3 .0009	1 .0003	1 .0003	4 .0011	99 .0283
350	43 .0123	15 .0043	7 .0020	5 .0014	1 .0003	0 0.0000	1 .0003	0 0.0000	0.0000	0.0000	72
400	32 .0091	6 .0017	2 .0006	4 .0011	2 .0006	0 0.0000	1 .0003	2 .0006	1 .0003	2 .0006	52 .0149
450 AND ABOVE	42 .0120	8 .0023	10 .0029	4 .0011	1 .0003	1 .0003	2 .0006	0 0.0000	3 .0009	2 .0006	73 .0209
							* * * * * * * * * * * * * * * * * * *				
COLUMN TOTALS	2293 .6551	534 .1526	244	148 .0423	77 .0220	51 .0146	38 .0109	27 .0077	25 .0071	63 .0180	

This is accomplished by summing the joint frequencies of the pairs of categories satisfying the threshold values and then dividing by the total number of events. For example, suppose it is of interest to estimate the probability of occurrence of events that produce more than 1.75 inches of rain and that are preceded by 3.00 inches of precipitation, or more, in the past 168 hours. The estimate of this probability, from Table 4, is 0.0046 [= (1+1+4+0+0+0+2+1+2+0+3+2)/3500]. Note that the same answer could have been obtained (except for round-off error) by simply summing the appropriate relative frequencies. The probabilities of occurrence of other combinations of categories of magnitude and MAG168 can be estimated in a similar manner.

Tables of the joint frequency distributions of magnitude with MAG12, MAG48, and YRMAG at Salem are presented in Appendix D. Moreover, Appendix D contains tables of the joint frequency distributions of magnitude with the four antecedent rainfall variables at Portland and Eugene. These tables may be interpreted in the same manner as the table of the joint distribution of magnitude and MAG168 at Salem, which was described here.

6.2 Average Intensity and Antecedent Rainfall

Table 5 contains the joint frequency distribution of average intensity and MAG168 at Salem. As was the case with the frequency distribution of magnitude and MAG168, the largest joint frequencies are in the upper left corner of Table 5. That is, most of the precipitation events had small values of average intensity <u>and</u> small values of MAG168. This characteristic of the joint distribution is a result of the skewed nature of the marginal distributions of average intensity and MAG168. All of the joint frequency distributions of average intensity and antecedent rainfall have this pattern of frequencies.

Table 5. Joint frequency distribution of average intensity and magnitude for previous 168 hours (MAG168) at Salem. The top number in each entry is the joint frequency and the lower number is the joint relative frequency (n=3500).

	LOWER BOUNI	S FOR				LOWER B	OUNDS FO	R INTER	ALS OF				
	INTERVAL	5 OP				A (IN	VERAGE I Ches Per	NTENSIT HOUR X	Y 100)				
MAG	NITUDE LAST (INCHES X	168 HOURS 100)	0	1	2	3	4	5	6	7	8	9 AND ABOVE	ROW TOTALS
	0		112 .0320	500 .1429	291 .0831	142 .0406	88 .0251	56 .0160	24 .0069	15 .0043	7 .0020	16 .0046	1251
	50		74 .0211	313 .0894	162 .0463	87 .0249	47 .0134	23 .0066	10 .0029	10 .0029	6 .0017	9 .0026	741
	100		53 .0151	170 .0486	118 .0337	58 .0166	37 .0106	16 .0046	6 .0017	7 .0020	7 .0020	2 .0006	474
	150		25 .0071	113 .0323	80 .0229	43 .0123	29 .0083	14 .0040	7 .0020	7 .0020	.0014	2 .0006	325 .0929
56	200		24 .0069	96 .0274	46 .0131	27 .0077	19 .0054	18 .0051	.0014	6 .0017	6 .0017	3 .0009	250 .0714
	250		17 .0049	60 .0171	36 .0103	18 .0051	14 .0040	7 .0020	7 .0020	1 .0003	.0003	2 .0006	163 .0466
	300		15 .0043	28 .0080	15 .0043	14 .0040	12 .0034	.0017	1 .0003	2 .0006	.0003	5 .0014	.0283
	350		4 .0011	24 .0069	20 .0057	16 .0046	.0003	2 .0006	.0003	1 .0003	2 .0006	1 .0003	72 .0206
	400		4 .0011	16 .0046	8 .0023	5 .0014	6 .0017	7 .0020	3 .0009	0 0.0000	.0006	1 .0003	52 .0149
	450 AND 1	ABOVE	.0020	22 .0063	17 .0049	8 .0023	9 .0026	6 .0017	0.0000	2 .0006	0.0000	2 •0006	73 .0209
	COLUMN TOT	FALS	335 .0957	1342 .3834	793 .2266	418 .1194	262 .0749	155 .0443	64 .0183	51 .0146	37 .0106	43 .0123	ana di secondo Angle Angle Ang Angle Angle Ang

The probabilities of occurrence of particular combinations of average intensity and MAG168 values can be estimated using the frequencies in Table 5, as they were for magnitude and MAG168 using the frequencies in Table 4. For example, at Salem, the estimated probability of occurrence of a precipitation event with an average intensity of at least 0.5 in/hr that was preceded by 2.00 or more inches of rain in the last 168 hours is 0.0289 [= (18+5+...+0+2)/ 3500]. Similar probabilities can be estimated from the other tables of average intensity - antecedent rainfall distributions that are presented in Appendix D.

6.3 Average Intensity and Duration

The joint frequency distribution of average intensity and duration at Salem is presented in Table 6. The pattern of frequencies in this table is such that the highest frequencies are in the upper left corner, whereas the frequencies in the lower right corner are quite small. As with the other joint distributions, the probabilities of occurrence of events with particular combinations of the values of the characteristics can be estimated from the frequencies in Table 6 (e.g., at Salem the estimated probability of occurrence of an event that lasts at least 40 hours and that has an average intensity that is greater than or equal to 0.04 in/hr is 0.0163). Tables of the joint frequency distributions of average intensity and duration at Portland and Eugene are presented in Appendix D.

6.4 Maximum Intensity and Antecedent Rainfall

Table 7 contains the joint frequency distribution of maximum intensity and MAG168 at Salem. This table is qualitatively similar to Tables 4 and 5, which contain the joint frequency distributions of magnitude and average intensity with MAG168 at Salem. That is, most of the Salem events had small

Table 6. Joint frequency distribution of average intensity and duration at Salem. The top number in each entry is the joint frequency and the lower number is the joint relative frequency (n=3500).

LOWER BOUNDS FOR				LOWER BO	OUNDS FOI	R INTERV						
INTERVALS OF				AN (INC	VERAGE II Ches Per	NTENSITY HOUR X						
DURATION (HOURS)	0	1	2	3	4	5	6	7	8	9 AND ABOV E	ROW TOTALS	
0	166 .0474	852 .2434	390 .1114	182 .0520	108 .0309	71 .0203	30 .0086	20 .0057	22 .0063	32 .0091	1873 .5351	
8	123 .0351	255	168 .0480	92 •0263	51 .0146	38 .0109	16 .0046	14 .0040	.0011	7.0020	768 .2194	
16	33 .0094	117 .0334	98 .0280	56 .0160	44 .0126	14 .0040	5 .0014	9 .0026	4 .0011	2 .0006	382 .1091	
24	9 .0026	68 .0194	60 .0171	23 .0066	12 .0034	11 .0031	6 .0017	3 .0009	3 •0009	0.0000	195 .0557	
32	3 .0009	29 .0083	38 .0109	28 .0080	17 .0049	5 .0014	3 .0009	4 .0011	0.0000	0.0000	127 .0363	
40	0 0.0000	12 .0034	18 .0051	8 .0023	14 .0040	5 .0014	3 .0009	0 0.0000	.0003	0.0000	61 .0174	
48	.0003	6 .0017	5 .0014	10 .0029	3 •0009	6 .0017	0 0.0000	0 0.0000	0 0.0000	2.0006	33 .0094	
56	0 0.0000	0 0.0000	3 •0009	7 .0020	5 .0014	2 .0006	1 .0003	1 .0003	2 .0006	0.0000	21 .0060	
64	0 0.0000	1 .0003	8 .0023	2 .0006	3 .0009	1	0 0.0000	0.0000	1 .0003	0.0000	16 .0046	
72 AND ABOVE	0 0.0000	2 .0006	5 .0014	10 .0029	5 .0014	2 .0006	0 0.0000	0 0.0000	0 0.0000	0.0000	24 .0069	
COLUMN TOTALS	335 .0957	1342 .3834	793 .2266	418 .1194	262 .0749	155 .0443	64 .0183	51 .0146	37 .0106	43 .0123		

Table 7. Joint frequency distribution of maximum intensity and magnitude for previous 168 hours (MAG168) at Salem. The top number in each entry is the joint frequency and the lower number is the joint relative frequency (n=3500).

	LOWER BOUN	DS FOR				LOWER B	OUNDS FO	R INTERV	ALS OF				
	INTERVAL.	SOF				M. (IN	AXIMUM I CHES PER	NTENSITY HOUR X	100)				
MAGN	ITUDE LAST (INCHES X	168 HOURS 100)	0	4	8	12	16	20	24	28	32	36 AND ABOV E	ROW TOTALS
	0		520 .1486	350 .1000	178 .0509	83 .0237	56 .0160	21 .0060	16 .0046	14 .0040	.0017	7 .0020	1251 .3574
	50		313 .0894	210 .0600	84 •0240	67 .0191	32 .0091	14 .0040	9 .0026	.0023	1 .0003	3 .0009	741 .2117
	100		176 .0503	125 .0357	65 .0186	44 .0126	32 .0091	19 .0054	.0014	3 .0009	2 .0006	3 .0009	474 .1354
•	150		97 .0277	96 .0274	49 .0140	33 •0094	18 .0051	14	13 .0037	3 •0009	2 •0006	0.0000	325 .0929
л	200		96 .0274	56 .0160	37 .0106	28	19 .0054	5 .0014	2 .0006	1 .0003	2 .0006	4 .0011	250 .0714
a.	250		67 .0191	35 .0100	22 .0063	17 .0049	10 .0029	4 .0011	.0014	2 .0006	0 0.0000	1.0003	163 .0466
	300		40 .0114	18 .0051	12 .0034	14 .0040	5 .0014	3 •0009	.0009	1 .0003	2 .0006	1.0003	99 .0283
	350		25 .0071	19 .0054	13 .0037	8 .0023	2 .0006	3 .0009	0 0.0000	0.0000	0.0000	2 .0006	72 .0206
	400		17 .0049	11 .0031	8 .0023	6 .0017	6 .0017	1 .0003	1 .0003	0 0.0000	2 .0006	0.0000	52 .0149
	450 AND /	ABOV E	19 .0054	23 .0066	8 .0023	11 .0031	7 .0020	2 .0006	2 .0006	0 0.0000	0 0.0000	1 .0003	73 .0209
	COLUMN	BAT C	1070				107						
	COLUMN TO	IALS	.3914	943 • 2694	476	.0889	187	86 .0246	56 .0160	32 .0091	17 .0049	22 .0063	

values of maximum intensity and small values of MAG168. This also is true of the tables of the joint distributions of maximum intensity and MAG12, MAG48, and YRMAG at Salem, and of the joint distributions of maximum intensity and the four antecedent rainfall variables at Portland and Eugene. All of these tables are presented in Appendix D.

6.5 Maximum Intensity and Duration

As shown in Table 8, the joint frequency distribution of maximum intensity and duration at Salem is characterized by a pattern of frequencies that reflects the skewness of the marginal distributions of the two characteristics. More than 33 percent of the precipitation events at Salem lasted less than 8 hours and had a maximum intensity that was less than 0.04 in/hr. Only 4.4 percent of the events lasted at least 32 hours and had a maximum intensity of 0.16 in/hr or more. The results for Portland and Eugene (presented in Appendix D) are similar.

6.6 Maximum Intensity and Magnitude

The joint frequency distribution of maximum intensity and magnitude at Salem, shown in Table 9, is very much like the joint distribution of maximum intensity and duration presented in Table 8. That is, very few of the precipitation events at Salem had large values of magnitude and large values of maximum intensity; on the contrary, most of the events had small values of both characteristics. Of 3500 events at Salem, 1365 (39.00 percent) produced less than 0.25 inches of precipitation and had a maximum hourly rainfall that was less than 0.04 inches. Only 642 (18.34 percent) of the events had a magnitude value that was greater than or equal to 0.50 inches and had a maximum intensity of at least 0.08 in/hr; only 111 events (3.17 percent) produced 1.25 or more inches of

Table 8. Joint frequency distribution of maximum intensity and duration at Salem. The top number in each entry is the joint frequency and the lower number is the joint relative frequency (n=3500).

LOWED BOHNING FOR				LOWER B	OUNDS FO	R INTERV	ALS OF				
INTERVALS OF				M. (IN	AXIMUM I CHES PER	NTENSITY HOUR X	100)				
(HOURS)	0	4	8	12	16	20	24	28	32	36 AND ABOVE	ROW TOTALS
0	1181 .3374	452 .1291	144 .0411	56 .0160	24 •0069	4 .0011	8 .0023	1 .0003	0 0.0000	3 .0009	1873 .5351
8	160 .0457	293 .0837	151 .0431	86 .0246	39 .0111	20 .0057	9 .0026	4 .0011	2 .0006	4 .0011	768 .2194
16	21 .0060	129 .0369	83 .0237	71 .0203	42 .0120	14 .0040	9 .0026	5 .0014	3 .0009	5 .0014	382 .1091
24	6 .0017	50 .0143	50 .0143	39 .0111	29 .0083	12 .0034	8 .0023	0.0000	1 .0003	0 0.0000	195 .0557
32	1 .0003	14 .0040	32 .0091	34 .0097	18 .0051	12 .0034	7 .0020	6 .0017	2 .0006	.0003	127 .0363
40	0 0.0000	4 .0011	9 .0026	15 .0043	16 .0046	5 .0014	.0009	5 .0014	2 .0006	2 .0006	61 .0174
48	1 .0003	0 0.0000	4 .0011	2 .0006	7 .0020	6 .0017	4 .0011	2 .0006	.0009	4 .0011	33 .0094
56	0 0.0000	0 0.0000	1 .0003	3 .0009	2 .0006	4 .0011	4 .0011	3 .0009	1 .0003	3 .0009	21 .0060
64	0 0.0000	0 0.0000	1 .0003	3 .0009	4	1 .0003	2 .0006	4 .0011	1 .0003	0 0.0000	16 .0046
72 AND ABOVE	0 0.0000	1 .0003	1 .0003	2 .0006	6 .0017	8 .0023	2 .0006	2 .0006	2 .0006	0.0000	24 .0069
COLUMN TOTALS	1370 .3914	943 .2694	476 .1360	311 .0889	187 .0534	86 .0246	56 .0160	32 .0091	17 .0049	22 .0063	

σ

Table 9. Joint frequency distribution of maximum intensity and magnitude at Salem. The top number in each entry is the joint frequency and the lower number is the joint relative frequency (n=3500).

LOWER BOUNDS FOR	LOWER BOUNDS FOR INTERVALS OF													
INTERVALS OF				M. (TN	AXIMUM I	NTENSITY	100)							
MAGNITUDE (INCHES X 100)		4	8	12	16	20	24	28	32	36 AND Above	ROW TOTALS			
0	1365 .3900	725	156 .0446	37 .0106	9 .0026	1 .0003	0.0000	0.0000	0.0000	0.0000	2293 .6551			
25	3 •0009	189 .0540	186 .0531	96 .0274	42 .0120	'9 .0026	8 .0023	0 0.0000	0 0.0000	1 .0003	534 .1526			
50	2 .0006	23 .0066	78 .0223	77	32 .0091	13 .0037	12 .0034	2 .0006	0 0.0000	5 .0014	244 .0697			
75	0 0.0000	5 .0014	33 .0094	43 .0123	32 .0091	23 .0066	6 .0017	3 .0009	0.0000	3 .0009	148 .0423			
100	0 0.0000	1 .0003	16 .0046	28 .0080	16 .0046	7 .0020	5 .0014	2 .0006	2 .0006	0 0.0000	77 .0220			
125	0 0.0000	0 0.0000	5 .0014	11 .0031	17 .0049	6 .0017	4 .0011	3 .0009	4 .0011	1.0003	51 .0146			
150	0 0.0000	0.0000	2 .0006	8 .0023	11 .0031	3 .0009	4 .0011	7 .0020	0 0.0000	3 .0009	38 .0109			
175	0 0.0000	0 0.0000	0 0.0000	4 .0011	10 .0029	5 .0014	4 .0011	2 .0006	1 .0003	1 .0003	27 .0077			
200	0.0000	0.0000	0 0.0000	6 .0017	2 .0006	8 .0023	3 .0009	2 .0006	3 .0009	1 .0003	25 .0071			
225 AND ABOVE	0 0.0000	0 0.0000	0.0000	.0003	16 .0046	11 .0031	10 .0029	11 .0031	7 .0020	7 .0020	63 .0180			
COLUMN TOTALS	1370 .3914	943 .2694	476 .1360	311 .0889	187 .0534	86 .0246	56 .0160	32 .0091	17 .0049	22 .0063				
precipitation with a maximum intensity of 0.20 in/hr or more. The joint frequency distributions of maximum intensity and magnitude at Portland and Eugene are qualitatively similar to the distribution at Salem. The tables of these distributions are contained in Appendix D.

7. CONDITIONAL DISTRIBUTIONS OF PRECIPITATION EVENT CHARACTERISTICS

The conditional distributions of pairs of precipitation event characteristics can provide indications of the types of interactions and relationships that exist between the characteristics. A conditional distribution is formulated by first selecting the subset of events for which one characteristic, X say, has a particular value, x say. Then the conditional distribution of a second characteristic, Y say, given X=x is simply the distribution of Y for the subset of events.

As in the case of the marginal distributions considered in Section 5, the conditional distributions described in this section are characterized by their quantile values (e.g., the values of the 0.25th, 0.50th, 0.75th, and 0.90th quantiles of the distributions). However, instead of using box plots, the quantiles are displayed as in Figure 21. This figure contains the quantile values of the conditional distributions of magnitude given many different values of duration, at Salem, Each curve in Figure 21 represents a different quantile of the distributions. For example, the points on the lowest curve represent the 0.25th quantile values of the frequency distributions of magnitude for events lasting 1, 2, 3, ..., 80 hours. Note that the observations for some larger values of duration have been grouped to ensure that each set of quantile values is based on at least 10 events. This procedure also was followed for the other conditional distributions considered in this section. The curves have been smoothed using a 3-point smoothing algorithm to make the trends more visible.

The conditional distributions of six pairs of precipitation event characteristics at Salem are described in the following subsections. Each of these sets of distributions is represented using a diagram similar to Figure 21.





The corresponding figures for Portland and Eugene are not presented here because they are quite similar to the figures for Salem. The small differences in the distributions at the three stations are not of importance since the purpose of examining the conditional distributions is to obtain general (as opposed to quantitative) indications of the types of relationships that exist between the precipitation event characteristics. However, tables of the quantile values for three sets of conditional distributions (average intensity given duration, maximum intensity given duration, and maximum intensity given magnitude) at Portland, Salem, and Eugene, are presented in Appendix E.

7.1 Magnitude given Duration

Figure 21 displays the quantiles of the conditional distributions of magnitude given duration at Salem. The curves in this figure indicate that there is a very strong relationship between these two precipitation event characteristics: as the value of duration increases, the values of all of the conditional quantiles increase as well. For example, the median magnitude for events with a duration of 20 hours is about 0.50 inches, whereas the median magnitude for events lasting 40 hours is about 1.25 inches, more than twice as large. The only exceptions to this upward trend are for very large values of duration, where the sample sizes are small. It also appears that the variability of magnitude increases with increasing duration. This is indicated by the increasing distance between the 0.75th and 0.25th quantile values of magnitude (the interquartile range) with increasing duration. The existence of a relationship between magnitude and duration is not surprising. Naturally, the longer it rains the greater the expected precipitation accumulation.

7.2 Average Intensity given Duration

The trend in the quantile values of average intensity given duration at Salem (Figure 22) is not as strong as the trend for magnitude given duration.



Figure 22. Quantile values of the conditional distributions of average intensity given duration, at Salem.

However, there clearly is a relationship between these two variables, as is evidenced by the gradual increase in the conditional average intensity quantiles with increasing values of duration. The median value of average intensity for events lasting 10 hours is only about 0.02 in/hr, whereas the median value for events lasting 40 hours is greater than 0.03 in/hr. The trends for other quantiles have a similar slope.

The existence of this relationship between average intensity and duration could not have been anticipated. Although average intensity is functionally related to duration [Eq. (1)], it also is functionally related to magnitude. Thus, without prior knowledge of the type of relationship existing between magnitude and duration, it is not possible to assume the form of relationship between average intensity and duration. For example, if it were true that magnitude is directly proportional to duration (a plausible assumption, based on Figure 21), then average intensity would be a constant, independent of duration. Tables listing the quantile values of the conditional distributions of average intensity given duration at Portland, Salem, and Eugene are presented in Appendix E.

7.3 Average Intensity given Magnitude

Quantiles of the conditional distributions of average intensity given magnitude at Salem are presented in Figure 23. There is, once again, some evidence of a relationship between these two characteristics. As the conditioning value of magnitude increases, so do the conditional quantile values of average intensity. For the same reasons outlined in Section 7.2 for the relationship between average intensity and duration, the existence of this relationship could not have been anticipated.



Figure 23. Quantile values of the conditional distributions of average intensity given magnitude, at Salem. Only every second point is plotted.

7.4 Average Intensity given Maximum Intensity

Figure 24 contains the quantile values for the conditional distributions of average intensity given maximum intensity. As indicated by the curves in this figure, these two characteristics are not independent. First, the conditional quantile values of average intensity increase with increasing values of maximum intensity. Second, the variability of average intensity increases (as evidenced by the increasing interquartile range) with increasing maximum intensity. Apparently, the precipitation contribution made by the hour with the largest magnitude can be used as an index of the overall characteristics of a precipitation event.

7.5 Maximum Intensity given Duration

The quantile values of the conditional distributions of maximum intensity given duration are presented in Figure 25. The curves in Figure 25 indicate that there is a very strong relationship between maximum intensity and duration. That is, the probability of a large maximum intensity value is greater for precipitation events that last a long time than it is for short-duration events. For example, less than 25 percent of the events that lasted 10 hours had maximum intensity values that were greater than 0.10 in/hr. However, this percentage is greater than 75 for events that lasted 40 hours. Tables of the quantile values of the conditional distributions of maximum intensity given duration at Portland, Salem, and Eugene are presented in Appendix E.

7.6 Maximum Intensity given Magnitude

There also is an apparent dependency between the values of maximum intensity and magnitude for the Salem precipitation events, as illustrated in Figure 26. The conditional quantile values of maximum intensity steadily



Figure 24. Quantile values of the conditional distributions of average intensity given maximum intensity, at Salem.



Figure 25. Quantile values of the conditional distributions of maximum intensity given duration, at Salem.



Figure 26. Quantile values of the conditional distributions of maximum intensity given magnitude, at Salem. Only every second point is plotted.

increase with increasing magnitude. Furthermore, for magnitude values that are less than 0.40 inches, the interquartile range of the conditional distributions of maximum intensity becomes larger as the conditioning value of magnitude increases. For example, the interquartile range is about 0.03 in/hr for the distribution of maximum intensity given that the magnitude is 0.10 inches, whereas it is about 0.05 in/hr given that the magnitude is 0.40 inches. At the same time, the conditional medians increase from 0.04 to 0.13 in/hr. Tables of the quantile values of the distributions of maximum intensity given magnitude at Portland, Salem, and Eugene are presented in Appendix E.

8. SUMMARY AND CONCLUSIONS

The results presented in the preceding sections provide a general statistical description of precipitation events in western Oregon as well as estimates of particular probabilities that are of importance in the modeling and forecasting of soil erosion. Some general conclusions regarding the characteristics of precipitation events in western Oregon include the following:

- (a) The marginal distributions of the characteristics are quite positively skewed. That is, precipitation events with relatively small values of the characteristics occur most frequently and events with large values of the characteristics occur relatively infrequently.
- (b) The most extreme values of the precipitation event characteristics generally are much larger than the values for less extreme events, as evidenced by the curves of order and return statistics presented in Section 5.
- (c) The values of some pairs of precipitation event characteristics are not independent. For example, the values of precipitation event magnitude, average intensity, and maximum intensity are all related to the duration of the precipitation event.

Although these conclusions are based on the analysis of precipitation events defined using a soil erosion - specific definition, they also characterize precipitation events formulated using some other definitions (e.g., the "basic" precipitation event definition, with $I_m = 0.01$ in/hr and $S_t = 1$ hour). Furthermore, the methodology outlined in this report is general and could be applied to the analysis of other types of precipitation events (defined, perhaps, for other types of applications) at any location of interest. The more specific results described in this report are applicable only to precipitation events that are defined using the soil erosion - specific definition considered here ($I_m = 0.01$ in/hr, $S_t = 6$ hours), at three locations in western Oregon (Portland, Salem, and Eugene). As such, these results will be useful in estimating the probabilities of occurrence of several types of precipitation events that significantly influence soil loss in western Oregon. The detailed tables of results presented in the appendices will enhance research efforts toward the development of more accurate predictions of long-term erosion rates for this region.

REFERENCES

- Gayle, G. A., and R. W. Skaggs, 1978: Surface storage on bedded cultivated lands. <u>Transactions of ASAE</u>, <u>21</u>, 102-104, 109.
- Harward, M. E., G. F. Kling, and J. D. Istok (eds.), 1980: Erosion, Sediment, and Water Quality in the High Winter Rainfall Zone of the Northwestern U.S., Corvallis, Oregon State University, Oregon Agricultural Experiment Station Special Report No. 602, 220 pp.
- Lowery, B., G. F. Kling, and J. A. Vomocil, 1982: Overland flow from sloping land: Effects of perched water tables and subsurface drains. <u>Journal</u> of the Soil Science Society of America, <u>46</u>, 93-99.
- Nguyen, V.-T.-V., and J. Rousselle, 1981: A stochastic model for the time distribution of hourly rainfall depth. <u>Water Resources Research</u>, 17, 399-409.
- Tukey, J. W., 1977: <u>Exploratory Data Analysis</u>, Reading, Mass., Addison-Wesley, 688 pp.



APPENDICES

Table of Contents

		Page
APPENDIX	A. Data Base Description	. 83
APPENDIX	B Order Statistics	85
B.1	Duration	. 86
	a. Portland	. 86
	b. Salem	. 88
	c. Eugene	. 90
B.2	Magnitude	. 92
	a. Portland	. 92
	b. Salem	. 94
	c. Eugene	. 96
B.3	Average Intensity	. 98
	a. Portland	. 98
	b. Salem	100
	C. Eugene	102
В.4		. 104
		104
		100
DE	C. Eugene	110
D.J	Doutland	110
		112
		114
B.6	Magnitude for Previous 12 Hours	116
0.0	a. Portland	116
	b. Salem	118
	c. Eugene	120
B.7	Magnitude for Previous 48 Hours	. 122
	a. Portland	. 122
	b. Salem	. 124
	c. Eugene	. 126
B.8	Magnitude for Previous 168 Hours	. 128
	a. Portland	. 128
	b. Salem	. 130
	c. Eugene	132
B.9	Magnitude for Year Prior to Event	134
	a. Portiana	134
		130
		• 130
APPENDIX	C. Return Statistics	. 141
C_1	Duration	142
V•1	a. Portland	. 142
	b. Salem	. 145
	c. Eugene	. 148

		Pa	ge
(C.2	Magnitude .	51 51
		b. Salem	54 57
. (2	C. Eugene	57 60
,	0.3	a Portland	60
		h Salem 1	63
		c. Fugene	66
· · · · (C.4	Maximum Intensity	69
	- -	a. Portland	69
		b. Salem	72
		c. Eugene	75
(C.5	Hours Between Events	78
		a. Portland	78
		b. Salem	81
		c. Eugene	84
(C.6	Magnitude for Previous 12 Hours	87
		a. Portland	87
		b. Salem	90
		c. Eugene	93
· (C.7	Magnitude for Previous 48 Hours	90
		a. Portland \ldots	90
		b. Salem \ldots	99
	^ 0	C. Eugene	
	L.8	Magnitude for Previous 108 Hours	05
		a. Portiand \ldots	03
		$D, Salem \dots $	11
	റ്റ	U. EUYENE	14
	6.9	Portland 2	14
		$\begin{array}{c} a. \text{rortraind} \\ b \text{Salom} \end{array} $	17
		C Fugene	20
			-
APPEN	DIX	D. Joint Distributions of Precipitation Event	
.,		Characteristics	23
	D.1	Magnitude and Magnitude for Previous 12 Hours	24
		a. Portland	224
		b. Salem	25
		c. Eugene	26
	D.2	Magnitude and Magnitude for Previous 48 Hours	227
		a. Portland	227
		b. Salem	228
	_	c. Eugene	29
	D.3	Magnitude and Magnitude for Previous 168 Hours	130
		a. Portland \ldots	.3U 201
		D. Salem	20
		C. EUgene	-32)22
	υ.4	Magnitude and Magnitude for Year Prior to Event	222
			230
		D. Salelli	235

			Page
	D.5	Average Intensity and Magnitude for Previous 12 Hours	236
		a. Portland	236
		b. Salem	237
		c. Eugene	238
	D.6	Average Intensity and Magnitude for Previous 48 Hours	239
		a. Portland \ldots	239
		b. Salem	240
		c. Eugene	241
	D.7	Average Intensity and Magnitude for Previous 168 Hours	242
		a. Portland	242
		b. Salem	243
		c. Eugene	244
	D.8	Average Intensity and Magnitude for Year Prior to Event .	245
		a. Portland	245
		b. Salem	.246
		C. Lugene	247
	D.9	Average Intensity and Duration	248
			248
			249
		C. Eugene	250
	D.10	Maximum Intensity and Magnitude for Previous 12 hours	201
			251
			252
	נו ח	Navimum Intensity and Magnitude for Provious 48 hours	253
	0.11	Maximum Intensity and Magnitude for Frevious to nours .	254
		$a. For trainv \dots \dots$	255
			256
	n 12	Maximum Intensity and Magnitude for Previous 168 Hours .	257
	0.12	a Dortland	257
			258
			259
	D 13	Maximum Intensity and Magnitude for Year Prior to Event	260
		a Portland	260
		b. Salem	261
			262
	D.14	Maximum Intensity and Duration	263
		a. Portland \ldots \ldots \ldots \ldots \ldots \ldots \ldots	263
		b. Salem	264
		c. Eugene	265
	D.15	Maximum Intensity and Magnitude	266
		a. Portland \ldots	266
		b. Salem	266
		c. Eugene	268
		이 사람이 있는 것 같은 것이 있다. 이 가지 않는 것은 것이 있는 것은 것이 있는 것이 가지 않는 것이 있는 것이 있는 것이 있는 것이 있다. 가지 않는 것이 있는 것이 있는 것이 있는 것이 있는 같은 것은 것은 것은 것은 것이 있는 것이 같은 것이 있는 것	
APPE	INDIX	E. Conditional Distributions of Precipitation Event	
		Characteristics	269

E.1	Average Inten	nsity given	Duration .		• • • •	• • • •	. 270
	a. Portland		• • • • • •	• • •	• • • •		. 270
	b. Salem .				· · · ·	• • • •	. 2/1
	c. Eugene .						2/3
E.2	Maximum Inten	nsitv given	Duration .	• • •			. 275
	a. Portland			• • •		• • • •	. 275
	h Salem						. 276
	c Fugene						. 278
F2	Maximum Inton	ncity given	Magnitude	••••			280
L.3	Hax mum Incen	isity given	nught cuuc	• • •	••••	• • • •	280
	a. Portland			• • •		• • • •	. 200
	b. Salem .					• • • •	. 282
	c. Eugene .	• • • • •		• • •	• • • •	• • • •	. 285

Page

APPENDIX A

Data Base Description

Hourly precipitation data from Portland, Salem, and Eugene, Oregon, for mid-1948 through 1979 were used to create the records of precipitation events described and analyzed in this report. These data were obtained from the National Climatic Center (NOAA, U.S. Department of Commerce) at Asheville, North Carolina. The original data tapes that were obtained from the National Climatic Center are stored at the Climatic Research Institute at Oregon State University (OSU).

The hourly data were combined according to the event definition described in Section 3, and an event parameter file was created for each of the three sites. The files consist of individual data records for each precipitation event at a site during the period of the data record. All of the precipitation characteristics that were evaluated in this study are included in the record for each event. The data files are binary and are presently archived on magnetic tape at the OSU Computer Center under the file names PRT61 (Portland events), SAL61 (Salem events), and EUG61 (Eugene events). Copies of the files, on magnetic tape, also will be stored by the OSU Department of Soil Science at the conclusion of this project.

The archived data files may be retrieved from tape and copied onto direct access files by submitting the computer routine ARCHYR which is stored under user number GAUI5C. Before submitting ARCHYR it is first necessary to edit that routine to retrieve the desired data files under the appropriate user number. That is, the USER, CHARGE, TITLE, and RETRIEV statements in ARCHYR must be changed. The RETRIEV statement is of the form

RETRIEV, RF=pfn1/pfn2/pfn3/...,R.

For example, the statement

RETRIEV, RF=SAL61/PRT61, R.

would cause the files SAL61 and PRT61 to be retrieved and stored as direct access files.

Each record on the binary event data files contains the following ten parameters (in the order listed):

- (1) Hour the event ended, counting from January 1, 1900 (integer)
- (2) Event duration, in hours (integer)
- (3) Event magnitude, in hundredths of an inch (integer)
- (4) Average intensity, in hundredths of an inch per hour (floating point)
- (5) Hours since previous event ended (integer)
- (6) Maximum intensity, in hundredths of an inch per hour (integer)
- (7) Precipitation magnitude for previous 12 hours, in hundredths of an inch (integer)
- (8) Precipitation magnitude for previous 48 hours, in hundredths of an inch (integer)
- (9) Precipitation magnitude for previous 168 hours, in hundredths of an inch (integer)
- (10) Precipitation magnitude for the year prior to the beginning of the event, in hundredths of an inch (integer).

Note that average intensity is the only floating point variable.

APPENDIX B

Order Statistics

The following tables contain "order statistics" for each of the precipitation event characteristics at each of three sites (Portland, Salem, and Eugene, Oregon). These statistics are the values of the event characteristics for the 100 events with the largest values (or smallest values, for hours between events) of the characteristic of interest. For example, the duration order statistics are formulated by sorting the events in order of decreasing duration and listing the characteristics of the first 100 of the ordered events. The tables of order statistics are organized by characteristic, with separate tables for each site. An index listing the location of each table is given in the table of contents for the appendices (p. 79).

	53.0					NUEDACE	HOUDE C	TNOP	MR V T MITM	MAGNITUDE	MAGNITUDE	MAGNITUDE	MAGNITUDE
		ENDED	HOUD	DUDARTON	MACHITIMUNE	THEFT	TACID D	INCD 1	NUMENCIAN	12 000		168 405	SO FAR
	EVENT	ENDED	HOUR	(UOUDE)	MAGNITUDE	INTENSITI (IN/HD V 100)	LASTE	V САТ Т / ИТ 1	$\left(\mathbf{N} \right) \left(\mathbf{N} \right$	(TN X 100)	(TN X 100)	$(TN \times 100)$	$(TN \times 100)$
				(HOURS)	(18 X 100)	(10) HK A 100		(10)	IK A 100)	(10 7 100)	(10 8 100)	(10 % 100)	(10 200)
п	TANHARY	16 1	974 17	115	544	4.7	278		23	0	. 0	0	2462
5	DECEMBER	301	965 12	114	434	3.8	9		14	7	77	181	1061
ิจั	JANIIARY	201	970 10	110	328	3.0	31		21	0	53	311	1764
Ă	TANDARY	20 1	964 3	99	320	3.2	7		20	20	43	94	1484
5	NOVEMBER	17 1	950 23	72	376	5.2	. 7		23	ĩ	15	23	846
ŝ	TANIJARY	101	959 5	72	270	3.8	49		16	ō	0	29	1311
7	MARCH	30.1	963 10	72	268	3.7	14	1997 - Alexandria Alexandria	17	Ō	19	82	2272
8	NOVEMBER	12.1	951 13	72	190	2.6	35		18	· Õ	2	35	716
ğ	DECEMBER	26 1	954 5	72	141	2.0	27		16	0	17	17	1086
าก์	ADDIT	22 1	955 7	72	73	1.0	13		5	Ū.	16	122	2534
iĭ	DECEMBER	8 1	952 22	71	171	2.4	18		28	Ō	43	146	314
12	JANHARY	4 1	966 14	70	260	3.7	25		26	Ó	6	440	1501
12	JANUARY	27 1	1970 17	70	160	2.3	8		14	14	111	574	2423
14	JANHARY	4	1956 23	69	387	5.6	.13		29	0	54	121	2462
15	JANHARY	31	1958 12	69	171	2.5	16		17	Ō	53	143	1758
16	DECEMBER	16 1	1950 22	69	165	2.4	66		20	Ō.	Ō	38	1798
17	DECEMBER	10 1	1973 7	64	184	2.9	7		21	10	10	103	1585
īρ.	TANHADV	28 1	1967 10	63	190	3.0	10		14	6	26	154	1924
10	DECEMBED	5 1	067 17	63	163	2.6	11		19	ň	41	112	740
20	NOVEMBED	15 1	1966 12	62	186	3 0	22		38	ŏ	137	143	469
20	OCTOBED	30 1	1977 23	62	84	1.4	58		14	Õ.		66	132
21	TANUADY	0 1	1053 14	61	210	5.2	7		25	i i	2	133	994
22	DECEMBED	121	1969 19	61	213	3.5	14		23	ō	23	58	678
23	NOWFMBED	12 1	1968 17	59	167	2.8	27		23	ŏ	107	190	741
24	DECEMBED	5.1	1968 12	57	237	4.2	47		33	ŏ	0	65	1130
25	DECEMBER	23	1964 5	56	394	7.0	24		24	ŏ	90 ·	183	1066
20	JANIIARV	26	1964 8	56	278	5.0	21		29	ŏ	8	298	1833
20	DECEMBER	5	1951 O	56	207	3.7	11		28	ŏ	83	263	1257
29	FEBRUARY	24	1957 12	56	198	3.5	44		16	Õ	4	5	1322
30	DECEMBER	ំ រំរំ រ	1958 14	55	159	2.9	51		13	Ó	0	71	897
31	FEBRUARY	24	1979 19	55	133	2.4	8		16	10	13	97	1386
32	DECEMBER	28	1972 8	55	122	2.2	34		18	0	59	417	1213
33	JANUARY	7	1950 21	54	202	3.7	37		26	Ó	18	86	1311
34	DECEMBER	13	1966 16	54	121	2.2	15		13	Ő	76	243	1289
35	DECEMBER	22	1957 3	54	100	ī. <u>9</u>	6		10	41	135	197	1020
36	MAY	14	1978 19	53	197	3.7	24		18	0	23	23	3071
37	DECEMBER	21	1969 10	53	173	3.3	19		12	0	25	174	1046
38	OCTOBER	30	1975 8	53	149	2.8	11		10	0	27	135	327
39	OCTOBER	. 9	1962 12	53	141	2.7	16		16	0	18	56	56
ăn	TANIJARY	17	1951 7	53	112	2.1	7		12	39	135	179	2518
41	FEBRILARY	13	1954 17	52	262	5.0	272		14	Ũ	0	0	26 82
42	MARCH	- ĝ	1966 19	52	165	3.2	16		21	Ŭ,	65	112	2351
43	JANUARY	26	1953 10	52	145	2.8	35		20	Ō	62	395	1962
44	MARCH	16	1957 7	52	125	2.4	12		6	Ō	13	268	2115
45	FEBRIIARY	26	1978 3	52	60	1.2] 4		9	ō i	1	1	2433
46	JANUARY	20	1950 18	51	292	5.7	14		12	Õ	3	142	1823
47	DECEMBER	21	1953 1	51	239	4.7	16		16	Õ	36	38	1468
48	NOVEMBER	24	1949 11	51	237	4.6	193		25	Ō	Ō	0	390
49	JANUARY	16	1956 5	51	230	4.5	24		19	ere Ölle	35	74	3028
50	JANUARY	16	1971 17	51	201	3.9	6		12	9	49	225	1843
						the second se							

OVERALL ORDER STATISTICS AT PORTLAND SORTED BY DURATION

	DAT EV EN T	re Ended	HOUR	DURATION	MAGNITUDE	AV ERAGE INTENSITY	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY	MAGNITUDE LAST 12 HRS	MAGNITUDE LAST 48 HRS	MAGNITUDE LAST 168 HRS	MAGNITUDE YEAR SO FAR
				(HOURS)	(IN X 100)	(IN/HR X 100)) (1	EN/HR X 100)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
51	FEBRUARY	1	1963 7	51	133	2.6	31	25	0	25	25	1623
52	OCTOBER	4	1950 16	51	76	1.5	3277	10	0	· O	0	0
53	MARCH	17	1953 1	50	100	2.0	58	9	0	0	37	2590
54	JANUARY	28	1965 23	49	171	3.5	13	22	0	59	239	2276
55	NOVEMBER	13	1965 5	49	139	2.8	8	. 9	· 17 · .	45	76	416
56	DECEMBER	25	1965 8	49	137	2.8	53	12	0	0.00	42	924
57	MARCH	12	1961 16	49	100	2.0	6	9	4	44	162	2931
58	JANUARY	19	1953 17	48	184	3.8	7	15	13	95	2.53	1577
59	FEBRUARY	21	1956 16	48	171	3.6	7	15	2	6	30	3650
60	MARCH	30	1960 14	48	147	3.1	17	27	0	22	31	2081
61	FEBRUARY	9	1958 17	48	82	1.7	9	10	1	12	19	1948
62	FEBRUARY	11	1961 1	47	290	6.2	11	18	0	49	155	2083
63	DECEMBER	5	1966 12	47	213	4.5	28	25	0	25	110	904
64	FEBRUARY	25	1950 0	47	190	4.0	6	18	8	10	25	2623
65	MAY	3	1977 17	47	100	2.1	142	19	0	0	19	1173
66	FEBRUARY	12 :	1969 7	47	84	1.8	11	8	0	128	192	3195
67	DECEMBER	30	1968 21	47	77	1.6	6	6	· 1	59	216	2050
68	APRIL	12	1955 17	46	161	3.5	8	21	5 - 5	53	55	2310
69	MAY	6	1979 1	46	151	3.3	146	29	0	0.0	22	2076
70	NOVEMBER	28	1961 10	46	103	2.2	58	9	0	0	224	639
71	FEBRUARY	17	1953 3	46	102	2.2	8	15	1	7	9	2362
.72	NOVEMBER	19	1954 14	46	96	2.1	7	14	35	101	252	698
73	JANUARY	25	1975 21	45	236	5.2	11	12	0	42	45	2073
74	JANUARY	21	1972 0	45	226	5.0	6	20	12	78	90	1889
75	DECEMBER	21	1973 12	45	153	3.4	41	14	0	3	307	1952
76	DECEMBER	24	1968 7	45	149	3.3	27	15	0	3	158	1834
77	DECEMBER	7	1966 19	45	96	2.1	9	13	2	197	320	1117
78	DECEMBER	28	1977 0	45	30	•7	105	5	0	7	28	1600
. / 9	NOV EMBER	24	1960 21	44	355	8.1	7	30	11	:46	323	743
80	DECEMBER	21	1955 1	44	152	3.5	28	12	0	9	441	2256
81	JANUARY	9	19/1 1	44	123	2.8	159	13	0	0	4	1606
82	NOVEMBER	23	19// 19	44	123	2.8	/5	11		0.0	27	451
83	DECEMBER		1952 5	44	59	1.3	16	· · · ·	0	38	87	255
04	APRIL	21	1953 14	44	20	1.3	04	5	U .	U	40	3030
86	TANUARI		1951 IO 1076 10	43	100	3.0	31 74	34	U	5	111	3080
00	TANUARI	17	19/0 19	43	109	2.0		20	U F	Ŭ	20	1004
07	MADCU	10	1953 10	43	104	2.4	8	12	5		2/2	2256
20	DECEMBED	20	1077 0	43	50	1.0	9	10	22	71/	71/	1620
0.0	DECEMBER	30.	19// 0	43	22	1.2	67	0	U	2	30	1030
01	NOVEMBER	10	1055 7	43	240	F 0	22	2	· · · · ·	0	120	1134
<u><u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u></u>	FFRDIIADV	27	1976 12	42	240	J.J	29 11	21		10	100	2240
02	APRTI	21	1965 5	44	202	4.0 1 A	<u>т</u> т	J 4 1 A	. U .	/U 1	100	2340
94	MAY	20	1040 0	44	136	4.•U 2	0 207	14 15	4	4	л ТТ	2002
95	NOVEMBED	Â	1964 19	42	100	2.4	12	10	0	32	61	1004
96	APRTI.	17	1960 0	42	105 Q1	4.0	14	21	20)) 0E	124	11/ 2227
97	FEBRILARY	16	1970 17	41 41	252	£)	50	11	54 0	00	164 27	2321
98	DECEMBER	22	1971 3	Δ1	177	A 3	148	10	0	0	51	2000
99	FEBRUARY		1978 3	41	110	2.7	15		0	25	150	2251
100	NOVEMBER	7	1974 16	40	179	2 · / A 5	22	44 15	n v	20	109 109	2203
			0	ŦŸ		7.07	di 42	T.7	. V	τv	20	224

	DA EV EN T	TE ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE Intensity (IN/HR X 100)	HOURS SINC LAST EVEN	E MAXIMUM T INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (in x 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	JANUARY	27	1970 19	171	592	3.5	7	34	19	114	444	2398
2	DECEMBER	31	1965 14	139	496	3.6	6	21	2	73	184	1219
3	DECEMBER	22	1957 7	132	445	3.4	11	17	0	33	51	898
4	FEBRUARY	26	1957 7	106	361	3.4	180	19	0	0	D	1436
5	JANUARY	20	1964 5	101	452	4.5	12	22	· · · O	23	112	1693
6	MARCH	31	1963 8	98	468	4.8	13	22	0	14	84	2400
7	JANUARY	31	1958 12	96	421	4.4	54	28	0	0	111	1988
8	JANUARY	19	1953 14	96	409	4.3	40	19	0	8	323	1704
9	NOV EMBER	16	1973 14	90	470	5.2	6	35	4	150	442	884
10	MARCH	9	1957 3	90	338	3.8	15	23	0	57	63	1860
11	JANUARY	11	1971 14	87	134	1.5	18	9	0	2	2	2019
12	OCTOBER	23	1970 0	85	193	2.3	17	18	0	48	48	49
13	JANUARY	16	1971 17	82	235	2.9	9	20	5	38	159	2176
14	MARCH	5	1960 17	79	237	3.0	10	18	3	5	22	1743
15	DECEMBER	5	1951 19	77	296	3.8	12	29	0	78	295	1455
16	DECEMBER	8	1952 21	77	289	3.8	7	19	1	91	199	415
17	NOV EMBER	25	1970 14	76	264	3.5	45	22	0	5	70	642
18	JANUARY	14	1970 23	.76	193	2.5	47	12	0	0	135	1844
19	APRIL	22	1955 7	75	105	1.4	16	. 6	0	10	189	2676
20	JANUARY	4	1966 16	74	311	4.2	8	24	1	51	498	1717
21	DECEMBER	19	1961 12	73	247	3.4	15	23	0	27	105	902
22	MARCH	12	1961 16	73	175	2.4	10	13	. 5	15	193	3389
23	JANUARY	10	1959 5	72	413	5.7	15	27	0	2	81	1493
24	NOV EMBER	25	1955 12	72	213	3.0	9	20	1	3	247	1111
25	NOV EMBER	17	1950 22	71	593	8.4	11	31	0	21	23	1171
26	JANUARY	6	1956 0	71	396	5.6	11	34	37	87	112	2702
21	MARCH	30	1955 19	70	153	2.2	47	15	.0	U	80	21/9
28	FEBRUARY	1/	1970 19	69	304	4.4	51	30	U	0	9	3100
29	OCTOBER	31	19// 3	69	167	2.4	5/	10	.0	U 1	40	1100
30	DECEMBER	10	19/1 21	68	100	2.4	40	25	U	3	1/2	1100
21	APKIL	20	19/3 12	67	122	1.0	83	10		U .	20	1260
22	DECEMBER	19	1064 JJ	67	220	3.4	20	15	2	10	27	1209
2.4	DECEMBER	12	1934 23	66	150	2.2	20	10	0	10	10	1219
35	FEDDUADY	26	1050 13	66	106	4.0	27	20	0	20	72	2017
36	MAV	6	1070 10	66	196	2.0	1/0	15	0	29	28	2253
37	NOVEMBED	15	1963 21	66	192	2.0	149	19	. 0	2	177	699
λά	DECEMBER	5	1967 19	65	280	43	10	20	ů v	6 A	250	977
39	NOVEMBER	12	1965 19	65	263	4.0	6	17	22	73	122	465
40	DECEMBER	22	1974 10	65	178	27	8	29	5	23	85	1300
Ă١.	JANUARY	้ เบ็	1969 14	63	243	3 9	25	16	1	115	210	2570
42	FEBRUARY	19	1949 3	62	516	8.3	8	32	11	102	333	2501
43	NOV EMBER	25	1960 3	62	398	6.4	26	40	0	57	276	815
44	JANUARY	27	1953 3	62	222	3.6	44	20	ň	Я	574	2202
45	OCTOBER	29	1950 2	้ 6 เ	291	A R	12	26	ň	85	110	664
46	MARCH	Ĩĝ	1966 19	61	247	4.0	6	25	25	85	156	2731
47	DECEMBER	16	1970 17	61	215	3.5	17	20	23	10	56	1352
48	NOV EMBER	12	1968 19	61	205	3 4	34	29	ň	16	1 3 4	RNA
49	DECEMBER	16	1950 9	60	122	2.0	20	- g		1	65	2361
50	MAY	7	1963 7	59	288	4.9	7	16	Š	10	67	3324

OVERALL ORDER STATISTICS AT SALEM SORTED BY DURATION

	DA'I EV EN T	re Ended	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE Intensity (IN/HR X 100)	HOURS SINCE LAST EVENT	S MAXIMUM S INTENSITY IN/HR X 100)	LAST 12 HRS (IN X 100)	LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	DECEMBER	23 1	964 5	58	503	8.7	10	36	13	163	237	1374
52	JANUARY	21 19	972 5	58	416	7.2	8	28	13	64	73	2047
53	FEBRUARY	13 19	954 17	58	344	5.9	23	28	0	2	2	2786
54	OCTOBER	3 19	951 11	57	242	4.2	3123	38	· 0	0	0	0
55	JANUARY	17 19	951 9	57	177	3.1	7	12	23	152	215	3043
56	DECEMBER	10 19	953 5	57	136	2.4	13	20	0	170	290	1295
57	JANUARY	28 19	967 3	56	298	5.3	6	25	3	16	160	1869
58	DECEMBER	12 19	969 12	56	242	4.3	13	27	0	40	84	849
59	JANUARY	16 19	956 10	56	219	3.9	17	21	0	44	87	3361
60	JANUARY	18 19	970 21	56	202	3.6	9	15	11	79	274	2084
61	DECEMBER	7 19	954 10	56	164	2.9	15	12	0	7	9	861
62	APRIL	13 19	955 1	55	216	3.9	10	21	4	21	21	2382
63	DECEMBER	21 19	969 12	55	184	3.3	20	17	0	41	210	1278
64	MARCH	17 19	953 3	55	165	3.0	49	28	0	0	66	3212
65	DECEMBER	5 19	966 12	54	280	5.2	13	22	0	41	102	855
66	APRIL	28 19	962 19	54	199	3.7	50	23	0	0	18	2600
67	NOV EMBER	15 19	966 1	54	186	3.4	18	25	0	126	168	393
68	FEBRUARY	22 19	949 17	54	166	3.1	32	16	0	108	628	3017
69	OCTOBER	4 19	950 16	53	171	3.2	3299	28	0	- O	0	0
70	NOV EMBER	5 19	973 19	53	161	3.0	58	16	0	0.1	69	281
71	FEBRUARY	13 19	975 17	52	86	1.7	6	10	2	25	130	2322
72	DECEMBER	20 19	953 19	51	257	5.0	19	19	0	32	39	1470
73	FEBRUARY	2 19	952 1	51	239	4.7	9	38	1	78	94	2625
74	NOV EMBER	27 19	971 5	51	140	2.7	6	16	10	97	98	652
75	MARCH	25 19	976 19	51	131	2.6	9	14	· · 4	56	102	3156
76	NOVEMBER	16 19	954 5	51	96	1.9	8	22	5	13	117	524
77	JANUARY	16 19	974 17	50	476	9.5	6	26	45	221	323	3233
78	FEBRUARY	11 19	961 1	50	452	9.0	12	26	0	41	122	2225
79	JANUARY	7 19	950 18	50	294	5.9	37	37	0	8	91	1381
80	NOVEMBER	11 19	951 14	- 50	260	5.2	27	38	0	5	27	756
81	NOV EMBER	17 19	953 5	50	231	4.6	11	35	0	7	37	433
82	MARCH	26 19	956 14	50	100	2.0		9	18	42	121	4895
83	JANUARY	27 19	969 16	50	99	2.0	199	11	. 0	0	0	3023
84	DECEMBER	29 19	951 22	50	98	2.0	.7	20	8	76	116	2002
85	JANUARY	11 13	950 10	49	207	4.2	11	35	0	50	331	1704
00	FEBRUARI	3 15	01 C 0	49	1/6	3.0	12	46	U	142	215	1890
07	FEBRUARI	19 12	9/0 3	49	96	2.0		20		/9	152	2467
00	MARCH	2 12	102 21	49	42	.9	0	8	4	19	81	1923
09	JANUARI	10 10	9/4 19 DEE 22	48	203	5.5	2/6	33	U	U AI	204	2910
01	JANUARI	20 12	703 23 340 10	40	202	3. 3	20	24	1	41 15	294	2/02
21	MADCU	20 10	749 IU	40	142	3.9	20	10	0	10	19	355/
92	OCTORED	20 12	500 14 356 10	40	143	3.0		10	1	20	20	2260
0.4	ADDII	31 13 37 10	150 1C	40	122	2.5	160	10	5		1/5	493
95	FEBRUARY	20 10	168 5	40	210	6.8	107	20	U 0	76	76	3430 3377
96	OCTOBER	24 10	151 8	47	224	A 8	12	30 A6	0	10	/0	6211 505
97	NOVEMBER	10 10	955 12	47	219	A 7	20	27	0	25	133	000
98	MARCH	10 10	954 17	47	146	*•/ २ 1	20	16	10	163	103	2009 3/7/
99	DECEMBER	1 10	950 13	47	140	3.0	58	10	1.2	105 N	147	1044
100	NOVEMBER	12 19	70 12	47	138	2.9	24	12	Ő	19	109	434
									T			

OVERALL ORDER STATISTICS AT EUGENE SORTED BY DURATION

	530	a és				NUEDBOR	nounc	TNCE		MAGNITUDE	MAGNITUDE	MAGNITUDE	MAGNITUDE
	DAT	ENDED	HOUD	DUDADION	MACHINE	AVERAGE	TACE		TNORNETON	10 000	LAD UDC	160 UDC	CO FAD
	EV ENT	ENDED	HOUR	JURATION (UOUDC)	MAGNITUDE	INTENSITY (TR/UD V 100)	LAST	EV ENT	INTENSITI	12 HRS	40 RK5 (TN V 100)	(TN V 100)	
				(HOURS)	(IN X 100)	(IN/HR X 100)		(1	M/HR A 100)	(IN X 100)	(IN X 100)	(10 x 100)	(10 × 100)
1	TANHADY	15 1	1971 21	167	525	3 1		7	14	3	15	15	2425
2	DECEMPED	22 1		107	1015	8 0	6	'n	37	ň	10	70	1572
2	TANIJADY	23 3	1050 17	115	256	2.0	•	8	15	Ă	68	202	2024
2	DECEMPED	211	1950 17	110	2.50	7 3		7	45	30	103	109	806
4 C	DECEMBER	22 1	1957 5	110	260	7.5	· •	'	40	50	105	55	963
2	DECEMBER	1 1	1955 10	105	450	2.0 A E		27	10	7	10	222	1303
7	DECEMBER	101	1903 10	101	402	4.0	÷.	/ A.	10	0	19	162	2102
	PEGRUARI	10 1	1949 10	100	403	4.0	1	94 7	20	1	Q Q	284	1136
0	DECEMBER	20 1	1940 0	100	200	3.1	1	/ · ว	20	. 1	17	207	2557
.9	JANUARY	29 1	1967 19	95	. 39/	4.2	1	4	23	. 0	1/	165	1926
10	JANUARI	20 1	1964 21	93	721	1.0	1	4 A	14		30	102	1780
11	MARCH	101	1960 8	93	544	3.1	· 1	1. 1	25	Ŏ	10	10	1244
12	NOV EMBER	18 1	1950 5	92	0/3	1.3	1	2	55	0	102	1262	1344
13	DECEMBER	30 3	1964 10	92	299	3.3	. 1	4	14	1	192	1202	29/2
14	DECEMBER	31 1	1970 3	82	424	3.4		9 c	25	1	155	162	2722
15	JANUARY	22	19/2 /	81	608	1.5			40	2	155	103	2733
16	NOV EMBER	13 1	1964 /	80	331	4.1	· · · 1	4	29	Ű	44	103	201
17	NOV EMBER	14	195/ 21	80	167	2.1		/	20	0	02	0.3	3/0
18	NOV EMBER	16 1	1966 3	79	502	6.4	1	9	40	0	117	221	420
19	DECEMBER	19 1	1961 19	79	361	4.6	2	9	26	U	26	137	1550
20	JANUARY	11]	1950 18	79	196	2.5	1	L 2	28	. 0	194	225	1522
21	DECEMBER	23 .	1955 8	78	663	8.5	1	3	41	0	296	418	2187
22	OCTOBER	.29]	1950 17	· . <u>77</u>	600	7.8	1	9	26	0	37	/1	603
23	DECEMBER	17 1	1977 5	. 77	459	6.0	-	6	23	/1	326	514	1994
24	JANUARY	10 1	1959 16	77	379	4.9	Ţ	1	42		6	/9	1501
25	FEBRUARY	26	1958 19	72	292	4.1	2	9	25	0	49	81	3532
26	MARCH	6]	1951 8	72	208	2.9	5	3	20	0	0	29	40/5
27	MARCH	31 1	1963 7	71	458	6.5	-	8	41	18	100	1/4	2611
28	NOVEMBER	25]	1970 5	- 71	310	4.4	3	9	49	Ű	2	4/	/40
29	DECEMBER	18 1	1960 17	71	224	3.2	10	7	25	. 0	0	3	1407
30	JANUARY	22	1952 17	71	178	2.5	. 1	0	14	1	4	59	2397
31	NOV EMBER	24	1961 7	69	649	9.4	7	9	31	0	0	24	571
32	FEBRUARY	7]	1979 23	69	340	4.9	1	2	34	· 0	4	4	1278
33	JANUARY	28 1	1969 3	69	241	3.5	6	3	13	0	0	30	3389
34	DECEMBER	12	1968 3	68	407	6.0	2	7	39	0	22	327	1659
35	DECEMBER	5]	1951 11	68	281	4.1	1	4	44	• 0	33	356	1333
36	APRIL	16 1	1963 16	67	193	2.9	1	4	11	0.1	88	154	3335
37	NOV EMBER	16 1	1948 21	67	162	2.4	4	5	17	0	3	3	408
3.8	MAY	6 1	1979 19	65	239	3.7	14	3	29	0	0	28	3009
39	JANUARY	4 1	1966 7	64	644	10.1	1	2	37	0	101	470	1756
40	JANUARY	19	1953 17	64	251	3.9		7	20	16	90	252	1544
41	JANUARY	25	1965 10	64	243	3.8	1	3	20	0	14	16	3666
42	FEBRUARY	16 1	1958 16	63	387	6.1	3	2	36	0	51	222	3064
43	DECEMBER	2	1970 17	63	222	3.5	5	9	17	0	0	349	1157
44	JANUARY	29	1954 7	62	428	6.9	1	0	21	2	109	255	2499
45	MAY	7	1963 7	60	328	5.5		9	27	7	12	73	3650
46	NOV EMBER	12	1951 18	60	237	4.0		8	42	30	56	57	637
47	JANUARY	6	1976 10	59	303	5.1	. 1	0	56	2	30	62	2158
48	DECEMBER	14	1973 19	5.9	287	4.9	1	7	34	0	30	222	2531
49	FEBRUARY	18	1953 7	59	202	3.4		7	24	16	30	30	2401
50	FEBRUARY	2	1963 1	58	252	4.3		7	17	2	40	44	1664

OVERALL ORDER STATISTICS AT EUGENE SORTED BY DURATION

	DAT EV ENT	re Ended H	OUR I	OURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100	HOURS SIN LAST EVE)	NCE MAXIMUM ENT INTENSIT (IN/HR X 10	MAGNITUDE 4 LAST FY 12 HRS D0) (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51 1	DECEMBER	9 1952	0	58	194	3.3	7	25	36	141	303	507
52 I	MARCH	17 1953	. 5	58	146	2.5	52	14	0	0	71	2699
53 6	JANUARY	24 1970	1	57	350	6.1	7	25	. 1	42	330	2493
54	FEBRUARY	10 1960	5	57	293	5.1	21	27	0	72	245	1369
55 1	MARCH	13 1971	16	57	198	3.5	14	29	0	85	105	4220
56 1	NOVEMBER	16 1973	3	56	377	6.7	8	33	14	188	595	1218
57 1	DECEMBER	25 1954	14	56	92	1.6	22	7	0	3	3	987
58 3	JANUARY	17 1974	1	55	689	12.5	8	39	73	238	311	3778
59 1	NOVEMBER	25 1960	5	55	684	12.4	37	67	0	12	197	683
60 0	DCTOBER	31 1956	1	55	247	4.5	30	25	0	3	337	578
01 1	DECEMBER	5 1967	10	55	243	4.4	17	32	0	90	222	918
62 0	JANUARI	12 19/3	19	55	228	4.1	33	24	0	4	11	1621
64 -	NOV ENBER	29 19/1	10		168	3.1	8	22	. 18	314	428	1112
65 1	TECEMBED	10 1900	21	55	100	1.9	18		0	3	71	857
66 1	RCEMPER	2 1064	21	54	400	4./	0	30	30	35	341	1621
67 1	FERRIARY	A 1040	16	54	232	4.5	20	31	63	/1	452	1077
68	TANHARY	21 1967	16	53	367	1. 5	33		· · · · · · · · · · · · · · · · · · ·	1	15	1860
69	TANIJARY	9 1953	3	53	241	4 5	04 7	30			55	2170
70 3	JANUARY	31 1961	5	53	228	4.3	136	25	4	4	89	1001
71 0	OCTOBER	11 1962	21	53	192	3.6	100	20	2	70	258	205
72 1	FEBRUARY	27 1972	23	53	181	3.4	18	26	2 0	82	238	3876
⁴ 73 I	DECEMBER	18 1949	18	53	169	3.2	7	17	28	64	90	973
74 3	JANUARY	14 1950	10	53	123	2.3	11	17	Ő	89	411	1718
75 N	MARCH	25 1975	1	52	190	3.7	8	11	i	149	463	3665
76 3	JANUARY	9 1968	21	52	176	3.4	61	18	0	0	25	1352
77 1	1AY	26 1960	7	52	156	3.0	10	13	1 .	16	93	3376
78 Æ	APRIL	21 1955	7	52	78	1.5	60	8	0	0	161	2363
79 I	DECEMBER	6 1971	8	51	274	5.4	15 .	33	0	32	200	1312
80 3	JANUARY	16 1956	3	51	263	5.2	27	19	0 ° °	36	124	3838
- 81 F	APRIL	10 1971	3	51	252	4.9	38	23	0	2	2	4805
82 1	IARCH	10 1954	19	51	127	2.5	7	17	1	86	86	3382
03 1	JANUARY	18 19/1	<u>8</u>	50	299	6.0	9.4	34	9	174	501	2950
04 <u>1</u> 85 1	EBRUARY	20 19/0	12	50	28/	5.7	6	29	2	28	113	3481
86 0	CTORER .	18 1950	21	50	100	3.3	1/	14	0	38	107	1250
87 6	FEBRUARY	21 1956	16	10	104	3.3	30	1/	0	22	22	309
88 1	IOVEMBER	9 1973	16	49	220	0.2	12	20	1	4	36	4454
89 1	DECEMBER	30 1951	7	49	150	31	12	10	0	140	387	024
90 E	EBRUARY	11 1979	19	49	147	3.0	6	73	1 7	149	205	1941
91 N	ARCH	9 1951	15	49	93	1.9		20	7	15	337	4204
92 J	JANUARY	29 1965	0	48	328	6.8	14	20	0	30 A0	235	4304
93 N	IOV EMBER	5 1973	14	48	315	6.6	46	28	ŏ	3	2/1 05	3323
94 N	IARCH	27 1962	10	48	233	4.9	6	18	85	182	286	3170
95 J	JANUARY	18 1951	8	48	218	4.5	10	15	2	84	200	3045
96 N	OVEMBER	19 1955	14	48	206	4.3	16	40	õ	46	60	783
97 N	IOV EMBER	28 1949	1	48	152	3.2	12	16	ŏ	18	207	572
98 N	IARCH	22 1953	12	48	129	2.7	6	14	12	43	202	2901
99 A	PRIL	15 1978	23	48	121	2.5	150	10		Ō	- <u>1</u> -	4285
100 N	IOV EMBER	9 1963	5	47	319	6.8	20	25	Õ	61	123	362

OVERALL ORDER STATISTICS AT PORTLAND SORTED BY MAGNITUDE

1 JANUARY 16 1974 17 115 544 4.7 278 23 0 0 0 2462 2 DECEMBER 30 1955 12 114 434 3.8 9 14 7 77 161 10661 4 JANUARY 4 1956 23 69 387 5.6 17 23 0 55 123 2462 6 EVC ENBER 24 360 11 46 323 743 7 JANUARY 20 1970 10 110 328 3.0 31 21 0 53 311 1764 10 JANUARY 20 1970 10 110 328 3.0 31 21 0 53 311 166 14 JANUARY 20 1953 14 61 34 292 6.2 1 6 55 28 64 162 15 28 162 133 194 146 122 133 194		DAT EV EN T	re Ended	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (N/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1 1			10	1074 17	,,	(,		27.0		0	0	0	2462
5 DECEMBER 21 DECAMPSE 23 DECAMPSE 23 DECAMPSE 24 24 0 90 DES DES 5 DECEMBER 21 JANUARY 4 DES 23 72 376 5.2 7 23 1 15 23 BE 7 DANUARY 20 1950 10 110 328 3.0 31 21 0 53 311 166 9 JANUARY 20 1964 13 92 20 43 94 166 9 JANUARY 20 164 14 12 0 53 141 168 9 JANUARY 10 150 14 128 0 9 135 128 143 143 143 143 143 143 143 143 143 143 143 143 143 143 143 143 143 143 143 <td>2</td> <td>JANUARI</td> <td>30</td> <td>19/4 1/</td> <td>115</td> <td>244 131</td> <td>4./</td> <td>2/8</td> <td>23</td> <td>7</td> <td>77</td> <td>181</td> <td>1061</td>	2	JANUARI	30	19/4 1/	115	244 131	4./	2/8	23	7	77	181	1061
4 JANNARY 24 1956 23 72 376 5.6 13 29 0 54 121 2462 6 MOVENBER 24 1960 21 444 355 8.1 7 30 11 46 323 743 7 JANUARY 20 1964 3 99 320 3.2 7 20 20 43 94 1484 9 JANUARY 20 1964 3 99 320 3.2 7 20 20 43 94 1484 9 JANUARY 20 1950 18 292 5.7 14 12 0 3 142 182 163 163 0 163 163 163 0 163 163 163 114 152 270 3.8 49 16 0 0 29 131 13 130 144 163 10 73	2	DECEMBER	22	1967 5	56	201	7 0	24	24	0	90	181	1066
5 MOVEMBER 17 1950 23 97 376 5.22 77 23 1 15 23 143 7 MANNARY 20 1970 10 110 328 3.0 31 21 0 53 311 1764 9 JANNARY 20 1953 14 61 319 5.2 7 25 1 2 133 994 10 JANNARY 9 1953 14 61 319 5.2 7 25 1 2 133 994 11 PEBRUARY 11 1961 1 47 290 6.2 11 18 0 49 155 2083 133 133 133 133 133 133 133 133 133 133 133 133 133 133 133 133 133 133 144 16 16 16 133 133	2	TAMUADY	23	1904 J	50	207	5.6	13	29	ů ·	54	121	2462
G G	4	NOVEMBED	17	1050 23	72	376	5.2	13	23	1	15	23	846
0 0 0 0 10 0 20 10 10 20 11	6	NOVEMBER	21	1060 21		355	2.1 Q`1	, ,	20	11	46	323	743
6 JANNARY 20 120 12 7 20 20 13 94 1484 9 JANNARY 9 1950 14 319 52 7 25 1 2 133 194 10 JANNARY 20 1950 18 51 292 5.7 14 12 0 3 142 1823 11 FEBRUARY 11 151 47 280 6.2 11 18 0 49 15 208 81 459 910 12 JANUARY 26 1964 55 276 9.9 11 32 0 77 12 1131 15 MARCM 10 1953 10 72 266 3.7 73 34 43 77 77 1802 16 DEERNEARY 19 1954 17 253 6.8 15 21 0 0 0	7	TANIIADV	24	1970 10	110	328	3 0	31	21	1	53	311	1764
9 JANUARY 6 1953 14 61 319 5.2 7 14 12 0 3 142 1823 11 PERRUARY 11 1961 1 47 290 6.2 11 18 0 49 155 2083 11 JANUARY 20 1964 8 56 278 5.0 21 29 0 8 298 1833 12 JANUARY 10 1955 7 270 3.8 49 16 0 0 29 1311 14 JANUARY 19 1965 7 266 3.7 14 17 0 19 82 2272 11 PERBUARY 13 1954 17 52 262 5.0 272 14 0 0 0 20 20 77 1908 190 10 10 20 20 10 10 10	Ŕ	TANUARY	20	1964 3	99	320	3.2	7	20	20	43	94	1484
10 JANUARY 20 1950 18 51 292 5.7 14 12 0 3 142 123 11 FERENARY 10 1961 47 290 6.2 11 18 0 49 155 2083 12 NOVEMBER 16 1973 1 35 282 8.1 6 35 28 81 459 910 13 JANUARY 26 1964 8 56 276 5.0 21 29 0 8 298 1833 14 JANUARY 10 1959 5 72 270 3.8 49 16 0 0 29 1331 15 MARCH 30 1963 10 72 266 3.7 14 17 0 19 82 2272 16 DECHERE 13 1977 14 27 267 9.9 11 32 0 77 172 1151 17 FEBRUARY 13 1964 17 38 264 6.9 7 31 43 77 77 1908 18 FEBRUARY 13 1956 14 70 260 3.7 25 26 0 6 40 1501 19 JANUARY 4 1966 14 70 260 3.7 25 26 0 6 40 1502 20 FEBRUARY 13 1957 14 273 66.2 50 14 0 0 377 2808 12 OCTOBER 9 1955 19 37 253 6.2 50 14 0 0 377 2808 21 OCTOBER 9 1955 19 37 253 6.2 50 14 0 0 377 2808 22 JANUARY 23 1970 7 36 249 6.9 14 900 0 105 376 2140 23 NOVEMBER 13 1957 7 42 248 5.9 29 21 0 10 26 818 24 FEBRUARY 10 1949 7 20 244 12.2 15 20 0 22 105 316 2140 24 FEBRUARY 10 1949 7 20 244 12.2 15 20 0 22 105 316 139 454 25 NOVEMBER 19 1953 1 51 237 4.6 193 25 0 0 25 1341 25 NOVEMBER 19 1955 7 14 2 236 5.2 11 12 0 42 45 2073 30 JANUARY 25 1953 1 51 237 4.6 193 25 0 0 0 65 1130 28 NOVEMBER 2 1953 1 51 237 4.6 193 25 0 0 0 35 77 30 30 JANUARY 25 1955 19 37 233 4.5 24 19 0 0 35 77 30 30 JANUARY 25 1955 19 37 7 237 4.6 193 25 0 0 0 35 77 30 30 JANUARY 25 1955 19 37 7 237 4.6 193 25 0 0 0 35 77 30 30 JANUARY 25 1955 19 237 3 4.5 24 19 0 33 77 30 30 JANUARY 21 1975 1 45 236 5.5 1 230 4.5 6 6 21 12 78 90 30 JANUARY 21 1975 1 45 236 5.5 1 230 4.5 6 12 71 37 26 0 13 30 JANUARY 21 1956 15 51 230 4.5 6 12 57 237 4.6 193 25 0 85 210 30 JANUARY 21 1957 14 20 45 226 5.0 6 12 9 49 22 105 30 JANUARY 21 1957 17 21 20 4.5 236 4.5 10 6 23 10 78 90 30 JANUARY 21 1956 15 12 200 4.5 14 202 3.7 73 72 6 0 18 67 30 JANUARY 21 1957 17 23 201 8.7 61 23 3 30 77 73 73 30 JANUARY 12 1957 17 23 201 8.7 61 20 42 33 3071 43 JANUARY 21 1957 17 23 201 8.7 61 20 42 9 32 17 157 260 2030 41 FEBRUARY 22 1955 10 47 190 4.0 6 33 33 0 37 7 73 73 45 NOVEMBER 11 1955 51 18 191 10.6 33 33 0 37 7 73 73 45 NOVEMBER 11 1955 51 18 191 10 10 10 14 6 26 152 1924 47 FEB	ğ	JANUARY	- 9	1953 14	61	319	5.2	. 7	25	1	2	133	994
11 PEBRUARY 11 1961 1 47 290 6.2 11 18 0 49 165 208 12 NOTENBER 16 1973 1 35 202 6.1 6 35 28 81 459 910 13 JANUARY 26 1964 8 56 278 5.0 21 29 0 8 298 1831 15 MARCH 30 1963 10 72 268 3.7 14 17 0 19 82 2272 16 DECEMBER 13 1977 14 27 267 9.9 11 32 0 77 12 1151 17 FEBRUARY 19 1956 17 38 264 6.9 7 31 43 77 77 190E 19 JANUARY 4 1966 14 70 260 3.7 25 26 0 6 440 1501 19 JANUARY 4 1966 14 70 260 3.7 25 26 0 6 440 1501 19 JANUARY 4 1966 14 70 260 3.7 25 26 0 6 440 1501 20 FEBRUARY 16 1970 17 41 253 6.2 50 14 0 0 37 2808 21 OCTOBER 9 1955 19 37 253 6.8 15 21 0 23 109 109 22 JANUARY 23 1970 7 36 249 6.9 14 90 0 105 376 2240 22 JANUARY 10 1949 7 20 244 5.9 29 22 1 0 10 26 3109 109 23 NOVERMER 19 1955 7 42 248 5.9 29 29 21 0 10 26 3141 25 NOVERMER 9 1973 14 26 240 9.2 37 6 16 0 36 38 1468 27 DECEMBER 21 1953 1 51 239 4.7 16 16 0 36 38 1458 27 DECEMBER 21 1953 1 51 239 4.7 16 16 0 36 38 1458 27 DECEMBER 21 1953 1 51 239 4.7 16 16 0 36 38 1458 27 DECEMBER 21 1953 1 51 239 4.7 16 16 0 36 38 1458 27 DECEMBER 21 1953 1 51 239 4.7 16 16 0 36 38 1458 27 DECEMBER 21 1953 1 51 239 4.7 16 16 0 36 38 1458 27 DECEMBER 21 1953 1 51 239 4.7 16 16 0 36 38 1458 27 DECEMBER 21 1953 1 51 239 4.7 16 16 0 36 38 1458 27 DECEMBER 21 1953 1 51 230 4.5 24 19 0 35 7 4 3028 30 JANUARY 25 1975 21 45 226 5.0 6 20 12 78 90 1893 29 JANUARY 26 1956 5 51 200 4.5 24 19 0 35 7 4 3028 30 JANUARY 27 1976 12 247 213 4.5 28 13 25 0 0 13 302 30 JANUARY 26 1956 5 51 200 4.5 24 19 0 35 7 4 3028 31 JANUARY 27 1976 12 247 202 4.8 11 32 0 70 108 2348 33 JECEMBER 5 1966 12 247 213 3.5 14 23 0 23 58 678 33 DECEMBER 5 1950 5 51 200 4.5 24 19 0 35 74 3028 30 JANUARY 7 1950 21 54 202 3.7 7 37 26 0 18 86 1311 37 FEBRUARY 27 1976 12 242 202 4.8 11 32 0 70 108 2348 39 JANUARY 71 1950 21 54 202 3.7 7 37 72 60 18 86 1311 37 FEBRUARY 27 1976 12 42 202 4.8 11 32 0 70 108 2348 39 JANUARY 71 1950 21 54 202 3.7 7 37 26 0 18 86 1311 37 FEBRUARY 28 1957 17 23 201 8.7 61 18 0 23 23 3071 43 JANUARY 28 1957 10 63 190 3.0 10 14 6 26 6 134 1324 47 FEBR	ıñ	TANIJARY	20	1950 18	51	292	5.7	14	12	Ō	3	142	1823
12 10 10 10 10 10 10 10 10 14 14 14 10 15 12 10 10 13 10<	îĭ	FEBRUARY	ĩĩ	1961 1	47	290	6.2	11	18	ŏ	49	155	2083
13 17 17 13 22 0 77 172 1151 17 19 1968 17 38 264 6.9 7 31 43 77 77 1908 19 19 19 17 1 25 26 26 0 6 440 1501 10 10 26 3 77 25 26 0 0 10 37 2408 21 300 15 130 37 24 <t<< td=""><td>12</td><td>NOVEMBER</td><td>16</td><td>1973 1</td><td>35</td><td>282</td><td>8.1</td><td>6</td><td>35</td><td>28</td><td>81</td><td>459</td><td>910</td></t<<>	12	NOVEMBER	16	1973 1	35	282	8.1	6	35	28	81	459	910
1 1	13	JANUARY	26	1964 8	56	278	5.0	21	29	0	8	298	1833
15 MARCH 10 19 82 2272 16 DECEMBER 13 17 0 19 82 2272 16 DECEMBER 13 19 16 17 18 266 6.9 7 31 43 77 77 1908 18 FEBRUARY 13 1954 17 52 262 5.0 272 14 0 0 0 28 18 FEBRUARY 14 166 14 7 0 0 37 2080 20 OTOBER 9 14 30 0 105 376 2140 21 OCTOBER 9 1955 7 42 248 5.9 29 21 0 10 22 105 1341 24 FEBRUARY 10 1949 7 20 244 12.2 15 20 0 0 10 26 16 16 0 36 38 1464 25 NOVEMBER 1937	14	JANUARY	10	1959 5	72	270	3.8	49	16	Ō	0	29	1311
16 DECEMBER 13 1977 14 27 267 9.9 11 32 0 77 172 1151 17 PEBRUARY 13 1956 17 52 262 5.0 272 14 0 0 0 268 19 JANUARY 4 1966 14 77 7100 109 109 20 PEBRUARY 16 1970 17 41 253 6.2 50 14 0 0 37 260 21 OCTOBER 9 1955 19 37 253 6.8 15 21 0 105 376 210 21 NOVENBER 19 1955 7 42 48 5.9 29 21 0 105 376 2140 23 NOVENBER 19 1955 7 42 45 30 0 8 139 454 25 NOVENBER 19 157 14 24 24 240 9 13	15	MARCH	30	1963 10	72	268	3.7	14	17	0	19	82	2272
17 PEBRUARY 13 15 156 17 38 264 6.9 7 31 43 77 77 1908 18 FEBRUARY 13 1954 17 52 26 0 6 440 1501 19 JANUARY 4 1966 14 70 262 5.0 272 14 0 0 0 2682 19 JANUARY 4 1966 14 70 23 107 108 2010 10 23 109 109 20 109 20 109 20 109 20 100 10 26 100 10 26 100 20 2105 1341 10 10 26 110 20 20 2105 1341 13 454 25 20 0 22 105 1341 15 139 454 26 26 2195 1341 145 26 26 2195 1341 10 10 26 1341 10 10 <t< td=""><td>16</td><td>DECEMBER</td><td>13</td><td>1977 14</td><td>27</td><td>267</td><td>9.9</td><td>11</td><td>32</td><td>0</td><td>77</td><td>172</td><td>1151</td></t<>	16	DECEMBER	13	1977 14	27	267	9.9	11	32	0	77	172	1151
16 15 16 17 52 262 5.0 272 14 0 0 0 268 19 JANUARY 4 1966 14 70 260 3.7 255 266 0 6 440 1501 20 PEBRUARY 16 1970 17 41 253 6.8 15 21 0 23 109 109 22 JANUARY 23 1970 7 36 249 6.9 14 90 0 105 376 2140 22 JANUARY 10 1949 7 20 244 12.2 15 20 0 22 105 1341 25 NOVEMBER 21 1953 1 51 239 4.7 16 16 0 36 38 1468 27 DECEMBER 21 1953 1 51 237 4.2 47 33 0 0 6 38 1468 27 DECEMBER 21	î7	FEBRIJARY	19	1968 17	38	264	6.9	7	31	43	77	77	1908
19 JABULARY 1 1966 14 70 260 3.7 25 26 0 6 440 1501 20 PEBRUARY 16 170 17 41 253 6.2 50 14 0 0 37 2808 21 OCTOBER 9 1955 19 37 26 24 6.9 14 90 0 105 376 2140 23 NOVEMBER 19 1955 7 42 248 5.9 29 21 0 10 26 818 24 FEBRUARY 10 1949 7 20 244 12.2 15 20 0 22 105 1341 25 NOVEMBER 21 1953 1 51 237 4.6 193 25 0 0 0 390 25 NOVEMBER 24 1949 11 51 236 5.2 11 12 0 42 45 2073 30 300 300	18	FEBRUARY	13	1954 17	52	262	5.0	272	14	0	0	0	2682
20 PERPENARY 16 1970 7 41 253 6.2 50 14 0 0 37 2808 21 OCTOBER 9 1955 19 37 253 6.8 15 21 0 23 109 109 23 JANUARY 23 1970 7 36 244 59 29 21 0 10 26 818 23 JANUARY 23 1973 14 26 240 9.2 37 30 0 8 139 454 25 DECEMBER 2 153 1 51 239 4.7 16 16 0 36 38 1468 27 DECEMBER 2 1953 1 51 237 4.2 47 33 0 0 65 1130 28 NOVEMBER 24 193 13 25 0 0 0 390 148 20 JANUARY 21 1975 21 42	19	JANUARY	4	1966 14	70	260	3.7	25	26	0	6	440	1501
21 OCTOBER: 9 9 95 19 109 109 22 JANUARY 23 1970 7 36 249 6.9 14 90 0 105 376 2140 22 JANUARY 10 1949 7 20 244 12.2 15 20 0 22 105 1341 24 FEBRUARY 10 1949 7 20 244 12.2 15 20 0 22 105 1341 25 NOVEMBER 9 1973 14 26 244 12.2 15 20 0 22 105 1341 26 DECEMBER 21 1953 1 51 237 4.6 193 25 0 0 0 313 28 NOVEMBER 24 1949 11 51 237 4.6 193 25 0 0 0 390 29 JANUARY 16 1956 5 1 230 4.5 24 <td>20</td> <td>FEBRILARY</td> <td>16</td> <td>1970 17</td> <td>41</td> <td>253</td> <td>6.2</td> <td>50</td> <td>14</td> <td>Ō</td> <td>Ō</td> <td>37</td> <td>2808</td>	20	FEBRILARY	16	1970 17	41	253	6.2	50	14	Ō	Ō	37	2808
22 JANUARY 23 1970 7 36 249 6.5 14 90 0 105 376 2140 23 JANUARY 1955 7 42 248 5.9 29 21 0 105 376 2140 23 MOVEMBER 1955 7 42 248 5.9 29 21 0 10 26 818 24 FEBRUARY 10 1949 7 20 244 12.2 15 20 0 22 105 1341 25 NOVEMBER 9 1953 1 51 237 4.2 47 33 0 0 65 1130 26 DECEMBER 5 1949 11 51 236 5.2 11 12 0 42 45 2073 30 JANUARY 12 1972 0 45 226 5.0 6 20 12 78 90 1889 31 JANUARY 1972 0 45 <td>21</td> <td>OCTOBER</td> <td>9</td> <td>1955 19</td> <td>37</td> <td>253</td> <td>6.8</td> <td>15</td> <td>21</td> <td>0</td> <td>23</td> <td>109</td> <td>109</td>	21	OCTOBER	9	1955 19	37	253	6.8	15	21	0	23	109	109
23 NOVEMBER 15 15 2 24 15 10 26 818 24 PEBRUARY 10 1949 7 20 244 12.2 15 20 0 22 105 1341 25 NOVEMBER 9 173 14 26 244 12.2 17 30 0 8 139 454 25 NOVEMBER 21 1953 1 51 239 4.7 16 16 0 36 38 1468 26 DECEMBER 21 968 12 57 237 4.6 193 25 0 0 0 390 29 JANUARY 16 1956 5 1 230 4.5 24 19 0 35 74 3028 31 JANUARY 16 1956 5 1230 4.5 28 25 0 23 58 68	22	TANUARY	23	1970 7	36	249	6.9	14	90	0	105	376	2140
24 PERUARY 10 10 10 10 10 10 10 10 10 13 14 12 12 15 20 0 22 105 1341 25 NOVEMBER 9 1973 14 26 240 9.2 37 30 0 8 139 458 25 DECEMBER 2 1953 1 51 239 4.7 16 16 0 36 38 1468 27 DECEMBER 5 1968 12 57 237 4.2 47 33 0 0 65 1130 28 NOVEMBER 24 1949 11 51 236 5.2 11 12 0 42 45 2073 30 JANUARY 21 1972 0 45 226 5.0 6 20 12 78 90 1889 32 DECEMBER 5 1951 6 6 207 3.7 11 28 0 83 <td>23</td> <td>NOVEMBER</td> <td>19</td> <td>1955 7</td> <td>42</td> <td>248</td> <td>5.9</td> <td>29</td> <td>21</td> <td>0</td> <td>10</td> <td>26</td> <td>818</td>	23	NOVEMBER	19	1955 7	42	248	5.9	29	21	0	10	26	818
25 NOVEMBER 9 1073 14 26 240 9.2 37 30 0 8 139 454 26 DECEMBER 21 1953 1 51 239 4.7 16 16 0 36 38 1468 27 DECEMBER 5 1968 12 57 237 4.2 47 33 0 0 65 1130 28 NOVEMBER 21975 21 45 236 5.2 11 12 0 42 45 2073 30 JANUARY 21 1975 21 45 226 5.0 6 20 12 78 90 1889 31 JANUARY 21 1969 9 61 213 3.5 14 23 0 23 58 678 32 DECEMBER 1960 10 45 226 5.0 6 25 10 904 34 25 10 94 34 25 110 904	24	FEBRUARY	10	1949 7	20	244	12.2	15	20	0	22	105	1341
26 DECEMBER 21 1953 1 51 239 4.7 16 16 0 36 38 1468 27 DECEMBER 5 1968 12 57 237 4.2 47 33 0 0 65 1130 28 NOVEMBER 24 1949 11 51 237 4.6 193 25 0 0 0 390 29 JANUARY 25 1975 21 45 236 5.2 11 12 0 42 45 2073 30 JANUARY 16 1956 5 51 230 4.5 24 19 0 35 74 3028 31 JANUARY 16 1976 5 51 230 4.5 24 19 0 35 74 3028 31 JANUARY 1972 0 45 226 5.0 6 20 12 78 90 1889 32 DECEMBER 5 1951	25	NOV EMBER	9	1973 14	26	240	9.2	37	30	0	8	139	454
27 DECEMBER 5 1968 12 57 237 4.2 47 33 0 0 65 1130 28 NOVEMBER 24 1949 11 51 237 4.6 193 25 0 0 0 390 29 JANUARY 16 1956 5 51 230 4.5 24 19 0 35 74 3028 30 JANUARY 16 1956 5 51 230 4.5 24 19 0 35 74 3028 31 JANUARY 21 1969 61 213 3.5 14 23 0 23 58 678 32 DECEMBER 5 1966 12 47 3.7 11 28 0 83 263 1257 35 OCTOBER 23 1951 8 21 206 9.8 13 35 0 117 174 463 36 JANUARY 7 1950 21	26	DECEMBER	21	1953 1	51	239	4.7	16	16	Ū i	36	38	1468
28 NOVEMBER 24 1949 11 51 237 4.6 193 25 0 0 0 390 29 JANUARY 25 1975 21 45 236 5.2 11 12 0 42 45 2073 30 JANUARY 16 1956 51 230 4.5 24 19 0 35 74 3028 31 JANUARY 12 1972 0 45 226 5.0 6 20 12 78 90 1889 32 DECEMBER 1969 19 61 213 3.5 14 23 0 23 58 678 33 DECEMBER 5 1951 0 56 207 3.7 11 28 0 83 263 1257 35 OCTOBER 23 1951 8 21 206 9.8 13 35 0 117 174 463 36 JANUARY 1976 12 42	27	DECEMBER	5	1968 12	57	237	4.2	47	33	0	0	65	1130
29 JANUARY 25 1975 21 45 2073 30 JANUARY 16 1956 5 51 230 4.5 24 19 0 35 74 3028 30 JANUARY 16 1956 5 51 230 4.5 24 19 0 35 74 3028 31 JANUARY 11 1972 0 45 226 5.0 6 20 12 78 90 1889 32 DECEMBER 12 1966 12 47 213 4.5 28 25 0 25 110 944 4 DECEMBER 5 1951 8 21 206 9.8 13 35 0 117 174 463 36 JANUARY 7 1950 21 54 202 4.8 11 32 0 78 108 2348 39 JANUARY 16 1971 17 51 201 8.7 61 18	28	NOVEMBER	24	1949 11	51	237	4.6	193	25	0	0	0	390
30 JANUARY 16 1956 5 51 230 4.5 24 19 0 35 74 3028 31 JANUARY 21 1972 0 45 226 5.0 6 20 12 78 90 1889 32 DECEMBER 12 1969 12 47 213 3.5 14 23 0 23 58 678 33 DECEMBER 5 1966 12 47 213 4.5 28 25 0 25 110 904 34 DECEMBER 5 1951 0 56 207 3.7 11 28 0 83 263 1257 35 OCTOBER 23 1951 8 21 206 9.8 13 35 0 117 174 463 36 JANUARY 7 1950 21 54 202 3.7 37 26 0 18 86 1311 37 PEBRUARY 27	29	JANUARY	25	1975 21	45	236	5.2	11	12	· · · · · · · · · · · · · · · · · · ·	42	45	2073
31 JANUARY 21 1972 0 45 226 5.0 6 20 12 78 90 1889 32 DECEMBER 12 1969 19 61 213 3.5 14 23 0 23 58 678 33 DECEMBER 5 1966 12 47 213 4.5 28 25 0 23 58 678 34 DECEMBER 5 1951 0 56 207 3.7 11 28 0 83 263 1257 35 OCTOBER 23 1951 8 21 206 9.8 13 35 0 117 174 463 36 JANUARY 7 1950 21 54 202 3.7 37 26 0 18 86 1311 37 FEBRUARY 27 1976 12 42 02 3.7 17 157 260 2030 39 JANUARY 16 1971 17 <td>30</td> <td>JANUARY</td> <td>16</td> <td>1956 5</td> <td>51</td> <td>230</td> <td>4.5</td> <td>24</td> <td>19</td> <td>0</td> <td>35</td> <td>74</td> <td>3028</td>	30	JANUARY	16	1956 5	51	230	4.5	24	19	0	35	74	3028
32 DECEMBER 12 1969 19 61 213 3.5 14 23 0 23 58 678 33 DECEMBER 5 1966 12 47 213 4.5 28 25 0 25 110 904 34 DECEMBER 5 1951 0 56 207 3.7 11 28 0 83 263 1257 35 OCTOBER 23 1951 8 21 206 9.8 13 35 0 117 174 463 36 JANUARY 7 1950 21 54 202 3.7 37 26 0 18 86 1311 37 FEBRUARY 27 1976 12 42 202 4.8 11 32 0 70 108 2348 38 JANUARY 16 1971 7 23 201 8.7 61 18 0 0 84 1751 40 DECEMBER 21 1957 7 <	31	JANUARY	21	1972 0	45	226	5.0	6	20	12	78	90	1889
33 DECEMBER 5 1966 12 47 213 4.5 28 25 0 25 110 904 34 DECEMBER 5 1951 0 56 207 3.7 11 28 0 83 263 1257 35 OCTOBER 23 1951 8 21 206 9.8 13 35 0 117 174 463 36 JANUARY 7 1950 21 54 202 3.7 37 26 0 18 86 1311 37 FEBRUARY 27 1976 12 42 202 4.8 11 32 0 70 108 2348 38 JANUARY 16 1971 17 51 201 8.7 61 18 0 0 84 1751 40 DECEMBER 21 1955 17 14 199 14.2 9 32 17 157 260 2030 41 FEBRUARY 24	32	DECEMBER	12	1969 19	61	213	3.5	14	23	0	23	58	678
34 DECEMBER 5 1951 0 56 207 3.7 11 28 0 83 263 1257 35 OCTOBER 23 1951 8 21 206 9.8 13 35 0 117 174 463 36 JANUARY 7 1950 21 54 202 3.7 37 26 0 18 86 1311 37 FEBRUARY 27 1976 12 42 202 4.8 11 32 0 70 108 2348 38 JANUARY 16 1971 17 51 201 3.9 6 12 9 49 225 1843 39 JANUARY 13 1975 7 23 201 8.7 61 18 0 0 84 1751 40 DECEMBER 21 1955 17 14 199 14.2 9 32 17 157 260 2030 41 FEBRUARY 24<	33	DECEMBER	5	1966 12	47	213	4.5	28	25	0	25	110	904
35 OCTOBER 23 1951 8 21 206 9.8 13 35 0 117 174 463 36 JANUARY 7 1950 21 54 202 3.7 37 26 0 18 86 1311 37 FEBRUARY 27 1976 12 42 202 4.8 11 32 0 70 108 2348 38 JANUARY 16 1971 17 51 201 8.7 61 18 0 0 84 1751 40 DECEMBER 21 1955 17 14 199 14.2 9 32 17 157 260 2030 41 FEBRUARY 24 1957 12 56 198 3.5 44 16 0 4 5 1322 42 MAY 14 197 13.7 24 18 0 23 23 3071 43 JANUARY 5 1954 1 32	34	DECEMBER	5	1951 0	56	207	3.7	11	28	0	83	263	1257
36JANUARY7195021542023.7372601886131137FEBRUARY27197612422024.81132070108234838JANUARY16197117512013.9612949225184339JANUARY1319757232018.761180084175140DECEMBER211955171419914.293217157260203041FEBRUARY24195712561983.54416045132242MAY14197819531973.7241802323307143JANUARY519541321966.191743770182444OCDBER11195951819110.63333037737345NOVEMBER12195113721902.63518023571646JANUARY28196710631903.01014626154192447FEBRUARY2519500471904.0618810	35	OCTOBER	23	1951 8	21	206	9.8	13	35	0	117	174	463
37 FEBRUARY 27 1976 12 42 202 4.8 11 32 0 70 108 2348 38 JANUARY 16 1971 17 51 201 3.9 6 12 9 49 225 1843 39 JANUARY 13 1975 7 23 201 8.7 61 18 0 0 84 1751 40 DECEMBER 21 1955 17 14 199 14.2 9 32 17 157 260 2030 41 FEBRUARY 24 1957 12 56 198 3.5 44 16 0 4 5 1322 42 MAY 14 1978 19 53 197 3.7 24 18 0 23 23 3071 43 JANUARY 5 1954 1 32 196 6.1 9 17 4 37 70 1824 44 OCTOBER 11	36	JANUARY	7	1950 21	54	202	3.7	37	26	0	18	86	1311
38 JANUARY 16 1971 17 51 201 3.9 6 12 9 49 225 1843 39 JANUARY 13 1975 7 23 201 8.7 61 18 0 0 84 1751 40 DECEMBER 21 1955 17 14 199 14.2 9 32 17 157 260 2030 41 FEBRUARY 24 1957 12 56 198 3.5 44 16 0 4 5 1322 42 MAY 14 1978 19 53 197 3.7 24 18 0 23 23 3071 43 JANUARY 5 1954 1 32 196 6.1 9 17 4 37 70 1824 44 OCTOBER 11 1959 5 18 191 10.6 33 33 0 37 73 73 45 NOV EMBER 12	37	FEBRUARY	27	1976 12	42	202	4.8	11	32	0	70	108	2348
39JANUARY1319757232018.761180084175140DECEMBER211955171419914.293217157260203041FEBRUARY24195712561983.54416045132242MAY14197819531973.7241802323307143JANUARY519541321966.191743770182444OCTOBER11195951819110.63333037737345NOV EMBER12195113721902.63518023571646JANUARY28196710631903.01014626154192447FEBRUARY251950471904.061881025262348DECEMBER21197212261877.282746723382549NOV EMBER41969191618711.71133500930250NOV EMBER15196612621863.02238013714	38	JANUARY	16	1971 17	51	201	3.9	6	12	9	49	225	1843
40DECEMBER211955171419914.293217157260203041FEBRUARY24195712561983.54416045132242MAY14197819531973.7241802323307143JANUARY519541321966.191743770182444OCTOBER11195951819110.63333037737345NOV EMBER12195113721902.63518023571646JANUARY28196710631903.01014626154192447FEBRUARY2519500471904.061881025262348DECEMBER21197212261877.282746723382549NOV EMBER41969191618711.71133500930250NOV EMBER15196612621863.022380137143469	39	JANUARY	13	1975 7	23	201	8.7	61	18	0	0	84	1751
41 FEBRUARY 24 1957 12 56 198 3.5 44 16 0 4 5 1322 42 MAY 14 1978 19 53 197 3.7 24 18 0 23 23 3071 43 JANUARY 5 1954 1 32 196 6.1 9 17 4 37 70 1824 44 OCTOBER 11 1959 5 18 191 10.6 33 33 0 37 73 73 45 NOV EMBER 12 1951 13 72 190 2.6 35 18 0 2 35 716 46 JANUARY 28 1967 10 63 190 3.0 10 14 6 26 154 1924 47 FEBRUARY 25 1950 47 190 4.0 6 18 8 10 25 2623 48 DECEMBER 21 1972	40	DECEMBER	21	1955 17	14	199	14.2	9	32	17	157	260	2030
42 MAY 14 1978 19 53 197 3.7 24 18 0 23 23 3071 43 JANUARY 5 1954 1 32 196 6.1 9 17 4 37 70 1824 44 OCTOBER 11 1959 5 18 191 10.6 33 33 0 37 73 73 45 NOV EMBER 12 1951 13 72 190 2.6 35 18 0 2 35 716 46 JANUARY 28 1967 10 63 190 3.0 10 14 6 26 154 1924 47 FEBRUARY 25 1950 0 47 190 4.0 6 18 8 10 25 2623 48 DECEMBER 21 1972 12 26 187 7.2 8 27 4 67 233 825 49 NOV EMBER 4 1969 19 16 187 11.7 113 35 0 0 9 302 50 NOVEMBER 15 1966 12 62 186 3.0 22	41	FEBRUARY	24	1957 12	56	198	3.5	44	16	0	4	5	1322
43 JANUARY 5 1954 1 32 196 6.1 9 17 4 37 70 1824 44 OCTOBER 11 1959 5 18 191 10.6 33 33 0 37 73 73 45 NOV EMBER 12 1951 13 72 190 2.6 35 18 0 2 35 716 46 JANUARY 28 1967 10 63 190 3.0 10 14 6 26 154 1924 47 FEBRUARY 25 1950 0 47 190 4.0 6 18 8 10 25 2623 48 DECEMBER 21 1972 12 26 187 7.2 8 27 4 67 233 825 49 NOV EMBER 4 1969 19 16 187 11.7 113 35 0 0 9 302 50 NOV EMBER 15 1966 12 62 186 3.0 22 38 0 137 143 469 <td>42</td> <td>MAY</td> <td>14</td> <td>1978 19</td> <td>53</td> <td>197</td> <td>3.7</td> <td>24</td> <td>18</td> <td>0</td> <td>23</td> <td>23</td> <td>3071</td>	42	MAY	14	1978 19	53	197	3.7	24	18	0	23	23	3071
44 OCTOBER 11 1959 5 18 191 10.6 33 33 0 37 73 73 45 NOV EMBER 12 1951 13 72 190 2.6 35 18 0 2 35 716 46 JANUARY 28 1967 10 63 190 3.0 10 14 6 26 154 1924 47 FEBRUARY 25 1950 0 47 190 4.0 6 18 8 10 25 2623 48 DECEMBER 21 1972 12 26 187 7.2 8 27 4 67 233 825 49 NOV EMBER 4 1969 19 16 187 11.7 113 35 0 0 9 302 50 NOV EMBER 15 1966 12 62 186 3.0 22 38 0 137 143 469	43	JANUARY	5	1954 1	32	196	6.1	9	17	4	37	70	1824
45NOV EMBER12195113721902.63518023571646JANUARY28196710631903.01014626154192447FEBRUARY2519500471904.061881025262348DECEMBER21197212261877.282746723382549NOV EMBER41969191618711.71133500930250NOV EMBER15196612621863.022380137143469	44	OCTOBER	11	1959 5	18	191	10.6	33	33	0	37	73	73
46JANUARY28196710631903.01014626154192447FEBRUARY2519500471904.061881025262348DECEMBER21197212261877.282746723382549NOV EMBER41969191618711.71133500930250NOV EMBER15196612621863.022380137143469	45	NOV EMBER	12	1951 13	72	190	2.6	35	18	0	2	35	716
47 FEBRUARY 25 1950 0 47 190 4.0 6 18 8 10 25 2623 48 DECEMBER 21 1972 12 26 187 7.2 8 27 4 67 233 825 49 NOV EMBER 4 1969 19 16 187 11.7 113 35 0 0 9 302 50 NOV EMBER 15 1966 12 62 186 3.0 22 38 0 137 143 469	46	JANUARY	28	1967 10	63	190	3.0	10	14	6	26	154	1924
48 DECEMBER 21 1972 12 26 187 7.2 8 27 4 67 233 825 49 NOV EMBER 4 1969 19 16 187 11.7 113 35 0 0 9 302 50 NOV EMBER 15 1966 12 62 186 3.0 22 38 0 137 143 469	47	FEBRUARY	25	1950 0	47	190	4.0	-6	18	8	10	25	2623
49 NOV EMBER 4 1969 19 16 187 11.7 113 35 0 0 9 302 50 NOV EMBER 15 1966 12 62 186 3.0 22 38 0 137 143 469	48	DECEMBER	21	1972 12	26	187	7.2	8	27	4	67	233	825
50 NOVEMBER 15 1966 12 62 186 3.0 22 38 0 137 143 469	49	NOV EMBER	4	1969 19	16	187	11.7	113	35	0	0	9	302
	50	NOV EMBER	15	1966 12	62	186	3.0	22	38	Ō	137	143	469

OVERALL ORDER STATISTICS AT PORTLAND SORTED BY MAGNITUDE

51 NOVEMBER 20 1962 14 25 185 7.4 9 28 1 17 79	747 1585 1577
	1585 1577
52 DECEMBER 14 1973 7 64 184 2.9 7 21 10 10 103	1577
53 JANUARY 19 1953 17 48 184 3.8 7 15 13 95 253	
54 DECEMBER 28 1973 0 38 181 4.8 42 13 0 40 238	2190
55 NOVEMBER 7 1974 16 40 179 4.5 22 15 0 10 26	224
56 DECEMBER 2 1977 19 29 179 6.2 58 29 0 0 191	784
57 MAY 6 1963 16 39 178 4.6 12 13 0 1 49	2969
58 DECEMBER 10 1968 10 30 178 5.9 9 16 4 40 277	1407
59 DECEMBER 22 1971 3 41 177 4.3 148 10 0 0 44	1251
60 JANUARY 22 1954 14 39 177 4.5 65 16 0 0 200	2249
61 DECEMBER 4 1975 10 32 174 5.4 31 25 0 12 146	898
62 NOVEMBER 21 19/4 14 21 1/4 8.3 11 18 0 62 204	627
63 DECEMBER 21 1969 10 53 1/3 3.3 19 12 0 25 1/4	1046
64 DECEMBER 8 1952 22 /1 1/1 2.4 18 28 0 43 140	314
OS JANUARI SI 1930 12 09 1/1 2.3 10 1/ U SS 143	1/38
00 JANUARI 20 1905 23 49 1/1 3.5 15 22 U 39 239 67 PEDDIADU 21 1056 16 40 171 3 6 7 15 2 6 20	2270
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2862
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	574
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	572
71 NOVEMBER 12 1968 17 59 167 2.8 27 23 0 107 190	741
72 JANUARY 27 1954 23 26 167 6.4 12 18 0 43 252	2501
73 DECEMBER 2 1979 7 24 167 7.0 29 26 0 2 46	823
74 DECEMBER 16 1950 22 69 165 2.4 66 20 0 0 38	1798
75 MARCH 9 1966 19 52 165 3.2 16 21 0 65 112	2351
76 OCTOBER 19 1979 10 32 164 5.1 33 14 0 12 41	41
77 NOV EMBER 22 1961 5 22 164 7.5 7 20 3 3 29	418
78 DECEMBER 5 1967 17 63 163 2.6 11 19 0 41 112	740
79 NOVEMBER 15 1963 7 36 163 4.5 6 28 3 3 142	565
80 NOVEMBER 24 1964 17 34 162 4.8 15 13 0 25 25	349
81 OCTOBER 10 1953 3 17 162 9.5 27 30 0 8 8	35
82 APRIL 12 1955 17 46 161 3.5 8 21 5 53 55	2310
83 JANUARY 27 1970 17 70 160 2.3 8 14 14 111 574	2423
84 DECEMBER 11 1958 14 55 159 2.9 51 13 0 0 71	897
85 NOV EMBER 20 1960 17 29 158 5.4 20 20 0 72 237	539
86 FEBRUARY / 1951 18 43 155 3.6 31 34 0 5 111	3080
87 FEBRUARY 14 1959 17 39 155 4.0 70 22 0 0 102	2158
00 MARCH / 193/ 10 28 133 3.3 / 10 9 02 /0	1/34
00 DECEMBER 21 1073 1 31 134 3.0 33 10 0 0 20	2050
JU DECEMBER 21 175 12 43 135 3.4 41 14 0 3 30/ 01 MADCH 28 107 10 3 30/ 3 30/	1932
21 MARCH 20 17/4 14 50 155 4.0 50 20 0 0 0 02 DECEMBER 27 1055 1 AA 152 35 20 12 0 0 0 AA	2256
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	757
94 FEBRUARY 3 1963 5 36 152 4.2 11 12 0 124 158	1756
95 NOVEMBER 16 1953 14 21 152 7.2 9 23 2 23 44	472
96 MAY 6 1979 1 46 151 3.3 146 29 0 0 22	2076
97 DECEMBER 27 1974 5 25 151 6.0 24 20 0 1 108	1306
98 NOVEMBER 26 1971 10 20 150 7.5 15 14 0 57 104	599
99 OCTOBER 30 1975 8 53 149 2.8 11 10 0 27 135	327
100 DECEMBER 24 1968 7 45 149 3.3 27 15 0 3 158	1834

	DAT EV ENT	re Ended	HOUI	R DURATION (HOURS)	MAGNITUDE (in x 100)	AVERAGE Intensity (In/hr x 100)	HOURS LAST	SINCE EVENT	MAXIMUM Intensity In/hr x 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR So Far (IN X 100)
1	NOV EMBER	17 1	950 22	2 71	593	8.4	1	1	31	0	21	23	1171
2	JANUARY	27 1	970 1	171	592	3.5		7	34	19	114	444	2398
3	FEBRUARY	19 1	949 3	8 62	516	8.3		8	32	11	102	333	2501
4	DECEMBER	23 1	.964 !	5 58	503	8.7	1	0	36	13	163	237	1374
5	DECEMBER	31 1	965 14	139	496	3.6		6	21	2	73	1.84	1219
6	JANUARY	16 1	.974 17	50	476	9.5		6	26	45	221	323	3233
7	NOV EMBER	16 1	973 14	90	470	5.2		6	35	- 4	150	442	884
8	MARCH	31 1	963	3 98	468	4.8	1	3	22	0	14	84	2400
9	JANUARY	20 1	.964	5 101	452	4.5	. 1	2	22	0	23	112	1693
0	FEBRUARY	11 1	961]	50	452	9.0	1	2	26	. 0	41	122	2225
11	DECEMBER	22 1	957	132	445	3.4	1	1	17	0	33	51	898
	JANUARY	31 1	.958 II	96	421	4.4	5	4	28	0	0	111	1988
1.5	JANUARI	21 1	9/2 3	58	416	1.2	•	8	28	13	64	73	2047
141 I E	JANUARI	10 1	939 :		413	5./	. 1	5	21	U	2	81	1493
	UANUAR I	75 1	060 14	90	409	4.3	4	0	19	. 0	. 8	323	1704
17	TANUADV	201	900 3 056 (0 02	398	6.4 5.6	2	0	40	0	57	276	815
	FEDDIADV	26 1	057 5	1 106	390	J.U J.A	10	1	34	37	87	112	2702
10	OCTORED	10 1	955 (301	0.5	10	0" C	19	0	27	0	1430
วัก	FEBRUARY	13 1	954 17	, 11 58	344	5 9	2	3	20		37	10/	0/
21	MARCH	9 1	957 3	90	338	3.9	1	5	20	0	57	62	2/00
22	FEBRUARY	20 1	968	Å7	319	6.8	1	2	20	. 0	76	76	2000
23	JANIIARY	4 1	966 16	74	311	4.2		8	24	1	51	A 0 9	1717
24	FEBRUARY	21 1	956 12	45	307	6.8		6	24	8	11	42	4027
25	FEBRUARY	17 1	970 19	69	304	4.4	5	ĩ	30	ŏ	10	ů,	3166
26	JANUARY	28 1	967 3	56	298	5.3	-	6	25	3	16	160	1869
27	DECEMBER	51	951 19	77	296	3.8	1	2	29	ō	78	295	1455
28	JANUARY	71	950 18	3 50	294	5.9	3	7	37	0	8	91	1381
29	OCTOBER	29 1	950 2	2 61	291	4.8	1	3	26	Ō	85	110	664
10	DECEMBER	8 1	952 21	. 77	289	3.8		7	19	1	91	199	415
31	MAY	7 1	963 7	59	288	4.9		7	16	5	10	67	3324
32	DECEMBER	5 1	967 19	65	280	4.3	1	2	20	0	64	250	877
33	DECEMBER	51	966 12	2 54	280	5.2	1	3	22	0	41	102	855
34	APRIL	91	971 17	40	268	6.7	1	5	17	0	7	8	3801
35	FEBRUARY	10 1	949 16	34	267	7.9		9	19	2	21	164	2116
56	DECEMBER	4 1	968 21	. 37	266	7.2	4	9	28	0	0	50	1272
57	NOV EMBER	25 1	970 14	76	264	3.5	4	5	22	0	5	70	642
58	NOV EMBER	13 1	965 19	65	263	4.0		6.		22	73	122	465
59	JANUARY	13 1	9/4 19	48	263	5.5	27	6	33	0	0	0	2910
10	DECEMBER	13 1	9/3 15	66	262	4.0	. 8	6	28	0	0	130	1947
17.	JANUARI Novembed	20 1	903 23	48	262	5.5		9.	24	1	41	294	2702
1	DECEMBER	20 1	951 14	50	200	5.2	. 2	/ ·	38		5	27	756
	NOVEMBED	20 1	959 13		257	J.U E 0	Ţ	ייצ	19	U	52	39	1470
5	DECEMBER	191	961 12	72	237	3.0 		/ 5	13	U 0	U 27	128	658
16	MARCH	i	966 10		247	J.4 A A	T	6	23	0 25	21	105	902
17	DECEMBER	31 1	970	28	247	4.V 6 5	14	к К	20	20	140	122	2/31
8	JANUARY	111	969 14	63	243	2.0	2	υ	20	29 1	140	10/ 10/	1//0
9	OCTOBER	3 1	951 11	57	242	4.2	312	จั	38	ň	112	210	23/3
50	DECEMBER	12 1	969 12	56	242	4.3	1	3	27	ŏ	40	84	849

	DAT EV EN T	re Ended	HOUR	DURATION	MAGNITUDE	AV ERAGE INTENSITY	HOURS S	SINCE EVENT	MAXIMUM INTENSITY	MAGNITUDE LAST 12 HRS	MAGNITUDE LAST 48 HRS	MAGNITUDE LAST 168 HRS	MAGNITUDE YEAR SO FAR
				(HOURS)	(IN X 100)	(IN/HR X 100)).	(1	N/HR X 100) (IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
51	DECEMBER	10 1	968 10	28	242	8.6	34	4	18	0	4	275	1547
52	JANUARY	28 1	1954 1	33	240	7.3		7	17	2	85	243	2499
53	FEBRUARY	2 1	952 1	51	23 9	4.7		9	38	1	78	94	2625
54	MARCH	51	960 17	79	237	3.0	10	0	18	3	5	22	1743
55	JANUARY	16 1	971 17	82	235	2.9		9	20	5	38	159	2176
56	NOV EMBER	25 1	977 16	32	234	7.3	1:	3	35	0	78	165	585
57	FEBRUARY	14 1	959 14	31	234	7.5	63	2	21	. O	0	75	2611
58	NOV EMBER	17 1	953 5	50	231	4.6	1	1	35	÷. 0	7	37	433
59	JANUARY	20 1	953 14	14	230	16.4	10	0.1	46	10	165	480	2113
60	NOV EMBER	91	973 14	40	229	5.7	31	1	19	0	10	173	452
61	DECEMBER	191	960 1	67	228	3.4	1	8	13	2	2	27	1269
62	NOVEMBER	71	974 14	40	227	5.7	23	3	19	0	4	45	220
63	DECEMBER	15 1	.977 16	42	226	5.4		7	28	33	144	323	1340
- 64	OCTOBER	24 1	951 8	47	224	4.8	12	2	46	0	16	133	505
65	OCTOBER	19 1	979 21	43	223	5.2	33	3	18	0	5	10	10
66	JANUARY	27 1	953 3	62	222	3.6	. 44	4	20	0	8	534	2393
67	MARCH	28 1	974 12	39	221	5.7	31	7	27	0	13	13	4959
68	DECEMBER	4 1	.975 7	26	220	8.5	41	1	34	0	9	163	1192
69	JANUARY	16 1	956 10	56	219	3.9	17	7	21	0	44	87	3361
70	NOV EMBER	19 1	955 12	47	219	4.7	20	D	27	0	25	41	889
71	APRIL	13 1	955 1	55	216	3.9	10	0.	21	4	21	21	2382
72	DECEMBER	27 1	955 1	46	216	4.7	2	7	14	0	33	509	2439
73	DECEMBER	16 1	970 17	61	215	3.5	1	7 .	20	0	10	56	1352
74	NOV EMBER	23 1	953 1	34	214	6.3	1	1	26	0	14	278	711
75	NOV EMBER	25 1	955 12	72	213	3.0	_ 9	9	20	1	3	247	1111
/6	JANUARY	25 1	964 21	46	213	4.6	11	8	15	0	60	503	2232
77	JANUARY	28 1	959 0	33	213	6.5	1	1	19	0	3	153	2273
78	NOV EMBER	26 1	962 14	27	208	7.7		8	23	36	94	170	1012
79	JANUARY	11 1	950 10	49	207	4.2	1.	1	35	0	- 50	331	1704
80	DECEMBER	21 1	973 10	43	207	4.8	50	0	15	0	0	448	2491
81	NOV EMBER	20 1	978 3	37	206	5.6	43	1	20	0	2	9	129
82	NOV EMBER	12 1	968 19	61	205	3.4	34	4	29	0	16	134	804
83	MAY	14 1	978 23	43	203	4.7		5	14	14	33	49	3174
84	JANUARY	18 1	970 21	56	202	3.6		9	15	11	79	274	2084
85	DECEMBER	12 1	959 14	36	202	5.6	1	7	30	. 0	15	35	401
80	FEBRUARY	25 1	976 7	27	200	7.4	1	8	20	0	36	131	2600
8/	NOV EMBER	21 1	974 17	24	200	8.3	17	7	15	j O	15	164	628
88	NOVEMBER	5 1	969 3	22	200	9.1	11	2	35	0	0	11	444
09	APRIL	28 1	962 19	54	199	3.7	50	0	23	0	0	18	2600
90	FEBRUARY	26 I	958 12	66	196	3.0	27	7	24	0	29	73	· 2917
91	OCTOBER	23 1	.970 0	85	193	2.3	1	7	18	0	48	48	49
92	JANUARI	14 1	9/0 23	/6	193	2.5	47	/	12	U U	0	135	1844
93	JANUARI	24 1	1 202	29	191	6.6	12	2	17	0	26	31	2437
94 0F	FEBRUARY	2/ 1	.9/b 14	46	190	4.1	· · ·	9	27	1	200	255	2800
30	ma i Ma v	1/ 1	9/2 19	46	189	4.1	11	L	22	0	2	2	3903
90	MAI	61	9/9 19	66	186	2.8	149	9	15	0	0	28	2253
31	NOV EMBER	12 1	1 000	54	186	3.4	10	8	25	0	126	168	393
20	DECEMBER	23 1	905 IU	39	186	4.8	28	8	29	0	31	32	59
77	DECEMBER	21 1	955 17	15	186	12.4		1	25	26	194	312	2193
T00	ri a i	2 1	949 10	48	185	3.9	20	0	19	· · · · · · · · · · · · · · · · · · ·	15	19	3557

	5.87						NUEDACE	HOUDE STNCP	MRVTMIM	MAGNITUDE	MAGNITUDE	MAGNITUDE	MAGNITUDE
	DA'.	ENDED	UOI	ם מודי		MACNITUDE	AV ERAGE	HOURS SINCE	MAXIMUM	LAST 12 UPC	LAST AS UDC	168 UPC	ILAR So Fad
	EA DIA 1	ENDED	not	JR	(HOURS)	(IN X 100)	(IN/HR X 100)		N/HR X 100)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
1	DECEMBER	23	1964	8	127	1015	8.0	60	37	0	0	70	1572
2	DECEMBER	22]	L957	5	110	807	7.3	7	45	30	103	109	806
3	JANUARY	20]	1964 2	21	.93	721	7.8	14	65	0	98	162	1826
4	JANUARY	17 1	1974	1	55	689	12.5	8	39	73	238	311	3778
5	NOV EMBER	25]	1960	5	55	684	12.4	37	67	0	12	197	683
6	NOV EMBER	18]	1950	5	92	673	7.3	12	35	0	10	18	1344
7	DECEMBER	23]	1955	8	78	663	8.5	13	41	0	296	418	2187
8	NOV EMBER	24]	1961	7	69	649	9.4	79	31	0	0	24	571
9	JANUARY	4]	1966	7	64	644	10.1	12	37	0	101	470	1756
10	FEBRUARY	11 1	1961	1	46	628	13.7	17	48	0	16	81	2376
11	JANUARY	22]	1972	7	81	608	7.5	6	40	2	155	163	2733
12	OCTOBER	29 1	1950	17	77	600	7.8	19	26	0	37	/1	603
13	JANUARY	15 1		21	167	525	3.1	1	14	3	15	15	2425
14	NOV EMBER	16 1	1966	3	/9	502	6.4	19	40	U .	11/	221	440
12	FEBRUARY	18 1	1949]	10	100	483	4.8	/4	19		2.20	102	2193
16	DECEMBER	1/ 1		5	//	459	6.0	0	23	/1	320	214	1994
1/	MARCH	34.1	1903 1065 1		101	408	. 0.0	. 0	41⊥ 10	10	10	1/4	1303
10	DECEMBER	21 1	1965 1	201	101	432	4.0		10	0	19	026	2956
7.2	DECEMBER	20 1	1955	3 7	60	430	9.3	39	20	· · · · · ·	100	255	2050
20	DECEMBED	29 1	1070	2	82	120	5 2	10	25		24	200	1980
21	NOVEMBER	25 1	1077	21	20	424	10 9	7	66	15	120	230	714
22	DECEMBER	12 1	1969	2	59	420	6.0	27	30	10	22	327	1659
24	OCTOBER	10	1955	- 7	31	403	13.0	30	28	ŏ	~ <u>5</u>	30	30
25	TANHARY	29	1967	19	95	307	4.2	12	23	õ	17	387	2557
26	JANUARY	8	1976	5	33	392	11.9	- <u>9</u>	32	ì	145	334	2461
27	FEBRUARY	16	1958	าด้	63	387	6.1	32	36	ō	51	222	3064
28	TANUARY	10	1959	16	77	379	4,9	ĩī	42	Õ	6	79	1501
29	NOV EMBER	16	1973	3	56	377	6.7	8	33	14	188	595	1218
30	JANUARY	21	1967	16	53	367	6.9	84	30	Ō	0	55	2170
31	DECEMBER	13	1948	8	100	366	3.7	7	20	1	8	284	1136
32	DECEMBER	19	1961 1	19	79	361	4.6	29	26	0	26	137	1550
33	JANUARY	24]	1970	1	57	350	6.1	. 7	25	1	42	330	2493
34	OCTOBER	19 1	1979 1	10	34	345	10.1	88	45	0	0	30	30
35	MARCH	6 1	1960	8	93	344	3.7	14	14	0	2	18	1780
36	FEBRUARY	7 1	1979	23	69	340	4.9	12	34	· · · 0.	· 4	4	1278
37	NOV EMBER	23	1953	5	40	335	8.4	11	28	0	20	166	569
38	NOV EMBER	13 1	1964	7	80	331	4.1	14	29	. 0	44	103	261
39	MAY	7	1963 -	7	60	328	5.5	. 9	27	7	12	73	3650
40	JANUARY	29 1	1965	0	48	328	6.8	14	27	0 -	40	271	3923
41	DECEMBER	1 1	1975	5	36	326	9.1	49	38	0	. 0	63	1125
42	FEBRUARY	14	1959	12	25	324	13.0	79	30	0	0	82	2758
43	JANUARY	6	1978	10	33	322	9.8	30	50	0	38	131	2728
44	NOV EMBER	20	1978]	τũ	43	321	7.5	29	42	0	7	9	142
45	NOV EMBER	9	1963	5	47	319	6.8	20	25	U	61	123	362
46	NOV EMBER	5	1973	14	48	315	6.6	46	28	Ŭ,	3	95	243
4/	NOV EMBER	21	19/1	. <u>Т</u> .	35	314	9.0	12	32	U U	80	110	/98
48	DECEMBER	5	1966 . 1966 .	TZ .	36	313	8./	1	32	8	21	119	1103
49	JANUARY	28	1929	Ļ	35	312	8.9	20	47	. 0	2	/5	2329
20	NOV EMBER	25 .	19/0	5	71	310	4.4	39	49	U and U	2	4/	/40

OVERALL ORDER STATISTICS AT EUGENE SORTED BY MAGNITUDE

	DAT EV EN T	'E ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE Intensity (IN/HR X 100	HOURS LAS	5 SINC F EVEN	E N T IN (IN/H	MAXIMUM NTENSITY NR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	DECEMBER	13 197	7 19	26	307	11.8		11		30	0	164	285	1687
52	FEBRUARY	21 195	6 16	49	305	6.2		7		25	1	4	36	4454
53	JANUARY	6 197	6 10	59	303	5.1		10		56	2	30	62	2158
54	DECEMBER	4 197	9 0	27	302	11.2		39		40	0	205	244	1421
55	DECEMBER	4 196	8 21	27	300	11.1		35		27	0.	1	93	1332
56	DECEMBER	30 196	4 16	92	299	3.3		12		14	0	192	1262	2972
57	JANUARY	18 197	1 8	50	299	6.0		9		34	9	174	501	2950
58	DECEMBER	20 195	3 12	46	299	6.5		20		25	0	34	41	1348
59	DECEMBER	4 19/	5 16	21	299	14.2		21		50	0	6	344	1457
60	JANUARY	12 195	9 1	17	299	17.6		6		54	5	124	445	1885
61	REDDUADY	2 197	2 19	39	294	7.5		16		21	0	69	373	4126
62	FEDRUARI	10 190	0 10	57	293	5.1		21		27	0	72	245	1369
61	F EDRUAR I	20 193	2 10	12	292	4.1		29		25	0	49	81	3532
65	DECEMBER	14 197	5 19	59	287	4.9		17.		34	. 0	30	222	2531
66	DECEMPED	20 19/	0 12	50	287	5./		. 6		29	2	28	113	3481
67	JANIJADV	27 195	1 11	00	201	4.1		14		44	0	33	356	1333
68	TANUARY	11 196	0 10	30	200	/ • 4		32		20	0	12	265	2280
69	JANUARY	12 197	20 23	22	270	0.2		10		22	5/	113	221	2786
70	NOVEMBER	19 195	8 19	29	276	0.4		12		29	U	55	69	2295
71	DECEMBER	6 197	1 8	51	274	5.4		15		32	U	20	164	/40
72	DECEMBER	7 195	3 10	105	26.8	2.6		22		26	. 0	32	200	1312
73	DECEMBER	21 196	9 12	31	266	8.6		<u> </u>		28	2	10	22	202
74	JANUARY	16 195	6 3	51	263	5.2		27		19	0	70	124	1200
75	MAY	17 197	2 5	32	263	8.2		7		31	2	20	124	5030
76	DECEMBER	12 196	9 3	25	258	10.3		10		49	2	50	100	906
77	JANUARY	24 195	0 17	115	256	2.2		8		15	4	68	202	2024
78	DECEMBER	10 197	1 21	54	255	4.7		6		30	้ารถ้	35	341	1621
79	NOV EMBER	26 196	2 12	24	255	10.6		82		37	Ő	Ĩ	70	981
80	NOV EMBER	7 197	4 1 2	35	254	7.3		22		21	ŏ	1 Ň	23	171
81	FEBRUARY	2 196	31	58	252	4.3		7		17	2	40	44	1664
82	APRIL	10 197	1 3	51	252	4.9		38		23	Ō	2	2	4805
83	MARCH	28 197	4 14	41	252	6.1		39		27	Ó	10	10	6292
84	JANUARY	19 195	3 17	64	251	3.9		7		20	16	90	252	1544
85	NOV EMBER	12 196	5 12	40	249	6.2		10		20		29	73	430
80	OCTOBER	31 195	6 7	55	247	4.5		30		25	0	3	337	578
8/	DECEMBER	27 197	4 /	21	245	11.7		95		48	0	0	155	1451
00	JANUARI	25 196	5 <u>10</u>	64	243	3.8	49.00	13		20	• • 0	14	16	3666
0.9	DECEMPER	3 190	7 10	55	243	4.4		17		32	0	90	222	918
01	NOVEMBER	21 107	2 19	24	242	6./		19		24	0	1	11	625
92	TANIIADV	28 106	5 5	54	242	2.5		48		42	0	0	462	1604
93	TANUARY	0 105	2 2	52	241	3.5		03		13	0	0	30	3389
94	MAY	6 197	9 19	65	241	4.0		42		25	4	4	89	1051
95	NOV EMBER	12 195	1 18	60	233	3./	ل	43		29	0	0	28	3009
96	JANUARY	25 197	0 12	29	235	Ω 1		6		42	30	56	57	637
97	MARCH	27 196	2 10	48	233	4.9		6		20 19	40	225	469	2843
98	DECEMBER	2 196	4 7	54	232	4.3		26		31	00 40	182	280	3170
99	NOV EMBER	9 197	3 16	49	230	4.7		12	a de la composición d	18	03	11	434	10//
100	DECEMBER	21 197	38	42	229	5.5		48		22	0 O	0	434	3020

	DA' EV EN T	re Ended	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SI LAST EV	NCE ENT (IN	MAXIMUM INTENSITY /HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	OCTOBER	10	1976 17	· 1	28	28.0	7.		28	3	17	17	26
2	MAY	7	1956 21	2	38	19.0	61		30	0	0	50	4419
3	MAY	26	1958 19	4	69	17.3	46		34	0	7	16	3011
4	MAY	9	1956 19	3	45	15.0	43		30	0	38	88	4457
5	MAY	1	1965 17	2	29	14.5	8		17	3	6	7	3053
6	DECEMBER	21	1955 17	14	199	14.2	9		32	17	157	260	2030
7	FEBRUARY	11	1961 12	- 1	14	14.0	9		- 14	19	241	423	23/3
8	DECEMBER	32	1953 0	1	14	14.0	83		12	0		48	1761
9	JANUARY	20	1953 10	8	106	13.3	10		24	· 1	121	31/	2603
10	APRIL	7	1958 17	2	26	13.0	68		19 -	U	00	221	2055
11	MARCH	13	1971 14	1	13	13.0	15		12	ů č		108	1784
12	FEBRUARY	19	1962 17	1	13	13.0	44		13	0	18	18	44
13	OCTOBER	18	1958 10	2	25	12.5	15		20	0	22	105	1341
14	FEBRUARY	10	1949 /	20	244	12.2	13		20	A State	122	209	316
15	OCTOBER	22	1954 17	2	24	12.0	15		12	. 0		7	2487
16	APRIL	1	1964 14	16	197	11 7	113		35	Ň	Ó	ġ	302
1/	NOV EMBER	4	1909 19	о ТО	. 23	11 5	21		13	Ŏ	i ·	8	831
10	DECEMBER	25	1957 7	10	110	11.0	18		28	0	4	5	409
20	MAY	25	1953 17	2	22	11.0	7		14	ì	25	53	3182
20	MAV	6	1973 19	ົ້	ĩĩ	11.0	13		11	0	1	8	2293
21	МАРСН	20	1964 19	- Â	43	10.8	6		28	10	10	35	2431
23	OCTOBER	11	1959 5	18	191	10.6	33		33	0	37	73	73
24	FEBRUARY		1961 21	11	115	10.5	31		26	0	29	111	1813
25	OCTOBER	10	1954 3	5	52	10.4	42		19	0	1	6	6
26	FEBRUARY	17	1953 17	5	51	10.2	10		15	11	83	111	2464
27	NOV EMBER	5	1962 12	3	30	10.0	9		21	13	49	49	380
28	NOV EMBER	17	1953 14	2	20	10.0	8		19	2	165	204	03/
29	JANUARY	24	1970 3	2	20	10.0	17		10	0	243	5/5	2309
30	APRIL	4	1958 19	1	10	10.0	47		10	U	21	40	2003
31	MAY	16	1974 19		10	10.0	7		10	5	31		4397
32	MAY	21	1949 17	1	10	10.0	22		10	· · · · ·	45	745	016
33	NOV EMBER	13	1968 17	1	10	10.0	12		10	U	40	172	1151
34	DECEMBER	13	1977 14	27	267	9.9	. 11		32	0	117	174	463
35	OCTOBER	23	1951 8	8 21	206	9.8	13		55	U	11/	29	2790
36	MAY	20	1968 0	15	14/	9.8	115		20	0	0	12	3087
37	MAY	20	19/6 19	1 3	29	9.1	75		20	30	90	277	1023
38	NOV EMBER	20	1902 1	15	162	0 5	27		30	0	8	- 8	35
39	OCTOBER	10	1955 3		102	9.5	3086		29	ŏ	Ő	Ō	0
40	MAV	2	1956 16	. 4 . Δ	38	9.5	17		23	Ŏ	9	24	4378
41	FFDDIIADV		1953 7		19	9.5			14	23	94	160	2276
12	DECEMBER	2	1948 7	12	112	9.3	13		22	0	30	102	405
44	JANUARY	10	1979 12	2 16	149	9.3	19		40	0	5	5	675
45	NOV EMBER	9	1973 14	26	240	9.2	37		30	0	8	139	454
46	MAY	11	1963 21	2	18	9.0	6		13	9	9	224	3193
47	DECEMBER	31	1958 21	t Ī	9	9.0	8		9	2	6	102	1285
48	FEBRUARY	10	1977 12	2 1	9	9.0	8		. 9	4	4	4	474
49	MARCH	18	1976 23	3 1	9	9.0	7		9	30	39	112	2678
50	JANUARY	13	1950 16	5 11	97	8.8	10		16	2	5	338	1686
OVERALL ORDER STATISTICS AT PORTLAND SORTED BY INTENSITY

							HOUDO GINOE	MANTMIN	MAGNITUDE	MAGNITUDE	MAGNITUDE	MAGNITUDE
	DA	CE			NACHTOURD	AVERAGE	HOURS SINCE	TNTENSTEV	12 HRS	AS HRS	168 HRS	SO FAR
	EV EN T	ENDED	HOUI	(HOURS)	(TN X 100)	$(TN/HR \times 100)$		$N/HR \times 100)$	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
				(HOOKS)	(10 x 100)	(10) III II 100)	· · · ·		•••••			· · · ·
51	JANUARY	13	975	7 23	201	8.7	61	18	· 0 · ·	0	84	1751
52	JANUARY	1 1	949	3 7	60	8.6	33	13	0	63	93	1037
53	OCTOBER	29 1	L968	7 2	17	8.5	92	12	н О на	0	- 4	460
54	MAY	27	1979 14	4 2	17	8.5	89	11	0	0	3	2296
55	DECEMBER	2	1972	7 7	59	8.4	67	21	0	0	107	465
56	MARCH	22	1971	7 5	42	8.4	163	17	0	0	2	3001
57	FEBRUARY	26	1957	3 16	134	8.4	6	2.8	3	85	207	1524
58	OCTOBER	21	1951 23	2 13	108	8.3	6	25	4	25	89	355
59	NOV EMBER	21	1974 14	4 21	174	8.3	11	18		62	204	02/
60	JANUARY	4	1975	1 13	107	8.2	11	21	0	10	110	1512
61	OCTOBER	11 :	1968 13	2 10	82	8.2	10	16	5	62	110	227
62	OCTOBER	17 :	1968 19	9 5	41	8.2	53	20	U	U	232	337
63	NOV EMBER	23	1948 1	87	57	8.1	32	15	0	24	104	230
64	DECEMBER	3	1970 10	9	73	8.1	ŢŢ	14	U 11	4	133	7/3
65	NOV EMBER	24	1960 2	1 44	355	8.1		30	20	91	450	910
66	NOVEMBER	16	1973	1 35	282	8.1	24	21	20	23	218	218
67	OCTOBER	8	1950 1	3 · · 9 ·	12	0.0	10	21	1	35	151	1405
68	NOV EMBER	28	1973 1	U 0	40	9.0	8	15	2	19	47	2014
70	APRIL	23 6	19/9 2.	Ω	16	8.0	24	ĩĩ	ō	15	37	3368
71	NOVEMBED	17	1075	1 1	10	8.0	7	8	4	45	128	693
72	TANUADV	17	1961	1 1	8	8.0	20	8	0	65	114	1694
73	FEBRUARY	22	1962	7 Î	ă ·	8.0	61	8	- 19 0	0	56	1797
74	DECEMBER	23	1971 2	1 15	119	7.9	17	16	0	86	178	1429
75	OCTOBER	26	1966 1	2 8	61	7.6	78	27	.0	0	157	227
76	NOVEMBER	22	1959 1	4 10	76	7.6	25	18	0	76	198	5 9 2
77	NOV EMBER	25	1954	5 5	38	7.6	131	13	0	0	83	794
78	NOV EMBER	26	1971 1	0 20	150	7.5	15	14	0	57	104	599
79	DECEMBER	11	1948 1	8 10	75	7.5	11	25	0	63	237	764
80	OCTOBER	16	1956 1	2 10	75	7.5	84	15	0	0	36	- 36
81	OCTOBER	20	1963 1	26	45	7.5	61	15	0	0	12	50
82	OCTOBER	21	1967	56	45	7.5	56	15	0	0	12	1600
83	JANUARY	25	1958	7 2	15	7.5	10	13	6	/5	103	1030
84	NOVEMBER	11	1977 1	7 2	15	7.5	34	13	Ŭ	11	50	1639
85	FEBRUARY	8	1955 1	0 17	127	/.5	14	10	U 2	34	29	418
86	NOV EMBER	22	1961	5 22	164	7.5	1	20	1	17	79	747
87	NOV EMBER	20	1962 1	4 25	185	7.4	125	17	n	1	101	2771
88	FEBRUARI	22	19/0 2	1 5	57	7.7	133	11	35	136	356	844
0.9	NOV EMDER	10	1057	1 0 1 3	22	7 3	Ğ	18	³ 3	115	362	2029
01	MARCH	20	10/0 1	8 J	22	7.3	11	17	Ŏ	22	22	2022
02	OCTORER	20	1057 1	6 3	22	7.3	7	16	5	5	5	5
07	OCTOBER	20	1963 1	6 7	22	7.3	ż	īi	12	12	74	282
94	MARCH	30	1954 1	0 16	117	7.3	178	12	Ō	Ō	0	3139
95	MARCH	15	1967 1	0 20	146	7.3	29	15	0	26	40	2432
96	TANUARY	10	1969 1	7 14	102	7.3	14	21	0	51	311	2579
97	MAY	26	1953	5 4	29	7.3	7	20	5	5	95	3364
98	FEBRUARY	27	1965 2	1 4	29	7.3	6	19	2	60	73	2691
99	NOV EMBER	16	1953 1	4 21	152	7.2	9	23	2	23	44	472
100	DECEMBER	6	1950	5 13	94	7.2	37	16	0	27	149	1647

										MAGNITUDE	MAGNITUDE	MAGNITUDE	MAGNITUDE
	DAT	re				AV ERAGE	HOURS	SINCE	MAXIMUM	LAST	LAST	LAST	YEAR
	EVENT	ENDED	HOUR	DURATION	MAGNITUDE	INTENSITY	LAST	EVENT	INTENSITY	12 HRS	48 HRS	168 HRS	SO FAR
				(HOURS)	(IN X IUU)	(IN/HR X 100)		(1	N/HR X 100)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
1	NOV EMBER	4	1978 1	2	57	19.0	1	8	46	0	2	25	30
2	OCTOBER	15	1951 16	4	72	18.0	Ť.	7	41	ő	42	129	372
จั	DECEMBER	31 1	1953 23	1 i	18	18.0	R	2	18	ň		- 27	1767
ă	JANHARY	20 1	1953 14	14	230	16.4	1	ก็	46	10	165	ARO	2113
5	OCTOBER	18	1958 10		46	15.3	1	Š	27	Ĩ	22	222	30
6	MAY	26 1	1958 17	2	28	14.0	Ā	7	26	ŏ	้ก	25	3785
7	JANUARY	22	1965 7	ī	14	14.0	•	6	14	6	12	17	2423
8	MARCH	21	1949 15	ī	14	14.0	1	9	14	Ő	58	155	3413
ğ	APRIL	24	1979 19	ĩ	14	14.0	2	9	14	ŏ	39	59	2211
10	OCTOBER	25 1	1955 17	9	125	13.9	33	Ő	22	ŏ	Ő	Ő	452
īĭ	OCTOBER	7	1969 21	6	79	13.2	12	7	29	ŏ	ň n	44	44
12	OCTOBER	10	1948 23	ğ	116	12.9	7	3	23	ō	ŏ	58	65
13	OCTOBER	11 1	1968 14	13	164	12.6	•	8	38	3	31	63	63
14	DECEMBER	21	1955 17	15	186	12.4		ž	25	26	194	312	2193
15	OCTOBER	8	1950 10	6	73	12.2	3	2	19	0	14	331	331
16	OCTOBER	28	1949 10	· Å	48	12.0	ĩ	ĩ	24	Ő	17	20	182
17	JANUARY	27	1956 1	3	36	12.0	i 1	ī	19	Ő	16	201	3895
18	APRIL	1	976 12	- ī	12	12.0	2	8	12	Ō	60	94	3369
19	MAY	13	1960 12	ī	12	12.0		6	12	4	53	92	2905
20	NOV EMBER	7	1966 16	ī	12	12.0	4	õ	12	Ō	4	23	229
21	APRIL	20	1976 7	ī	12	12.0	-	6	12	8	23	51	3492
22	MARCH	10 1	1957 1	2	23	11.5		9	20	7	114	404	2205
23	MAY	1	1976 17	2	23	11.5	7	5	12	Ó	0	11	3569
24	NOV EMBER	5	1962 14	3	34	11.3		9	23	10	27	27	482
25	DECEMBER	7	1950 0	4	44	11.0	1	5	26	Ó	98	298	2274
26	OCTOBER	20	1971 12	1	11	11.0	1	5	11	Ó	137	166	167
27	NOV EMBER	25	1949 7	2	21	10.5	2	б	14	0	130	210	603
28	OCTOBER	23	1973 3	4	40	10.0	4	0	27	0	43	79	160
29	FEBRUARY	23	1968 23	1	10	10.0	1	4	10	0	81	552	2758
30	DECEMBER	9	1948 13	6	59	9.8		6	26	2	17	206	1284
31	JANUARY	14	1954 10	3	29	9.7	10	8	25	0	0	36	2019
32	JANUARY	16 1	1974 17	50	476	9.5		6	26	45	221	323	3233
33	DECEMBER	13	1965 14	2	19	9.5	3	1	10	0	1	32	1016
34	DECEMBER	16 1	1973 12	18	166	9.2	1	0	15	3	44	306	2253
35	NOV EMBER	5 1	1969 3	22	200	9.1	11	2	35	0	0	11	444
36	OCTOBER	17 1	1956 21	11	100	9.1	1	2	29		39	55	89
37	FEBRUARY	11	1961 1	50	452	9.0	1	2	26	0	41	122	2225
38	OCTOBER	21	1967 7	8	72	9.0	5	6	24	0	0	12	192
39	FEBRUARY	16	1959 17	1	9	9.0		7	9	9	96	355	2941
40	FEBRUARY	13 1	1979 3	1	9	9.0		8	9	9	57	340	1416
41	OCTOBER	28	1963 17	1	9	9.0		9	9	25	50	253	312
42	FEBRUARY	13	1972 8	1	9	9.0		9	9 1	8	16	31	2601
43	DECEMBER	30	1977 14	1	9	9.0		9	9	3	43	72	1720
44	NOV EMBER	8 :	1962 1	7	61	8.7	5	3	24	0	0	61	516
45	DECEMBER	23	1964 5	58	503	8.7	1	0	36	13	163	237	1374
46	DECEMBER	2	1948 14	18	156	8.7		7	26	1	31	171	983
47	JANUARY	1 :	1963 17	3	26	8.7	4	0	17	0	8	145	1610
48	DECEMBER	10	1968 10	28	242	8.6	3	4	18	0 :	4	275	1547
49	DECEMBER	11 :	1977 8	16	138	8.6	1	6	34	0	13	73	1035
50	OCTOBER	27	1979 3	8	69	8.6	1	3	18		87	230	461

	DA' EV EN T	re Ended) HOU	R DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE Intensity (IN/HR X 100)	HOURS SINCE LAST EVENI	C MAXIMUM Intensity In/hr x 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR So Far (IN X 100)
51	JANUARY	1	1949	6 10	86	8.6	30	20	0	89	123	1726
52	OCTOBER	20	1979 1	2 10	86	8.6	6	. 13	29	217	233	233
53	OCTOBER	10	1955	0 41	350	8.5	16	28	0	37	67	67
54	FEBRUARY	17	1953 1	9 8	68	8.5	7	22	27	178	208	3059
55	FEBRUARY	27	1979 1	06	51	8.5	31	18	0	14	120	1692
56	DECEMBER	23	1961	8 4	34	8.5	8	18	1	8	433	1335
57	MAY	14	1974 1	0 4	34	8.5	68	15	0	0	11	5509
58	OCTOBER	17	1968 1	7 4	34	8.5	47	12	0	0	357	417
59	NOV EMBER	27	1954 1	4 2	17	8.5	16	14	0	4	33	835
60	FEBRUARY	22	1966 1	7 2	17	8.5	54	14	0	0	46	2539
61	MAY	27	1958 2	3 2	17	8.5	13	13	0	29	54	3814
62	MAY	24	1953 1	9 2	17	8.5	25	- 1 - 9 -	0	58	217	4094
63	FEBRUARY	19	1951 2	2 2	17	8.5	9	9	4	15	84	4091
64	DECEMBER	- 4	1975	7 26	220	8.5	41	34	0	9	163	1192
65	NOV EMBER	17	1950 2	2 71	593	8.4	11	31	0	21	23	1171
66	NOV EMBER	21	1974 1	7 24	200	8.3	17	15	0	15	164	628
67	OCTOBER	28	1963	7 6	50	8.3	72	18	0	0	203	262
68	FEBRUARY	19	1949	3 62	516	8.3	8	32	11	102	333	2501
69	JANUARY	10	1979 1	2 16	132	8.3	25	18	· · · · ·	I	18	/69
70	MAY	12	1971 2	1 5	41	8.2	435	18	0	0	100	4198
71	NOV EMBER	23	1948 1	7 5	41	8.2	31	17	0	2	120	102
72	FEBRUARY	26	1971 1	6 5	41	8.2	6	14	1.3	82	133	1162
73	DECEMBER	21	1961	7 21	172	8.2	9	37	10	121	305	2560
74	MARCH	22	1971	7 6	49	8.2	158	18		46	162	2694
75	FEBRUARY	8	1950	8 /	57	8.1	21	15	U O	40	68	2054
76	MAY	20	1960	3 D	40	8.0	12	10	0	122	402	1157
11	DECEMBER	. 6	1907 2	1 5	40	0.0	21	15	A	50	169	2923
78	FEBRUARY	10	1950 1	4 Z	10	0.0	20	0 10		20	114	420
19	NOV EMBER	17	1050 1	9 1 1 1	0	0.0	10	8	ň	72	112	3111
00	FEDRUARI	10	1927 1	1 17	125	7 0	6	17	· Å	120	500	1920
07	JANUARI	12	1020 1	J 17	110	7.5	.15	34	ñ	29	135	358
02	NOV EMBER	2	1930 1	A 12	95	7 0	11	28	õ	52	202	1108
84	FEDUIADV	10	10/0 1	6 34	267	7.9	Î Î	19	2	21	164	2116
85	TANIIARY	2	1951 1	6 20	157	7.9	54	30		1 0 1 1	90	2646
86	NOVEMBER	2	1948	0 18	141	7.8	14	24	0	25	40	226
87	NOV EMBER	6	1975 2	1 16	125	7.8	18	32	0	2	8	555
88	JANUARY	18	1954	3 9	70	7.8	10	23	1	94	167	2186
89	OCTOBER	27	1969	3 13	101	7.8	45	33	0	· · · · 4	23	306
90	NOV EMBER	26	1962 1	4 27	208	7.7	8	23	36	94	170	1012
91	OCTOBER	10	1953	5 19	146	7.7	184	31	0	0	0	61
92	FEBRUARY	24	1961]	.7 6	46	7.7	47	16	0	0	109	2971
93	JANUARY	1	1949	3 14	107	7.6	8	26	34	86	209	1812
94	OCTOBER	21	1975 1	0 13	99	7.6	35	20	0	1	34	140
95	NOV EMBER	20	1960 1	7 7	53	7.6	6	36	12	48	300	735
96	FEBRUARY	14	1959]	4 31	234	7.5	62	21	0	0	75	2611
97	DECEMBER	24	1964	3 12	90	7.5	10	19	9	303	674	1877
98	JANUARY	22	1954	8 12	90	7.5	<u>7</u>		19	35	237	2291
99	JANUARY	14	1974]	0 8	60	7.5	7	13	1	227	263	31/3
100	TANIIARY	21	1968	1 4	30	. 7.5	6	13	3	12	202	T12A

OVERALL ORDER STATISTICS AT EUGENE SORTED BY INTENSITY

	יאמ	יסי				AVERACE	HOURS STACE	MAXTMIIM	MAGNITUDE	MAGNITUDE	MAGNITUDE LAST	MAGNITUDE YEAR
	EV ENT	ENDED	HOUR	DURATION	MAGNITUDE	TNTENSTTY	LAST EVENT	INTENSITY	12 HRS	48 HRS	168 HRS	SO FAR
	DV DIV I	ENDED	noon	(HOURS)	(IN X 100)	(IN/HR X 100)		(N/HR X 100)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
1	JANUARY	14	1974 10	7	128	18.3	13	32	0	156	183	3650
2	MAY	18	1957 10	1	18	18.0	10	18	15	61	135	3639
3	JANUARY	12	1959 1	17	299	17.6	6	54	5	124	445	1885
4	DECEMBER	24	1964 1	11	193	17.5	6	41	23	467	1015	2587
5	APRIL	8	1972 7	6	102	17.0	12	36	0	79	263	5152
6	JANUARY	4	1966 16	2	34	17.0	7	22	20	469	870	2400
7	OCTOBER	19	1959 23	2	34	17.0	197	17	0	0	0	161
8	MAY	20	1968 12	3	43	16.0	15	24	0	52	52	3283
9	NOV EMBER	4	1965 3	1	16	16.0	6	16	75	114	114	357
10	OCTOBER	7	1969 21	5	78	15.6	124	35	0	0	42	42
īĭ	NOV EMBER	4	1969 19	11	160	14.5	95	31	0	0	4	422
12	NOVEMBER	4	1978 3	4	58	14.5	138	44	0	0	22	29
13	NOV EMBER	30	1978 16	8	114	14.3	16	34	0	92	105	568
14	DECEMBER	4	1975 16	21	299	14.2	21	50	0	6	344	1457
îŝ	MARCH	3	1973 17	2	28	14.0	6	26	9	14	229	2483
16	NOVEMBER	3	1972 14	10	138	13.8	26	50	0	33	78	164
17	FEBRUARY	11	1961 1	46	628	13.7	17	48	0	16	81	2376
18	OCTOBER	31	1952 15	2	27	13.5	25	25	0	4	15	35
19	DECEMBER	5	1970 14	3	40	13.3	7	22	2	27	306	1463
20	OCTOBER	ıŏ	1955 3	31	403	13.0	30	28	0	5	30	30
21	JANUARY	25	1975 23	12	156	13.0	29	36	Ó	20	25	2253
22	FEBRUARY	14	1959 12	25	324	13.0	79	30	. 0	0	82	2758
23	NOVEMBER	19	1966 12		116	12.9	-32	29	Ó	2	504	932
24	DECEMBER	19	1955 14	17	219	12.9	7	40	3	92	246	1968
25	DECEMBER	2	1967 10	7	90	12.9	30	22	0	11	135	828
26	OCTOBER	31	1973 16	6	77	12.8	73	23	0	0	30	160
27	MARCH	30	1974 7	15	190	12.7	9	36	20	238	314	6596
28	OCTOBER	18	1958 10	3	38	12.7	14	19	0	25	25	43
29	JANUARY	17	1974 1	55	689	12.5	8	39	73	238	311	3778
30	OCTOBER	30	1955 12	2	25	12.5	8	13	. 1	13	73	522
31	NOV EMBER	25	1960 5	55	684	12.4	37	67	0	12	197	683
32	FEBRUARY	20	1977 14	. 4	49	12.3	193	41	0	0	0	429
33	JANUARY	6	1966 0	18	216	12.0	14	36	0	390	862	2434
34	NOVEMBER	11	1961 5	5	60	12.0	16	19	0	12	12	4 85
35	JANUARY	- 8	1976 5	33	392	11.9	9	32	1	145	334	2461
36	OCTOBER	7	1962 17	13	154	11.8	26	42	0	14	72	72
37	DECEMBER	13	1977 19	26	307	11.8	11	30	0	164	285	1687
38	DECEMBER	27	1974 7	21	245	11.7	95	48	0	0	155	1451
39	JANUARY	29	1958 7	14	163	11.6	7	32	26	91	201	2500
40	DECEMBER	26	1951 13	7	79	11.3	67	18	0	0	56	1792
41	DECEMBER	4	1979 0	27	302	11.2	39	40	0	205	244	1421
42	DECEMBER	4	1968 21	27	300	11.1	35	27	Û.	1	93	1332
43	MAY	24	1953 19	4	44	11.0	26	39	0	66	186	3649
44	MAY	17	1974 17	2	22	11.0	25	21	0	33	78	7163
45	OCTOBER	5	1963 19	2	22	11.0	13	21	Ū.	13	13	13
46	APRTL	7	1978 17	ĩ	<u>,</u>	11.0	48	11	Ō	0	215	4274
47	APRTI.	3	1954 21	ī	īī	11.0	ii	īī	Ō	100	102	3686
48	NOVEMBER	25	1977 21	39	420	10.8	7	66	15	129	230	714
49	FEBRUARY	22	1972 0	4	43	10.8	50	24	0	0	41	3641
50	OCTOBER	17	1970 23	$\mathbf{\hat{4}} = \mathbf{\hat{5}} + \mathbf{\hat{4}} + \mathbf{\hat{4}}$	43	10.8	282	20	Ō	Ō	0	8

	DAT	E			AV ERAGE	HOURS SINCE	MAXIMUM	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE YEAR
	EV ENT	ENDED HOU	R DURATION	MAGNITUDE	INTENSITY	LAST EVENT	INTENSITY	12 HRS	48 HRS	168 HRS	SO FAR
			(HOURS)	(IN X 100)	(IN/HR X 100)) (:	[N/HR X 100)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
51 007	TORER	5 1950	2 4	43	10.8	10	18	2	132	153	153
52 NOV	/EMBER	26 1962 1	2 24	255	10.6	82	37	ō	Ō	70	981
53 APF	RIL	5 1978	5 5	53	10.6	9	37	14	18	152	4209
54 DEC	CEMBER	23 1972 2	1 9	95	10.6	6	23	1	118	644	1280
55 NOV	/EMBER	17 1954	5 15	158	10,5	10	32	3	68	188	526
56 MAY	Y	7 1956	3 8	84	10.5	19	30	0	10	38	5528
57 OC1	FOBER	17 1968 1	9 4	42	10.5	47	21	0	0	294	349
58 JAN	NUARY	8 1961	5 10	104	10.4	37	32	· • 0	16	90	1778
59 DEC	CEMBER	12 1969	3 25	258	10.3	10	49	3	59	100	806
60 FEE	BRUARY	6 1960 2	3 7	72	10.3	38	20	0	28	173	1297
61 FEE	BRUARY	1 1961 2	3 8	82	10.3	34	31	0	127	228	2213
62 OC1	FOBER	19 1979 1	0 34	345	10.1	88	45	0	0	30	30
63 FEE	BRUARY	16 1974 1	7 11	111	10.1	1	24	32	83	112	4923
64 JAN	NUARY	4 1966	7 64	644	10.1	12	37	U	101	4/0	2105
65 APF	RIL	11 1955	/ 9	90	10.0	10	20	0	140	215	2769
66 FEE	BRUARY	2/ 19/6 1	4 /	70	10.0	18	37	0	140	175	3693
6/ MAI	Υ Υ	20 1953	3 / 1 A	70	10.0	20	20	0		66	4454
60 PP		2/ 1950 2	1 4 A A	40	10.0		14	11	11	129	3218
	TOPED	21 1901 1	4 4 6 3	30	10.0	31	20	10	27	27	96
70 OCI	RCH	17 1952 1	8 3	30	10.0	78	14	ŏ	0	6	3213
72 100	DTT.	4 1975 1	7 I	10	10.0	25	10	Õ	12	48	3903
73 DEC	CÉMBER	12 1969 1	2 1	10	10.0	- 8	10	1	261	358	1064
74 001	TORER	22 1963 1	2 11	108	9.8	32	18	0	13	13	60
75 JAN	NUARY	16 1964 1	0 9	88	9.8	14	36	0	12	122	1738
76 DEC	CEMBER	24 1972 1	6 9	88	9.8	10	20	21	102	573	1375
77 JAN	NUARY	6 1978 1	0 33	322	9.8	30	50	0	38	131	2728
78 MAY	Y	9 1967 1	0 8	78	9.8	221	16	0	0	0	3772
79 APH	RIL	17 1979	0 7	68	9.7	6 a 1 a 1	15	13	64	138	2810
80 NOV	<i>VEMBER</i>	19 1958 1	9 29	276	9.5	82	32	0	0	164	740
81 DE(CEMBER	21 1952 1	8 2	19	9.5	12	18	0	16	40	829
82 JAN	NUARY	9 1969 1	7 12	113	9.4	39	28	0	61	108	2673
83 NOV	<i>J</i> EMBER	24 1961	7 69	649	9.4	79	31	0	0	24	5/1
84 DEC	CEMBER	27 1955	3 46	430	9.3	34	26	0	10	9.36	2850
85 NOV	VEMBER	29 1968 1	4 5	28	9.3	01	13	U	16	70	697
86 NOV	VEMBER	6 1968 2	1 /	05	9.3	28	1/	10	10	20	255
8/ NUV	VEMBER	3 1965 2		110	9.3	100	20	12	12	30	195
00 NUV	V LMDLK	TO 1900 1	9 12	110	9.2	2195	27	Ň	ň	ň	1,50
		11 1069 1	5 0 0 10	164	9.2	17	30	0	42	55	55
90 003	NUARY	4 1975	1 13	118	9.1	56	21	Ő	0	33	1729
92 DE(CEMBER	1 1975	5 36	326	9.1	49	38	Ŏ	ŏ	63	1125
93 API	RTI.	14 1957 1	6 7	63	9.0	6	24	13	30	70	3281
94 FEI	BRUARY	13 1967	8 5	45	9.0	42	18	Ō	17	17	2996
95 JAI	NUARY	12 1956 2	1 4	36	9.0	33	19	0	11	253	3802
96 API	RIL	23 1958 1	7 4	36	9.0	19	18	0	41	133	4339
97 NO	VEMBER	29 1977	3 3	27	9.0	31	15	0	34	629	1172
98 OC	TOBER	23 1977	5 3	27	9.0	380	11	0	0	0	6.9
99 NO	VEMBER	27 1971	1 35	314	9.0	12	32	0	80	114	798
100 JA	NUARY	28 1959	1 35	312	8.9	20	47	0	2	75	2329

	EVE	DATE NT ENDED	HOUF	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE Intensity (In/hr x 100)	HOURS LAST	SINCE Event (I)	MAXIMUM INTENSITY N/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100	MAGNITUDE LAST 48 HRS) (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	JANUAR	Y 23	1970 7	36	249	6.9	1	4	90	0	105	376	2140
2	MAY	20	1968 0	15	147	9.8	11	5	62	0	0	29	2790
3	JANUAR	Y 10	1979 12	16	149	9.3	1	9	40	. 0	5	5	675
4	MARCH	23	1958 23	7	49	7.0		6	39	1	16	71	25 6 5
5	NOV EMB	ER 15	1966 12	2 62	186	3.0	2	2	38	0	137	143	469
6	NOV EMB	ER 16	1973 1	35	282	8.1	_	6	35	28	81	459	910
7	OCTOBE	R 23	1951 8	21	206	9.8	1	3	35	0	117	174	463
8	NOV EMB	ER 4	1969 19	16	187	11.7	11	3	35	0	. 0	9	302
, y	FEBRUA		1921 10 1921 10	43	155	3.0	3	1	34	U	5	111	3080
10	TANUAD	KI II V 10	107/ 17	10	10/	3.0	2	8	34	U	30	19/	3258
12	MAV	26	1058 10	10	100	17 2	· · A	6	34	. 0	107	.16	2011
12	DECEMB	ER 5	1968 12	57	237	A 2		7	33	0	0	65	1120
14	OCTOBE	R 11	1959 5	18	191	10.6	3	,	33	ň	37	73	73
îŝ	DECEMB	ER 26	1957 1	12	69	5.8	ĩ	4	33	ň	16	246	1138
16	FEBRUA	RY 27	1976 12	42	202	4.8	1	i	32	Õ	70	108	2348
17	DECEMB	ER 13	1977 14	27	267	9.9	ī	ī	32	Ō	77	172	1151
18	DECEMB	ER 26	1964 7	18	87	4.8	1	2	32	0	90	592	1550
19	DECEMB	ER 21	1955 17	14	199	14.2		9	32	17	157	260	2030
20	FEBRUA	RY 19	1968 17	38	264	6.9		7	31	43	77	77	1908
21	DECEMB	ER 10	1953 5	30	127	4.2		7	31	14	73	292	1302
22	MAY	7	1979 21	. 16	49	3.1		8 .	31	11	86	167	2243
23	NOV EMB	ER 24	1960 21	44	355	8.1	_	7	30	11	46	323	743
24	NOV EMB	ER 9	1973 14	26	240	9.2	3	7	30	0.	8	139	454
25	DECEMB	ER 5	1963 21	. 26	91	3.5	19	5	30	. 0	0	0	868
20	OCTOBE	K 10	1953 J	1/	162	9.5	2	7	30	U.	8	8	35
21	MAKCH		19/0 1/	10	/9	2.3		0	30		20	101	3196
20	MAY	. 7	1026 31	· · ·	40	10.0	4	3	30	0		88	445/
20	TANIIAD	V A	1056 23	69	30	19.0		2	20	0	54	. 101	4419
21	TANIJAR	v 26	1964 8	56	278	5.0	2	1	29	0	. J#	200	1022
32	MAY		1979 1	46	151	3.3	14	6	29	ů i	ů.	290	2076
33	MAY	24	1973 19	35	94	2.7	2	3 3	29	ň	1	2	2377
34	DECEMB	ER 2	1977 19	29	179	6.2	5	8	29	ŏ	ō	191	784
35	OCTOBE	R 2	1962 17	4	38	9.5	308	6	29	Ō	Ŏ		0
36	DECEMBI	ER 8	1952 22	71	171	2.4	1	8	28	0	43	146	314
37	DECEMB	ER 5	1951 0	56	207	3.7	1	1	28	0	83	263	1257
38	NOV EMB	ER 15	1963 7	36	163	4.5	3 - E - E	6	28	3	3	142	565
39	NOV EMB	ER 20	1962 14	25	185	7.4		9	28	1	17	79	747
40	FEBRUA	RY 26	1957 3	16	134	8.4		6	28	3	85	207	1524
41	NOV EMB	ER 26	1962 1	15	144	9.6		7	28	30	90	277	1023
42	NOV EMB	ER 20	1965 8	12	44	3.7	1	2	28	0		137	655
4.5	MARCH	K 25	1922 I/	TO .	110		T	8	28	10	4	5	409
44	OCTORE	P 10	1904 19	4	4.5	10.8		7	28	10	10	35	2431
4 J 4 K	MARCH		1960 14	19	147	20.0	1	' 7	20 27	3	1/	1/ 21	20
47	DECEMBI	ER 22	1974 7	20	76	э•т Э А	1	Å	27	0	22	200	1000
48	DECEMB	ER 21	1972 12	26	187	7.9	-	8	27	۵ ۸	51 67	223	1227 825
49	OCTOBE	R 25	1979 1	24	87	3.6	1	ğ	27	ñ	41	235	276
50	NOV EMB	ER 15	1975 14	23	49	2.1	-	7	27	13	38	82	626

OVERALL ORDER STATISTICS AT PORTLAND SORTED BY MAX RATE

						AVERACE	HOURS SINCE	MAXIMUM	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE YEAR
	DA1 EV ENT	ENDED	HOUR	DURATION	MAGNITUDE	INTENSITY	LAST EVENT	INTENSITY	12 HRS	48 HRS	168 HRS	SO FAR
		LINDHO		(HOURS)	(IN X 100)	(IN/HR X 100)) (IN/HR X 100)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
			050 14		00	1 2		27	22	100	154	280
51	NOV EMBER	10	1958 14	15	74	4.9	54	27	-ō	0	16	113
52	OCTOBER	19 1	1066 10	1.7	61	7.6	78	27	0	0	157	227
53	TANUADY	20 1	1900 12	70	260	3.7	25	26	0	6	440	1501
54	JANUARI	7	1950 14	54	202	3.7	37	26	0	18	86	1311
55	OCTORED	2	1957 19	27	82	3.0	3161	26	0	0	0	0
. 57	DECEMBER	2 -	1979 7	24	167	7.0	29	26	0	2	46	823
57	DECEMBER	21	1961 7	21	139	6.6	22	26	0	98	279	1093
50	NOVEMBER	16	1948 22	18	42	2.3	6	26	- 5	42	53	9/
60	FFRRIARV	1	1961 21	11	115	10.5	31	26	0		111	1813
61	MAY	6	1966 5	8	44	5.5	223	26	0	0	0	2801
62	TANHARY	- <u>9</u>	1953 14	61	319	5.2	7	25	1	2	133	994
63	NOVEMBER	24	1949 11	51	237	4.6	193	25	0	0	0	390
64	FEBRILARY	1	1963 7	51	133	2.6	31	25	0	25	25	1023
65	DECEMBER	5	1966 12	2 47	213	4.5	28	25	0	25	110	904
66	MARCH	1	1955 17	39	93	2.4	9 1	25	3	60	70	1049
67	NOV EMBER	18	1974 19	36	147	4.1	179	25	Û			2423
68	MARCH	25	1962 7	35	145	4.1	22	25	0	14	46	2037
69	DECEMBER	4	1975 10) 32	174	5.4	31	25		12	140	639
70	NOV EMBER	27	1949 2	2 26	97	3.7	18	25	U	21	60	572
71	NOV EMBER	8	1968 19	25	168	6.7	14	25		21	24	2976
72	APRIL	30	1952 14	25	68	2.7	23	25	0	40	34 71	2357
73	FEBRUARY	8	1950 5	5 20	66	3.3	6	25	0	42	80	355
74	OCTOBER	21	1951 22	2 13	108	8.3	6	25	- 4	<u>25</u> 1	243	1176
75	NOV EMBER	3.0	1962 12	2 13	87	6.7	8	25	1	£2	245	764
76	DECEMBER	11	1948 18	3 10	75	7.5	11	25	U O	00	183	1066
-77	DECEMBER	23	1964	5 56	394	7.0	24	24	0	25	159	2265
78	FEBRUARY	8	1978	3 41	110	2.7	15	24	U E	11	73	1023
79	DECEMBER	24	1949	B 40	115	2.9	150	24	5	1	20	203
80	NOV EMBER	4	1965	B 33	138	4.2	152	24	0	Ĭ	 1	2494
81	MARCH	17	1958 19	9 23	45	2.0	27	24	. U	.	152	1288
82	NOVEMBER	24	1950	2 15	95	6.3	59	24	57	162	170	197
83	OCTOBER	10	1953 1	9 10	42	4.2	0	24	57	121	317	1761
84	JANUARY	20	1953 10	0 8	106	13.3	10	24 24	i	35	151	1405
85	NOV EMBER	28	1973 1	0 6	48	8.0	10	24	28	29	124	1909
86	MARCH	1	1973 1	2 6	39	0.0	779	22	ĩ	0	0	2462
87	JANUARY	16	1974 1	/ 115	544	4./	2/0	23	ĩ	15	23	846
88	NOV EMBER	17	1950 2	3 72	3/6	D •2	14	23	ō	23	58	678
89	DECEMBER	12	1969 1	9 61	213	3.5	14	23	Ő	107	190	741
90	NOV EMBER	12	1968 1	7 59	167	2.0	27	23	ĩ	14	48	757
91	DECEMBER	12	1959 1	0 37	152	4.1	25	23	ō	92	176	1558
92	FEBRUARY		1960 T	U 35	147	5./ 5./	23	23	3	45	249	1535
93	JANUARY	, 10 10	1920 1	0 2/	140	J+4 3 3	' 7	23	29	238	384	729
94	NOV EMBER	(<u>11</u>	19/3 1	y 40	D1 -	4.2 A 2	16	23	0	75	147	2883
95	MARCH	12	1052 1	y 23	90 150		0	23	ž	23	44	472
96	NOV EMBER	(<u>1</u> 0	1067	4 21 2 20	105	1+4	8	23		7	61	1774
9/	JANUARY	20	1057	J 20 0 16	105	J.J 7 0	50	23	ō	10	113	3470
98	JANUARY	28	1054 1	C 10	T00	0.5	17	23	Ō	9	24	4378
99	MAY	:4 2.0	TA20 T	0 4 2 AD	50 171	2.5	13	22	ŏ	59	239	2276
T00	JANUARY	20	T 203 7	J 47	T / T		<u> </u>	. – –	-			

	DAT EV EN T	YE ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE Intensity (In/HR X 100)	HOURS LAST	SINCE EVENT (1	MAXIMUM Intensity N/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR So Far (IN X 100)
	PROFILER	· C 1	1052 2	25	150	4.3		7	49	7	65	114	1085
1	DECEMBER	1 5	1953 3	40	176	3.6	1	2	46	0	142	215	1890
2	FEBRUARI	נכ	10E1 0	47	224	4.8	· 1	2	46	0	16	133	505
3	NOVEMBED	12 1	1951 0	20	97	4.9	· 3	3	46	0	9	229	500
- 1	TANIIARY	20 1	953 14	14	230	16.4	1	Ō	46	10	165	480	2113
6	NOVEMBER	4	1978 1	-3	57	19.0	1	8	46	0	2	35	39
7	DECEMBER	26	1957 10	21	78	3.7	1	5	42	0	28	371	1380
8	MAY	15 1	1977 19	20	75	3.8	1	1	42	0	5	39	1301
9	OCTOBER	15 1	1951 16	4	72	18.0	1	7	41	0	42	129	3/2 015
10	NOV EMBER	25 1	1960 3	62	398	6.4	2	6	40		5/	2/0	010
11	OCTOBER	3 1	1951 11	57	242	4.2	312	3		U I	70	04	2625
12	FEBRUARY	2]	1952 1	51	239	4.7		9	38	1	/0	24	756
13	NOV EMBER	11 1	1951 14	50	260	5.2	2	./	30	2	21	63	63
14	OCTOBER	11 1	1968 14	13	164	12.6	•	8	30		8	91	1381
15	JANUARY	7	1950 18	50	294	5.9	J	0	37	10	121	365	1162
16	DECEMBER	21		21	1/2	8.2 2 P		5	37	1	12	15	3190
17	MAY	31 .	1967 14	10	44	2.0	14	1	37	õ	0	34	2649
18	APRIL	12.	1937 14 1967 5	10	503	87	1	0	36	13	163	237	1374
19	DECEMBER	23	1904 J 1055 JJ	43	128	3.0	ī	8	36	Ō	99	245	1753
20	DECEMBER		1955 23		51	5.7	ī	3	36	0	28	28	28
21	NOVEMBED	20	1960 17	7	53	7.6	_	6	36	12	48	300	735
21	NOVEMBER	16	1973 14	90	470	5.2		6	35	4	150	442	884
24	NOVEMBER	17	1953 5	50	231	4.6	1	.1	35	0	7	37	433
25	JANUARY	11	1950 10	49	207	4.2	1	.1	35	0	50	331	1/04
26	NOVEMBER	25	1977 16	32	234	7.3	1	.3	35	0	78	165	585
27	NOV EMBER	5	1969 3	22	200	9.1	11	.2	35	0	0	11	444
28	JANUARY	27	1970 19	171	592	3.5		7	34	19	114	444	2398
29	JANUARY	6	1956 0) 71	396	5.6	·]	.1	34	37	87	112	2/02
30	NOV EMBER	27	1949 18	3 40	130	3.3	2	20	34	0	21	229	044
31	NOV EMBER	29	1971 1	36	130	3.6		7	34	6	137	162	1102
32	DECEMBER	4	1975 7	26	220	8.5	4	11	34	U O	12	103	1035
33	DECEMBER	11	1977 8	B 16	138	8.6	1	16	34		20	135	358
34	NOV EMBER	9	1958 12	2 15	119	7.9			34	. 0	0	100	2910
35	JANUARY	13	1974 19	48	263	5.5	2		22	ň		23	306
36	OCTOBER	27	1969 3		101	1.8	. 4	10 . R	33	11	102	333	2501
31	FEBRUARY	19	1949 3		102	A 1		26	32	-0	2	47	989
38	DECEMBER	- S - C	1075 21	16	125	7 8		18	32	0	2	8	555
33	NOVENDER	17	1050 22) <u>10</u>) 71	593	8.4		i i	31	Ŭ Ū	21	23	1171
40	OCTORFD	10	1950 22	; <u>1</u> 9	146	7.7	- 1	B 4	31	0	0	0	61
12	FEBDIIADV	17	1970 10	69	304	4.4		51	30	0	0	9	3166
47	FEBRUARV	20	1968	5 47	319	6.8		12	30	0	76	76	2277
44	DECEMBER	12	1959 14	36	202	5.6		17	30	0	15	35	401
45	NOV EMBER	18	1974 21	L 36	153	4.3	1	B2	30	0	0	0	464
46	NOVEMBER	18	1960 12	2 33	134	4.1		9	30	2	42	267	561
47	NOVEMBER	18	1979	7 23	82	3.6		7	30	5	37	37	702
48	JANUARY	2	1951 10	5 20	157	7.9		54	30	0	0	90	2040
49	DECEMBER	27	1974 !	5 20	149	7.5		96	30	<u>O</u>	0	1/8	14/0
50) DECEMBER	5	1951 19	9 77	296	3.8		12	29	0	78	290	T400

OVERALL ORDER STATISTICS AT SALEM SORTED BY MAX RATE

EVENT ENDED HOUR DUBARTION IMAGNITUDE IMTENSITY LAST SYSHT IMTENSITY LAST SYSHT <thlast sysht<="" th=""> LAST SYSHT LAST SYSH</thlast>		DA	FE				AVERAGE	HOURS SINCE	MAXIMUM	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE YEAR
(HW X 100) (HW X 1		EV ENT	ENDED	HOUR	DURATION	MAGNITUDE	INTENSITY	LAST EVEN	INTENSITY	12 HRS	48 HRS	168 HRS	SO FAR
51 DECYNDER: 21 074 10 65 130 130 130 53 JANUARY 6 1961 16 134 804 53 JANUARY 6 16 134 804 53 JANUARY 6 16 13 25 55 54 OCTOBER: 12 13 2 59 0 10 15 155 55 MARCH 12 131 32 59 0 16 134 804 57 OCTOBER 1956 21 11 100 9.1 12 29 0 33 54 64 14 98 97 13.2 122 0 0 131 1949 1947 1972 58 442 4.0 56 28 0 0 131 1949 1947 1972 58 444 59 23 28 0 0 130 1947 130 1947 130 1947 130 1947 130 130 1949 <th></th> <th></th> <th></th> <th></th> <th>(HOURS)</th> <th>(IN X 100)</th> <th>(IN/HR X 100)</th> <th></th> <th>(IN/HR X 100)</th> <th>(IN X 100)</th> <th>(IN X 100)</th> <th>(IN X 100)</th> <th>(IN X 100)</th>					(HOURS)	(IN X 100)	(IN/HR X 100)		(IN/HR X 100)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
52 SOVENNEER 12 1966 19 61 205 3.4 34 29 0 16 134 004 53 ANCARK 61 161 16 45 157 3.5 97 29 0 0 115 1545 56 54 OCTOBER 12 1931 0 15 156 3.9 11 29 0 109 155 156 167 15 156 3.9 112 29 0 109 156 1270 55 OCTOBER 13 1956 16 79 13.22 127 29 0 0 144 44 44 44 44 44 44 44 13 193 139 15 156 13.0 130 13947 130 13947 130 13947 130 1344 132 130 134 133 144 1323 1340 140 130	51 T	FCEMBER	22 197	4 10	65	178	2.7	8	29	5	23	85	1300
5.3 JANUARY 6 1961 16 45 157 3.5 97 29 0 0 15 154 55 MARCH 12 1071 3 21 103 4.9 15 29 0 103 168 3348 57 OCTOBER 17 1956 21 1 100 9.1 17 29 0 36 45 129 56 OCTOBER 17 1956 21 6 71 14.4 29 0 36 46 44 45	52 1	NOVEMBER	12 196	8 19	61	205	3.4	34	29	. 0	16	134	804
54 0 CTODER 21 1963 100 39 186 4.8 28 29 0 31 32 39 55 MARCH 12 1971 321 103 4.9 15 29 0 319 168 3348 56 MARCH 71 1956 21 11 100 9.1 12 29 0 46 156 1270 57 OCTOBER 71 1956 21 6 79 13.2 127 29 0 0 111 1989 59 OCTOBER 71 1956 22 4.4 56 28 0 0 110 1947 60 DECREMER 11971 15 58 44 5.9 23 28 0	53 3	TANUARY	6 196	1 16	45	157	3.5	97	29	0	0	15	1545
55 marcel i i i 29 0 1.09 1.68 3348 55 MOYENBER 29 15 58 3.9 14 29 0 39 55 B9 57 OCTOBER 7 1956 21 11 100 9.1 12 29 0 39 55 B9 55 MOYENBER 7 1956 21 6 79 13.2 127 29 0 0 444 44 69 JANUARY 31 1958 12 96 421 4.4 54 28 0 0 110 1947 61 JANUARY 31 1954 15 56 3144 5.0 29 28 0 0 66 221 27 28 33 144 323 1344 323 1344 323 1344 323 1344 323 1344 323 1344 323 1344 323 1344 323 1344 333 1344 323 <td>54 0</td> <td>OCTOBER</td> <td>23 196</td> <td>3 10</td> <td>39</td> <td>186</td> <td>4.8</td> <td>28</td> <td>29</td> <td>0</td> <td>31</td> <td>32</td> <td>59</td>	54 0	OCTOBER	23 196	3 10	39	186	4.8	28	29	0	31	32	59
56 MOYENBER 29 0 46 156 1270 57 OCTOBER 7 1969 21 6 79 13.2 127 29 0 39 55 89 58 OCTOBER 7 1969 21 6 79 13.2 127 29 0 0 41 49 60 DECKMER 13 1973 19 66 262 4.0 8 28 0 0 101 199 61 JANCANY 21 1972 55 416 7.9 23 28 0 0 0 66 3212 63 JANCANY 21 1972 7 55 165 3.0 49 28 0	55 1	MARCH	12 197	1 3	21	103	4.9	15	29	0	109	168	3348
57 0 CTORDER 17 1956 21 11 100 9.1 12 29 0 39 55 B9 59 OCTORDER 7 1950 13 127 29 0 0 44 44 59 JANDARY 31 1958 12 96 421 4.4 54 28 0 0 111 1990 61 JANDARY 31 1954 17 53 344 5.9 29 28 0 0 64 73 204 62 PERMARY 13 1954 171 3.2 3299 28 0 0 0 0 65 2020 10 0 50 1272 1340 14 323 1344 323 1344 323 1340 13 13 14 333 144 323 1340 13 127 35 295 13 13 13 14 <td>56 1</td> <td>NOVEMBER</td> <td>29 195</td> <td>1 0</td> <td>15</td> <td>58</td> <td>3.9</td> <td>14</td> <td>29</td> <td>0</td> <td>46</td> <td>156</td> <td>1270</td>	56 1	NOVEMBER	29 195	1 0	15	58	3.9	14	29	0	46	156	1270
58 OCTODER 7 13.2 127 23 0 0 44 44 60 DECKMEER 13 1973 19 66 222 4.0 86 28 0 0 113 1988 61 JANUARY 21 1972 5 8 416 7.2 28 28 13 64 73 2466 62 FEBRUARY 13 1954 17 55 3.6 3.44 5.9 23 0 </td <td>57 0</td> <td>OCTOBER</td> <td>17 195</td> <td>6 21</td> <td>11</td> <td>100</td> <td>9.1</td> <td>12</td> <td>29</td> <td><u> </u></td> <td>39</td> <td>55</td> <td>89</td>	57 0	OCTOBER	17 195	6 21	11	100	9.1	12	29	<u> </u>	39	55	89
59 JANUARY 31 1956 12 4.4 54 28 0 0 111 1988 61 JANUARY 13 1957 5 8 416 7.2 8 28 13 64 73 2047 61 JANUARY 13 1954 17 58 416 7.2 8 28 13 64 73 2047 63 MARCH 11 1953 3 55 165 3.0 49 28 0 0 66 3212 64 OCTOBER 4 1950 16 28 0 14 323 1340 65 DECEMBER 15 1977 16 42 226 5.4 7 28 33 144 323 1340 67 DECEMBER 15 1971 16 42 28 0 0 50 1272 67 DECEMBER 13 137 26 28 29 45 45 2896 70	58 (OCTOBER	7 196	9 21	6	79	13.2	127	29	0	0	44	44
GO DECEMBER 13 197 19 66 262 4.0 86 28 0 0 130 1347 62 FEBRUARY 13 1954 17 56 344 5.9 23 28 0 2 2 2466 63 MARCI 17 153 3 55 165 3.0 49 28 0	59 3	JANUARY	31 195	8 12	96	421	4.4	54	28	· · · 0	0	111	1988
61 JANUARY 21 1972 5 58 416 7.2 8 28 13 64 7.3 2447 63 MARCH 11 71 1953 3 55 165 3.0 49 28 0 0 66 3212 63 MARCH 11 71 1953 3 55 165 3.0 49 28 0 0 66 3212 64 OCTOBER 15 1977 16 42 226 5.4 7 28 30 144 323 1340 65 DECEMBER 15 1977 16 42 226 5.4 7 28 0 0 0 50 1272 66 OCTOBER 10 1955 0 41 164 4.0 8 28 29 45 45 2896 67 DECEMBER 31 307 14 13 93 33 163 4.5 7 20 20 7 20 20 7 20 20 7 20 20 7 20 20 7 20 20 7 20 <	60 I	DECEMBER	13 197	3 19	66	262	4.0	86	28	0	0	130	1947
62 PEBRUARY 13 1954 17 58 344 5.9 23 28 0 0 0 0 0 64 0CTOBER 4 1950 16 53 171 3.2 3299 28 0 0 0 0 0 0 65 DECCEMBER 15 1977 16 42 226 5.4 7 28 33 144 323 128 0	61 3	JANUARY	21 197	2 5	58	416	7.2	8	28	13	64	/3	2047
63 MARCH 17 1953 3 55 165 3.0 49 28 0	62 1	FEBRUARY	13 195	4 17	58	344	5.9	23	28	U O	2	<u> </u>	2700
64 0CTOBER 4 1950 16 53 171 3.2 3299 28 0	63 1	MARCH	17 195	3 3	55	165	3.0	49	28	U	U	00	5212
65 DECEMBER 15 1977 16 42 226 5.4 7 28 53 183 322 124 67 PEBRUARY 24 1950 19 41 164 4.0 8 28 2 7 35 2958 66 DECEMBER 4 1968 21 37 266 7.2 49 28 0 0 55 1272 69 PEERUARY 17 1953 3 33 163 4.9 6 28 29 45 45 295 11 20 1108 7 20 1108 7 20 1109 7 20 20 1109 7 20 20 109 7 20 20 109 7 20 20 109 7 20 20 109 7 20 20 109 7 20 21 109 13 13 4493 143 143 143 143 143 143 143 143 143 143 143 143 143 143 143 143 143 143	64 (OCTOBER	4 195	0 16	53	171	3.2	3299	28	22	144	222	1340
66 0CTOBER 10 1955 0 41 350 8.5 16 26 0 37 55 2956 66 DECCMBER 4 1950 19 41 164 4.0 8 26 2 7 35 1272 66 DECCMBER 4 1953 3 33 163 4.9 6 28 0 0 50 1272 70 DECCMBER 3 1970 14 12 95 7.9 11 28 0 7 20 20 1108 71 DCTOBER 10 1955 7 2 413 5.7 15 27 0 2 81 1493 73 DECCMBER 19 1955 12 47 219 4.7 20 27 0 25 41 849 74 POCEMBER 19 1955 12 47 219 4.7 20 27 0 13 13 44 449 47 00 25 <td>65 1</td> <td>DECEMBER</td> <td>15 197</td> <td>7 16</td> <td>42</td> <td>226</td> <td>5.4</td> <td></td> <td>28</td> <td>33</td> <td>144</td> <td>525</td> <td>1340</td>	65 1	DECEMBER	15 197	7 16	42	226	5.4		28	33	144	525	1340
67 PERCUARY 24 1950 19 41 164 4.0 0 20 2 1 50 1272 69 PEERUARY 17 1953 3 33 163 4.9 6 28 29 45 45 2896 70 DECCEMBER 3170 14 12 95 7.9 11 28 0 72 20 20 70 DECCEMBER 101959 5 12 66 242 4.3 13 27 0 40 84 849 71 DECCEMBER 12 1955 12 76 247 1 200 255 41 899 74 NOVERMBER 12 1955 12 47 20 27 0 13 13 4959 7 DECEMBER 21 1941 12 39 221 5.7 37 77 0 13 13 4959 7 DECEMBER 21 123 39 221 5.7 0<	66 (DCTOBER	10 195	5 0	41	350	8.5	10	20	. U	37	35	2958
66 DECEMBER 4 1966 21 37 266 72 26 29 45 72 202 110 70 DECEMBER 3 1970 14 12 95 7.9 11 28 0 52 202 1108 71 DECEMBER 3 1970 14 12 95 7.9 11 28 0 72 202 108 71 DECEMBER 10961 5 72 413 5.7 15 27 0 2 81 1493 73 DECEMBER 1955 12 47 219 4.7 20 27 0 23 41 849 74 NOVEMBER 19756 14 46 100 4.7 20 27 0 13 13 4959 74 DECEMBER 28 1973 16 34 67 2.0 16 27 0 13 13 4959 1112 76 10 15 1112 76 132	67 1	FEBRUARY	24 195	0 19	41	164	4.0	40	20	ĥ	ee Áre	50	1272
69 PEBRUARY 17 1953 3 33 163 4.9 0 25 25 25 25 26 110 70 DECEMBER 10 1961 5 1 68 6.2 68 28 0 7 20 20 70 DECEMBER 10 1951 5 72 413 5.7 15 27 0 20 28 1493 73 DECEMBER 12 1969 12 56 242 4.3 13 27 0 40 84 849 75 FEBRUARY 27 1976 14 46 190 4.1 9 27 1 200 25 2800 76 MARCH 21 3974 12 39 34 67 2.0 16 27 0 13 13 4959 77 DECEMBER 23 1973 16 46 67 2.0 16 27 0 25 166 1726 78 M	68 1	DECEMBER	4 196	8 21	3/	266	1.2	49	20	20	45	45	2896
70 DECEMBER 3 19/0 14 12 95 7.5 11 25 5 72 20 25 41 849 20 20 25 41 849 20 25 21 41 20 27 0 25 41 849 20 27 12 200 25 41 849 27 0 13 13 4459 27 0 13 13 4459 27 0 15 17.5 111 200 25 16 17.5 111.12 200 25 16 27 0 13 14 14 13 26 0 13 16 17 17.0	69 1	FEBRUARY	17 195	3.3	33	103	4.7	11	20	29	52	202	1108
11 000 000 20	70 1	DECEMBER	3 197	U 14	12	95	1.9	59	20	ň	7	20	20
72 DAROARY 10 1969 12 56 242 4.3 13 27 0 40 64 649 73 DECEMBER 19 1955 12 47 219 4.7 20 27 0 25 41 689 75 FEBER/DARY 27 1976 14 46 190 4.1 9 277 0 13 13 4959 75 FEBER/DARY 27 1949 18 34 108 3.2 30 277 0 13 13 4959 70 DECEMBER 23 1973 16 34 67 2.0 16 277 0 13 13 4950 70 MARCH 11 1970 16 9 54 6.0 89 27 0 0 76 135 126 10 0 72 28 9 160 207 0 43 79 160 80 OCTOBER 19173 3 46 10.0		OCTOBER	10 196	0 I D	11	00 412	57	15	20	ŏ	2	81	1493
73 DBCLEMBER 12 195 12 47 20 27 0 23 41 889 75 FEBRUARY 27 1975 14 46 190 4.1 9 27 1 200 255 2800 75 FEBRUARY 27 1974 12 39 221 5.7 37 77 0 13 13 4959 76 MARCH 28 1974 18 34 108 3.2 30 27 0 1 157 1112 78 NOVEMBER 29 1973 16 34 67 2.0 16 27 0 0 76 3558 80 OCTOBER 1958 10 3 4 0 10.0 40 27 0 43 79 16 81 OCTOBER 1958 10 3 46 153 15 27 0 22 22 39 82 OCTOBER 1954 16 10.0 60	12	JANUARI	10 193	0 1 2	56	313	3.7	12	27	ŏ	40	84	849
74 NOV ENDER 19 1933 12 47 213 14 46 190 4.1 9 27 1 200 255 2800 75 FEBERMARY 27 1976 14 46 190 4.1 9 27 0 13 13 4959 77 DECEMBER 23 1949 18 34 108 3.2 30 27 0 13 13 4959 77 DECEMBER 23 1973 16 34 67 2.0 16 27 0 25 196 1726 79 MARCH 11 1970 10 9 54 6.0 89 27 0 0 3558 80 OCTOBER 1951 13 46 15.3 15 27 0 22 22 39 82 OCTOBER 1973 14 46 15.3 15 27 0 22 22 39 82 OCTOBER 1916 17 50	73 1	DECEMBER	12 190	5 13	J0 47	242	4.7	20	27	ŏ	25	41	889
75 FLDROART 21 107 12 39 221 5.7 37 27 0 13 13 4959 77 DECEMBER 23 1949 18 34 108 3.2 30 27 0 1 157 1112 77 DECEMBER 23 1949 18 34 108 3.2 30 27 0 1 157 1112 78 NOVEMBER 29 1973 16 34 67 2.0 16 27 0 0 76 3558 80 OCTOBER 23 1973 3 4 40 10.0 40 27 0 43 79 160 81 OCTOBER 18 1974 150 346 15.3 15 27 0 43 79 160 83 JANUARY 16 1974 150 476 9.5 6 26 45 221 323 3233 84 FEBRUARY 11 1661 1<	74 1	NUV EMBER	27 107	12 12 12 14	4/	100	4.1	20	27	ĭ	200	255	2800
10 MARCH 20 194 16 32 32 30 27 0 1 157 1112 77 DECEMBER 29 1973 16 34 67 2.0 16 27 0 25 196 1726 78 NOVEMBER 29 1973 3 4 40 10.0 40 27 0 43 79 160 80 OCTOBER 23 1973 3 4 40 10.0 40 27 0 43 79 160 81 OCTOBER 18 1958 10 3 46 15.3 15 27 0 22 22 39 82 OCTOBER 1950 2 6 126 0 41 122 2223 323 333 34 83 JANUARY 16 1974 17 50 452 9.0 12 26 0 41 122 2235 85 OCTOBER 3 1967 13 <td< td=""><td>76 1</td><td>F GDRUAR I</td><td>27 197</td><td>1 12</td><td>30</td><td>221</td><td>5.7</td><td>37</td><td>27</td><td>ō</td><td>13</td><td>13</td><td>4959</td></td<>	76 1	F GDRUAR I	27 197	1 12	30	221	5.7	37	27	ō	13	13	4959
17 DBCENDER 23 193 16 34 67 2.0 16 27 0 25 196 1726 78 NOVEMBER 21 1973 3 4 40 10.0 40 27 0 0 76 3558 80 OCTOBER 18 1958 10 3 46 15.3 15 27 0 22 22 39 81 OCTOBER 18 1958 10 3 46 15.3 15 27 0 22 22 39 82 OCTOBER 18 1950 2 61 271 0 25 110 66 83 JANUARY 16 1974 17 50 476 9.5 6 26 21 323 3233 3233 84 FEBRUARY 11 1961 1 50 452 9.0 12 26 0 41 122 2225 7 7 7 7 11 12 12 12 <td>70</td> <td>MARCH Nørømbed</td> <td>20 19/</td> <td>0 19</td> <td>34</td> <td>108</td> <td>3.2</td> <td>30</td> <td>27</td> <td>0</td> <td>1</td> <td>157</td> <td>1112</td>	70	MARCH Nørømbed	20 19/	0 19	34	108	3.2	30	27	0	1	157	1112
10 10 <th< td=""><td>78</td><td>NOWFMBER</td><td>29 197</td><td>1 16</td><td>34</td><td>67</td><td>2.0</td><td>16</td><td>27</td><td>0</td><td>25</td><td>196</td><td>1726</td></th<>	78	NOWFMBER	29 197	1 16	34	67	2.0	16	27	0	25	196	1726
B0 OCTOBER 23 1973 3 4 0 10.0 40 27 0 43 79 160 81 OCTOBER 18 1958 10 3 46 15.3 15 27 0 22 22 39 82 OCTOBER 29 1950 2 61 291 4.8 13 26 0 85 110 664 83 JANUARY 16 1974 17 50 476 9.5 6 26 0 41 1122 2225 85 OCTOBER 3 1967 19 35 99 2.8 6 26 2 7 7 7 7 86 NOVEMBER 23 1953 1 34 214 6.3 11 26 0 14 278 711 87 JANUARY 19 1967 21 32 88 2.8 9 26 4 250 335 2167 80 DECEMBER 1967	79	MARCH	11 197	0 10	9	54	6.0	89	27	0	.0.1	76	3558
000000000000000000000000000000000000	80	OCTOBER	23 197	3 3	4	40	10.0	40	27	0	43	79	160
02.0 CTOBER 29 1950 2 61 291 4.8 13 26 0 85 110 664 83 JANUARY 16 1974 17 50 476 9.5 6 26 45 221 323 3233 84 FEBRUARY 11 1961 1 50 452 9.0 12 26 0 41 122 22225 85 OCTOBER 3 1967 19 35 99 2.8 6 26 2 7 7 7 7 86 NOVEMBER 23 1953 1 34 214 6.3 11 26 0 14 278 711 87 JANUARY 29 1967 21 32 88 2.8 9 26 4 250 335 2167 88 DECEMBER 2 1948 14 18 156 8.7 7 26 1 31 171 983 90 APRIL 6	81	OCTOBER	18 19	58 10	3	46	15.3	15	27	0	22	22	39
83 JANUARY 16 1974 17 50 476 9.5 6 26 45 221 323 3233 84 FEBRUARY 11 1961 1 50 452 9.0 12 26 0 41 122 2225 85 OCTOBER 3 1967 19 35 99 2.8 6 26 2 7 8 11 205 13 14 107 5.0 6 26 22 142 191 2072 2072 26 1 31 171 983 9 9 8 6 26	82	OCTOBER	29 195	50 2	61	291	4.8	13	26	0	. 85	110	664
84 FEBRUARY 11 1961 1 50 452 9.0 12 26 0 41 122 2225 85 OCTOBER 3 1967 19 35 99 2.8 6 26 2 7 7 7 7 86 NOVEMBER 23 1953 1 34 214 6.3 11 26 0 14 278 711 87 JANUARY 29 1967 21 32 88 2.8 9 26 4 250 335 2167 87 JANUARY 29 1967 21 32 88 2.8 9 26 4 250 335 2167 88 DECEMBER 2 1948 14 18 156 8.7 7 26 1 31 171 983 90 APRIL 6 1963 10 16 56 3.5 6 26 34 86 209 1812 92 MACH 18 </td <td>83</td> <td>JANUARY</td> <td>16 197</td> <td>4 17</td> <td>50</td> <td>476</td> <td>9.5</td> <td>6</td> <td>26</td> <td>45</td> <td>221</td> <td>323</td> <td>3233</td>	83	JANUARY	16 197	4 17	50	476	9.5	6	26	45	221	323	3233
85 OCTOBER 3 1967 19 35 99 2.8 6 26 2 7 7 7 7 86 NOVEMBER 23 1953 1 34 214 6.3 11 26 0 14 278 711 87 JANUARY 29 1967 21 32 88 2.8 9 26 4 250 335 2167 87 DECEMBER 20 1955 19 24 121 5.0 6 26 22 142 191 2072 89 DECEMBER 2 1948 14 18 156 8.7 7 26 1 31 171 983 90 APRIL 6 1963 10 16 56 3.5 6 26 38 65 257 2960 91 JANUARY 1 1949 3 14 107 7.6 8 26 34 86 209 1812 92 MARCH 18 1959 17 10 67 7 17 26 1 15 15 86 93 OCTOB	84	FEBRUARY	11 196	51 1	50	452	9.0	12	26	0	41	122	2225
86 NOV EMBER 23 1953 1 34 214 6.3 11 26 0 14 278 711 87 JANUARY 29 1967 21 32 88 2.8 9 26 4 250 335 2167 88 DECEMBER 20 1955 19 24 121 5.0 6 26 22 142 191 2072 89 DECEMBER 2 1948 14 18 156 8.7 7 26 1 31 171 983 90 APRIL 6 1963 10 16 56 3.5 6 26 38 65 257 2960 91 JANUARY 1 1949 3 14 107 7.6 8 26 34 86 209 1812 92 MARCH 18 1959 17 10 67 6.7 17 26 0 4 38 3088 93 OCTOBER 14	85	OCTOBER	3 196	57 19	35	99	2.8	6	26	2	7	7	
87 JANUARY 29 1967 21 32 88 2.8 9 26 4 250 335 2167 88 DECEMBER 20 1955 19 24 121 5.0 6 26 22 142 191 2072 89 DECEMBER 2 1948 14 18 156 8.7 7 26 1 31 171 983 90 APRIL 6 1963 10 16 56 3.5 6 26 38 65 257 2960 91 JANUARY 1 1949 3 14 107 7.6 8 26 34 86 209 1812 92 MARCH 18 1959 17 10 67 6.7 17 26 0 4 38 3088 93 OCTOBER 14 1965 12 8 50 6.3 29 26 1 15 15 86 94 DECEMBER 9 <td< td=""><td>86</td><td>NOV EMBER</td><td>23 195</td><td>53 1</td><td>. 34</td><td>214</td><td>6.3</td><td>11</td><td>26</td><td>0</td><td>14</td><td>278</td><td>711</td></td<>	86	NOV EMBER	23 195	53 1	. 34	214	6.3	11	26	0	14	278	711
88 DECEMBER 20 1955 19 24 121 5.0 6 26 22 142 191 2072 89 DECEMBER 2 1948 14 18 156 8.7 7 26 1 31 171 983 90 APRIL 6 1963 10 16 56 3.5 6 26 38 65 257 2960 91 JANUARY 1 1949 3 14 107 7.6 8 26 34 86 209 1812 92 MARCH 18 1959 17 10 67 6.7 17 26 0 4 38 3088 93 OCTOBER 14 1965 12 8 50 6.3 29 26 1 15 15 86 94 DECEMBER 9 1948 13 6 59 9.8 6 26 2 17 206 1284 95 DECEMBER 7 1	87	JANUARY	29 196	57 21	. 32	88	2.8	9	26	4	250	335	2167
89 DECEMBER 2 1948 14 18 156 8.7 7 26 1 31 171 983 90 APRIL 6 1963 10 16 56 3.5 6 26 38 65 257 2960 91 JANUARY 1 1949 3 14 107 7.6 8 26 34 86 209 1812 92 MARCH 18 1959 17 10 67 6.7 17 26 0 4 38 3088 93 OCTOBER 14 1965 12 8 50 6.3 29 26 1 15 15 86 93 OCTOBER 14 1965 12 8 50 6.3 29 26 1 15 15 86 94 DECEMBER 9 1948 13 6 59 9.8 6 26 2 17 206 1284 95 DECEMBER 7 1950 <td>88</td> <td>DECEMBER</td> <td>20 195</td> <td>55 19</td> <td>24</td> <td>121</td> <td>5.0</td> <td>6</td> <td>26</td> <td>22</td> <td>142</td> <td>191</td> <td>2072</td>	88	DECEMBER	20 195	55 19	24	121	5.0	6	26	22	142	191	2072
90 APRIL 6 1963 10 16 56 3.5 6 26 38 65 257 2960 91 JANUARY 1 1949 3 14 107 7.6 8 26 34 86 209 1812 92 MARCH 18 1959 17 10 67 6.7 17 26 0 4 38 3088 93 OCTOBER 14 1965 12 8 50 6.3 29 26 1 15 15 86 94 DECEMBER 9 1948 13 6 59 9.8 6 26 2 17 206 1284 95 DECEMBER 7 1950 0 4 44 11.0 15 26 0 98 2274 96 MAY 26 1958 17 2 28 14.0 47 26 0 0 25 3785 97 DECEMBER 10 1971 21 68 160 2.4 46 25 0 3	89	DECEMBER	2 194	8 14	18	156	8.7	7	26	1	31	171	983
91 JANUARY 1 1949 3 14 107 7.6 8 26 34 86 209 1612 92 MARCH 18 1959 17 10 67 6.7 17 26 0 4 38 3088 93 OCTOBER 14 1965 12 8 50 6.3 29 26 1 15 15 86 94 DECEMBER 9 1948 13 6 59 9.8 6 26 2 17 206 1284 95 DECEMBER 7 1950 0 4 44 11.0 15 26 0 98 2274 96 MAY 26 1958 17 2 28 14.0 47 26 0 0 25 3785 97 DECEMBER 10 1971 21 68 160 2.4 46 25 0 3 172 1108 98 MARCH 9 1966 19 61 247 4.0 6 25 25 85 156 2731	90	APRIL	6 196	53.10	16	56	3.5	6	26	38	65	257	2900
92 MARCH 18 1959 17 10 67 6.7 17 26 0 4 36 5086 93 OCTOBER 14 1965 12 8 50 6.3 29 26 1 15 15 86 94 DECEMBER 9 1948 13 6 59 9.8 6 26 2 17 206 1284 95 DECEMBER 7 1950 0 4 44 11.0 15 26 0 98 298 2274 96 MAY 26 1958 17 2 28 14.0 47 26 0 9 25 3785 97 DECEMBER 10 1971 21 68 160 2.4 46 25 0 3 172 1108 98 MARCH 9 1966 19 61 247 4.0 6 25 25 85 156 2731 98 MARCH 9 1966	91	JANUARY	1 194	19 3	14	107	7.6	8	26	54	80	209	2088
93 OCTOBER 14 1965 12 8 50 6.3 29 26 1 15 15 16 94 DECEMBER 9 1948 13 6 59 9.8 6 26 2 17 206 1284 95 DECEMBER 7 1950 0 4 44 11.0 15 26 0 98 298 2274 96 MAY 26 1958 17 2 28 14.0 47 26 0 0 25 3785 97 DECEMBER 10 1971 21 68 160 2.4 46 25 0 3 172 1108 98 MARCH 9 1966 19 61 247 4.0 6 25 25 85 156 2731 99 JANUARY 28 1967 3 56 298 5.3 6 25 3 16 160 1869 100 NGWEMBER 15 1966 1 54 186 3.4 18 25 0 126 168 393	92	MARCH	18 19	59 17	10	67	6.7	17	26	U U	4	30 15	3000
94 DECEMBER 9 1948 13 6 59 9.8 6 20 2 17 208 1204 95 DECEMBER 7 1950 0 4 44 11.0 15 26 0 98 298 2274 96 MAY 26 1958 17 2 28 14.0 47 26 0 0 25 3785 97 DECEMBER 10 1971 21 68 160 2.4 46 25 0 3 172 1108 98 MARCH 9 1966 19 61 247 4.0 6 25 25 85 156 2731 99 JANUARY 28 1967 3 56 298 5.3 6 25 3 16 160 1869 100 NOVEMBER 15 1966 1 54 186 3.4 18 25 0 126 168 393	93	OCTOBER	14 196	55 12	8	50	6.3	29	20	<u>.</u>	17	206	1284
95 DECEMBER 7 1950 0 4 44 11.0 15 26 0 96 25 2274 96 MAY 26 1958 17 2 28 14.0 47 26 0 0 25 3785 97 DECEMBER 10 1971 21 68 160 2.4 46 25 0 3 172 1108 98 MARCH 9 1966 19 61 247 4.0 6 25 25 85 156 2731 98 MARCH 9 1966 19 61 247 4.0 6 25 25 85 156 2731 99 JANUARY 28 1967 3 56 298 5.3 6 25 3 16 160 1869 100 NOVEMBER 15 1966 1 54 186 3.4 18 25 0 126 168 393	94	DECEMBER	9 194	18 13	6	59	9.8	0 15	20	4	08	200	2274
96 MAY 26 1958 17 2 28 14.0 47 26 5 6 172 1108 97 DECEMBER 10 1971 21 68 160 2.4 46 25 0 3 172 1108 98 MARCH 9 1966 19 61 247 4.0 6 25 25 85 156 2731 99 JANUARY 28 1967 3 56 298 5.3 6 25 3 16 160 1869 100 NUMERE 15 1966 1 54 186 3.4 18 25 0 126 168 393	95	DECEMBER	7 19	50 0	4	44	11.0	10	20	0	50	25	3785
97 DECEMBER 10 10 2.4 40 20 25 85 156 2731 98 MARCH 9 1966 19 61 247 4.0 6 25 25 85 156 2731 99 JANUARY 28 1967 3 56 298 5.3 6 25 3 16 160 1869 100 NUMERED 15 1966 1 54 186 3.4 18 25 0 126 168 393	96	MAY	26 19	28 17	2	28	14.0	47	20	ň	3 3	172	1108
98 MARCH 9 1900 19 01 247 4.0 0 25 3 16 160 1869 99 JANUARY 28 1967 3 56 298 5.3 6 25 3 16 160 1869 100 NOVEMBER 15 1966 1 54 186 3.4 18 25 0 126 168 393	9/	DECEMBER	10 19	71 Z1		100	6+4 A 0	40	25	25	85	156	2731
100 NOVEMBER 15 1966 1 54 186 3.4 18 25 0 126 168 393	20	TANUADY	20 104	57 JU	7 5 <u>7</u>	297	*•U 5 2	6	25	3	16	160	1869
	33	NOVEMBED	15 104	56 1	54	186	3.4	18	25	ō	126	168	393

										MAGNITUDE	MAGNITUDE	MAGNITUDE	MAGNITUDE
	DA	ГE			· · · · · · · · · · · · · · · · · · ·	AVERAGE	HOURS	SINCE	MAXIMUM	LAST	LAST A9 UDC	LAST	IDAR SO FAR
	EV EN T	ENDED	HOUR	DURATION	MAGNITUDE	INTENSITY	LAST	EV ENT	INTENSITY	12 HRS	40 RKS (TN Y 100)	(TN X 100)	$(TN \times 100)$
				(HOURS)	(IN X 100)	(IN/HR X 100)		0	IN/HR X 100)	(IN X 100)	(10 x 100)	(10 × 100)	(10 / 100)
	NOTEMPED	25	10C0 E	E E	604	12 4		27	67	0	12	197	683
1	NOV EMBER	25	1960 5	22	004 A20	10.8	-	7	66	15	129	230	714
2	NUVEMBER	20	1064 21	01	721	7.8	. 1	ι ά	65	0	98	162	1826
3	JANUARI	20	1076 10	50	203	51	1	0	56	2	30	62	2158
4 5	JANUARI	12	19/0 10	17	200	17.6	-	6	54	5	124	445	1885
5	JANUARI	14 6	1070 10	22	322	9.8	-	3Õ	50	Õ	38	131	2728
. 7	DECEMPER	. О. Л.	1975 16	21	299	14.2		21	50	Ō	6	344	1457
6	NOVEMBER	2	1072 14	10	138	13.8		26	50	Ō	33	78	164
a a	NOVEMBER	25	1970 5	71	310	4.4		39	49	0	2	47	740
10	DECEMBER	12	1969 3	25	258	10.3	j	LO	49	3	59	100	806
11	FEBRILARY	11	1961 1	46	628	13.7		17	48	0	16	81	2376
12	DECEMBER	27	1974 7	21	245	11.7	9	95	48	· 0 ·	0	155	1451
13	DECEMBER	26	1964 7	17	143	8.4		8	48	25	242	1245	2829
14	DECEMBER	16	1970 21	38	226	5.9		9	47	4	87	134	1686
15	JANIJARY	28	1959 1	35	312	8.9		20	47	0	2	75	2329
16	DECEMBER	22	1957 5	110	807	7.3		7	45	30	103	109	806
17	OCTOBER	19	1979 10	34	345	10.1	1	88	45	0	0	30	30
18	DECEMBER	5	1951 11	68	281	4.1		14	44	0	33	356	1333
19	NOV EMBER	4	1978 3	4	58	14.5	13	38	44	0	0	22	- 29
20	TANUARY	10	1959 16	77	379	4.9		11	42	0	6	79	1501
21	NOV EMBER	12	1951 18	60	237	4.0		8	42	30	56	57	637
22	NOVEMBER	20	1978 10	43	321	7.5		29	42	0	7	9	142
$\begin{bmatrix} 0 \\ 0 \end{bmatrix} \tilde{2}\tilde{3}$	MARCH	25	1976 5	35	218	6.2		21	42	0	110	235	4173
24	NOVEMBER	21	1973 5	34	242	7.1	4	4.8	42	0	0	462	1604
25	DECEMBER	24	1965 10	25	152	6.1		40	42	0	4	17	1098
26	OCTOBER	7	1962 17	13	154	11.8		26	42	0	14	72	72
27	DECEMBER	23	1955 8	78	663	8.5		13	41	0	296	418	2187
28	MARCH	31	1963 7	71	458	6.5		8 .	41	18	100	174	2611
29	DECEMBER	24	1964 1	11	193	17.5		6	41	23	467	1015	2587
30	FEBRUARY	20	1977 14	4	49	12.3	1	93	41	0	0	0	429
31	JANUARY	22	1972 7	81	608	7.5		6	40	2	155	163	2733
32	NOV EMBER	16	1966 3	79	502	6.4		19	40	0	117	221	428
33	NOV EMBER	19	1955 14	48	206	4.3		16	40	0	46	60	783
34	DECEMBER	4	1979 0	27	302	11.2		39	40	0.0	205	244	1421
35	DECEMBER	19	1955 14	17	219	12.9		7	40	3	92	246	1968
36	DECEMBER	12	1968 3	68	407	6.0		27	39	0	22	327	1659
37	JANUARY	17	1974 1	55	689	12.5		8	39	73	238	311	3778
38	MARCH	30	1960 19	43	190	4.4		.8	39	4	35	55	2539
39	NOV EMBER	14	1958 7	41	138	3.4		65	39	0	0	242	576
40	OCTOBER	15	1971 7	21	60	2.9		23	39	0	2	2	2
41	MAY	24	1953 19	4	44	11.0		26	39	0	66	186	3649
42	DECEMBER	1	1975 5	36	326	9.1		49	38	0	0	63	1125
43	FEBRUARY	18	1974 21	26	214	8.2		27	38	0	130	223	5034
44	NOVEMBER	10	1975 12	19	143	7.5		19	38	0	27	131	700
45	DECEMBER	23	1964 8	127	1015	8.0		60	37	0	0	70	15/2
46	JANUARY	4	1966 7	64	644	10.1		12	37	0	101	470	1756
47	NOV EMBER	26	1962 12	24	255	10.6		82	37	0	0	70	981
48	FEBRUARY	27	1976 14	7	70	10.0		18	37	0	140	315	3768
49	APRIL	5	1978 5	5	53	10.6		9	37	14	18	152	4209
50	FEBRUARY	16	1958 16	63	387	6.1		32	36	0	51	222	3064

OVERALL ORDER STATISTICS AT EUGENE SORTED BY MAX RATE

	DAT EV EN T	re Ended	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE Intensity (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM Intensity (n/hr x 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	JANUARY	16 1	954 8	31	197	6.4	12	36	0	40	64	1922
52	JANUARY	6 1	966 0	18	216	12.0	14	36	0	390	862	2434
53	DECEMBER	4 1	978 14	17	110	6.5	27	36	0	3	231	694
54	MARCH	30 1	974 7	15	190	12.7	9	36	20	238	314	6596
55	JANUARY	25 1	975 23	12	156	13.0	29	36		20	25	2253
56	JANUARY	16 1	964 10	9	88	9.8	14	36	0	12	122	1/30
57	APRIL	8 1	972 7	6	102	17.0	12	36	0	//9	203	1244
58	NOV EMBER	18 1	950 5	92	673	7.3	12	35	. U	10	10	3496
59	APRIL	28 1	962 14	47	213	4.5	10	35		36	157	5850
60	MARCH	12 1	.974 7	25	147	5.9	15	30	23	138	498	1911
61	DECEMBER	21 1	961 10	24	141	2.9	. 10	35	24	50	50	619
62	NOVEMBER	71	975 19	1/	50	3.3	A1 5	35		4	54	855
63	DECEMBER	- 0 <u>1</u>	9/4 10	10	64	6 2	12	35	, O	12	61	3516
64	MAY	14 1	95/ 3	10	78	15.6	124	35	ŏ	0	42	42
60	DUTUBER	71	070 22	69	340	4.9	12	34	Ō	4	4	1278
67	DECEMBED	14 1	973.19	59	287	4.9	17	34	0	30	222	2531
68	TANHADV	181	971 8	50	299	6.0	9	34	9	174	501	2950
69	OCTOBER	23 1	951 9	26	153	5.9	11	34	0	62	121	411
70	APRIL	6 1	979 12	16	90	5.6	94	34	0	0	8	2546
.71	NOV EMBER	15 1	975 10	16	84	5.3	12	34	0	26	194	869
572	NOV EMBER	11 1	973 17	14	112	8.0	7	34	38	78	612	918
ō73	JANUARY	27 1	1960 10	11	93	8.5	25	- 34	5	11	17	1005
74	NOV EMBER	30 1	978 16	8	114	14.3	16	34	0	92	105	000
75	NOV EMBER	16 1	1973 3	56	377	6.7	8	33	14	188	292	1210
76	DECEMBER	61	971 8	51	274	5.4	15	33	0	32	200	346
77	OCTOBER	27]	1967 21	21	152	1.2	52	33	0	0	222	918
78	DECEMBER	5 1	1967 10	55	243	4.4	1/	34	0	90 73	230	2231
79	JANUARY	181	970 10	40	199	4.5	267	32		· / J	230	3467
80	JANUARY	13 1	19/4 14	40	103	9.7	207	32	. 8	27	119	1183
. 8T	DECEMBER	ורכ	1900 12 1071 1	25	313	9.0	12	32	ŏ	80	114	798
82	TANIIADV	2/ 1	1976 5	33	392	11.9	· • 9	32	ì	145	334	2461
0.0	NOWEMBED	101	058 19	29	276	9.5	82	32	0	0	164	740
85	FEBRILARY	15 1	1961 10	19	88	4.6	8	32	2	46	729	3089
86	DECEMBER	26]	957 7	16	87	5.4	22	32	сана О	34	719	1653
87	NOV EMBER	17 1	1954 5	15	158	10.5	10	32	ia in 3 n ⊳	68	188	526
88	JANUARY	29 1	1958 7	14	163	11.6	7	32	26	91	201	2500
89	JANUARY	8]	1961 5	10	104	10.4	37	32	0	16	90	1778
90	JANUARY	14]	1974 10	7	128	18.3	13	32		156	183	3650
91	NOV EMBER	24]	1961 7	69	649	9.4	79	31	0	-0	24	5/1
92	DECEMBER	2 1	1964 7	54	232	4.3	26	31	63	/1	452	10//
93	MAY	17 1	1972 5	32	263	8.2	7	31	2	2	2	1261
94	DECEMBER	1]	1961 5	30	120	4.0	37	31	U o	0 245	342 275	275
95	OCTOBER	20 1	1979 17	23	169	1.5	242	31 21	D D	343 0	373 N	4716
96	MAY	14	1969 /	21	100	5.U 14 E	243 05	21 21	N N	ů v	ž	422
97	NOV EMBER	4.	1061 JJ 1903 TA	0 11	00 TOU	14.5	30	31	ň	127	228	2213
50	DECEMBED	101	1071 23	54	255	10.J 4.7	6	30	30	35	341	1621
100	JANUARY	21	1967 16	53	367	6.9	84	30	Ŏ	Ō	55	2170

	DAJ EV EN T	'E ENDED	HOUR	DURATION	MAGNITUDE	AVERAGE INTENSITY	HOURS LAST	SINCI EV EN	E MAXIMUM T INTENSITY	MAGNITUDE LAST 12 HRS	MAGNITUDE LAST 48 HRS	MAGNITUDE LAST 168 HRS	MAGNITUDE YEAR SO FAR
				(HOURS)	(IN X 100)	(IN/HR X 100)			(IN/HR X 100)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
1	DECEMBER	22]	1957 3	54	100	1.9		6	10	41	135	197	1020
2	JANUARY	16 1	1971 17	51	201	3.9		6	12	9	49	225	1843
3	MARCH	12 1	1961 16	49	100	2.0		6	9	4	44	162	2931
4	FEBRUARY	25]	1950 0	47	190	4.0		6	18	8	10	25	2623
5	DECEMBER	30 1	1968 21	47	77	1.6		6	6	1	59	216	2050
6	JANUARY	21 1	L972 0	45	226	5.0		6	20	12	78	90	1889
7	DECEMBER	17]	1972 16	40	134	3.4		6	10	4	4	44	596
8	NOV EMBER	15 1	1963 7	36	163	4.5		6	28	3	3	142	565
9	NOV EMBER	16]	1973 1	35	282	8.1		6	35	28	81	459	910
10	OCTOBER	28]	1961 1	35	127	3.6		6	16	<u>1</u>	23	70	162
11	NOV EMBER	25 1	1955 14	35	123	3.5		6	18	1	56	308	1126
12	JANUARY	14]	1970 12	31	95	3.1		6	11	33	125	229	1669
13.	OCTOBER	6.1	1950 3	30	119	4.0		6	21	. 3	74	-/6	/6
14	FEBRUARY	10 1	1959 3	30	/9	2.6		6	. 9	2	20	28	2079
15	NOV EMBER	12 1	19// 3	30	46	1.5		6	8	4	61 07	93	384
15	APRIL	2 1	19/4 5	30	39	1.3		6	20	20	85	2/5	4339
1/	UCTOBER	20 1	L950 1/	29	107	3./		Č	20	29	93	141	120
10	NOV EMBER	101	1937 8	29	93	3.2		Ċ	12	01	50	15	420
20	AFRIL	10 1		20	135	4.0		0 C	14	· 31		252	3203
20		. 14 1	10/0 10	20	30	1.0		6	12	12	111	252	2041
21	ADDII	27 1	1949 17	20	15	1.0		6	15	5	17	17	2837
23	NOVEMBER	14 1	1958 8	25	46	יי. אינ		Ğ.	15		89	225	590
24	MARCH	1 1	1977 14	25	37	1.5		6	- 7	23	79	192	704
25	DECEMBER	16	973 14	24	98	4.1		6	16	12	68	234	1 80 9
26	NOVEMBER	101	971 23	24	54	2.3		6	10	37	43	101	367
27	DECEMBER	1 1	1966 19	24	38	1.6		6	10	4	48	68	845
28	JANUARY	5 1	1965 10	24	36	1.5		6	6	4	19	161	1854
29	DECEMBER	23]	1973 1	24	30	1.3		6	7	5	94	313	2110
30	DECEMBER	29 1	1951 17	23	62	2.7		6	20	6	25	30	1656
31	JANUARY	31 1	1969 19	23	56	2.4		6	10	1	57	115	2942
32	APRIL	9 1	L974 21	23	34	1.5		6	8	1	1	55	4424
33	DECEMBER	11 1	1955 21	20	82	4.1		6	18	33	74	238	1688
34	FEBRUARY	8 1	L950 5	20	66	3.3		6	25	6	42	71	2357
35	APRIL	25 1	1967 21	20	48	2.4		6	10	2	2	12	2939
36	NOVEMBER	29]	L973 12	20	12	.6		6	4	48	76	198	1453
37	DECEMBER	22]	1967 19	19	57	3.0		6	· 7	10	45	98	1075
38	MARCH	30 1	1967 17	19	40	2.1		6	13	6	33	69	2759
39	JANUARY	30 1	1965 0	19	38	2.0		6	9	15	135	391	2447
40	JANUARY	9]	L970 17	18	91	5.1		6	10	9	13	21	1453
41	FEBRUARY	4	19/9 5	18	45	2.5		6	6	11	14	14	939
42	NOV EMBER	10 1	1948 22	18	42	2.3		6	26	5	42	53	97
43	DECEMBER	18 1	1051 5	18	31	1./		0	13		15	121	907
44 1 C	MADOU	2	1022 2	17	52	3.1		0	10	25	103	103	103
43	MARCH	44	1060 0	17	30	2.L		0	10	5	3		2028
40	FERDIARY	10 1	1057 2	16	32	1.9		6	11	TO	13	203	000
10	FERDIARY	20 3	107/ 7	16	104	0.4		6	20	2	0) 50	207	1044
40	NOVEMBED	10 1	1973 17	16	104	0.0		6	14	י כ דר	50	270	702
50	MARCH	291	1957 7	16	40	2.5		6	11 5	47	74 12	10	2303
- •								~			±.,		2303

ł

OVERALL ORDER STATISTICS AT PORTLAND SORTED BY HRS BTWN +

DA EV EN I	TE ' ENDED HOUR I	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE Intensity (In/HR X 100)	HOURS LAST)	SINCE EVENT (I	MAXIMUM INTENSITY N/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51 MAY	21 1964 3	16	11	.7		6	3	16	16	19	2730
52 MARCH	18 1975 16	15	67	4.5		6	13	1	44	98	2986
53 NOV EMBER	9 1967 17	15	42	2.8		6	17	4	21	21	493
54 JANUARY	11 1971 10	15	29	1.9		6	8	20	28	148	1754
55 NOV EMBER	3 1948 18	15	24	1.6		6	9	0	0	0	• 0
56 MARCH	31 1963 /	15	23	1.5		6		29	188	308	2540
57 FEBRUARI	22 19/1 1/	15	23	1.5		6	4		101	62	2506
50 MAY	21 1900 17 17 1075 7	10	15	1.0		6	3	10	101	144	2868
60 FEDDIADV	25 1071 0	14	14	2.4		6	10	20	30	30	3496
61 NOV FMBFR	Q 1964 12	14	20	2.4		6	6	5	15	116	2044
62 MARCH	7 1960 12	14	24	17		6	0	3	17	110	1990
63 NOVEMBER	25 1979 0	14	14	1.0		6	5	25	02	178	1000
64 FEBRUARY	12 1952 1	14	13	.9		6	a.	14	14	32	2362
65 OCTOBER	21 1951 22	13	108	8.3		6	25	- 4	25	89	355
66 JANUARY	22 1956 0	13	35	2.7		6	8	6	24	323	3373
67 FEBRUARY	13 1975 5	13	30	2.3		6	9	27	109	161	2538
68 JANUARY	13 1953 14	13	23	1.8		6	7	17	83	449	1441
69 MARCH	15 1968 7	13	19	1.5		6	5	20	55	66	2392
70 NOVEMBER	11 1964 5	13	15	1.2		6	6	4	37	96	269
71 FEBRUARY	22 1972 21	13	9	.7		6	.3	20	20	91	2380
72 MARCH	7 1966 0	12	62	5.2		6	9	3	29	58	2289
73 NOV EMBER	10 1957 21	12	38	3.2		6	8	9	9	9	362
74 MARCH	3 19/1 12	12	26	2.2		6	- 6	1	16	137	2667
75 FEDRUARI	2 19/0 3	12	23	1.9		6		30	91	107	2197
70 NOVEMBER 77 JANHARV	1/ 1061 1/	12	11	.9		6	2		14	10	1600
78 NOVEMBER	23 1074 12	11	63	57		6	12	2	111	20U TO	1022
79 DECEMBER	17 1967 19	11	26	2.4		6	6	1	111 111	350	020
80 JANUARY	13 1959 1	īī	14	1.3		6	Š	16	98	372	1683
81 APRIL	15 1976 17	īī	12	1.1		6	4	4	12	69	2950
82 MAY	1 1964 19	11	12	1.1		6	4	8	39	74	2649
83 MAY	1 1963 21	11	12	1.1		6	2	1	9	36	2945
84 APRIL	11 1974 17	11	11	1.0		6	8	3	12	74	4461
85 MARCH	15 1971 7	11	4	.4	1. 2011 - 1	6	1	7	56	234	2997
86 FEBRUARY	12 1979 1	10	44	4.4		6	12	2	54	211	1198
87 OCTOBER	10 1953 19	10	42	4.2		6	24	57	162	170	197
88 JANUARY	12 1958 17	10	41	4.1		6	13	21	47	91	1370
89 MARCH	18 1952 10	10	23	2.3		6	7	16	16	71	2734
90 MAY	2/ 1969 12 7 1077 7	10	22	2.2		6	11	8	16	16	3745
02 NOVENDER	22 1052 12	TO	5	.0		0	10	0	20	13	288
92 NOVERIDER	11 1052 14	9	23	D.y E 1		0 6	12	5/	84	321	/91
94 MARCH	2 1050 10	7 Q	10 10			6	14	54 A	20	300	1328
95 NOV EMBER	14 1975 7	9	34	2 8		6	10	4 A	4 /	190	2000
96 JANUARY	30 1950 3	ģ	28	3.1		6	Q	7	л С	יט בון	252 2250
97 DECEMBER	30 1954 1	9	23	2.6		6	8	4	51	192	1278
98 OCTOBER	14 1971 17	9	22	2.4		6	16	3	7	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	7
99 DECEMBER	18 1979 16	9	21	2.3		6	7	36	90	112	1204
100 FEBRUARY	15 1961 14	9	19	2.1		6	8	28	52	387	2461

							noupp			MAGNITUDE	MAGNITUDE	MAGNITUDE	MAGNITUDE
	EV ENT	TE ENDED	HOUR	DURATION	MAGNITUDE	AV ERAGE INTENSITY	LAST	SINCE	MAXIMUM	LAST	LAST	LAST	YEAR So fad
	DV 1111		noon	(HOURS)	(IN X 100)	(IN/HR X 100)	DUD I	(I	$N/HR \times 100)$	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
-						· · · ·		_					
1	DECEMBER	31	1965 14	139	496	3.6		6	21	2	73	184	1219
2	NOVEMBER	12	19/3 14	90	4/0	5.2		0	35	4	150	442	884
3	NOV EMBER	13	1902 19	00	203	4.0		0	11	22	/3	122	465
4	MARCH	20	1966 19	50	24/	4.0		6	25	25	85	150	2/31
2	JANUARI	20	190/ 3		298	2.3		0	25	3	16	100	1869
07	FEBRUARI	13	19/3 1/	52	140	1./		6	10	10	20	130	2322
6	NOV ENBER	21	19/1 3	51	140	2.1		C	10		221	202	200
0	JANUARI	10	19/4 1/	50	4/0	9.0		6	20	40	221	323	3233
10	OCTORED	21	1962 ZI	47	122	25		6	15	9 E	19	175	1923
11	DUTUBER	21	1021 22	40	122	2.5		C	15	5	24	1/2	493
17	PECEMPER	20	1951 ZZ	41	70	2.1		о с	10			550	2007
12	FEDDUADY	.30	1056 10	40	207	L./		6	24	0 I	40	339 AD	2037
14	FEDRUARI	14	1070 12	43	202	4 7		6	24	1 1	22	42	902/
12	TANKADV	17	1054 7	4J A1	116	4./ 20		6	19	74	55	47	2070
16	MADCU	21	1075 14	40	TIO	2.0		6	10	· ·	110	. 222	2070
17	NOVEMBED	16	1060 5	20	45	1.2		6	12		119	200	2913
10	NOV ENDER	21	1070 2		247	1.9		6	10	20	146	193	403
10	DECEMPER	21	1970 5	20	241	2.0		6	20	29	140	107	1//0
20	MADCH	25	1050 16	36	22	2.0		6	0 7	10	15	24	2202
20	MADCU	10	1075 14	25	167	• 9 A 10		6	10	12	40	02	3232
21	OCTORED	10	1067 10		101	4.0		6	10	1	42	40	4122
22	FEDDUADY	22	190/ 19	35	99	2.0		6	20	4	01	475	2676
23	T EDRUARI	23	1060 14	25	61	2.3		6	15	20	70	4/3	2070
24	DECEMBER	24	1055 1	35	52	1.5		6	12	29	220	112	2034
25	NOVEMBED	27	1055 2	37	110	2.0		с с	15	2	220	220	2307
20	FFRDIADV	17	1052 3	33	163	3.2		6 .	29	20		220	2806
21	MADCH	1	1056 3	33	103	4.5		6	12	29	41J 60	06	4543
20	NOVEMBED	14	1050 23	22	61	1.0		6	13	5	07	26.0	4040 507
20	FFRDIARV		1968 10	33	142	1.0		6	19	15	90	200	2014
21	OCTORED	24	1900 10	31	57	4.0		6	17	10	110	209	2014
32	OCTOBER	6	1050 2	20	146	5.0		6	25	17	146	171	171
22	NOVEMBER	12	1964 7	29	05	3 3		6	17	12	52	1/1 91	220
34	OCTOBER	31	1950 1	28	70	2.5		6	10	22	150	406	082
35	APRIL	ี ลิ ไ	1972 21	27	89	2.2		6	18	17	67	130	3653
36	APRIL	2	1958 19	26	63	2.4		6	18	Å .	12	43	3367
37	NOV EMBER	24	1949 2	25	159	6.4		6	10	30	A 7	55	444
38	FEBRUARY	9	1958 16	25	57	2.3		6	7	5	72	85	2494
39	DECEMBER	20	1955 19	24	121	5.0		6	26	22	142	1.91	2072
40	NOVEMBER	24	1963 1	24	34	1.4		ě.	12	1	21	87	957
41	DECEMBER	23	1971 21	23	91	4.0		6	17	Ŕ	107	149	1628
42	NOV EMBER	6	1953 10	23	48	2.1		6		20	20	40	346
43	APRIL	20	1961 0	23	45	2.0		6	19	Ĩğ	42	64	4003
44	FEBRUARY	17	1962 16	23	41	1.8		6	10	16	20	136	1801
45	OCTOBER	21	1961 14	23	18	8		6	6	2	2	2	138
46	APRIL	19	1965 8	22	100	4.5		6	10	8	9	12	3297
47	NOV EMBER	8	1970 7	22	31	1.4		6	7	3	24	59	384
48	FEBRUARY	26	1955 21	22	25	ī.i		6	6		17	ĩĩ	1862
49	NOV EMBER	17	1954 8	21	111	5.3		6	24	12	77	192	620
50	MAY	5	1959 12	21	59	2.8		6	12	-4	4	40	3591

OVERALL ORDER STATISTICS AT SALEM SORTED BY HRS BTWN

	DA	TE			AV ERAGE	HOURS	SINCE	MAXIMUM	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE	MAGNITUDE YEAR
	EV EN T	ENDED HOUR	DURATION	MAGNITUDE	INTENSITY	LAST	EV EN T	INTENSITY	12 HRS	48 HRS	168 HRS	SO FAR
			(HOURS)	(IN X 100)	(IN/HR X 100)	(1	N/HR X 100)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
51	FEBRUARY	25 1961 21	21	51	2.4		6	12	46	46	154	3017
52	DECEMBER	17 1972 14	20	93	4.7		6	10	12	15	33	617
53	MARCH	24 1952 8	20	67	3.4		6	11	3	3	49	3410
54	JANUARY	24 1956 8	20	59	3.0		6	12	18	74	240	3820
55	DECEMBER	21 1963 5	20	58	2.9		б .	8	19	74	74	1227
56	DECEMBER	13 1966 23	20	.55	2.8		6	12	14	74	249	1386
57	NOV EMBER	14 1960 8	20	48	2.4		6	17	10	45	145	435
28	FEBRUARY	15 1950 0	20	24	1.2		6	5	6	82	176	2870
- 60	ADDII	14 1900 14	19	78	4.1)	6	17	1	30	278	3008
61	APRIL	10 19/0 0 22 1050 12	19	25	1.3		6	4	3	30	83	2958
62	MYDCH	23 1930 12	19	16	1.2		6	4	3	20	201	3701
63	OCTORED	11 1062 10	19	10	• 8		6	5	12	24	95	3609
64	ADDTT.	20 1061 10	10	04	4./		0	18	1	61	236	268
65	DECEMBER	17 1073 12	1.8	72	4.0		. D	24	2	2	43	4159
66	JANUARY	17 1978 5	18	A1	2.2		¢	10	22	182	4/2	2419
67	NOV EMBER	9 1962 10	18	24	1 3		6	12	1/	41	109	2142
68	JANUARY	12 1959 3	17	135	7.9		6	17		120	120	581
69	OCTOBER	27 1961 3	17	83	4.9		6	25	2	120	500	1920
70	FEBRUARY	16 1959 8	17	82	4.8		6	15	11	208	308	212
71	NOV EMBER	9 1967 17	17	34	2.0		6	-6	2	21	21	504
72	FEBRUARY	5 1950 10	17	17	1.0		6	5	7	58	94	2590
73	MAY	2 1963 7	17	17	1.0		6	5	3	13	38	3285
74	APRIL	6 1963 10	16	56	3,5		6	26	38	65	257	2960
75	APRIL	27 1953 7	16	56	3.5		6	11	16	23	38	3717
76	NOV EMBER	1 1950 21	16	52	3.3		6	14	9	70	483	1074
- 77	MAY	31 1967 1	16	44	2.8		6	37	1	12	15	3190
78	OCTOBER	26 1975 16	16	36	2.3		6	12	2	34	164	303
. /9	DECEMBER	30 1975 16	16	35	2.2		6	7	23	30	187	1729
00	JANUARY	/ 1953 14	15	89	5.9		6	15	3	3	128	1230
01	NOV EMBER	20 1962 12	15	61	4.1		6	12	1	3	96	843
202	NONEMBED	0 1949 10	15	43	2.9		6	18	4	57	57	57
84	DECEMBER	5 1061 1	15	21	1.8		6	11	5	8	246	672
85	NOV EMBER	27 1973 14	15	10	1.7		0	5	1	6	99	766
86	JANUARY	19 1970 17	14	75	1.3		C C	3	5	48	322	1707
87	NOV EMBER	22 1973 1	14	61	J.4 A A		C	10	11	11/	424	2286
88	DECEMBER	6 1974 19	14	59	A 2		6	10	29	1/1	505	1530
89	OCTOBER	7 1960 21	14	48	3.4		6	11	50	13	03	1020
90	APRIL	12 1972 12	14	44	3.1		6	15	50	14	207	2756
91	DECEMBER	26 1969 16	14	26	1.9		6	Q	17	21	207	3/30
92	JANUARY	6 1965 10	14	25	1.8		6	ģ	- îi	31	110	2281
93	OCTOBER	3 1957 5	14	16	1.1		6	5	26	33		2201
94	MARCH	22 1957 1	14	15	1.1		б	3	ī	27	94	2443
95	FEBRUARY	2 1978 23	13	37	2.8		6	12	8	102	119	2397
96	FEBRUARY	1 1970 7	13	б	.5		6	2	19	41	288	3031
97	MAY	18 1953 19	12	57	4.8		6	17	1	1	18	3878
98	JANUARY	14 1969 7	12	32	2.7		6	9	4	61	462	2883
100	NOVEMBER	T2 T2// 2	12	30	2.5		6	7	10	58	76	382
100	NOVEMBER	4 19/9 1/	12	29	2.4		0	9	10	21	62	627

	יאמ	1F				AVEDACE	HOURS	SINCE	MAXTMIIM	MAGNITUDE	MAGNITUDE LAST	MAGNITUDE	MAGNITUDE YEAR
	EVENT	ENDED	HOUR	DURATION	MAGNITUDE	INTENSITY	LAST	EVENT	INTENSITY	12 HRS	48 HRS	168 HRS	SO FAR
				(HOURS)	(IN X 100)	(IN/HR X 100)		(1)	N/HR X 100)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
1	JANUARY	22]	1972 7	81	608	7.5		6	40	2	155	163	2733
2	DECEMBER	17 1	977 5	77	459	6.0		6	23	71	326	514	1994
3	DECEMBER	10 1	1971 21	54	255	4.7		6	30	30	35	341	1621
4	FEBRUARY	26 1	1976 12	50	287	5.7		6	29	2	28	113	3481
5 1	DECEMBER	30 1	1951 7	49	150	3.1		6	19	1	149	205	1941
6	FEBRUARY	11]	L979 19	49	147	3.0		6	23	7	15	357	1631
7	MARCH	27]	1962 10	48	233	4.9		6	18	85	182	286	3170
8	MARCH	22]	1953 12	48	129	2.7		6	14	12	43	202	2901
9	JANUARY	27]	1970 12	42	185	4.4		6	18	40	275	648	3078
10	JANUARY	17 1	1973 7	41	121	3.0		6	16	3	112	294	1911
11	OCTOBER	24]	1970 19	36	129	3.6		6	16	4/	113	100	220
12	FEBRUARY	10 1	1949 21	35	139	4.0		6	10	L 57	112	200	2040
13	JANUARY		1969 8	34	278	8.2		6	10		772	• 35	627
14	NOVEMBER	24	1964 19	34	135	4.0		6	21	25	38	0.8	547
15	NOV EMBER			34	150	5.0		6	21	23	187	296	1916
10	FEBRUARI	26	1903 14	31	120	2.2		6	12	Δ.	46	98	40.85
10	MADCU	20 1	1975 3	31	50	1.6		6	8	48	195	282	3466
10	FEBRILARV	20 1	1973 3	30	48	1.6		6	8	59	87	146	3956
20	TANHARY	25 1	1970 12	29	235	8.1		6	26	40	225	469	2843
21	DECEMBER	28	1951 0	29	70	2.4		6	14	68	79	135	1871
22	MAY	13	1951 6	28	74	2.6		6	12	1	22	47	4594
23	DECEMBER	9	1969 16	26	31	1.2		6	10	14	14	31	7 2 7
24	APRIL	19 :	1965 7	25	128	5.1		6	14	2	2	9	4591
25	APRIL	7 :	1972 12	25	78	3.1		6	19	1	124	1.85	5074
26	FEBRUARY	21	1957 0	25	16	.6		6	2	1	1	9	1856
27	MAY	23	1953 12	24	7.0	2.9		6	18	10	53	116	3579
28	NOV EMBER	27	1973 23	24	51	2.1		6	13	8	56	408	2017
29	MARCH	1	1966 7	24	33	1.4		6	10	17	20	26	3025
30	NOV EMBER	. 4	1950 0	22	52	2.4		6	1	0	2	565	1200
31	JANUARY	14	1966 19	22	26	1.2		6	5	1	9	29	2720
32	FEBRUARY	18	1976 5	20	91	4.0		0	20	E0	270	6 4 1	1202
33	OCTOBER	30	1950 19	20	. 56	2.8		0	12	20	3/0	041	1205
34	NOV EMBER	1/	1953 12	20	34 .	1.1		0	0 A	23	,,,	75	3288
30	MARCH	24.	1952 9	20	11	1.5		6	μ 4	5	41	152	3103
30	TANUADV	22	1052 10	10	113	50		6	18	Ă	166	397	1795
30	TANUART	10	1955 19	19	78	4.1		6	15	5	201	407	3263
39	MARCH	7	1960 8	18	112	6.2		6	30	4	178	346	2124
40	NOVEMBER	12	1973 17	18	112	6.2		6	19	48	174	584	1030
41	JANUARY	22	1954 21	18	97	5.4		6	18	2	3	320	2247
42	MAY	2	1957 14	18	63	3.5		6	16	19	29	30	3392
43	NOV EMBER	13	1951 18	18	59	3.3		6	7	12	157	293	874
44	JANUARY	17	1954 8	18	40	2.2		6	6	24	197	237	2119
45	MARCH	2	1964 16	18	27	1.5		6	9	8	55	68	2943
46	MARCH	3	1957 3	18	16	.9		6	6	2	2	311	2293
47	MAY	5	1965 14	18	15	.8		6	8	2	4	11	4800
48	JANUARY	12	1959 1	17	299	17.6		6	54	5	124	445	1885
49	MARCH	14	1970 14	17	48	2.8		6	9	7	19	114	3818
50	FEBRUARY	13	1979 14	17	45	2.6		6	10	·· 10	59	449	1791

OVERALL ORDER STATISTICS AT EUGENE SORTED BY HRS BTWN

	DA'I EV EN T	le Ended Houi	R DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE Intensity (IN/HR X 100)	HOURS LAST	SINCE EVENT (1	MAXIMUM INTENSITY N/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51 F	EBRUARY	22 1979 2	l 17	15	.9		6	4	1	43	227	2063
52 J.	ANUARY	17 1978 1) 16	123	7.7		6	26	· 4	57	168	3266
53 0	CTOBER	20 1950 1	5 16	11	.7		6	4 .	27	96	263	550
54 J	ANUARY	10 1965 1	9 15	111	7.4		6	12	2	36	195	3539
55 D	ECEMBER	30 1977	J 15	57	3.8		6	17	12	16	137	2603
56 F	EBRUARY	7 1958	3 15	39	2.6		6	12	1	11	33	2822
5/0	CTOBER	31 19/9	3 15	27	1.8		6	10	33	50	218	/85
50 M	ARCH	26 1950 1		03	1.5		6	10	2	4.2	25	077
50 0	CTORER	0 1050	2 1A	33	5 1		6	10	2	57	44 57	57
61 D	ECEMBER	12 1977	5 14	53	3.8		6	11	8ก์	138	232	1634
62 M	ARCH	26 1971 2	ĩ 14	40	2.9		6	11	25	90	218	4677
63 N	OVEMBER	15 1958	3 14	26	1.9		6	14	4	138	315	714
64 F	EBRUARY	18 1951	7 14	18	1.3		6	4	14 /	14	142	3997
65 D	ECEMBER	18 1969	5 14	14	1.0		6	4	1	58	401	1204
66 F	EBRUARY	2 1978 2	1 13	68	5.2		6	16	27	102	124	3665
67 M.	AY	11 1961	3 13	50	3.8		6	22	22	94	143	4540
68 J.	ANUARY	10 1972	7 13	28	2.2		6	6	17	29	41	2267
69 N	OV EMBER	13 1952 1	7 13	19	1.5		6	11	14	45	55	117
70 N	OVEMBER	5 1962 1	2 13	15	1.2		6	4	5	5	10	038
71 U	ECEMBER		9 12	25	2.1		C .		12	23	00 60	2104
72 N	DDTI	1 1970 1 0 1057	2 IZ 1 12	13	2.1		6	6	16	16	216	3802
74 D	FCEMBER	23 1973 1	2 12	4	±•± 		6	ĩ	7	38	421	3261
75 0	ECEMBER	24 1964	1 11	193	17.5		6	41	23	467	1015	2587
76 M	ARCH	16 1975 1	4 11	69	6.3		6	19	13	15	18	3202
77 F	EBRUARY	17 1970 1	5 11	55	5.0		6	19	17	150	164	3569
78 F	EBRUARY	15 1967	8 11	52	4.7		6	16	2	58	75	3054
79 J	ANUARY	13 1978 1	9 11	46	4.2		6	18	8	53	102	3151
80 F	EBRUARY	16 1959	1 11	36	3.3		6	8	20	320	426	3112
81 N	OV EMBER	10 1973	B 11	26	2.4		6	6	3	219	611	854
82 D	ECEMBER	1 1952 1	9 11	20	1.8		6	7	3	32	32	236
83 D	ECEMBER	15 1950		20	1.8		6	4	8	34	11	2521
04 J. 95 M	ANUARI	1 1950 1 7 1062	9 <u>11</u> 2 11	12	1.1		6	3	10	20	00	1291
86 F	FRRIARY	11 1969 1	9 11	7			6	2	12	46	228	4094
87 J	ANUARY	14 1953 1	6 11	5	-5		6	2	31	106	381	1449
88 N	OVEMBER	14 1960	7 10	86	8.6		6	26	3	32	148	343
89 N	OV EMBER	17 1948 1	3 10	47	4.7		6	10	6	81	165	570
90 N	OVEMBER	28 1961 1	0 10	8	.8		6	6	7	33	682	1253
91 D	ECEMBER	23 1972 2	19	95	10.6		6	23	11. se 1 . se se	118	644	1280
92 D	ECEMBER	6 1950 2	3 9	36	4.0		6	20	17	53	274	2408
93 J	ANUARY	30 1952 1	0 9	33	3.7		6	17	1	6	33	2608
94 A	PRIL	4 1954 1	29	28	3.1		6	6	11	111	113	3697
א כע	נאו דדמת	70 JUE0 TO TA// T	/ 9 p n	22	2.4		0	. У -	2	12	100	10/0
א סכ מ 107	DDTI	20 1920	0 9 1 0	21	2.3		6		2	5	109	42/3
98 n	ECEMBER	31 1962	7 0	10	4.4 1.1		6	2	4	18	18	1560
<u>99</u> л	ANUARY	24 1966	5 9	-5			6	ĩ	2	6	23	2781
100 M	AY	6 1960 2	3 8	46	5.8		6	11	, ital 6	Ğ	38	3126

	DAT	re .				AVERAGE	HOURS	SINCE	MAXIMUM	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE YEAR
	EV EN T	ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	INTENSITY (IN/HR X 100)	LAST	EV ENT (I	INTENSITY N/HR X 100)	12 HRS (IN X 100)	48 HRS (IN X 100)	168 HRS (IN X 100)	SO FAR (IN X 100)
1	NOV EMBER	9	1968 3	1	1	1.0		7	1	64	175	217	740
2	OCTOBER	10 1	1953 19	10	42	4.2		6	24	57	162	170	197
3	DECEMBER	2	1948 15	2	10	5.0		6	7	56	117	180	517
4	NOVEMBER	29	1973 12	20	12	.6		6	4	48	76	198	1453
5	MARCH	26	1962 3	13	60	4.6		7	10	48	145	187	2182
6	FEBRUARY	28	1976 5	10	6	.6		7	4	48	197	285	2550
7	FEBRUARY	20	1968 7	8	15	1.9		6		46	264	341	21/2
8	MAY	10	1956 5	5	16	3.2		6	9	45	45	155	4002
9	NOV EMBER	26	19/1 1/	1	2	2.0		0	2	40	103	200	1702
10	JANUARY	14	1950 5	: 6	16	2.1			2	44	101	323	1697
11	FEBRUARY	9.	1960 21	0	4	1 5		7	2	44	129 01	136	2423
12	FEBRUARY	10	1950 14	2	264	1.5		7	21		77	77	1008
13	FEBRUARI	19.	1900 1/	30	204	1.9		/ Я	51	43	- 66	95	98
14 15	DECEMBER	22	1909 14		17	2.8		Q .	ğ	· 43	273	459	2229
16	TANUADY	22	1061 2		<u>0</u>	1 5		6	Å	43	94	151	1292
17	MADCH	22	1971 16	2	6	3.0		6	5	42	42	42	3043
18	DECEMBER	22	1957 3	54	100	1.9		6	10	41	135	197	1020
19	MARCH	1	1961 14	1	100	1.0		6	ī	40	48	175	2752
20	TANIJARY	17	1951 7	53	112	2.1		7	12	39	135	179	2518
21	DECEMBER	12	1948 23	21	30	1.4		7	12	38	120	292	839
22	NOVEMBER	26	1962 14	5	4	.8		8	2	38	234	420	1167
23	NOV EMBER	10	1971 23	24	54	2.3		6	10	37	43	101	367
24	NOVEMBER	22	1953 12	9	53	5.9		6	12	37	84	321	791
25	MARCH	13	1972 7	4	6	1.5		8	3	37	98	204	2981
26	DECEMBER	18	1979 16	9	21	2.3		6	7	36	90	112	1204
27	NOV EMBER	19	1954 14	46	96	2.1		7	14	35	101	252	698
28	MARCH	. 9	1957 5	36	137	3.8		7	12	35	167	231	1889
29	MAY	27	1958 17	12	16	1.3		10	8	35	69	85	3080
30	NOVEMBER	23	1953 1	6	44	7.3		6	11	35	136	356	844
31	JANUARY	1	1949 1	14	40	2.9		8	10	34	60	153	1097
32	JANUARY	11	1953 14	9	46	5.1		6	12	34	56	366	1358
33 -	NOV EMBER	17	1953 5	9	13	1.4		6	6	34	101	196	624
34	APRIL	8.	1950 17	5	7	1.4		1	.5	34	10	100	3449
35	JANUARY	14	1970 12	31	. 95	3.1		0	11	33	125	229	1005
30	DECEMBER	10	19/1 3	22	30	1.4		c	10	33	74	219	1690
3/	DECEMBER	11	1955 21	20	82	4.1		7	18	33	67	230	1863
30	MARCH	12	1900 14		12	1.3		0 ·			79	1 80	3275
39	MARCH	24	1970 5	. J	0 1	2.7		5	· •	22	52	106	2614
40	DECEMBED	24	1930 /	2	2	4 0		7	Å	33	151	228	1457
41	FFRDUARV	27	1951 2	ี้ โ	3	3.0		7	3	33	144	266	3235
43	DECEMBER	6	1963 7	i	2	2.0	•	8	2	33	91	91	959
44	APRIL	17	1960 0	42	้ลา	1.9		8	21	32	85	124	2327
45	APRIL	10	1971 1	28	135	4.8		6	12	31	52	67	3205
46	NOVEMBER	10	1958 1	6	10	1.7		7		31	105	318	485
47	DECEMBER	ĩ	1964 10	4	10	2.5		7	4	31	105	313	762
48	FEBRUARY	18	1953 7	4	6	1.5		9	2	31	120	162	2515
49	JANUARY	28	1959 3	17	18	1.1		7	4	30	73	231	1988
50	DECEMBER	11	1968 10	16	42	2.6		7	11	30	182	418	1585

OVERALL ORDER STATISTICS AT PORTLAND SORTED BY MAG12

	DAME				NUEDACE	UOUDC	SINCE	MAYTMIM	MAGNITUDE	MAGNITUDE LAST	MAGNITUDE	MAGNITUDE VEAR
E37 E	DATE NU ENDE			MACNITUDE	AV ERAGE	100N3 Т X C T	FUENT	INTENCTOR	12 485	AS HPS	168 HRS	SO FAR
EVE	NI ENDE	U 1001	(HOURS)	(TN X 100)	$(TN/HR \times 100)$	UNDI	ту Би I (Т)	$N/HR \times 100$	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
			(HOORD)	(10 1 100)	(10) III I 100			.,	(200 00 2007)	(
51 NOV EMP	ER 26	1962	1 15	144	9.6		7	28	30	90	277	1023
52 FEBRUA	RY 2	1978	3 12	23	1.9		6	6	30	91	107	2197
53 MAY	20	1960 2	1 11	35	3.2		7	14	30	66	136	2833
54 DECEME	ER 4	1953	8 10	4	.4		7	2	30	84	135	1093
55 NOV EME	ER 30	1966 1	26	5	.8	1997 - 1997 19	6	1	30	43	63	840
56 MARCH	18	1976 2	3 1	9	9.0		7	9	30	39	112	2678
57 OCTOBE	R 28	1950 1	7 29	107	3.7		6	20	29	93	141	518
58 NOVEME	ER 11	1973 1	9 26	57	2.2		7	23	· 29	238	384	/29
59 MAY	18	1972	8 19	14	.7		7	4	29	104	109	35/0
60 MARCH	31	1963	7 15	23	1.5		6	7	29	188	308	2540
61 MAY	2	1976	5 3	4	1.3		1	2	29	29	40	3110
62 OCTOBE	R 31	1976 1	4 2	7	3.5		6	25	29	29	02	127
63 NOV EME	BER 16	1973	1 35	282	8.1		6	. 35	28	50 51	409	2461
64 FEBRUA	ARY 15	1961 1	4 9	19	2.1		6	24	20	20	10/	1000
65 MARCH	1	19/3 1	2 0	39	0.0		0	24	20	29	£2	4416
66 MAY	5	1956	5 4 7 1	3	.0		7	1	20	47	44	2845
67 MAY	0	1900 1	2 I 2 I	1	1.0		6	1	28	46	174	2910
60 MARCH	כ רו הית	1930	2 I 7 16	1	2.8		6	11	27	92	370	786
70 DECEME	12 12 12 12 12 12 12	1978 1	0 14	10	-7		7	2	27	78	142	417
71 FEBRUA		1975	5 13	30	2.3		6	9	27	109	161	2538
72 DECEME	$\frac{1}{1}$ $\frac{1}{2}$	1972 1	6 11	59	5.4		7	13	27	117	485	1154
73 NOV EME	SER 21	1960	8 7	28	4.0		9	7	27	158	342	697
74 NOVEME	BER 19	1959	5 3	13	4.3		7	7	27	108	111	503
75 DECEME	30 BER 30	1964	7 1	1	1.0		6	1 • • •	27	57	289	1749
76 NOVEME	BER 20	1958 1	6 35	37	1.1		7	4	26	94	229	730
77 APRIL	2	1974	5 30	39	1.3		6	6	26	85	27.5	4339
78 OCTOBE	IR 28	1969 1	0 22	34	1.5		7	6	26	45	67	263
79 FEBRUA	RY 16	1974 1	9 13	12	.9		7	3	26	51	112	3458
80 MAY	22	1953	8 8	4	•5		6	1	26	58	121	3336
81 OCTOBE	ER 11	. 1959 1	4 2	7	3.5		7	6	26	191	264	264
82 MAY	15	5 1978	3 2	4	2.0		6	2	26	171	220	3268
83 FEBRUA	ARY 9	1969 2	1 18	67	3.7		1	22	25	106	130	5120
84 OCTOBE	CR 19	1958 1	4 18	43	2.4		10	12	20	43	40	103
85 OCTOBE	SR 3	1951	5 1/	52	3.1		0	10	20	179	211	3147
85 MAY	/ תו	1963 1	6 1/ 3 16	37	2.2		0	11	25	121	195	195
87 UCTUBI	SK /	1950	5 IJ	23	1.0		6	у 5	25	92	178	777
00 NOVEMI		1969 1	0 14 1 11	<u> </u>	3 7		ğ i	8	25	131	244	1763
00 DECEMI	1KI 3 1 FD 30	1900 1	7 0	22	2 4		7	13	25	84	90	836
91 DECEM	SER JU) 1972 1	7 2	11	5.5		9.	- 8	25	59	120	524
92 JANUAL	v 11	1969	3 2	2	1.0		9	i	25	137	389	2681
93 DECEMI	SER 7	1967	8 2	2	1.0		9	ī	25	71	265	963
94 NOVEMI	BER 7	1971 1	6 1	2	2.0		8	2	25	38	93	322
95 OCTOB	ER 18	3 1968	5 1	2	2.0		9	2	25	41	252	378
96 MAY	24	1974 2	1 6	12	2.0		7	4	24	42	70	4677
97 JANUAI	RY 14	1954 2	1 6	9	1.5		6	3	24	28	41	2073
98 NOVEM	3ER 24	1948	8 5	8	1.6		9	3	24	57	139	295
99 OCTOBI	ER 22	2 1970	5 3	5	1.7		6	2	24	70	142	167
100 NOVEMI	3ER 21	1960 1	6 1	7	7.0		6	7	24	170	354	725

	DAT	PE .				AVERAGE	HOURS	SINCE	MAXIMUM	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE YEAR
	EVENT	ENDED	HOUR	DURATION	MAGNITUDE	TNTENSTTY	LAST	EVENT	INTENSITY	12 HRS	48 HRS	168 HRS	SO FAR
	DV BIV I		noon	(HOURS)	(IN X 100)	(IN/HR X 100)	DAUT	(1	IN/HR X 100)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
1	DECEMBER	4	1975 16	2	7	3.5		6	5	84	220	370	1412
2	OCTOBER	9 :	1969 19	38	105	2.8		7	22	66	79	123	123
3	DECEMBER	7 1	1953 7	19	60	3.2		8	14	55	150	241	1235
4	DECEMBER	17 :	1973 12	18	72	4.0		6	16	55	182	472	2419
5	DECEMBER	5 1	1968 7	5	5	1.0		6	2	52	266	310	1538
6	DECEMBER	10	1968 17	2	10	5.0		6	5	52	242	503	1789
7	NOV EMBER	8 3	1962 10	2	4	2.0		6	. 3 .	52	61	122	577
8	DECEMBER	12 2	1977 3	12	24	2.0		7	17	51	147	208	1173
9	OCTOBER	7	1960 21	14	48	3.4		6	14	50	79	79	79
10	DECEMBER	22	1955 7	7	8	1.1		8	5	50	272	498	2379
11	FEBRUARY	25	1950 3	1	1	1.0		7	1	49	164	171	3122
12	DECEMBER	16	1977 7	10	22	2.2		6	6	47	225	544	1566
13	JANUARY	17	1958 10	4	11	2.8		6	3	47	72	265	1854
14	OCTOBER	19 1	1958 17	22	75	3.4		9	18	46	68	68	85
15	FEBRUARY	25	1961 21	21	51	2.4		6	12	46	46	154	3017
16	JANUARY	1 2	1949 21	11	3	.3		6	1	46	193	315	1919
17	JANUARY	16	1974 17	50	476	9.5		6	26	45	221	323	3233
18	NOVEMBER	10	1958 12	17	14	.8		7	4	45	140	252	477
19	NOV EMBER	2	1964 1	8	14	1.8		6	6	45	53	93	146
20	JANUARY	22	1954 21	5	3	.6		7	1	45	125	304	2381
21	DECEMBER	24	1964 10	1	2	2.0		6	2	45	189	764	1967
22	OCTOBER	19	1971 19	2	5	2.5		6	3	44	138	162	162
23	MARCH	20	1949 1	1	1	1.0		6	1	42	55	176	3390
24	NOV EMBER	15	1948 6	9	23	2.6		8	10	40	78	78	568
25	MAY	20	1960 19	9	18	2.0		7	5	40	45	104	3009
26	DECEMBER	1	1978 5	7	15	2.1		6	7	40	77	141	476
27	OCTOBER	10	1955 14	6	12	2.0		8	10	40	349	417	417
28	OCTOBER	23	1973 17	6	2	.3		7	1	40	40	119	200
29	APRIL	6	1963 10	16	56	3.5		6	26	38	65	257	2960
30	TANIJARY	6	1956 0	71	396	5.6		11	34	37	87	112	2702
31	OCTOBER	20	1968 16	8	8	1.0		6	4	37	61	201	513
32	DECEMBER	1	1964 19	6	18	3.0		7	6	37	160	390	971
33	NOV EMBER	26	1962 14	27	208	7.7		8	23	36	94	170	1012
34	JANHARY	12	1953 3	6	12	2.0		7		36	75	343	1570
35	JANUARY	ĨÕ	1959 14	2	7	3.5		6	4	36	246	488	1906
36	DECEMBER	9	1955 10	7	4	.6		8	1	35	101	270	1749
37	DECEMBER	3	1948 3	6	2	.3		8	· · 1	35	157	276	1139
38	JANUARY	26	1975 5	1	5	5.0		8	5	35	162	195	2127
39	JANUARY	1	1949 3	14	107	7.6		8	26	34	86	209	1812
40	OCTOBER	18	1968 1	1	1	1.0		6	1	34	34	388	451
41	DECEMBER	15	1977 16	42	226	5.4		7	28	33	144	323	1340
42	FEBRUARY	28	1971 3	28	34	1.2		8	6	33	89	174	3066
43	NOV EMBER	12	1951 17	21	20	1.0		7	6	33	162	270	1016
44	NOV EMBER	24	1948 16	14	9	.6		8	4	33	43	132	803
45	JANUARY	20	1970 8	10	37	3.7		6	15	32	141	432	2361
46	DECEMBER	7	1970 3	īn	29	2.9		6	16	32	63	295	1267
47	JANUARY	9	1953 3	30	176	5.9		8	17	31	92	200	1319
48	DECEMBER	24	1972 16	11	20	1.8		8 5	8	31	138	508	1184
4 9	NOV EMBER	24	1949 2	25	159	6.4		6	19	30	47	55	444
50	DECEMBER	10	1948 23	25	137	5.5		9	15	30	76	203	1343

OVERALL ORDER STATISTICS AT SALEM SORTED BY MAG12

	DAI EV ENT	'E ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE Intensity (In/hr x 100	HOURS LAST	SINCE EVENT (I	MAXIMUM Intensity N/HR X 100)	LAST 12 HRS (IN X 100)	LAST 48 HRS (IN X 100)	LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	JANUARY	21 1	968 12	5	2	.4		6	1	30	40	210	1789
52	DECEMBER	27 1	9/4 14	1	3	3.0		8	3	30	149	256	1627
53	APKIL	1/ 1	958 19	1	2	2.0		8	2	30	101	148	3604
54	DECEMBER	31 1	970 3	. 38	247	6.5		.6	20	29	146	167	1770
33	DECEMBER	24 1	908 14	35	61	1.7		6	9	29	70	112	2054
20	FEBRUARI	1/ 1	933 3	33	163	4.9		b	28	29	45	45	2896
5/	FEBRUARI		9/4 14	21	45	2.1		8	25	29	108	179	3962
50	NOVENDED	20 I	9/1 1/	1/	4/	2.8		1	13	29	36	74	2817
59	TANTIADY	15 1	058 D	12	01	4+4		0	10	29	1/1	505	1530
61	OCTOBER	20 1	070 12	10	86	1.1		с	12	29	29	21	2048
62	DECEMBER	5 1	978 7	- Q		0.0		0	12	29	217	233	233
63	FEBRILARY	12 1	958 12	7	36	5 1		9	10	29	101	209	200
64	MAY	3 1	977 14	Á	6	1.5		7	5	29	101	239	1252
65	NOV EMBER	1 ī	976 17	3	4	1.3		8	2	29	77	79	180
66	FEBRUARY	61	970 21	2	2	1.0		ž	ī	29	111	149	3155
67	JANUARY	13 1	973 19	1	ī	1.0		7	ī	29	189	282	1620
68	APRIL	30 1	961 5	2	3	1.5		8	2	28	84	89	4241
69	JANUARY	19 1	951 8	39	116	3.0		7	9	27	153	361	3220
70	DECEMBER	30 1	952 7	10	36	3.6		8	9	27	94	110	1061
71	FEBRUARY	27 1	974 7	10	4	.4		6 1	1	27	89	134	4460
72	FEBRUARY	17 1	953 19	8	68	8.5		.7	22	27	178	208	3059
73	NOV EMBER	81	968 19	8	16	2.0		6	4	27	118	174	788
74	DECEMBER	20 1	961 1	4	13	3.3		8	7	27	128	352	1149
75	DECEMBER	28 1	973 1	1	1	1.0		6	1	27	76	161	2840
76	OCTOBER	14 1	951 19	1	1	1.0		6	1	27	48	128	371
77	DECEMBER	21 1	955 17	15	186	12.4		7	25	26	194	312	2193
78	APRIL	20 1	965 7	15	53	3.5	•	7	21	26	108	112	3397
19	UCTUBER	3 1	957 5	14	10	1.1		6	5	26	33	33	33
00	JANUARI	1 4 1	903 IU	10	34	3.4		1	8	26	26	171	1636
07	NOV ENDER	16 1	931 0 040 E	4	4	.0		0	2	26	64	334	1085
87	JANHADV	10 1	051 N		10	2.5		6	4 3	20	31	29	986
84	TANHARY	27 1	971 10	. J	2	2.5		6	3 1	20	157	231	2803
85	MAY	27 1	961 7	2	2	1.0		7		20	50	96	3040
86	MARCH	91	966 19	61	247	A 0		6	25	20	91	156	9401 2721
87	OCTOBER	<u>9</u> 1	962 10	32	113	3.5		7	16	25	90	130	130
88	MARCH	51	956 17	30	29	1.0		7	5	25	118	191	4660
89	DECEMBER	22 1	972 17	22	83	3.8		7	20	25	179	396	998
90	OCTOBER	27 1	961 19	9	23	2.6		6	-9	25	110	157	295
91	MARCH	22 1	971 23	6	10	1.7		9	4	25	49	49	3618
92	DECEMBER	6 1	971 3	2	3	1.5		6	2	25	126	183	1105
93	OCTOBER	28 1	963 17	1	9	9.0		9	9	25	50	253	312
94	DECEMBER	31	970 21	1	1	1.0		6	1	25	109	253	1203
95	NOV EMBER	12 1	973 14	46	179	3.9		7	18	24	173	419	705
96	FEBRUARY	22 1	972 14	7	24	3.4		6	6	24	24	92	2712
97	APRIL	14 1	963 21	4	9	2.3		6	retar 5 e a a	24	69	116	3164
98 (60	UCTUBER	22 1	954 L9	1	2	2.0		7	2	24	151	256	343
99 : 100 -	JANUAK I	1/ 1	901 9 070 10	5/	1//	3.1		1	12	23	152	215	3043
LUU	OCTOBER	24 1	310 IZ	. 31	5/	T.8		6	17	23	119	241	242

	DA'I EV EN T	re ENDED	HOUR	DURATION	MAGNITUDE	AV ERAGE INTENSITY	HOURS LAST	S INCE EV EN T	MAXIMUM INTENSITY	MAGNITUDE LAST 12 HRS	MAGNITUDE LAST 48 HRS	MAGNITUDE LAST 168 HRS	MAGNITUDE YEAR SO FAR
				(HOURS)	(IN X 100)	(IN/HR X 100)		(IN/HR X 100)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
h	NOVEHDED	21	1070 0	· · · ·	Q.	4 0		6	6	86	152	219	682
2	NOV ENDER	27	1962 10	48	233	4.9		Ğ.	18	85	182	286	3170
2	TANHARY	6	1966 19	12	19	1.6		7	5	83	250	1023	2650
Å	DECEMBER	12	1977 5	14	53	3.8		6	11	80	138	232	1634
5	OCTOBER	- 8	1969 21	17	50	2.9		7	21	78	78	120	120
6	NOVEMBER	4	1965 3	1	16	16.0		6	16	75	114	114	357
7	JANUARY	17	1974 1	55	689	12.5		8	39	73	238	311	3778
8	DECEMBER	17	1977 5	77	459	6.0		6	23	71	326	514	1994
9	OCTOBER	8	1962 7	8	25	3.1		6	6	71	168	226	226
10	DECEMBER	4	1979 12	10	87	8.7		27	28	69	234	320	1/23
11	DECEMBER	28	1951 0	29	70	2.4		6	14	68	/9	135	10/1
12	MARCH	13	1974 3	14	48	3.4		7	II	65	181	240	2400
13	JANUARY	26	1975 14	8	5	•6		~	2	65	001	101	2403
14	DECEMBER	2	1964 7	54	232	4.3		26	31	60	170	402	564
15	OCTOBER	23	1951 23	7	2			0	1	60	173	72	545
16	NOV EMBER	11	1961 12	1	2	2.0		ć	2	50	97	146	3956
17	FEBRUARY	28	1971 7	30	48	1.0		0 6	15	. 50	378	641	1203
18	OCTOBER	30	1950 19	20	50	2.8		0	10	57	113	221	27.86
19	JANUARY	11	1969 8	34	2/8	0.2		6	1	56	206	284	1989
20	JANUARY	5	19/5 19	L L	1	1.0		7	. 1	55	110	110	305
21	NOVEMBER	11	1900 3		12	3.0		'	8	53	71	205	4262
22	TANUADY	כ 1 ג	1070 10	41)	2	1.0		6	ĩ	53	155	174	2731
23	DECEMPED	25	1965 21	28	46	1.6		7 .	8	50	152	169	1250
24	FERDINDV	21	1968 19	20	2	1.0		6	i	49	152	323	2604
26	MARCH	20	1975 3	31	50	1.6		6	8	48	195	282	3466
27	NOVEMBER	12	1973 17	18	112	6.2		6	19	48	174	584	1030
28	MAY	21	1968 3	8	12	1.5		7	8	48	100	100	3331
29	OCTOBER	24	1970 19	36	129	3.6		6	16	47	113	220	228
30	OCTOBER	28	1967 8	2	8	4.0	· .	9	. 4	45	152	180	498
31	NOV EMBER	5	1969 5	1	2	2.0		9	2	44	160	161	582
32	FEBRUARY	23	1972 8	26	99	3.8		7	20	43	43	82	3684
33	NOV EMBER	22	1973 3	15	25	1.7		7	11	43	242	525	1846
34	OCTOBER	18	1970 10	3	15	5.0		8	8	43	43	43	21 21 20
35	FEBRUARY	28	1979 3	8	33	4.1		6	19	41	50	129	21/0
36	FEBRUARY	11	1961 14	4	28	7.0		9	11	41	232	702	2004
37	JANUARY	.27	1970 12	42	185	4.4		6	18	40	2/5	160	2843
38	JANUARY	25	1970 12	29	235	8.1		2	20	40	16	405	4033
39	APRIL	19	19/0 12	10	4	-4		4		40	96	271	337
40	OCTOBER	23	1956 12		2	2.0		6	1	40	167	192	3733
41	FEBRUARI	10	19/0 3) <u>1</u>	2	2.0		8 .	2	30	194	219	3624
42	TANUARI	22 T 0	105/ 2	1	- 1	1.0		6	ĩ	39	100	249	2344
45	NOVEMBED	11	1072 17	14	112	8.0		ž	34	38	78	612	918
45	MARCH	- 7	1970 14	8	40	5.0		7	14	38	68	97	3727
46	FEBRILARV	19	1974 12	, š	10	1.7		8	5	38	214	437	5248
47.	FEBRUARY	25	1972 0	32	93	2.9		7	19	37	142	155	3783
48	DECEMBER	21	1972 12	2 4	33	8.3		6	20	37	160	505	1129
49	NOV EMBER	19	1953 21	3	3	1.0		6	1	37	39	154	549
50	JANUARY	16	1956 10) 2	4	2.0		6	2	37	214	340	4101

OVERALL ORDER STATISTICS AT EUGENE SORTED BY MAG12

51 OCTOBER 8 1959 7 1 2 2.0 8 2 37 55 55 52 DECEMBER 9 1952 0 58 194 3.3 7 25 36 141 303 53 NOV EMBER 28 1964 5 26 111 4.3 7 16 36 135 305 54 JANUARY 13 1973 12 9 59 6.6 8 24 35 185 232 55 MARCH 16 1968 17 5 4 .8 7 2 34 63 188 56 FEBRUARY 8 1965 21 1 2 2.0 7 2 34 34 47 57 DECEMBER 21 1972 14 19 117 6.2 8 21 33 170 538 58 OCTOBER 31 1979 3 15 27 1.8 6 7 33	MAGNITUDE YEAR SO FAR (IN X 100)
52 DECEMBER 9 1952 0 58 194 3.3 7 25 36 141 303 53 NOV EMBER 28 1964 5 26 111 4.3 7 16 36 135 305 54 JANUARY 13 1973 12 9 59 6.6 8 24 35 185 232 55 MARCH 16 1968 17 5 4 .8 7 2 34 63 188 56 FEBRUARY 8 1965 21 1 2 2.0 7 2 34 34 47 57 DECEMBER 2 1972 14 19 117 6.2 8 21 33 170 538 58 OCTOBER 31 1979 3 15 27 1.8 6 7 33 50 218 59 NOV EMBER 6 1973 19 21 65 3.1 8 14 322 <td>55</td>	55
53 NOV EMBER 28 1964 5 26 111 4.3 7 16 36 135 305 54 JANUARY 13 1973 12 9 59 6.6 8 24 35 185 232 55 MARCH 16 1968 17 5 4 .8 7 2 34 63 188 56 FEBRUARY 8 1965 21 1 2 2.0 7 2 34 63 188 56 FEBRUARY 8 1965 21 1 2 2.0 7 2 34 34 47 57 DECEMBER 22 1972 14 19 117 6.2 8 21 33 170 538 58 OCTOBER 31 1979 3 15 27 1.8 6 7 33 50 218 59 NOV EMBER 6 1973 19 21 65 2.3 9 12 32	507
54 JANUARY 13 1973 12 9 59 6.6 8 24 35 185 232 55 MARCH 16 1968 17 5 4 .8 7 2 34 63 188 56 FEBRUARY 8 1965 21 1 2 2.0 7 2 34 34 47 57 DECEMBER 22 1972 14 19 117 6.2 8 21 33 170 538 58 OCTOBER 31 1979 3 15 27 1.8 6 7 33 50 218 59 NOV EMBER 6 1973 19 21 65 3.1 8 14 32 292 398 60 OCTOBER 6 1950 8 20 45 2.3 9 12 32 107 196 61 OCTOBER 7 1977 7 18 37 2.1 7 30 32	897
55 MARCH 16 1968 17 5 4 .8 7 2 34 63 188 56 FEBRUARY 8 1965 21 1 2 2.0 7 2 34 34 47 57 DECEMBER 22 1972 14 19 117 6.2 8 21 33 170 538 58 OCTOBER 31 1979 3 15 27 1.8 6 7 33 50 218 59 NOV EMBER 6 1973 19 21 65 3.1 8 14 32 292 398 60 OCTOBER 6 1950 8 20 45 2.3 9 12 32 107 196 61 OCTOBER 7 1977 7 18 37 2.1 7 30 32 32 32 32 62 FEBRUARY 16 1974 17 11 111 10.1 7 24	1849
56 FEBRUARY 8 1965 21 1 2 2.0 7 2 34 34 47 57 DECEMBER 22 1972 14 19 117 6.2 8 21 33 170 538 58 OCTOBER 31 1979 3 15 27 1.8 6 7 33 50 218 59 NOV EMBER 6 1973 19 21 65 3.1 8 14 32 292 398 60 OCTOBER 6 1950 8 20 45 2.3 9 12 32 107 196 61 OCTOBER 7 1977 7 18 37 2.1 7 30 32 32 32 62 FEBRUARY 16 1974 17 11 111 10.1 7 24 32 83 112 63 JANUARY 5 1961 19 5 10 2.0 7 4 32 <td>2941</td>	2941
57 DECEMBER 22 1972 14 19 117 6.2 8 21 33 170 538 58 OCTOBER 31 1979 3 15 27 1.8 6 7 33 50 218 59 NOVEMBER 6 1973 19 21 65 3.1 8 14 32 292 398 60 OCTOBER 6 1950 8 20 45 2.3 9 12 32 107 196 61 OCTOBER 7 1977 7 18 37 2.1 7 30 32 32 32 62 FEBRUARY 16 1974 17 11 111 10.1 7 24 32 83 112 63 JANUARY 5 1961 19 5 10 2.0 7 4 32 64 67 64 DECEMBER 14 1974 2 2 1.0 7 1 32 187 323 65 NOV EM	4311
58 OCTOBER 31 1979 3 15 27 1.8 6 7 33 50 218 59 NOVEMBER 6 1973 19 21 65 3.1 8 14 32 292 398 60 OCTOBER 6 1950 8 20 45 2.3 9 12 32 107 196 61 OCTOBER 7 1977 7 18 37 2.1 7 30 32 32 32 62 FEBRUARY 16 1974 17 11 111 10.1 7 24 32 83 112 63 JANUARY 5 1961 19 5 10 2.0 7 4 32 64 67 64 DECEMBER 14 1974 21 2 2 1.0 7 1 32 187 323 65 NOVEMBER 4 1974 21 2 2 1.0 7 1 32 164 67 65 NOVEMBER	1162
59 NOV EMBER 6 1973 19 21 65 3.1 8 14 32 292 398 60 OCTOBER 6 1950 8 20 45 2.3 9 12 32 107 196 61 OCTOBER 7 1977 7 18 37 2.1 7 30 32 32 32 62 FEBRUARY 16 1974 17 11 111 10.1 7 24 32 83 112 63 JANUARY 5 1961 19 5 10 2.0 7 4 32 64 67 64 DECEMBER 14 1974 21 2 2 1.0 7 1 32 187 323 65 NOV EMBER 4 1950 2 2 1.0 50 1 32 50 483	785
60 OCTOBER 6 1950 8 20 45 2.3 9 12 32 107 196 61 OCTOBER 7 1977 7 18 37 2.1 7 30 32 32 32 62 FEBRUARY 16 1974 17 11 111 10.1 7 24 32 83 112 63 JANUARY 5 1961 19 5 10 2.0 7 4 32 64 67 64 DECEMBER 14 1974 21 2 2 1.0 7 1 32 187 323 65 NOVEMBER 4 1950 2 2 1.0 50 1 32 50 483	558
61 OCTOBER 7 1977 7 18 37 2.1 7 30 32 32 32 62 FEBRUARY 16 1974 17 11 111 10.1 7 24 32 83 112 63 JANUARY 5 1961 19 5 10 2.0 7 4 32 64 67 64 DECEMBER 14 1974 21 2 2 1.0 7 1 32 187 323 65 NOVEMBER 4 1950 2 2 1.0 50 1 32 50 483	196
62 FEBRUARY 16 1974 17 11 111 10.1 7 24 32 83 112 63 JANUARY 5 1961 19 5 10 2.0 7 4 32 64 67 64 DECEMBER 14 1974 21 2 2 1.0 7 1 32 187 323 65 NOVEMBER 4 1950 2 2 1.0 50 1 32 50 483	32
63 JANUARY 5 1961 19 5 10 2.0 7 4 32 64 67 64 DECEMBER 14 1974 21 2 2 1.0 7 1 32 187 323 65 NOVEMBER 4 1950 2 2 2 1.0 50 1 32 50 483	4923
64 DECEMBER 14 1974 21 2 2 1.0 7 1 32 187 323 65 NOV EMBER 4 1950 2 2 2 1.0 50 1 32 50 483	1752
65 NOVEMBER 4 1950 2 2 2 1.0 50 1 32 50 483	1242
	1317
66 FEBRUARY 10 1971 5 1 8 8.0 7 8 32 34 138	3632
67 DECEMBER 13 1966 17 1 1 1.0 7 1 32 60 315	18/5
68 JANUARY 14 1953 16 11 5 .5 6 2 31 106 381	1449
69 DECEMBER 22 1957 5 110 807 7.3 7 45 30 103 109	806
/0 NOVEMBER 12 1951 18 00 23/ 4.0 8 42 30 56 5/	0.37
/1 DECEMBER 10 19/1 21 54 255 4./ 6 30 30 35 341	1021
/2 JANUARY II 1932 8 10 1/ 1.1 / 5 30 129 223	2310
73 MARCH 12 1904 10 14 00 4.9 / 11 30 104 103	3204
/4 MARCH 10 1932 0 3 3 1.0 0 3 30 30 30 30 75 NGYUMDED 15 1054 17 10 40 27 7 1 13 20 05 151	3243
75 NOV EMBER 15 1554 1/ 10 40 2./ / 15 25 00 151 76 NOV EMBER 10 1971 10 12 20 2.2 0 0 20 102 160	521
70 NOVEMBER 10 17/1 17 12 20 2.3 0 0 27 103 100 77 NOVEMBER 19 1940 19 52 160 22 7 17 20 64 00	072
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	515
70 DECEMBER 13 1337 1 2 3 1.3 / 2 20 122 140 70 PEDNADV 3 1963 1/ 31 159 51 6 26 27 107 206	1016
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1910
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	550
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3665
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1444
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2500
85 APRIL 11 1955 23 8 7	2195
86 NOVEMBER 16 1973 19 7 7 1.0 9 3 26 277 742	1595
87 FEBRUARY 1 1964 3 6 6 1.0 7 4 26 38 113	2813
88 MAY 3 1977 17 4 2 .5 7 1 26 80 109	1614
89 NOV EMBER 1 1955 5 34 130 3.8 6 21 25 38 98	547
90 DECEMBER 26 1964 7 17 143 8.4 8 48 25 242 1245	2829
91 MARCH 26 1971 21 14 40 2.9 6 11 25 90 218	4677
92 NOVEMBER 29 1978 16 13 38 2.9 7 10 25 67 67	530
93 MARCH 22 1950 14 12 45 3.8 9 19 25 53 232	3476
94 DECEMBER 10 1977 5 4 10 2.5 6 7 25 29 139	1513
95 JANUARY 17 1954 8 18 40 2.2 6 6 24 197 237	2119
96 NOVEMBER 7 1975 19 17 56 3.3 8 35 24 50 50	619
97 DECEMBER 22 1968 23 1 1 1.0 8 1 24 42 166	2335
98 MARCH 12 1974 7 25 147 5.9 8 35 23 36 157	5850
99 FEBRUARY 1 1974 14 21 63 3.0 9 30 23 83 129	4701
100 NOVEMBER 17 1953 12 20 34 1.7 6 8 23 73 95	

OVERALL ORDER STATISTICS AT PORTLAND SORTED BY MAG48

									MAGNITUDE	MAGNITUDE	MAGNITUDE	MAGNITUDE
	DAI	'E				AVERAGE	HOURS SINCE	MAXIMUM	LAST	LAST AQ UDC	LAST	IEAR So Fad
	EVENT	ENDED	HOUR	DURATION	MAGNITUDE	INTENSITY	LAST EVENT	INTENSITY	(TN X 100)	40 HRS (TN X 100)	(100 HKS)	(IN X 100)
				(HOURS)	(IN X 100)	(1N/HK X 100)	(1	N/HK A 100/	(10 x 100)	(IN A 100)	(10 8 100)	(10 10 2007)
1	DECEMBER	22 1	955 7	6	17	2.8	9	9	43	273	459	2229
5	DECEMBER	14 1	977 12	Ř	57	7.1	13	17	Ó	267	400	1418
3	FEBRUARY	20 1	968 7	. 8	15	1.9	6	9	46	264	341	2172
4	OCTOBER	10 1	955 17	8	26	3.3	14	10	0	252	362	362
5	FEBRUARY	17 1	970 7	6	10	1.7	8	3	. 4	246	290	3061
6	JANUARY	24 1	970 3	2	20	10.0	17	10	0	243	575	2389
7	FEBRUARY	11 1	1961 12	1	14	14.0	9	14	19	241	423	2373
8	NOVEMBER	10 1	973 10	6	35	5.8	15	16	0	240	379	694
9	JANUARY	24 1	970 10	2	14	7.0	6	11	20	239	565	2409
10	NOV EMBER	11 1	L973 19	26	57	2.2	7	23	29	238	384	729
11	NOV EMBER	26 1	1962 14	5	4	•8	8	2	38	234	420	1167
12	DECEMBER	22 1	1955 16	1	1	1.0	7	1	16	233	460	2246
13	DECEMBER	24 1	L964 17	26	84	3.2	11	13	0	225	502	1460
14	DECEMBER	15 1	L977 17	19	73	3.8	11	17	U	215	450	14/5
15	FEBRUARY	21 1	L968 3	11	45	4.1	9	8	8	207	356	2187
16	OCTOBER	24 1	L951 7	9	8	.9	14	3 4 4	0	206	3/4	669
17	JANUARY	15 1	L975 5	32	68	2.1	15	6	0	201	2/4	1952
18	JANUARY	21 1	L950 16	12	26	2.2	9	8	6	199	316	2115
19	DECEMBER	7]	1966 19	45	96	2.1	9.0	13	2	197	320	111/
20	FEBRUARY	28 1	L976 5	10	6	.6	7	4	48	197	285	2550
21	NOV EMBER	20]	1955 7	1	1	1.0	23	1	U	193	258	1000
22	NOV EMBER	6]	1969 16	14	10	.7	11	3	<u>v</u>	192	195	494
23	DECEMBER	22]	1972 16	17	56	3.3	10	1/	/	191	420	1012
24	JANUARY	26 1	1975 19	5	26	5.2	16	11	20	101	201	2303
25	OCTOBER	11]	1959 14	2	1	3.5		07	20	191	204	2540
26	MARCH	31]	1963 7	15	23	1.5	20	5	29	197	310	2115
27	JANUARY	22	19/2 5	a a b a y -	1/ -	1.7	20	5		197	190	489
28	NOV EMBER	5 1	1969 14	3	5	1./	12	1	Ň	186	255	932
29	NOV EMBER	21 1	1962 3	<u></u> Ц	1 2	2.0	19	2	ň	183	247	2020
30	JANUARY		1954 19	16	42	2.0	10	11	30	182	41.8	1585
31	DECEMBER	11 1	1908 IU	10	42 5	2.0	7	1 <u>5</u>	10	181	267	2371
32	DECEMBER	20	19/3 /	17		2.0	4	11	25	178	211	3147
33	MAI		1903 10	17	37	2.2	25	A		178	221	963
34	DECEMBER	20	19// 12	10	10	2 0	6	2	23	177	331	2426
35	DECEMPED	22	1934 21	1	1	1 0	ă	้ำ	7	176	177	1428
27	NOVEMBED	. 22 .	1069 3	1	1	1.0	ž	î	64	175	217	740
20	NOVENDER	22	107/ 10	0 1	12	1.3	21	5	Ö	174	378	801
20	NOVENDER	22	1962 7	7	2	4	Ĩ	ĩ	3	172	369	1171
33	NOVENDER	27	10/0 7	2	12	4 0	16	. 6	Ō	171	237	627
A1	MAV	15	1978 3	2	Δ ···	2.0	6	2	26	171	220	3268
42	TANTIARY	8	1950 5	้า	1	1.0	ž	ī	16	171	236	1513
43	NOVEMBER	21	1960 16	î	7	7.0	6	7	24	170	354	725
44	JANUARY	10	1959 14	3	4	1.3	6	2	17	169	281	1581
45	MARCH	27	1962 3	15	29	ī.9	<u>9</u>	5	14	168	245	2242
46	MARCH	9	1957 5	36	137	3.8	7	12	35	167	231	1889
47	DECEMBER	3	1979 3	ĩŏ	20	2.0	10	6	17	167	178	990
48	NOVEMBER	17	1953 14	2	20	10.0	8	19	2	165	204	637
49	NOV EMBER	24	1961 3	23	57	2.5	22	7	· · · · · · · · · · · · · · · · · · ·	164	193	582
50	OCTOBER	20	1979 17	22	30	1.4	9	8	1	164	205	205

OVERALL ORDER STATISTICS AT PORTLAND SORTED BY MAG48

	DA	TE					AV ERAGE	HOURS	SINCE	MAXIMUM	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE YEAR
	EV EN T	ENDED	HOU	R DUR	ATION	MAGNITUDE	INTENSITY	LAST	EV EN I	INTENSITY	12 HRS	48 HRS	168 HRS	SO FAR
				(HO	URS)	(IN X 100)	(IN/HR X 100)		IN/HR X 100)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
51 DI	ECEMBER	14	1969 1	2	33	98	3.0		7	13	2	163	257	891
52 NG	OVEMBER	15	1963 1	6	2	7	3.5		7	4	9	163	214	728
53 NG	OV EMBER	26	1971 1	7	1	2	2.0		6	2	45	163	250	749
54 00	CTOBER	10	1953 1	9	10	42	4.2		6	24	57	162	170	197
55 NG	OV EMBER	17	1953	5	9	13	1.4		6	6	34	161	196	624
56 A	PRIL	20	1965 1	6	2	5	2.5		8	3	14	160	176	3032
57 NG	OV EMBER	21	1960	8	.7	28	4.0		9 :	7	27	158	342	69/
58 FI	EBRUARY	17	1970 1	9	3	·	3.0		9	20		128	300	3071
59 DI	ECEMBER	21	1955 I	1	14	199	14.2		2	32	1/	15/	200	2030
. 60 J/	ANUARY	25	1965	8	19	4/	2.5		1	10	,1	104	1/4	1 2 2 1 0
61 FI	EBRUARI	4	1908	D		21	1.0		9	10	11	159	203	1761
62 JI	ANUARY		1900	U .	Ţ	1	1.0		7		22	152	342	1/57
63 DI	ECEMBER	21	19/4 1	4 7	· 1	4	4.0		6	4 2	22	151	220	1600
64 DI	ECEMBER	24	19/0	1	. 10	20	1.7		9		<u> </u>	1/0	200	2428
	ANUARI	24	1934	7	10	10	1./		14	2	0	149	154	824
67 51	ANUARI FRDIIADV	28	1975 1	2	5.	13	8		13	2	· · · · ·	149	291	2556
60 M	AV	20	1068 1	່	21	20	1 4		15	8	ů ů	147	151	2937
60 M		28	1962 1	Λ	11	29	2.4		20	2	- Õ	147	169	2582
70 .1	ANIIARY	29	1967 1	2	19	52	2.7		8	8	5	146	218	2114
71 M	ARCH	16	1967	8	6	2	.3		17	i	Ō	146	184	2578
72 D	ECEMBER	31	1970 1	4	· 1	ī	1.0		6	1	5	146	263	1605
73 N	OV EMBER	29	1971	7	40	62	1.6		22	10	0	145	252	751
74 M	ARCH	26	1962	3	13	60	4.6		7	10	48	145	187	2182
75 J	ANUARY	21	1970	5	12	48	4.0		8	15	9	145	385	2092
76 A	PRIL	11	1971	0	11	19	1.7		12	7	0	145	194	3340
77 M	ARCH	29	1974	7	6	21	3.5		12	7	· · · · · · · · · · · · · · · · · · ·	144	161	4225
78 F	EBRUARY	4	1963	0	4	3	.8		14	1	0	144	310	1908
79 FI	EBRUARY	8	1951	2	1	3	3.0		7	3	33	144	266	3235
80 J <i>i</i>	ANUARY	6	1966	1	19	100	5.3		7	17	1	143	333	1762
81 F	EBRUARY	22	1956	7	3	4	1.3		12	2	0	143	196	3821
82 J.	ANUARY	29	1954	7	7	10	1.4		25	4	0	142	339	2668
83 F	EBRUARY	7	1970	1	1	2	2.0		7	2	21	142	186	2/69
84 N	OVEMBER	26	1964 2	3	32	85	2.7	* 14	21	10	Ŭ	140	18/	311
85 D	ECEMBER	1/	19/3 2	T	2	3	1.5		14	2	U	139	3/4	1949
86 N	OV EMBER	15	1966 1	2	14	100	3.0		22	38	U 2	137	143	407
00 T	ECEMBER		1951 2	2	14	10	1.3		0	10	2	127	307	26.81
00 J	ANUARI	11	1057 1	3	2	2	2.0		9	3	16	137	360	2001
00 M	M PMP PD	22	1023	1	6		7 2		с -	11	25	136	356	844
91 D	ECEMBER	22	1955	2	54	100	1.9		6	10	41	135	197	1020
92 1	ANIIARV	17	1951	7	52	112	2.1		7	12	30	135	179	2518
93 .	ANUARY	30	1965	'n	19	38	2.0		6	ī	15	135	391	2447
94 M	AY	15	1978 1	4	4	10	2.5		7	8	4	134	224	3272
95 J	ANUARY	26	1953 1	7	i	2	2.0		7	ž	18	134	346	2107
96 M	ARCH	17	1967 1	4	23	35	1.5		7	8	ī	133	184	2580
97 F	EBRUARY	8	1955 2	1	4	11	2.8		6	9	3	133	184	1766
98 A	PRIL	13	1955 1	9	5	21	4.2		21	12	0	132	216	2471
99 D	ECEMBER	21	1973 1	9	2	5	2.5		6	4	1	132	331	2105
100 F	EBRUARY	3	1968 1	4	11	41	3.7		9	8	25	131	244	1763

	DA' EV EN T	fe Ended	нос	JR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVER INTEN (IN/HR	AGE SITY X 100)	HOURS LAST	s inc ev en	CE NT : (IN/	MAXIMU INTENSI /HR X 1	UM Ety LOO)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR So Far (IN X 100)
1	FEBRUARY	. 11 1	961 1	2	4	18	. 4	.5		8		15		10	396	562	2677
2	OCTOBER	10 1	955 1	4	6	12	2	.0		8		10		40	349	417	417
3	JANUARY	22 1	972	0	7	18	2	.6		12		5		0	326	482	2463
4	DECEMBER	24 1	964	3	12	90	7	.5		LO .		19		9	303	674	1877
5	NOV EMBER	25 1	960 1	4	1	1	1	.0		11		1		0	290	518	1213
6	FEBRUARY	12 1	961	8	12	8		.7		8		3		18	289	579	2695
7	FEBRUARY	22 1	956]	12	12	29	2	.4		11		9		· 0	285	336	4334
8	FEBRUARY	21 1	968]	4	23	. 80	3	.5		L O		14		6	278	395	2596
9	DECEMBER	22 1	955	7	7	.8	1	.1		8		5		50	272	498	2379
10	DECEMBER	51	.968	7	5	5	1	.0		6		2		52	266	310	1538
11	FEBRUARY	11 1	949	8	2	3	1	.5		15		2		0	266	355	2383
12	DECEMBER	71	966 1	6	43	90	2	.1		8		20		17	261	377	1135
13	DECEMBER	11 1	968 1	4	13	33	2	.5		8		10		10	252	426	1799
14	APRIL	10 1	971	5	1	1	1	.0		12		1		0	251	275	4069
15	JANUARY	29 1	967 2	21	32	88	2	.8		9		26		4	250	335	2167
16	JANUARY	10 1	959 3	4	2	7	3	.5		6		4		36	246	488	1906
17	DECEMBER	10 1	968]	17 .	2	10	5	.0		6		5		52	242	503	1789
18	NOV EMBER	27 1	962	7	8	10	1	.3		10		5		- 5	235	369	1220
19	FEBRUARY	15 1	959 1	10	8	14	1	.8		11		3		0	234	296	2845
20	DECEMBER	15 1	973	8	26	44	1	.7		L 1		5		. 0	232	275	2209
21	JANUARY	29 1	954]	L 6	23	43	1	.9		L6		7.		0	232	448	2739
22	JANUARY	22 1	953]	17	28	50	1	.8		23		5		0	230	641	2343
23	JANUARY	14 1	974]	L 0 :	8	60	- 7	.5		7.		13		1	227	263	3173
24	DECEMBER	16 1	977	7	10	22	2	.2		6		6		47	225	544	1566
25	DECEMBER	21 1	953	3	1	1	1	.0		7		1		1	224	289	1727
26	DECEMBER	12 1	969]	9	1	1	1	.0		6		. 1		19	222	314	1091
27	JANUARY	16]	974]	17	50	476	9	.5		6		26		45	221	323	3233
28	DECEMBER	24 1	955	1	35	52	1	.5		6		13		7	220	497	2387
29	DECEMBER	4 1	1975 1	16	2	7	.3	.5		6		. 5		84	220	370	1412
30	APRIL	11 1	971]	16	27	83	3	.1		7		11		1	217	276	4070
31	OCTOBER	20 1	979]	2	10	86	8	.6		6		13		29	217	233	233
32	NOV EMBER	10 1	.973	8	4	24	6	.0		15		12		0	217	400	681
33	NOV EMBER	23]	1953]	17	4	10	- 2	.5		13		· 5		0	214	278	925
34	DECEMBER	27]	955 1	0	· 1	1	1	.0		8		1		6	213	509	2655
35	MARCH	29 1	974	7	7	40	5	.7	•	12		10		0	212	234	5180
36	FEBRUARY	16 1	959	8	17	82	4	•8		6		15		11	208	308	2859
37	DECEMBER	13 1	969	7	4	7	1	.8		8		2		- 1 1	206	312	1092
38	JANUARY	20]	1964 J	L7	4	11	2	.8		8		5		8	205	477	2145
39	JANUARY	28 1	L959 J	17	2	8	4	•0	1.2	L6		- 7		0	205	366	2486
40	MARCH	30 1	1974]	L 2	18	108	6	.0		L1		20		0	204	274	5220
41	FEBRUARY	14]	L954]	10	1.	3	3	.0		16		3		0	201	346	3130
42	FEBRUARY	27]	1976]	L 4	46	190	- 4	.1		9		27		1	200	255	2800
43	NOV EMBER	5 1	1969 1	19	11	14	1	.3		6		6		7	200	208	644
44	NOV EMBER	22]	1974]	L7	7	16	2	.3		L 8		7		0	200	364	828
45	JANUARY	11 1	1959	3	8	7		.9		6		3		 7	199	495	1913
46	OCTOBER	29 1	1950]	6	7	27	3	.9	*.	6		8		10	196	383	955
47	DECEMBER	21]	1955 1	17	15	186	12	.4		7		25		26	194	312	2193
48	JANUARY	1 1	949 2	21	11	3		.3		6		1		46	193	315	1919
49	JANUARY	29 1	1965]	16	10	23	2	.3		7		6		3	193	541	2964
50	DECEMBER	21]	1973]	17 -	1	· · · · 4	4	.0		7		4		3.	193	467	2698

λ.

OVERALL ORDER STATISTICS AT SALEM SORTED BY MAG48

	DAT EV ENT	re Ended	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE Intensity (In/hr x 100	HOURS LAST	SINCE EVENT (1	MAXIMUM Intensity N/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51 1	TANTIADV	25	1965 12	28	62	2.2		7	13	18	191	222	2628
52 0	CEMPED	24	1964 10	ĩ	2	2.0		6	2	45	189	764	1967
52 1	TAMIADY	11	1073 10	า	· · ī	1.0		7	1 .	29	189	282	1620
53 0	ANUARI	10	1975 19	5	8	1.6		11	2	0	187	622	3278
59 0	ANUARI	13	1968 7	้างกั	85	2.8	4	11	9	0	186	218	227
55 0	DDI	12	1055 23	12	23	1.9		9	5	10	185	237	2598
50 P	APKID	11	1955 25		23	3 3		17	6	0	183	418	429
	CTUDER	17	1073 13	18	72	4.0	·	6	16	55	182	472	2419
50 L	JECEMBER	5	1966 10	17	89	5.2		11	10	0	181	434	2028
29 0	DANUARI	1 1 1	1070 17	22	83	3.8		7	20	25	179	396	998
60 L	DECEMBER	22	19/4 1/	22	3	1.5		15	2	Ŭ Ū	179	251	664
61 1	WOV EMBER	17	1952 ZT	2	- 69	8.5		7	22	27	178	208	3059
62 E	EBRUARY	1/	1903 19			.		6		ī	177	350	1548
63 L	DECEMBER	12	1948 15	0	50	1 0		11	ā i	ō	176	204	3451
64 F	EBRUARY	11	1969 8	20	50	2.2		Â.	5	1 I	174	482	2868
65 N	IARCH	31	1963 19	3	170	2.5		7	18	24	173	419	705
66 N	IOV EMBER	12	19/3 14	40	1/9	3.5		7	Ξ.	13	172	562	1588
67 I	DECEMBER	1/	19/1 2	10	20	2.0		É.	3	- 1	172	191	4092
68 M	IAY	18	19/2 3	· · · ·	3	3.0		7		16	172	173	941
69 J	JANUARY	11	19/9 19	L L	61			5	16	29	171	505	1530
70 N	IOV EMBER	22	1973 1	14	10	3.9		6	10	4	171	226	1980
71 3	JANUARY	12	19/2 14	1	120	2.0		12	20		170	290	1295
72 I	DECEMBER	10	1953 5	57	130	2.94 E		13	1	2	170	348	1601
73 E	EBRUARY	. 10	1960 3	4	2	• 3		<i>'</i>	20	7	168	309	1099
74 I	DECEMBER	14	1969 10	21	99	9.7		0	20	2	168	222	1976
75 3	JANUARY	12	1972 7	2	4	2.0		0 7	2	1	168	326	1230
76 N	NOV EMBER	27	1962 16	1	3	3.0		. /	. 0	22	167	21.2	2889
77 N	ARCH	19	1975 17	18	24	1.3		11	13	<u> </u>	167	118	1480
78 I	DECEMBER	12	1948 0	15	68	4.0		11	12	5	167	200	2132
79 3	JANUARY	26	1975 17	6	11	1.8		0 : 10 :	3	10	165	4.80	2113
80 3	JANUARY	20	1953 14	14	230	10.4		10	40.	10	164	244	2810
81 C	JANUARY	3	1951 19	6	6	1.0		12	1	0	164	314	915
82 N	NOVEMBER	20	1958 19	- 4	3	.8		12	1	15	164	208	2198
83 N	IARCH	9	1957 14	2	7	3.5		.9	0	10	164	171	3122
84 I	FEBRUARY	25	1950 3	1	1	1.0		10	26	12	163	237	1374
.85 I	DECEMBER	23	1964 5	58	503	8.7		10	10	13	162	237	1197
86 I	DECEMBER	13	1977 14	27	143	5.3		8	10	22	162	270	1016
87 1	NOV EMBER	12	1951 17	21	20	1.0		1	0	33	162	195	21 27
88 1	JANUARY	26	1975 5	1	5	5.0		8	5	33	160	300	971
89 I	DECEMBER	1	1964 19	6	18	3.0			0	37	100	406	982
90 (OCTOBER	31	1950 1	28	70	2.5		5	19	23	159	272	1141
91 1	DECEMBER	3	1948 16	1	1	1.0		12	4	25	150	213	1120
92 1	DECEMBER	3	1948 3	6	2			8	1	35	157	210	2803
93 i	JANUARY	3	1951 0	3	7	2.3		0	<u> </u>	20	157	217	2003
94 (OCTOBER	6	1950 21	9	14	1.6		9	2	<u>2</u> 0	156	201	1629
95 1	DECEMBER	24	1969 8	1	1	1.0		13	Ţ	U 1	100	271 201	2066
96 1	FEBRUARY	3	1963 21	_ 1	1	1.0		TU	1	C .	100	727	2000
97 1	DECEMBER	23	1973 3	27	17	• 6		. /	4	9 9 A	100	205	1374
98 1	NOVEMBER	26	1955 19	19	53	2.8		사람 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이	8		153	200	3224
99 .	JANUARY	19	1951 8	39	116	3.0			12	41	153	254	2199
100 .	TANNADV	20	1950 18	11	55	5.0		U	13	· 4		A J 7	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~

	DAT EV EN T	re Ended	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE Intensity (IN/HR X 100)	HOURS LAST	SINCE EVENT (I	MAXIMUM Intensity N/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	FEBRUARY	11 1	1961 14	4	28	7.0		9	11	41	532	702	3004
2	JANUARY	4]	1966 16	2	34	17.0		7	22	20	469	870	2400
3	DECEMBER	24]	L964 1	· 11 ·	193	17.5		6	41	23	467	1015	2587
4	JANUARY	9 1	L976 5	12	17	1.4]	.2	7	0	392	725	2853
5	JANUARY	6 3	1966 0	18	216	12.0	· 1	.4	36	0	390	862	2434
6	DECEMBER	27 1	L955 16	7	5	• • 7		6	2	15	382	1030	3286
7	OCTOBER	30]	1950 19	20	56	2.8		6	15	58	378	641	1203
8	FEBRUARY	12 1	1961 3	4	11	2.8		.0	5	14	369	118	3032
9	OCTOBER	20 1	1979 17	23	169	7.3		1	31	8	345	5/5	3/3
10	DECEMBER	17 1		77	459	6.0		6	23	12	320	214	1994
11	NOV EMBER	23	1953 I/	2	4	2.0		9	<u> </u>	. 13	323	300	3082
12	FEBRUARY	15 1	1959 8	y 11	30	3.3		. <u>с</u>	. 0 9	20	324	426	3112
13	FEBRUARY	10 1	1040 1	11	30	3.3		7	2	19	319	420	2676
14	FEBRUARI	20 1	1071 16	55	168	3 1		8	22	18	314	428	1112
10	NUV BRIDER	29 J 5 1	1066 22	1	100	1 0		ă ·		18	313	426	1496
10	DECEMBER	5	1968 14		5	.7		0	3	-4	300	387	1632
19	DECEMBER	6	1975 21	28	96	3.4		26	11	Ō	299	631	1756
10	FERDIARY	22	1956 5	7	29	4.1	•	6		17	298	333	4759
20	DECEMBER	23	1955 8	78	663	8.5	1	LŠ	41	Ö	296	418	2187
21	FEBRUARY	17	1958 17	17	28	1.6		9	9	3	294	527	3451
22	JANUARY	21	1964 5	2	2	1.0		6	1	7	294	819	2547
23	DECEMBER	20	1953 21		1	1.0		8	1	4	294	333	1647
24	NOVEMBER	6 3	1973 19	21	65	3.1		8	14	32	292	398	558
25	JANUARY	12	1972 17	1	3	3.0]	12	3	0	278	347	2573
26	NOV EMBER	16 3	1973 19	7	7	1.0		9	3	26	277	742	1595
27	JANUARY	27	1970 12	42	185	4.4		6	18	40	275	648	3078
28	DECEMBER	13	1969 5	1	2	2.0		15	2	O O	267	364	1074
29	DECEMBER	12	1969 12	1	10	10.0		8	10	1	261	358	1064
30	OCTOBER	11	1955 10	3	13	4.3		28	9	. 0	260	420	433
31	DECEMBER	22	1969 23	14	100	7.1		21	30	0	258	408	1004
32	NOVEMBER	27	1962 5	4	10	2.5		13	5	0	200	319	1230
33	JANUARY	6	1966 19	12	19	1.6				83	250	1023	2050
34	DECEMBER	31	1970 16	2	5	3.0		11	4	U D	200	440	1134
35	NOV EMBER	2/	19// 1/	18	38	2.1		<u>6</u> 1	17	1 1 1 1 1 1	245	254	5057
30	APRIL	11 .	19/1 14	<u> </u>	90	J.0 A		9	17	J	240	429	2560
31	JANUARI	20	1930 14	25	125	3 6		7	22	6	242	253	867
30	DECEMBER	19	1974 14	21	101	3.0 A 8		22	19	0	242	1000	4467
33	DECEMBED	26	1964 7	17	143	8.4		8	48	25	242	1245	2829
40 A1	NOVEMBER	20	1973 3	15	25	1.7		7	11	43	242	525	1846
42	MARCH	29	1974 7	8	52	6.5		9	18	6	241	262	6544
43	JANUARY	29	1965 10	ž	์ วิ	1.0		7	2	4	240	585	4251
44	JANUARY	17	1974 1	55	689	12.5		8	39	73	238	311	3778
45	MARCH	30	1974 7	15	190	12.7		9	36	20	238	314	6596
46	DECEMBER	4	1979 12	10	87	8.7		27	28	69	234	320	1723
47	NOV EMBER	13	1965 19	22	79	3.6		10	20	4	229	303	679
48	DECEMBER	25	1964 7	10	49	4.9		19	18	0	228	1208	2780
49	FEBRUARY	8	1979 19	4	6	1.5		17	2	0	228	344	1618
50	JANUARY	25	1970 12	29	235	8.1		6	26	40	225	469	2843

OVERALL ORDER STATISTICS AT EUGENE SORTED BY MAG48

DATE DATE <thdate< th=""> DATE DATE <thd< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>HONDO</th><th>0.7.10.17</th><th>M & W T MT</th><th>- 24</th><th>MAGNITUDE</th><th>MAGNITUDE</th><th>MAGNITUDE</th><th>MAGNITUDE</th></thd<></thdate<>								HONDO	0.7.10.17	M & W T MT	- 24	MAGNITUDE	MAGNITUDE	MAGNITUDE	MAGNITUDE
EVENT ENDE BOUR DURATION MACRITUDE IMPERSITY LASE VERT INTERSITY INTER INTER<		DA'I	E ·			· · · · · · · · · · · · · · · · · · ·	AVERAGE	HOUKS	SINCE	MAXIMU	16	LAST	LAST	LAST	I DAR
THYLREY OI 155 22 CITA Y LODO CITA Y LODO <th< td=""><td></td><td>EVENT</td><td>ENDED</td><td>HOUR</td><td>DURATION</td><td>MAGNITUDE</td><td>INTENSITY</td><td>LAST</td><td>EVENT</td><td>INTENSI</td><td>LTY</td><td>12 HRS</td><td>48 HRS</td><td>168 HRS</td><td>SU FAR</td></th<>		EVENT	ENDED	HOUR	DURATION	MAGNITUDE	INTENSITY	LAST	EVENT	INTENSI	LTY	12 HRS	48 HRS	168 HRS	SU FAR
51 DNURAT 30 1958 23 7 148 5.5 12 24 924 364 265 53 MAYREER 18 1973 8 6 6 1.0 22 2 0 224 265 5734 54 PERBURANT 19 1971 16 24 88 3.7 8 16 1 223 765 3341 55 JANURARY 23 1972 16 24 88 3.7 8 16 1 223 765 3341 55 JANURARY 23 1973 8 11 26 2.4 6 6 3 219 611 8514 417 424 50 NOVEMBER 10 12 6 11 360 414 417 424 40 411 4164 4164 4164 4164 4164 4164 4164 4164 4164 4164 4164 4164 4164 4164 4164 4164 4164 4164 4164<					(HOURS)	(IN X 100)	(IN/HR X 100)		(1	N/HR X 1	LOO)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X IUU)
bi AARUARY 30 1958 27 148 5.7.2 16 23 9 244 186 6142 55 AVANDARY 19 19 17 19 17 10 17 10 12 22 20 224 245 5734 54 FEBULARY 19 19 1 1 1.0 6 1 10 224 245 5734 55 JANDARY 23 1970 14 2 5 2.7.5 7 3 2 223 315 1050 56 NOVENBER 25 1976 14 1 1 1.0 8 1 5 214 4437 4316 58 WARCH 19 174 12 0 2.0 10 12 37 214 437 4244 61 146 14 12 3.0 24 4 0 2111 349 4316 61 146 15 1975 19 1 1 1.0 <								•	~			•		264	2662
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	51	JANUARY	30 1	1958 23	27	148	5.5	T	2	24		Y Y	224	304	2003
53	52	NOV EMBER	13 1	1973 10	10	76	7.6		8	22			224	209	1142
54 FEBRUARY 19 1974 19 1 1 1 1.0 6 1 10 224 444 225 55 JANUARY 23 1972 16 24 88 3.7 8 16 1 223 765 JANUARY 23 1972 16 24 88 3.7 8 16 1 223 765 JANUARY 23 1972 16 24 88 3.7 8 16 1 223 765 JANUARY 23 1973 8 11 26 2.4 6 6 1 3 219 611 891 55 16 1 1 1 1.0 8 1 3 1975 10 4 1 1 1 1.0 8 1 3 1975 10 4 1 2 5 2.6 7 3 2 23 315 1976 14 1 1 1 1.0 6 1 2 6 23 4 477 5248 60 200 KHER 30 1973 8 11 20 1.8 10 12 6 231 376 2250 62 JANUARY 7 1978 14 4 12 3.0 2 1.8 10 12 6 211 376 226 244 1921 62 JANUARY 7 1979 14 4 12 3.0 2 1.8 2 9 40 0 204 226 226 224 1929 613 776 226 6 6 JANUARY 7 1979 14 4 12 3.0 8 6 1 55 201 407 3263 67 MARCH 4 1955 19 1 1 1 1.0 6 1 5 5 201 407 3263 67 MARCH 4 1955 12 1 4 12 3.0 8 6 1 201 266 515 5 201 407 3263 67 MARCH 4 1956 21 4 12 3.0 8 6 1 201 266 5150 68 JANUARY 12 1969 23 14 12 0 8.6 24 15 0 197 493 3064 70 MARCH 4 1956 21 4 12 3.0 8 6 1 201 266 5150 68 JANUARY 12 1969 23 14 120 8.6 24 8 8 20 196 200 JAUC 22 JANUARY 12 1969 23 14 120 8.6 24 15 0 197 493 3064 70 MARCH 4 1956 11 1 8 8.0 8 8 8 20 196 200 JAUC 22 JANUARY 12 1969 23 14 120 8.6 24 15 0 197 493 3064 70 MARCH 2 1949 11 1 8 8.0 8 8 8 20 136 200 JAUC 23 JAUC 23 JAUC 24 JA	53	MAY	18]	1972 8	6	6	1.0	2	2	2		U	224	205	5/34
55 JANUARY 23 1972 16 1 223 765 3341 55 ANUVENEER 10 1973 8 11 26 2.4 6 6 3 219 611 854 56 NOVENDERR 10 1973 8 11 26 2.4 6 6 3 219 611 854 56 NOVENDERR 10 1975 14 1 1 10 8 1 5 3 214 340 440 440 401 10 11 10	54	FEBRUARY	19 1	1974 19	1	1	1.0		6	1		10	224	444	5258
56 MOYENDER 25 2.5 7 3 2 223 315 1050 57 MOYENDER 10 11 26 2.5 7 3 2 223 315 1050 58 MARCH 25 1976 14 1 1 10 8 1 5 218 419 4391 4591 59 FEDRUMARY 19 1974 12 6 10 14 6 211 300 430	55	JANUARY	23	1972 16	24	88	3.7		8	16		1	223	765	3341
57 NOY EMBER 10 1973 8 11 26 2.4 6 6 3 219 611 651 58 MARCH 25 1976 14 1 1 1.0 8 1 5 218 419 4391 59 FERUARY 16 1957 12 6 10 1.7 8 5 38 214 437 5244 61 00 JANUARY 15 157 11 20 1.8 10 12 6 211 376 2240 63 JANUARY 7 1979 2 302 1.2 39 40 0 205 244 14228 65 OCTOBER 4 1957 7 302 14 10 2.2 2 0 204 237 234 169 33 364 67 MARCH 1956 1 4 16 2 197 233 3064 60 MANCH 1940 1.2 2.0 6	56	NOV EMBER	25	1970 14	2	5	2.5		7	3		2	223	315	1050
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	57	NOV EMBER	10 1	1973 8	11	26	2.4		6	6		3	219	611	854
59 59 50 10 1.7 8 5 38 214 437 5248 60 JANUARY 16 1956 10 2 4 2.0 6 2 37 214 340 4101 61 NOVEMBER 30 1973 5 11 20 1.8 10 12 6 211 376 2250 63 JANUARY 7 1979 0 27 302 11.2 39 40 0 205 244 1421 65 OCTOBER 4 1967 17 3 4 1.3 22 2 0 204 238 238 65 JANUARY 19 18 40 2.2 6 6 1407 237 2119 364 65 JANUARY 17 193 31 50 1.6 6 2 48 195 282 3466	58	MARCH	25]	1976 14	1	1	1.0		8	1		5	218	419	4391
GO JANUARY 16 1956 10 2 4 2.0 6 2 37 214 340 4100 C1 NOVERNER 30 1973 5 11 20 1.8 10 12 6 211 376 2250 C1 NOVERNER 4 1975 19 1 1.0 6 1 56 206 284 1989 G4 DECEMBER 4 1975 19 17 3 4 1.3 22 0 204 238 238 G5 JANUARY 19 1951 8 19 78 4.1 6 15 5 201 407 3263 G6 JANUARY 12 1956 21 4 12 3.0 8 6 1 201 268 150 6 3 48 195 233 130 10 1.6 6 8 8 20 1376 237 2132 70 MACC 20 197 333 <td>59</td> <td>FEBRUARY</td> <td>19 1</td> <td>1974 12</td> <td>6</td> <td>10</td> <td>1.7</td> <td></td> <td>8</td> <td>5</td> <td></td> <td>38</td> <td>214</td> <td>437</td> <td>5248</td>	59	FEBRUARY	19 1	1974 12	6	10	1.7		8	5		38	214	437	5248
1 100720000000000000000000000000000000000	60	JANUARY	16	1956 10	2	4	2.0		6	2		37	214	340	4101
22 JANUARY 7 1978 14 14 12 3.0 24 14 0 211 389 3050 63 JANUARY 5 1975 19 1 1 1.0 6 1 56 206 284 1421 64 DECEMBER 4 1975 0 27 302 11.2 39 40 0 205 244 1421 65 OCTODER 4 1956 1 12 3.0 8 6 1 201 407 3263 67 MARCH 1 1956 1 12 3.0 8 6 1 201 407 3237 2119 60 JANUARY 1 1956 1 12 2.0 8 2 39 106 201 397 313 3064 70 MAXCH 2 1957 3 31 50 1.6 6 8 48 195 282 3466 70 MAXCH 1950	۴ĩ	NOVEMBER	30	1973 5	11	20	1.8	1	0	12		6	211	376	2250
0.5 0	62	TANIIADY	7	1978 14	Ā	12	3.0		4	4		Ŏ.	211	389	3050
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	63	TANUARI	5 1	1075 10	1	1	1 0		6	์ เ		56	206	284	1989
010 DCCDMBER 4 1919 0 2 12 12 2 0 204 238 238 238 6 236 6 5 201 407 3263 6 6 197 237 2119 6 6 24 197 237 2119 3064 7 7 7 201 7 7 7 3064 7 7 3064 7 <	61	DECEMPED	1	1070 0	27	302	11.2	3	ă .	40		0	205	244	1421
05 05 06.1005x 1 3 4 1.1 5 20 207 565 67 MARCH 4 1951 8 19 78 4.1 6 15 5 201 406 5150 67 MARCH 4 1951 8 18 40 2.2 6 6 1 201 266 5150 69 JANUARY 17 1954 8 18 40 2.2 6 6 24 197 237 2119 69 JANUARY 12 1969 23 14 120 8.6 24 15 0 197 433 3064 70 MAX 2 1949 11 1 8 8.0 8 20 196 200 3425 1522 73 PEBRUARY 18 1970 1 1 2 2.0 6 2 16 193 408 575 5222 299 3.3 12 14 0 192 1262	64	DECEMBER		1067 17	21	302	1 2		2			ň	204	238	238
06 JANOARY 19 1931 0 12 30 13 13 13 14 16 16 16 17 17 15 14 12 30 8 6 1 101 268 1519 16 17 17 137 2119 17 133 164 14 12 30 8 6 14 107 433 3064 70 MAX 2 1949 11 1 8 8.0 8 8 20 196 200 3425 1522 3466 71 MARCH 20 1975 3 31 50 1.6 6 8 48 195 222 1522 1522 1522 73 PEBRUARY 11 11 10 2 2.0 6 2 193 194 219 3624 179 196 14 193 408 575 5 12 260 197 13 1262 2972 16 193 406 16 193 406	05	OCTOBER	4.		10	70	1.5		6	15			204	407	3263
07 MARCH 4 1954 8 12 3.0 0 0 1 201 200 21.10 69 JANUARY 17 1954 8 18 40 2.2 6 6 24 197 237 21130 69 JANUARY 12 1969 23 14 120 8.6 24 15 0 197 493 3064 70 MAX 2 1949 11 1 8 8.0 8 20 196 200 3425 73 PEBRUARY 18 1970 1 1 2 2.0 6 2 16 193 408 575 75 DECCEMBER 30 1964 16 92 299 3.3 12 14 0 192 1262 2972 76 MARCH 31 1974 23 13 49 3.8 26 14 0 192 166 86 21972 76 MARCH 11 10 <	66	JANUARY	19	1951 8	19	/8	4.1		0	15			201	907	5150
68 JANUARY 17 1954 8 18 40 2.2 6 6 24 197 237 2117 70 MAX 2 1949 11 1 8 8.0 8 8 20 196 200 3425 70 MAX 2 1949 11 1 8 8.0 8 20 196 200 3425 71 MARCH 20 1975 3 31 50 1.6 6 6 48 195 282 3466 72 JANDARY 11 1970 1 1 2 2.0 6 2 16 193 408 575 75 DECEMBER 30 1964 16 92 299 3.3 12 14 0 192 266 2972 76 MARCH 31 1974 21 31 218 7 10 20 16 1893 208 208 208 208 208 208 208 208	67	MARCH	4	1956 21	4	12	5.0		0	0			107	200	2110
69 JANUARY 12 1969 23 14 120 8.6 24 15 0 197 493 3064 70 MAY 2 1949 11 1 8 8.0 8 8 20 196 200 3425 71 MARCH 20 1975 3 31 50 1.6 6 8 48 195 282 3466 73 PEBRUARY 18 1970 1 1 2 2.0 8 2 39 194 219 3624 74 OCTOBER 27 1956 5 1 2 2.0 6 2 16 193 408 575 75 DECCMBER 30 1964 16 92 299 3.3 12 14 0 190 504 676 75 DECCMBER 31 1974 23 13 49 3.8 26 14 0 190 504 676 7 0CTOBER 12 1968 14 13 30 27 8 33 14 188 59 1218 8 191 18	68	JANUARY	1/ 1	1954 8	18	40	2.2		0	0		24	197	407	2119
70 MAY 2 1946 200 3423 71 MARCH 20 1975 3 31 50 1.6 6 8 48 195 282 3466 72 JANUARY 11 1970 1 1 2 2.0 8 2 39 194 219 3624 73 PEBRUARY 18 1970 1 1 2 2.0 8 2 39 194 219 3624 74 OCTOBER 27 1956 5 1 2 2.0 6 2 16 193 408 575 75 DECEMBER 30 1964 14 30 2.7 8 10 8 190 206 6786 76 MARCH 14 1974 21 31 218 7.0 10 20 16 189 236 60455 78 MARCH 14 1974 21 21 21 21 21 21 21 21 21<	69	JANUARY	12 1	1969 23	14	120	8.6	2	4	12		0	197	493	3004
71 MARCH 20 1975 3 31 50 1.6 6 8 48 195 242 3460 73 PEBRUARY 18 1950 1 1 2 2.0 8 2 39 194 219 3624 73 PEBRUARY 18 1970 1 1 2 2.0 6 2 39 194 219 3624 74 OCTOBER 31 1954 16 92 299 3.3 12 14 0 192 1262 2972 76 MARCH 31 1964 14 30 2.7 8 10 8 190 208 219 7 PROVEMBER 14 1974 21 31 218 7.0 10 20 16 189 236 6045 7 PROVEMBER 14 1974 21 2 2 1.0 7 1 32 187 265 1216 81 DECEMBER 14 1974	70	MAY	2	1949 11	1		8.0		8	8		20	196	200	3420
72 JANUARY 11 196 2.5 11 28 0 194 225 1524 73 FEBRUARY 18 1970 1 1 2 2.0 8 2 39 194 219 3624 74 OCTOBER 27 1956 5 1 2 2.0 6 2 16 193 408 575 75 DECEMBER 30 1964 16 92 299 3.3 12 14 0 190 504 6766 76 MARCH 31 194 3.8 26 14 0 190 504 6786 77 OCTOBER 16 1973 3 56 377 6.7 8 33 14 188 595 1218 80 PEBRUARY 3 1963 14 31 158 5.1 6 26 27 187 323 1242 80 PEBRUARY 3 1963 14 131 157 13 14 <td>71</td> <td>MARCH</td> <td>20</td> <td>1975 3</td> <td>31</td> <td>50</td> <td>1.6</td> <td></td> <td>6</td> <td></td> <td></td> <td>48</td> <td>195</td> <td>282</td> <td>3400</td>	71	MARCH	20	1975 3	31	50	1.6		6			48	195	282	3400
73 PEBRUARY 18 1910 1 1 2 2.0 8 2 39 194 219 3624 74 OCTOBER 71 1956 5 1 2 2.0 6 2 16 193 408 575 75 DECEMBER 30 1964 16 92 229 3.3 12 14 0 192 1262 2972 76 MARCH 31 1974 23 13 49 3.8 26 14 0 190 504 6768 70 OCTOBER 12 1973 3 56 377 6.7 8 33 14 188 595 1218 79 NOVEMBER 16 1973 3 56 377 6.7 8 33 14 188 595 1218 80 PEBRUARY 3 1963 14 31 158 5.1 6 26 27 187 323 1242 82 MARCH 3	72	JANUARY	11 1	1950 18	79	196	2.5	- 1	1	28		0	194	225	1522
74 OCTOBER 27 1956 5 1 2 2.0 6 2 16 193 408 575 75 DECEMBER 30 1964 16 92 299 3.3 12 14 0 192 1262 2972 76 MARCH 14 1974 23 13 49 3.8 26 14 0 190 504 6786 77 OCTOBER 12 1968 14 11 30 2.7 8 10 8 190 208 219 78 MARCH 14 1974 23 56 377 6.7 8 33 14 188 595 1218 80 PEBRUARY 3 1963 14 31 156 5.1 6 26 27 187 232 1242 80 PEBRUARY 3 1960 7 6 22 3.7 7 11 4 186 245 5272 83 OCTOBER 26	73	FEBRUARY	18 .	1970 1	1	2	2.0		8	2		39	194	219	3624
75 DECEMBER 30 1964 16 92 299 3.3 12 14 0 192 1262 2972 76 MARCH 31 1974 23 13 49 3.8 26 14 0 190 504 6786 77 OCTOBER 12 1968 14 11 30 2.7 8 10 8 190 208 219 78 MARCH 14 1974 21 31 218 7.0 10 20 16 189 236 6045 79 NOVEMBER 16 1973 3 56 377 6.7 8 33 14 188 595 1218 80 FEBRUARY 3 1963 14 31 158 5.1 6 26 27 187 296 1916 1 1212 28 2142 28 12142 28 2142 28 2142 28 2142 28 2142 28 2142 28 2142 <td< td=""><td>74</td><td>OCTOBER</td><td>27</td><td>1956 5</td><td> 1</td><td>2</td><td>2.0</td><td></td><td>6</td><td>2</td><td></td><td>16</td><td>193</td><td>408</td><td>575</td></td<>	74	OCTOBER	27	1956 5	1	2	2.0		6	2		16	193	408	575
76 MARCH 31 1974 23 13 49 3.8 26 14 0 190 504 6786 77 OCTOBER 12 1968 14 11 30 2.7 8 10 8 190 208 219 78 MARCH 14 1974 21 31 218 7.0 10 20 16 189 236 6045 79 NCVEMBER 16 1973 3 56 377 6.7 8 33 14 188 595 1218 80 FEBRUARY 3 1963 14 31 158 5.1 6 26 27 187 323 1242 81 DECEMBER 14 1974 21 2 1.0 7 1 32 187 323 1242 82 MARCH 31 1960 7 6 22 3.7 7 11 4 186 56 56 232 1849 360 50709 360	75	DECEMBER	30	1964 16	92	299	3.3	. 1	.2	14		0	192	1262	2972
77 OCTOBER 12 1968 14 11 30 2.7 8 10 8 190 208 219 78 MARCH 14 1974 21 31 218 7.0 10 20 16 189 236 6045 79 NOVERBER 16 1973 56 377 6.7 8 33 14 188 595 1218 80 FEBRUARY 3 1963 14 31 158 5.1 6 26 27 187 296 1916 81 DECEMBER 14 1974 21 2 2 1.0 7 1 32 187 323 1242 82 MARCH 31 1960 7 6 22 3.7 7 11 4 186 245 2729 83 OCTOBER 26 1956 21 10 48 4.8 8 13 12 185 360 527 84 JANUARY 71 970 19 1 1 1.0 6 1 7 185 789 3263 86 FEBRUARY 23 1968 3 10 70 7.0 9	76	MARCH	31	1974 23	13	49	3.8	2	6	14		0	1.90	504	6786
78 MARCH 14 1974 21 31 218 7.0 10 20 16 189 236 6045 79 NCVEMBER 16 1973 3 56 377 6.7 8 33 14 188 595 1218 80 FEBRUARY 3 1963 14 11 158 5.1 6 26 27 187 296 1916 81 DECEMBER 14 1974 21 2 2 1.0 7 1 32 187 323 1242 82 MARCH 31 1960 7 6 22 3.7 7 11 4 186 245 2729 83 OCTOBER 6 1956 21 10 48 4.8 8 13 12 185 360 527 84 JANUARY 13 1973 12 9 59 6.6 8 24 35 185 232 184 86 FERUARY 23	77	OCTOBER	12	1968 14	11	30	2.7		8	10		8	190	208	219
79 NOV EMBER 16 1973 3 56 377 6.7 8 33 14 188 595 1218 80 FEBRUARY 3 1963 14 31 158 5.1 6 26 27 187 296 1916 81 DECEMBER 14 1974 21 2 2 1.0 7 1 32 187 296 1916 81 DECEMBER 14 1974 21 2 3.7 7 11 4 186 245 2729 83 OCTOBER 26 1956 21 10 48 4.8 8 13 12 185 360 527 84 JANUARY 13 1973 12 9 59 6.6 8 24 35 185 232 184 85 JANUARY 27 1970 19 1 1 1.0 6 1 7 185 789 3263 86 FEBRUARY 23 1968 </td <td>78</td> <td>MARCH</td> <td>14</td> <td>1974 21</td> <td>31</td> <td>218</td> <td>7.0</td> <td>1</td> <td>.0</td> <td>20</td> <td></td> <td>16</td> <td>189</td> <td>236</td> <td>6045</td>	78	MARCH	14	1974 21	31	218	7.0	1	.0	20		16	189	236	6045
B0 FEBRUARY 3 1963 14 31 158 5.1 6 26 27 187 296 1916 B1 DECEMBER 14 1974 21 2 2 1.0 7 1 32 187 323 1242 B2 MARCH 31 1960 7 6 22 3.7 7 11 4 186 24.5 2729 B3 OCTOBER 26 1956 21 10 48 4.8 8 13 12 185 360 527 B4 JANUARY 13 1973 12 9 59 6.6 8 24 35 185 232 1849 B5 JANUARY 27 1970 1 1 1.0 6 1 7 185 789 3263 B6 PEBRUARY 23 1966 3 10 70 7.0 9 15 15 184 361 26642 B7 JANUARY 7 1962	79	NOV EMBER	16	1973 3	56	377	6.7		8	33		14	188	595	1218
B1 DECEMBER 14 1974 21 2 1.0 7 1 32 187 323 1242 82 MARCH 31 1960 7 6 22 3.7 7 11 4 186 245 2729 83 OCTOBER 26 1956 21 10 48 4.8 8 13 12 185 360 5277 84 JANUARY 13 1973 12 9 59 6.6 8 24 35 185 232 1849 85 JANUARY 27 1970 19 1 1 1.0 6 1 7 185 789 3263 86 FEBRUARY 23 1968 3 10 70 7.0 9 15 15 184 361 2642 3733 86 FEBRUARY 23 1962 10 48 233 4.9 6 18 85 182 286 3170 89 FEBRUARY 26 <td>80</td> <td>FEBRUARY</td> <td>3</td> <td>1963 14</td> <td>31</td> <td>158</td> <td>5.1</td> <td></td> <td>6</td> <td>26</td> <td></td> <td>27</td> <td>187</td> <td>296</td> <td>1916</td>	80	FEBRUARY	3	1963 14	31	158	5.1		6	26		27	187	296	1916
BARCH 31 1960 7 6 22 3.7 7 11 4 186 245 2729 83 OCTOBER 26 1956 21 10 48 4.8 8 13 12 185 360 527 84 JANUARY 13 1973 12 9 59 6.6 8 24 35 185 232 1849 85 JANUARY 27 1970 19 1 1 1.0 6 1 7 185 789 3263 86 FEBRUARY 23 1968 3 10 70 7.0 9 15 15 184 361 2642 87 JANUARY 7 1956 23 4 15 3.8 14 8 0 184 442 3733 86 FEBRUARY 26 1957 7 22 127 5.8 9 26 6 182 309 2164 90 MARCH 13 1977	81	DECEMBER	14	1974 21	2	2	1.0		7	1		32	187	323	1242
03 0.1 0.1 2.2 0.1 1 1.3 1.2 1.85 3.60 5.27 84 JANUARY 13 1973 1.2 9 5.9 6.6 8 2.4 3.5 1.85 2.32 1.849 85 JANUARY 27 1970 1.9 1 1 1.0 6 1 7 1.85 7.89 3.263 86 FEBRUARY 23 1968 3 10 70 7.0 9 1.5 1.5 1.84 3.61 2.64.2 87 JANUARY 7 1956 2.3 4 1.5 3.8 1.4 8 0 1.84 4.42 3.733 88 MARCH 27 1962 10 4.8 2.33 4.9 6 1.8 8.5 1.82 2.86 3170 89 FEBRUARY 26 1957 7 2.2 1.27 5.8 9 2.6 6 1.82 30.9 2.164 90 MARCH 13 1.4	82	MARCH	31	1960 7		22	3.7		7	11		- 4	186	245	2729
05 06100LR 10	82	OCTORED	26	1056 21	10	48	4.8		8	12		12	1.85	360	527
05 07.00 MART 13 1970 12 1 1 1.0 6 1 7 185 789 3263 86 FEBRUARY 23 1968 3 10 70 7.0 9 15 15 184 361 2642 87 JANUARY 7 1956 23 4 15 3.8 14 8 0 184 442 3733 88 MARCH 27 1962 10 48 233 4.9 6 18 85 182 286 3170 89 FEBRUARY 26 1957 7 22 127 5.8 9 26 6 182 309 2164 90 MARCH 13 1974 3 14 48 3.4 7 11 65 181 240 5997 91 DECEMBER 4 1977 3 11 18 1.6 12 4 0 180 247 1381 92 DECEMBER 4	84	TANUADV	12	1073 12	ŏ	50	6 6		8	24		35	185	232	1849
B6 FEBRUARY 23 1968 10 70 7.0 9 15 15 184 361 2642 86 FEBRUARY 7 1956 23 4 15 3.8 14 8 0 184 442 3733 86 MARCH 27 1962 10 48 233 4.9 6 18 85 182 286 3170 89 FEBRUARY 26 1957 7 22 127 5.8 9 26 6 182 309 2164 90 MARCH 13 1974 3 14 48 3.4 7 11 65 181 240 5997 91 DECEMBER 4 1977 3 11 18 1.6 12 4 0 180 247 1381 92 DECEMBER 4 1977 14 4 3 .8 7 1 8 180 235 1399 93 OCTOBER 9 1962	95	TANUARI	27	1070 10	1	1	1 0		č i	1		33	185	789	3263
66 FEBRUARY 7 1956 3 10 70	0.	PPDDUADY	27	1060 2	10	70	7 0		0	15		15	184	361	2642
67 JANOARI 7 1950 23 4 15 5.0 14 6 0 104 442 5753 88 MARCH 27 1962 10 48 233 4.9 6 18 85 182 286 3170 89 FEBRUARY 26 1957 7 22 127 5.8 9 26 6 182 309 2164 90 MARCH 13 1974 3 14 48 3.4 7 11 65 181 240 5997 91 DECEMBER 4 1977 3 11 18 1.6 12 4 0 180 247 1381 92 DECEMBER 4 1977 14 4 3 .8 7 1 8 180 235 1399 93 OCTOBER 9 1962 7 12 54 4.5 12 11 0 179 251 251 94 OCTOBER 23 <td< td=""><td>00</td><td>TANUARI</td><td>23</td><td>1900 3</td><td>10</td><td>15</td><td>2.0</td><td></td><td></td><td></td><td></td><td>10</td><td>194</td><td>442</td><td>3733</td></td<>	00	TANUARI	23	1900 3	10	15	2.0					10	194	442	3733
88 MARCH 27 1962 10 48 233 4.9 6 16 63 162 200 5176 89 FEBRUARY 26 1957 7 22 127 5.8 9 26 6 182 309 2164 90 MARCH 13 1974 3 14 48 3.4 7 11 65 181 240 5997 91 DECEMBER 4 1977 3 11 18 1.6 12 4 0 180 247 1381 92 DECEMBER 4 1977 14 4 3 .8 7 1 8 180 235 1399 93 OCTOBER 9 1962 7 12 54 4.5 12 11 0 179 251 251 94 OCTOBER 23 1951 23 7 2 .3 6 1 60 179 265 564 95 DECEMBER 15	07	JANUARI	~ ~ ~	1920 73	40	10	3.0		.4 C	10		05	107	296	3170
89 FEBRUARY 26 102 309 2104 90 MARCH 13 1974 3 14 48 3.4 7 11 65 181 240 5997 91 DECEMBER 4 1977 3 11 18 1.6 12 4 0 180 247 1381 92 DECEMBER 4 1977 3 11 16 12 4 0 180 247 1381 92 DECEMBER 4 1977 1 8 180 235 1399 93 OCTOBER 9 1962 7 12 54 4.5 12 11 0 179 251 251 94 OCTOBER 23 1951 23 7 2 .3 6 1 60 179 265 564 95 DECEMBER 15 1974 7 3 2 .7 7 1 2 179 325 1244 96 JANUARY 16 1968 </td <td>-88</td> <td>MARCH</td> <td>21</td> <td>1962 10</td> <td>40</td> <td>233</td> <td>4.7</td> <td></td> <td>0</td> <td>10</td> <td></td> <td>05</td> <td>102</td> <td>200</td> <td>2164</td>	-88	MARCH	21	1962 10	40	233	4.7		0	10		05	102	200	2164
90 MARCH 13 1974 3 14 48 3.4 7 11 65 181 240 5577 91 DECEMBER 4 1977 3 11 18 1.6 12 4 0 180 247 1381 92 DECEMBER 4 1977 3 11 18 1.6 12 4 0 180 247 1381 92 DECEMBER 4 1977 14 4 3 .8 7 1 8 180 247 1381 92 DECEMBER 9 1962 7 12 54 4.5 12 11 0 179 251 251 94 OCTOBER 23 1951 23 7 2 .3 6 1 60 179 265 564 95 DECEMBER 15 1974 7 3 2 .7 7 1 2 179 325 1244 96 JANUARY 16 1968 </td <td>89</td> <td>FEBRUARY</td> <td>20</td> <td>195/ /</td> <td>22</td> <td>12/</td> <td>5.8</td> <td></td> <td>7</td> <td>20</td> <td></td> <td>0</td> <td>102</td> <td>203</td> <td>5007</td>	89	FEBRUARY	20	195/ /	22	12/	5.8		7	20		0	102	203	5007
91 DECEMBER 4 1977 3 11 18 1.6 12 4 0 180 247 1381 92 DECEMBER 4 1977 1 4 3 .8 7 1 8 180 235 1399 93 OCTOBER 9 1962 7 12 54 4.5 12 11 0 179 251 251 94 OCTOBER 23 1951 23 7 2 .3 6 1 60 179 265 564 95 DECEMBER 15 1974 7 3 2 .7 7 1 2 179 325 1244 96 JANUARY 16 1968 23 23 131 5.7 12 16 0 178 331 1731 97 MARCH 7 1960 8 18 112 6.2 6 30 4 178 346 2124 98 DECEMBER 3 1962 </td <td>90</td> <td>MARCH</td> <td>13</td> <td>1974 3</td> <td>14</td> <td>48</td> <td>3.4</td> <td></td> <td></td> <td>11</td> <td></td> <td>0.5</td> <td>181</td> <td>240</td> <td>1201</td>	90	MARCH	13	1974 3	14	48	3.4			11		0.5	181	240	1201
92 DECEMBER 4 1977 14 4 3 .8 7 1 8 180 235 1399 93 OCTOBER 9 1962 7 12 54 4.5 12 11 0 179 251 251 94 OCTOBER 23 1951 23 7 2 .3 6 1 60 179 265 564 95 DECEMBER 15 1974 7 3 2 .7 7 1 2 179 325 1244 96 JANUARY 16 1968 23 23 131 5.7 12 16 0 178 331 1731 97 MARCH 7 1960 8 18 112 6.2 6 30 4 178 346 2124 98 DECEMBER 3 1962 3 1 1 1.0 8 1 27 177 239 1444	91	DECEMBER	4	1977 3	11	18	1.6		.2	4		U U	180	24/	1301
93 OCTOBER 9 1962 7 12 54 4.5 12 11 0 179 251 251 94 OCTOBER 23 1951 23 7 2 .3 6 1 60 179 265 564 95 DECEMBER 15 1974 7 3 2 .7 7 1 2 179 325 1244 96 JANUARY 16 1968 23 23 131 5.7 12 16 0 178 331 1731 97 MARCH 7 1960 8 18 112 6.2 6 30 4 178 346 2124 98 DECEMBER 3 1962 3 1 1 1.0 8 1 27 177 239 1444	92	DECEMBER	4	1977 14	4	3	•8	1.0	1	1		8	180	23.5	1233
94 OCTOBER 23 1951 23 7 2 .3 6 1 60 179 265 564 95 DECEMBER 15 1974 7 3 2 .7 7 1 2 179 325 1244 96 JANUARY 16 1968 23 23 131 5.7 12 16 0 178 331 1731 97 MARCH 7 1960 8 18 112 6.2 6 30 4 178 346 2124 98 DECEMBER 3 1962 3 1 1 1.0 8 1 27 177 239 1444	93	OCTOBER	9	1962 7	12	54	4.5]	.2	11		0	179	251	251
95 DECEMBER 15 1974 7 3 2 .7 7 1 2 179 325 1244 96 JANUARY 16 1968 23 23 131 5.7 12 16 0 178 331 1731 97 MARCH 7 1960 8 18 112 6.2 6 30 4 178 346 2124 98 DECEMBER 3 1962 3 1 1 1.0 8 1 27 177 239 1444	94	OCTOBER	23	1951 23	7	2	•3		6	1		60	179	265	564
96 JANUARY 16 1968 23 23 131 5.7 12 16 0 178 331 1731 97 MARCH 7 1960 8 18 112 6.2 6 30 4 178 346 2124 98 DECEMBER 3 1962 3 1 1 0 8 1 27 177 239 1444	95	DECEMBER	15	1974 7	3	2	.7		7	1		2	179	325	1244
97 MARCH 7 1960 8 18 112 6.2 6 30 4 178 346 2124 98 DECEMBER 3 1962 3 1 1 0 8 1 27 177 239 1444	96	JANUARY	16	1968 23	23	131	5.7]	.2	16		0	178	331	1731
98 DECEMBER 3 1962 3 1 1.0 8 1 27 177 239 1444	97	MARCH	7	1960 8	18	112	6.2		6	30	1. J. J. J.	4	178	346	2124
	98	DECEMBER	3	1962 3	1	1	1.0		8	1		27	177	239	1444
99 JANUARY 21 1964 14 2 9 4.5 6 5 2 175 821 2549	99	JANUARY	21	1964 14	2	9	4.5		6	5		2	175	821	2549
100 JANUARY 11 1959 3 2 5 2.5 9 3 12 175 440 1880	100	JANUARY	11	1959 3	2	5	2.5		9	3		12	175	440	1880

...

	DA' EV EN T	TE ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE Intensity (IN/HR X 100)	HOURS SINCE LAST EVENT (MAXIMUM Intensity In/hr X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1 1		26	1964 7	18	87	4.8	12	32	0	90	592	1550
2	DECEMBER	25	1964 1	2	6	3.0		3	11	113	586	1544
2	TANIIADV	24	1970 3	2	20	10.0	17	10	0	243	575	2389
A	TANIIADV	27	1970 17	70	160	2.3	8	14	14	111	574	2423
5 1	DECEMBER	27	1964 21	25	53	2.1	13	10	0	93	571	1637
6	TANHARY	24	1970 10	23	14	7.0	6	11	20	239	565	2409
7	TANIIADV	20	1974 12	1	-i -	1.0	41	-1	0	54	560	3112
8 1	DECEMBER	28	1964 12	8	13	1.6	6	6	6	107	545	1690
ğ.	TANHARY	18	1974 17	18	106	5.9	30	34	Ó	107	544	3006
ú i	TANIIARV	Ŕ	1956 3		- 9	4.5	17	6	Ō	107	530	2956
111	DECEMBER	17	1977 1	19	36	1.9	12	6	Ō	108	523	1548
2 1	DECEMBER	17	1977 7		· ī	1.0	6	1	15	57	515	1584
וֹז	DECEMBER	17	1977 17	2	13	6.5	7	7	1	38	511	1585
Δ	DECEMBER	30	1965 21	$\overline{2}$	-5	2.5	6	3	18	76	509	1495
5	DECEMBER	24	1964 17	26	.84	3.2	11	13	0	225	502	1460
6	TANIJARV	9	1956 14	8	16	2.0	27	4	0	11	497	2965
17	DECEMBER	24	1972 16	11	59	5.4	7	13	27	117	485	1154
8 1	DECEMBER	23	1972 21	19	86	4.5	11	10	0	125	467	1068
1 9 1	DECEMBER	31	1965 16	ī	1	1.0	18	1	0	59	462	1500
20	DECEMBER	22	1955 16	ī	ī	1.0	· 7	1	16	233	460	2246
21	NOV EMBER	16	1973 1	35	282	8.1	6	35	28	81	459	910
22	DECEMBER	22	1955 7	6	17	2.8	9	9	43	273	459	2229
23	JANUARY	14	1953 10	5	4	.8	14	2	0	48	452	1464
24	DECEMBER	15	1977 17	19	73	3.8	11	17	0	215	450	1475
25	DECEMBER	18	1977 19	1	2	2.0	25	2	0	33	450	1598
26	JANUARY	13	1953 14	13	23	1.8	6	7	17	83	449	1441
27	DECEMBER	24	1955 1	13	9	.7	20	3	0	89	447	2247
28	DECEMBER	27	1955 1	44	152	3.5	28	12	0	9 1	441	2256
29	JANUARY	7	1956 7	28	107	3.8	29	17	0	85	441	2849
30	JANUARY	4	1966 14	70	260	3.7	25	26	. 0	6	440	1501
31	JANUARY	10	1956 0	4	3	.8	6	1	12	25	438	2981
32	NOV EMBER	21	1950 0	5	13	2.6	19	8	0	53	437	1275
33	DECEMBER	29	1964 7	10	14	1.4	9	4	10	66	427	1703
34	JANUARY	12	1953 19	9	25	2.8	7	7	8	103	424	1416
35	FEBRUARY	11	1961 12	1	14	14.0	9	14	19	241	423	2373
36	DECEMBER	22	1972 16	17	56	3.3	10	17	7	191	420	1012
37	NOV EMBER	26	1962 14	5	4	.8	8	2	38	234	420	1167
38	DECEMBER	11	1968 10	16	42	2.6	7 .	11	30	182	418	1585
39	DECEMBER	28	1972 8	55	122	2.2	34	18	0	59	417	1213
40	JANUARY	12	1953 3	6	12	2.0	8	4	20	91	412	1404
41	FEBRUARY	13	1961 17	32	31	1.0	21	4	0	119	410	2387
42	NOV EMBER	14	1973 8	14	56	4.0	12	12	· · · O ·	68	405	854
43	FEBRUARY	23	1968 5	26	61	2.3	15	13	0	59	404	2235
44	FEBRUARY	21	1968 12	2	3	1.5	· 7 ·	2	20	114	401	2232
45	DECEMBER	14	1977 12	8	57	7.1	13	17	0	267	400	1418
46	JANUARY	22	1953 19	29	95	3.3	27	19	0	107	399	1867
47	NOV EMBER	13	1973 7	7	24	3.4	6	7	1	92	399	830
48	JANUARY	10	1956 23	14	9	.6	9	3	1	19	396	2984
49	JANUARY	26	1953 10	52	145	2.8	35	20	0	62	395	1962
50	JANUARY	30	1965 0	19	38	2.0	6	9	15	135	391	2447

OVERALL ORDER STATISTICS AT PORTLAND SORTED BY MAG168

EV	DATE ENT END	ED	HO	UR 1	DURA (HOU	TION IRS)	I MAG (IN	NIT X	UDE 100)	I (IN)	AV E NTE /HR	RAGE NSIT X 1	Y 00)	HOUI	RS S St E	INCE V ENT (M IN IN/H	AXIM TENS R X	UM ITY 100)	MAGI 1 (IN	NITUD LAST 2 HRS X 10	DE ;)0)	MAGNI LA 48 (IN X	TUDE ST HRS 100)	MAGN 168 (IN	AST AST HRS X 100)	MAG S (IN	NITUDE YEAR O FAR X 100)	•
51 NOV EM	BER 2	0	1950	0		9		53				5.9			41			20			0			15		391		1222	
52 JANUA	RY 1	1 .	1969	14		1		3				3.0			9			3			2		1	04		391		2683	
53 NOV EM	BER 2	3	1974	12		11		63				5.7			6			12			2		1	11		390		813	
54 JANUA	RY 1	1	1969	3		2		2				1.0			9			1			25		1	37		389	•	2681	
55 DECEM	BER	5	1951	22		14		18				1.3			- 8			10			2		1	37		387		1464	
56 FEBRU	ARY 1	5	1961	14		9		19				2.1			6			8			28			52		387		2461	
57 JANUA	RY 2	1	1970	5		12		48			÷.,,	4.0			8			15			9		1	45		385		2092	
58 NOVEM	BER 1	7	1966	21		5		10				2.0			22			6			0			62		385		717	
59 NOVEM	BER 1	1	1973	19		26		57				2.2			7			23			29		2	38		384		729	
60 FEBRU	ARY 1	5	1961	0		15		43				2.9			16			· · 9			0			30		384	17	2418	
61 MARCH	1	1	1957	1		6		12				2.0			18			9			0			62		382		2051	
62 DECEM	BER 1	0	1966	19		2		2				1.0			- 7			1			11			74		381		1287	
63 MARCH	1	2	1957	16		- 4 ·		11				2.8			7	1.00		6			7			51		380		2102	
64 JANUA	RY 2	2	1964	12		4		5				1.3			8			2			1			21		3.80		1825	
65 DECEM	BER 2	2	1961	21		10		24				2.4			29			14			0		1	21		379		1232	
66 NOVEM	BER 1	0	1973	10		6		35				5.8			15			16			0		2	40		379		694	
67 MARCH	1	3	1957	3		1		· 1				1.0			10			1			6			50		379		2113	
68 JANUA	RY 2	2	1964	0		1		1				1.0			13			-1			0			26		379		1824	
69 MARCH	1	2	1957	5		17		39				2.3			10			15			7			37		378		2063	
70 NOVEM	BER 2	2	1974	19		9		12				1.3			21			5			0		1	74		378		801	
71 DECEM	BER	6	1951	. 7		3		5				1.7			6			3			3		1	19		378		1482	
72 DECEM	BER 2	4	1961	5		23		- 59				2.6			8			22			18			24		377		1256	
73 NOVEM	BER 1	6	1966	19		4		8				2.0			8			- 4			18		. 1	12		377		709	
74 JANUA	RY 2	3	1970	7		36		249				6.9			14			90	l .		0		. 1	05		376		2140	
75 OCTOB	er 2	4	1951	7		9		. 8				.9			14			3			0		2	06		374		669	
76 NOVEM	BER 2	8	1949	16		3		5				1.7			. 7			4			20		1	09		374		764	
77 DECEM	BER 1	7	1973	21		2		3				1.5			14			2	1		0.		1	39		374		1949	
78 JANUA	RY 1	.3	1959	1		11		14				1.3			6			5	i		16			98		372		1683	
79 JANUA	RY 1	2	1950	18		9		- 4				- 4			- 11			1	· .		0			4		371		16.82	
80 JANUA	RY 2	21	1964	10		3		8				2.7			10			4			4			84		371		1810	
81 NOVEM	BER 1	.2	1973	17	1.	16		44				2.8			6			11	•		27			92		370		786	
82 JANUA	RY	8	1966	14		16		14				.9			25			6			0			14		370		1871	
83 JANUA	RY 1	.1	1950	23		1.		1				1.0			29			. 1			0			89	$\{ 1, 2, \dots, n\}$	370		1681	
84 NOVEM	BER 2	27	1962	7		7		3				.4	•		9			1			· 3.		1	72		369		11/1	
85 JANUA	RY	6	1966	21		7		9				1.3			13			2			- 0		- , , , ,	01		36/		1802	
86 JANUA	RY 1	1	1953	14		9		46				5.1			6			12			34			56		366		1358	
87 NOVEM	BER I	.3	1968	17		1		10			۲ <u>۲</u>	0.0			12			10			0			40		303		1004	
88 JANUA	RY 2	0	1964	21		6		12				2.0			11			5			Ű		1	25		364		1100	
89 NOVEM	BER 2	:T	19/3			32		62				T • A			91			8			U		_	U		302		1192	
90 OCTOB	ER 1	.0.	1955	17		8		26				3.3			14			10			0			52		302		302	
91 MARCH	. 1	0	1957	1		3		22				1.3			9			19			- 3		1	72		304		2029	
92 MARCH		9	1957	14		1		. 3				3.0			5						10		1	3/		300		2020	
93 NOV EM	BER 1	3	1968 1968	5		5		8	2			2.1			. 9			5).		12		1	07		33/		3U8 2197	
94 FEBRU	AKY 2	а. Т	1969 1868	່ <u>ວ່</u>		.Т. Т.		45				4.1			. 9			8	• 		7 2 E		2	26		330		210/	
95 NOVEM	BER 2	3	1922	. Т.		10		44				1.5			0			1			33		. 1	20	1.1.1.1	330		044 740	
90 NOVEM	DER J	U.	1949	U.		12		22				1.8			21			4	1	•	U N			33		355		2175	
JANUA	KI 2 DFD 7	:49 >1	1060	16		12		4				7 0			14			1			24		1	70		354		775	
DO TANITA	DER 2	ыц. С. Б. С.	1070	10		24		1.0				1.0			16			2					د :	22		352		2161	
100 OCTOR	ER 1	ĩ	1955	12		44 K		16				2.7			12						. V 0			31		353		388	
		-																											

	DAT EV ENT	re Ended	HOUR	DURATION	MAGNITUDE	AVERAGE Intensity (In/HB x 100)	HOURS LAST	SINCE EVENT	MAXIMUM INTENSITY N/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
				(HOUND)	(10 x 100)	(11) 111 1 2007				•	151	708	3700
1	JANUARY	18 1	1974 19	18	73	4.1		8 <u>1</u>	15	10	112	794	1002
2	DECEMBER	26	1964 7	19	65	3.4		8	11	10	110	766	1069
3	DECEMBER	25 1	1964 3	5	23	4.6		13	8.	0	112	764	2057
4	DECEMBER	28 1	1964 1	32	40	1.3	-	uj –	9		100	764	1967
5	DECEMBER	24	1964 10	1	2	2.0		6	2	40	107	694	1782
6	JANUARY	20	1974 1	1	1	1.0		29	1		202	671	1977
7	DECEMBER	24	1964 3	12	90	7.5			19		202	641	2343
8	JANUARY	22	1953 17	28	50	1.8		23	2	17	230	630	1789
9	NOV EMBER	20	1950 7	1	2	2.0		0	2	1/	23	612	1791
10	NOV EMBER	21	1950 1	5	6	1.2		14	4 ·	0	108	628	3017
11	FEBRUARY	22	1949 17	54	166	3.1		32	10	0	197	622	3278
12	JANUARY	8	1956 1	5	8	1.6			2	0	22	614	1764
13	NOV EMBER	20	1950 0	8	25	3.1		12	0 7	1	23	597	2703
14	FEBRUARY	13	1961 10	18	44	2.4		8		1 0	12	583	3286
15	JANUARY	9 :	1956 10	6	16	2.7		28	4	0	12	505	1354
16	NOV EMBER	18	1973 14	1	5	5.0		¥ <u>7</u>	2	U C		570	1614
17	DECEMBER	18 1	1977 8	20	19	1.0		1	3	10	200	579	2695
18	FEBRUARY	12	1961 8	12	8	•7		8	3	10	209	566	2055
19	JANUARY	12	1959 23	· . 1	1	1.0			1	2	342	564	2057
20	JANUARY	12	1959 14	1	2	2.0			2	0	142	563	2747
21	FEBRUARY	15	1961 16	. 33	94	2.8		20	20	12	172	562	1588
22	DECEMBER	17	1977 5	15	26	1.7		/	15	10	205	562	2677
23	FEBRUARY	11	1961 12	. 4	18	4.5		B C	10	1	330 A0	550	2097
24	DECEMBER	30	1964 5	46	78	1.7		0	10	1	Q1	552	2758
25	FEBRUARY	23	1968 23	1	10	10.0		14	TO	12	24	549	3302
26	JANUARY	9	1956 19	2	2	1.0			1	13	27	544	1566
27	DECEMBER	16	1977 7	10	22	2.2		0	. 0		103	541	2964
28	JANUARY	29	1965 16	10	23	2.3		. /		2	A7	539	2523
29	JANUARY	24	1972 3	6	5	.8			20	. 6	Â,	534	2393
30	JANUARY	27	1953 3	62	222	3.6		94	20	. U	47	533	2528
31	JANUARY	25	1972 7	14	19	1.4		13	· ••	0	60	530	1911
32	JANUARY	12	1950 10	7	5	• •/		1/	2	0	18	529	3304
33	JANUARY	10	1956 19	12	12	1.0		12		2	66	520	2222
34	JANUARY	23	1964 5	4	10	2.5		9	1	· .	290	518	1213
35	NOV EMBER	25	1960 14	1		1.0		27	14		33	509	2439
36	DECEMBER	27	1955 1	46	216	9./		4 I Q	1	6	213	509	2655
37	DECEMBER	27	1955 10	1	1	1.0		0	Ŕ	31	138	508	1184
38	DECEMBER	24	1972 16	11	20	1.0		6	16	29	171	505	1530
39	NOV EMBER	22	1973 1	14	10	9.9		19	15	Ō	60	503	2232
40	JANUARY	25	1964 21	46	213	. 4.0		10	5	52	242	503	1789
41	DECEMBER	10	1968 17	Ž	10	3. 0		11	ĩ	Ō	73	501	1715
42	JANUARY	Ţ	TA60 2	5	135	70		6	17	Ă	120	500	1920
43	JANUARY	12	1959 3	1/	T22	1.7		10	12	ō	71	500	2481
44	JANUARY	23	1972 12	1/	44	2.5		17	12	ō	121	499	825
45	DECEMBER	11	1922 10	14	21	1.7 A)		 	24	i i	51	498	1717
46	JANUARY	4	TAPP 10	/4	311	9.4		8	<u>-</u> 5	50	272	498	2379
47	DECEMBER	22	1955 7	75	E 0	1.5		6	11	7	220	497	2387
48	DECEMBER	24	1922 I	35	52	2.5		7	19	4	33	497	2170
49	JANUARY	22	1904 1/	73	J6 7	2.1		6	าร์	7	199	495	1913
					,			- ·	-	5 A			

٦.

OVERALL ORDER STATISTICS AT SALEM SORTED BY MAG168

	DAT EV ENT	ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE Intensity (In/hr x 100)	HOURS SINCE LAST EVENT (I	MAXIMUM INTENSITY N/HR X 100)	LAST 12 HRS (IN X 100)	LAST 48 HRS (IN X 100)	LAST 168 HRS (IN X 100)	YEAR SO FAR (IN X 100)
	DDTT		1063 17	.	5	5.0	20	5	0	16	489	2875
51 8	PRIL	10	1059 14	2	7	3.5	6	4	36	246	488	1906
52 J 53 K	ANUARI	10	1950 21	16	52	3.3	6	14	9	70	483	1074
7 CC -	ANIIADV	21	1964 14	īĭ	14	1.3	10	3	6	137	483	2156
56 3	ANUARI	22	1972 0	-7	18	2.6	12	5	0	326	482	2463
55 U	ANUARI	21	1963 19	3	7	2.3	8	5	1	174	482	2868
57 .1	ANIIARV	20	1953 14	14	230	16.4	10	46	10	165	480	2113
58 8	DDTT.	 	1963 7	7	12	1.7	32	3	0.0	5	480	2880
59.1	ANHARY	20	1964 17	4	11	2.8	8	5	8	205	4//	2145
60 8	EBRILARY	17	1961 14	21	22	1.0	25	. : 5 .	0	84	4/6	2041
61 1	ECEMBER	23	1972 21	18	103	5.7	9	24	6	12/	4/0	1001
62 F	EBRUARY	23	1968 7	35	82	2.3	б	15	6	91	4/5	2070
63 N	OV EMBER	21	1973 5	33	171	5.2	30	15	0	70	4/4	1052
64 0	CTOBER	31	1950 23	9	22	2.4	12	7	0	102	4/3	2410
65 D	ECEMBER	17	1973 12	18	72	4.0	6	16	55	184	4/2	2417
66 J	ANUARY	13	1969 12	4	4	1.0	10	1	10	107	470	2698
67 E	ECEMBER	21	1973 17	1	4	4.0	1	4	3	193	407	2000
68 J	ANUARY	14	1969 7	12	32	2.7	6	y 10	4	120	402	1633
69 J	ANUARY	15	1953 0	22	71	3.2	7	18	0	120	460	1916
70 J	ANUARY	13	1950 15	12	69	5.8	16	12	U O	. 63	459	1343
71 I	ECEMBER	23	1957 14	9	10	1.1	23	D		155	455	2702
72 I	ECEMBER	23	1973 3	27	17	•6	1	2		104	451	2117
73 3	IANUARY	6	1966 19	8	26	3.3	10	4	0	54	449	2987
74 J	ANUARY	.30	1965 16	8	5	• • • • •	10		1	67	PAA	852
75 I	DECEMBER	12	1952 2	2	2	1.0	9	1 16	ů I	07	448	2491
76 E	DECEMBER	21	1973 10	43	207	4.8	50	15	0	232	448	2739
77 3	JANUARY	29	1954 16	23	43	1.9	10	7	1	232	446	1353
78 I	ECEMBER	24	1957 21	21	27	1.3	10	5	÷.	12	445	2892
79 F	APRIL .	3	1963 23	6	10	1./	11			105	445	3336
80 J	IANUARY	19	1951 19	1	1	1.0	11	34	19	114	444	2398
81 3	JANUARY	27	1970 19	171	592	3.0	6	35	4	150	442	884
82 N	IOV EMBER	16	1973 14	90	4/0	2.4	20	18	7	109	442	3098
83 3	JANUARY	7	1956 8	29	180	2.0	12	1 2	Ó	34	438	2164
84 J	JANUARY	8	1966 17	t t	3	3.0	10	ĩ	5	101	438	3002
85 I	EBRUARY	29	1976 1	1	14	2.0	19	5	i i i	53	437	4464
86 I	FEBRUARY	26	1956 17	17	14 00	5.2	11	10	Ō	181	434	2028
87.0	JANUARY	5	1966 19	1/	07	95	Ŕ	18	1	8	433	1335
88 1	DECEMBER	23	1901 0	4		3.7	6	15	32	141	432	2361
89 0	JANUARY	20	1970 0	10	57		ž	5	6	115	432	2996
90 1	EBRUARY	20	19/0 14	4	ň	1.0	37	1	0	21	432	1334
91 I	JECEMBER	44	1066 3	1 A	<u> </u>	2.3	8	3	2	89	431	1225
92 1	JECEMBER	10	1000 JJ		57	5.2	21	9	0	70	428	2822
95 0	JANUAKI	72	1066 2	±+ 5	21	4.2	26	10	0	26	428	2143
94 L	JANUAKI	11	1060 14	12	33	2.5	8	10	10	252	426	1799
30 1	JECENDER PEDDIJADV	20	1076 1		6	6.0	9	6	1	131	426	2990
071	E SDRUAKI	10	1954 9	1	ĭ	1.0	6	1 - 1 - S.S.	21	64	426	3213
00	TANIIADV	10	1970 17	14	75	5.4	6	16	11	117	424	2286
90 1	DECEMBED	ĥ	1951 7	5	9	1.8	6	3	3	152	423	1751
100	DECEMBER	28	1972 1	46	101	2.2	36	10	O	20	421	1204

MA CONTRACTOR

.

	DAT EV EN T	re Ended	но	UR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS LAST	S I NC EV EN	E MAXIMUM T INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	DECEMBER	30	1964	16	92	299	3.3		12	14	0	192	1262	2972
2	DECEMBER	26	1964	7	17	143	8.4		8	48	25	242	1245	2829
3	DECEMBER	25 2	1964	7	10	49	4.9		19	18	0	228	1208	2780
4	JANUARY	19 :	1974	17	1	1	1.0		19	1	0	101	1031	4 56 8
5	DECEMBER	27 :	1955	16	7	5	.7		6	2	15	3 82	1030	3286
6	JANUARY	6	1966	19	12	19	1.6		7	5	83	250	1023	2650
7	DECEMBER	24	1964	1	11	193	17.5		6	41	23	467	1015	2587
8	JANUARY	18.	19/4	21	21	101	4.8		23	19	0	242	1000	446/
10	DECEMBER	23	1933	19		420	0.0		9 74	20	1	00	9/4	2850
11	JANUADV	2/ 20	1935	17	40	2	9.3		34 33	20	U O	10	930	2830
12	TANUARY	20	1966	8	11	32	2 9		22	7	ů N	52	919	2669
13	DECEMBER	23	1957	17		6	1.0	:	30	2	0	99	888	1613
14	JANUARY	4	966	16	2	34	17.0		7	22	20	469	870	2400
15	JANUARY	6	1966	Ō	18	216	12.0		14	36	Ő	390	862	2434
16	JANUARY	24	1964	0	25	39	1.6		10	7	18	48	857	2558
17	DECEMBER	24	1957	17	16	34	2.1		9	8	4	18	850	1619
18	JANUARY	25	1972	7	13	32	2.5		27	16	Ó	79	822	3429
19	JANUARY	21 3	1964	14	2	9	4.5		6	5	2	175	821	2549
20	JANUARY	21	1964	5	2	2	1.0		6	1	7	294	819	2547
21	DECEMBER	18	1977	10	1	1	1.0	:	28	1	0	114	819	2453
22	JANUARY	27	1970	19	1	1	1.0		6	1	7	185	789	3263
23	JANUARY	23	19/2	10	24	88	3.7		8	16	1	223	765	3341
24	JANUARI	20.	1904	3.	23	111	4.8		29	10	2	33	745	2597
20	NOV ENDER	13	19/3	19	22	13	1.0		9 1 A	5	20	2//	730	1013
27	FEBRUARY	15	1961	10	19	88	4.6		8	32	2	135	729	3080
28	FEBRUARY	14	1961	7	6	ĩ	5	• •	10	2	5	40	726	3086
29	JANUARY	<u></u> 9	1976	5	12	17	1.4		12	7	õ	392	725	2853
30	DECEMBER	26	1957	7	16	87	5.4		22	32	Ō	34	719	1653
31	FEBRUARY	12	1961	. 3	4	11	2.8		10	5	14	369	718	3032
32	JANUARY	10 1	1976	19	2	2	1.0	:	36	1	0	17	712	2870
33	NOV EMBER	21 :	1950	6	2	10	5.0		25	9	· 0	30	703	2047
34	JANUARY	12 .	1976	5	27	93	3.4		8	20	2	4	702	2872
35	FEBRUARY	11	1961	14	4	28	7.0		9	11	41	532	702	3004
-36	NOVEMBER	17	1973	19	2	2	1.0		23	1	0	77	699	1602
3/	OCTOBER	31	1950	21	8	6	.8		17	2	0	105	693	1259
20	NOVEMBER	10	1050	16	5	29	5.8		0	TÛ	1	52	684	2018
40	NOVEMBER	28	1950	10	10	2 1	1.0		24 6	L C		102	683	2017
41	DECEMBER	23	1972	5	10	1	1.0		14	1	6	150	00Z	1255
42	NOV EMBER	17	1966	19	Ā	2	.5		35	1	ň	56	653	930
43	NOV EMBER	27	1961	17	27	33	1.2		56	8	ň	Õ	649	1220
44	JANUARY	27	1970	12	42	185	4.4	·	6	18	40	275	648	3078
45	JANUARY	20	1971	1	33	143	4.3		8 .	16	7	170	645	3249
46	DECEMBER	23	1972	21	9	9 5	10.6		6	23	1	118	644	1280
47	OCTOBER	30 3	1950	19	20	56	2.8		6	15	58	378	641	1203
48	NOVEMBER	10	1973	19	5	38	7.6		6	18	14	108	634	880
49	DECEMBER	6	1975	21	28	96	3.4		26	11	0	299	631	1756
50	NOVEMBER	29 1	1977	3	3	27	9.0		31	15	0	34	629	1172

132

.

OVERALL ORDER STATISTICS AT EUGENE SORTED BY MAG168

	DAT EV EN T	E ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE Intensity (IN/HR X 100)	HOURS SI LAST EV	INCE VENT (IN)	MAXIMUM Intensity /Hr X 100)	LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51 NO	VEMBER	27 1	977 17	18	38	2.1	27		10	0	249	628	1134
52 JA	NUARY	26 1	972 21	2	2	1.0	35		1	0	32	622	3461
53 JA	NUARY	14 1	969 7	12	38	3.2	21		17	· · · O	120	613	3184
54 NO	NEMBER	11 1	973 17	14	112	8.0	. 7		3.4	38	78	612	918
55 NO	WEMBER	10 1	973 8	11	26	2.4	6		6	· 3	219	611	854
56 JA	NUARY	21 1	971 16	, ¹	3 3	.4	30		1	0.0	76	608	3392
57 JA	NUARY	30 1	970 3	7	17	2.4	48		5	0	0	604	3264
58 NO	N EMBER	16 1	973 3	56	377	6.7	- 8 -		33	14	188	595	1218
59 AP	RIL	31	974 10	1	2	2.0	7		. 2	2	68	588	6904
60 JA	NUARY	29 1	965 10	3	3	1.0	7		2	4	240	585	4251
61 NO	VEMBER	12 1	973 17	18	112	6.2	6		19	48	174	584	1030
62 DE	CEMBER	24 1	972 16	9	88	9.8	10		20	21	102	5/3	13/5
63 NO	WEMBER	13 1	973 10	10	76	7.6	8		22	5	224	569	1142
64 NO	VEMBER	4 1	950 0	22	52	2.4	- 6		1	0	2.5	565	1265
65 JA	NUARY	10 1	966 14	3	18	6.0	50		8	10	05	202	2/01
66 JA	NUARY	13 1	9/0 /	10	13	.0	9		4	13	142	560	1076
07 DE	SCEMBER		9/1 /	22	50	3.0	14		12	2	20	549	3222
60 DB	NUARI	10 1	066 7	24		2.1	27		15	Ň	20	549	1718
70 00	TOPER	25 1	070 7	24	79	· · · · · · · · · · · · · · · · · · ·	11		17	Ň	22	548	578
70 00		2.5 1	979 J 974 1	42	69	1.6	Ĩ		11	13	49	543	6835
72 80		3 1	963 0	3	8	2.7	62			-0	Ō	540	3069
73 DE	CEMBER	22 1	972 14	19	117	6.2	8		21	33	170	538	1162
74 00	TOBER	24 1	979 7	7	11	1.6	18		3	0	23	537	567
75 JA	NUARY	31 1	954 10	4	4	1.0	47		2	0	0	537	2927
76 DE	CEMBER	12 1	971 19	29	120	4.1	7		17	3	130	535	1879
77 AP	PRIL	3 1	963 7	1	2	2.0	6		2	8	8	531	3077
78 FE	BRUARY	17 1	961 14	16	24	1.5	36		6	0	30	528	3177
79 FE	EBRUARY	17 1	958 17	17	28	1.6	- 9		9	3	294	527	3451
80 OC	TOBER	23 1	979 5	3	10	3.3	6		4	· . 1.	13	527	557
81 NO	WEMBER	22 1	973 3	15	25	1.7	7		11	43	242	525	1846
82 OC	TOBER	22 1	979 21	8	8	1.0	6		4	5	7	519	549
83 NO	WEMBER	30 1	977 17	4	2	.5	34		1	0	27	518	1199
84 MA	ARCH	4 1	972 14	11	12	1.1	31		4 · ·	0	96	517	4420
85 DE	SCEMBER	1/ 1	9// 5	11	459	5.0	0		23	/1	320	514	1994
86 00	TOBER	22 1	9/9 /	3	5	1.1	33		2	0	130	500	1200
00 DE	CEMBER	· · · · · · ·	904 L	2	- 4 	•0	14		20	37	160	505	1129
00 DE	NDCH NDCH	21 1	974 23	12	33	3.8	26		14		190	504	6786
00 NC	WCH WENEFD	10 1	066 12	10	116	12.9	32		29	ň		504	932
91 JA	NIIARY	$\frac{1}{22}$ 1	971 7	í	1	1.0	15		ĩ	ŏ	3	504	3395
92 JA	NUARY	18 1	971 8	50	299	6.0	- 9		34	9	174	501	2950
93 DE	CEMBER	21 1	961 10	24	141	5.9	15		35	0	138	498	1911
94 JA	NUARY	17 1	969 7	15	78	5.2	21		26	0	59	495	3281
95 JA	ANUARY	16 1	959 10	14	66	4.7	91		9	0	0	495	2184
96 JA	ANUARY	12 1	969 23	14	120	8.6	24		15	0	197	493	3064
97 JA	ANUARY	11	965 3	1	1.	1.0	11		1	0	119	491	3271
98 FE	EBRUARY	20 1	949 23	9	8	.9	36		2	0	6	487	2680
99 AF	PRIL	31	963 21	1	2	2.0	13		2	0 10	10	486	3079
100 FE	BRUARY	19 1	949 1	3	4	1.3	7		2	19	319	483	2676

	DA EV EN T	TE ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE Intensity (IN/HR X 100)	HOURS SING	CE MAXIMUM NT INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1 MA	Y	24 1	1974 21	6	12	2.0	7	4	24	42	70	4677
2 MA	Y	24]	1974 8	10	42	4.2	101	10	0	0	28	4635
3 MA	Y	19]	1974 17	2	2	1.0	24	1	0	26	86	4633
4 MA	Ŷ	18 1	1974 16	11	26	2.4	34	7	0	15	64	4607
5 MA	Y	16 1	1974 19	1	10	10.0	7	10	5	31	71	4597
6 MA	Y	30]	1956 23	4	28	7.0	101	12	0	0	37	4591
7 MA	Y	16]	1974 10	24	31	1.3	24	8	0	19	51	4566
8 MA	Y	26]	1956 14	6	37	6.2	180	21	0	0	0	4554
9 MA	Y	18 1	1956 19	1	3	3.0	148	3	0	0	8	4551
10 MA	Y	12 1	1956 14	2	2	1.0	16	1	0	25	130	4549
11 MA	Y	14 1	1974 10	17	19	1.1	29	12	0	4 ÷ .	32	4547
12 MA	Y	12 1	1974 12	2	4	2.0	29	2	0	14	28	4543
13 MA	Y	11 1	1974 5	9	14	1.6	9	4	1	14	14	4529
14 MA	Y	10 1	1974 12	. 9	3	.3	8	1	9	11	11	4526
15 MA	Y	11 .	1956 21	8	24	3.0	8	10	1	68	137	4525
16 MA	Y	11 1	1956 5	1	1	1.0	15	1	0	67	146	4524
1/ MA	Y	10 1	1956 12	1	6	6.0	6	6	16	61	149	4518
18 MA	Y	9	1974 19	5	11	2.2	295	4	0	0	0	4515
19 AP.	RIL	27	19/4 /	. 1	1	1.0	12	1	0	15	37	4514
20 AP	RIL	26		2	10	5.0	9	8	1	9	30	4504
ZI AP.	RIL	20	19/4 /	Ī	1	1.0	21	1	. 0	15	31	4503
22 MA	Y DTT	10 1	1956 5	5	16	3.2	6	9	45	45	133	4502
23 AP	RIL	25 1	19/4 8	6	. 8	1.3	19	2	0	14	23	4495
24 AP	RIL	24	19/4 /	2		3.5	21	5	0	11	16	4488
25 AP.	81L	23	19/4 8	8	. 11.	1.4	75	5	0.	0	5	4477
20 AP	81L	19 1	19/4 ZI	0	2		191	2	Ŭ	0	0	44/2
21 AP.	K11 D T T	11 1		, T T	11	1.0	0	8	3	12	/4	4461
20 AP	KIL V	11 1	19/4 0	3		1.0	24	2	0	34	/1	4458
20 10	1 D T T	9 4	1930 19	2	40	12.0	43	30	0		88	445/
21 AP	K15 DTT			23	34	1.5	6	8	I	I	55	4424
22 NP		2 1	19/4 10	1	1	1.0	40	1	. 0	2.	60	4423
32 AP		6 1			2	1.0		1	U	1	108	4421
24 147	V		1974 0	1	20	1.0	8	1	0	33	172	4420
35 MA	v	5 1	1956 21		38	19.0	10	30	U	0	50	4419
36 10		51		7	5	•0	10	1	28	4/	62	4416
37 40	RTT.		974 14	φ. 	27	1.5	17	3	0	32	108	4414
38 20	RTI.	2 1	074 10	5	47 5	1 0	14	· · · · · ·	U 2	10	1/8	438/
30 AP	RTT.	21		9		1.0	14	4	U I	19	203	4382
40 MA	V V	A 1	056 16	3	20		ע דו	1	Ţ	55	306	4378
41 MA	v .		956 19	1	50	3.0	1 21	23	U I	9	24	43/8
42 AD	PTI.	28 1	956 14	 Д	15	2.0	121	10	U	20	35	4369
43 AD	RTL	201	974 5	30	10 10	3.0	20	13	0 26	20	20	4354
44 AP	RTL	27 1	956 8		20	1.J 2 0	470		20	85	2/5	4359
45 API	RTL	7 1	956 3	7	0	2.7	4/J 56		U A	U A	U I A	4334
46 AP	RTT.	Λ, J	956 12	1	2	T.2	50		U	U A	14	4325
47 AP	RTL	21	956 12	± 2	J	2.0	40 1 <i>C</i>	5	U A	4	53	4322
48 AP	RTL	1 1	956 10	1	•• •	2.0	10 27	2	0 U	2	51	4318
49 MA	RCH	31 1	974 17	Ę	26	4.U 5.0	41	10	U A	27	940	4310
50 MA	RCH	31 1	956 14	ĩ	20	3.0	<i>21</i>	10	U 2	0/	249	4313
~~		, J T , J		-	у .	J • U	0	3	4	24	113	4313
OVERALL ORDER STATISTICS AT PORTLAND SORTED BY YRMAG

		ለጥሮ				AVERAGE	HOURS	SINCE	MAXIMUM	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE YEAR
	EV EN 2	r ended	HOUR	DURATION	MAGNITUDE	INTENSITY	LAST	EVENT	INTENSITY	12 HRS	48 HRS	168 HRS	SO FAR
				(HOURS)	(IN X 100)	(IN/HR X 100)		() 	LN/HR X 100)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
51	MARCH	31	1956 5	2	2	1.0		10	1	6	22	134	4311
52	MARCH	30	1956 17	16	22	1.4		21	7	10	20	149	4209
53	MARCH	29	1956 5	1	1	1.0		6	1	19	19	135	4200
54	MARCH	28	1956 21	3	19	6.3		51	12	12	. 01	101	4209
55	MARCH	26	1956 16	12	11			8	3	13	112	101	4230
56	MARCH	30	1974 10	13	67	5.2		13	12	10	112	156	4233
57	MARCH	25	1956 19	. 8	25	3.1		10	y 7	10	144	161	4225
58	MARCH	29	19/4 /	6	21	3.5		12 .	6	· 0	8	63	4140
59	MARCH	25	1956 5	40	93	2.3		10	5		3	18	4138
60	MAY	28	1951 13	2	8	4.0		19 71	3	0	- J	15	4135
61	MAY	27	1951 10	1	2	1.5		0	3	· 1	37	57	4134
62	MARCH	23	1956 1	49 1		2.0		26	2	តំ ំ	17	13	4133
63	MAY	24	1951 10	1	1	2.0		20	1	ň	49	56	4133
.64	MARCH	22	1930 12	7	11	1.0		6	Ā	2	2	2	4122
00	MAI	23	1951 13	· · · ·	2	2 0	2	56	2	ō	ō	ō	4120
60	MAI	12	1951 0		1	1.0		ĩĩ -	ĩ	Ō	21	78	4119
61	MAI	12	1051 10	7	7	1.0		- Q	3	6	14	71	4112
20	MAX	11	1951 10	8	14	1.8		89	5	Ō	0	110	4098
70	MADCU	21	1956 16	3 32	56	1.8	2	61	ġ	Ō	0	0	4077
71	MARCH	28	1974 14	38	153	4.0		38	20	0	8	8	4072
72	млрси	Ĩ.ŭ	1956 10	5	- 5	1.0		29	4	0	34	176	4072
73	MARCH	25	1974 10	4	8	2.0	2	07	3	0	0	0	4064
74	MARCH	16	1974 14	15	16	ī.i		18	5	0	50	166	4048
75	MAV	7	1951 1	17	57	3.4		46	13	0	10	73	4041
76	MARCH	8	1956 1	10	34	3.4		52	9	0	0	153	4038
77	MARCH	5	1956 10	14	30	2.1		13	13	0	82	146	4008
78	MARCH	15	1974 5	31	52	1.7		16	4	0	58	116	3996
79	MAY	4	1951 10	10	53	5.3		58	15	0	0	131	3988
80	MAY	ĺ	1951 15	5	15	3.0		6	8	2	5	116	3973
81	MAY	1	1951 3	1	2	2.0		24	2	0	3	114	3971
82	APRIL	30	1951 2	1	1	1.0		11	1	0	62	113	3970
83	APRIL	29	1951 15	3	2	.7		19	1	0	96	111	3968
84	MARCH	13	1974 7	16	30	1.9		8	5	17	65	89	3966
85	MAY	29	1961 21	4	4 .	1.0		58	1	0	0	57	3943
86	MARCH	12	1974 7	12	49	4.1		19	14	0	32	87	3917
87	MARCH	4	1956 7	37	106	2.9		8	15	1	17	54	3902
88	MAY	27	1961 7	23	46	2.0		65	10	0	0	72	3897
89	MAY	23	1961 14	1	2	2.0		14	2	0	9	70	3895
90	MARCH	2	1956 10	20	16	•8		16	3	0	3	56	3886
91	MAY	23	1961 0	5	9	1.8		3.9	3	Õ	27	61	3880
92	MARCH	11	1974 0	16	32	2.0		25	6	0	3	57	3885
93	FEBRUAR	Y 29	1956 23	1	1	1.0		21	1	0	18	60	3885
94	FEBRUAR	Y 29	1956 1	3	2	.7		8	1	7	21	02	3003
9 5	MARCH	9	1974 5	1	3	3.0		32	3	Ű	2	/3	3882
96	MARCH	7	1974 21	4	2	•5		25	1	U	5	210	3000
97	MARCH	6	1974 16	2	2	1.0		12	Ļ	0	48	210	30/0
98	MARCH	. 5	1974 23	1	1	1.0		4	1 1	20	4/ 1E	212	2011
. 99	FEBRUAR	Y 28	1956 14	9	Te	T•8		10	2	4	15 T2	161	2862
100	FEBRUAR	¥ 27	1920 51	11	5	• 3		TO	<u> </u>	U	12	TOT	J002

	EV E	DATE NT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (in x 100)	AVERAGE Intensity (In/hr x 100)	HOURS SINCE LAST EVENT (MAXIMUM Intensity (n/hr x 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	MAV	24	1974 17	1	1	1.0	11	1		12	22	5587
2	MAY	24	1974 5	5	12	2.4	102	6	Ō	<u>-</u>	10	5575
3	MAY	19	1974 19	3	6	2.0	27	4	0	4	60	55 69
4	MÁY	18 1	1974 12	4	4	1.0	42	2	0	6	56	5565
- 5	MAY	16	1974 14	2	6	3.0	9	4	3	16	61	5559
6	MAY	16 1	1974 3	2	3	1.5	11	2	0	47	58	5556
7	MAY	15	1974 14	6	13	2.2	23	5	0	34	45	5543
8	MAY	14	1974 10	4	34	8.5	68	15	U 1	0	11	5509
- 9	MAY	11	19/4 10	4	10	2.0	277	1	1	1 0	Ď T	5499
10	MAY	10 .	19/4 23	1	2	1.0	21	2	. 0	2	22	5495
12	APKIL	20.	19/4 3	1	3	1.0	16	1	ů ·	10	21	5494
12	APRIL	24	1974 8	15	10	.7	63	- - -	ŏ	Ō	11	5484
14	ADRTI.	20	1974 3	1	ĩ	1.0	8	i	9	10	10	5483
15	APRIL	19	1974 17	4	9	2.3	9	6	1	1	1	5474
16	APRIL	19	1974 5	i	1	1.0	183	1	0	0	0	5473
17	APRIL	11	1974 12	9	19	2.1	7 1	· 8 ·	1	5	63	5454
18	APRIL	10 1	1974 21	1	1	1.0	30	1	0	31	62	5453
19	APRIL	9 1	1974 14	3	4	1.3	9	2	-14	. 29	67	5449
20	APRIL	9]	1974 1	6	27	4.5	45	9	0	3	42	5422
21	APRIL	8 1	1974 0	7	8	1.1	11	4		10	100	5414
22	APRIL	6 1	1974 5	2	3	1.5	6 0	2	1	20	175	5411
23	APRIL	5 .	1974 21	1	1	1.0	26	1 ·	2	20	188	5408
24	APRIL	5	1974 12	. <u>I</u>	17	A 3	14	7	õ	10	248	5391
20	APRIL ADDTI	2	1974 16	2	3	1.5	11	2	ŏ	- j	390	5388
20	APRIL	3	1974 3	1	i.	1.0	- <u>-</u>	ī	2	36	413	5387
28	APRIL	2	1974 17	15	7	.5	7.	2	1	52	421	5380
29	APRIL	11	1974 19	1	1	1.0	6	1	19	51	420	5379
30	APRIL	1 1	1974 12	26	51	2.0	21	9	0	108	382	5328
31	MAY	30 3	1956 23	7	46	6.6	97	15	0	0	11	5255
32	MAY	26 1	1956 14	7	11	1.6	323	5	· · 0	0	0	5244
33	MAY	12]	1956 21	2	15	7.5	25	13	0	18	69	5229
34	MARCH	30 1	1974 12	18	108	6.0	11	20	U	204	2/4	5220
35	MAY		1956 17	?	18	2.6	18	10	0	22	62	5211
30	MAY	10 1	1956 1/	1	1	1.0	11	6 I	0	. 21	40	5189
20	MADCU	20 1	1930 3		40	5.7	12	10	Ň	212	234	5180
20	MAKCH	29 1	1956 1	5	40	1.8	25	3	ŏ	20	40	5180
40	MAV	6 1	956 19	ĩ	í	1.0	10	ĩ	8	24	39	5179
41	MAY	6	1956 7	5	19	3.8	18	7	0.	13	20	5160
42	MAY	5 1	1956 8	10	5	.5	7	3	6	15	24	5155
43	MAY	4]	1956 16	6	8 a. 8	1.3	17	- 4 - 1	0	7	16	5147
44	MAY	3]	L956 17	8	7	.9	115	2	0	0	9	5140
45	APRIL	28 1	1956 14	6	9	1.5	303	6	0	0	0	5131
46	APRIL	15 1	1956 17	1	1	1.0	105	<u>1</u>	0	0	38	5130
47	APRIL	11 1	1956 7	13	38	2.9	85	<u>7</u>	0	0	15	5092
48	APRIL	7 1	1956 5	6	15	2.5	141	7 .	0	U	27	5077
49	APRIL	1]	1956 1	47	71	1.5	29	8	U	11	140	5006
50	MARCH	28]	1956 21	3	11	3.7	53	b	U, U,	U	T 2 2	4995

OVERALL ORDER STATISTICS AT SALEM SORTED BY YRMAG

	D# EV EN 1	ATE F ENDED) H(DUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 10)	HOURS SINC LAST EVEN D)	E MAXIMUM T INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51 MA	RCH	28	1974	12	39	221	5.7	37	27	0	13	13	4959
52 MAI	RCH	25	1974	8	6	13	2.2	203	5	0	0	0	4946
53 MAI	RCH	16	1974	16	5	33	6.6	11	14	0	47	277	4913
54 MAJ	RCH	16	1974	0	1	1	1.0	19	1	10	85	2//	4912
55 MAI	RCH	26	1956	14	50	100	2.0	1	y y	18	42	121	4090
56 MAI	RCH	24	1956	5	7	25	5.0	0	D .	10	23	10	4070
57 MA	Y	23	1951	13	1	19	2.1	12		10	47	92	4866
58 MA	RCH	23	1950	TO	3	10	5.0	235	6		. 0	Ĩõ	4858
59 MA		23	1056	- 1 1	14	10	1.0	255		5	72	78	4852
CU MAN	RCD DCU	23	1056	2	15	36	2.4	12	ġ	Ō	38	42	4816
62 MAI	RCH	15	1974	3	33	98	3.0	12	11	0	133	179	4814
63 MA	γ	13	1951	2	27	66	2.4	8	11	· · 1 .	32	133	4792
64 MA	Ŷ	ĩĩ	1951	16	6	13	2.2	8	10	11	19	122	4779
65 MAI	RCH	21	1956	0	16	38	2.4	23	8	0	4	<u>-</u> 4	4778
66 MAI	RCH	19	1956	8	2	4	2.0	153	3	0	0	1	4774
67 MAI	RCH	12	1956	21	1	1	1.0	80	1	0	0	84	4773
68 MA	Y	11	1951	1	7	19	2.7	98	7	0		114	4/60
69 MAI	RCH	9	1956	12		16	4.0	15	9	Ű	00	210	4/0/
70 MAI	RCH	- 8	1956	17	2	2	1.0	11	1	0	00 G	205	4689
71 MAI	RCH	8	1956	- 5	18	66	3./	42	12		37	205	4673
72 MAI	RCH	13	1974	17	38	141	3.7	19	10	25	118	191	4660
7.3 MAI	RCH	2	1051	16	30	101	1.0		12	0	13	37	4659
74 MA	Y V	- 0 - A	1021	21 TO	2.C. A	101	4.0	14	1	Ő	16	88	4657
75 MA	v	- 4 A	1951	21	2	11	5.5	6	10	ĭ	5	106	4646
70 MA	v	2	1951	าลี	ĩ	î	1.0	14	1	Ū Ū	4	105	4645
78 MA	v		1951	ૈર્ગ	Â	4	.5	29	1	0	3	101	4641
79 MA	Ŷ	ĭ	1951	15	i	i	1.0	6	1	2	11	100	4640
80 MA	Y ·	ī	1951	8	5	2	.4	6	1	3	11	98	4638
81 MA	RCH	10	1974	21	17	37	2.2	23	7 1	0	1	51	4636
82 MAI	RCH	9	1974	5	1	1	1.0	85	1	0	0	50	4635
83 AP	RIL	30	1951	21	8	9	1.1	23	5	0	7	89	4029
84 AP	RIL	29	1951	14	. 1	1	1.0	8	불	D	. /2	00	4020
85 API	RIL	29	1951	5	3	6	2.0	13	5	20	62	62	4622
86 AP	RIL	28	1951	13	4	20	5.0	0	11	20	02	102	4589
87 MA	RCH	5	19/4	10	19	. 40	4.4	21	1	ō	3	199	4588
00 MA	RCH	4	1974	14	1 2	3	1.5	23	2	Č.	10	214	4585
07 MA	RCN DCU	2	1074	7.4	20	31	1.1	16	7	Ő	93	186	4554
01 MA	RCN DCU	Å	1956		23	117	3.5	6	13	1	58	96	4543
92 AD	RTI.	28	1951	2	19	62	3.3	668	7	0	0	0	4540
93 MA	RCH	30	1951	11	7	6	.9	7	3	1	19	25	4534
94 MA	RCH	29	1951	22	21	19	.9	86	4	0	0	6	4515
95 MA	RCH	25	1951	10	4	6	1.5	90	2	0	0	5	4509
96 MA	RCH	21	1951	13	2	2	1.0	14	1	0	3	60	4507
97 MA	RCH	20	1951	21	19 - 1 4 - 2	3	.8	111	2	0	Q	57	4504
98 MAI	RCH	2	1956	12	28	58	2.1	18	6	Õ	5	116	4485
99 FEI	BRUARY	29	1956	14	5	2	4	22	1	Ū	5	126	4483
100 MA	Y	29	1961	17	3	- 5	1.7	56	3	0	U	55	4483

	DA	TE ENDED HOI		MACNITMINE	AV ERAGE	HOURS SINCE	MAXIMUM	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE LAST	MAGNITUDE YEAR
	PA PIAT	ENDED NO	(HOURS)	(IN X 100)	(IN/HR X 100) (INTENSITI (IN/HR X 100)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
1	MAY	24 1974	5 7	4	.6	100	1	0	0	27	7190
2	MAV	17 1074 1	.) . 7	22	11 0	25	21	0	22	70	7163
1	MAV	16 1074 1	A 33	A7	1 1	18	14	0	33	24	7105
5	MAY	14 1974 1	2 3	22	7 3	45	13	0	22	12	7110
6	MAY	12 1974 1	2 1	2	2.0	24	2	n n	7	10	7092
7	MAY	11 1974 1	0 5	. 7	1.4	37	ã	õ	, ,	Ĩ	7085
8	MAY	9 1974 1	7 1	3	3.0	353	3	ŏ	- õ	ŏ	7082
9	APRIL	31 1974	0 3	19	6.3	18	10	Ŭ.	Ō	30	7063
10	APRIL	24 1974	3 6	30	5.0	12	16	· 0	25	33	7033
11	APRIL	23 1974	8 10	25	2.5	80	14	0	0	8	7008
12	APRIL	19 1974 1	4 2	8	4.0	95	4	0	0	9	7000
13	APRIL	15 1974 1	4 4	9	2.3	93	- 4	0	0	67	6991
14	APRIL	11 1974]	.2 4	8	2.0	27	4	0	10	67	6983
15	APRIL	10 1974	5 . 1	4	4.0	14	4	0	55	75	6979
16	APRIL	9 1974]	4 3	6	2.0	12	5	0	49	90	6973
17	APRIL	9 1974	06	49	8.2	47	16	0	0	61	6924
18	APRIL	6 1974]	.9 1	1	1.0	8	1	2	7	137	6923
19	APRIL	6 1974]	.0 1	2	2.0	18	2	0	5	135	6921
20	APRIL	5 1974]	.4 3	5	1.7	29	<u>3</u> .	0	10	320	6916
21	APRIL	4 1974	7 2	10	5.0	19	7	0	36	425	6906
22	APRIL	3 1974 1	.0 1	2	2.0	7	2	2	68	588	6904
23	APRIL	3 19/4	1 42	69	1.6	9	11	13	49	543	6835
24	MARCH	31 19/4 4	23 13	49	3.8	26	14	20	190	504	6780
25	MARCH	30 19/4	/ 15	190	12.1	·	30	20	238	314	6544
20	MARCH	29 19/4	/ . O.	252	6 1	20	10	0	241	202	6202
20	MADCH	20 19/4 1		252	2 0	202	21	. 0	10	10	6282
20	MARCH	16 1974 1	6 8	10	2.0	202	ä	0	. Q1	PAA	6263
30	MARCH	14 1974 3	่ง จา้	218	7 0	10	20	16	189	236	6045
31	MARCH	13 1974	3 14	48	3 4	7	11	65	181	240	5997
32	MARCH	12 1974	7 25	147	5.9	8	35	23	36	157	5850
33	MARCH	10 1974 2	21 6	34	5.7	Ğ	16	-2	2	123	5816
34	MARCH	10 1974 1	0 2	2	1.0	62	1	ō	ō	121	5814
35	MARCH	7 1974 1	7 2	5	2.5	42	4	0	39	225	5809
36	MAY	22 1972	3 2	6	3.0	14	4	Ŏ	17	288	5757
37	MAY	21 1972 1	2 2	5	2.5	6	3	i	12	283	5752
38	MAY	21 1972	3 1	1	1.0	7	· 1	11	11	282	5751
39	MAY	20 1972 1	.9 3	11	3.7	56	5	0	0	271	5740
40	MAY	18 1972	8 6	6	1.0	22	2	0	224	265	5734
41	MARCH	5 1974 2	21 18	116	6.4	69	16	0	0	329	5693
42	MAY	30 1956 1	9 4	34	8.5	94	21	0	0	24	5671
43	MAY	26 1956 1	.7 9	24	2.7	342	7	. O	0	0	5647
44	MAY	12 1956	1 2	2	1.0	8	1	4	31	125	5645
45	MAY	11 1956 1	16 1 I	. 4	4.0	32	4	0	27	123	5641
46	MAY	10 1956	7 6	27	4.5	46	· · · 11	0	1	124	5614
47	MAY	8 1956	3 3	2	.7	21	1	0	84	122	5612
48	MARCH	2 1974	7 36	109	3.0	12	14	0	114	285	5584
49	MAY	7 1956	3 8	84	10.5	19	30	0	10	38	5528
50	MAY	6 1956	0 2	6	3.0	18	4	. 0	22	32	5522

OVERALL ORDER STATISTICS AT EUGENE SORTED BY YRMAG

	DA]	E ENDED	HOUP	DURATIO	MAGNITUDE	AV ERAGE	HOURS SINCE	MAXIMUM INTENSITY	LAST 12 HRS	LAST 48 HRS	LAST 168 HRS	YEAR SO FAR
	13V 13IV 1	BNDBD	nook	(HOURS)	(IN X 100)	(IN/HR X 100)	IN/HR X 100)	(IN X 100)	(IN X 100)	(IN X 100)	(IN X 100)
51	МАЧ	5	1956 3	5	4	.8	12	2	0	28	28	5518
52	MAY	4	1956 10	4	18	4.5	20	9	0	10	10	5500
53	MAY	3	1956 10	4	10	2.5	418	7	0	0	0	5490
54	FEBRUARY	28	1974 7	19	103	5.4	11	26	· • • •	131	222	5481
55	APRIL	15	1956 19	3	9 .	3.0	93	··· · · · · ·	······	0	63	5481
56	APRIL	11	1956 19	2	2	1.0	14	1	0	61	84	54/9
57	MAY	17	1972 5	32	263	8.2	7	31	2	2	2	5471
58	MAY	15	1972 14	1	2	2.0	406	2	0	0	0	5469
59	MAY	30	1971 21	2	8	4.0	29	6	0	1	81	5455
60	MAY	29	1971 14	1	1	1.0	76	1	Ŭ,	0	80	5454
61	APRIL	28	1972 14	9	20	2.2	6	. 9	5	2	21	5449
62	APRIL	28	1972 0	4	5	1.3	84	2	U	U	30	2444
63	APRIL	24	1972 7	12	22	1.8	62	6	U	0	14	5422
64	APRIL	11	1956 3	. 9	61	6.8	18	13	U	U .	23	5410
65	APRIL	21	1972 5	4	14	3.5	104	0	U	40 V	40	5400
66	APRIL	16	1972 17	7	5		12	3	· · · · · ·	43	132	5205
67	APRIL	7	1956 10	11	23	2.1	120	12	· · · 0	30	145	5393
68	APRIL	1	1956 17	1	2	2.0	20	10			30	5375
69	MAY	26	19/1 8	19	/9	4.2	14	1	0	.	20	5374
70	MAY	25	19/1 0	4	42	1.0	100	12	Ň	. U	106	5360
/1	APRIL	10	19/2 23	22	45	57	15	20	0	8	102	5350
12	FEBRUARY	27	19/4 1	23	131	2.6	00	8	ů ů	ŏ	65	5345
73	MAI	20	19/1 19	10	29	2.0	56	3	ŏ	ŏ	294	5342
74	FEDRUARI	21	1056 14	21	60	1.9	34	6	Ō	i	106	5333
75	MARCH	28	1956 21	1	1	1.0	45	ĩ	- Ö	12	111	5332
70	MAN	16	1071 5	13	65	5.0	68	14	Ō	0	22	5280
70		12	1072 23	24	84	3.5	20	23	0.0	5	315	5276
79	APRTI.	11	1972 3	4	5	1.3	43	2	Ō	4	332	5271
80	FEBRUARY	22	1974 17	38	83	2.2	32	15	0	11	419	5259
81	MAY	12	1971 19	4	22	5.5	197	14	0	0	0	5258
82	FEBRUARY	19	1974 19	i	1	1.0	6	1	10	224	444	5258
83	APRIL		1972 3	8	17	2.1	13	5 and 5 and 5	0	140	336	5254
84	MAY	4	1971 10	2	6	3.0	230	- 4	0	0	0	5252
85	FEBRUARY	19	1974 12	6	10	1.7	8	5	38	214	437	5248
86	MARCH	28	1956 0	43	94	2.2	18	12	13	38	62	5238
87	APRIL	24	1971 19	7	15	2.1	24	8	. 0	6	41	5237
88	APRIL	23	1971 12	1	2	2.0	6	2	4	11	87	5235
89	APRIL	23	1971 5	5	4	-8	16	2	0	7	84	5231
90	MARCH	24	1956 10	5	11	2.2	49	. 4 .	0	0	24	522/
91	APRIL	22	1971 7	2	7	3.5	39	5	0	16	77	5224
92	MARCH	22	1956 5	2	6	3.0	29	5	0	18	18	5221
93	APRIL	20	1971 14	7	16	2.3	6	7	4	4	61	5208
94	APRIL	20	1971 1	1	4	4.0	56	4	U	U	5/	5204
95	MARCH	20	1956 21	12	18	1.5	291	6	0	U	U	5203
96	MARCH	- 8	1956 7	11	18	1.6	51	5		U	2/5	5105
97	APRIL	17	1971 17	13	39	3.0	10	18	1/	18	108	2702
98	MARCH	5	1956 17	9	23	2.6	10	8	D	10/	213	5152
	APRIL	8	1972 7	S G	102	17.0	12	36	U 1	19	203	5150
100	MARCH	4	1920 51	. 4	12	3.0	ď	0	, L L	201	200	01.00

