

STATISTICAL ANALYSES OF SPATIAL AND TEMPORAL STORM RAINFALL
CHARACTERISTICS IN PUERTO RICO.

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TABLE OF CONTENTS

	<u>Page</u>
TITLE PAGE -----	
TABLE OF CONTENTS -----	i
ABSTRACT -----	iii
ACKNOWLEDGEMENT -----	iv
LIST OF FIGURES -----	vi
LIST OF TABLES -----	viii
1. INTRODUCTION -----	1
2. RELATED RESEARCH -----	3
3. RESEARCH PROCEDURES AND METHODOLOGIES -----	6
3.1 Data Manipulation -----	6
3.1.1 Data Acquisition -----	7
3.1.2 Data Selection -----	7
3.1.3 Objective Storm Definitions -----	10
3.1.3.1 Meteorologic Definitions of Storm ----	10
3.1.3.1.1 Convective Precipitation ---	11
3.1.3.1.2 Orographic Precipitation --	11
3.1.3.1.3 Cyclonic Precipitation ---	11
3.1.3.2 Engineering Definition of Storm -----	12
3.1.3.2.1 Point Definition of Storm -----	12
3.1.3.2.2 Areal Definition of Storm-	13
3.2 Development of Temporal Storm Rainfall Distributions-	14
3.3 Frequency Analyses -----	15
3.3.1 Storm Duration -----	16
3.3.2 Mean Storm Rainfall Intensity -----	16
3.3.3 Order Statistics -----	17
3.3.3.1 Intensity-Duration Frequency Analysis of Rainstorms -----	17
3.3.3.2 Exceedance Probabilities of Hourly Rainfall Data -----	18

TABLE OF CONTENTS - Continued

	<u>Page</u>
3.4 Data Processing and Reduction-----	19
4. EXPERIMENTAL RESULTS -----	20
4.1 Non-Dimensional Temporal Storm Rainfall Distributions-	20
4.2 Frequency Analysis of Storm Rainfall-----	24
5. CONCLUSIONS-----	32
6. FURTHER RESEARCH WORK-----	34
REFERENCES-----	35
APPENDIXES	
A- Figures and Tables of the Research Work-----	37
B- Inverse Distance Technique for Geographical Interpolation-----	246
C- Examples of Various Computer Data Files Available Upon Request-----	248

ABSTRACT

Hourly rainfall data from ten representative rainfall stations in Puerto Rico were analyzed to determine storm rainfall characteristics. Spatial and temporal variabilities of storm rainfall were presented.

Storm events were identified objectively. Storm durations for various events were estimated. Mean storm rainfall intensities were found for all historical storms with mean intensities higher than 0.20 in/hr. Non-dimensional storm rainfall distributions were found for all the stations. The distributions were stratified by storm duration and storm class where a class is defined as the portion of the storm with heavier rainfall.

Frequency analyses were performed on storm durations, and storm rainfall intensities. Relevant tendencies were analyzed. Daily rainfall distributions at various stations were developed. Three predominant tendencies were found, namely, skewed uni-modal, bi-modal, and multi-modal distributions.

Frequency analyses of order statistics were done on storm data and hourly data independent of storm events. Relevant discrepancies exist between both analysis. Results show that the intensity-duration-frequency design criteria recommended by the National Weather Service (Technical Paper #42, 1961) need to be updated.

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LIST OF FIGURES

<u>No.</u>	<u>Figure</u>	<u>Page</u>
3.1	Location Map of Selected Stations in the Study-----	9
	Mean Non-Dimensional Storm Rainfall Distributions for Station.	
A1	Botijas 2 - Orocovis-----	38
A2	Cayey 1 E-----	42
A3	Corozal-----	46
A4	Dos Bocas-----	50
A5	Fajardo-----	54
A6	Maricao 2 SSW-----	58
A7	Ponce 4 E -----	62
A8	San Juan WSFO-----	66
A9	San Sebastián 2 WNW -----	70
A10	Yabucoa 1 NNE -----	74
	Probability Distribution of Storm Rainfall Intensities Stratified by Storm Durations at _____ Station (Minimum Time Between Storms = 1 hr).	
A11	Botijas 2 - Orocovis Station-----	93
A12	Cayey 1 E Station-----	96
A13	Corozal Substation-----	99
A14	Dos Bocas Substation-----	102
A15	Fajardo Station-----	105
A16	Maricao 2 SSW Station-----	108
A17	Ponce 4 E Station-----	111
A18	San Juan WSFO Station-----	114
A19	San Sebastián 2 WNE Station-----	117
A20	Yabucoa 1 NNE Station-----	120

LIST OF TABLES

<u>No.</u>	<u>Table</u>	<u>Page</u>
3.1	Data Summary for Studied Rainfall Stations-----	8
3.2	Criteria for Defining Storm Duration Class Based on the Period of Maximum Rainfall.-----	15
A.1	Storm Frequency Stratified by Class Duration ----- Frequency of Rainstorms Stratified by Rainfall Intensity and Duration.	78
A2	Minimum Time Between Storms = 1 hr.-----	88
A3	Minimum Time Between Storms = 6 hrs.-----	128
A4	Daily Rainfall Distribution Stratified by Rainfall Intensity and Hour of Occurrence.-----	177
	Rainstorm Ordering for x - Hour Duration Events at _____ Station. (Intensity-Duration-Frequency Tables).	
A5	Botijas 2 Orocovis-----	187
A6	Cayey 1 E-----	191
A7	Corozal-----	196
A8	Dos Bocas-----	201
A9	Fajardo-----	206
A10	Maricao 2 SSW-----	211
A11	Ponce 4 E-----	216
A12	San Juan WSFO -----	221
A13	San Sebastián 2 WNW -----	226
A14	Yabucoa 1 NNE -----	231
	Rainfall Ordering for Hourly Precipitation Data at _____ Station. (Intensity Frequency Tables)	
A15	Botijas 2 - Orocovis-----	236
A16	Cayey 1 E -----	237
A17	Corozal Substation-----	238

LIST OF TABLES - Continued

<u>No.</u>	<u>Table</u>	<u>Page</u>
A18	Dos Bocas-----	239
A19	Fajardo-----	240
A20	Maricao 2 SSW-----	241
A21	Ponce 4 E-----	242
A22	San Juan WSFO-----	243
A23	San Sebastián 2 WNW -----	244
A24	Yabucoa 1 NNE -----	245
	San Juan WSFO Station: Min. Time Between Storms 1:00 Hour Min. Rainfall Intensity 0.20 in/hr	
C1	Listing of Rainstorm Data -----	251
C2	Storm Hyetographs Stratified by Station and Storm Duration -----	252
C3	Statistics of Non-Dimensional Storm Rainfall Distribution-----	253

1. Introduction

Precipitation can be considered as the driving mechanism of the hydrologic cycle. Although many types of precipitation exist, rainfall is the only relevant one in Puerto Rico.

Rainfall is associated with storm events. The research work discussed herein is the first comprehensive effort guided to evaluate hourly rainfall data collected by the National Weather Service Office with the purpose of describing statistical characteristics of tropical rainstorm events in Puerto Rico.

Storm sewer, culvert, street and urban drainage, agricultural drainage, and channel design are all sensitive to the characteristics of rainstorm events. Moreover, the hydrology and hydraulics of small watersheds highly depend on rainstorm characteristics. Flash floods are the typical response of small but steep watersheds in Puerto Rico. Variabilities in the rainfall input cause great changes in watershed responses. Therefore rainfall-runoff analysis design is highly affected by storm rainfall characteristics. Rainstorm modeling and simulation require a good knowledge of the rainfall distribution in time and space.

Safety, risk and economic analyses depend on accurate estimation of storm rainfall variabilities. Weather modifications such as those produced by urban development, industrial activities, air flight traffic, and induced rainfall activities can be evaluated utilizing changes in storm rainfall distributions. Flood and weather forecasting are dependent on the accuracy of modelling the climate and rainfall-runoff dynamics. Both are affected by the spatial and temporal rainfall characteristics. Optimum management of water resources for small communities is sensitive to rainstorm occurrence. Reservoir operations and aquifer recharge basi-

cally depends on the intensity, location, distribution, and frequency of storm events.

Hydrologic and hydraulic design are affected by the spatial and temporal rainfall variabilities in Puerto Rico. A statistical analysis of the hourly rainfall record available should provide valuable information in terms of the spatial and temporal rainstorm characteristics. The spatial and temporal distribution of point duration, and effective time raining are among the significant characteristics that we can studied in order to provide a significant evaluation of the storm rainfall.

Considering that there exist limited information inferred from real data analysis, the research project discussed herein promise to contribute remarkably to the understanding of storm rainfall inputs in hydrologic and hydraulic analysis, simulation, modelling and design. Also, this research effort opens a window for further studies in rainfall as frequency analysis, rainfall-runoff relationships, long term (monthly, annual, seasonal) and short term (15 minutes) rainfall characteristics, antecedent moisture conditions, and other rainfall related studies.

The specific objectives of the research work discussed herein are to:

1. Objectively define and select representative rainstorm events in Puerto Rico.
2. Determine non-dimensional temporal storm rainfall distributions
3. Determine variabilities of storm rainfall distributions with storm duration, location, and other relevant parameters.
4. Determine probability density functions of storm durations and intensities.
5. Interpolate geographically temporal storm rainfall distributions.

2. Related Research

The spatial and temporal rainfall variabilities in Puerto Rico are practically unknown. However, it is known that rainfall varies considerably either in space or time. Rainfall in Puerto Rico is associated with either of the following mechanisms: 1) easterly waves which basically occur during summer season (May-November months) or, 2) cold fronts which are associated with the winter season (December-April months). Easterly waves as tropical disturbances usually involve torrential rain. Otherwise, they bring near normal rainfall. Cold fronts are associated with cold air masses coming from the north which occasionally move far enough south to reach the Caribbean. Active slow moving cold fronts may produce storms of moderate intensities which last intermittently for several days.

In the island also exist a remarkable orographic effect which induce more rainfall generation and affects the spatial and temporal rainfall distribution. It produces larger rainfall amounts in the northern and mountain than in the southern regions. Convective effects produced by differential heating in urbanized metropolitan areas may also affect the rainfall pattern. Saturated air masses heated over developed areas are lifted to colder levels where condensation and precipitation occur.

The highly variable rainfall distribution in the island is caused by complex rainfall generation mechanisms which frequently interact among themselves. Modelling these rainfall phenomena is a difficult task specially when neither the physical mechanisms producing rainfall nor the rainfall characteristics on the ground are clearly defined in Puerto Rico.

The best attempt of describing the spatial and temporal rainfall variabilities of storm rainfall was conducted by the National Weather

Bureau (NWE, 1961). The published hydrologic design maps for Puerto Rico and Virgin Islands. Probable maximum precipitation (PMP), depth-duration-frequency rainfall, and cloudburts rainfall were analyzed and presented. Durations of 30 minutes to 24 hours for frequencies of 1, 2, 5, 10, 25, 50 and 100 years were given for rainstorms. PMP for durations of 1, 6, and 24 hrs were provided. Also, PMP for cloudbursts of durations between 5 minutes and 6 hours were given. A similar effort was done later (Miller, 1965) providing PMP amounts for rainstorms of duration from 1 to 10 days.

Although these publications have been the unique tool for selecting desing storms in Puerto Rico, they do not provide criteria for slecting either the storm frequency and duration, or a satisfactory storm rainfall distribution in time. The papers suggest criteria for slecting the hourly distribution of the PMP storm. It also suggests to use the most critical temporal rainfall distribution for PMP cloudbursts. There is neither evi-dence for the former nor justification for the latter. Engineering ana-lysis, simulation modelling, and design require realistic criteria for the selection of rainfall variabilities in time and space. It could be better inferred from the analysis of existing storm rainfall data.

The practice in Puerto Rico has been to transfer rainfall analysis and design criteria from other geographical locations, specially those derived form the United States. Oxford (1969) recognized the inadequacy of rainfall data for pavement drainage design in San Juan, Puerto Rico. He used cloudburst rainfall as critical design condition. Although he shows no documentation for selecting a rainstorm duration of 15 minutes and a frequency of approximately 1/10 of the PMP for cloudbursts, he clearly shows the need for defining storm rainfall characteristics in

time and space in order to provide realistic criteria designing purposes.

Storm intensity, duration, and frequency in time and space are the most important paramter in rainfall analysis for short term rainfall-runoff relationship. Other than Technical Paper #42 and #53, (NWB, 1961; Miller, 1965) the writer has found no significant contribution on this topic in Puerto Rico.

In a major effort to corroborate his findings, he has consulted the National Weather Service in San Juan, Puerto Rico, searching for published or unpublished literature (Colón, 1983). An effort has been done by the National Weather Service Flash Flood Hydrologist to evaluate the NWB Technical Paper # 42 (Calbeberst, 1953). He has found remarkable discrepancies on a station analysis basis. Detailed frequency analysis in Puerto Rico is under way by ongoing research project directed by the writer. Although it is beyond the scope of this research work to perform analysis of order statistics, limited results are presented for the convenience of the reader.

Design storms generally are selected for duration equal to the time of concentration of the basin. Small watersheds usually have time of concentration of less than 6 hours. For example, the Soil Conservation Service recommends to use the larger between the time of concentration of a basin or the 6-hr duration event, whichever longer, for the design of emergency and freeboard hydrographs of small dams. (Viessman, et al., 1977).

Duration of desing storms should be selected on a probability base. Even when the basin shows a long time of concentration, the probability of having a storm duration equal to the time of concentration can be very low. Therefore, there is no justification for designing for a duration

equal to the time of concentration. A better way is to design for the storm duration which minimize cost of failures.

Selecting representative hydrographs once the storm depth and duration have been selected is the last step in defining the design storm. Temporal distribution of the design storm will significantly affect the watershed response as the shape and peak value of the hydrograph.

Temporal storm rainfall distributions needed to be developed for the hydrometeorological condition of local areas. Transferring storm rainfall distribution from other places is not an acceptable practice unless both areas show similar hydrometeorological characteristics. For example, the Soil Conservation Service Type II storm rainfall distribution has been recommended frequently en Puerto Rico. It is sensitive and risky not to verify and update these type of criteria, specially when the risk of a project failure due to undocumented criteria is high.

The importance of rainfall analysis has been well acknowledged. Similar studies to the one proposed herein have been conducted by the Illinois State Water Survey during the past decade. Their studies have been broad in their goals including weather modifications studies, agricultural problems, urban drainage design, water quality, and real time weather and flood forecasting (Acherman, et al., 1977; Changnon, et al., 1978). These studies provide rainfall analysis and design criteria for the midwestern region of the United States, therefore, they do not apply here. However, it is important to point out that they have succeed in their effort of providing rational and practical rainfall criteria for analyses, simulation, modelling, and design in hydrology and hydraulics.

3. Research Procedures and Methodologies

3.1 Data Manipulation

3.1.1 Data Acquisition

Hourly rainfall data collected by the U. S. National Weather Service (NWS) and published in computer magnetic tapes by the Environmental Data Service, National Climatic Center, U. S. Department of Commerce at Ashville, North Carolina was used in the research work discussed herein.

3.1.2 Data Selection

The data selected for the study included 10 out of 29 rainfall stations reported for Puerto Rico and Virgin Islands. Table 3.1 presents a brief description of the stations selected. It includes station name, index number, location, length of rainfall record, and total number of storm events recored at the station. Figure 3.1 shows the approximate location of the selected stations in the study.

Although it is desirable to use all the available rainfall stations for determining detailed spatial rainfall characteristics, the stations selected were considered representative of major spatial storm rainfall characteristic trends in the island. Multiplicative efforts introduced by considering extra stations limited the number of representative stations to 10.

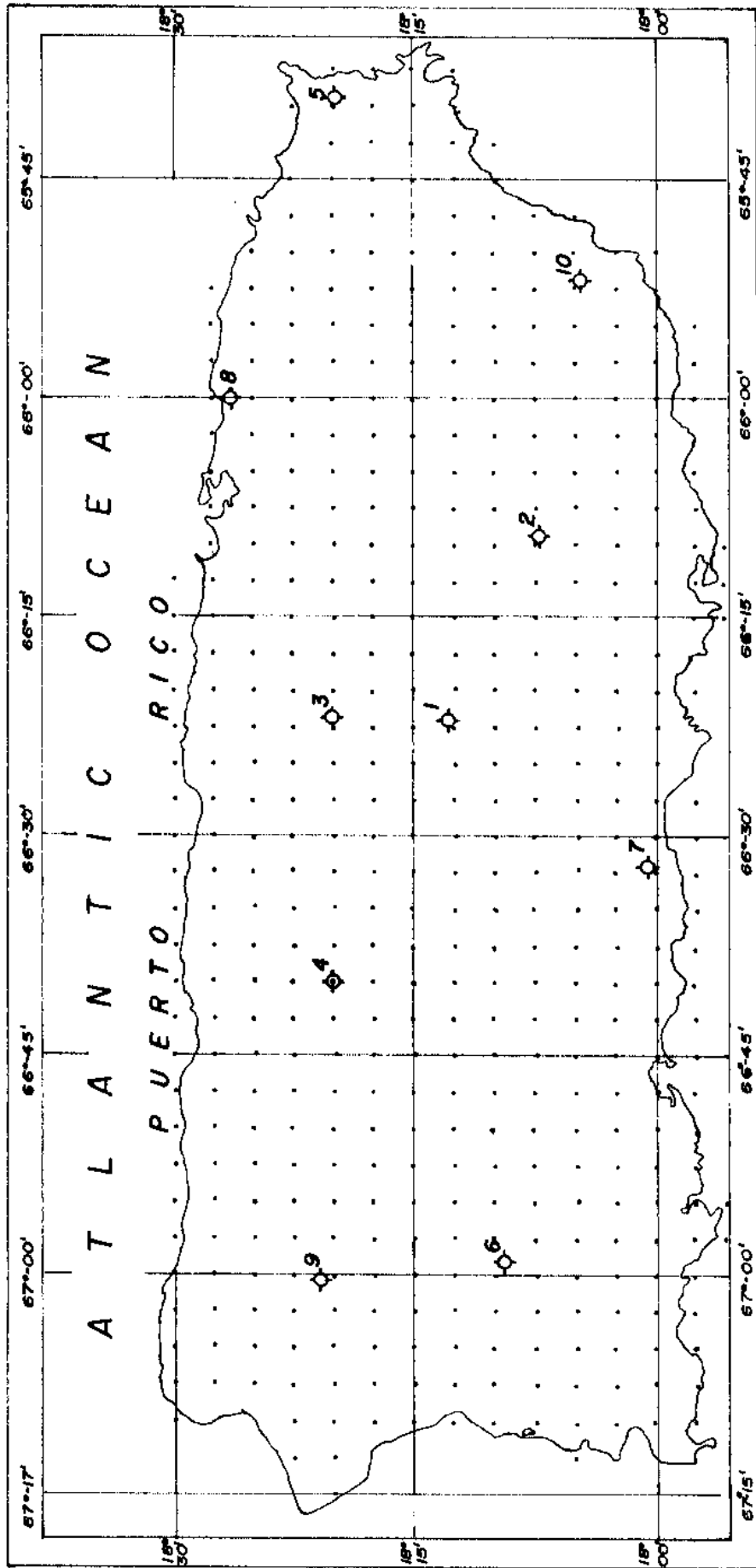
A maximum record length of 204 months was available at San Juan station. The minimum record length is of 121 months is Botijas 2-Orocovis station. Record length available in Puerto Rico are not the most desirable for obtaining high statistical significance in every hydro-

TABLE 3.1

Data Summary for Studied Rainfall Stations

No.	Name	Index No.	Location		Period of Record		No. of Months with Record	No. of Storm Events		
			Latitude	Longitude	From	to		1 hr	3 hr	6 hr
1	Botijas 2-Orocovis	0988	18°13'	66°22'	6-1973	12-1983	121	421	283	238
2	Cayey 1 E	1901	18°07'	66°09'	7-1971	12-1983	146	466	290	211
3	Corozal Substation	2934	18°20'	66°22'	7-1971	12-1983	149	678	461	358
4	Dos Bocas	3431	18°20'	66°40'	7-1971	12-1983	149	781	619	533
5	Fajardo	3657	18°19'	65°39'	7-1971	12-1983	150	797	546	392
6	Maricao 2 SSW	5908	18°09'	66°59'	7-1971	12-1983	150	945	774	686
7	Ponce 4 E	7292	18°01'	66°32'	7-1971	12-1983	149	354	267	232
8	San Juan WSFO	8812	18°26'	66°00'	1-1967	12-1983	204	390	247	173
9	San Sebastián 2 WNW	8881	18°21'	67°01'	7-1971	12-1983	145	671	569	529
10	Yabucoa 1 NNE	9829	18°04'	65°52'	7-1971	12-1983	150	1052	697	429

Figure 3.1 Location Map of Selected Stations in the Study



logic application. However, valuable information is derived and inferred from actual field data. It will help in achieving rational and practical analysis and design in hydrology.

Missing and accumulated rainfall values were not used in this research work.

3.1.3 Objective Storm Definitions

Pagán-Trinidad (1982) has suggested various objective storm event definitions. A storm can be defined from either the meteorologic or the engineering viewpoint. In meteorology a storm is recognized by its atmospheric physical properties as three dimensional and turbulent process which can be modeled by means of heat and mass transport theory. Therefore, the meteorologists frequently define a storm system based on its spatial and temporal boundary characteristics along with the synoptic pattern. Conversely, from the engineering viewpoint, a storm is generally defined based on the duration of the recorded event at one or more points within an area.

3.1.3.1 Meteorologic Definition of Storm

The precipitation process is mainly caused by dynamic or adiabatic cooling which involves a vertical transport of saturated air masses. Therefore, the hydrometeorologists have classified it based on the mechanism causing the vertical displacement as convective, orographic or cyclonic precipitation. Although meteorologists have more specific characterization of synoptic storm patterns

based on the storm physical properties, it suffices engineering applications the classification based on the storm cooling mechanism. The latter classification is more meaningful to engineers because it better shows the expected rainfall characteristics on the ground. Spatial and temporal regularities have been observed in rainfall of similar cooling mechanisms. They are described in the following.

3.1.3.1.1 Convective Precipitation

Convective precipitation is caused by heating and lifting of saturated air masses near the ground surface. The air mass expands as it rises and reduces its density. A vertical motion follows reaching a level where cooling, condensation and precipitation follow. Short, spotty, and extremely intense thunderstorms are typical under this classification.

3.1.3.1.2 Orographic Precipitation

Orographic precipitation is caused by mechanical lifting of warm saturated air masses due to physical constraints like mountains. The air masses are pushed into a cooler level where cooling, condensation and precipitation occur.

3.1.3.1.3 Cyclonic Precipitation

Cyclonic precipitation is associated with the large scale vortex type motion which is caused by air masses of different energy content. Air masses are forced to flow due to the pressure difference causing the warmer air to

override the cool air. It is characterized for being less intense and covers larger areas than the convective type. Cyclonic precipitation could be classified as frontal or non-frontal. A front is the boundary between both air masses. In a cold front the cold air wedge advances into the warm air mass forcing it upward rapidly causing intense storms along the front. In a warm front the warm air flows over the cold air. It ascends and moves slower than the cold front causing less intense precipitation over larger areas with relative long duration.

3.1.3.2 Engineering Definition of Storm

The storm definition from the engineering viewpoint is generally based on the recorded duration of the storm at a point or an areal basis. The point concept needs to be extrapolated to an areal concept in order to have a consistent physical picture of the process. Several possible storm duration definitions based on point precipitation data is presented as follows.

3.1.3.2.1 Point Definition of Storm

1. Continuous wet period - The storm duration is defined by the continuous raining period at a given station. If the data is given in discrete time intervals (e. g., hourly data), the storm duration is highly dependent on the sampling time interval. The possible error of having a dry period within the duration of almost twice the discrete time interval could pass undetected.

2. Wet-dry periods - The storm duration is defined by the wet-dry period which contains no dry period longer than a selected duration, e. g., Huff (1967) selected 6 hours as the optimum time to differentiate between storms events.

3. Auto-correlation - A storm duration is defined by the time lag k which minimizes the first cycle of the rainfall correlogram.

3.1.3.2.2 Areal Definition of Storm

1. Total area wet - A storm is defined by the length of time when all stations within an area record rainfall. This definition has the same deficiency at the point definition presented in addition to its dependence on the size of the area. Also there is no way of excluding dry subareas between station. It also excludes the partial area events.

2. Partial area wet - A storm is defined by the time when at least one station within the area records rainfall.

3. Wet-dry area - A storm duration is defined by the continuous time which does not contain a dry period in the whole area for a time interval longer than a selected duration.

4. Wet-dry-period - A storm duration is defined by the wet-dry period which contains no dry period in any single station within the area longer than a selected duration.

3.2 Development of Temporal Storm Rainfall Distributions

The engineering concept of defining storm events at a point was used herein. Continuous raining periods were selected from the data. Storm duration, rainfall depth, and mean rainfall intensity were determined each storm and for each stations analyzed. Significant storm events were limited to those showing storm rainfall intensities grater or equal to 0.20 in/hr.

Similarly, storm events were selected for a maximum non-rainy (dry) period between rainy (wet) period of 3 hours and 6 hours. Probability density functions were also found for these two criteria.

Once storm events were selected and identified the following was performed at each rainfall stations for continuous storm rainfall events.

1. Cumulative dimensional hydrographs were found by adding incremental rainfall depths by hour.
2. Cumulative dimensional hydrographs were non-dimensionalized by converting storm time to percent of total storm duration, and rainfall depth to percent of total rainfall depth for each storm event.
3. Storm evetns were stratified by storm duration.
4. Storm evetns for each duration were stratified by storm class depending on the period when the maximum rainfall felt. The periods were defined as shown in Table 3.2.

Table 3.2 Criteria for Defining Storm Duration Class
Based on the Period of Maximum Rainfall

Storm Duration (hours)	Criterion
2	media
3	tercile
4 - 6	quartile
7 - 12	quartile

5. Mean non-dimensional storm rainfall distributions were determined by obtaining the mean distributions for each storm duration class (e. g., each quartile). Other basic statistics were obtained for each point estimated in the curve.
6. Non-dimensional storm rainfall distributions were plot for various storm durations shown in Table 3.2.

3.3 Frequency Analysis

Frequency analysis provides the probability of occurrence of determined parameters. Probabilities of storm durations and mean storm rainfall intensities were determined in order to define storm rainfall characteristics. Order statistics for mean storm rainfall intensities of various durations at each station were determined. Order statistics of hourly rainfall data independent of storm event were also found.

3.3.1 Storm Duration

Frequency analysis of storm durations was performed as follows:

1. The relative frequency f of storm duration as stratified in Table 3.2 were obtained for each station by counting the number of storms in each duration class n divided by the total number of storms N .

Mathematically

$$f = n/N \quad (3.1)$$

2. Probability density functions were smoothed out by using variable class intervals in the analysis.
3. Histograms were plot in order to show the trend of probability density functions. The mean value of the probability density functions were used for those class intervals grater than 1 hour.

3.3.2 Mean Storm Rainfall Intensity

Distribution of storm rainfall intensities of 0.10 in/hr beginning with 0.20 in/hr and ending, but not including, 1.0 in/hr. Thereafter, class interals every 0.5 in/hr were used. The following procedure was followed.

1. Storm events were stratified by duration.
Duration clases of 1 hr, 2 hr, 3 hr, 4-6 hr, 7-12 hr events were analyzed.
2. Relative frequencies f of storm rainfall intensities were obtained by counting the number of storms with mean rainfall intensities in each class interval of the selected storm durations.

3. Probability density functions were smoothed out by selecting variable class intervals as described previously.
4. Histograms were plot for each stratification including those for all storm durations together.

3.3.3 Order Statistics

3.3.3.1 Intensity-Duration-Frequency Analysis of Rainstorms

Order statistics were obtained for partial duration series of rainstorm intensities of various durations at each station. The number of events in each sample were conditioned by the total number of events available for each duration. Since continuous storm events were considered, the sample size decreased exponentially as the storm duration increased. Order statistics were obtained no matter the sample size. Since the principal interest of this research work focuses on short duration storm events (e. g., less than 6-hr events), sample sizes are considered suitable. Order statistics were obtained as follows:

1. Exceedance probabilities were obtained by organizing in descending order rainfall intensities for each duration at each station.
2. The probability $P(X \geq x)$ of a given event being equaled or exceeded in any specific year was obtained from the following mathematical relationship,

$$P(X \geq x) = \frac{m}{N} \quad (3.2)$$

where:

m = order rank of the event in the partial duration series

N = total number of years in the record

X = hydrologic variable

x = hydrologic variate

3. The return period T in years was estimated as:

$$T = \frac{1}{P(\geq x)} = \frac{N}{m} \quad (3.3)$$

3.3.3.2 Exceedance Probabilities of Hourly Rainfall Data

Intensity-duration-frequency analysis performed in the previous section is based on mean storm intensities. A selection criteria for considering storms in the sample was a minimum mean rainstorm intensity equal to 0.20 in/hr. This criteria warrants relevant and significant rainstorm events. However, extreme rainburst within rainstorms were not considered as potential extreme events because they are hindered by a longer rainstorm event.

Frequency analysis of extreme hourly rainburst was performed as follows:

1. The total number of hours with rainfall were selected in the sample independent of the storm duration.

2. A partial duration series of hourly rainfall values were organized in descendent order.

3. The probability $P(X \geq x)$ of being equaled or exceeded any specific year was obtained from equation

4. The return period T in years was computed by equation (3.3).

3.4 Data Processing and Reduction

A DECSYSTEM - 10 high speed mainframe computer was mainly used for processing rainfall data. Various computer codes were written in Fortran which performed tasks mentioned previously in this chapter. SPSS software package was used to performed part of the frequency analysis. Software was developed for special cases where SPSS did not apply.

Various microcomputers (e. g., IBM-PC, RAINBOW) were mainly used for developing graphics (e. g., non-dimensional storm rainfall distributions, probability density functions). Micro-computer software was coded in BASIC language for interpolating non-dimensional storm rainfall distributions.

Results were presented in tables, graphs, and computer printouts. Most tables and graphs are incorporated in the report discussed herein. However, valuable computer printouts will be available on request basis. Results will be discussed in the following section.

4. Experimental Results:

Results of this research work are discussed next. Most of the information analyzed have been condensed and reduced to tables and graphs. Details of the research results have been stored in extensive computer files which can be printed out and furnished upon the reader's request.

4.1 Non-Dimensional Temporal Storm Rainfall Distributions

Storm events were selected according to the criteria of 1) minimum times between separate storm events, and 2) minimum mean storm rainfall intensity. Storm events were stratified according to station. Minimum times between storms of 1-hr, 3-hrs, and 6-hrs were used to compare the effects of expected non-raining (dry) periods within storms. The selection of minimum times between storms is a criteria which varies with the type of hydrologic applications. In fact, Viessman (1977) points out that for urban drainage design the storm duration is usually shorter than 6 hrs. In this case, minimum time between storms of 1 hour is sufficient to separate two independent events. Therefore, considering that most of our urban and rural watersheds show time of concentrations of less than 6 hrs, this research work emphasizes the analysis on continuous rainfall periods. Also information is presented for the criterion of 6-hrs minimum time between storms for comparison purposes.

Storm events were selected following the criteria presented previously. Storm durations were estimated. The mean storm rainfall intensities were computed. Storms were stratified according to durations as 1, 2, 3, 4-6, 7-12 duration

events. Storms were also stratified by media, tercile or quartile depending on the portion of time when the maximum amount of rainfall fell. For example, a 2-hr storm experiencing the heavier rainfall during the first 50% of the duration of the storm is classified as a first media storm, a 4-hr storm experiencing the heavier rainfall in the third 25% of the duration is classified as a third quartile storm.

Figures A1 to A10 present non-dimensional storm rainfall distributions for ten rainfall stations analyzed in the study. One figure is presented for each of the durations mentioned previously. One hour storms are not shown because a uniform distribution is expected from hourly rainfall data. These distributions can be achieved utilizing 15-minute rainfall data which is out of the scope of this research work. However, the writer is involved in evaluating short term storm rainfall distribution for durations less or equal to one hour.

One non-dimensional storm rainfall distribution curve is presented for each storm class within the duration. Storm classes were discussed previously in Table 3.2. Figures show approximate continuous distributions which have been approximated from discrete data. Statistics of various points are available for the distributions, however they are too extensive to be included herein. Approximations of continuous curves are based on the writer's experience with thousands of storms analyzed and typical distributions developed elsewhere. The reader is free to approximate the distributions with two linear segments although it is less likely to occur this way and the writer

does not recommend to do so. Distributions have not been smoothed out since the writer will be completing the study by analysing the remaining rainfall station in Puerto Rico. At that time trends will be better determined and smoothing can be done with higher reliability.

Rainstorms of two and three hour durations were discretized according to hours of data in the storm. Rainstorms of 4-6, and 7-12 hr-duration were classified together in order to increase the sample size. In these cases, interpolation were done every 10% and every 25% of storm durations. However storm classes were selected for quartiles. Each media, tercile or quartile distribution is represented by one curve.

Table A1 presents frequency storms per class and frequency of storms per duration at the studied rainfall stations. It was found that there are a significant chance of having uniform storms in 2-hour duration events. The opportunity is negligible for other durations.

The frequency distributions of storm classes show that there are preferential classes for rainstorms to occur. For example, at Botijas 2-Orocovis Station the preference for 2-hr duration events is the first media showing 69 out of 123 storm events or a 56% of the total. Preferential storm classes denoted by the mode of the distribution can be recommended for hydrologic design purposes, although all the possible distributions can be tested in design for sensitivity. Urban drainage is highly sensitive to temporal storm rainfall distributions. Sensitivity analysis of storm rainfall distributions in this case can pro-

vide the most critical operation conditions. The mode of the distribution of storm classes is marked with an asterisk in Table 3.2.

Non-dimensional storm rainfall distributions presented in Figure A1 to A10 show significant temporal storm rainfall variabilities from station to station, and at different durations for the same station. It is significant to point out that the temporal storm rainfall shows that various storms accumulate over 60% of the total storm rainfall in less than 25% of the duration. (e. g., San Juan Station, 4 to 6 hrs; 1st, 2nd, and 3rd quartiles), and all the stations analysis show that in several 2-hr storms over 70% of the total rainfall is accumulated in less than 50% of the storm duration (e. g., 1st quartile storms). This is particularly significant because all the stations show greater number of 2-hr storms in the first media. In general, non-dimensional storm rainfall analysis shows that the tendency is not uniform rainfall distributions within storms, but significant variable ones. Storm rainfall distributions depend mainly on location, storm duration, and storm class.

Spatial variability of distributions from station to station is significantly larger as storm duration increases. Storm durations of 2 and 3 hours show similar patterns.

Although regionalization of storm rainfall distributions can show better spatial variabilities, it may not be the most appropriate way of estimating distribution in ungaged areas.

The temporal storm rainfall distributions at a point are valid for the specific location of the stations. Engineering

applications will require to derived similar distribution at ungage sites. For this purpose an interpolation skeme which utilizes the information available need to be used. Pagán-Trinidad (1982) has presented a detailed analysis of various interpolation schemes with special emphasis on rainfall interpolation. An inverse distance technique is recommended. Orographic effects can be considered by incorporating a modified normal annual precipitaion skeme. Appendix B presents an inverse distance technique to interpolate storm rainfall distribution curves for the any of the storm class distributions. Storm class modes are found in Table A1 for ten stations in Puerto Rico, should that is the recommended distribution,

4.2 Frequency Analyses of Storm Rainfall

Table A2 presents frequency of rainstorms stratified by rainfall intensity and duration for ten selected stations in Puerto Rico for storm criteria of 1-hr minimum time between storms. The analysis was done for all storms together independently of their durations, and for various durations as 1, 2, 3, 4-6, 6-12, rainstorm duration events. Rainfall intensities in in/hr were stratified as shown in the table. The parameters n , f , and F are frequency (numbers of storms per intensity class), relative frequency (n divided by total number of storms shown in last line of the table), and cummulative frequency (Σf).

The table shows interesting tendencies. For a given storm duration the relative frequency (probability) of mean storm intensities are decaying with an increase in the intensity. This is valid for all durations. Storm duration classes grater

6 hours are not considered reliable durations because its limited sample size. The same tendency is equally valid for all the station in the study independently of the number of storms per duration class.

Storm durations also show a decaying patterns as the storm duration increases. Since the table only shows the frequency of storm durations in variable class intervals, it is easier to visualize tendencies plotting histograms of the data in Table A2.

Figures A11 to A20 presents probability distributions of storm rainfall intensities in in/hr per storm duration in hours at the selected stations in Puerto Rico for rainstorms events selected with the criteria of 1 hour between storms. The total number of events is shown at the top of the figures.

Trends and tendencies are better observed by histograms. Histograms for various duration at different stations follow similar patterns. Mathematical equation describing observed tendencies can be derived. For example, an exponential decay function can be well adjusted to the data. Various models will be fitted to the data in a continuing project. An exponential model can be generically stated as:

$$P(i_1 \leq i \leq i_2) = \int_{i_1}^{i_2} i^x \cdot di \quad (4.1)$$

$$\text{or } p(i) = i^x \quad (4.2)$$

where:

$P(i_1 \leq I \leq i_2)$ = probability of variable I

i, i_1, i_2 = intensity variates in in/hr

$p(i)$ = probability density function of i

x = exponent

It is relevant to point out that x values can be used for regionalization purposes for specific durations. At this stage values of x have not been found because it is worth it to consider the remaining stations in Puerto Rico. A continuing effort is being followed by the writer to complete this part of the study.

Similarities of probability density functions at different locations are obvious from the figures. Dispersion of data in high duration events is due to the limited sample size.

Probability distributions for rainstorm durations up to 6 hours at various stations are presented in Figure A21. Rainstorms criterion of 1-hr between storms was used. A similar model to the one discussed previously for rainstorm intensities can be fitted to this data. In this case the model can be stated as:

$$p(D) = D^{-Y} \tag{4.3}$$

where:

p(D) = probability density function of storm duration

D = storm duration in hours

Y = exponent

Similar storm duration distributions were found through the island. Regionalization will be made after further stations are considered. From the previous results it is found that the probability density function can be fitted to a model with storm duration and intensities or independent variables. Therefore, for the generic model of rainstorm intensity

$$x = F(D) \tag{4.4}$$

An attempt to study the effect of the criteria used to

select storm event was done by studying storms with minimum time between storms equal to 6 hours.

Table A3 presents a summary of frequency of rainstorms stratified by rainfall intensities and durations. A merge of short duration storms (e. g., 1, 2, and 3-hr duration rainstorms) is obvious as the frequency of these storms decreases and the those for higher classes increases. The total number of storms is reduced due to the merge of storms into one of longer durations. The relative frequency distributions still follow a similar patterns to the distributions of storms selected by 1-hr minimum time between storms. The increase in the frequency of longer duration storms may serve to increase the sample size of storm durations between 6 an 12 hours.

The number of storm with duration longer than 12 hours is not significant. Therefore it could be concluded that rainstorm events in Puerto Rico tends to last for duration of less than twelve hours. Rainfall events of longer durations are associated with hurricane events. Long duration events show extremely low rainstorms mean intensities.

Figures A22 to A31 show probability density functions of mean storm rainfall intensities for storm selection criteria of 6-hr between storms for the station selected in the study. The functions were stratified by storm rainfall duration as it was done previously. The figures show the data reduction of Table A3. Storm duration distributions are shown in Figure A33.

Results are similar to previous results. The main difference between both criteria is that the distributions are

flattened somehow due to the increase of longer duration events. It is important to notice that both criteria are relevant in engineering hydrologic design and should be applied separately on a case by case basis. Distribution of continuous storms are relevant to hydrologic design of design storm shorter than 6 hours which is generally the case of urban and small watershed hydrology typical in Puerto Rico.

The other criteria can be applied to few relative large basins in Puerto Rico (e. g., Río Añasco basin, Río La Plata basin, Río Grande de Loiza basin).

The daily rainfall distribution at the studied stations were analyzed in order to determine preferred time of rainfall during the day cycle. Hourly rainfall distributions in the day show trends and patterns in the rainfall temporal distribution.

Table A4 show daily rainfall distributions stratified by rainfall intensity and hour of occurrence at various stations studied. The frequency of occurrences independently of mean rainstorm intensity are summarized at the end of the table in the line identified as Totals. Stratification by intensity show preferred time of various intensities to occur. It is interesting to notice that the most intense rainfall occur at the higher frequency of rainfall.

Defining two periods during the day, namely, morning and afternoon, three main daily tendencies are observed throughout the island at the stations studied. First, a skewed distribution with the mode in the early to the mid afternoon. Secondly a bimodal distribution with modes at the early morning and

early afternoon, and a multi-modal distribution which appears more a near-uniform distribution. Table 4.1 show a summary of the tendencies

Table 4.1 Rainfall Station Classified by Type of Tendency

Station	Tendency	Skewed	Bimodal	Multi-Modal
Botijas 2 - Orocovis			*	
Cayey 1E				*
Corozal			*	
Dos Bocas		*		
Fajardo			*	
Maricao 2 SSW		*		
Ponce 4 E				*
San Juan WSFO			*	
San Sebastián 2WNW		*		
Yabucoa 1 NNE				*

The table exhibits a tendency of dryer stations to show multi-modal distributions. Stations located in areas of extremely high intensity rainfall show a skewed unimodal distribution with the mode in the early to mid afternoon. Bimodal distributions are typical of those stations located in areas of moderate rainfall.

Intensity-duration-frequency analysis was performed on storm data in order to determine approximate frequencies of various storm events. Partial duration series of the first forty values were selected to define the base value of the partial duration series.

Intensity-duration-frequency tables are presented in Tables A5 to A14. One table is presented for each station and durations form 1 hour to 5 hours. Other durations are considered non-reliable for the purpose of this study.

Intensity-duration-frequency results at various stations are limited by the number of years of records available (e. g., from 12 to 17 years). However, this results are relevant for return periods of up to approximately 25 years. They also serve as a check for design criteria in Tehcnical Paper # 42 (NWS, 1961).

Results are also limited by the absence of extremely high frequencies typical of hurricane rainfall because limited number of them have occurred during the preiod of record. However, these type of events usually have frequencies longer than 25 years.

Due to the limitations of the data, frequency analysis was performed in a partial duration seires of the total hourly data independent of storm events. The results are compared with rainstorm events.

Tables A15 to A24 show results of hourly data. The table show order rank, date and time of occurrence, total precipitation in inches, exceedance probability in %, and return period in years for all stations studied. Intensity in in/hr is exactly equal to the precipitation depth in inches.

Results show that higher intensities are experienced when rainfall periods are taken independently of storm events. Rainburst within storms show larger results, however, the results show significant differences which obviously will affect hydro-

logic design. For example, Orocovis station shows 1.50 in/hr for a return period of 12.5 years when storm data is used. An approximately 2.50 in/hr is shown for the same return period when hourly data is used. Discrepancies in the length of record is because hourly data considers all the record available, while storm data was selected for the period with storm showing mean intensities higher than 0.20 in/hr.

The results in the tables show relevant discrepancies with Technical Paper #42 from the National Weather Bureau (1961). The topic deserves further study. Since frequency analysis is beyond the scope of this research work, tables are shown for information purposes. Frequency analysis is under study by this researcher and detailed analyses will be available in the near future.

5. CONCLUSIONS:

1. Storm rainfall in Puerto Rico shows temporal distribution tendencies which depend on the location, storm duration, and class of storm (meaning media, tercile or quartile storms). Typical temporal storm rainfall distributions are found in Figures A1 to A10.
2. Temporal storm rainfall distributions show that there is a storm preference to produce more rainfall during a specific period of the storm (e.g. a given quartile). These preferences are identified by the mode in Table A1.
3. Spatial variabilities of temporal storm rainfall distributions are significantly larger as the storm duration increases.
4. The probability of mean storm intensities decreases as the intensity increases. An exponential decay appears to be suitable for describing mathematically the relationship.
5. The probability of storm duration shows approximately an exponential decay similar to the one stated previously in 4.
6. A more comprehensive model can estimate the probability of storm events based on duration and intensity.
7. Storm selection criteria (e.g., minimum time between storms of 6 hours) does affect the frequency distribution of storms. This is because a combined effect of storm merging in time and storm elimination because a reduction in storm intensities. This is particularly true for storms with durations shorter than approximately 12 hours.
8. Mean rainstorm intensities in Puerto Rico for storm events of longer durations than 12 hours show that they are low relative to other storms of shorter durations.

9. Daily rainfall distributions show preferred time of occurrence. Typical tendencies are summarized in Table 4.1. The type of distribution is apparently related to hydrological zones.
10. Limited consideration in intensity-duration-frequency analysis show that large discrepancies exist when storm data vs. interval data is used.
11. The hydrologic design criteria recommended by the Technical Paper #42, (NWB, 1961) need to be updated with real rainfall data analysis.

6. FURTHER RESEARCH WORK:

The research work discussed previously has shown the need for further research work on the topic. The writer has continued his efforts to complete some necessary tasks which were not within the scope of the research work discussed previously. A brief description of the writer's continuing research efforts are in the following:

1. Analysis of remaining rainfall stations not considered in the study.
2. Development of non-dimensional storm rainfall distribution for a minimum storm selection time of 6 hrs between storms.
3. Frequency analysis including intensity-duration-frequency model fitting to the data and updating hydrologic design criteria for storm selection.
4. Evaluation of 15-minute rainfall data
5. Development of interpolation schemes for ungaged sites taking into consideration orographic effects.

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APPENDIX A

Figures and Tables of the Research Work

Figure A1. Mean Non-Dimensional Storm Rainfall Distributions
for Botijas 2- Orocovis Station
Minimum Time Between Storms = 1 hr

a. BOTIJAS 2-OROCOVIS:0900 2 HOURS

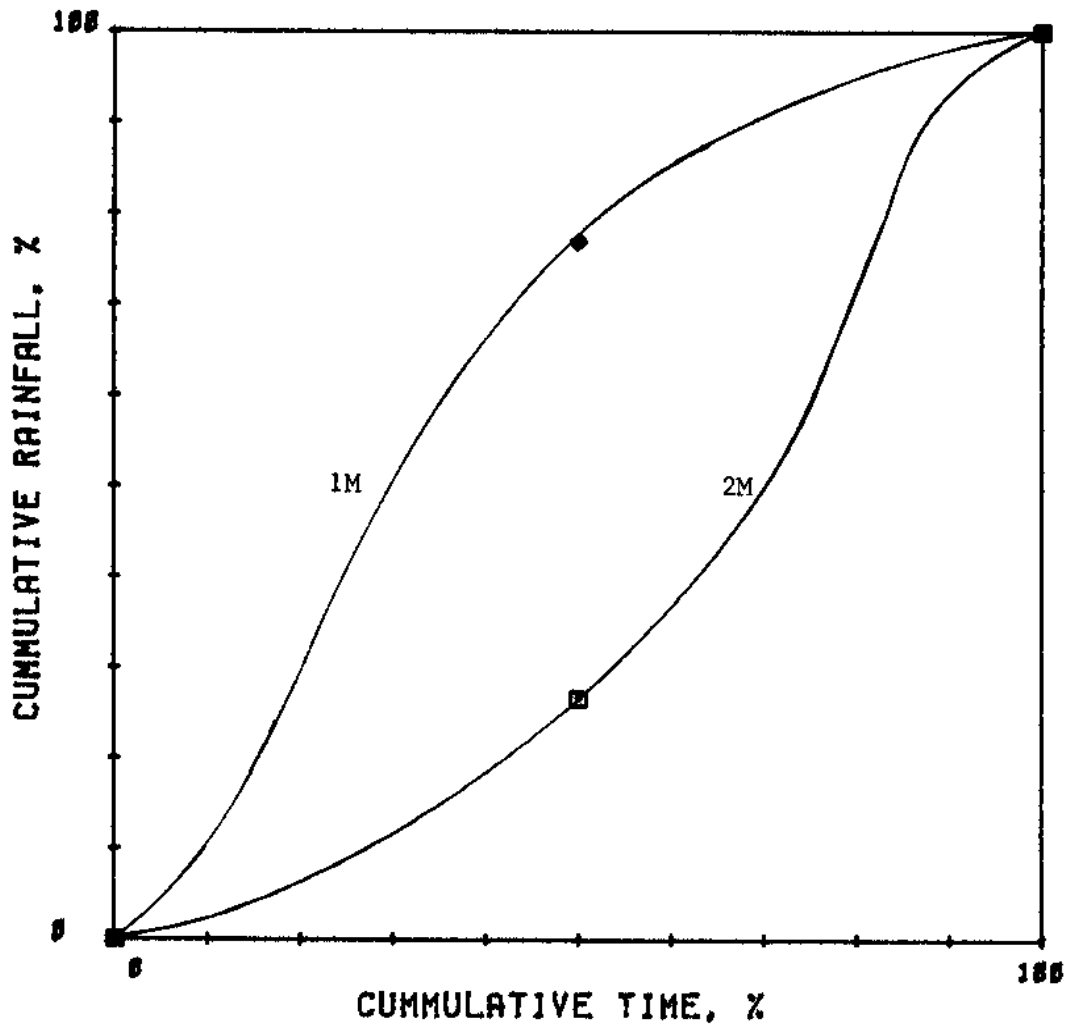


Figure A1 Continued

b. BOTIJAS 2-OROCOVIS: 0988 3 HOURS

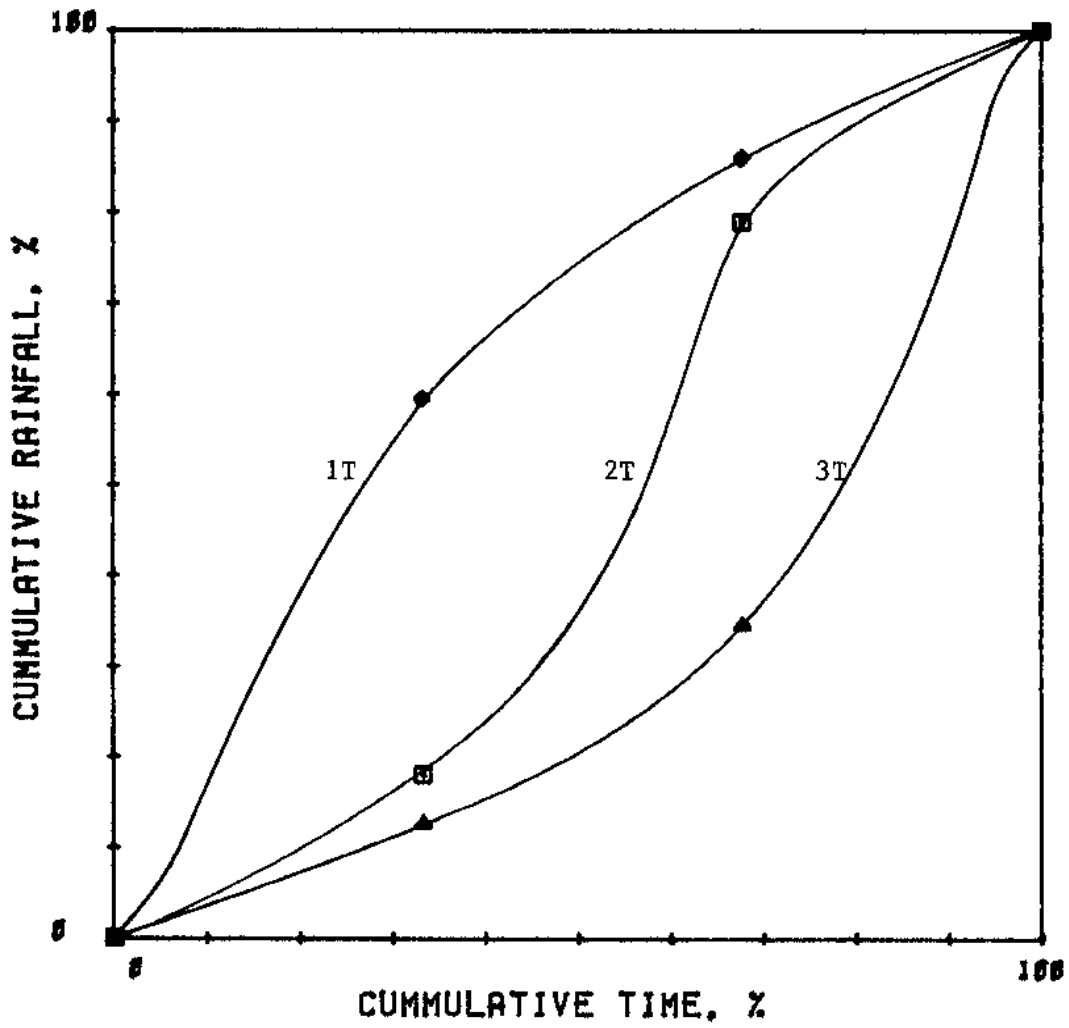


Figure A1. Continued

c. BOTIJAS 2-ORCOVIS: Ø988 4-6 HOURS

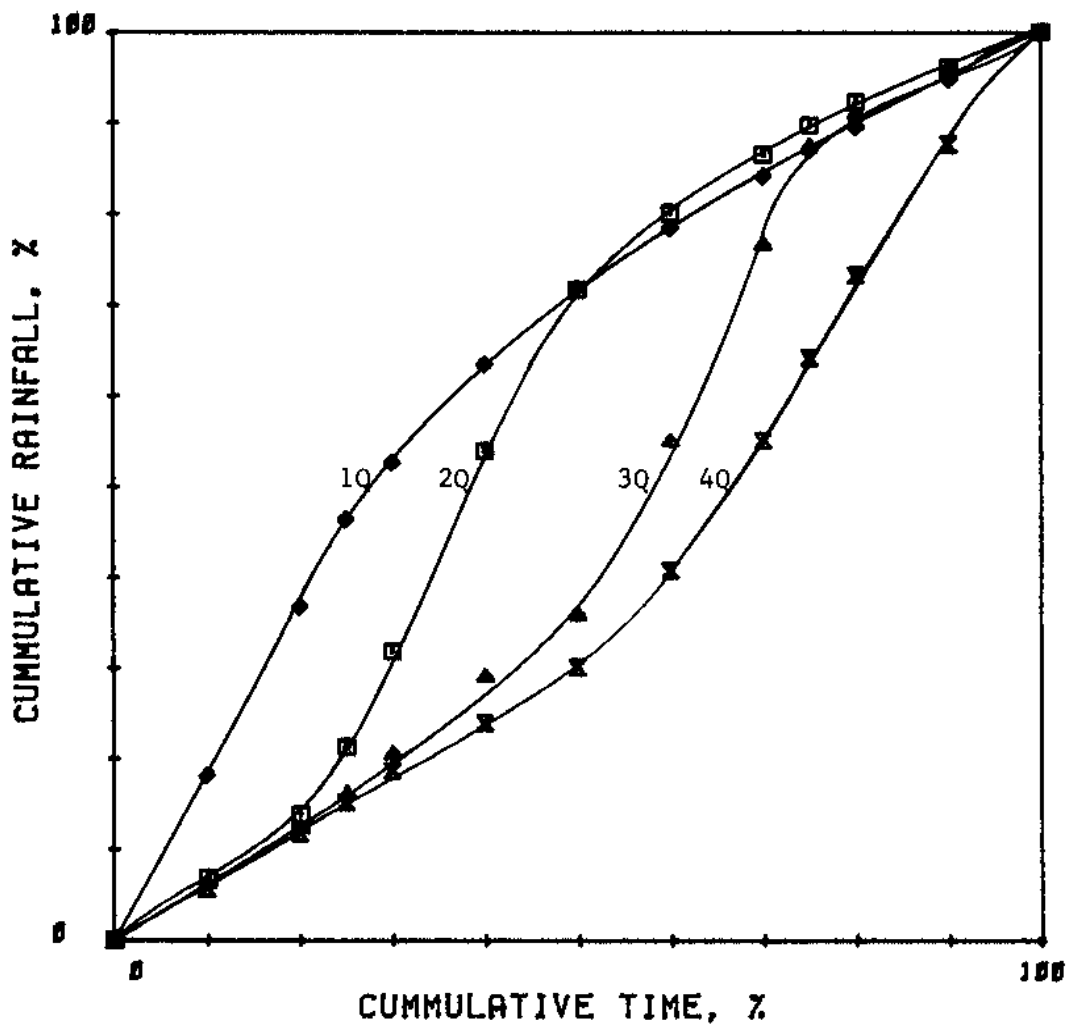


Figure A1. Continued

d. BOTIJAS 2-ORCOVIS: 0988 7-12 HOURS

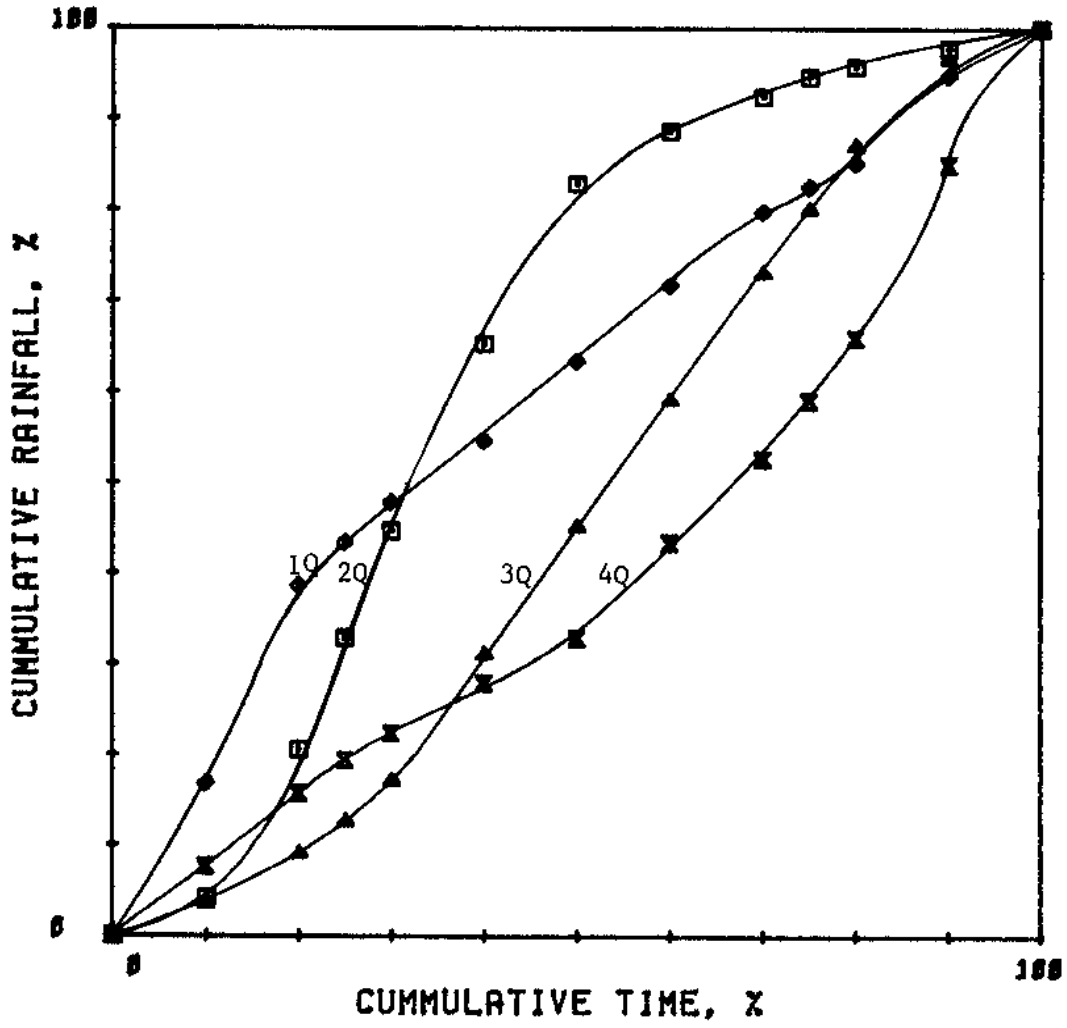


Figure A2. Mean Non-Dimensional Storm Rainfall Distributions for Cayey 1E Station. Minimum Time Between Storms = 1 hr

a. CAYEY 1 E : 1901 2 HOURS

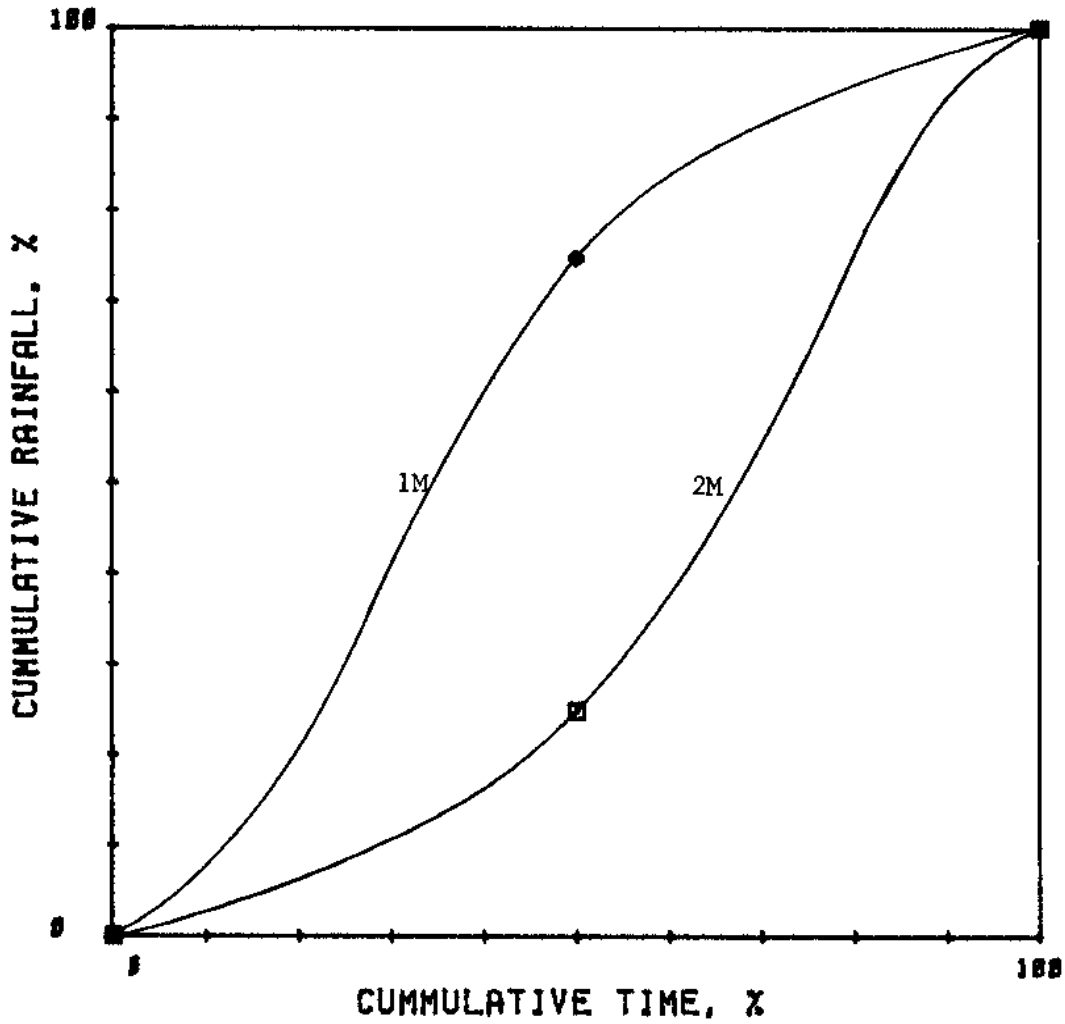


Figure A2. Continued

b. CAYEY 1 E : 1901 3 HOURS

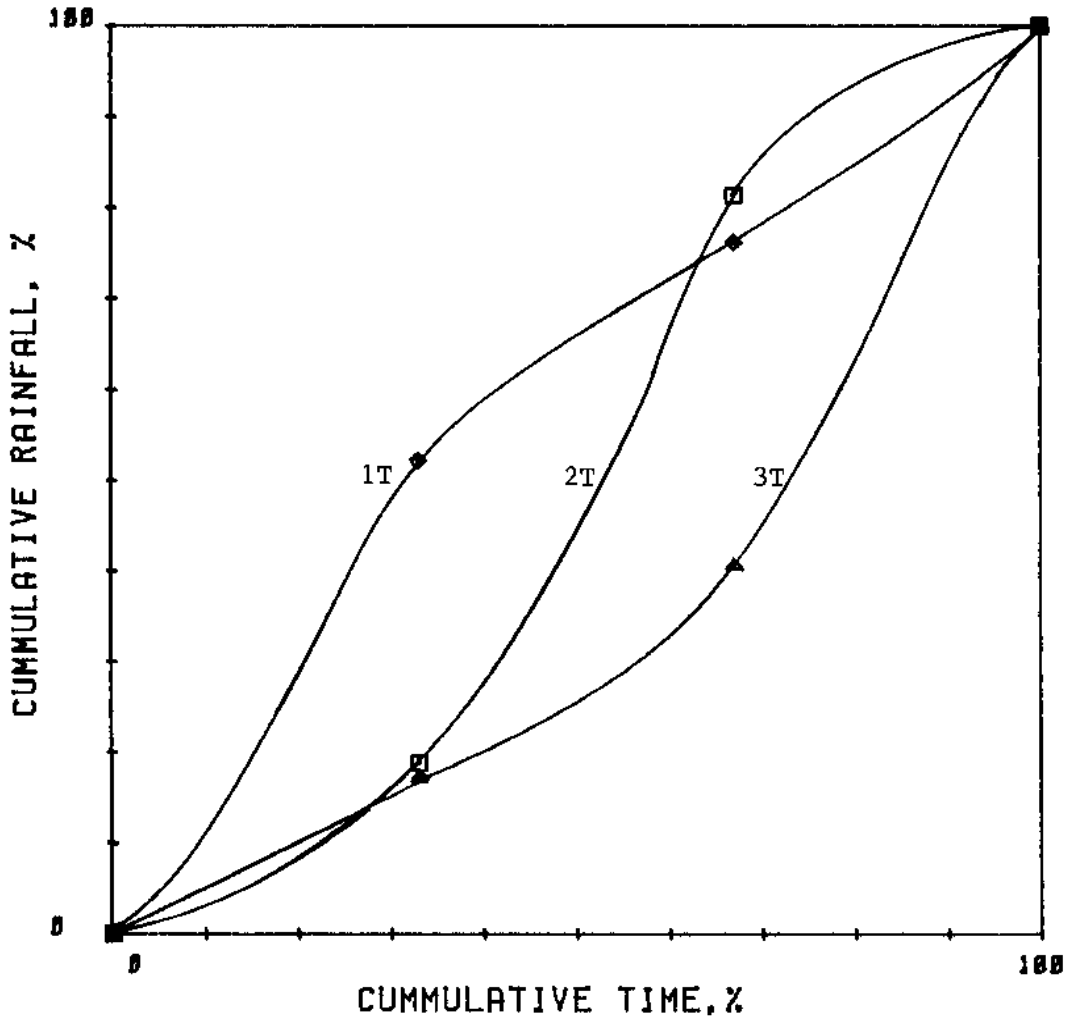


Figure A2. Continued

c. CAYEY 1 E : 1901 4-6 HOURS

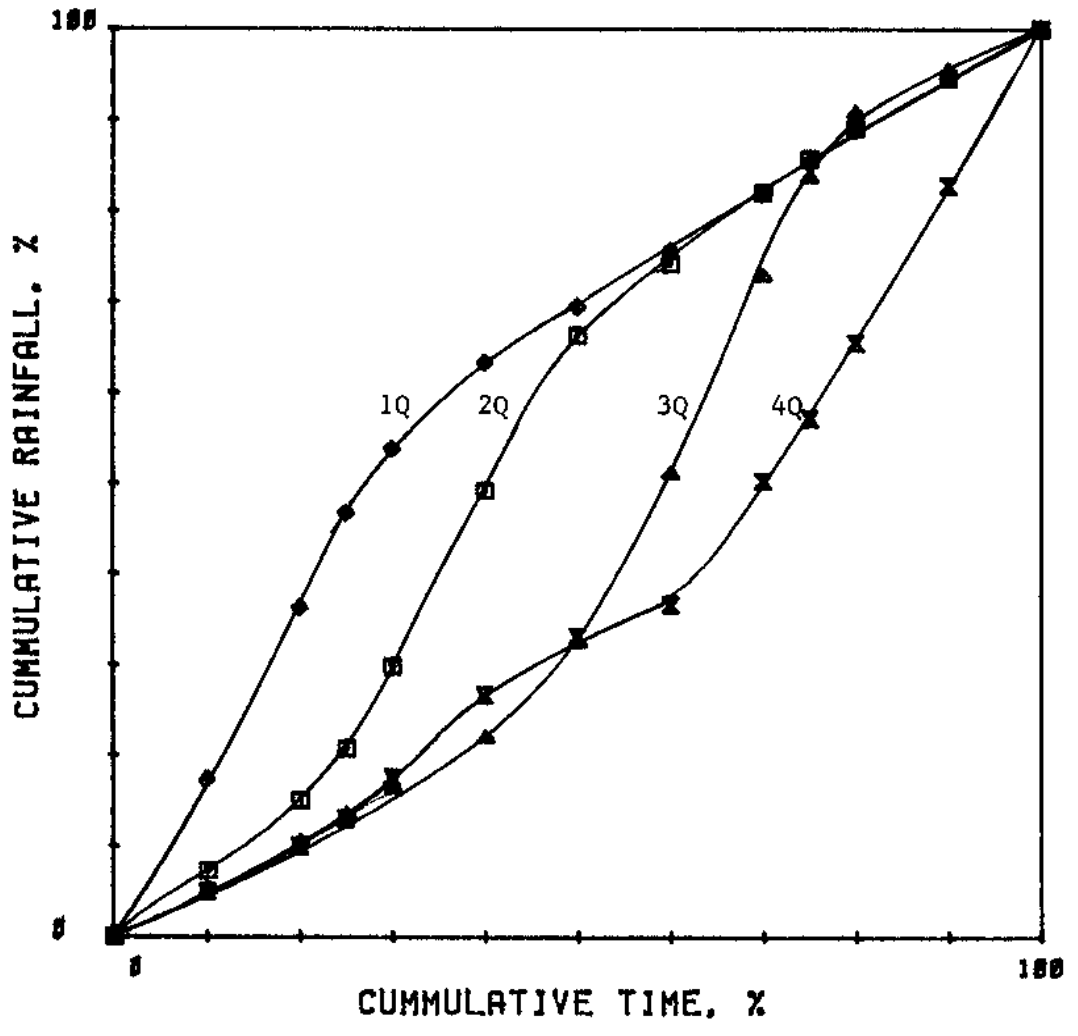


Figure A2. Continued

d. CAYEY 1 E : 1901 7-12 HOURS

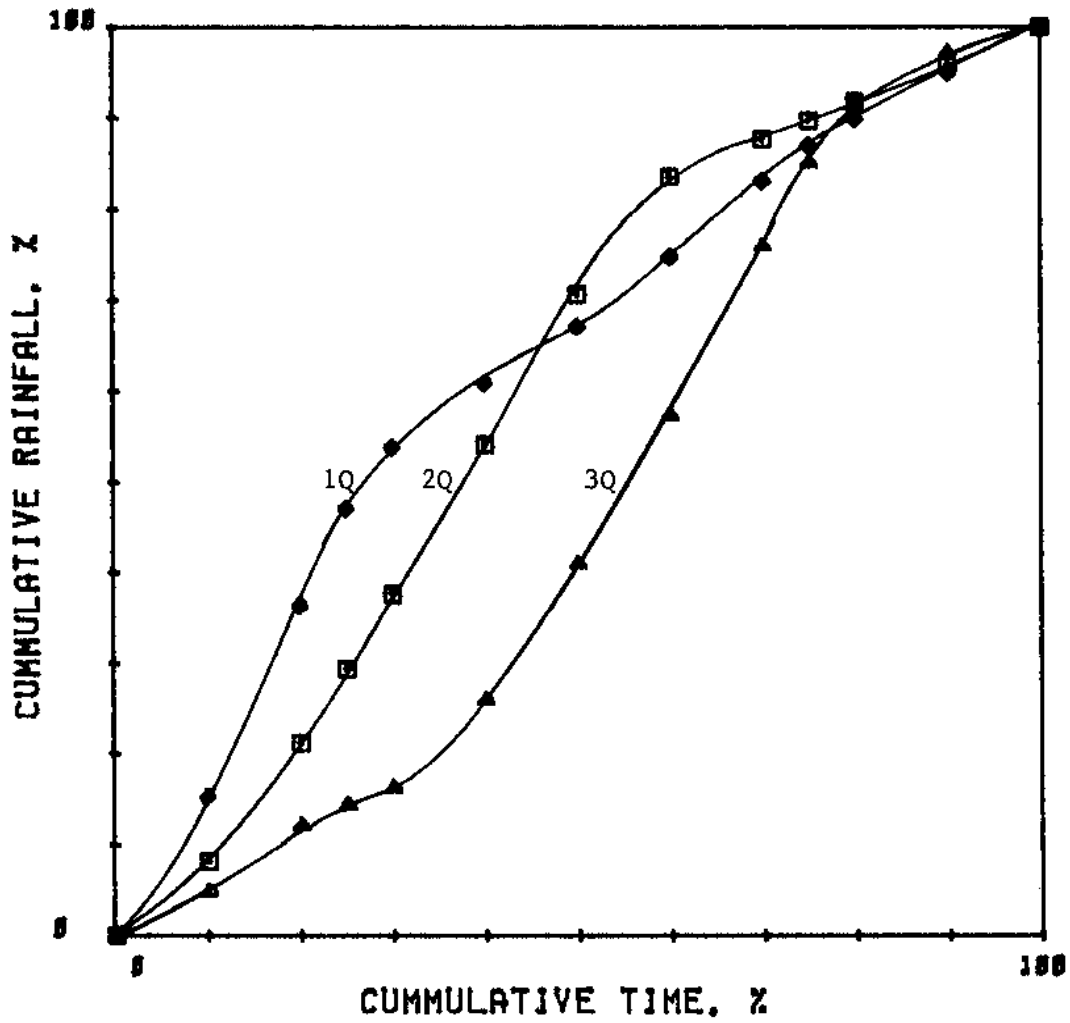


Figure A3. Mean Non-Dimensional Storm Rainfall Distributions for Corozal Substation. Minimum Time Between Storms = 1 hr

a. COROZAL SUBSTATION : 2934 2 HOURS

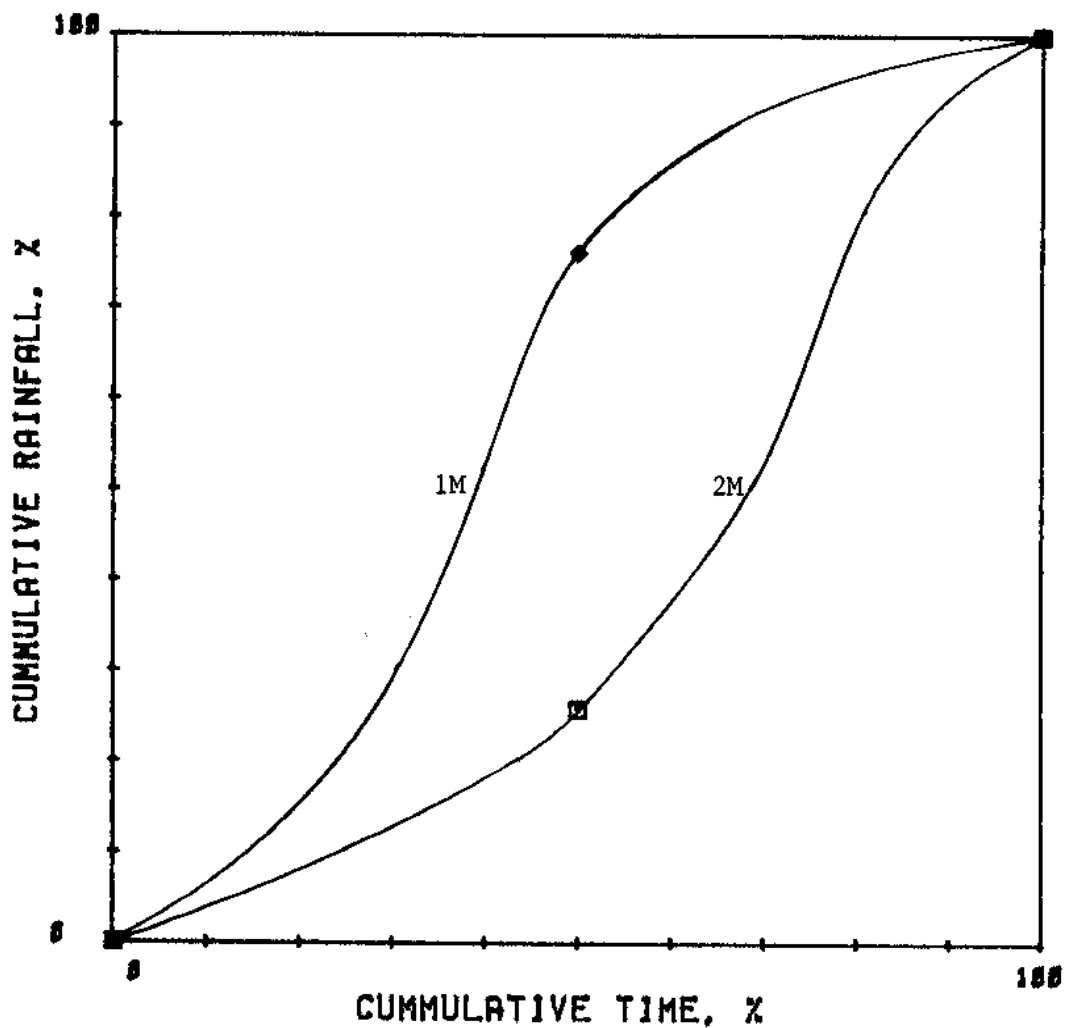


Figure A3. Continued

b. COROZAL SUBSTATION : 2934 3 HOURS

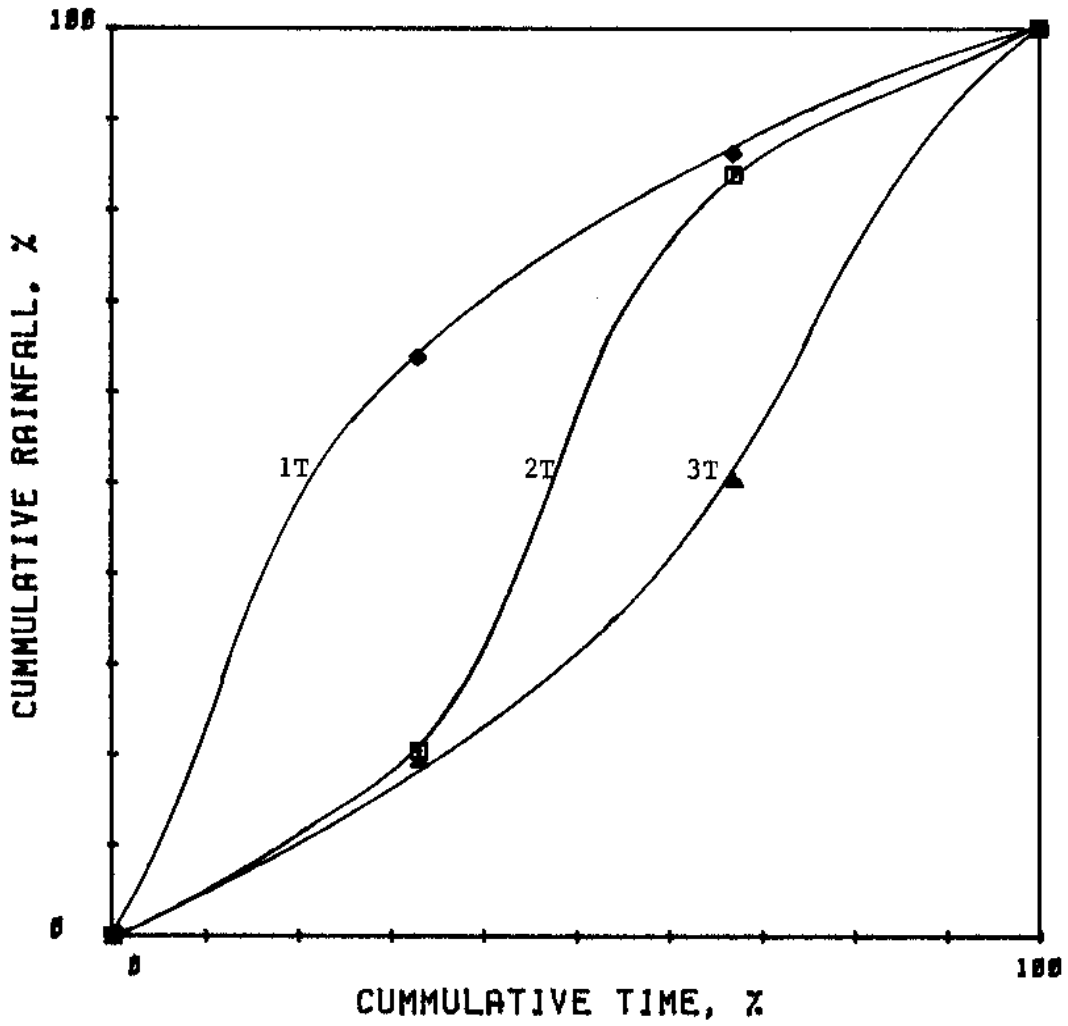


Figure A3. Continued

c. COROZAL SUBSTATION : 2439 4-6 HOURS

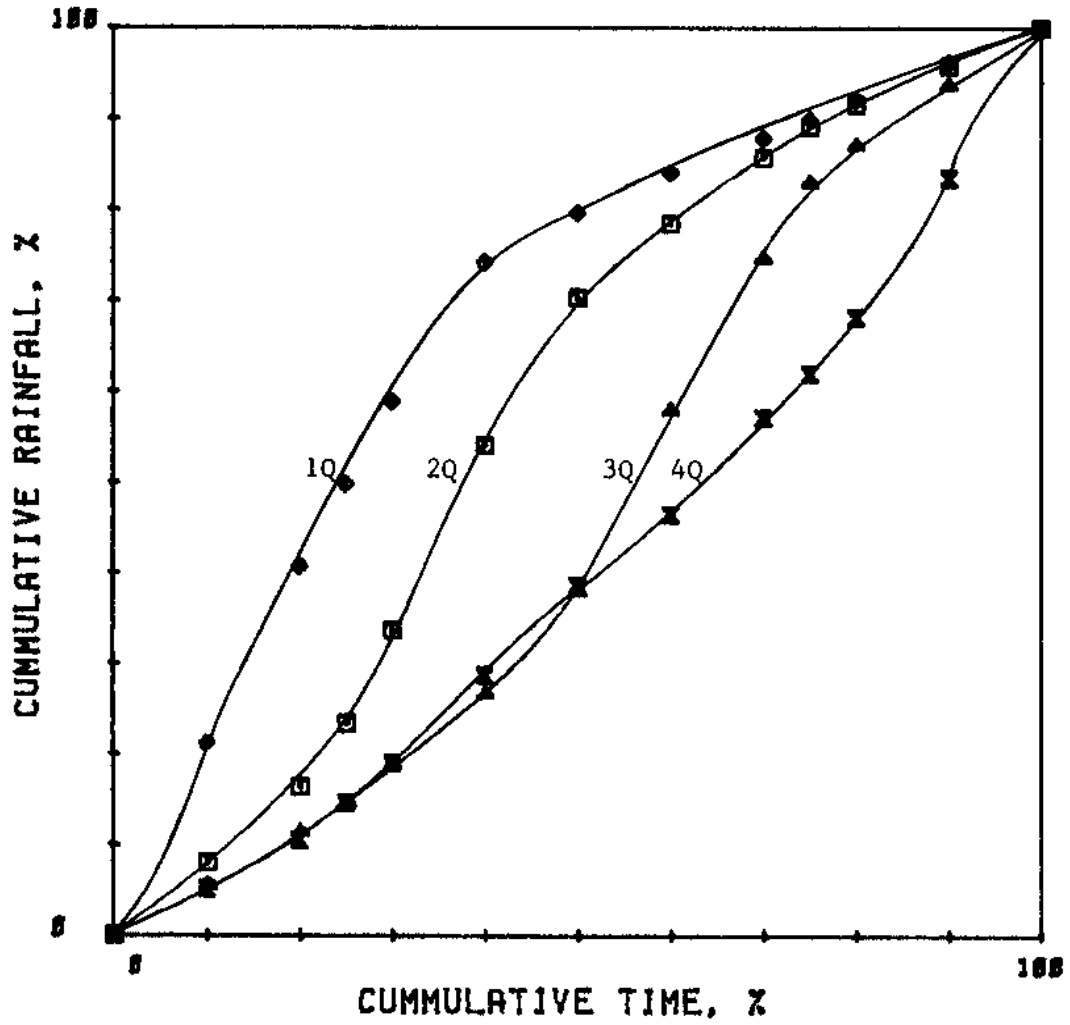


Figure A3. Continued

d. COROZAL SUBSTATION : 2934 7-12 HOURS

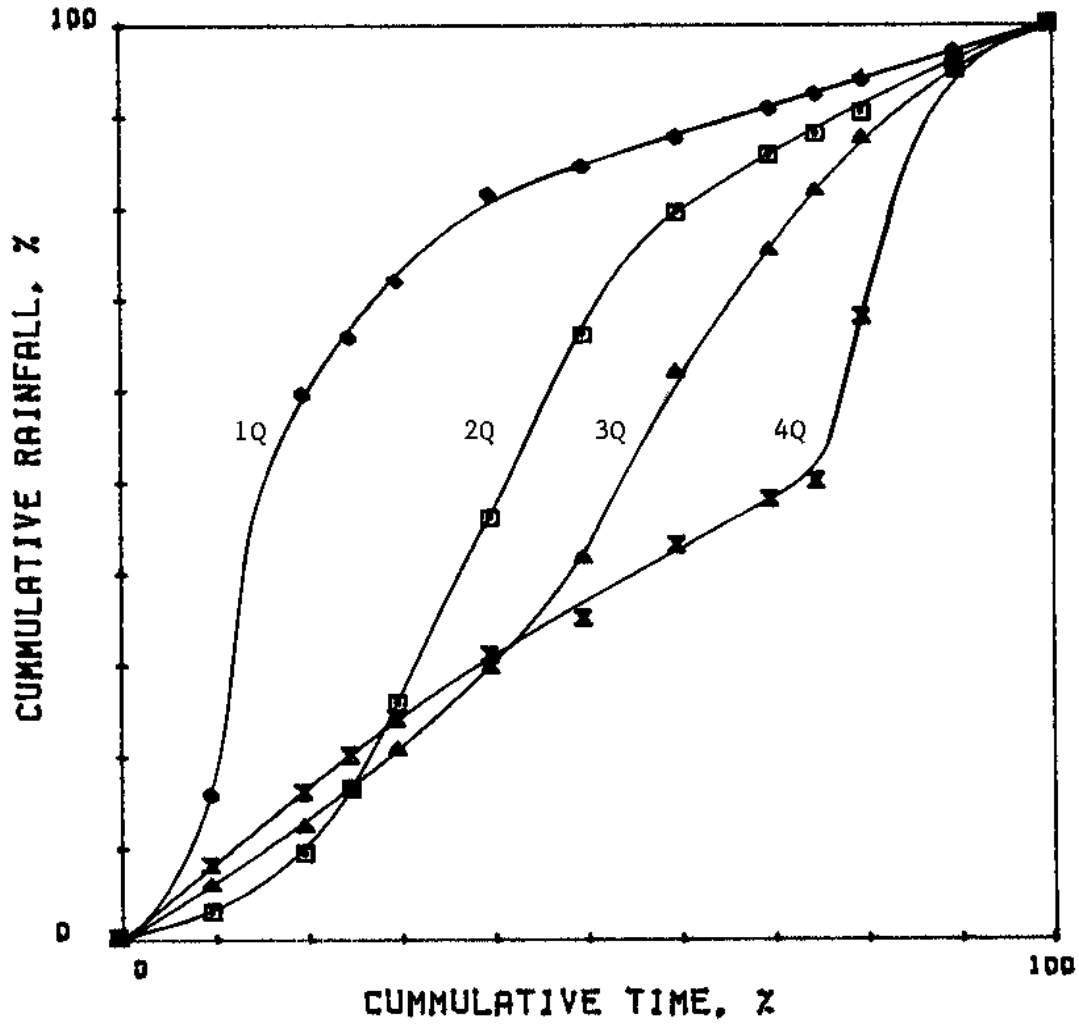


Figure A4. Mean Non-Dimensional Storm
Rainfall Distributions for
Dos Bocas Station.
Minimum Time Between Storms = 1 hr

a) DOS BOCAS: 3431 2 HOURS

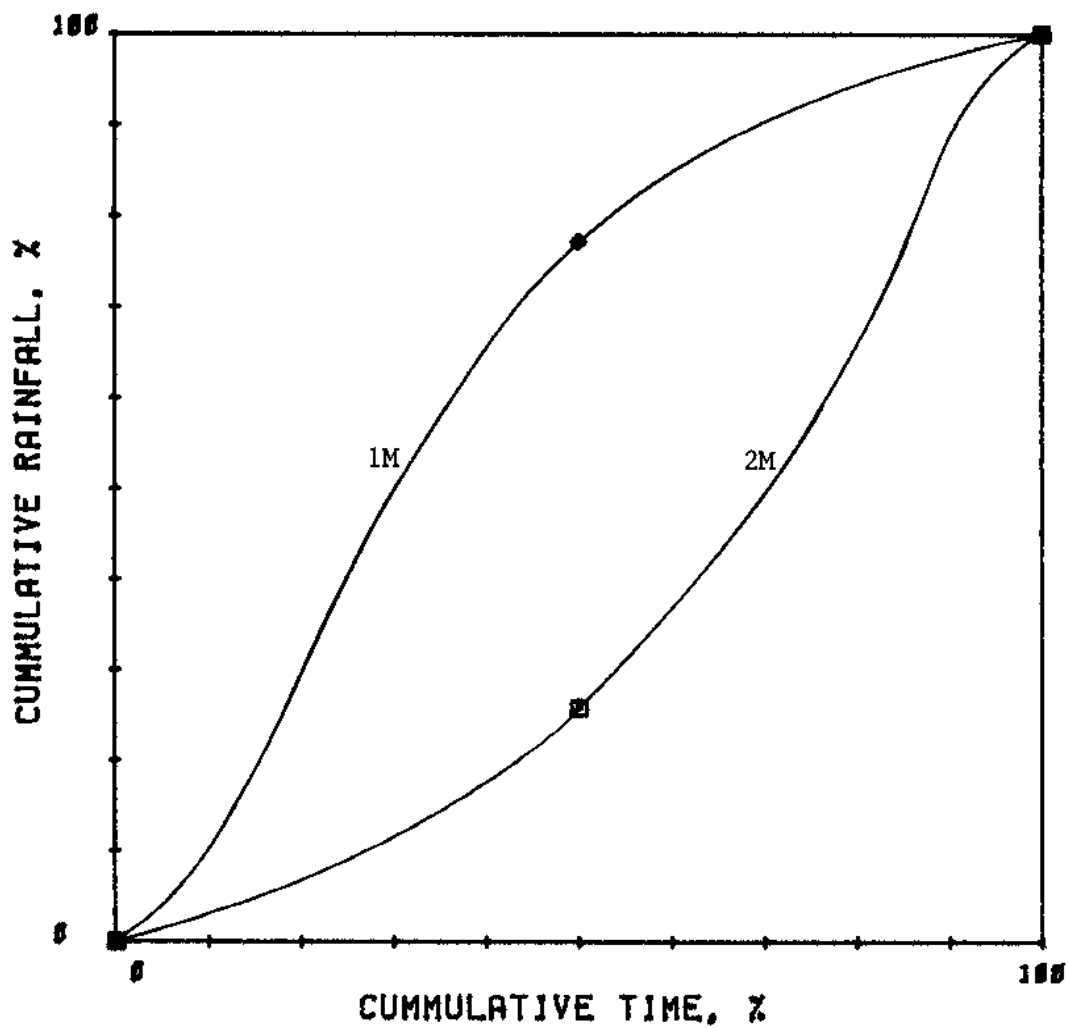


Figure A4. Continued.

b) DOS BOCAS: 3431 3 HOURS

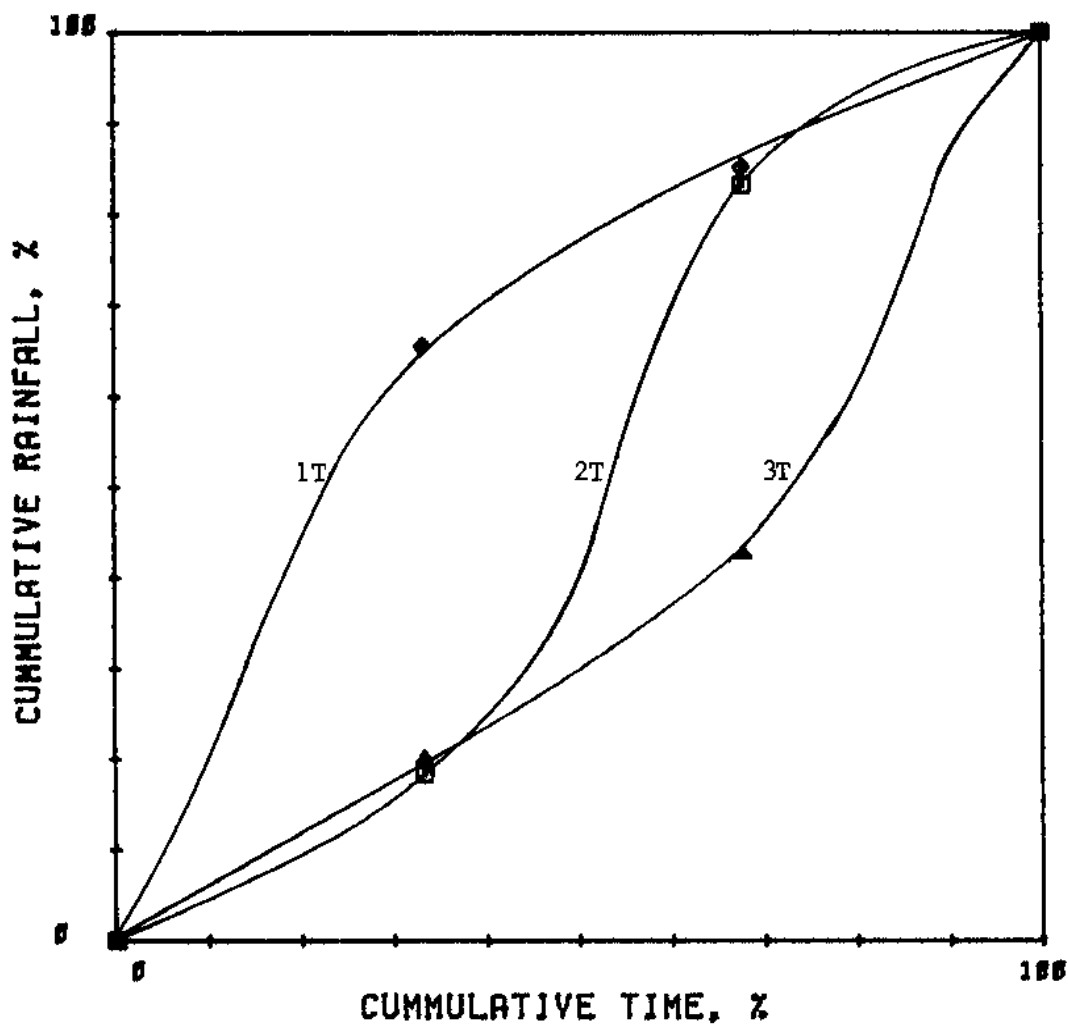


Figure A4. Continued.

c) DOS BOCAS: 3431 4-6 HOURS

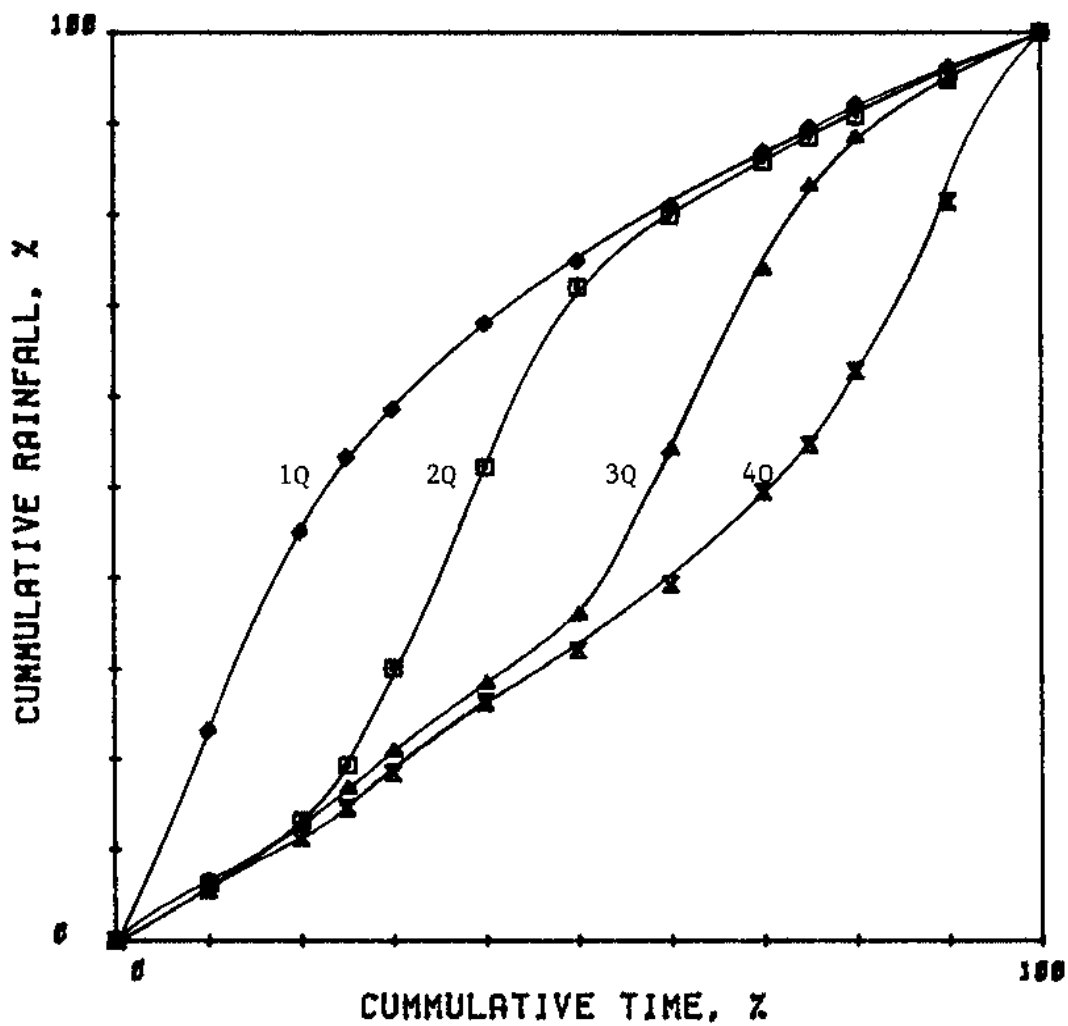


Figure A4. Continued.

d) DOS BOCAS: 3431 7-12-HOURS

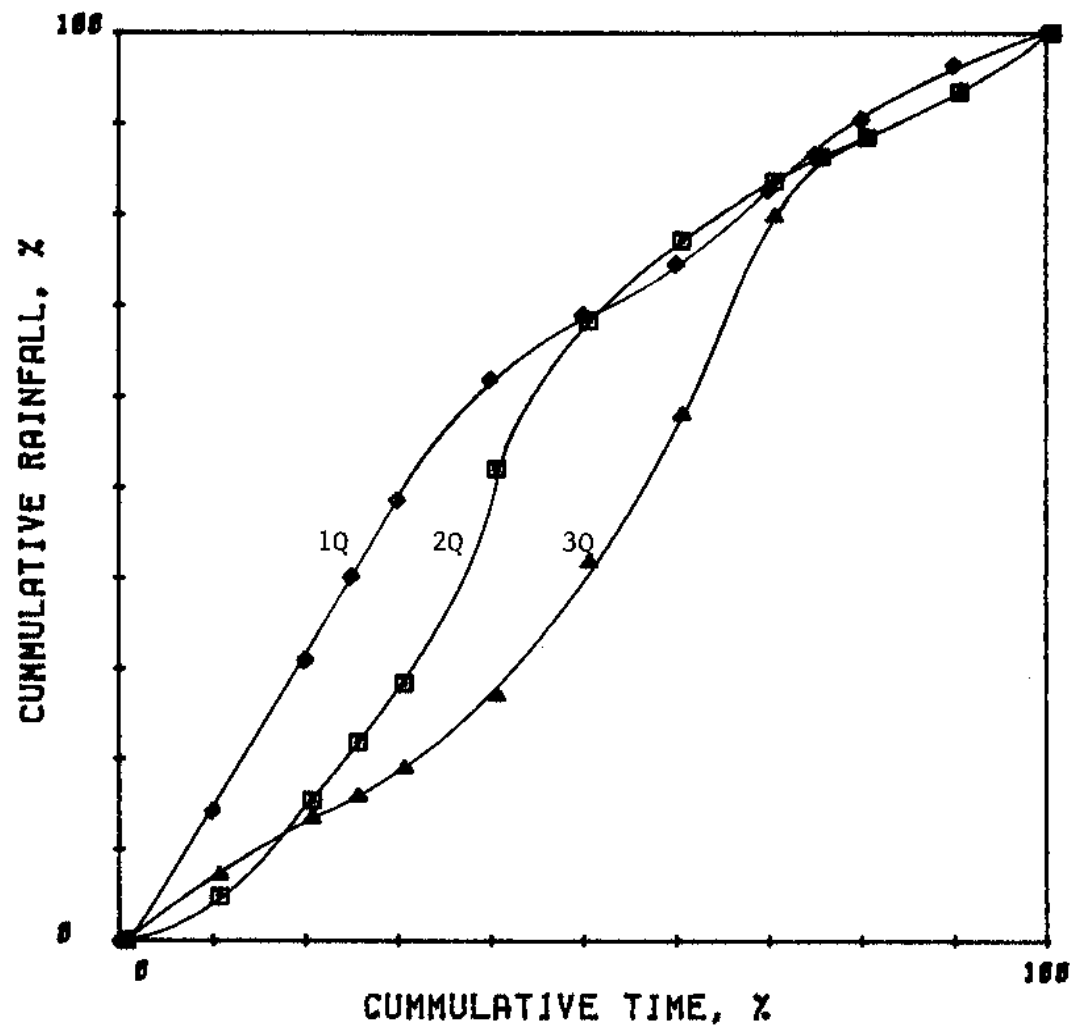


Figure A5. Mean Non-Dimensional Storm
Rainfall Distributions for
Fajardo Station.
Minimum Time Between Storms = 1 hr

a) FAJARDO : 3657 2 HOURS

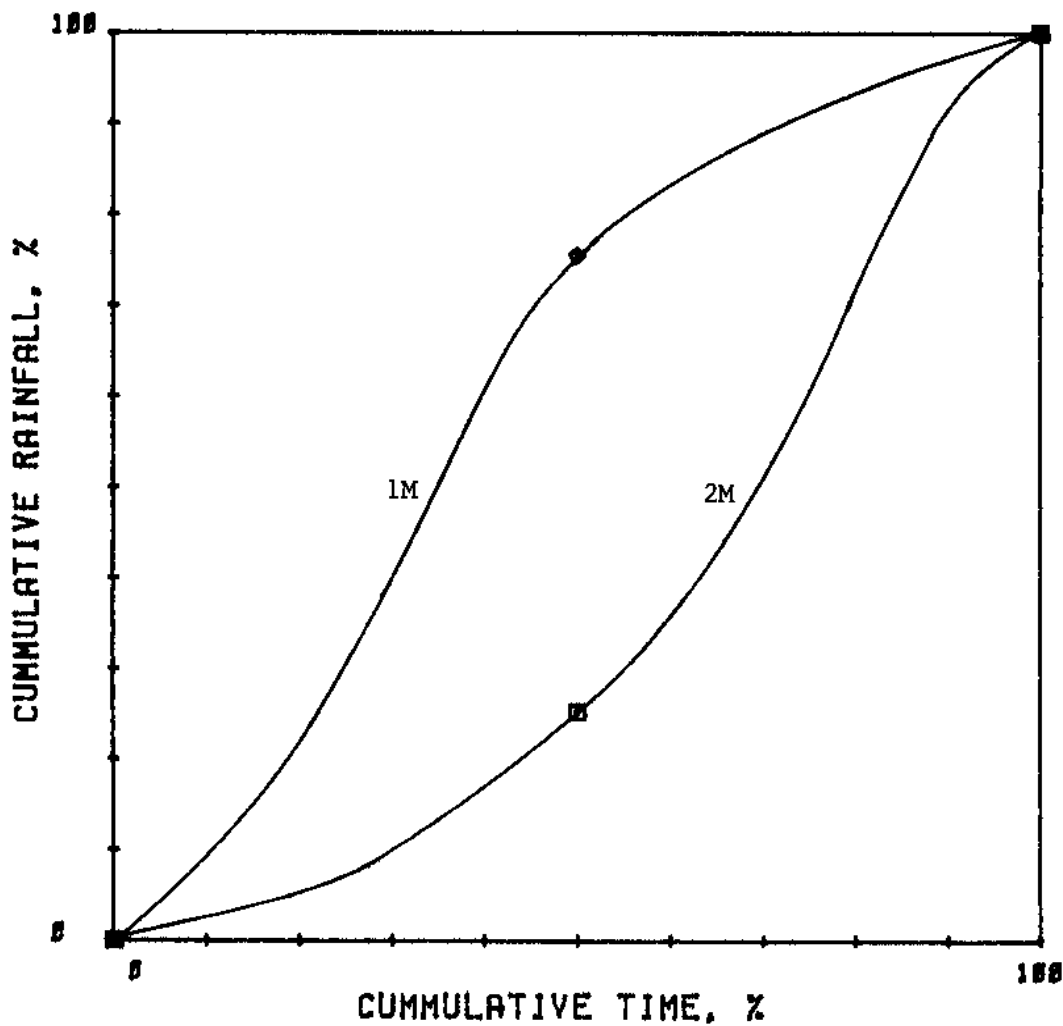


Figure A5. Continued.

b) FAJARDO : 3657 3 HOURS

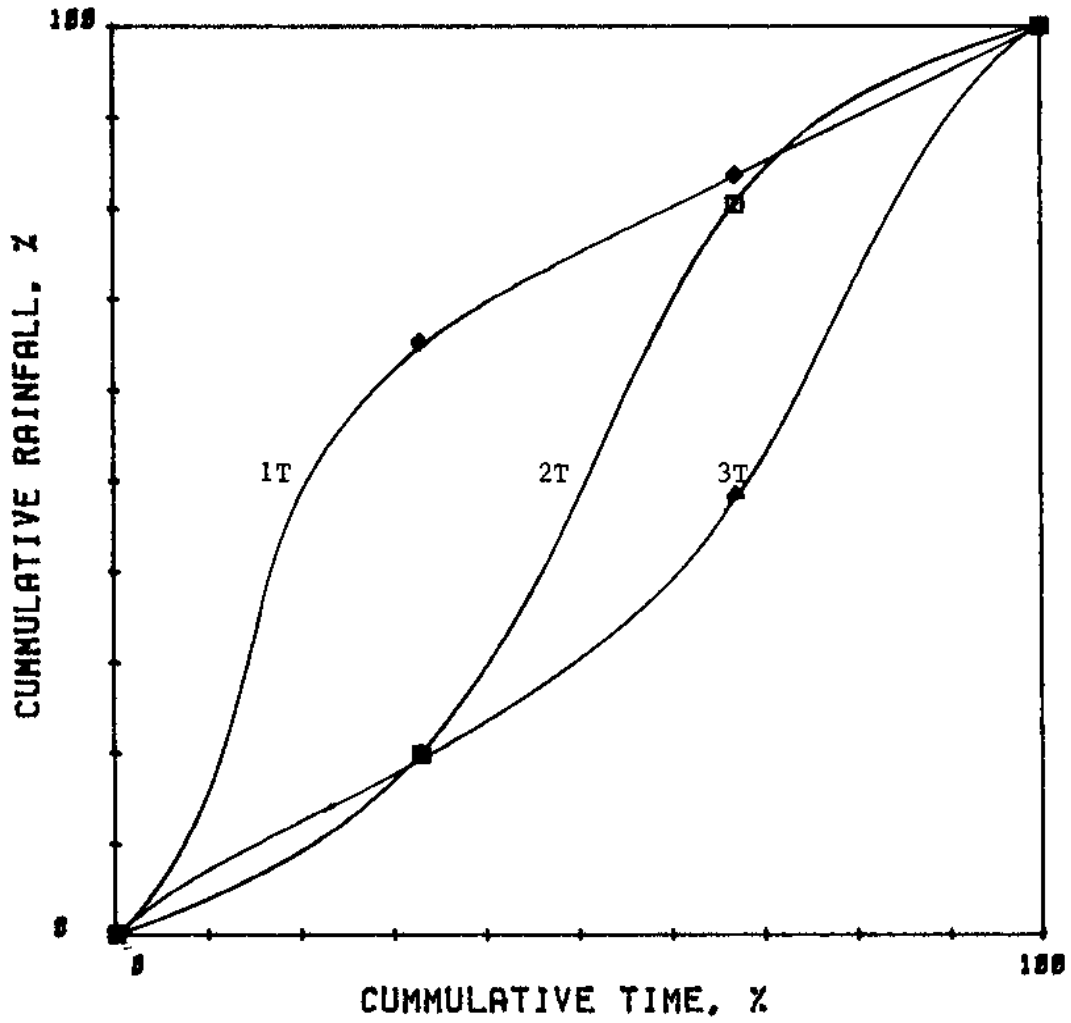


Figure A5. Continued.

c) FAJARDO : 3657 4-6 HOURS

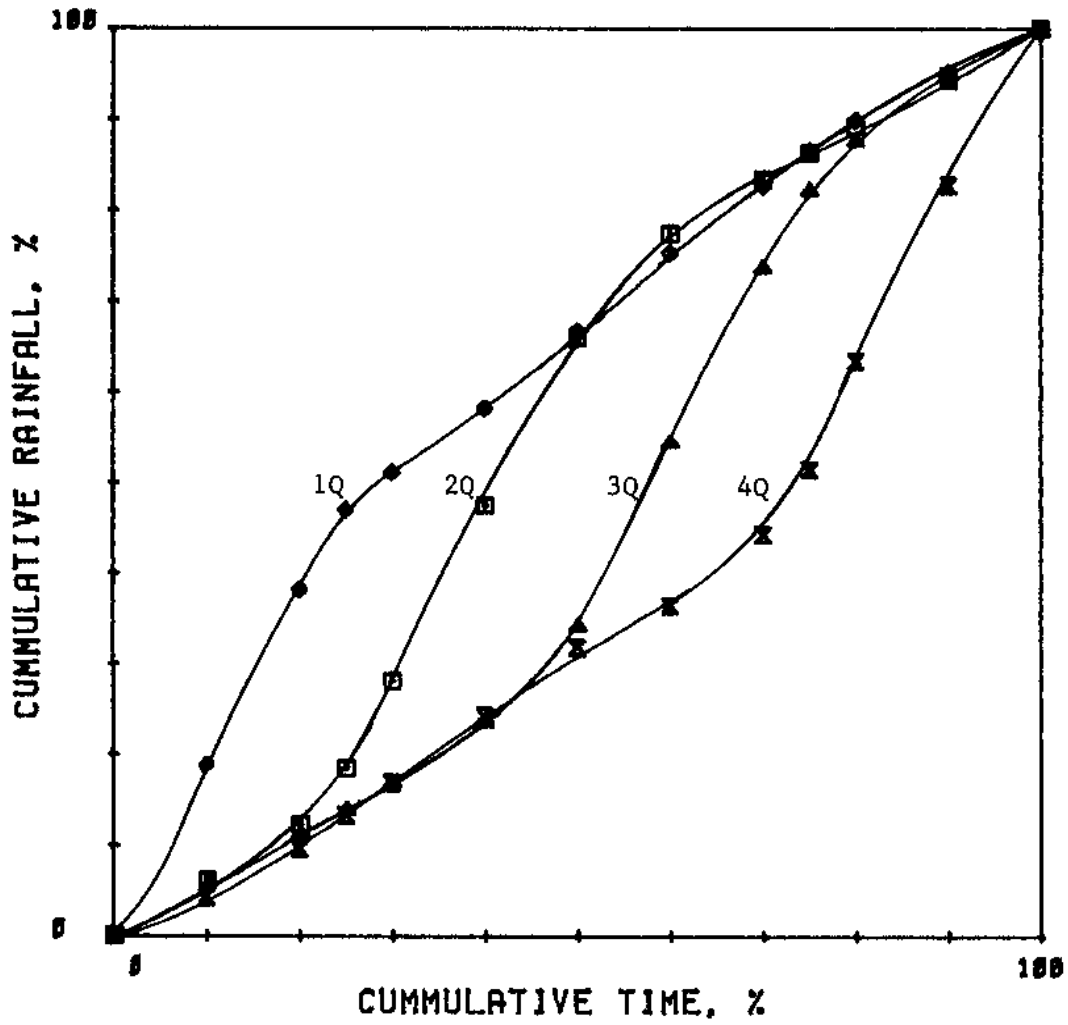


Figure A5. Continued.

d) FAJARDO : 3657 7-12 HOURS

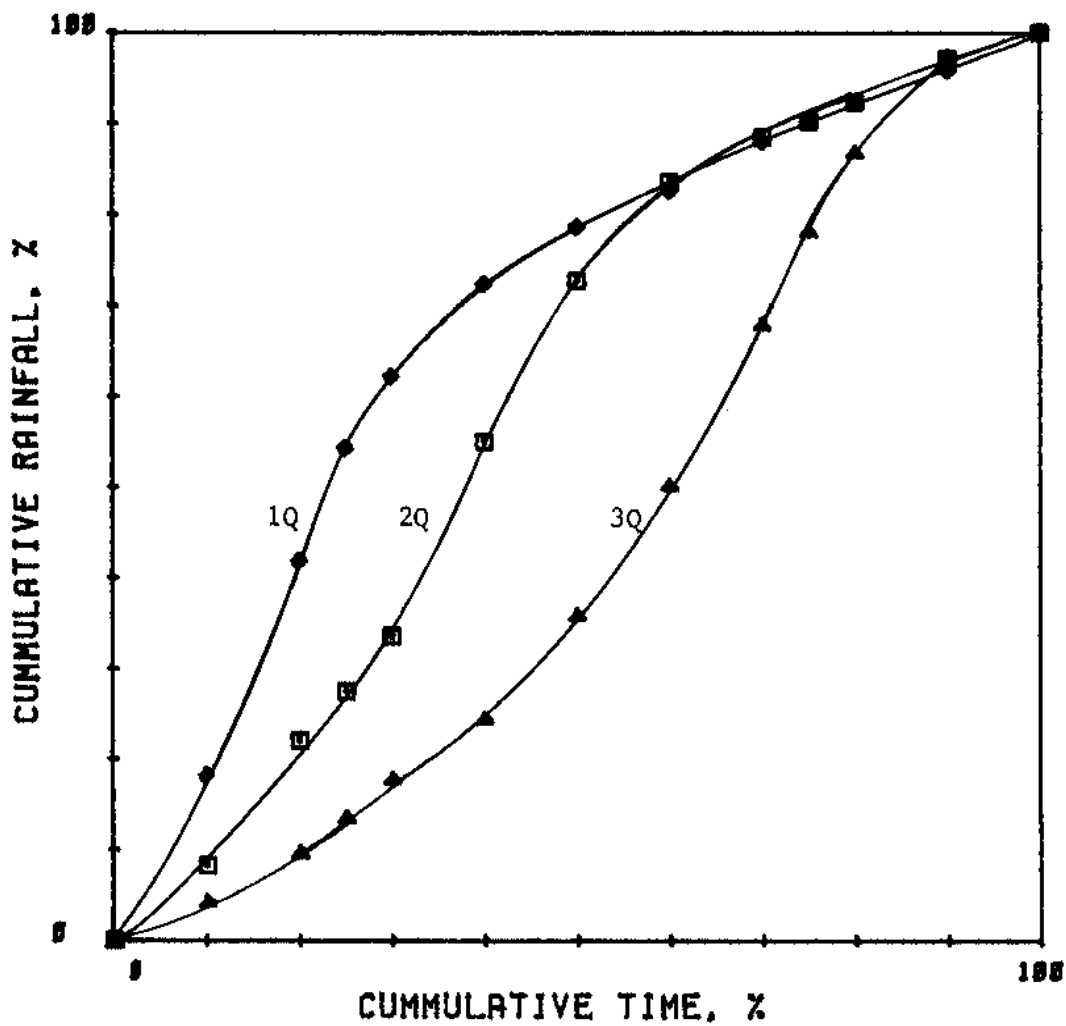


Figure A6. Mean Non-Dimensional Storm Rainfall Distributions for Maricao 2 SSW Station. Minimum Time Between Storms = 1 hr

a. MARICAO 2 SSW : 5908 2 HOURS

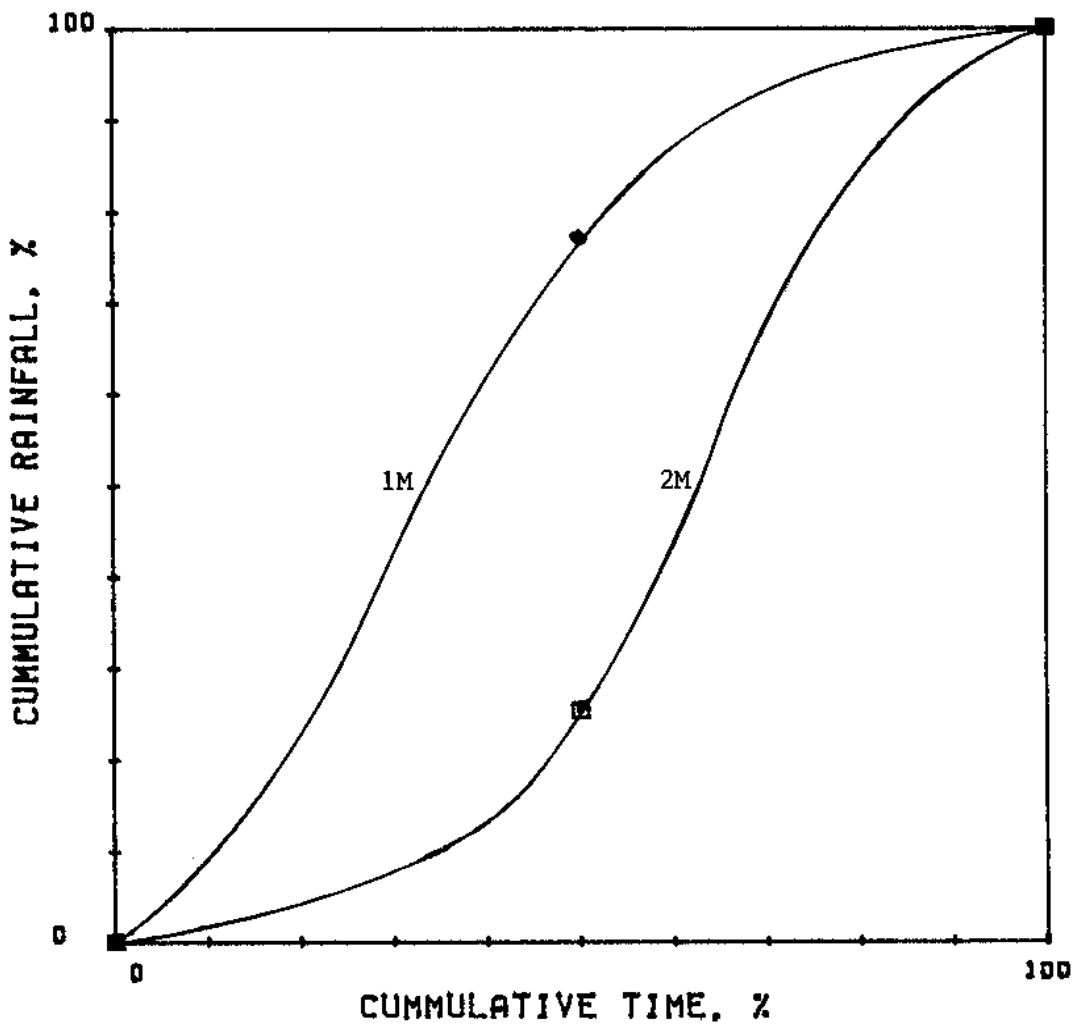


Figure A6. Continued

b. MARICAO 2 SSW : 5900 3 HOURS

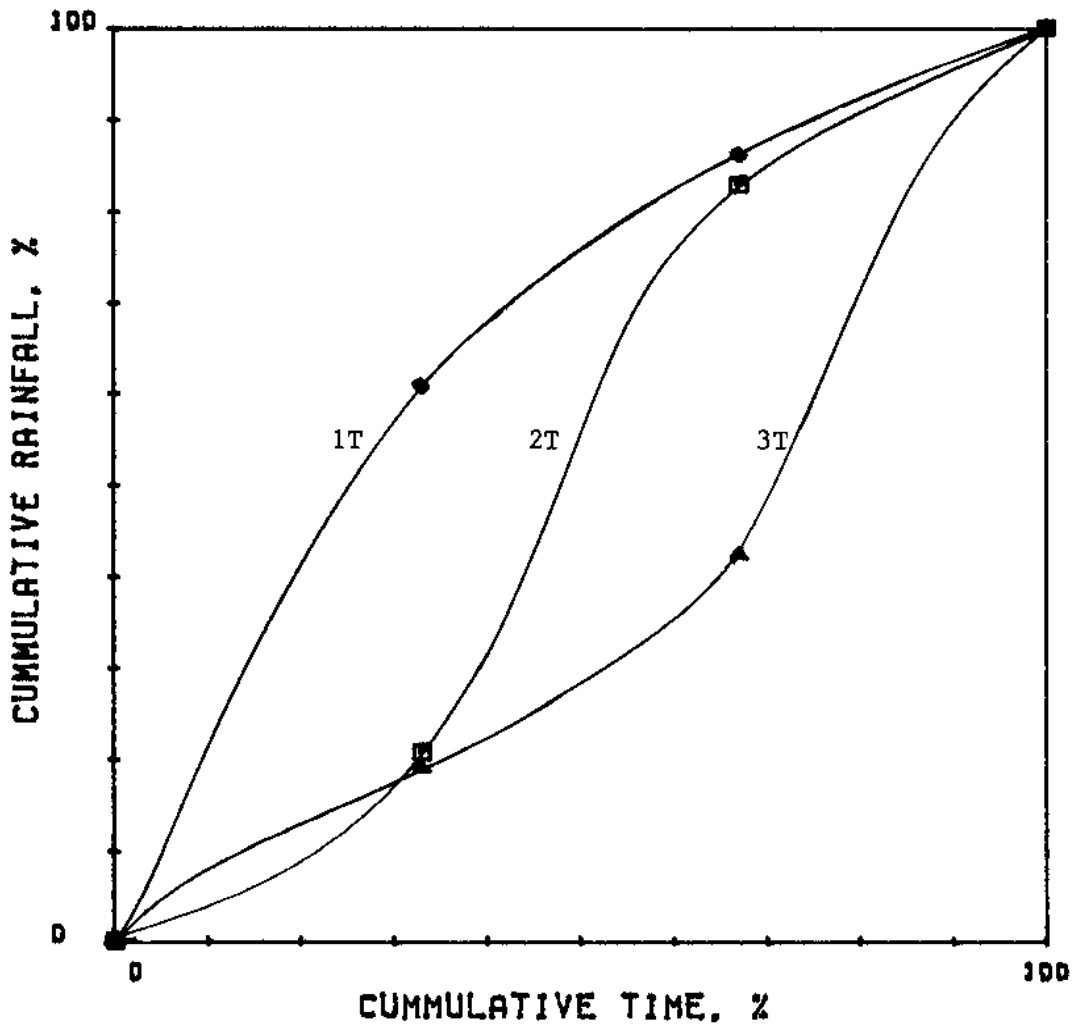


Figure A6. Continued

c. MARICOP 2 SSW : 5908 4-6 HOURS

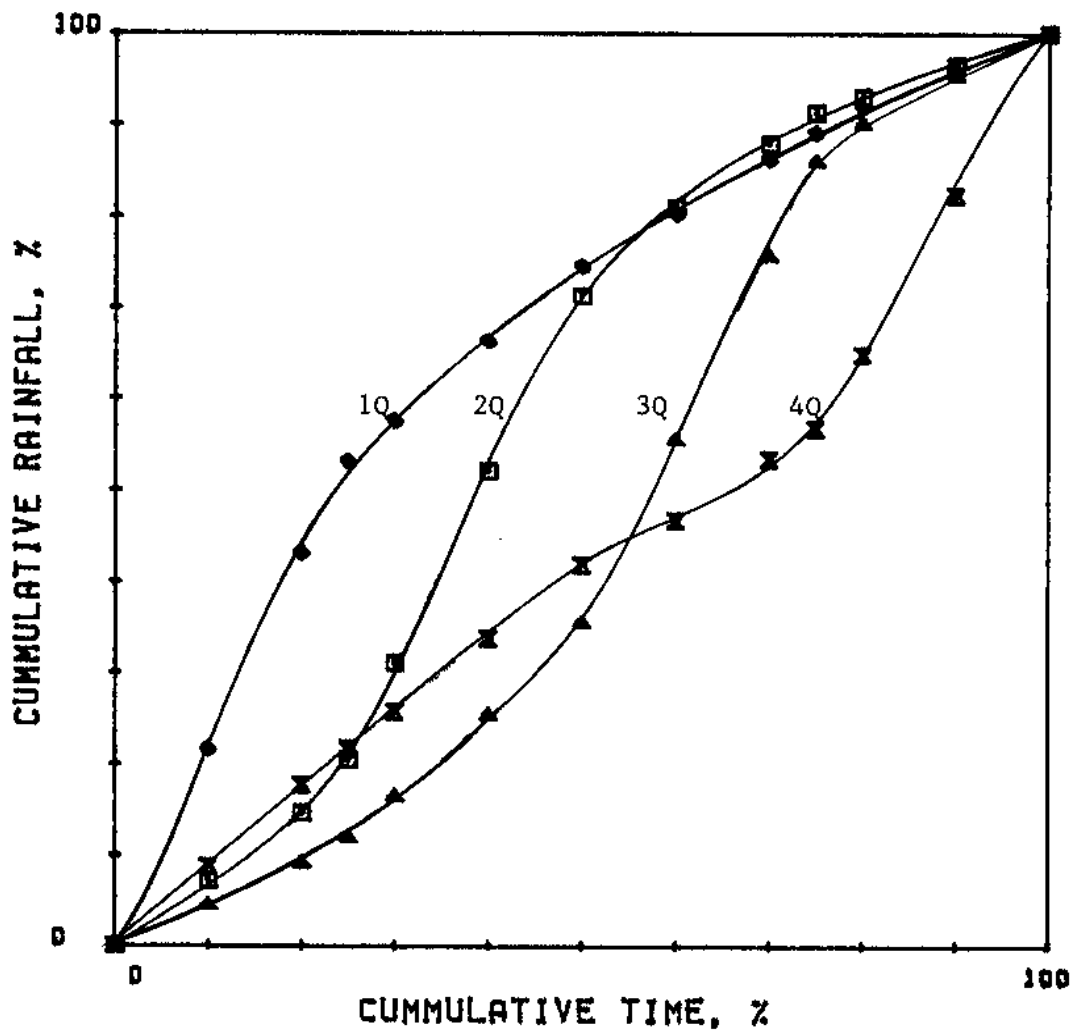


Figure A6. Continued

d. MARICAO 2 SSW : 5900 7-12 HOURS

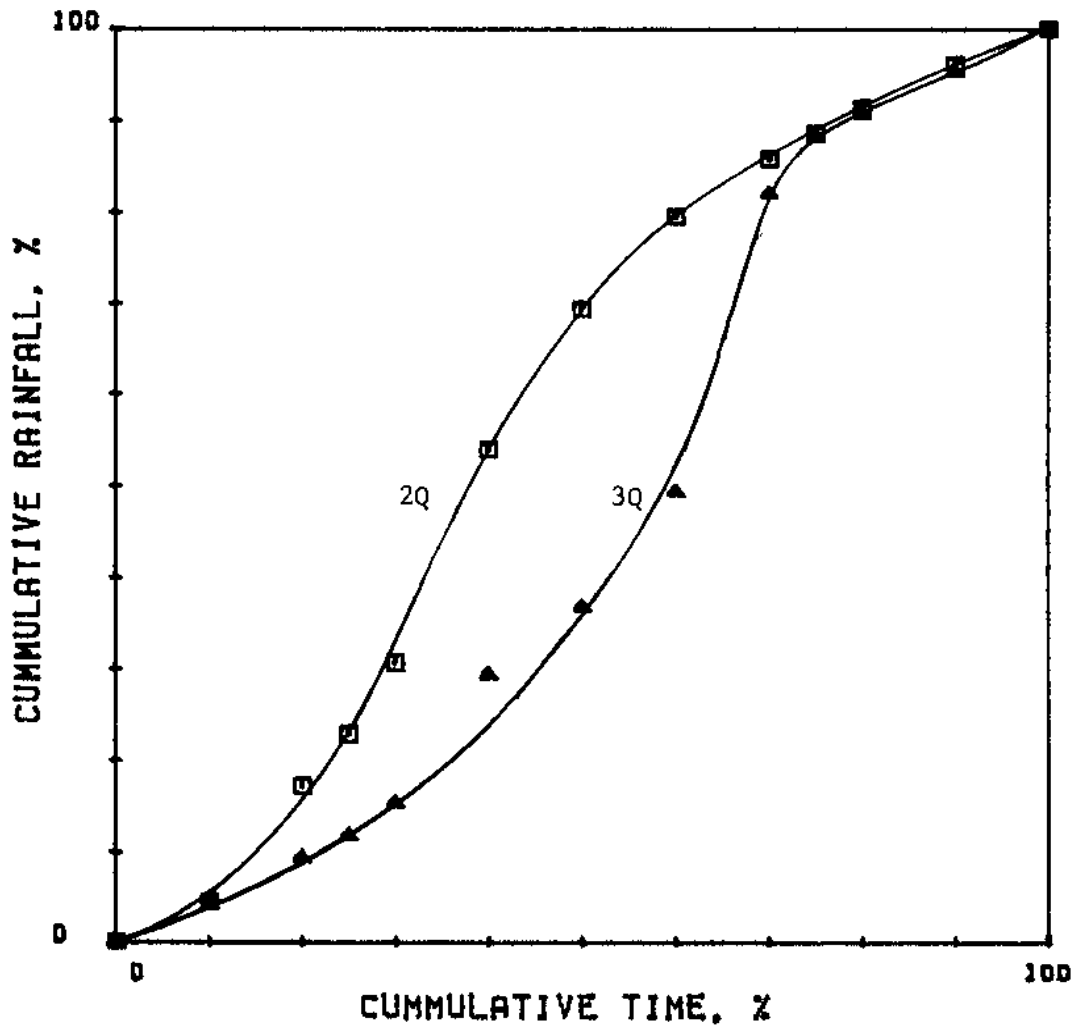


Figure A7. Mean Non-Dimensional Storm Rainfall Distributions for Ponce 4E Station. Minimum Time Between Storms = 1 hr

a. PONCE 4 E: 7292 2 HOURS

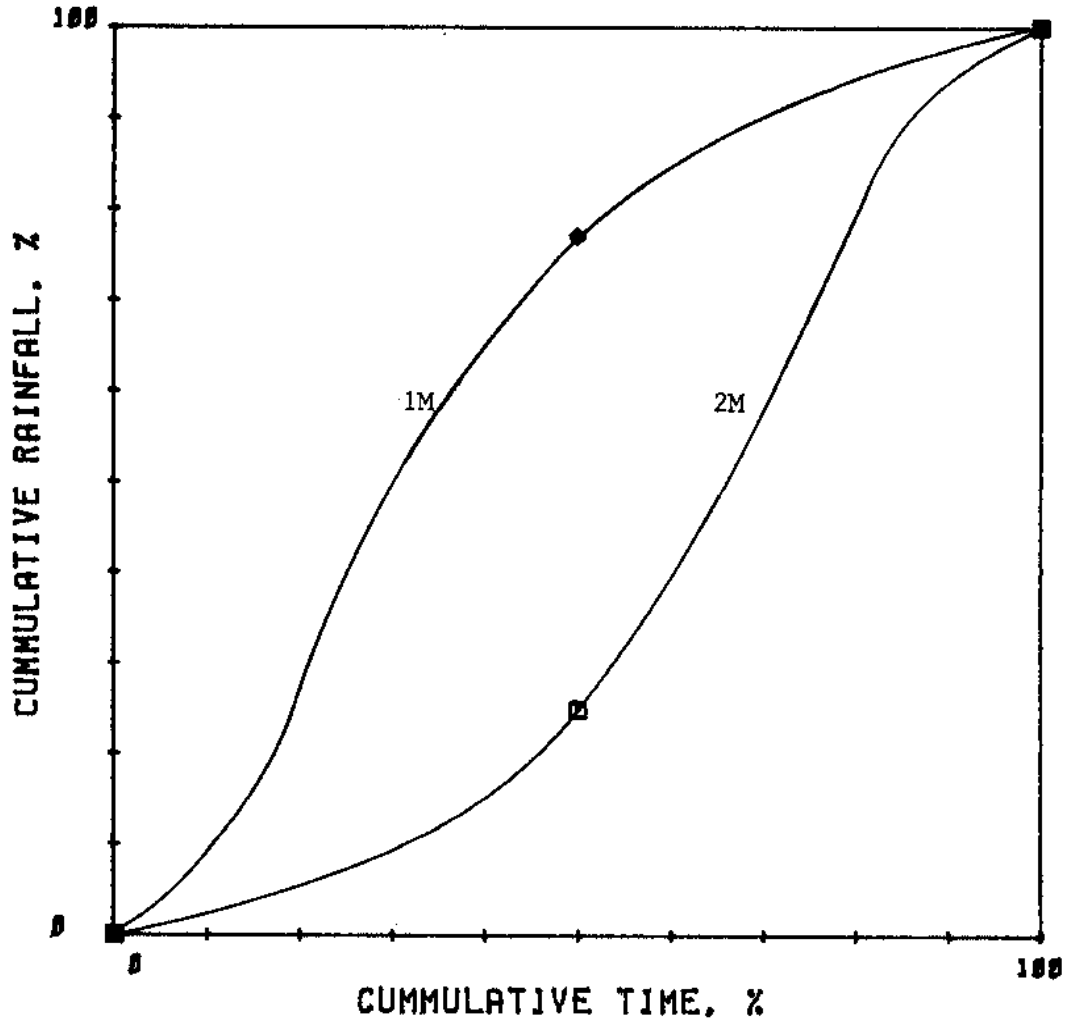


Figure A7. Continued

b. PONCE 4 E : 7292 3 HOURS

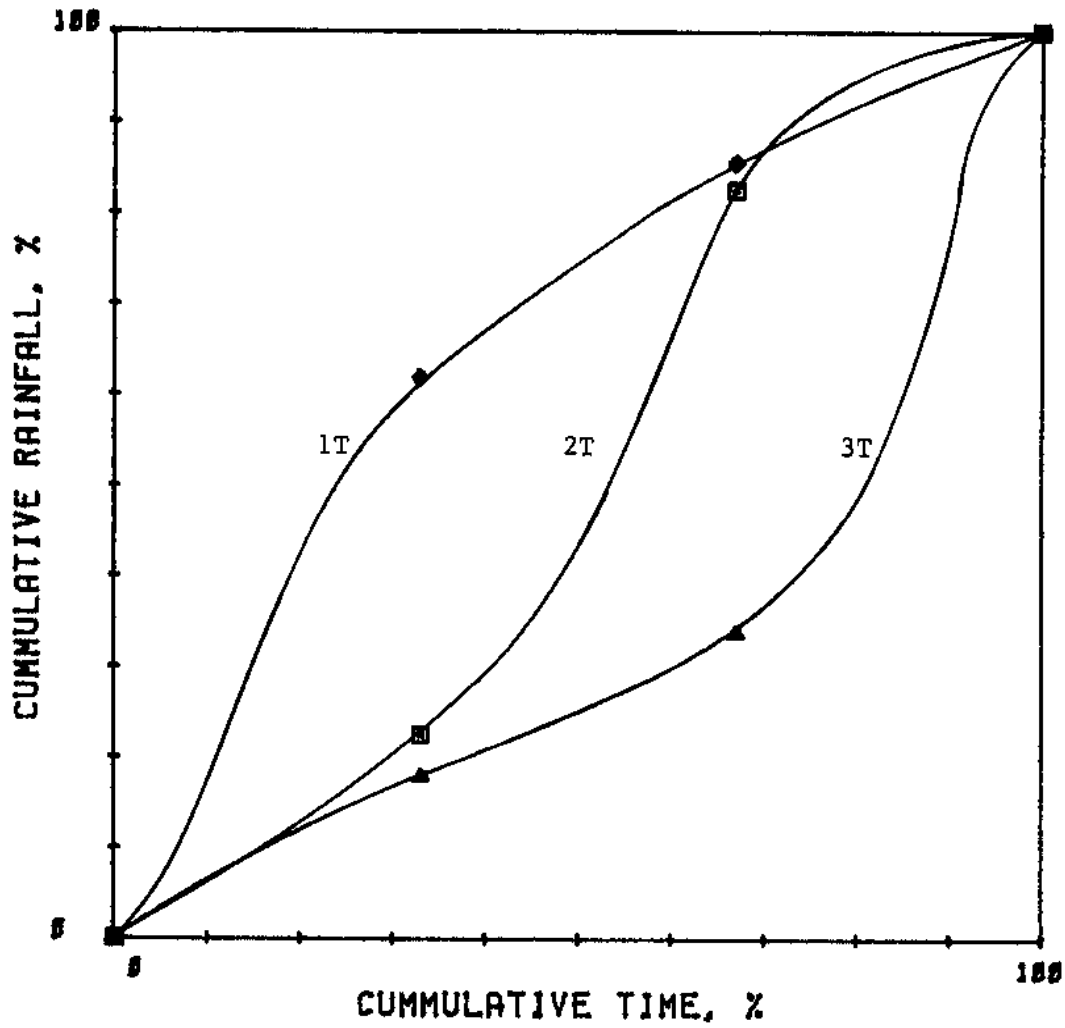


Figure A7. Continued

c. PONCE 4 E : 7292 4-6 HOURS

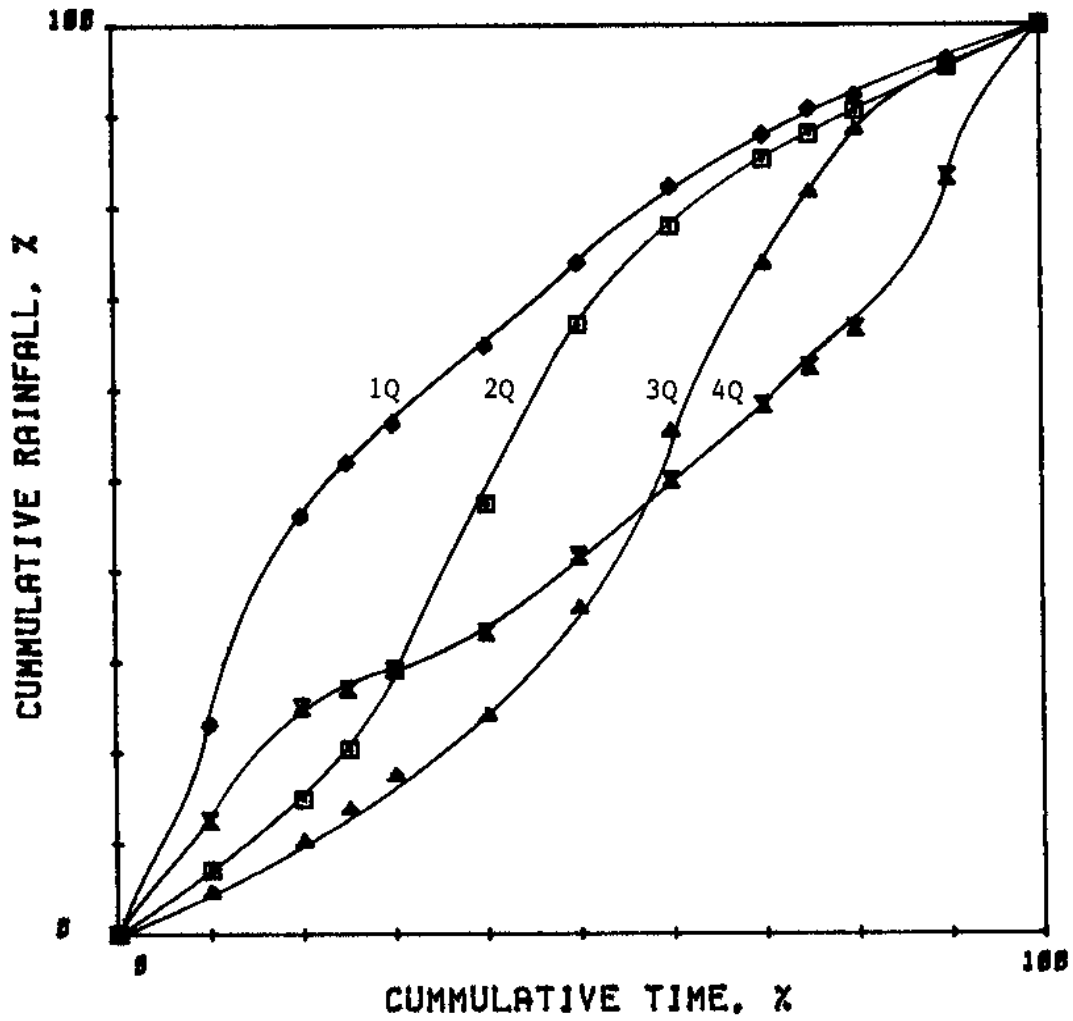


Figure A7. Continued

d. PONCE 4 E : 7292 7-12 HOURS

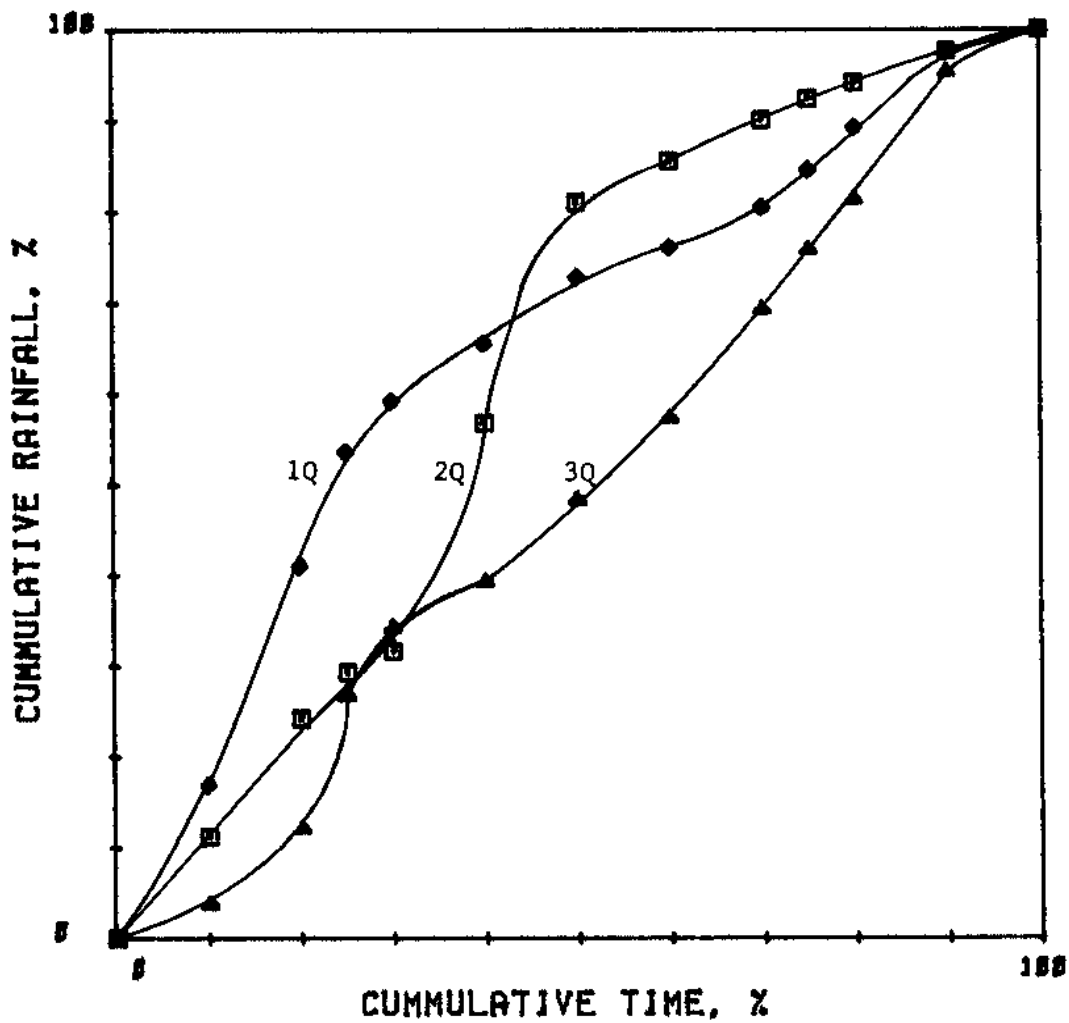


Figure A8. Mean Non-Dimensional Storm Rainfall
Distributions for San Juan WSFO Station
Minimum Time Between Storms = 1 hr

a. SAN JUAN WSFO:8812 2 HOURS

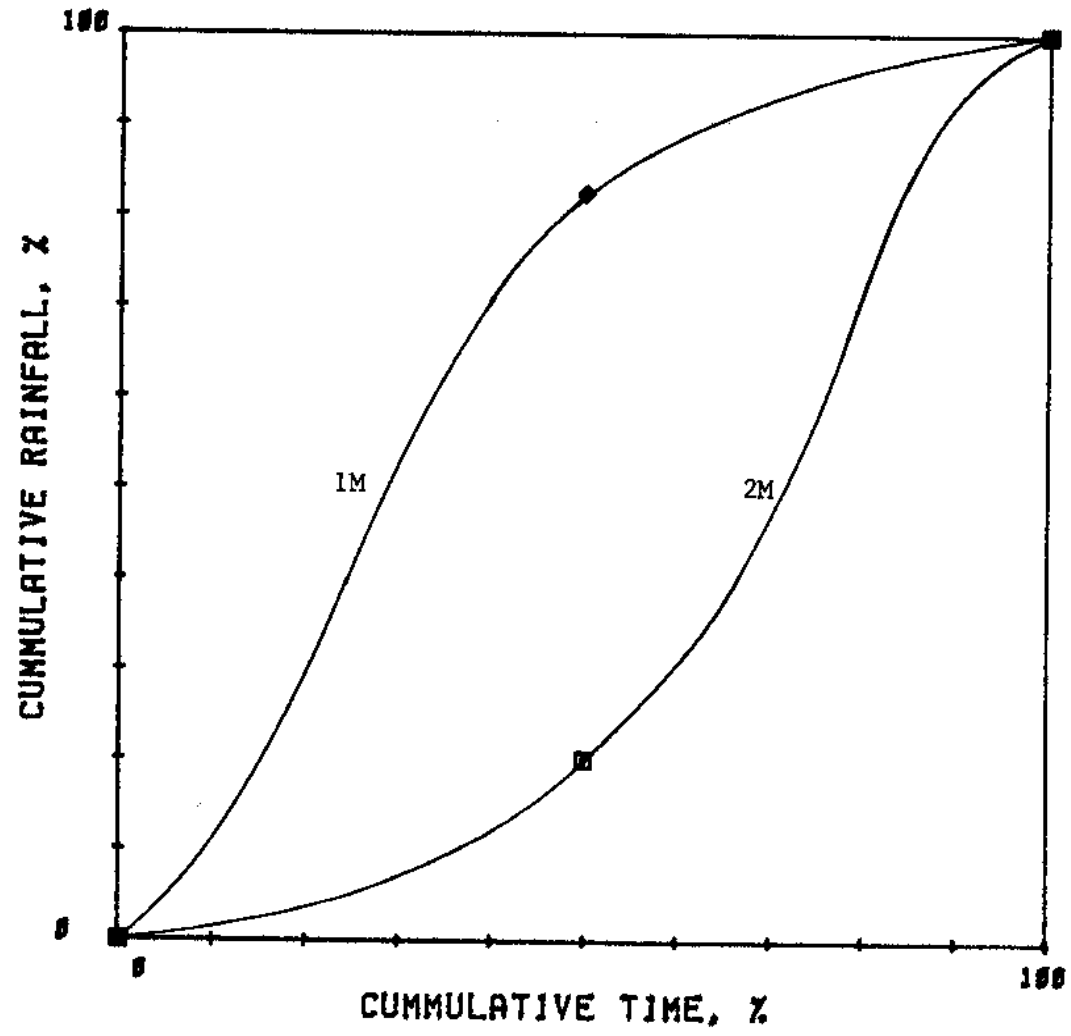


Figure A8. Continued

b. SAN JUAN WSFO:8812 3 HOURS

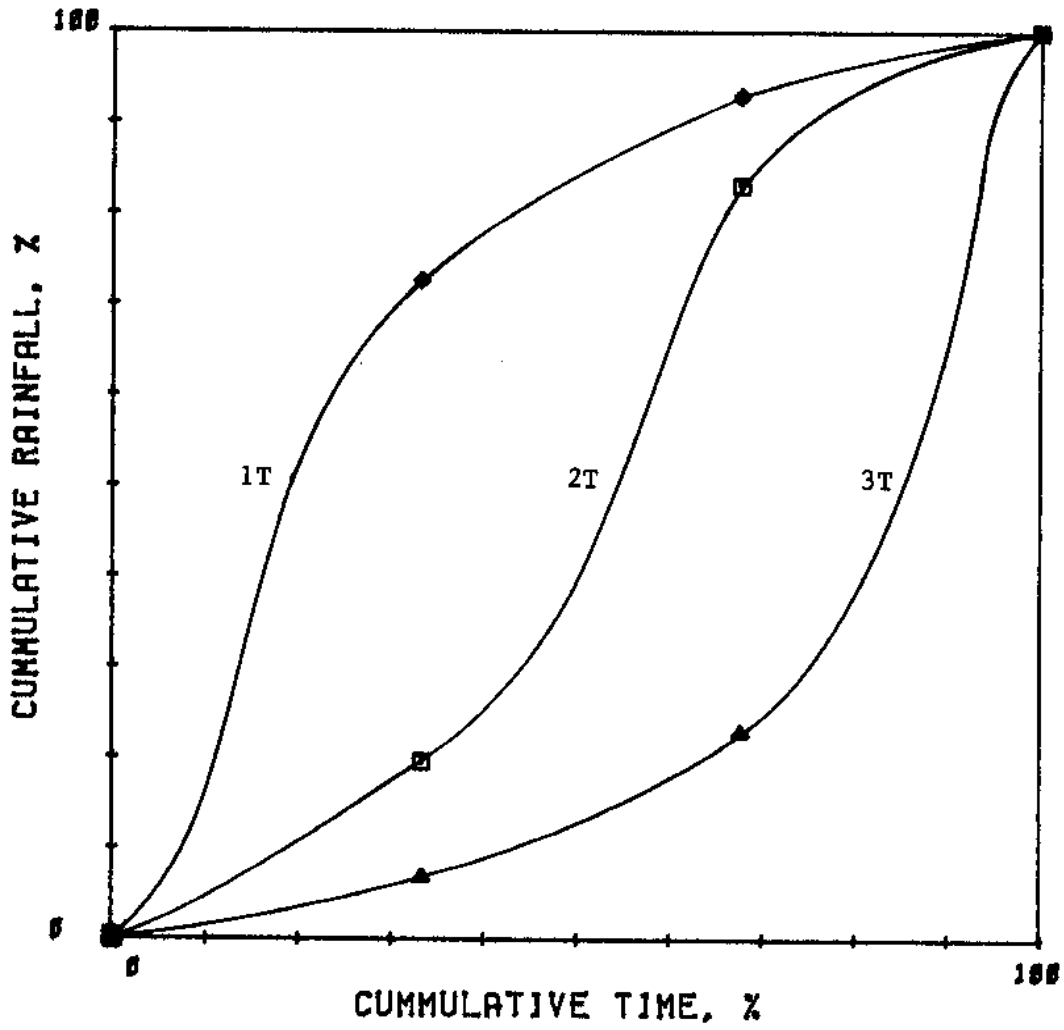


Figure A8. Continued

c. SAN JUAN WSFO:8812 4-6 HOURS

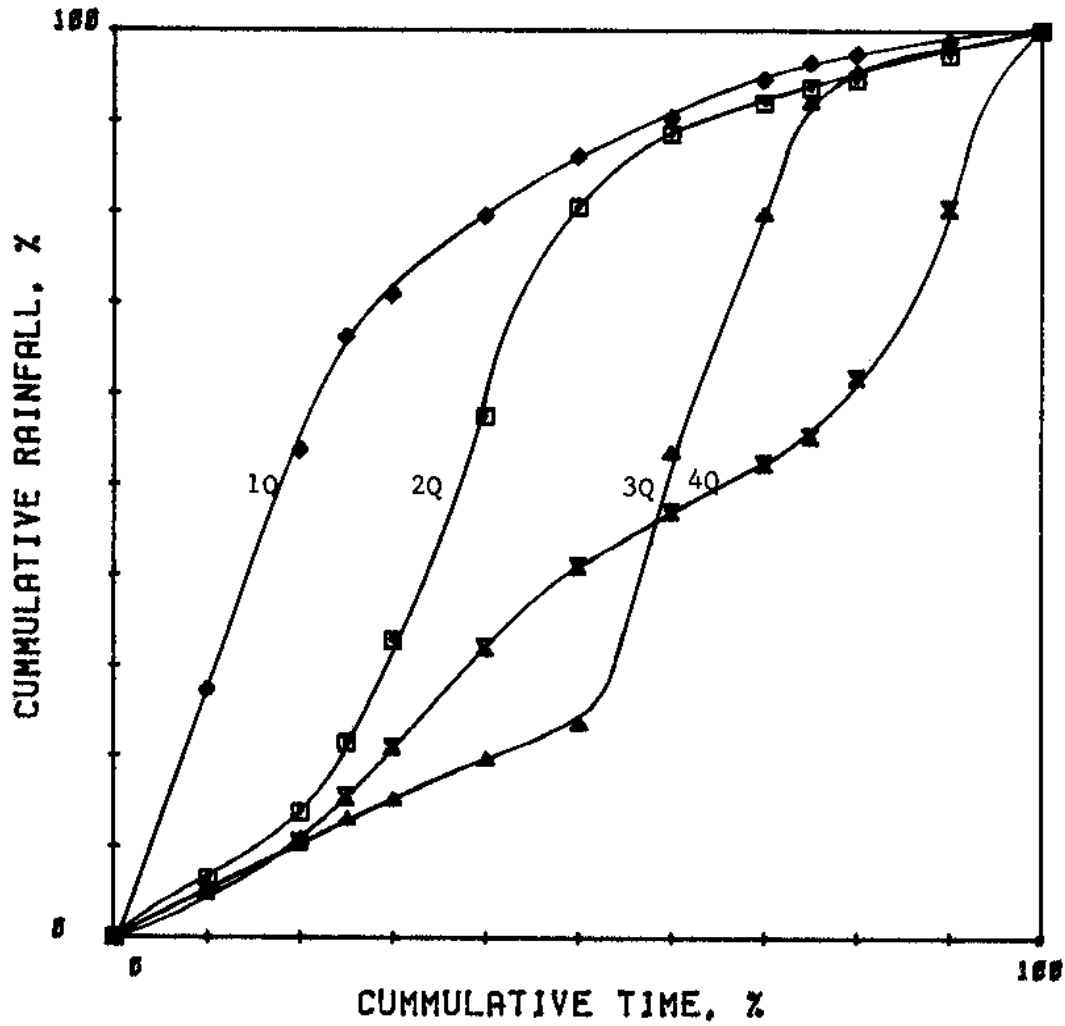


Figure A8. Continued

d. SAN JUAN WSFO:8812 7-12 HOURS

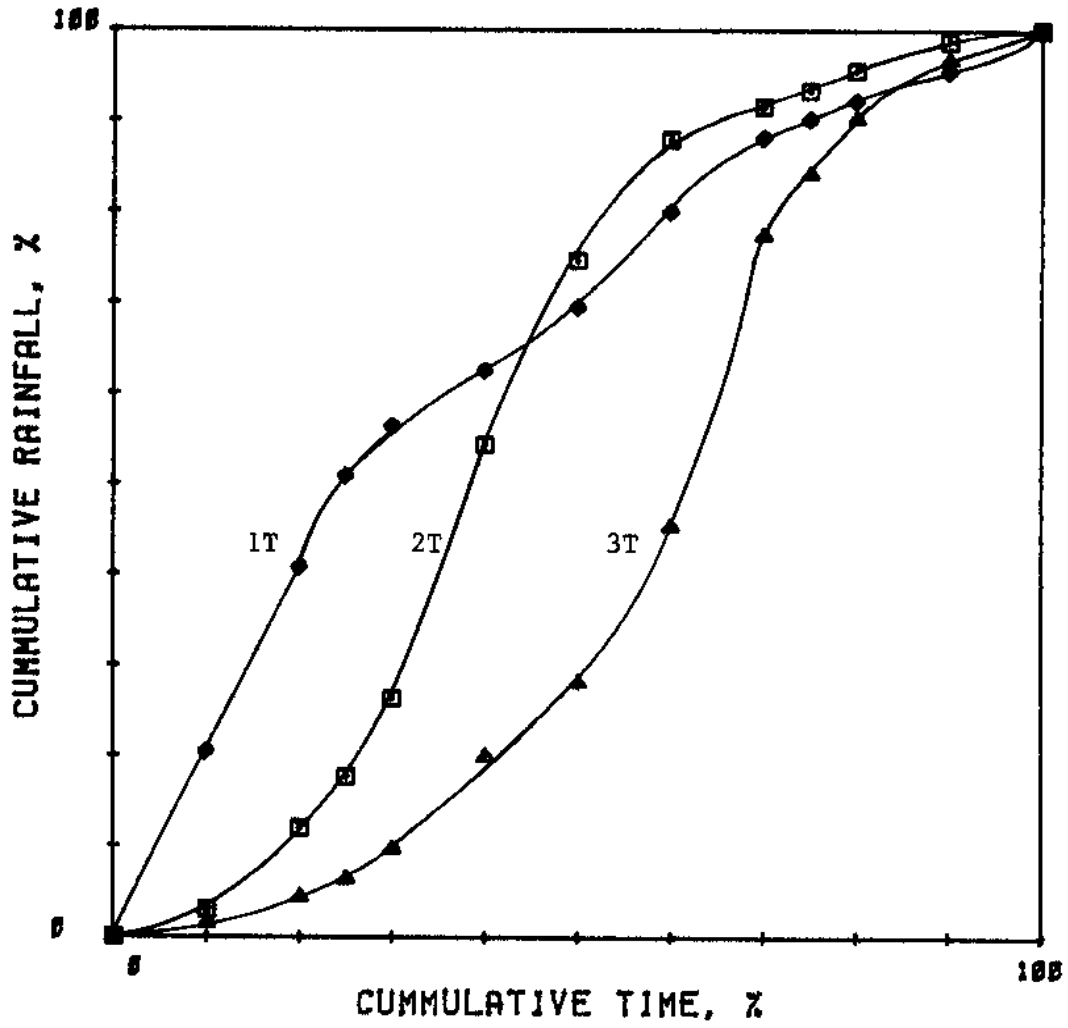


Figure A9. Mean Non-Dimensional Storm Rainfall
Distributions for San Sebastian 2WNW Station.
Minimum Time Between Storms = 1 hr

a. SAN SEBASTIAN 2 WNW: 8881 2 HOURS

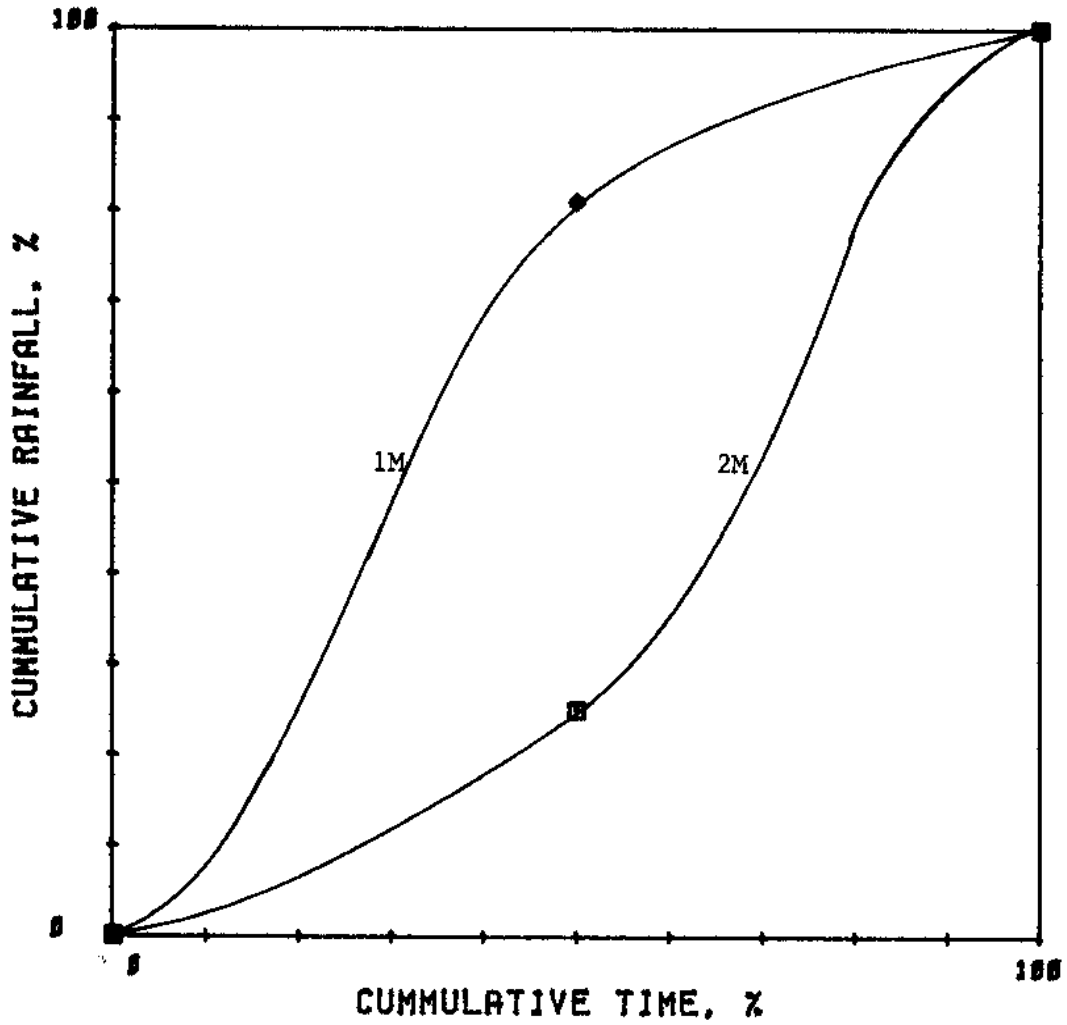


Figure A9. Continued

b. SAN SEBASTIAN 2 WNW: 8881 3 HOURS

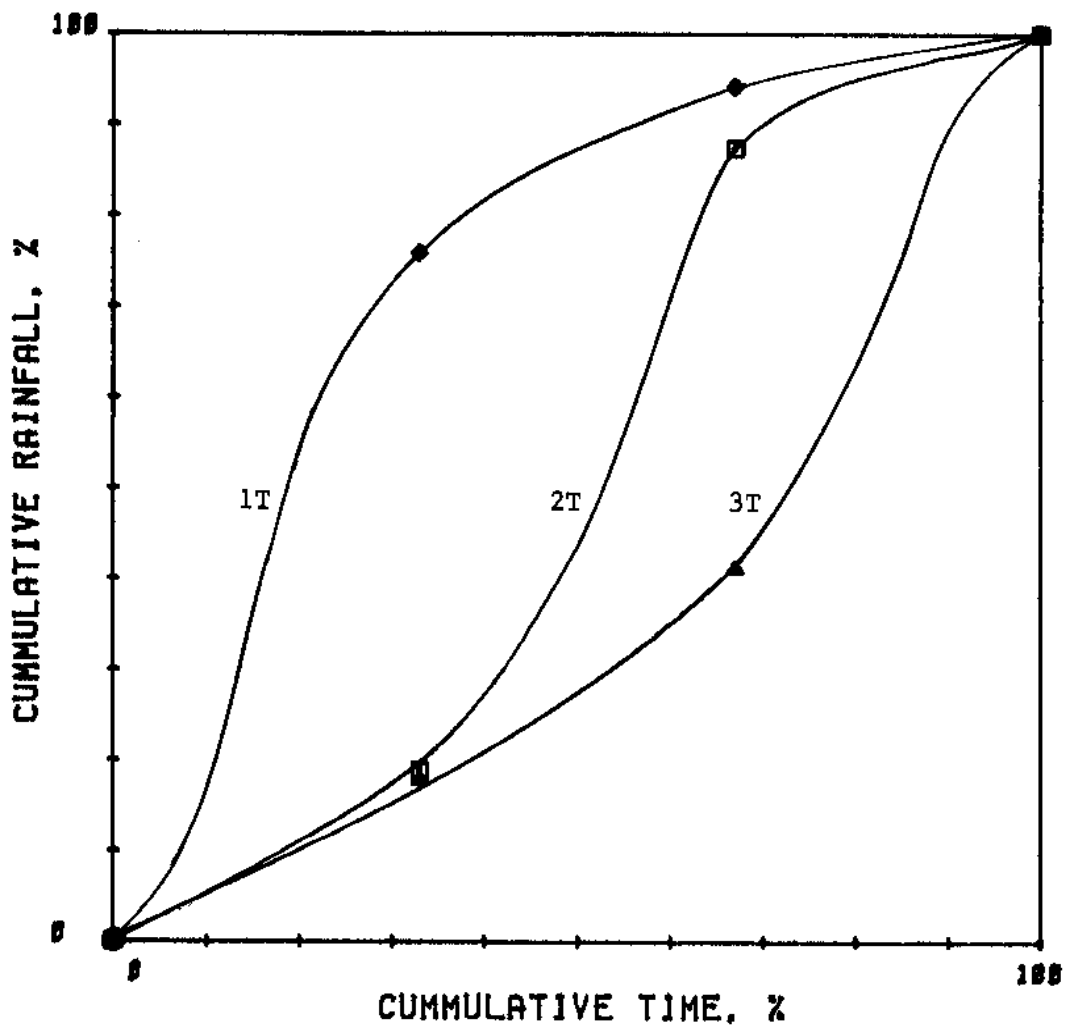


Figure A9. Continued

c. SAN SEBASTIAN 2 WNW: 8881 4-6 HOURS

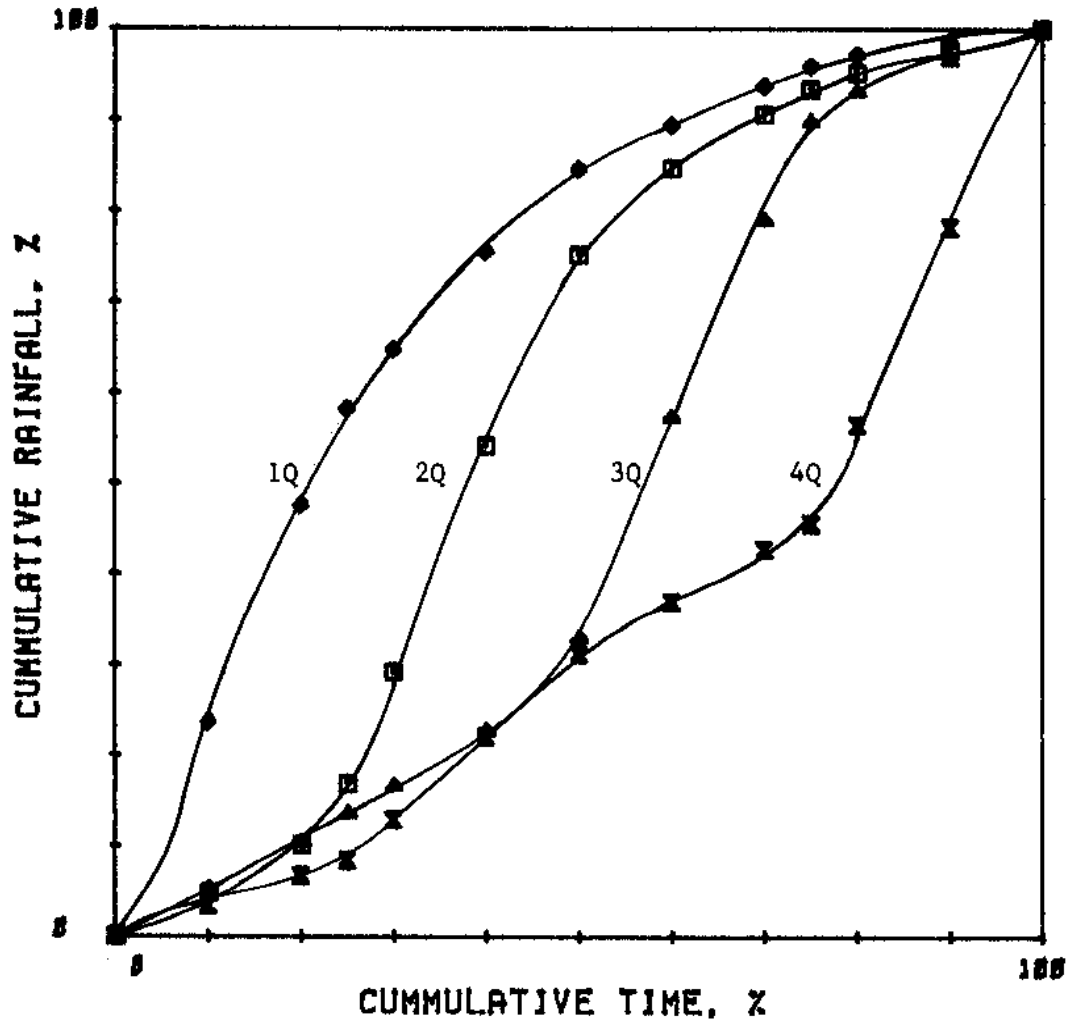


Figure A9. Continued

d. SAN SEBASTIAN 2 WNW: 8881 7-12 HOURS

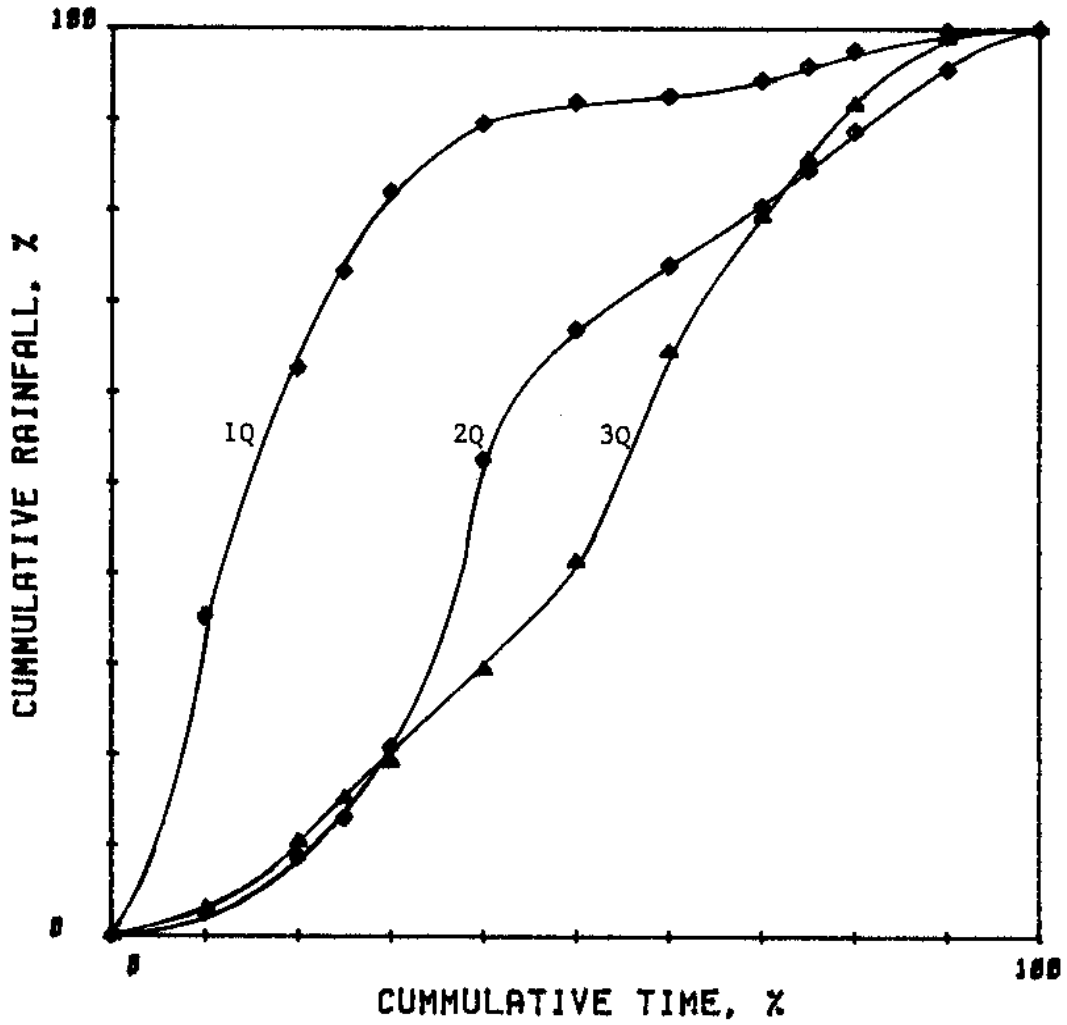


Figure A10. Mean Non-Dimensional Storm
Rainfall Distributions for
Yabucoa 1 NNE Station.
Minimum Time Between Storms = 1 hr

a YABUCOA 1 NNE: 9829 2 HOURS

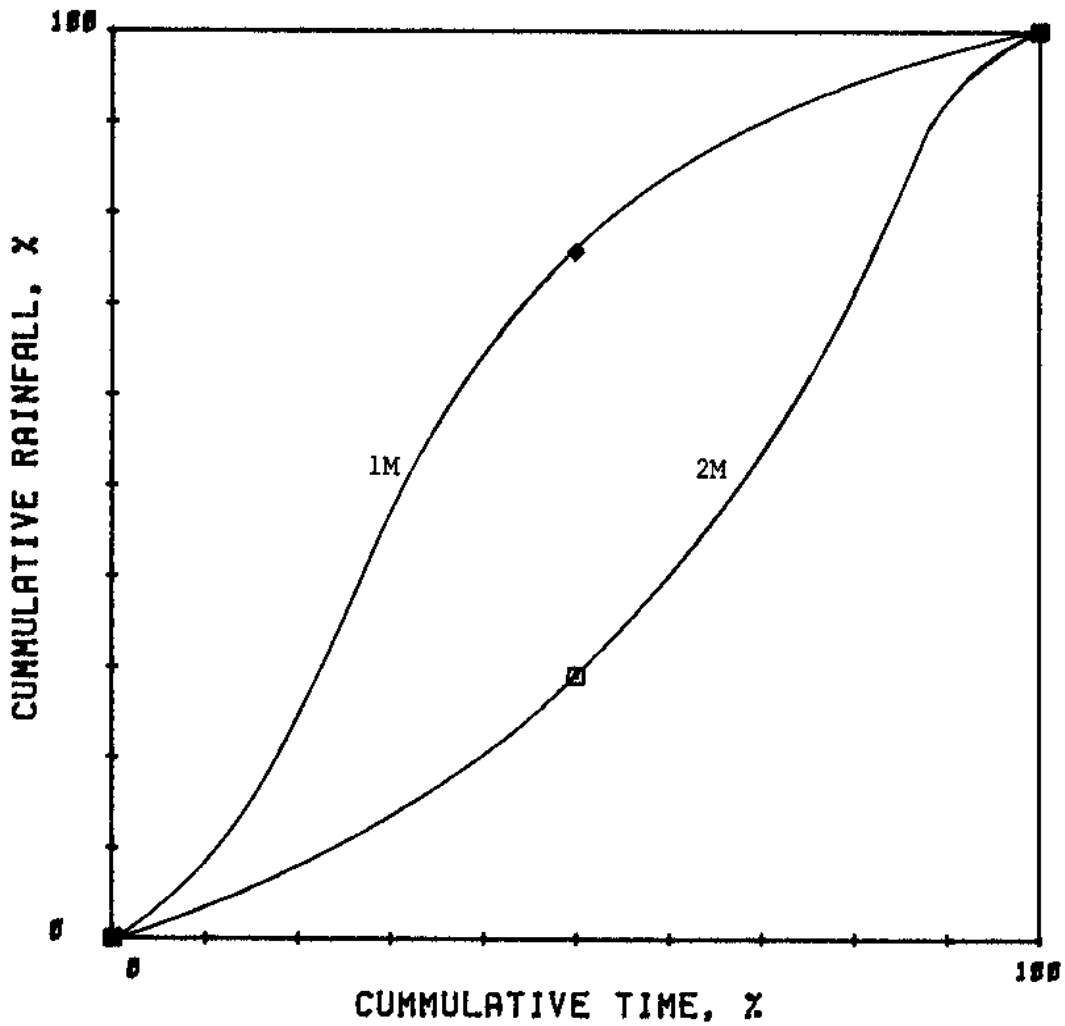


Figure A10. Continued.

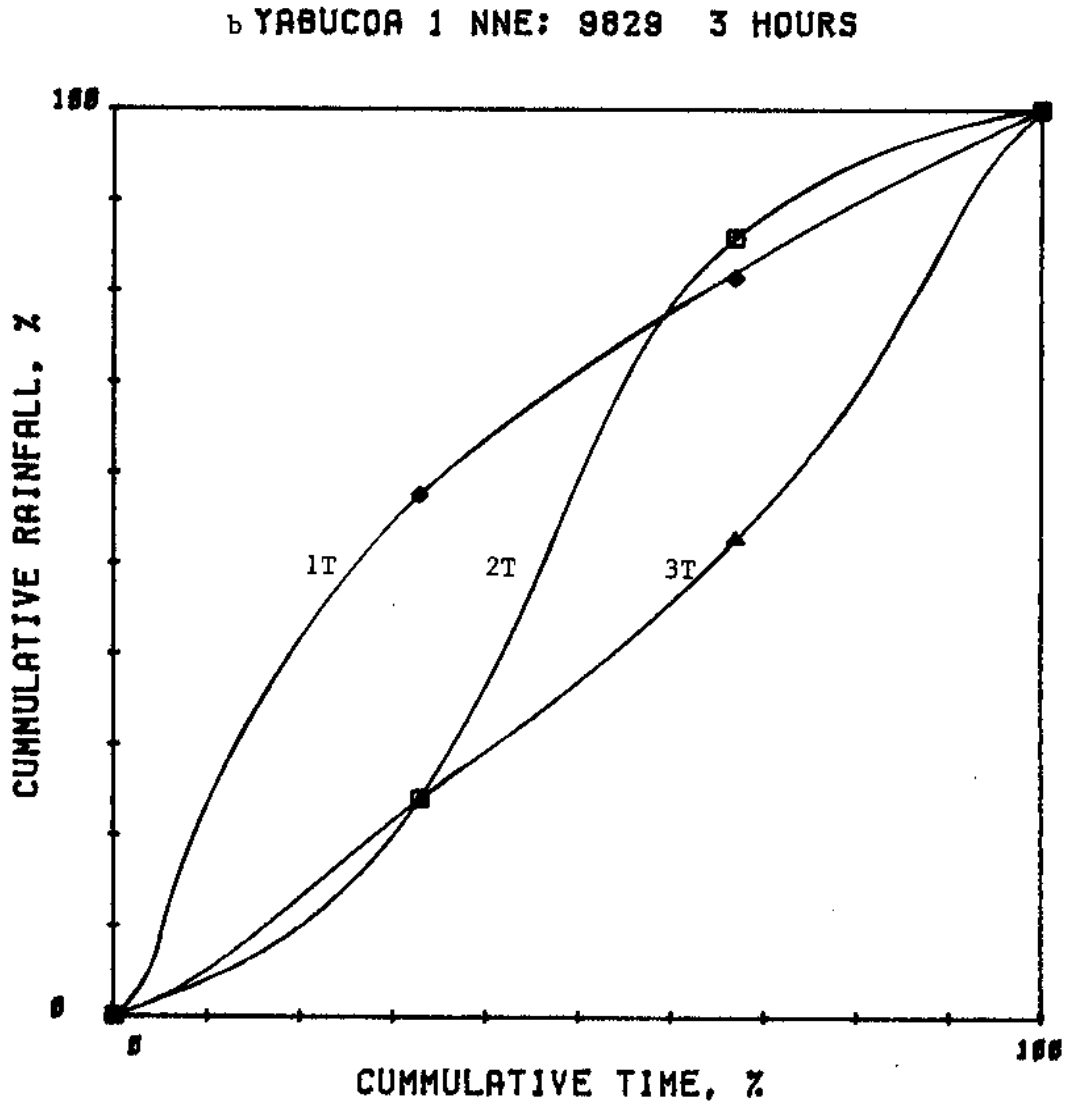


Figure A10. Continued.

c YABUCOA 1 NNE: 8829 4-6 HOURS

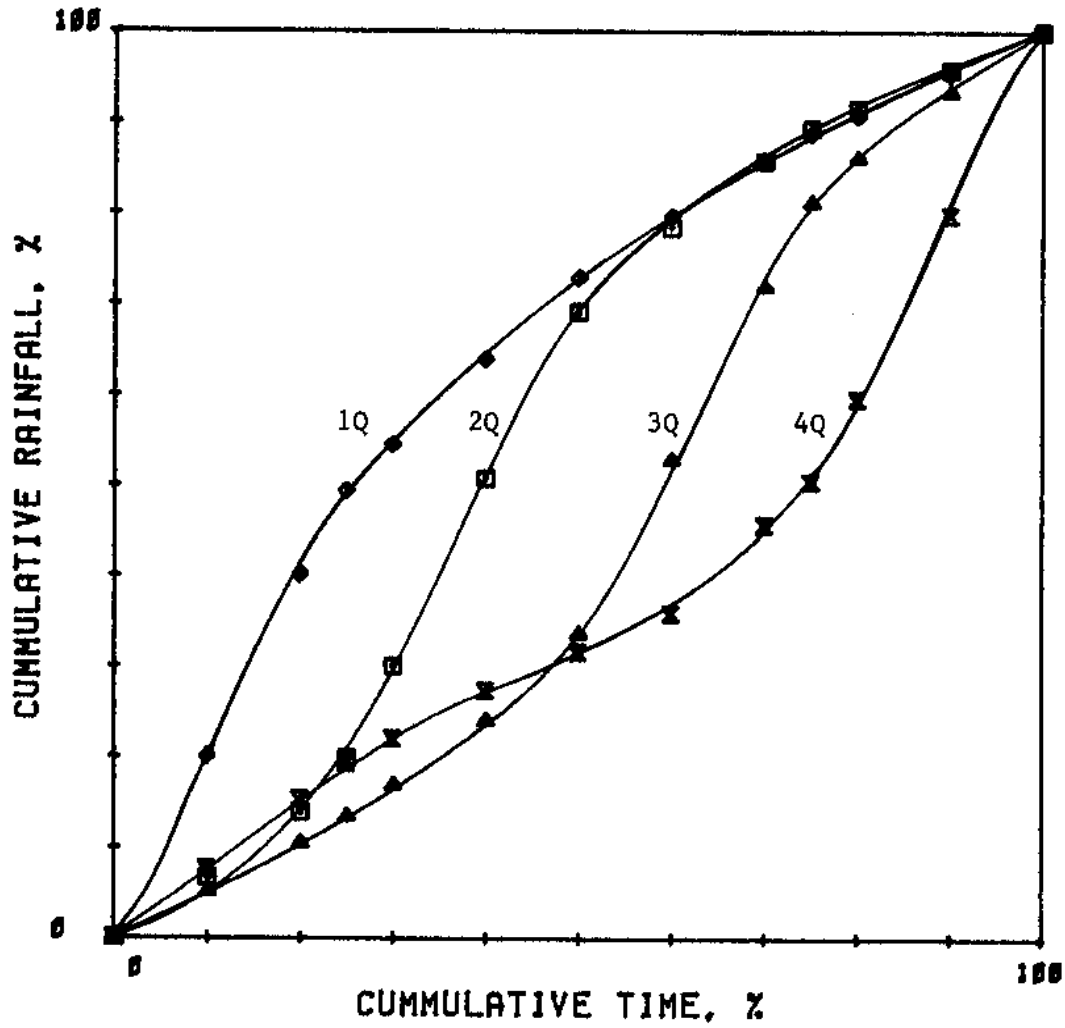


Figure A10. Continued.

a YABUCOA 1 NNE: 9829 7-12 HOURS

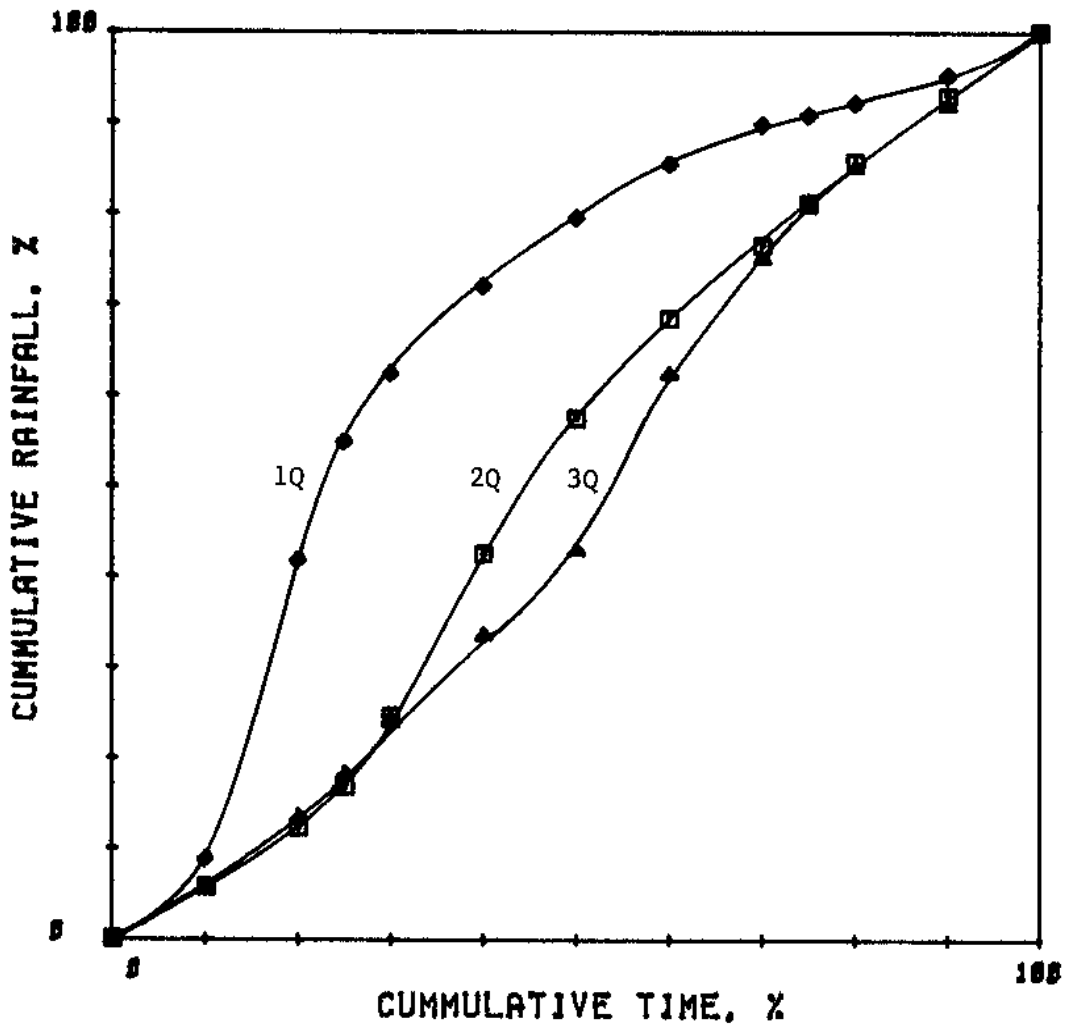


Table A1 Storm Frequency Stratified by Class and Duration

a. Botijas 2 - Orocovis Station: Index No. 0988

Duration (hrs)	Storm Class	No. of Storms per Class	No. of Storms per Duration
2	U	20	123
	1M	*69	
	2M	34	
3	1T	13	44
	2T	*25	
	3T	6	
4-6	1Q	9	37
	2Q	*18	
	3Q	7	
	4Q	3	
7-12	1Q	4	11
	2Q	3	
	3Q	1	
	4Q	3	
> 12	1Q	0	2
	2Q	2	
	3Q	0	
	4Q	0	
Total Number of Storms			217

U = uniform
M = media
T = tercile
Q = quatile

Table A1 Continued

b. Cayey I E Station: Index No. 1901

Duration (hrs)	Storm Class	No. of Storms per Class	No. of Storms per Duration
2	U	12	102
	1M	*56	
	2M	34	
3	1T	11	36
	2T	*19	
	3T	6	
4-6	1Q	11	45
	2Q	*22	
	3Q	8	
	4Q	4	
7-12	1Q	6	9
	2Q	1	
	3Q	2	
	4Q	0	
> 12	1Q	1	1
	2Q	0	
	3Q	0	
	4Q	0	
Total Number of Storms			193

U = uniform

M = media

T = tercile

Q = quartile

Table A1 Continued

c. Corozal Substation: Index No. 2934

Duration (hrs)	Storm Class	No. of Storms per Class	No. of Storms per Duration
2	U	23	189
	1M	*98	
	2M	68	
3	1T	20	67
	2T	*34	
	3T	13	
4-6	1Q	4	47
	2Q	19	
	3Q	20	
	4Q	4	
7-12	1Q	1	12
	2Q	4	
	3Q	6	
	4Q	1	
> 12	1Q	0	0
	2Q	0	
	3Q	0	
	4Q	0	
Total Number of Storms			315

U = uniform
M = media
T = tercile
Q = quartile

Table A1 Continued

d. Dos Bocas Station: Index No. 3431

Duration (hrs):	Storm Class	No. of Storms per Class	No. of Storms per Duration
2	U	20	239
	1M	*141	
	2M	78	
3	1T	27	100
	2T	*51	
	3T	22	
4-6	1Q	11	54
	2Q	*25	
	3Q	13	
	4Q	5	
7-12	1Q	2	8
	2Q	4	
	3Q	2	
	4Q	0	
> 12	1Q	0	1
	2Q	1	
	3Q	0	
	4Q	0	
Total Number of Storms			402

U = uniform
M = media
T = tercile
Q = quartile

Table A1 Continued

e. Fajardo Station: Index No. 3657

Duration (hrs)	Storm Class	No. of Storms per Class	No. of Storms per Duration
2	U	14	150
	1M	*73	
	2M	63	
3	1T	11	55
	2T	*34	
	3T	10	
4-6	1Q	10	48
	2Q	15	
	3Q	*19	
	4Q	4	
7-12	1Q	6	19
	2Q	6	
	3Q	7	
	4Q	0	
> 12	1Q	0	2
	2Q	1	
	3Q	1	
	4Q	0	
Total Number of Storms			274

U = uniform
M = media
T = tercile
Q = quartile

Table A1 Continued

f. Maricao 2 SSW Station: Index No. 5908

Durations (hrs)	Storm Class	No. of Storms per Class	No. of Storms per Duration
2	U	21	279
	1M	*150	
	2M	108	
3	1T	42	146
	2T	*78	
	3T	26	
4-6	1Q	18	103
	2Q	*43	
	3Q	36	
	4Q	6	
7-12	1Q	0	7
	2Q	* 6	
	3Q	1	
	4Q	0	
> 12	1Q	0	3
	2Q	1	
	3Q	2	
	4Q	0	
Total Number of Storms			538

U = uniform
M = media
T = tercile
Q = quartile

Table A1 Continued

g. Ponce 4E Station: Index No. 7292

Duration (hrs):	Storm Class	No. of Storms per Class	No. of Storms per Duration
2	U	10	103
	1M	*58	
	2M	35	
3	1T	8	26
	2T	*12	
	3T	6	
4-6	1Q	7	33
	2Q	*14	
	3Q	11	
	4Q	1	
7-12	1Q	2	5
	2Q	2	
	3Q	1	
	4Q	0	
> 12	1Q	0	2
	2Q	1	
	3Q	1	
	4Q	0	
Total Number of Storms			169

U = uniforms
M = media
T = tercile
Q = quantile

Table A1 Continued

h. San Juan WSFO Station: Index No. 8812

Duration (hrs)	Storm Class	No. of Storms per Class	No. of Storms per Duration
	U	0	
2	1M	*66	110
	2M	44	
3	1T	15	47
	2T	*29	
	3T	3	
4-6	1Q	13	44
	2Q	*16	
	3Q	11	
	4Q	4	
7-12	2Q	*11	21
	3Q	4	
	4Q	0	
> 12	1Q	0	5
	2Q	1	
	3Q	4	
	4Q	0	
Total Number of Storms			183

U = uniform
M = media
T = tercile
Q = quantile

Table A1 Continued

i. San Sebastián 2 WW Station: Index No. 8881

Duration (hrs)	Storm Class	No. of Storms per Class	No. of Storms per Duration
2	U	11	265
	1M	*177	
	2M	77	
3	1T	41	144
	2T	*91	
	3T	12	
4-6	1Q	31	98
	2Q	*41	
	3Q	21	
	4Q	5	
7-12	1Q	1	4
	2Q	1	
	3Q	2	
	4Q	0	
>.12	1Q	1	1
	2Q	0	
	3Q	0	
	4Q	0	
Total Number of Storms			512

U = uniform
M = media
T = tercile
Q = quantile

Table A1 Continued

j. Yabucoa 1 NNE: Index No. 9829

Duration (hrs)	Storm Class	No. of Storms per Class	No. of Storms per Duration
2	U	27	232
	1M	*125	
	2M	80	
3	1T	28	83
	2T	*38	
	3T	17	
4-6	1Q	14	77
	2Q	*35	
	3Q	21	
	4Q	7	
7-12	1Q	4	17
	2Q	7	
	3Q	6	
	4Q	0	
> 12	1Q	1	2
	2Q	1	
	3Q	0	
	4Q	0	
Total Number of Storms			411

U = uniform
M = media
T = tercile
Q = quantile

TABLE A2 Continued

c. Corozal Substation: Index No. 2934

Inten- sity (in/hr)	Storm Durations																													
	All						1				2				3				4-6				7-12				>12			
	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F
0.2-0.3	347	51	51	217	60	60	81	43	43	43	21	31	31	25	53	53	3	25	25	3	25	25	-	-	-	-	-	-	-	
0.3-0.4	124	18	69	59	16	76	33	17	60	20	30	61	9	19	72	3	25	50	3	25	50	-	-	-	-	-	-	-	-	
0.4-0.5	77	11	81	33	9	85	26	14	74	8	12	73	8	17	89	2	17	67	2	17	67	-	-	-	-	-	-	-	-	
0.5-0.6	40	6	87	13	4	89	20	11	85	4	6	79	1	2	91	2	17	83	2	17	83	-	-	-	-	-	-	-	-	
0.6-0.7	29	4	91	13	4	92	11	6	90	4	6	85	0	0	91	1	8	92	1	8	92	-	-	-	-	-	-	-	-	
0.7-0.8	19	3	94	11	3	95	2	1	92	4	6	91	2	4	94	0	0	92	0	0	92	-	-	-	-	-	-	-	-	
0.8-1.0	18	3	96	7	2	97	5	3	94	4	6	97	1	2	98	1	8	100	1	8	100	-	-	-	-	-	-	-	-	
1.0-1.5	20	3	99	6	2	99	11	6	100	2	3	100	1	2	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.5-2.0	3	-	100	3	1	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
No. of Storms	678			362			189			67			47			12			54			8			0					

d. Dos Bocas Station: Index No. 3431

0.2-0.3	302	39	39	182	48	48	72	30	30	30	31	31	16	30	30	1	13	13	1	13	13	-	-	-	-	-	-	-	-
0.3-0.4	137	18	56	66	17	65	48	20	50	11	11	42	9	17	46	3	38	50	3	38	50	-	-	-	-	-	-	-	-
0.4-0.5	101	13	69	43	11	77	34	14	64	12	12	54	10	19	65	2	25	75	2	25	75	-	-	-	-	-	-	-	-
0.5-0.6	68	9	78	21	6	82	23	10	74	13	13	67	9	17	81	2	25	100	2	25	100	-	-	-	-	-	-	-	-
0.6-0.7	43	6	83	19	5	87	16	7	81	4	4	71	4	7	89	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.7-0.8	34	4	88	8	2	89	13	5	86	10	10	81	3	6	94	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.9-1.0	43	6	93	15	4	93	14	6	92	10	11	92	3	6	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.0-1.5	38	5	98	18	5	98	13	5	97	11	7	99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5-2.0	12	2	100	5	1	99	6	3	100	7	1	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. of Storms	781			380			239			100			54			8			54			8			0				

TABLE A2 Continued

e. Fajardo Station: Index No. 3657

Inten- sity (in/hr)	Storm Durations																				
	All			1			2			3			4-6			7-12			>12		
	D	f	F	D	f	F	D	f	F	D	f	F	D	f	F	D	f	F	D	f	F
0.2-0.3	402	50	282	54	54	66	44	44	44	27	49	49	23	48	48	3	16	16	1	50	50
0.3-0.4	190	24	123	24	77	39	26	70	11	20	69	11	23	71	42	5	26	42	1	50	100
0.4-0.5	89	11	85	11	88	16	11	81	7	13	82	7	15	85	53	2	11	53	-	-	-
0.5-0.6	44	6	44	6	91	22	4	93	11	7	88	6	11	93	63	2	11	63	-	-	-
0.6-0.7	30	4	95	17	3	96	6	4	92	2	4	96	1	2	84	4	21	84	-	-	-
0.7-0.8	15	2	97	6	1	97	5	3	95	0	0	96	3	6	89	1	5	89	-	-	-
0.8-1.0	17	2	99	12	2	99	3	2	97	0	0	96	-	-	100	2	11	100	-	-	-
1.0-1.5	9	1	100	4	1	100	3	2	97	2	4	100	-	-	-	-	-	-	-	-	-
1.5-2.0	1	-	-	-	-	-	1	1	100	-	-	-	-	-	-	-	-	-	-	-	-
No. of Storms	797		523			150			55			48			19			2			

f. Maricao 2 SSW Station: Index No. 5908

0.2-0.3	333	35	178	44	44	84	30	30	45	31	31	22	21	21	2	29	29	2	67	67
0.3-0.4	196	21	85	21	65	51	18	48	28	19	50	28	27	49	3	43	71	1	33	100
0.4-0.5	106	11	43	11	75	40	14	63	15	10	60	8	8	56	0	0	71	-	-	-
0.5-0.6	97	10	34	8	84	29	10	73	16	11	71	16	16	72	2	29	100	-	-	-
0.6-0.7	59	6	19	5	88	16	6	79	13	9	80	11	11	83	-	-	-	-	-	-
0.7-0.8	47	5	17	4	92	12	4	83	12	8	88	6	6	88	-	-	-	-	-	-
0.8-1.0	48	5	11	3	95	19	7	90	10	7	95	8	8	96	-	-	-	-	-	-
1.0-1.5	49	5	14	3	99	25	9	99	6	4	99	4	4	100	-	-	-	-	-	-
1.5-2.0	7	1	3	1	100	3	1	100	1	1	100	-	-	-	-	-	-	-	-	-
No. of Storms	945		407			279			146			103			7			3		

TABLE A2 Continued

g. Ponce 4 E Station: Index No. 7292

Inten- sity (in/hr)	Storm Durations																							
	All			1			2			3			4-6			7-12			>12					
	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F			
0.2-0.3	176	50	48	89	48	54	56	54	54	14	54	54	16	48	48	1	20	20	0	0	0	0	0	0
0.3-0.4	75	21	69	39	21	74	20	19	74	8	31	85	5	15	64	2	40	60	1	50	50	1	50	100
0.4-0.5	52	15	86	29	16	85	14	14	87	0	0	85	7	21	85	1	20	80	1	50	100	1	50	100
0.5-0.6	18	5	91	11	6	91	3	3	90	2	8	92	1	3	88	1	20	100	-	-	-	-	-	-
0.6-0.7	13	4	94	4	2	93	5	5	95	2	8	100	2	6	94	-	-	-	-	-	-	-	-	-
0.7-0.8	8	2	97	5	3	96	1	1	96	-	-	-	2	6	100	-	-	-	-	-	-	-	-	-
0.8-1.0	6	2	98	2	1	97	4	4	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.0-1.5	6	2	100	6	3	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5-2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. of Storms	354	-	-	185	-	-	103	-	-	26	-	-	33	-	-	5	-	-	2	-	-	2	-	-

h. San Juan WSFO Station: Index No. 8812

0.2-0.3	212	54	54	92	56	56	53	48	48	28	60	60	24	55	55	12	57	57	3	60	60	3	60	60
0.3-0.4	83	21	76	35	21	78	24	22	70	8	17	77	10	23	77	5	24	81	1	20	80	1	20	80
0.4-0.5	45	12	87	16	10	88	14	13	83	7	15	91	6	14	91	2	10	90	0	0	80	0	0	80
0.5-0.6	19	5	92	9	6	93	6	5	88	1	2	94	1	2	93	1	5	95	1	20	100	1	20	100
0.6-0.7	17	4	96	8	5	98	5	5	93	2	4	98	1	2	95	1	5	100	-	-	-	-	-	-
0.7-0.8	5	1	98	2	1	99	2	2	95	0	0	98	1	2	98	-	-	-	-	-	-	-	-	-
0.8-1.0	7	2	99	1	1	100	4	4	98	1	2	100	1	2	100	-	-	-	-	-	-	-	-	-
1.0-1.5	2	1	100	-	-	-	2	2	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5-2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. of Storms	390	-	-	163	-	-	110	-	-	47	-	-	44	-	-	21	-	-	5	-	-	5	-	-

TABLE A2 Continued

i. San Sebastián 2 WNW Station: Index No. 8881

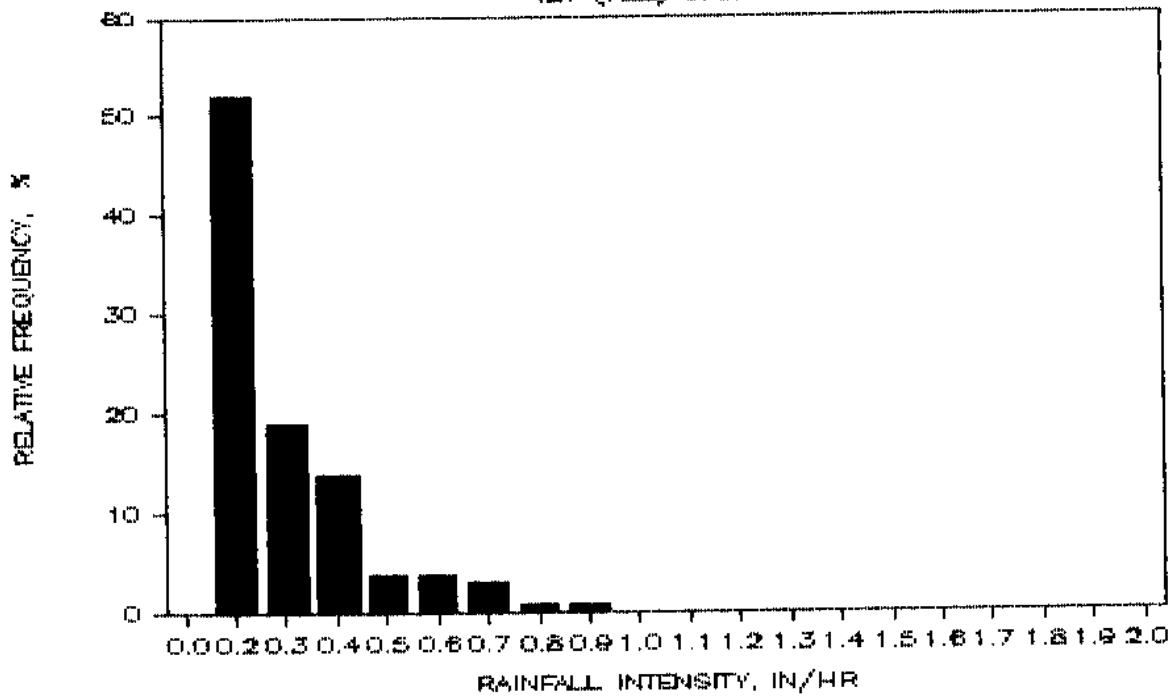
Inten- sity (in/hr)	Storm Durations																				
	All			1			2			3			4-6			7-12			>12		
	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F
0.2-0.3	204	30	30	49	31	31	77	29	29	29	38	26	26	36	37	37	75	75	1	100	100
0.3-0.4	153	23	53	33	21	52	60	23	52	31	22	48	29	30	66	0	0	0	-	-	-
0.4-0.5	103	15	69	20	13	64	40	15	67	27	19	67	16	16	83	0	0	0	-	-	-
0.5-0.6	66	10	78	15	9	74	27	10	77	15	10	77	8	8	91	1	25	100	-	-	-
0.6-0.7	37	6	84	6	4	77	17	6	83	10	7	84	4	4	95	-	-	-	-	-	-
0.7-0.8	28	4	88	9	6	83	10	4	87	5	3	88	4	4	99	-	-	-	-	-	-
0.8-1.0	34	5	93	8	5	88	15	6	93	10	7	94	1	1	100	-	-	-	-	-	-
1.0-1.5	35	5	98	11	7	95	16	6	99	8	6	100	-	-	-	-	-	-	-	-	-
1.5-2.0	7	1	99	4	3	97	3	1	100	-	-	-	-	-	-	-	-	-	-	-	-
No. of Storms	671			159			265			144			98			4			1		

j. Tabucoa 1 NNE Station: No. 9829

0.2-3.0	549	52	52	373	58	58	109	47	47	47	33	40	40	28	36	6	35	35	0	0	0
0.3-0.4	219	21	73	124	19	77	45	19	66	23	28	28	67	20	26	7	41	76	0	0	0
0.4-0.5	136	13	86	75	12	89	34	15	81	10	12	82	15	19	82	2	12	88	0	0	0
0.5-0.6	68	6	92	26	4	93	27	12	93	9	11	90	5	6	82	0	0	88	1	50	50
0.6-0.7	36	3	96	19	3	96	7	3	96	1	1	92	7	9	97	1	6	94	1	50	100
0.7-0.8	16	2	97	4	1	97	4	2	97	6	7	99	1	1	99	1	6	100	-	-	-
0.8-1.0	20	2	99	16	2	99	3	1	99	0	0	99	1	1	100	-	-	-	-	-	-
1.0-1.5	8	1	100	5	1	100	2	1	100	1	1	100	-	-	-	-	-	-	-	-	-
1.5-2.0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. of Storms	1053			642			232			83			77			17			2		

Figure A11. Probability Distribution of Storm Rainfall Intensities Stratified by Storm Duration at Botijas 2- Orocovis Station. Minimum Time Between Storms = 1 hr

a. BOTIJAS 2 - OROCOVIS : INDEX NO. 0988
421 (ALL) STORMS



b. BOTIJAS 2 - OROCOVIS : INDEX NO. 0988
204 (1 HOUR) STORMS

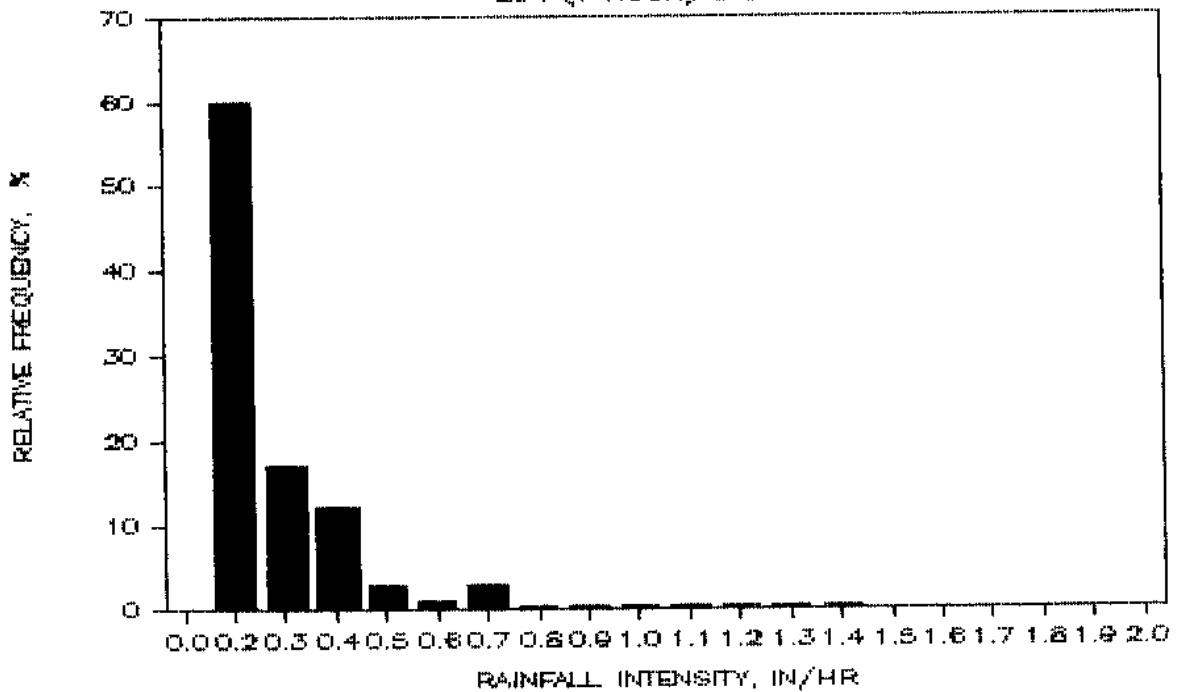
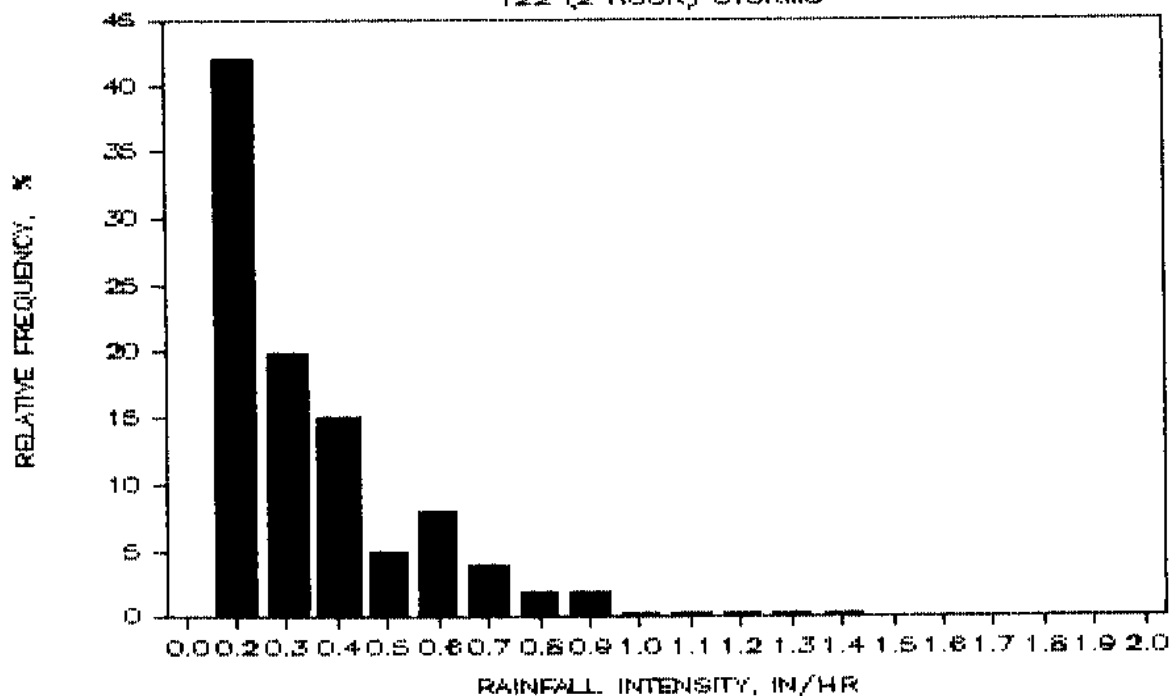


Figure All. Continued

c. BOTIJAS 2 - OROCOVIS : INDEX NO. 0988
122 (2 HOUR) STORMS



d. BOTIJAS 2 - OROCOVIS : INDEX NO. 0988
44 (3 HOUR) STORMS

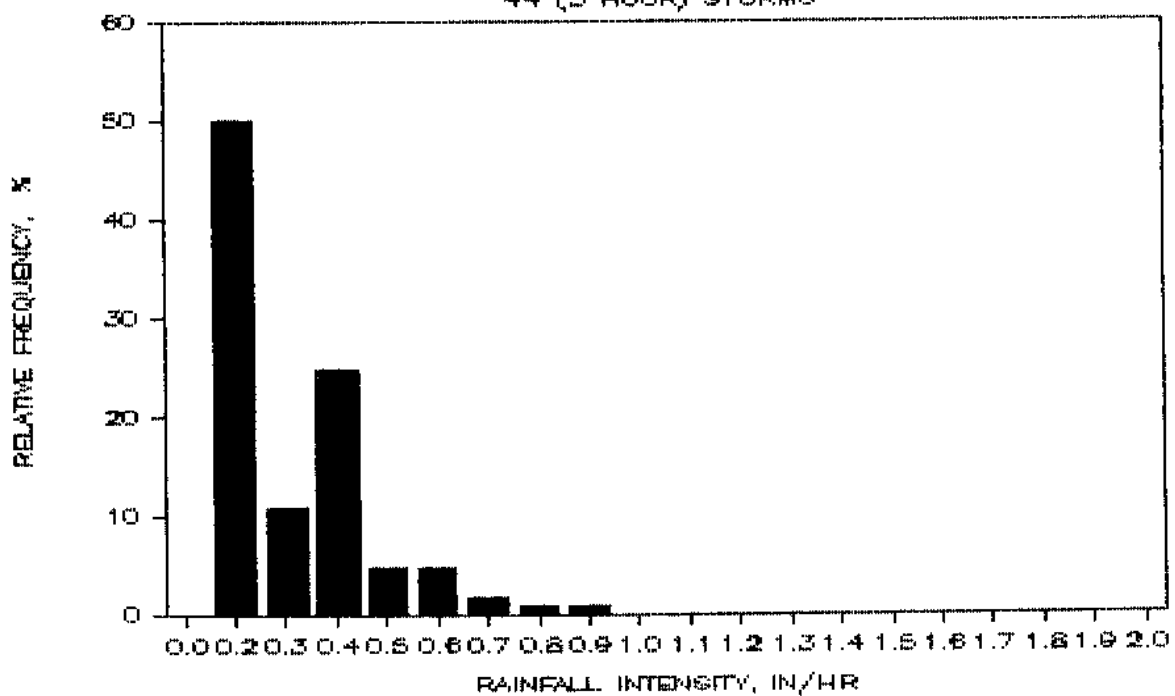
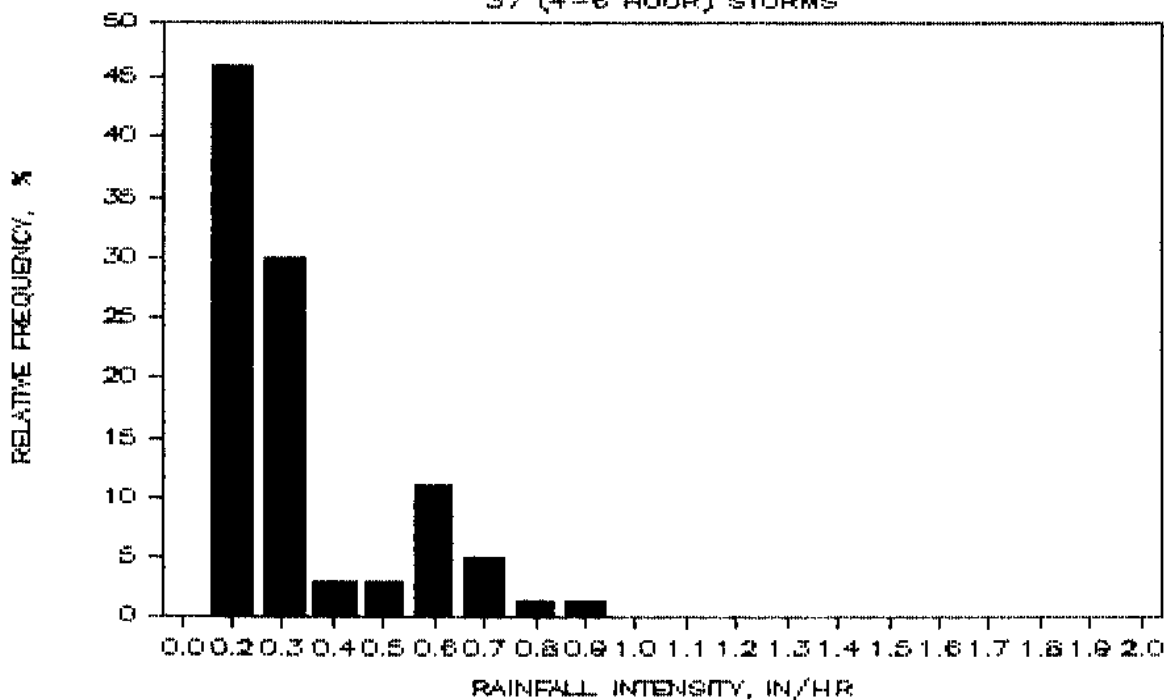


Figure A11. Continued

e. BOTIJAS 2 - OROCOVIS : INDEX NO. 0988
37 (4-6 HOUR) STORMS



f. BOTIJAS 2 - OROCOVIS : INDEX NO. 0988
11 (6-12) HOUR STORMS

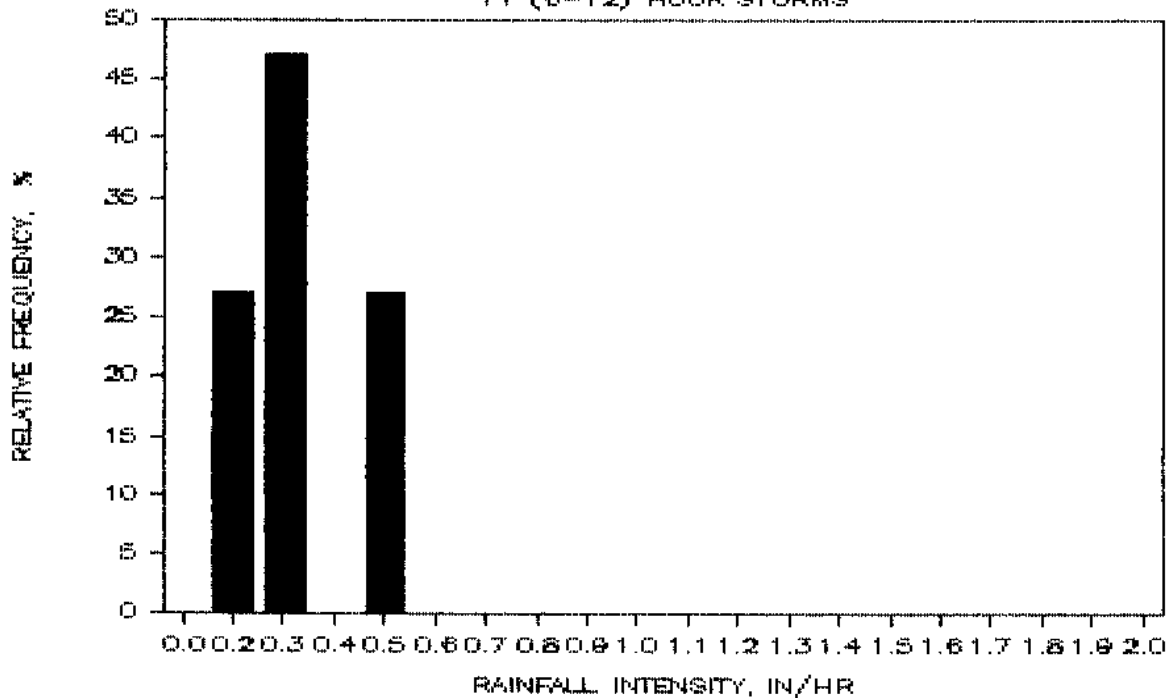
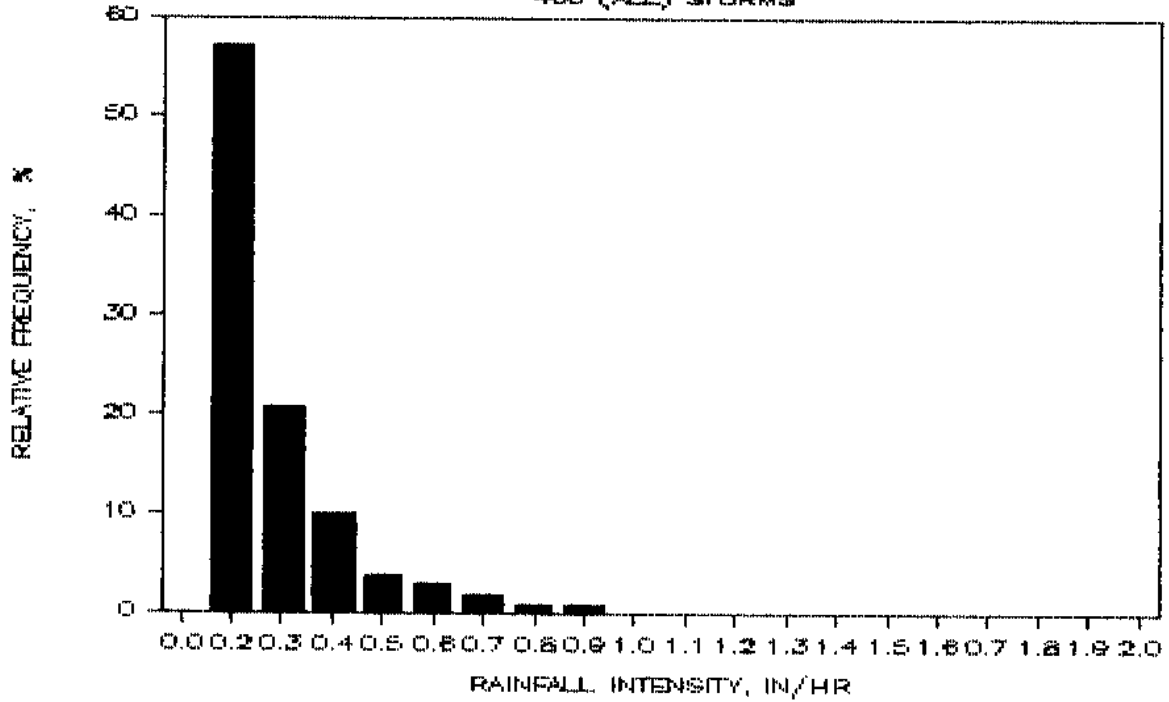


Figure A12. Probability Distributions of Storm Rainfall Intensities Stratified per Storm Duration at Cayey Station.

Minimum Time Between Storms = 1 hr

a. CAYEY : INDEX NO. 1901

486 (ALL) STORMS



b. CAYEY : INDEX NO. 1901

271 (1 HOUR) STORMS

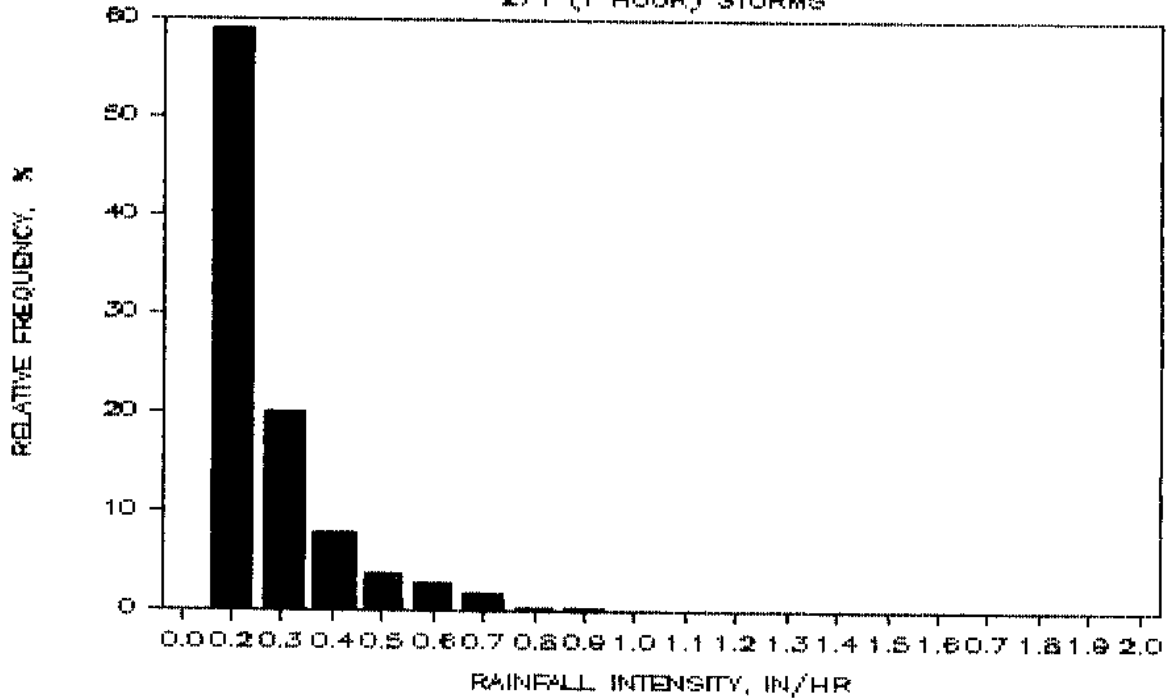
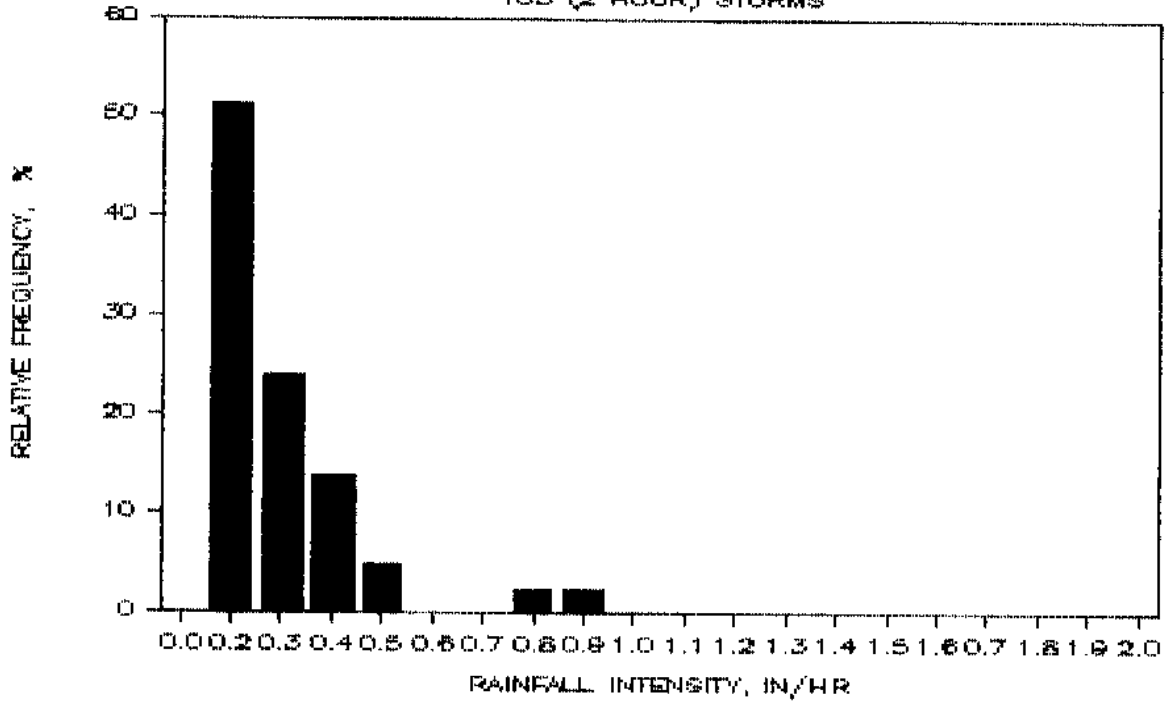


Figure A12. Continued

c. CAYEY : INDEX NO. 1901
103 (2 HOUR) STORMS



d. CAYEY : INDEX NO. 1901
36 (3 HOUR) STORMS

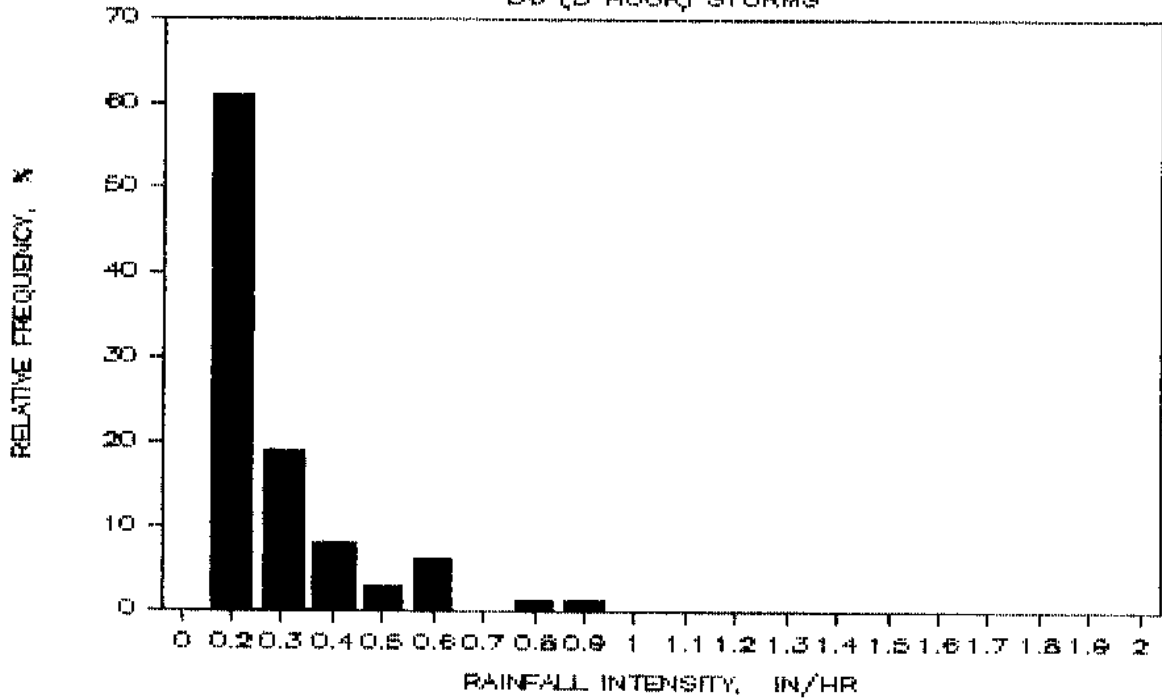
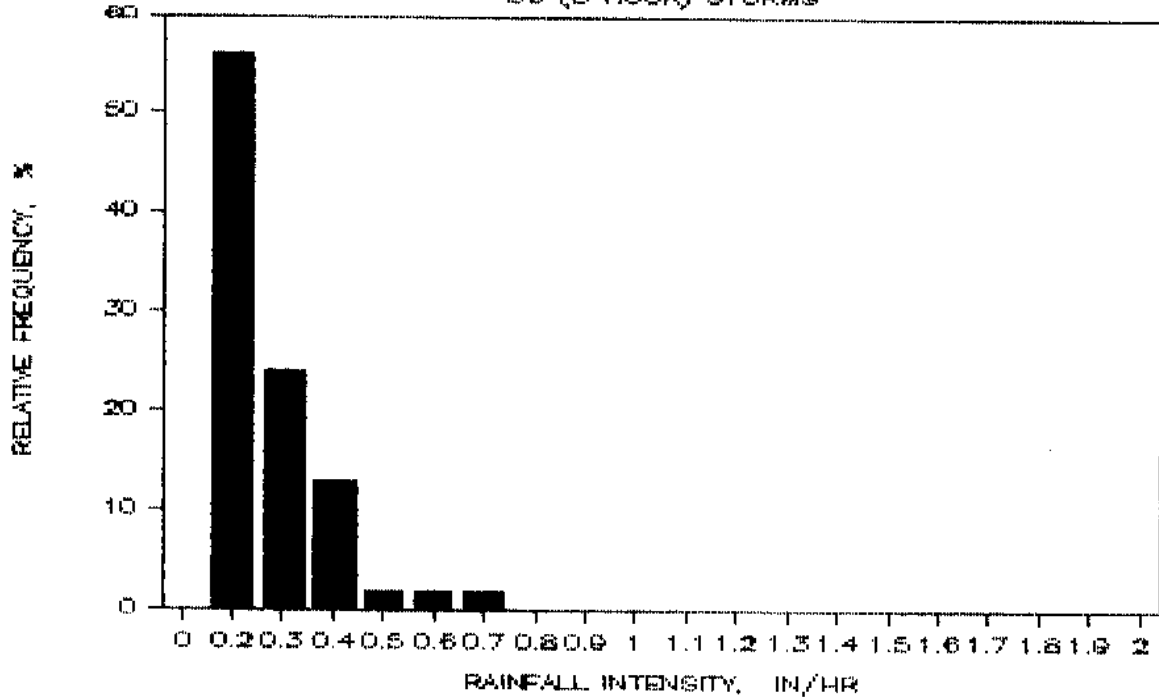


Figure A12. Continued

e. CAYEY : INDEX NO. 1901
36 (3 HOUR) STORMS



f. CAYEY : INDEX NO. 1901
9 (6-12 HOUR) STORMS

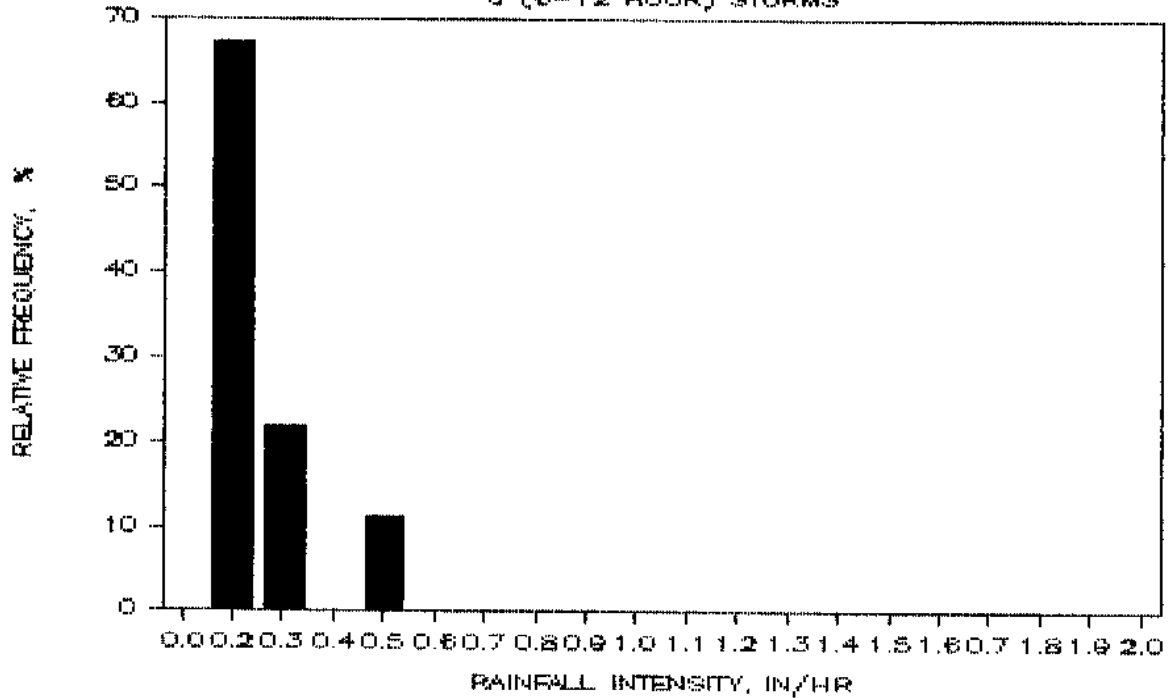
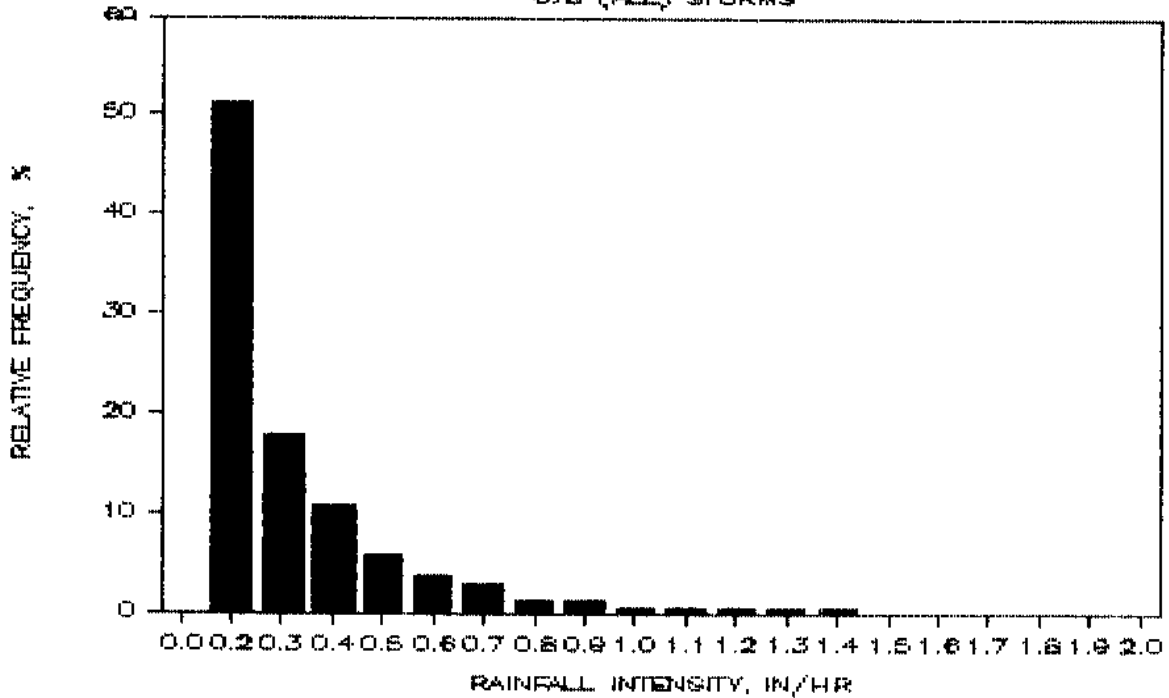


Figure A13. Probability Distributions of Storm Rainfall Intensities Stratified per Storm Duration at Corozal Station. Minimum Time Between Storms = 1 hr

a. COROZAL : INDEX NO. 2934
878 (ALL) STORMS



b. COROZAL : INDEX NO. 2934
362 (1 HOUR) STORMS

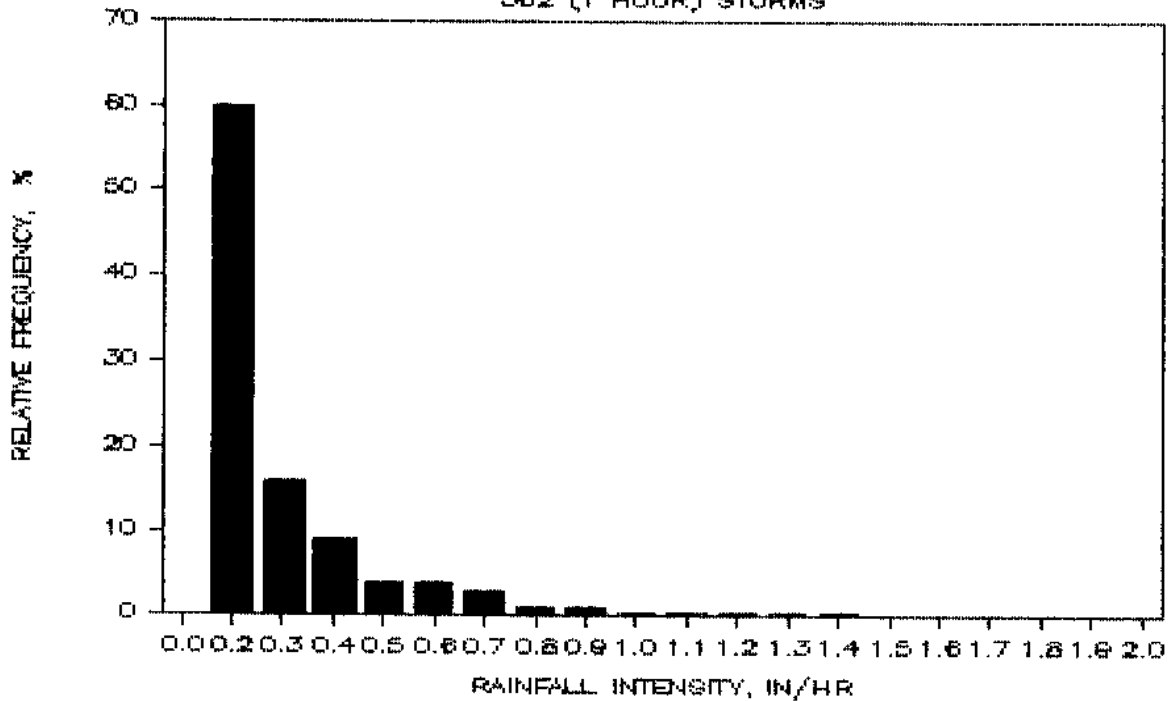
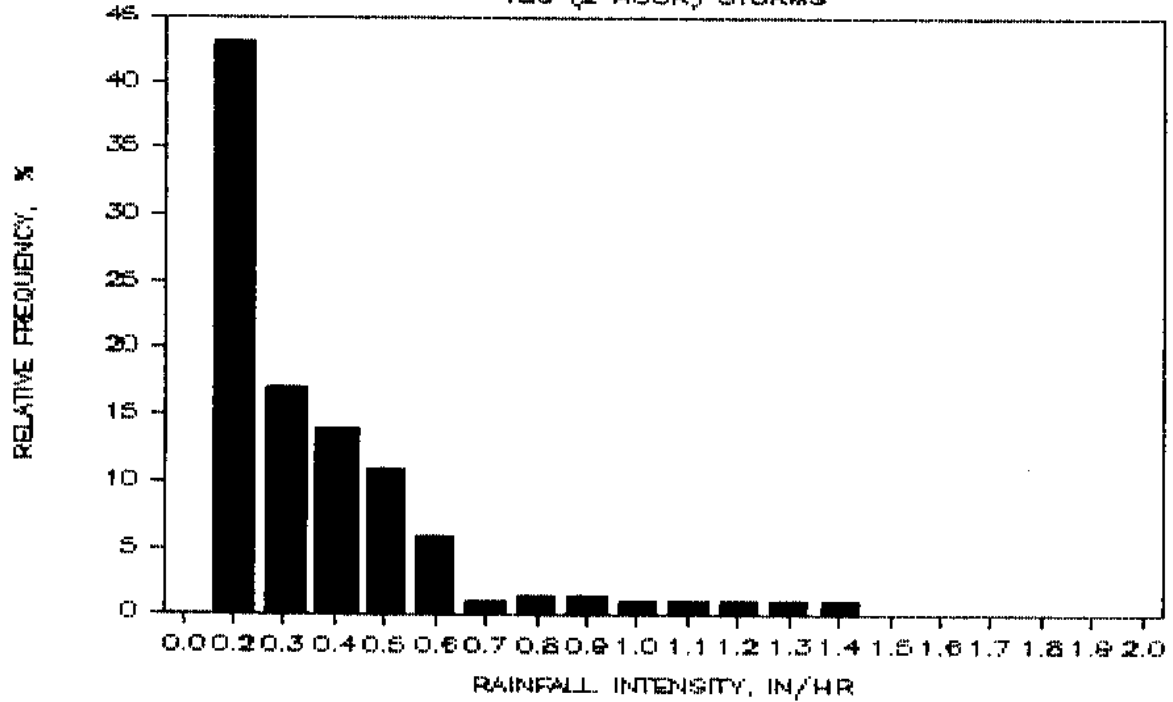


Figure A13. Continued

c. COROZAL : INDEX NO. 2934
189 (2 HOUR) STORMS



d. COROZAL : INDEX NO. 2934
67 (3 HOUR) STORMS

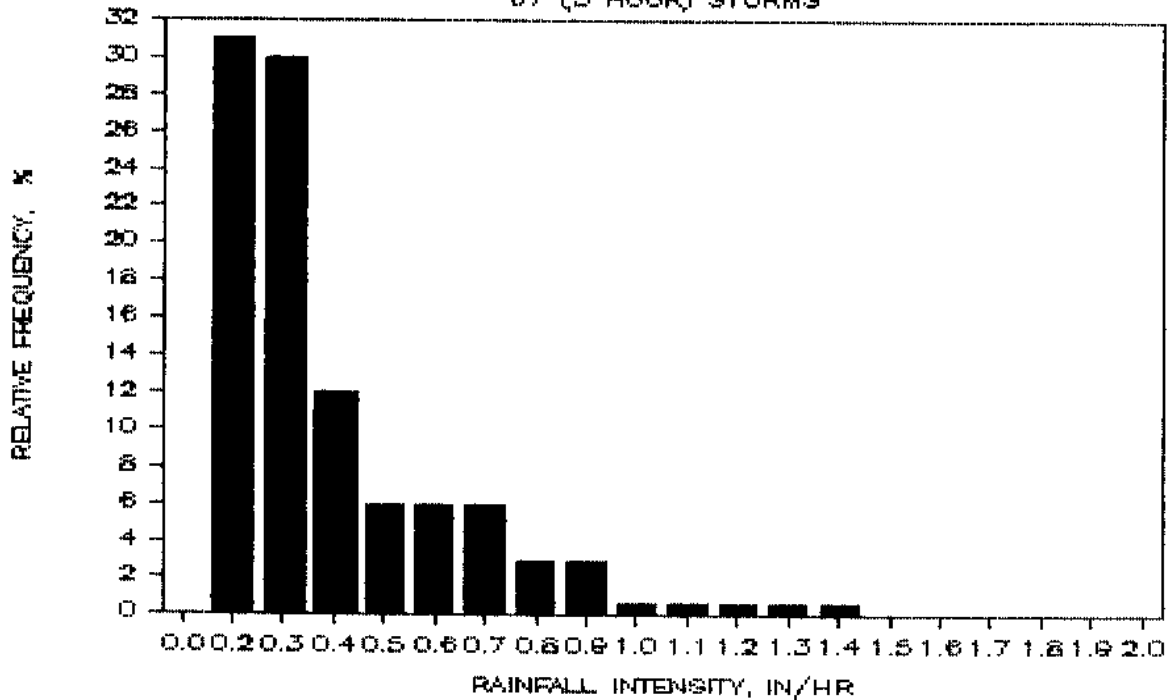
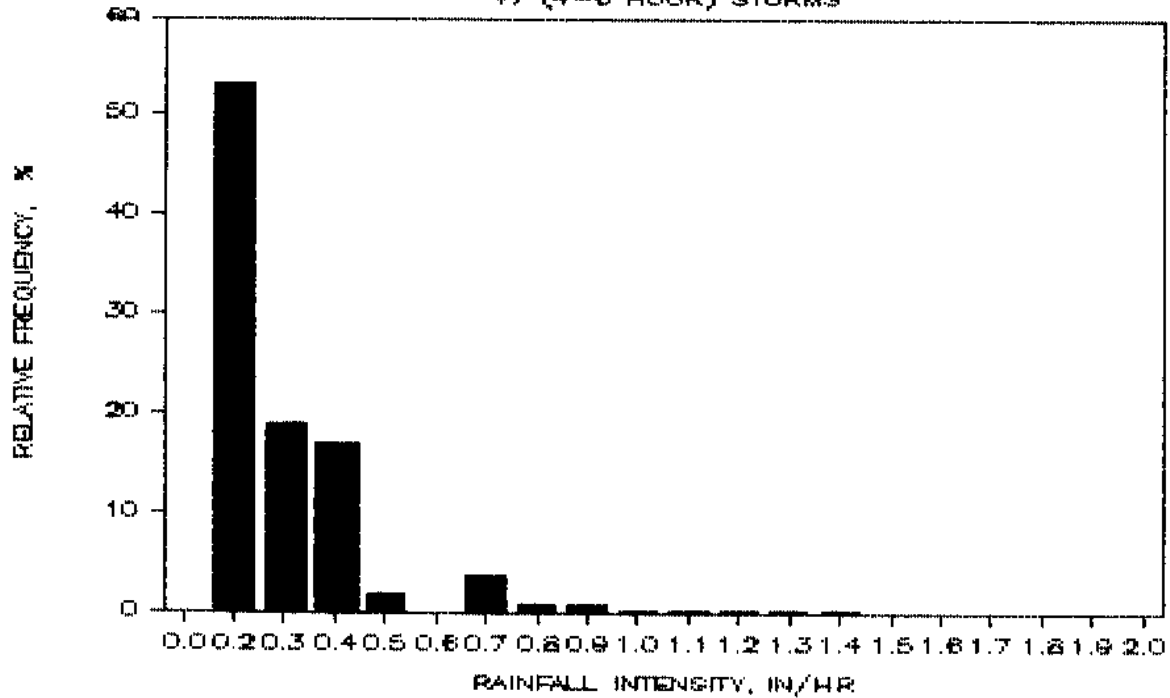


Figure A13. Continued

e. COROZAL : INDEX NO. 2934
47 (4-6 HOUR) STORMS



f. COROZAL : INDEX NO. 2934
12 (6-12 HOUR) STORMS

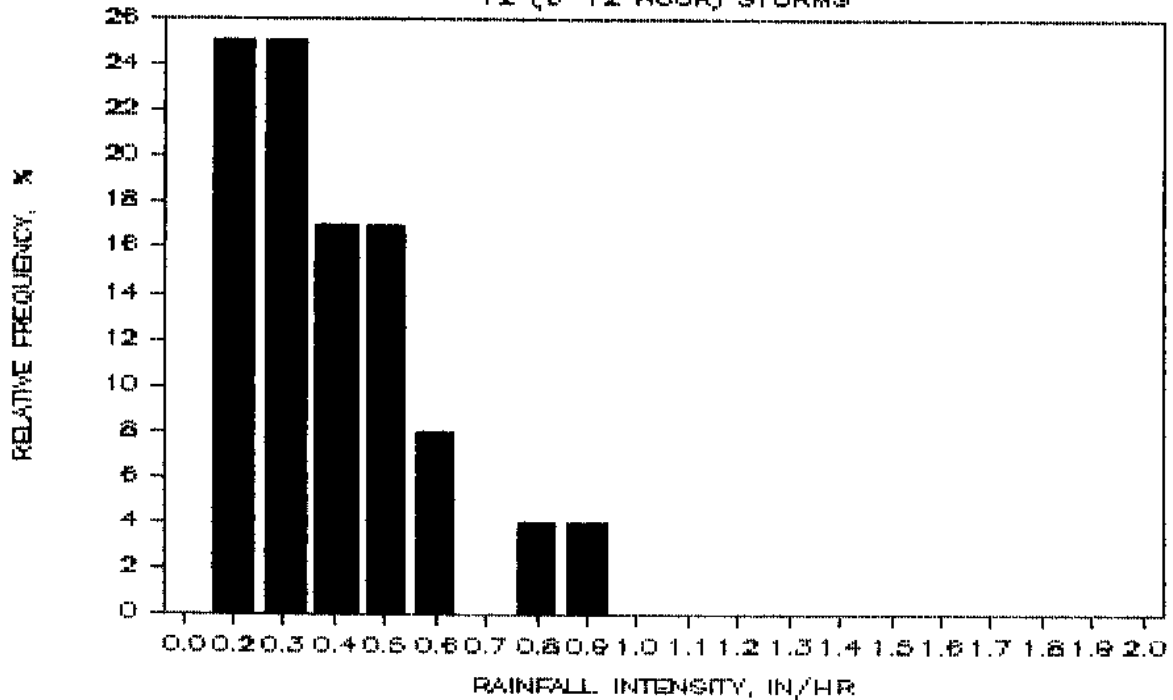


Figure A14. Probability Distributions of Storm Rainfall Intensities Stratified per Storm Duration at Dos Boca Station. Minimum Time Between Storms = 1 hr

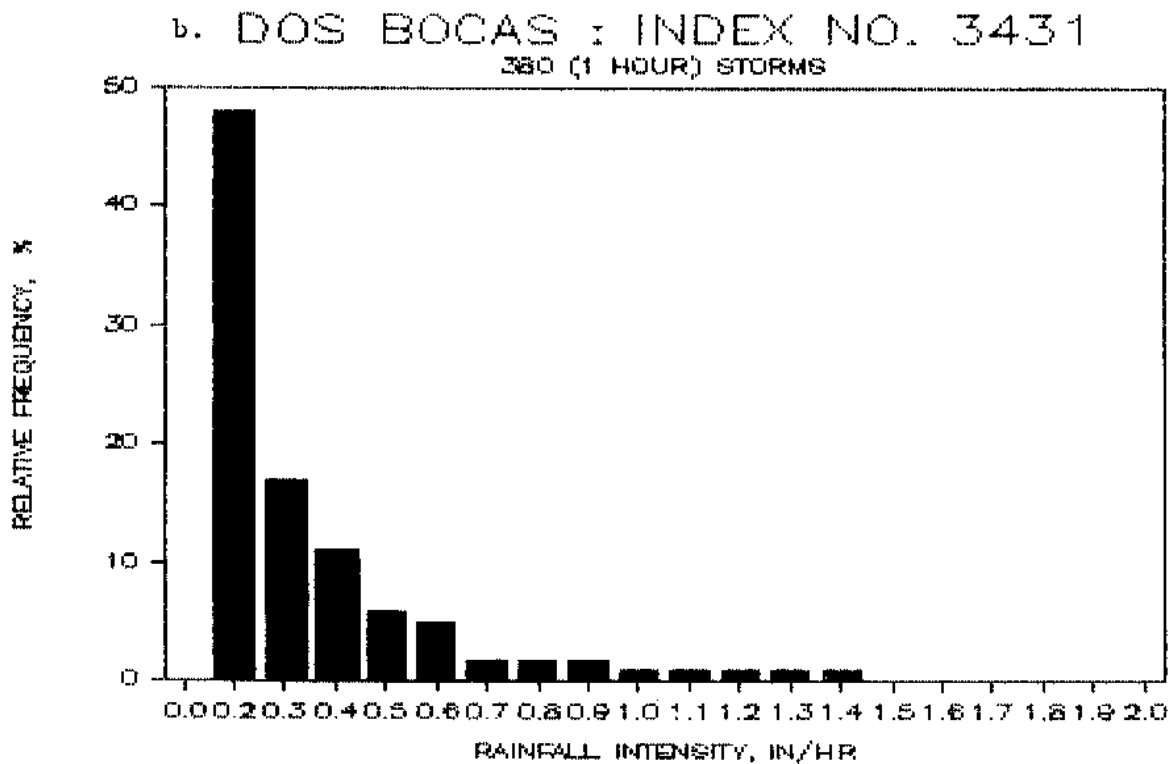
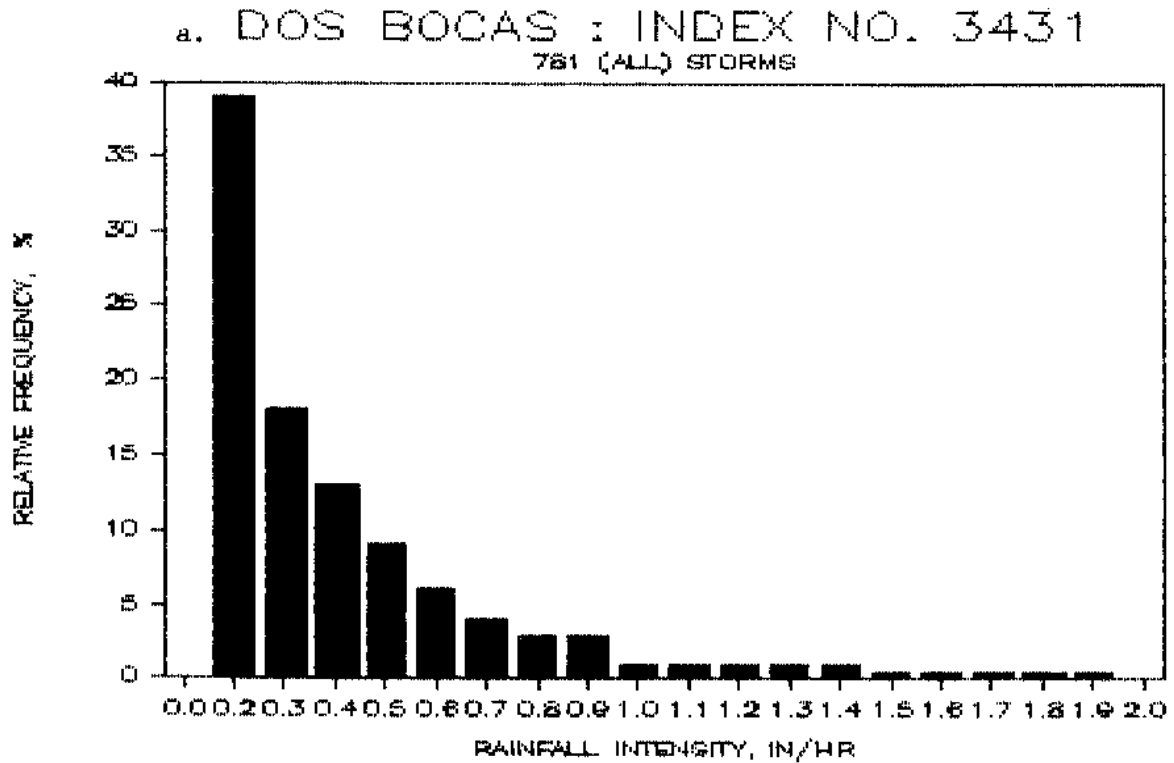
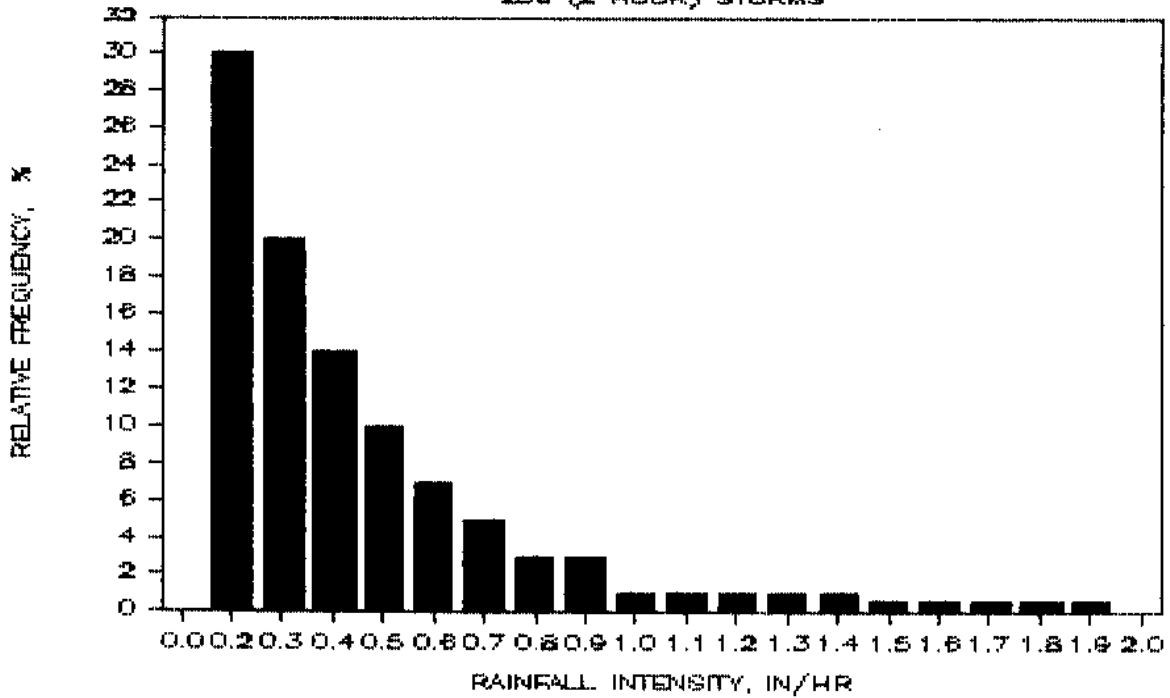


Figure A14. Continued

c. DOS BOCAS : INDEX NO. 3431
238 (2 HOUR) STORMS



d. DOS BOCAS : INDEX NO. 3431
100 (3 HOUR) STORMS

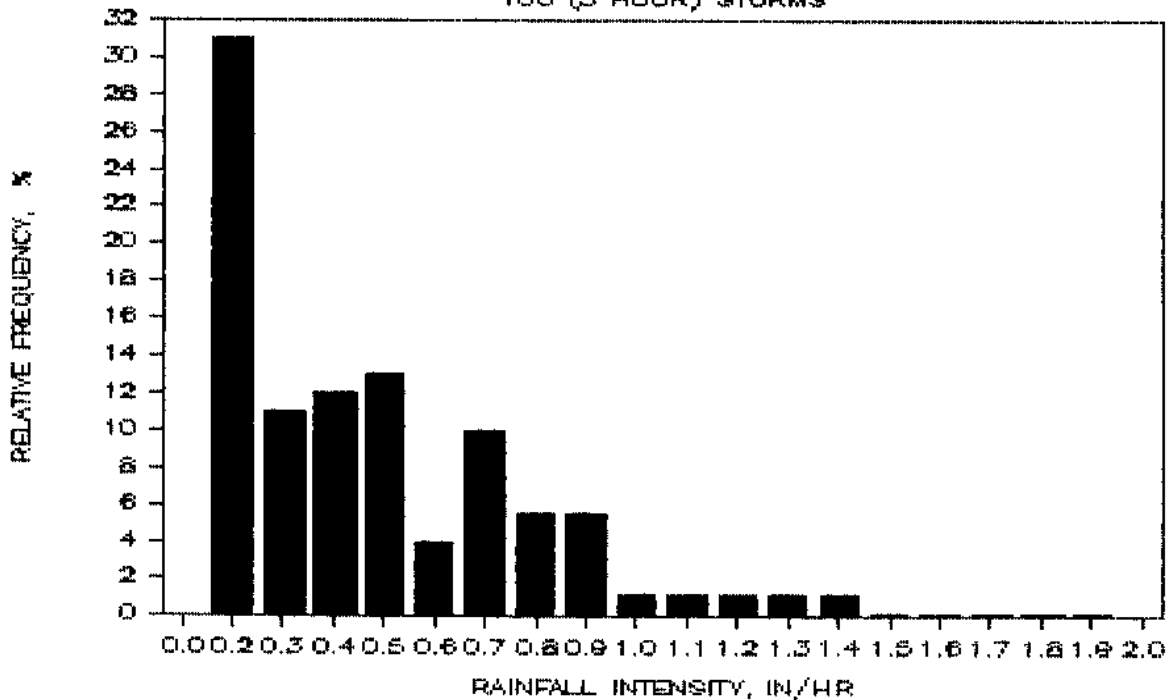
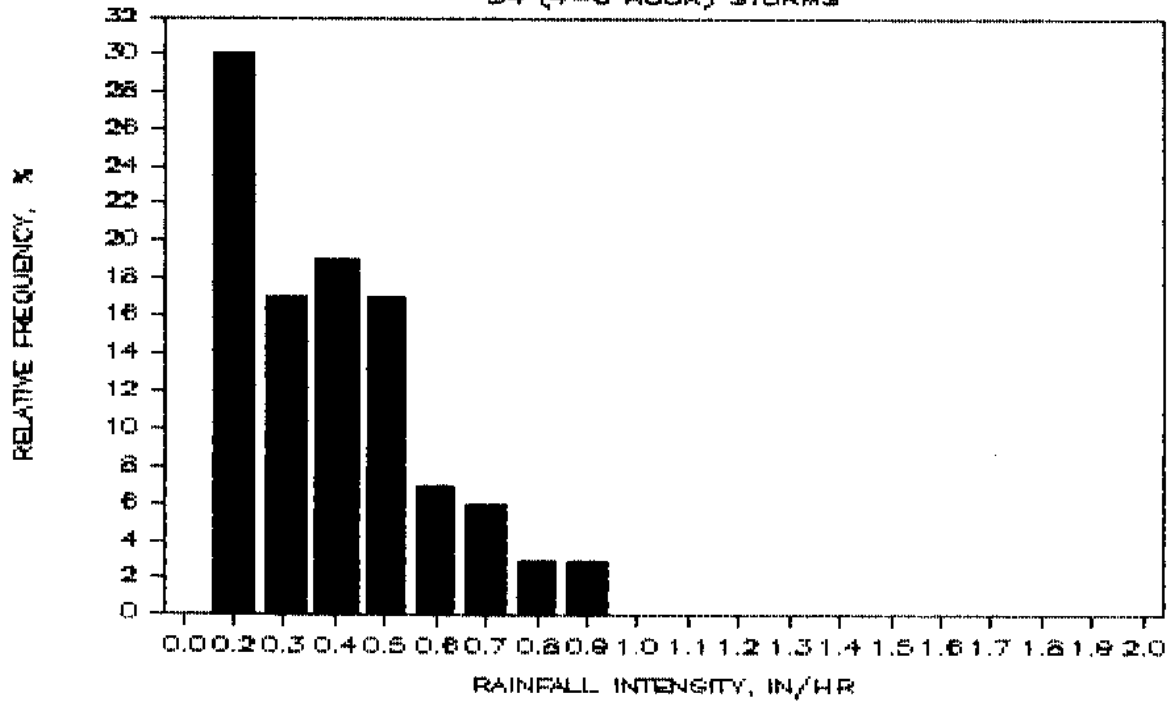


Figure A14. Continued

e. DOS BOCAS : INDEX NO. 3431
54 (4-6 HOUR) STORMS



f. DOS BOCAS : INDEX NO. 3431
8 (6-12) HOURS

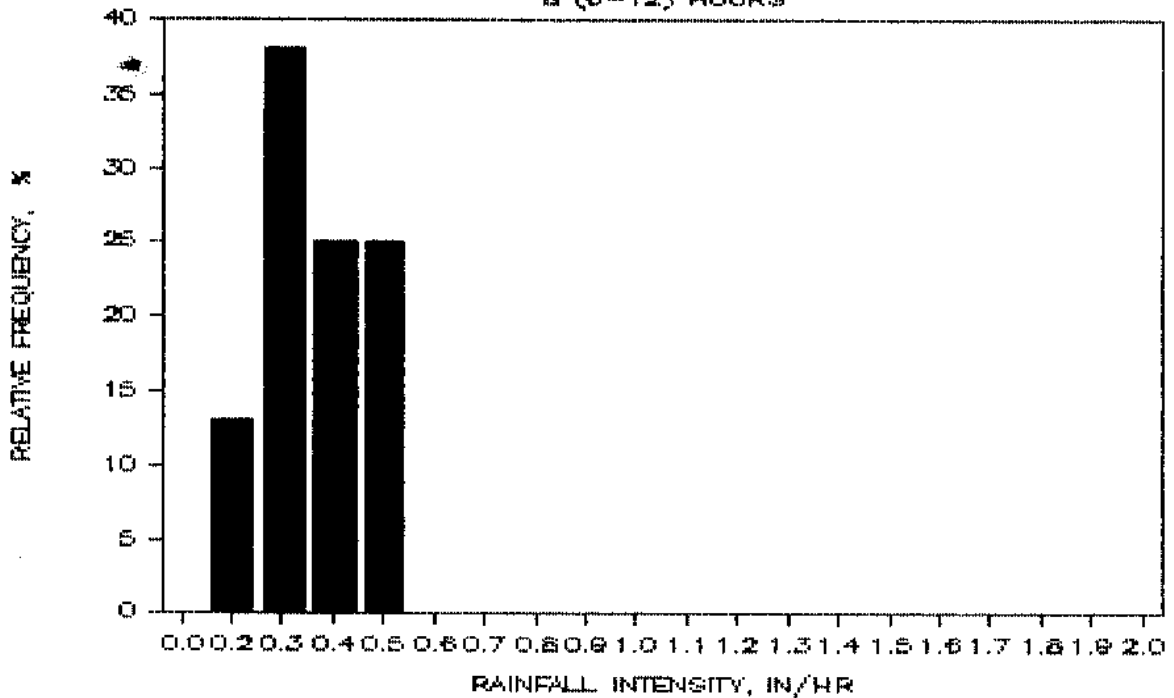
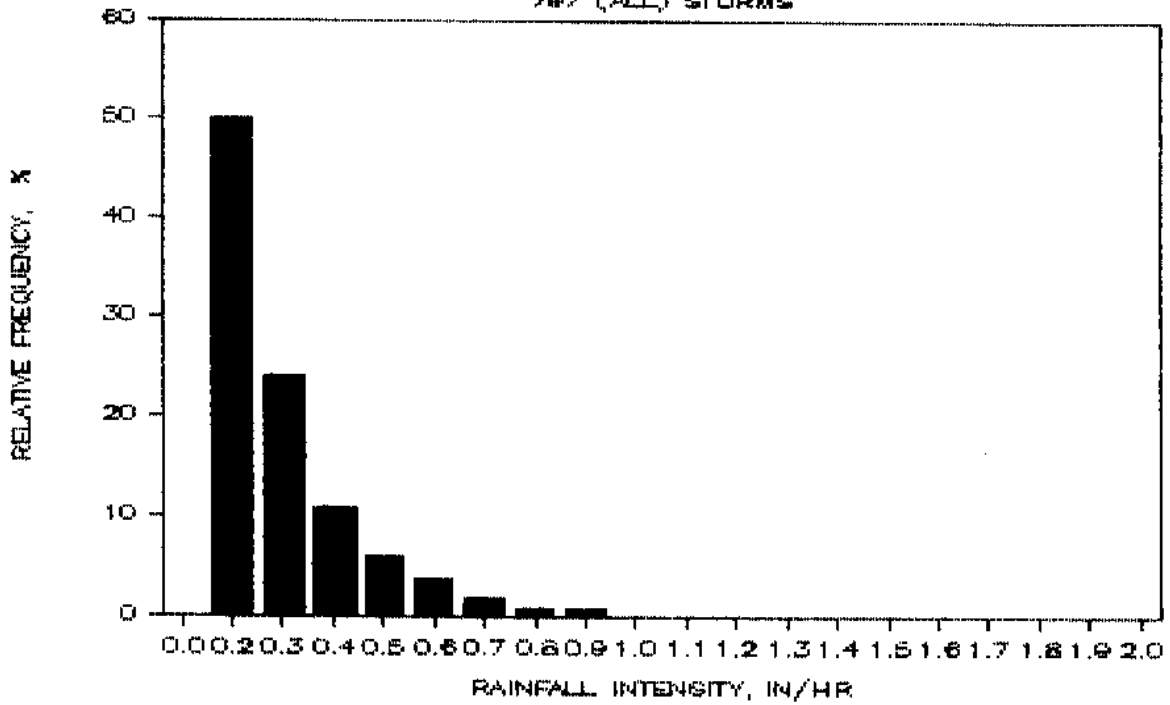


Figure A15. Probability Distributions of Storm Rainfall Intensities Stratified per Storm Duration at Fajardo Station.
Minimum Time Between Storms = 1 hr

a. FAJARDO : INDEX NO. 3657
797 (ALL) STORMS



b. FAJARDO : INDEX NO. 3657
523 (1 HOUR) STORMS

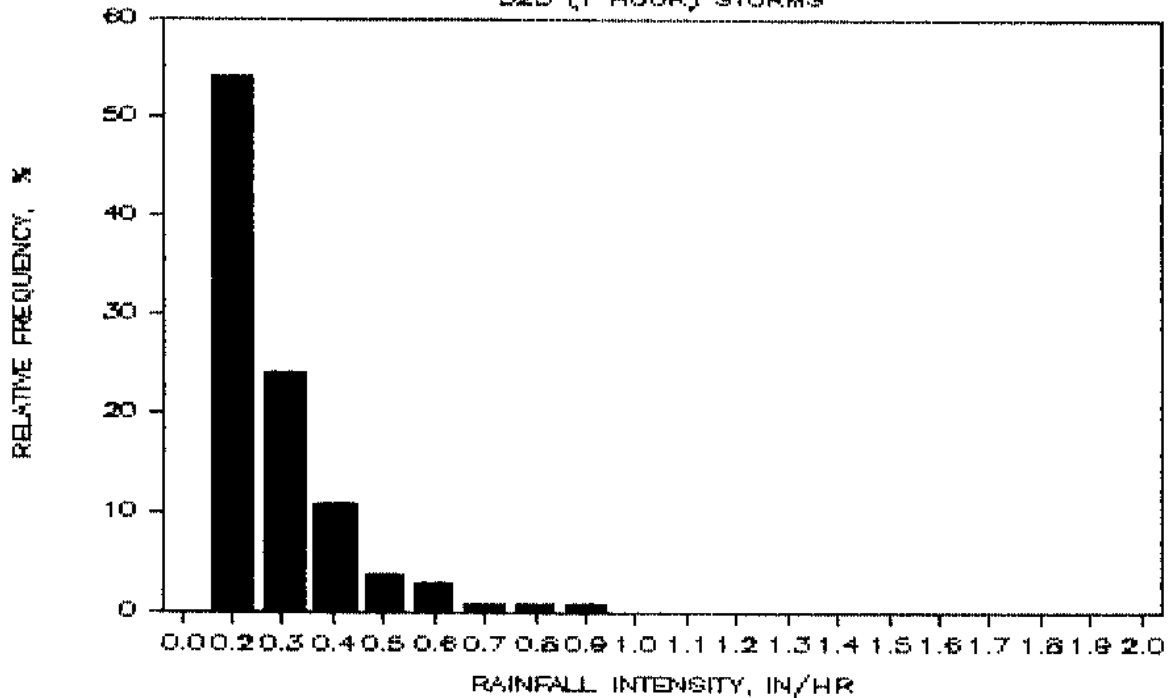
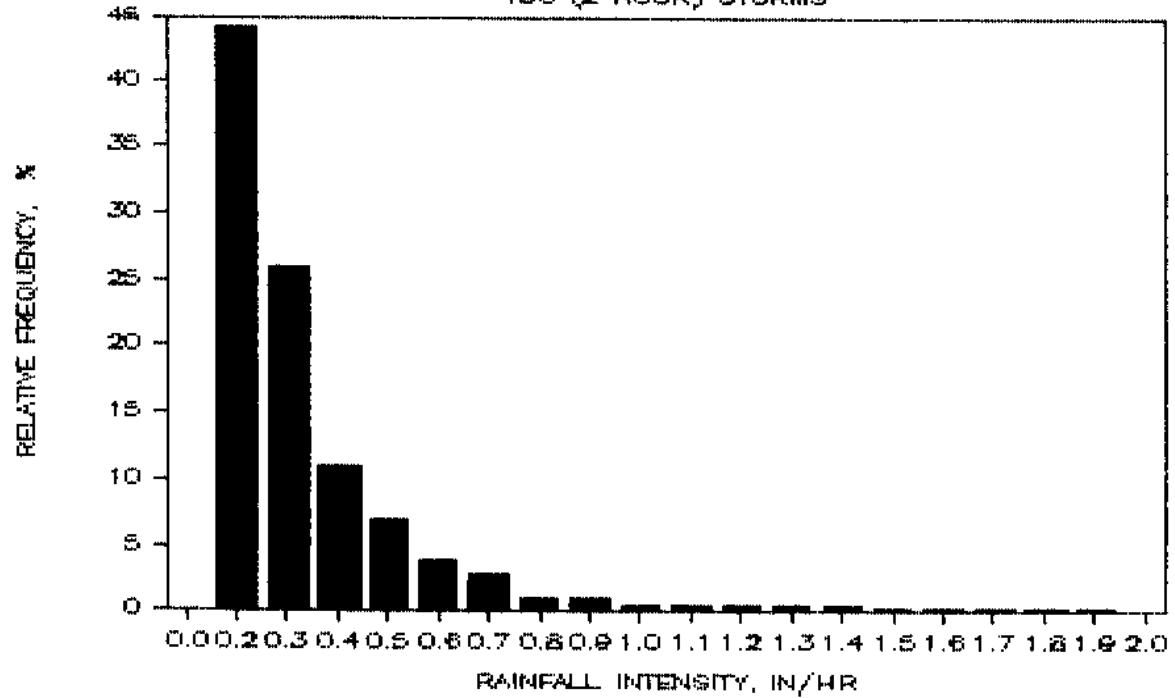


Figure A15. Continued

c. FAJARDO : INDEX NO. 3657
150 (2 HOUR) STORMS



d. FAJARDO : INDEX NO. 3657
66 (3 HOUR) STORMS

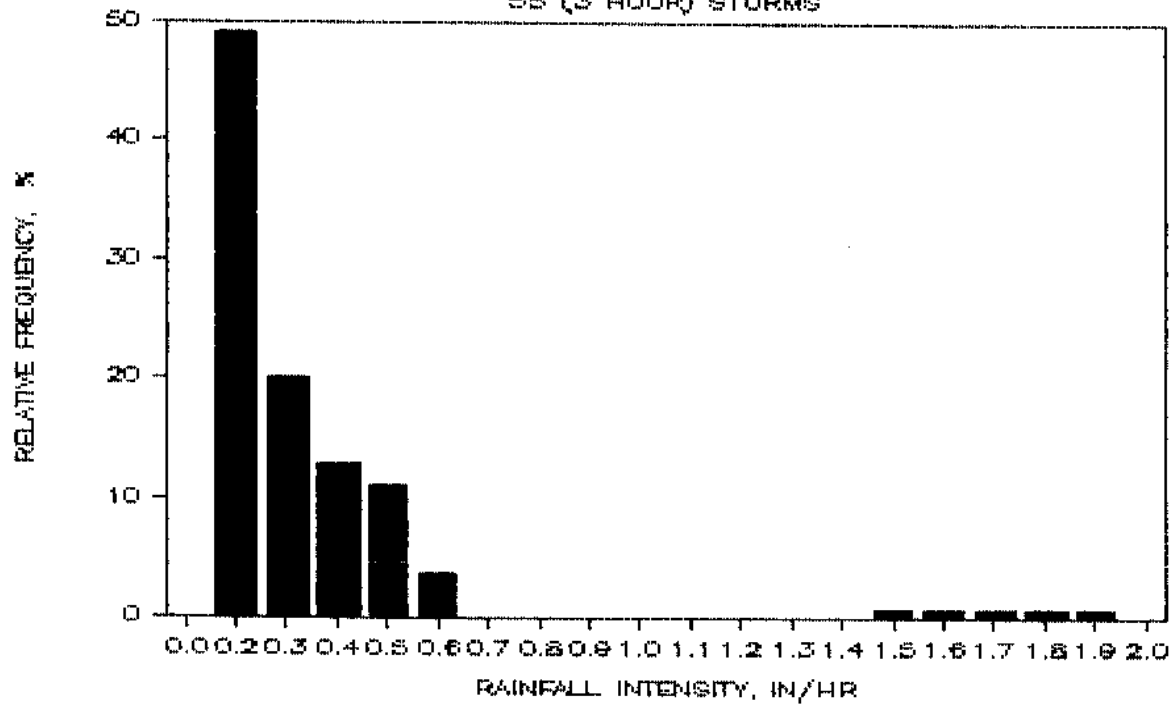
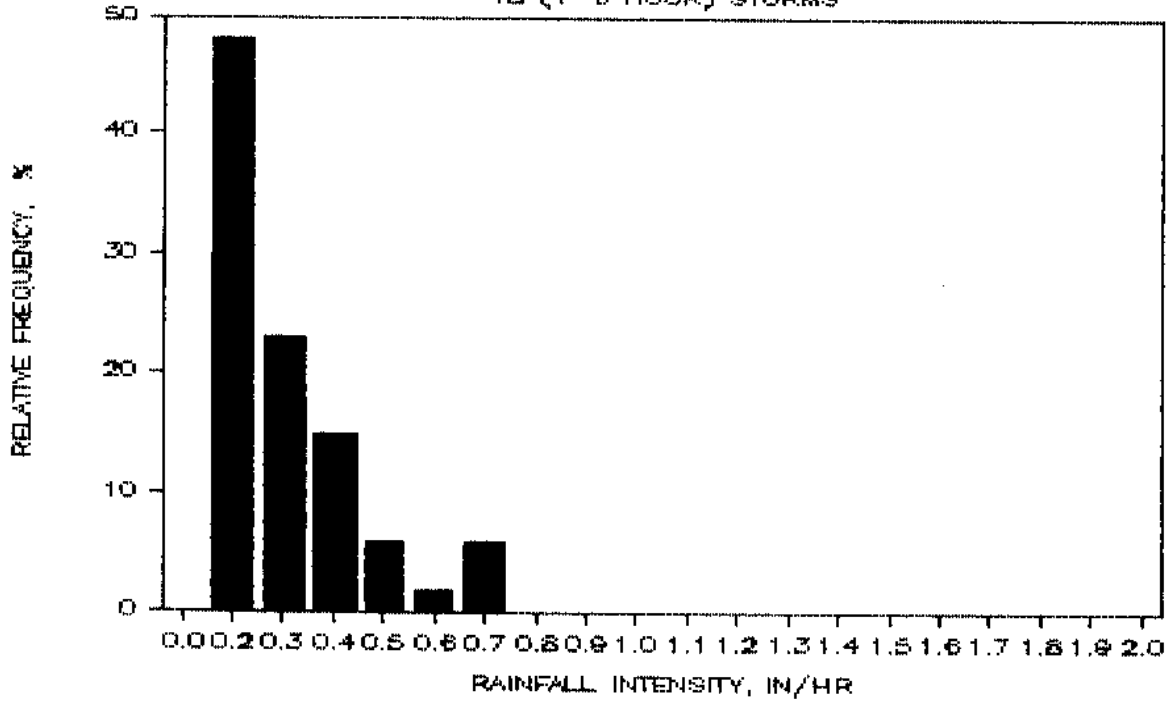


Figure A15. Continued

e. FAJARDO : INDEX NO. 3657
48 (4-6 HOUR) STORMS



f. FAJARDO : INDEX NO. 3657
19 (6-12 HOUR) STORMS

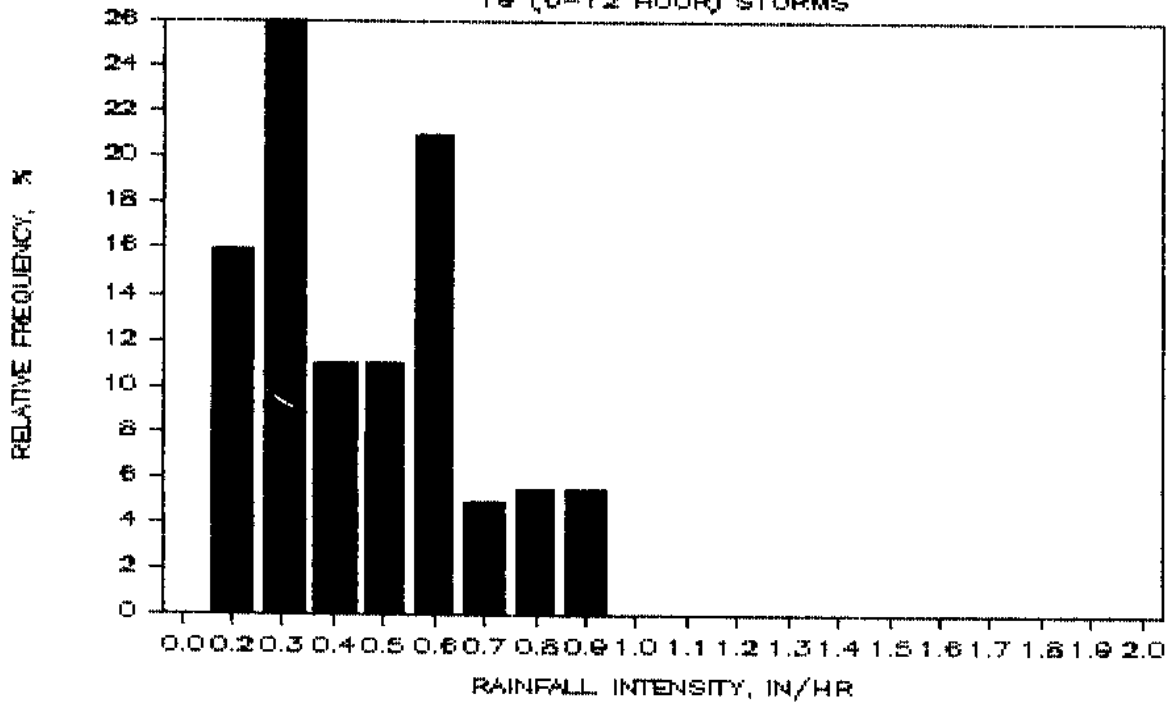
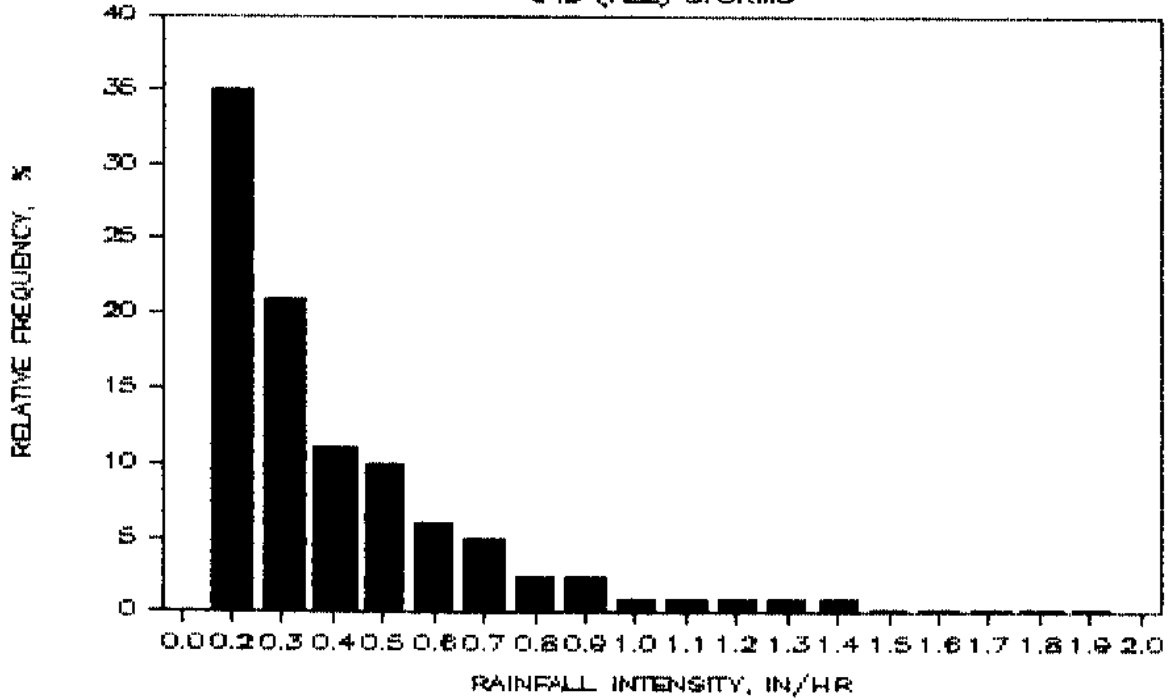


Figure A16. Probability Distributions of Storm Rainfall Intensities Stratified per Storm Duration at Maricao 2 SSW Station. Minimum Time Between Storms = 1 hr

a. MARICAO 2 SSW : INDEX NO. 5908
945 (ALL) STORMS



b. MARICAO 2 SSW : NO. 5908
407 (1 HOUR) STORMS

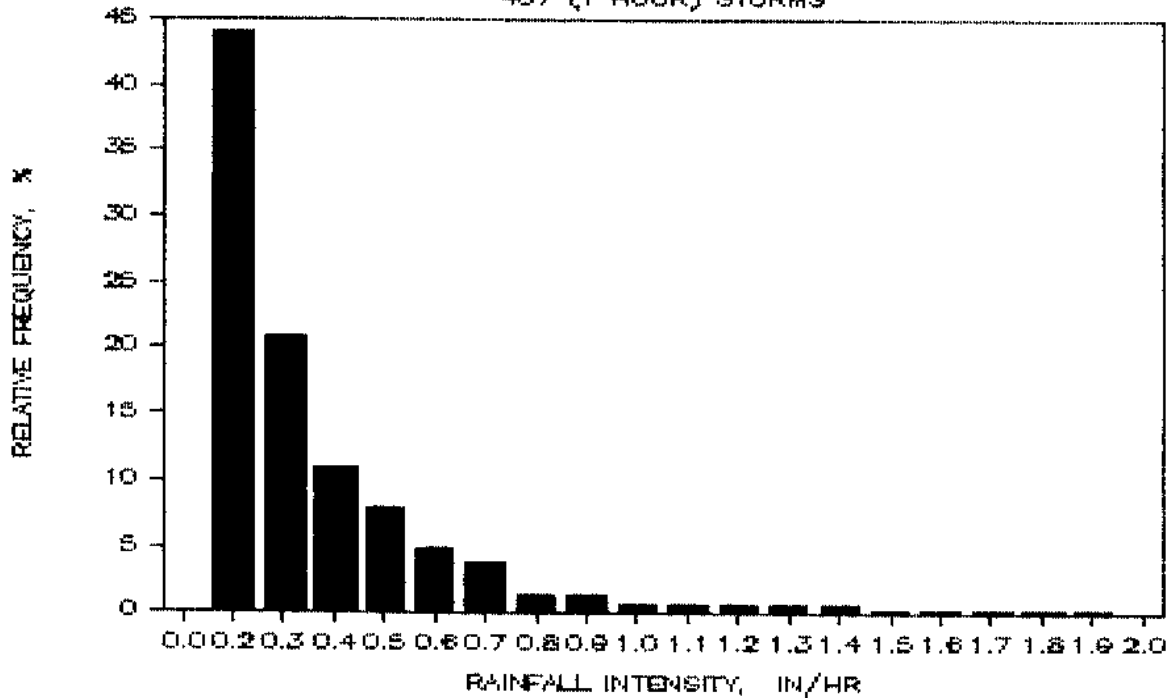
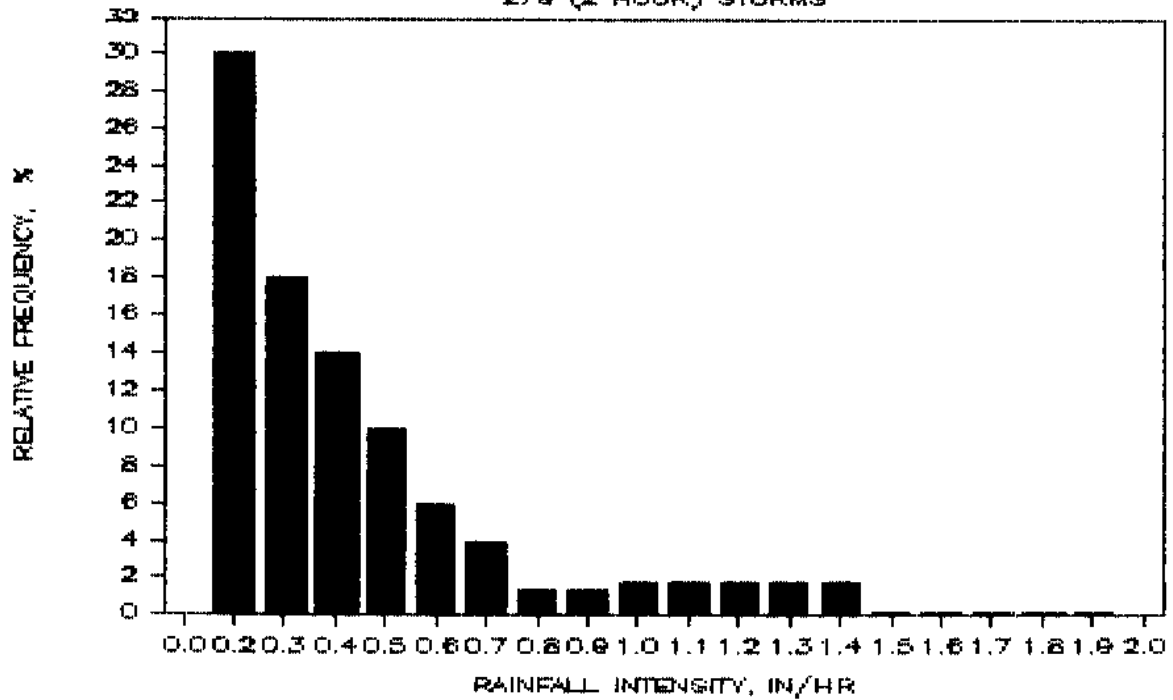


Figure A16. Continued

c. MARICAO 2 SSW : INDEX NO. 5908
279 (2 HOUR) STORMS



d. MARICAO 2 SSW : INDEX NO. 5908
148 (3 HOUR) STORMS

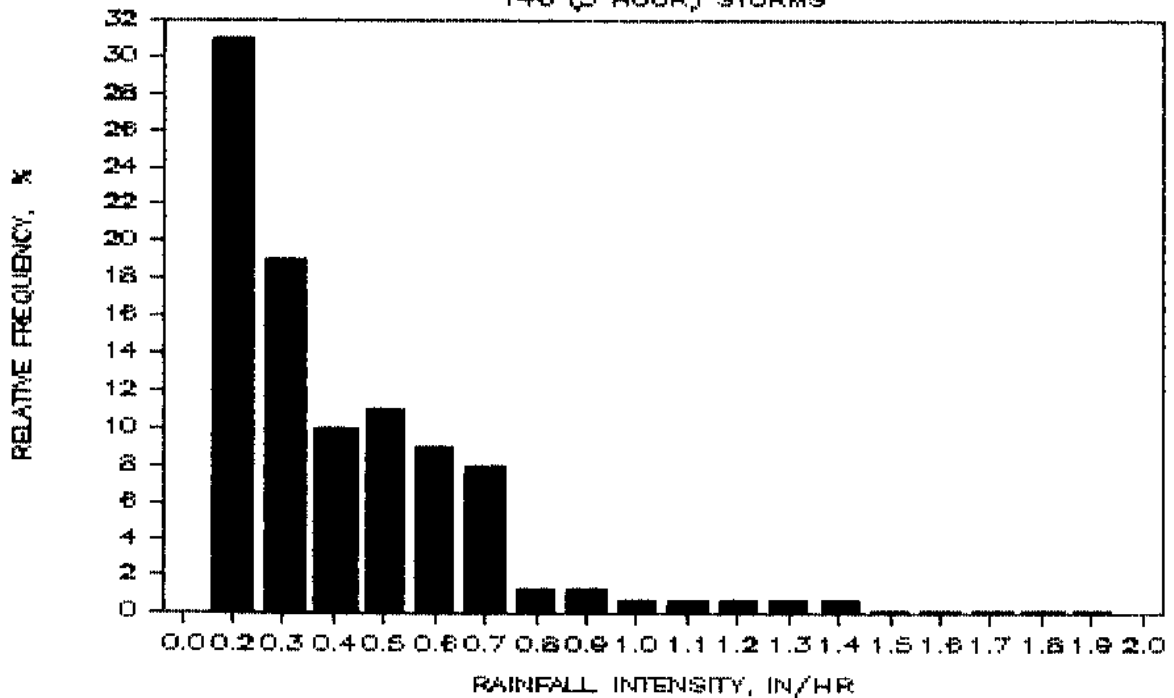
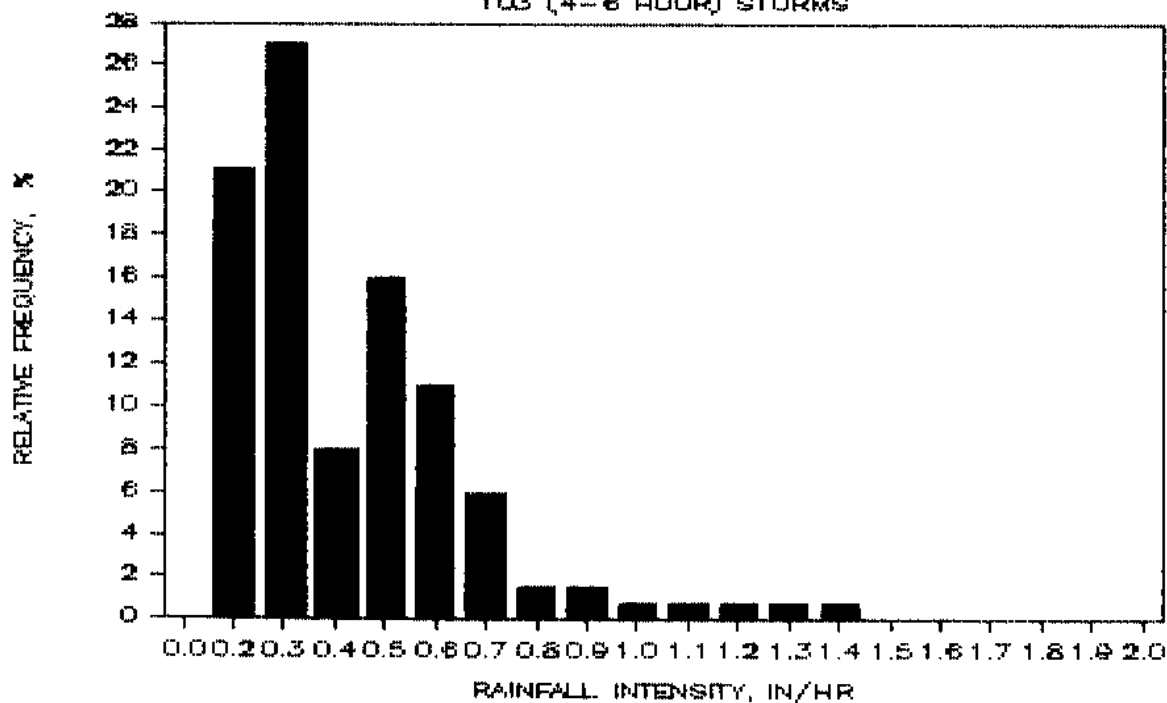


Figure A16. Continued

e. MARICAO 2 SSW : INDEX NO. 5908
103 (4-6 HOUR) STORMS



f. MARICAO 2 SSW : INDEX NO. 5908
7 (6-12 HOUR) STORMS

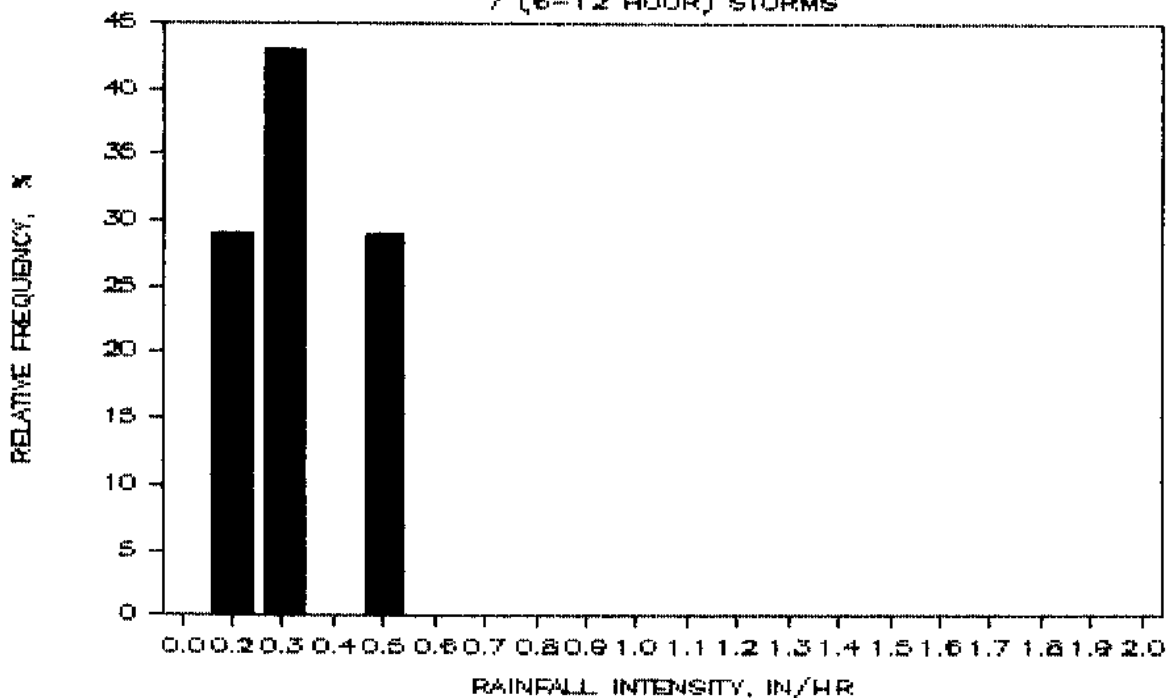
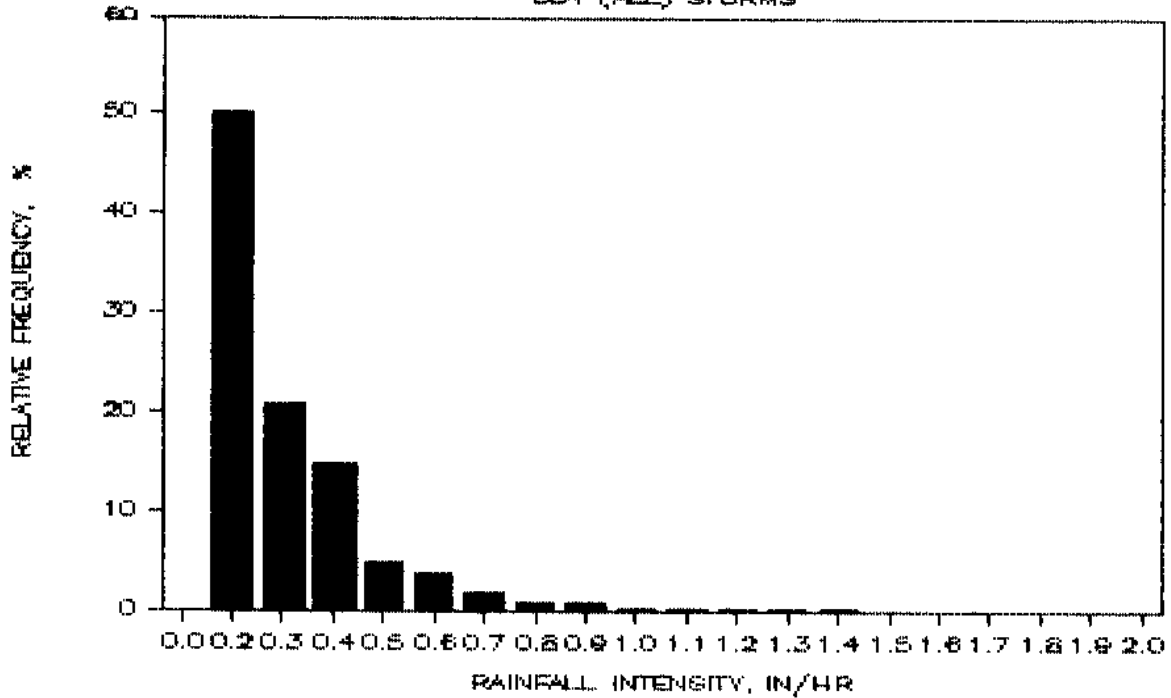


Figure A17. Probability Distributions of Storm Rainfall Intensities Stratified per Storm Duration at Ponce 4E Station. Minimum Time Between Storms = 1 hr

a. PONCE 4E : INDEX NO. 7292
364 (ALL) STORMS



b. PONCE 4E : INDEX NO. 7292
185 (1 HOUR) STORMS

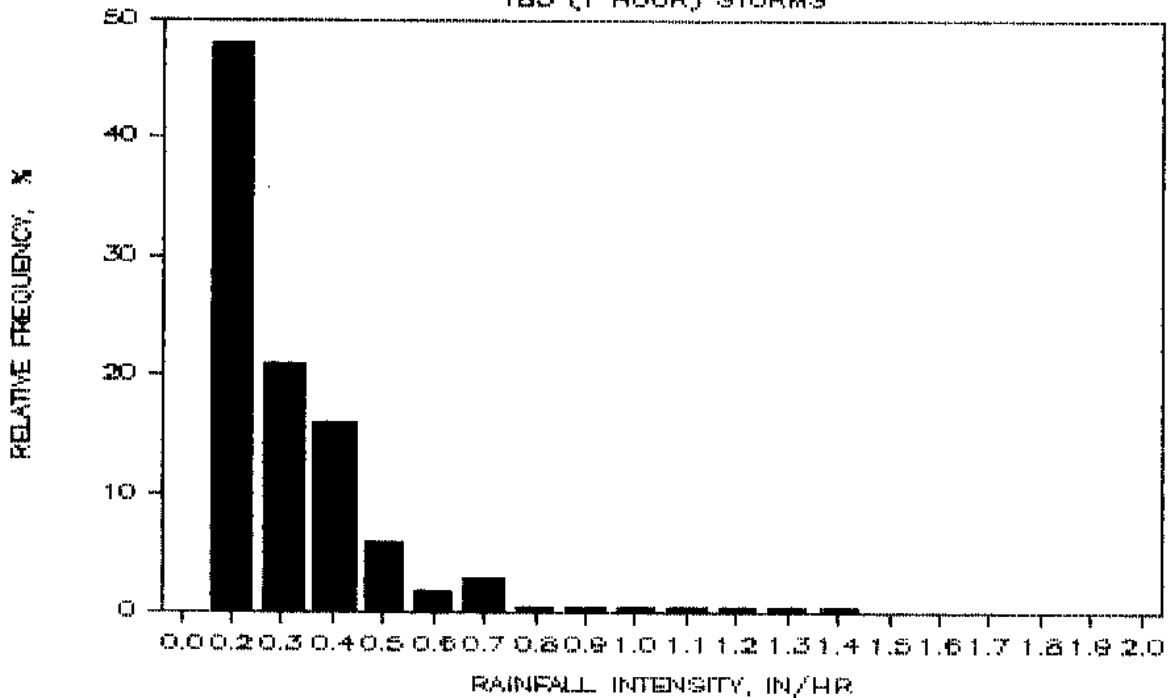
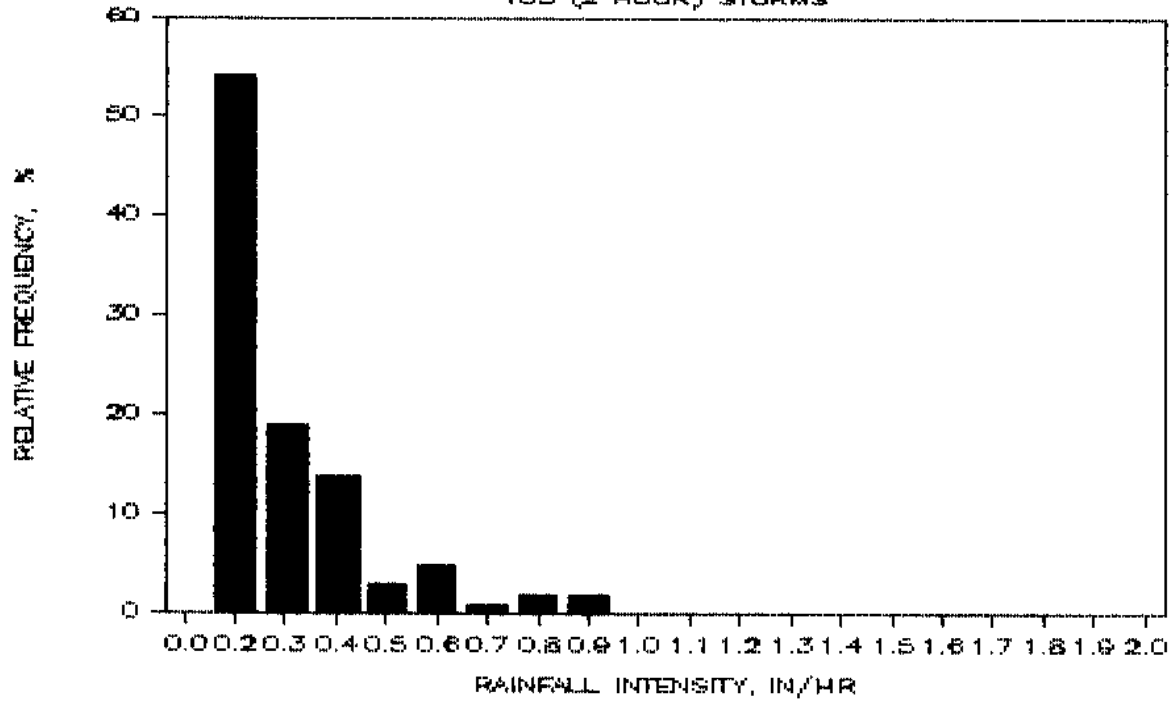


Figure A17. Continued

c. PONCE 4E : INDEX NO. 7292
103 (2 HOUR) STORMS



d. PONCE 4E : INDEX NO. 7292
26 (3 HOUR) STORMS

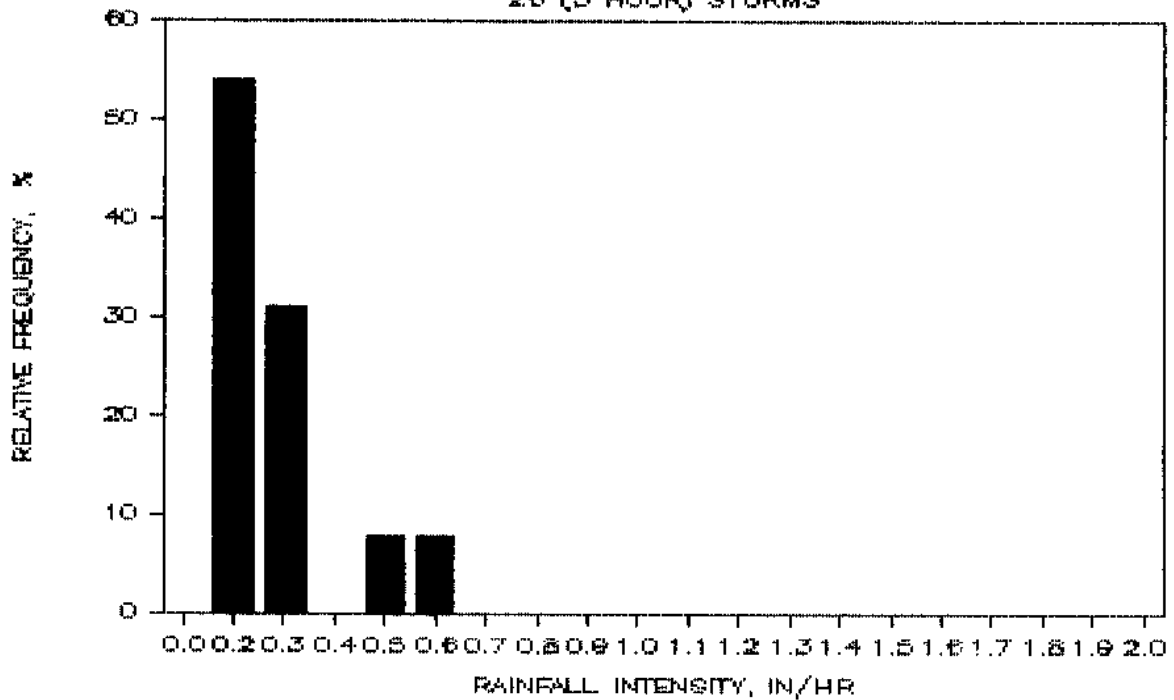
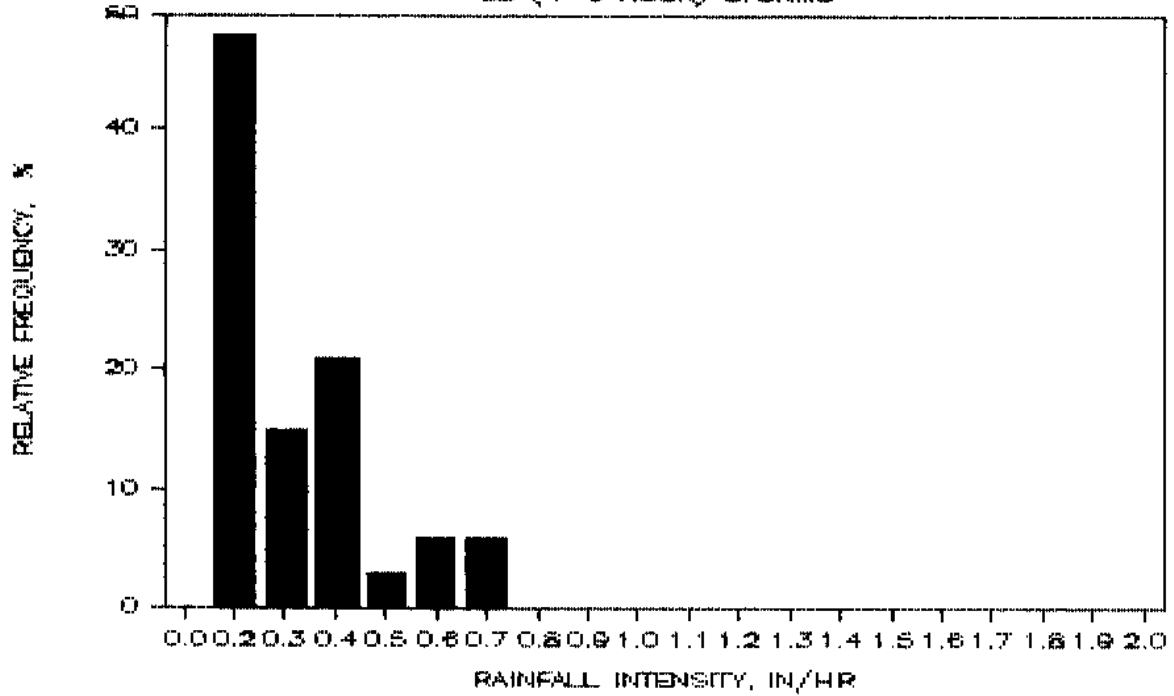


Figure A17. Continued

e. PONCE 4E : INDEX NO. 7292
33 (4-6 HOUR) STORMS



PONCE 4E : INDEX NO. 7292
5 (6-12 HOUR) STORMS

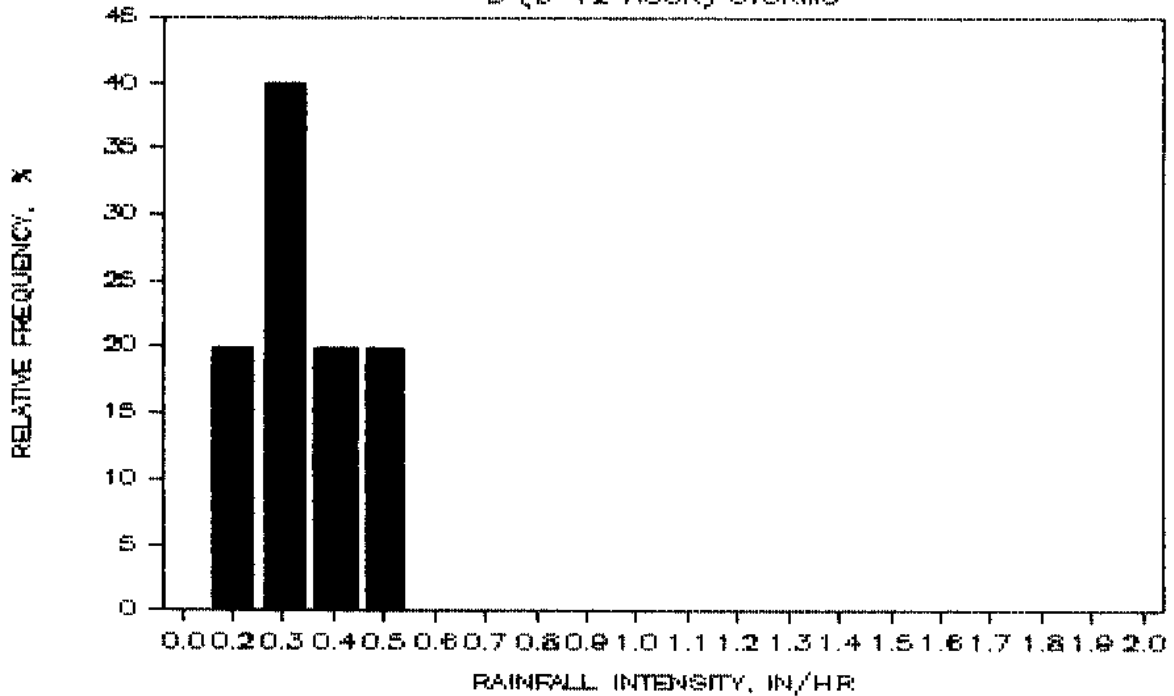
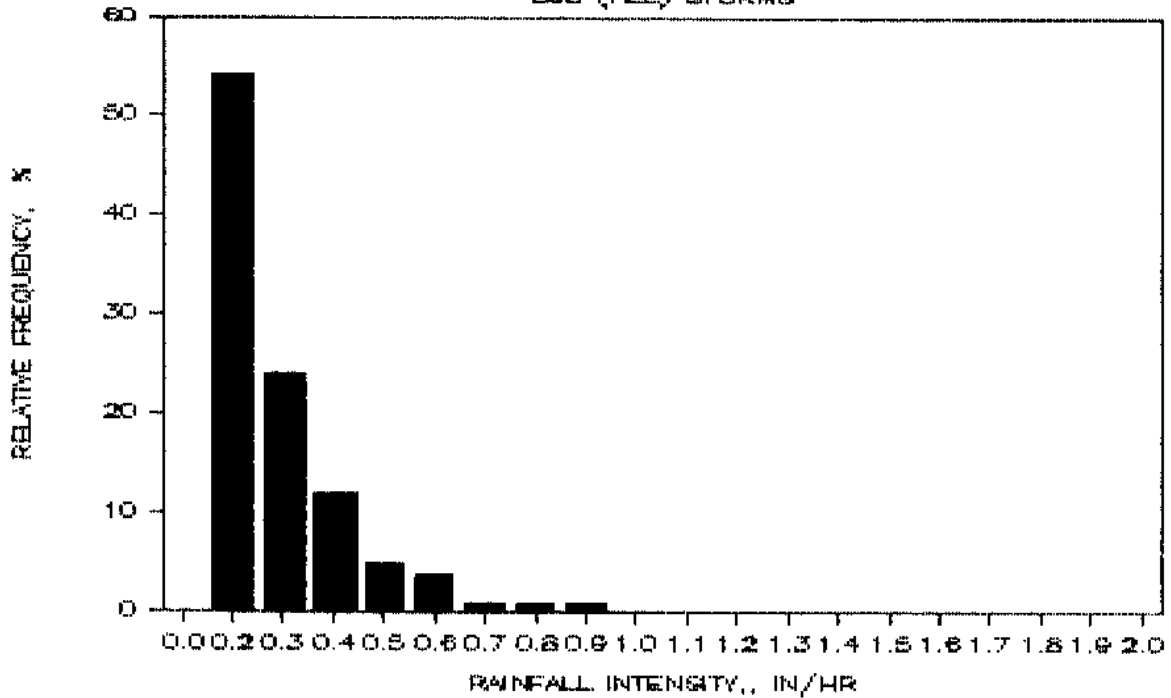


Figure A18. Probability Distributions of Storm Rainfall Intensities Stratified per Storm Duration at San Juan WSFO Station.

Minimum Time Between Storms = 1 hr

a. SAN JUAN WSFO : INDEX NO. 8812
300 (ALL) STORMS



b. SAN JUAN WSFO : INDEX NO. 8812
163 (1 HOUR) STORMS

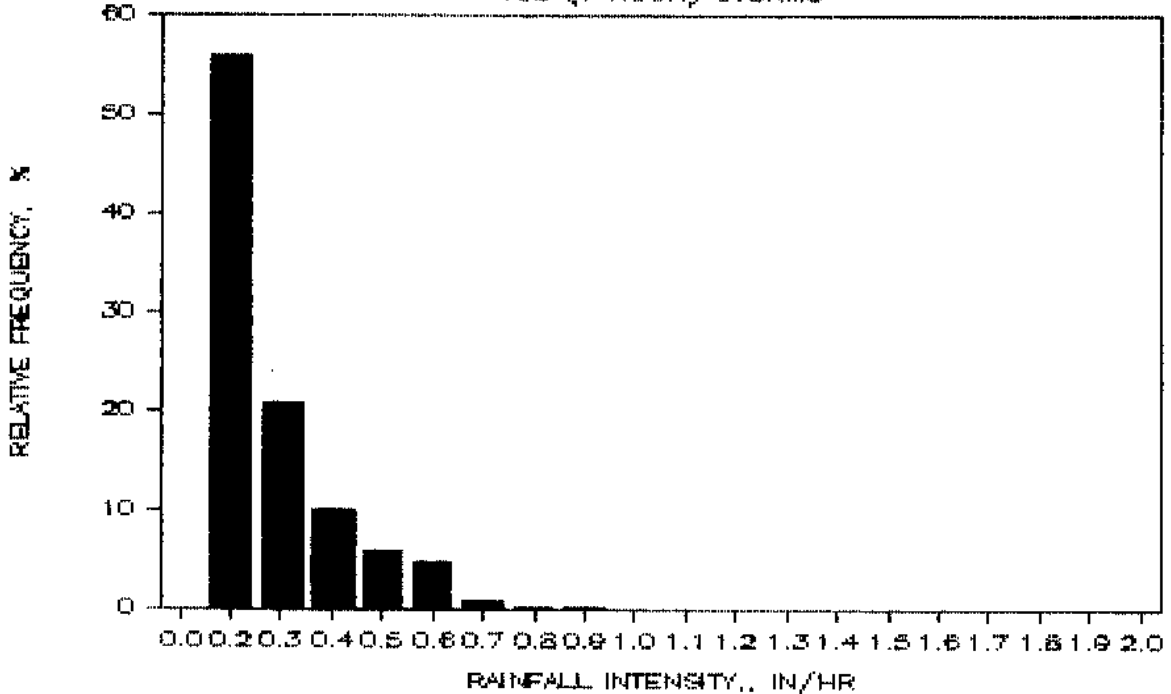
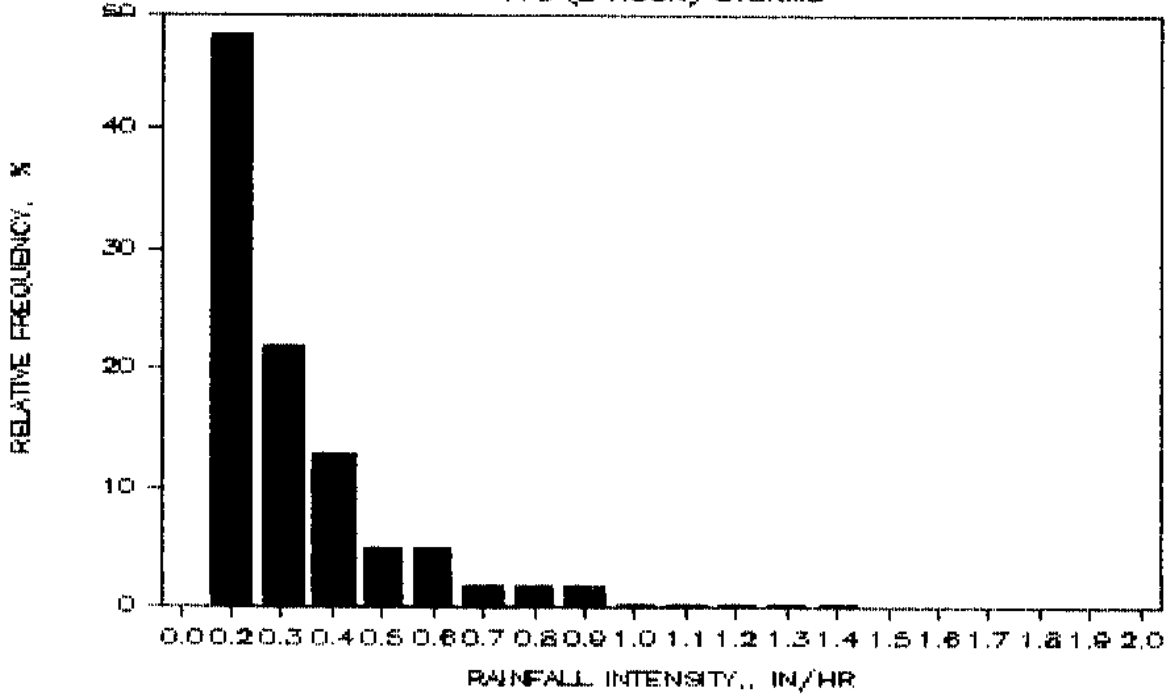


Figure A18. Continued

c. SAN JUAN WSFO : INDEX NO. 8812
110 (2 HOUR) STORMS



d. SAN JUAN WSFO : INDEX NO. 8812
47 (3 HOUR) STORMS

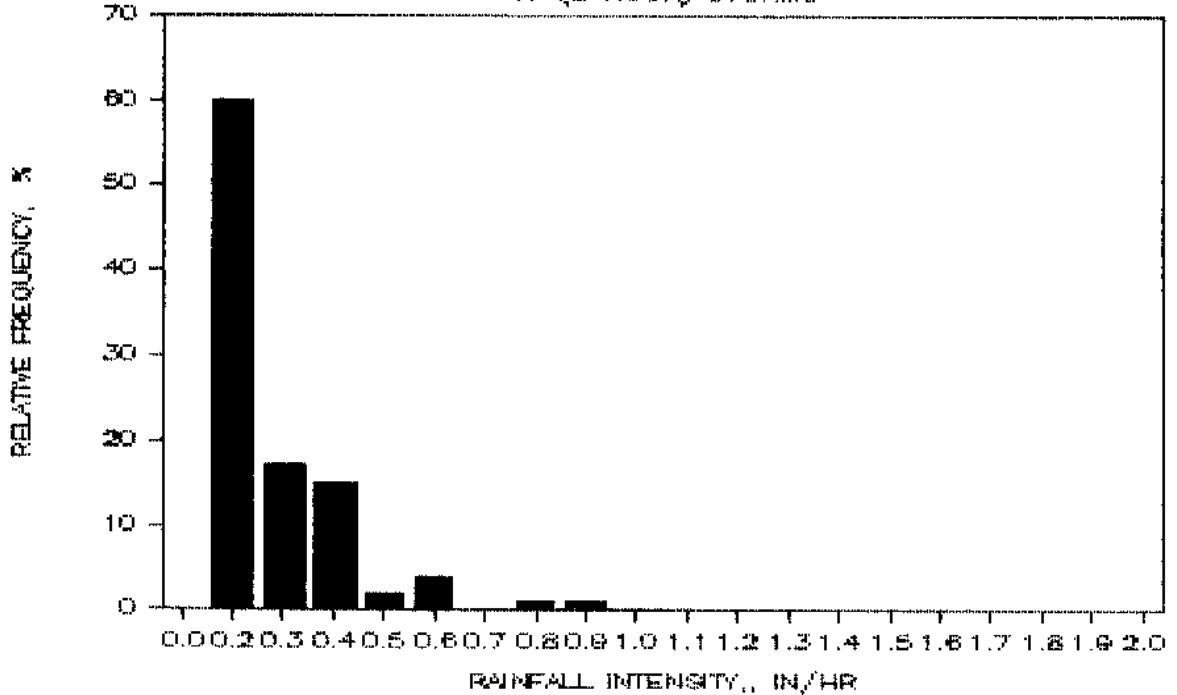
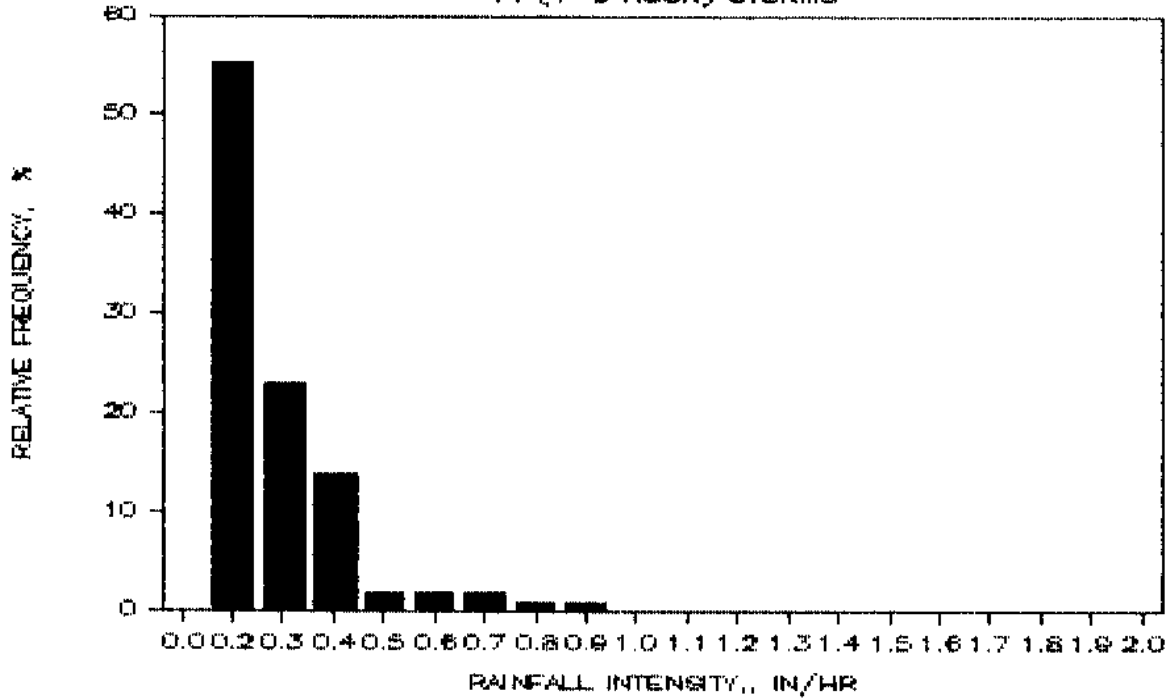


Figure A18. Continued

e. SAN JUAN WSFO : INDEX NO. 8812
44 (4-6 HOUR) STORMS



f. SAN JUAN WSFO : INDEX NO. 8812
21 (6-12 HOUR) STORMS

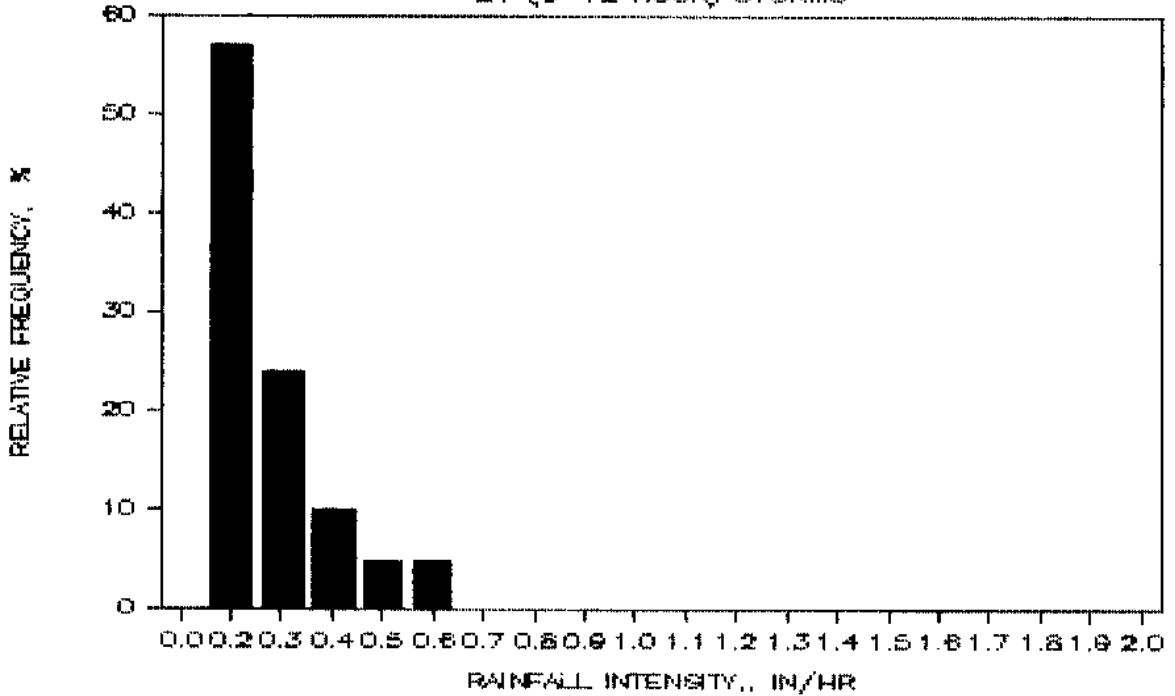


Figure A19. Probability Distributions of Storm Rainfall Intensities Stratified per Storm Duration at San Sebastian Station. Minimum Time Between Storms = 1 hr

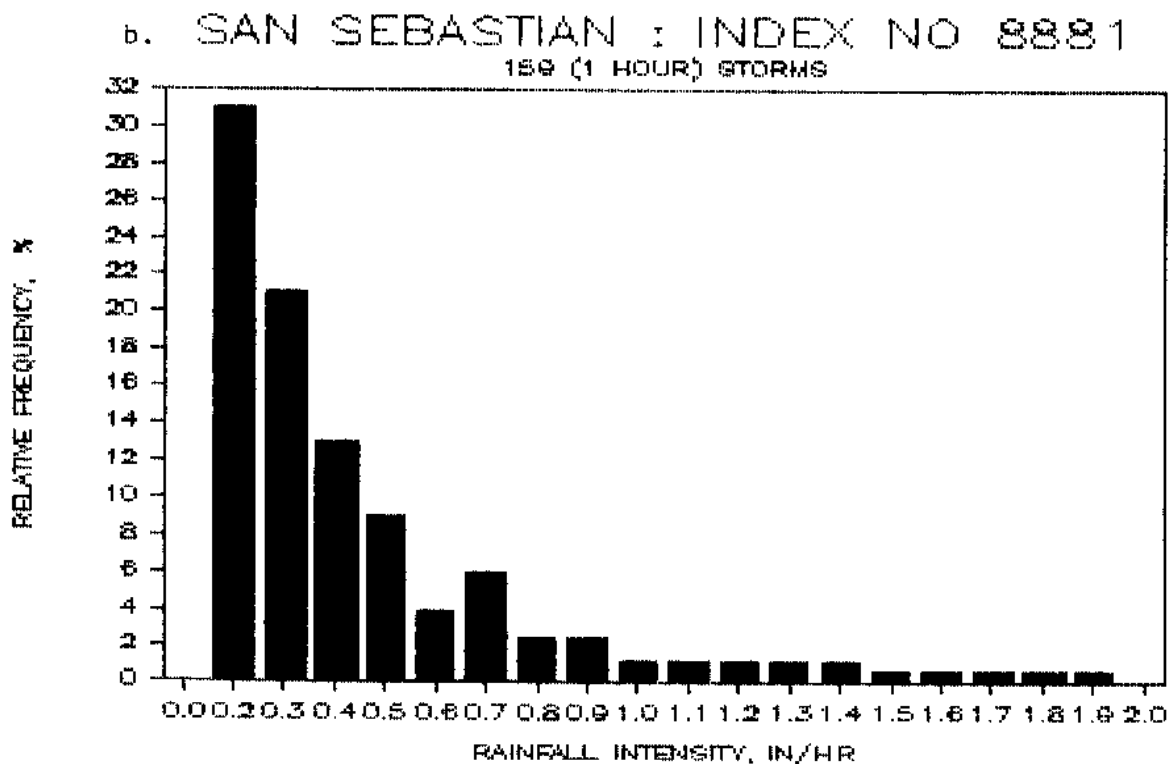
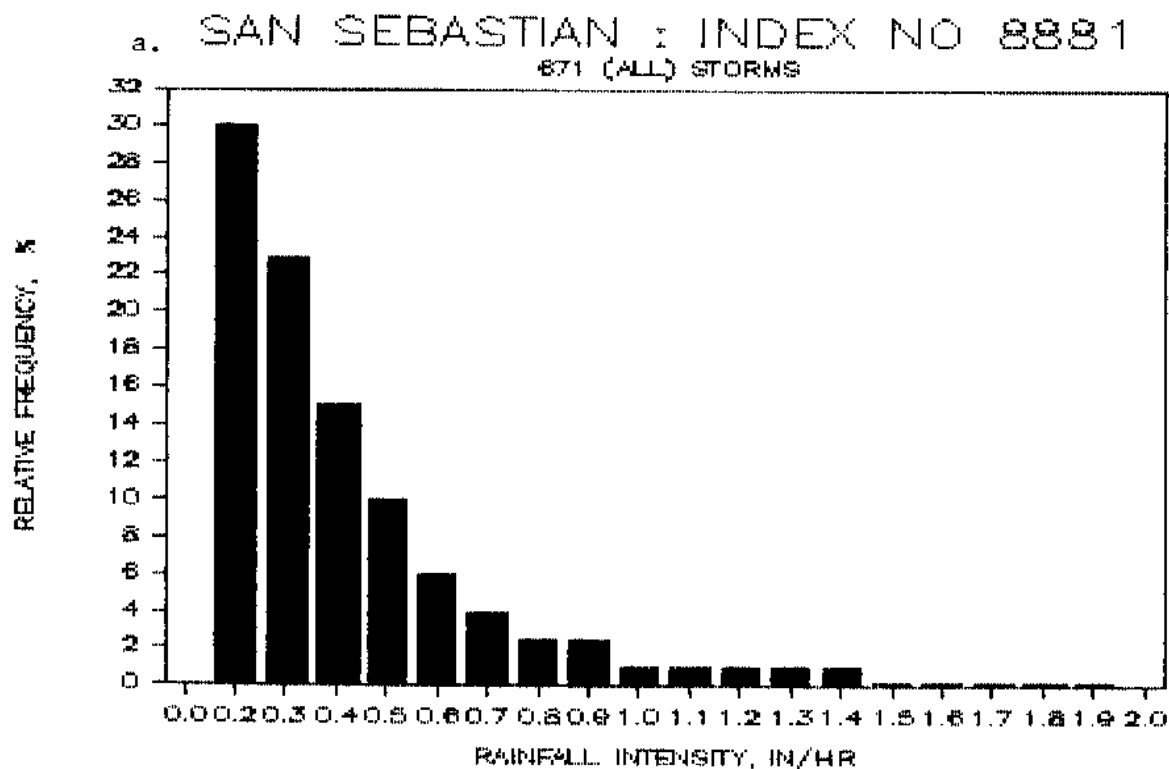
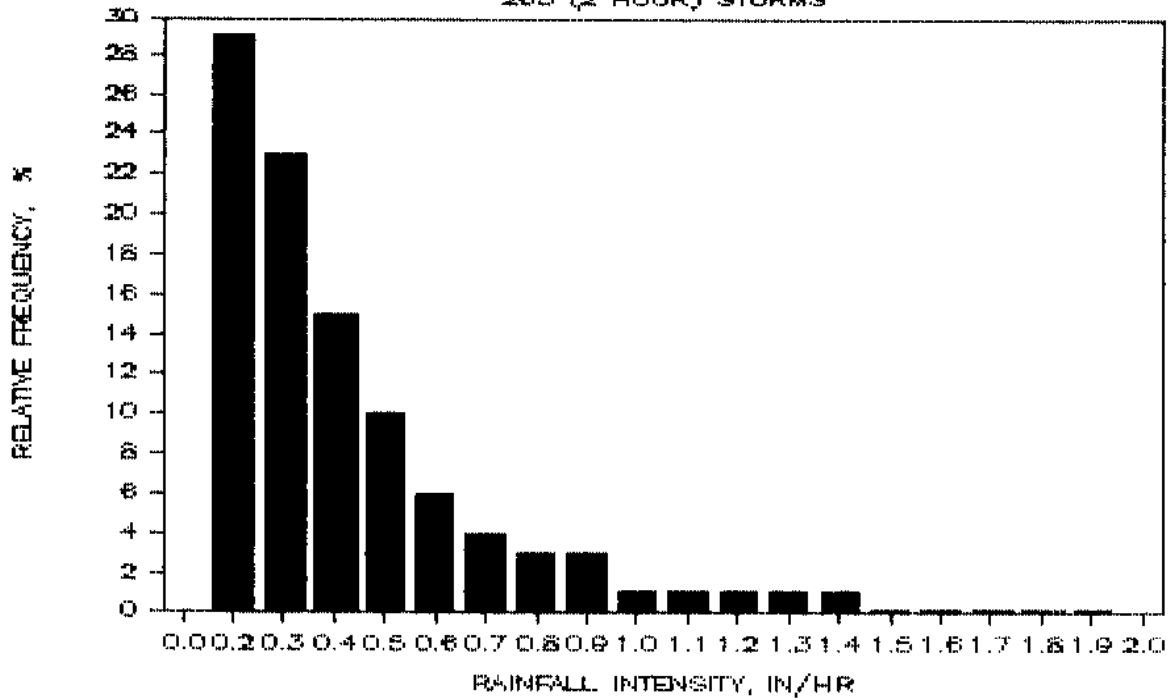


Figure A19. Continued

c. SAN SEBASTIAN : INDEX NO 8881
265 (2 HOUR) STORMS



d. SAN SEBASTIAN : INDEX NO 8881
144 (3 HOUR) STORMS

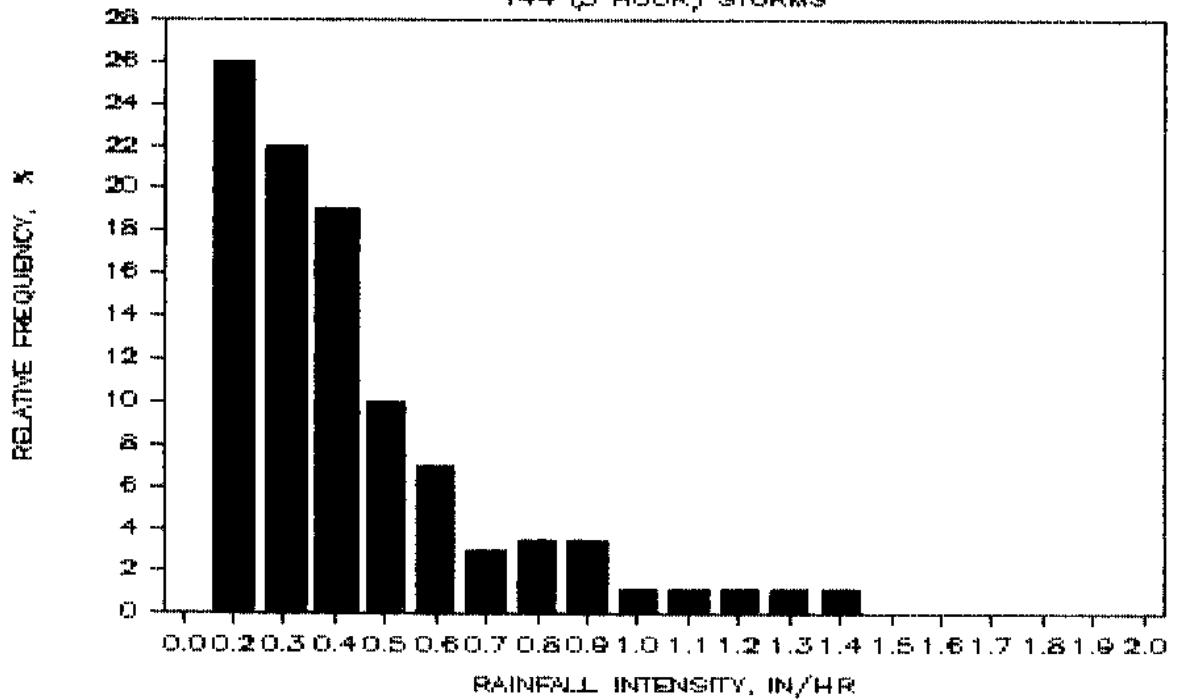
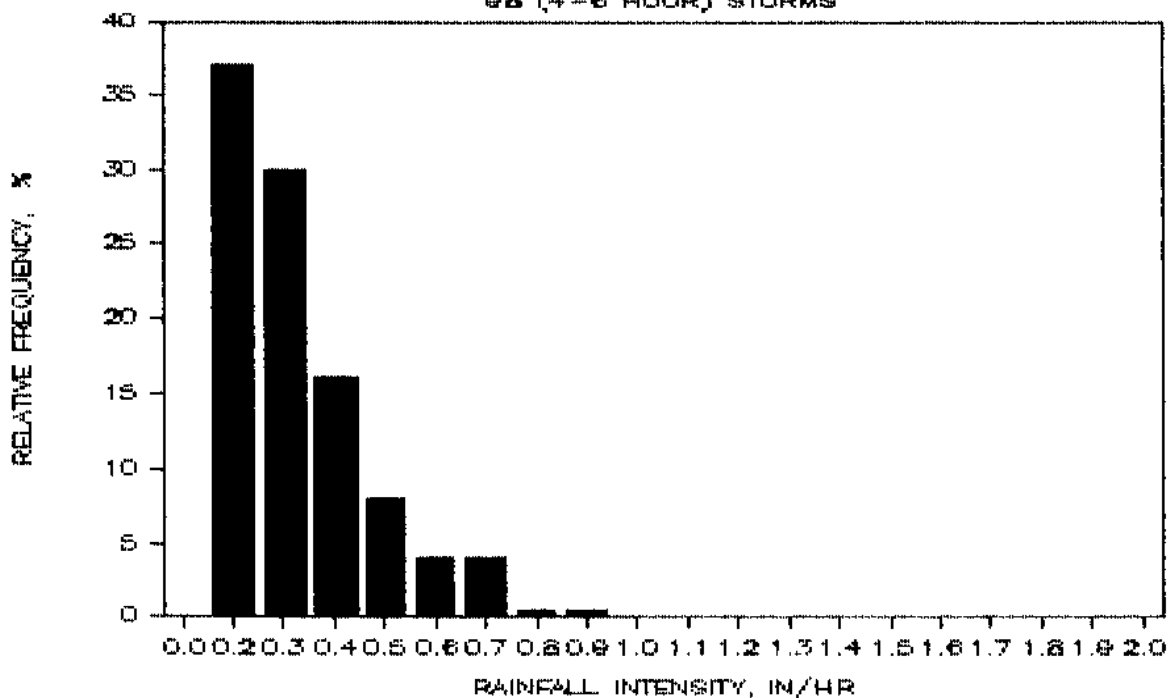


Figure A19. Continued

e. SAN SEBASTIAN : INDEX NO 8881
98 (4-6 HOUR) STORMS



f. SAN SEBASTIAN : INDEX NO 8881
4 (6-12 HOUR) STORMS

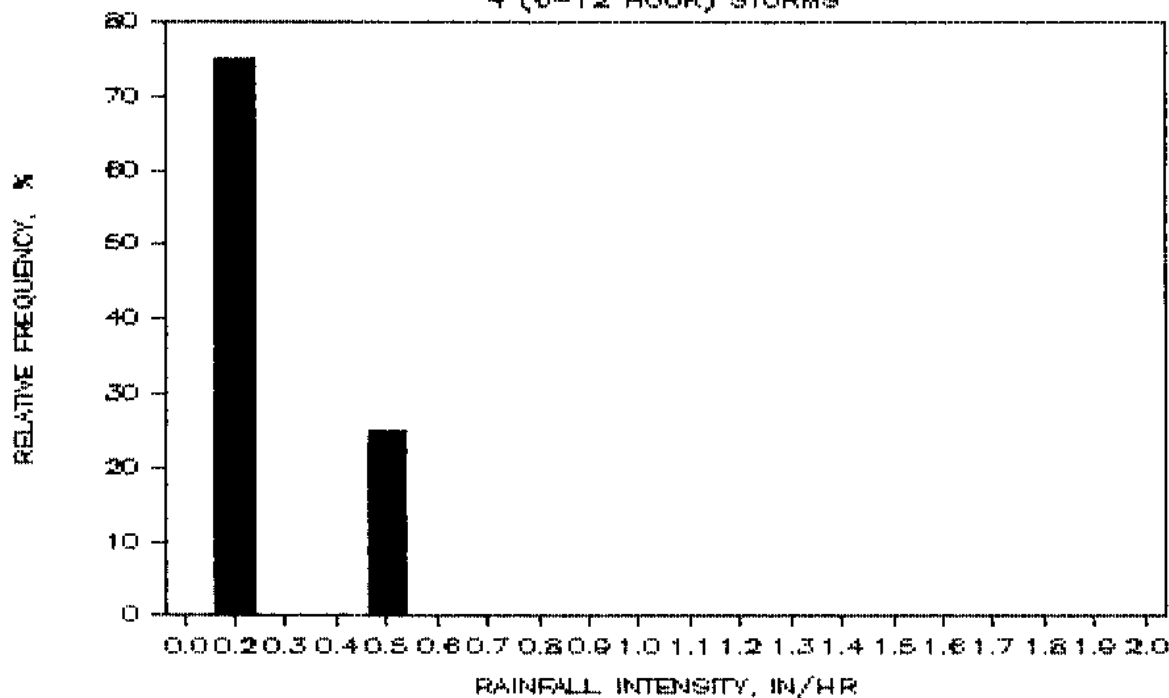
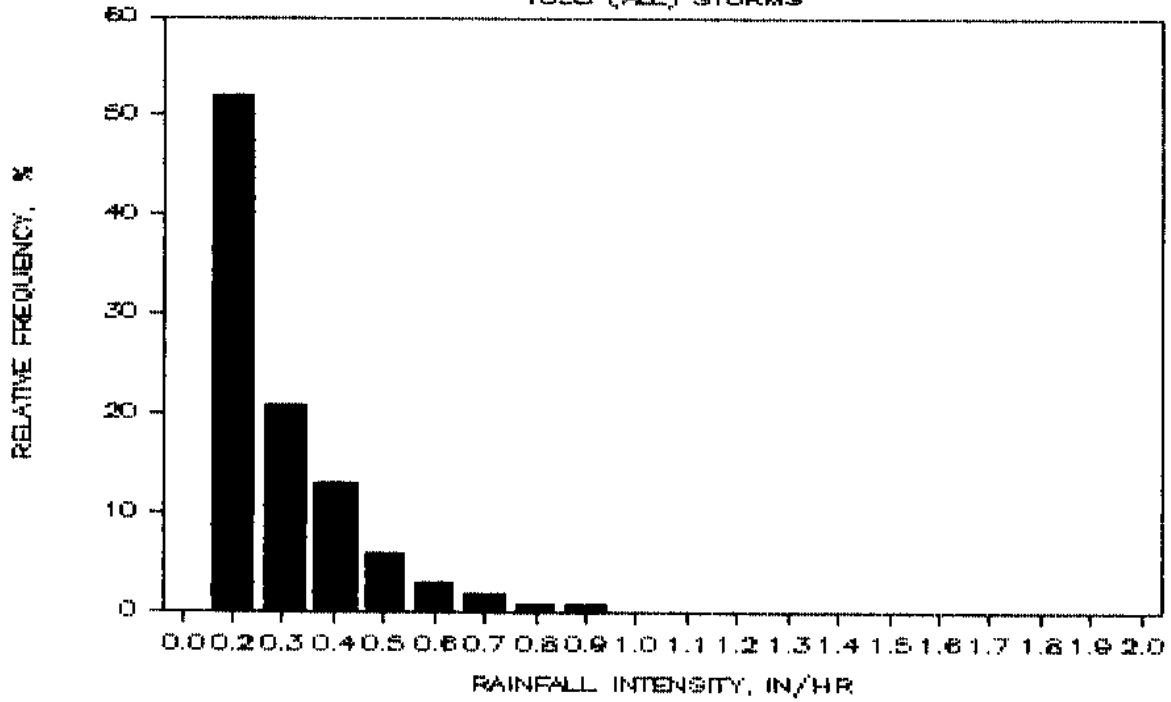


Figure A20. Probability Distributions of Storm Rainfall Intensities Stratified per Storm Duration at Yabucoa 1 NNE Station. Minimum Time Between Storms = 1 hr

a. YABUCOA 1 NNE : INDEX NO. 9829
1053 (ALL) STORMS



b. YABUCOA 1 NNE : INDEX NO. 9829
642 (1 HOUR) STORMS

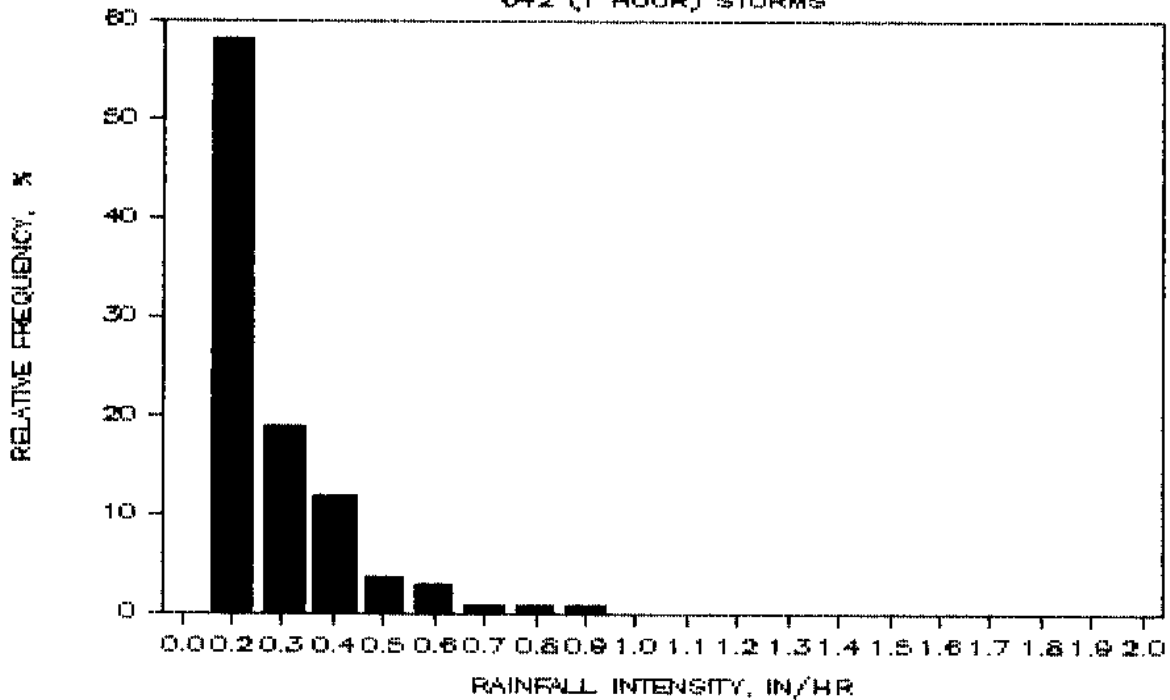
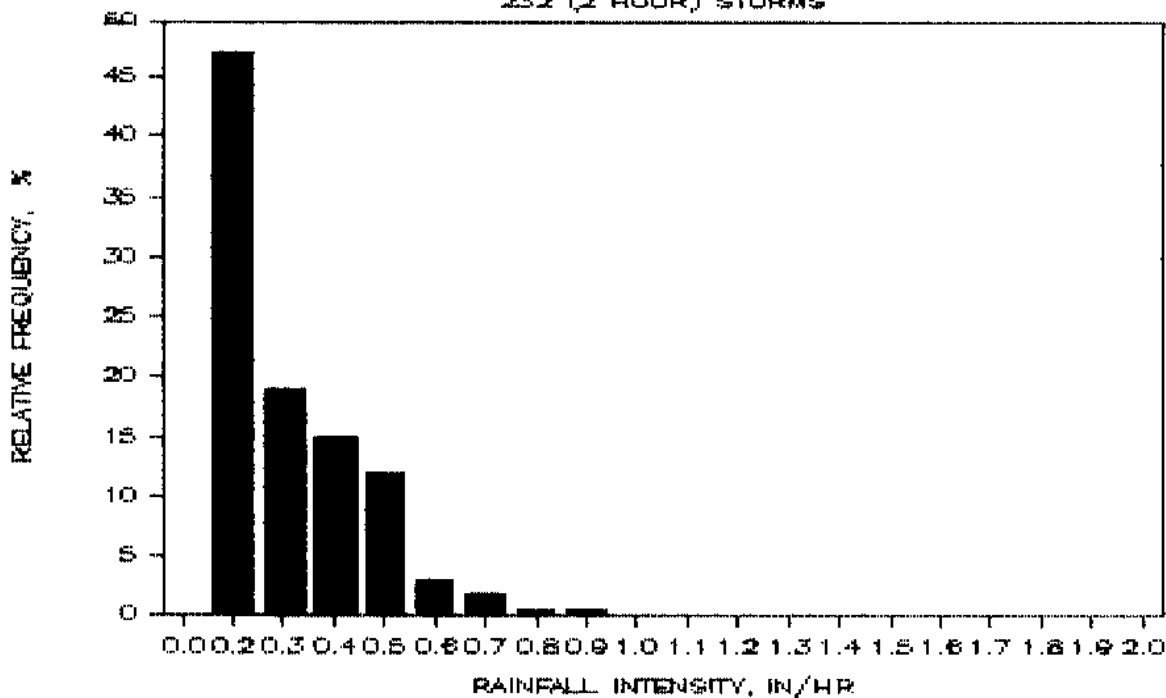


Figure A20. Continued

c. YABUCOA 1 NNE : INDEX NO. 9829
232 (2 HOUR) STORMS



d. YABUCOA 1 NNE : INDEX NO. 9829
83 (3 HOUR) STORMS

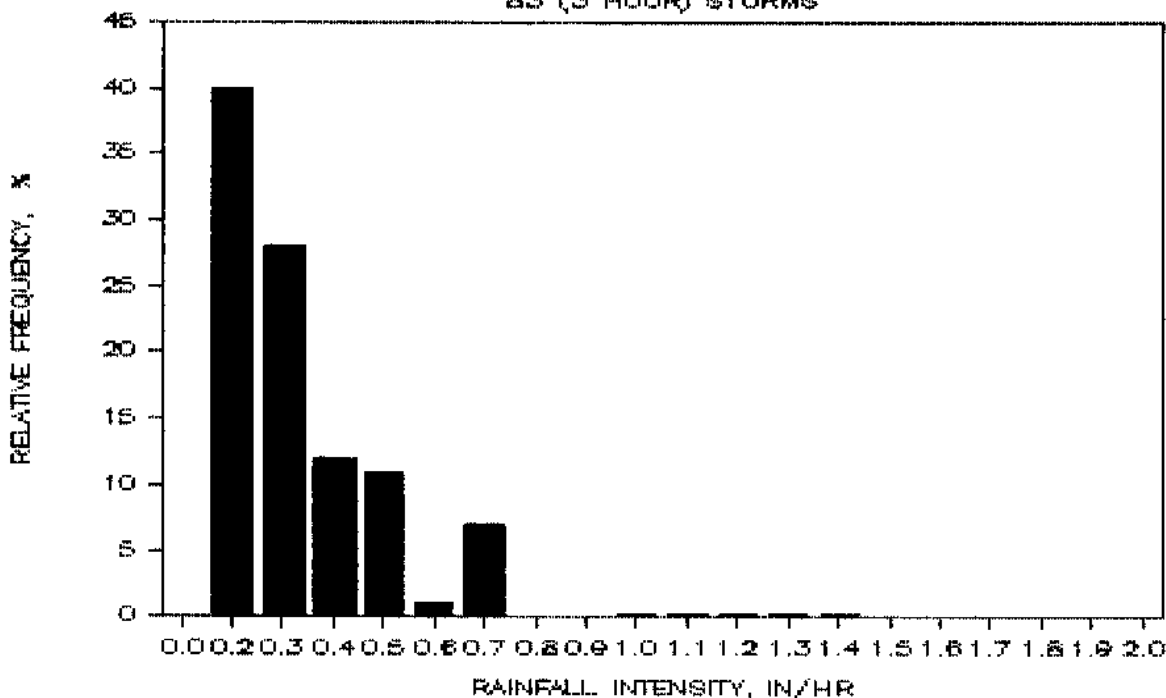
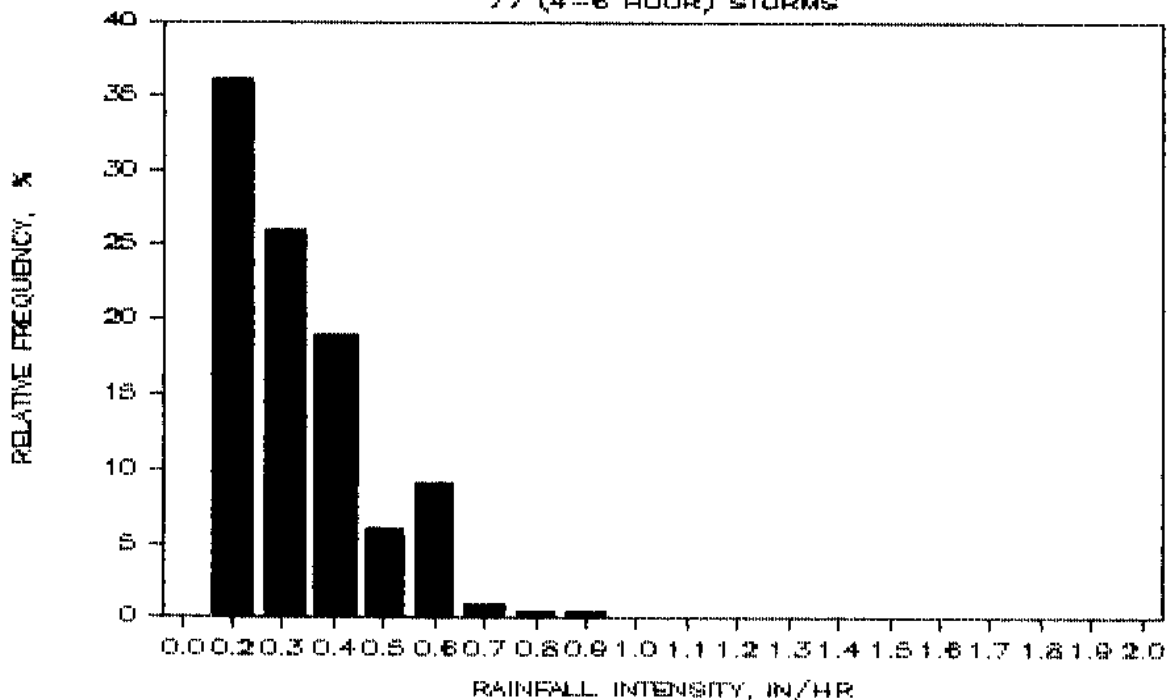


Figure A20. Continued

e. YABUCOA 1 NNE : INDEX NO. 9829
77 (4-6 HOUR) STORMS



f. YABUCOA 1 NNE : INDEX NO. 9829
17 (8-12 HOUR) STORMS

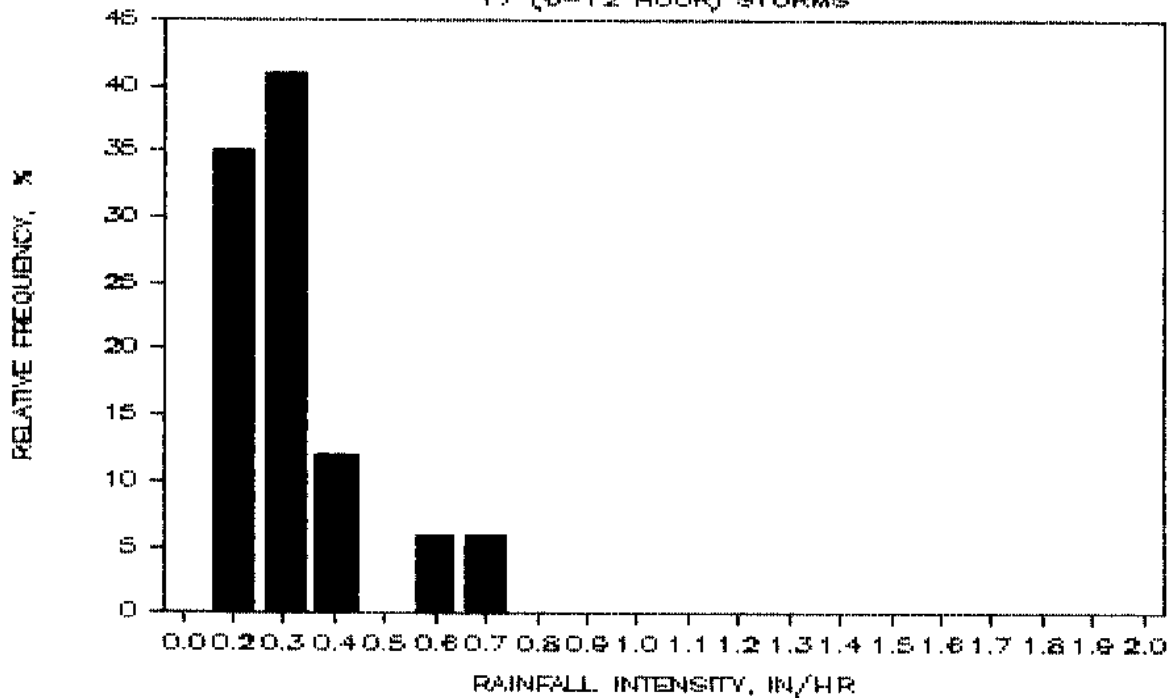
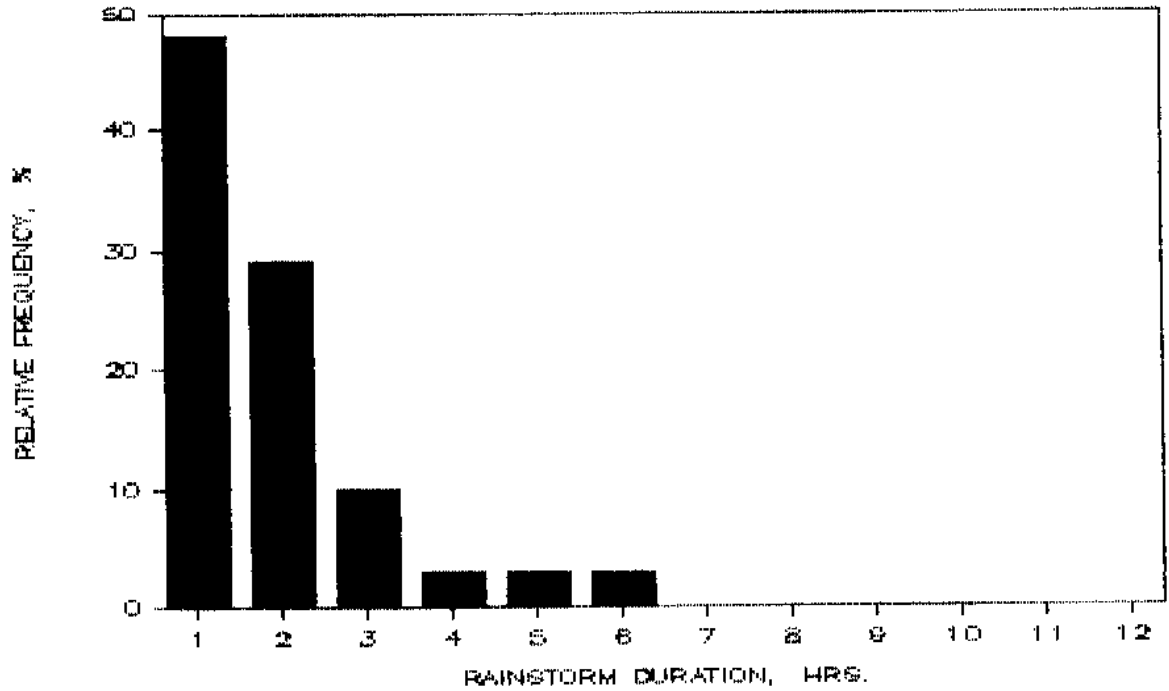


Figure A21. Probability Distribution of Storm Durations for Various Selected Stations.

Minimum Time Between Storms = 1 hr

a. BOTIJAS 2 - OROCOVIS : INDEX NO. 0988
421 STORMS



b. CAYEY : INDEX NO. 1901
466 STORMS

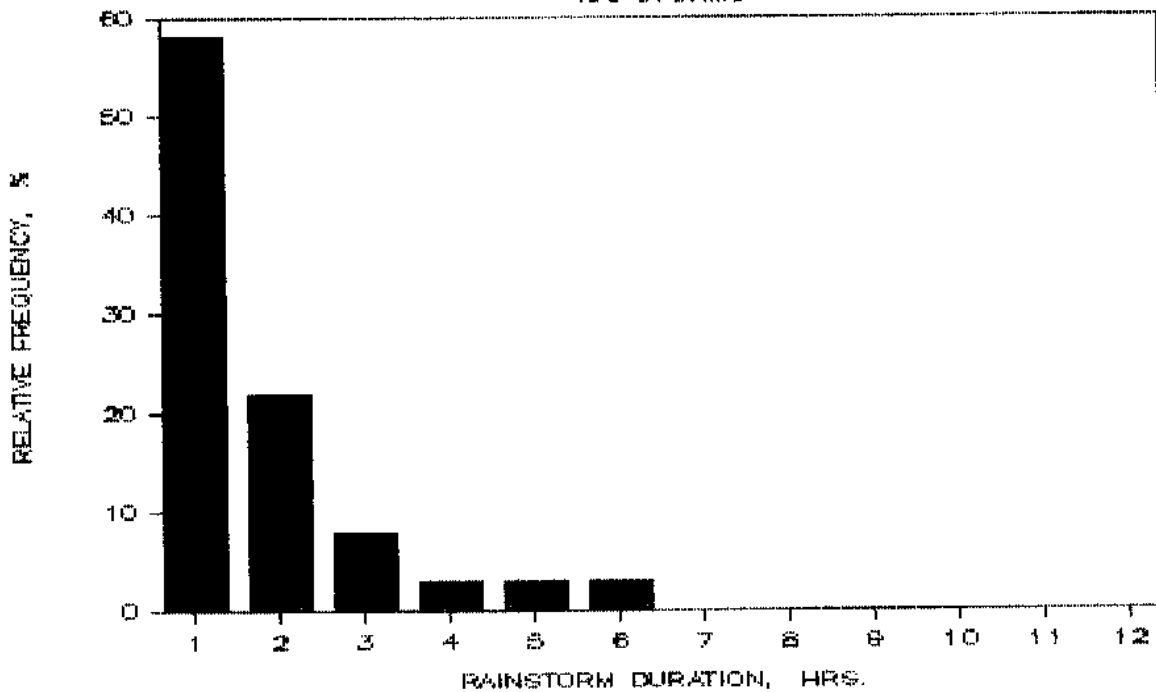
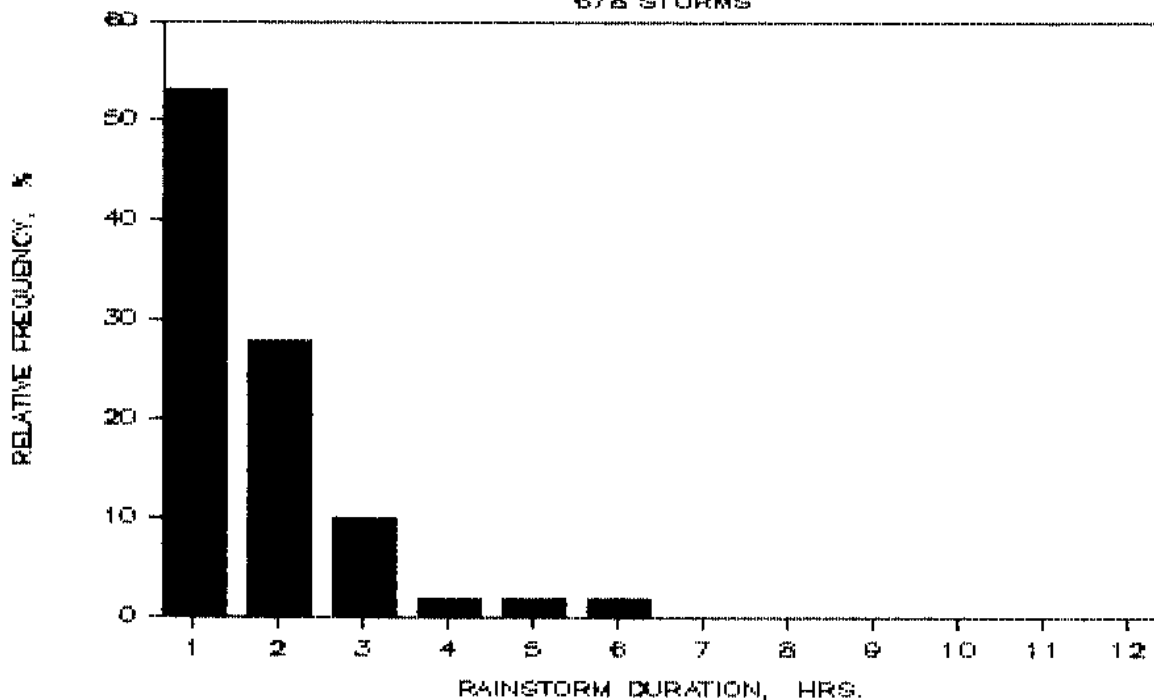


Figure A21. Continued

c. COROZAL : INDEX NO. 2934
878 STORMS



d. DOS BOCAS : INDEX NO. 3431
781 STORMS

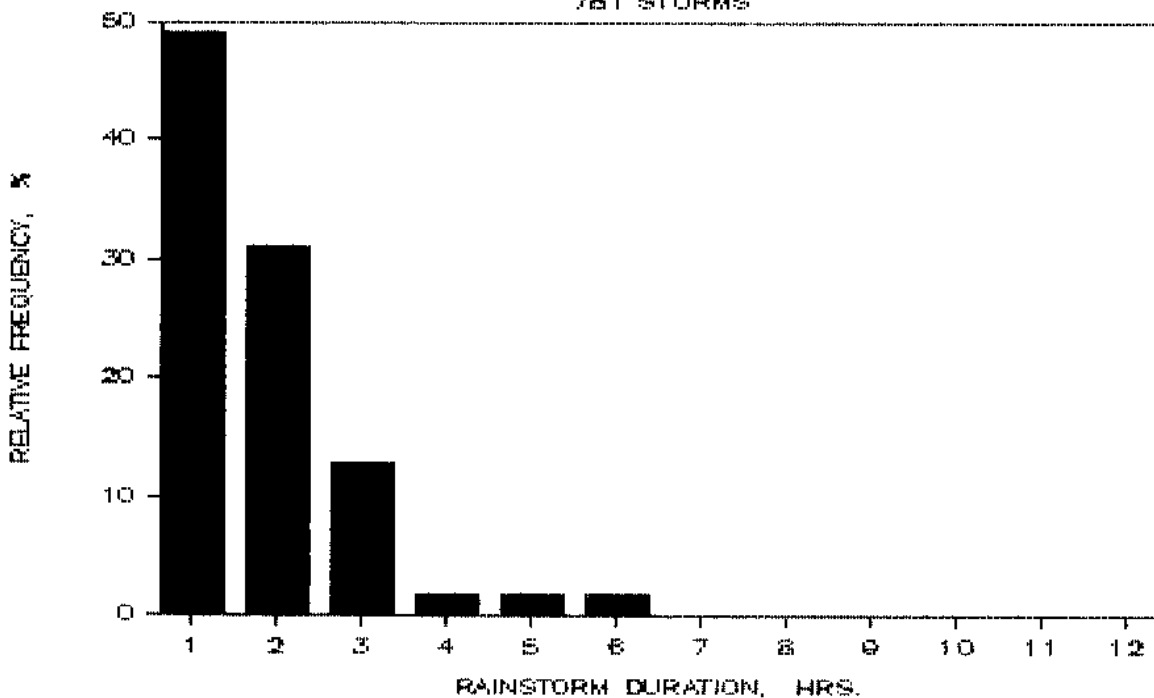
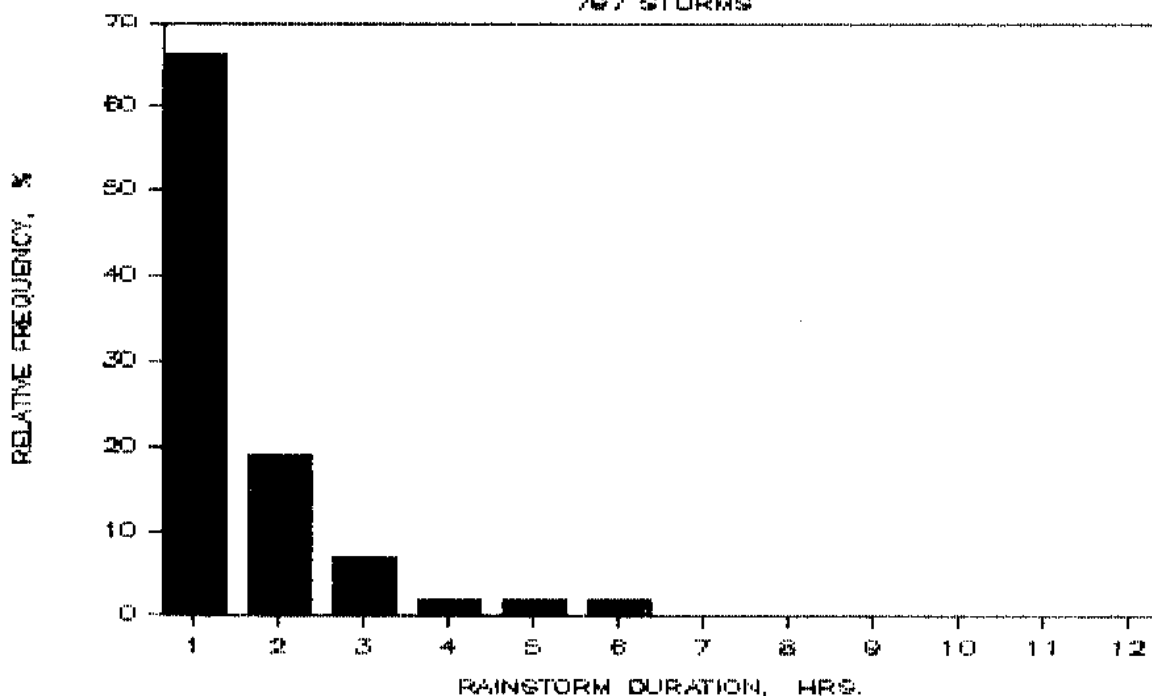


Figure A21. Continued

e. FAJARDO : INDEX NO. 3657
767 STORMS



f. MARICAO 2 SSW : INDEX NO. 5908
646 STORMS

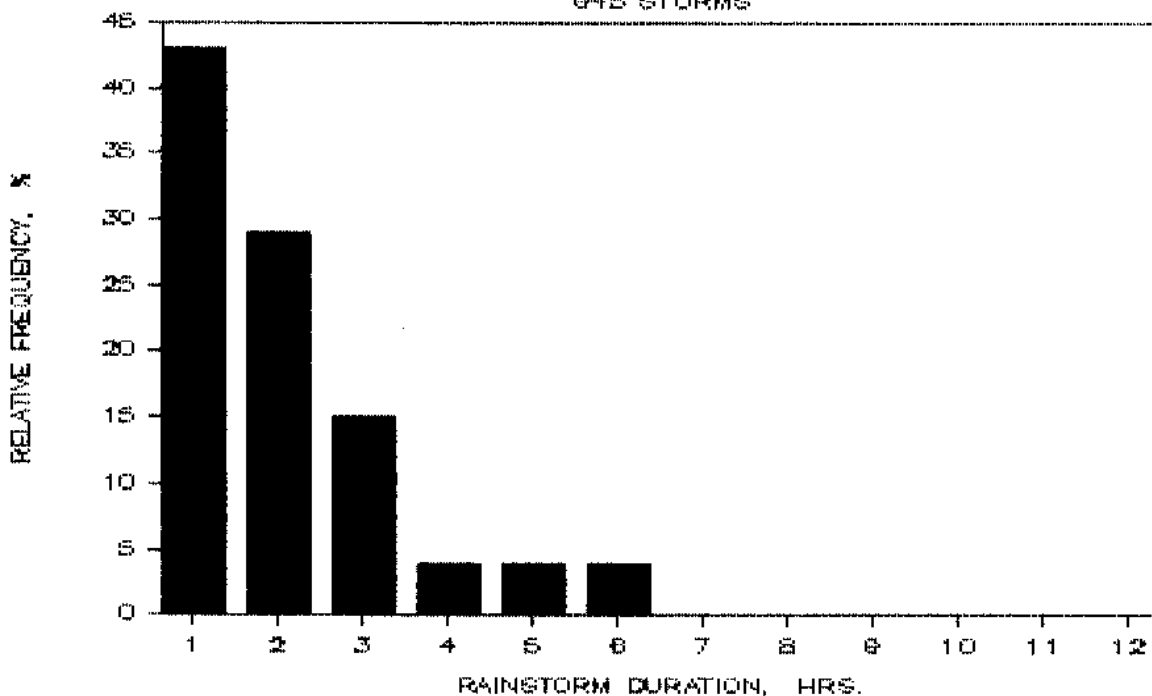
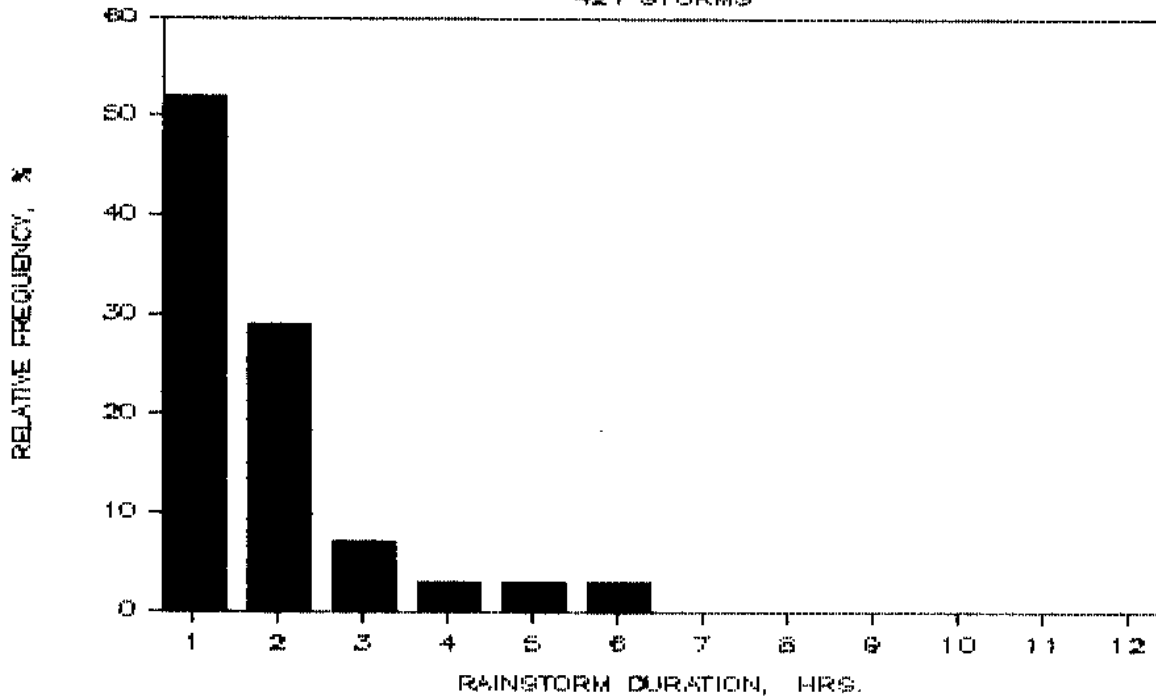


Figure A21. Continued

g. PONCE 4 E : INDEX NO. 7292
421 STORMS



h. SAN JUAN WSFO : INDEX NO. 8812
390 STORMS

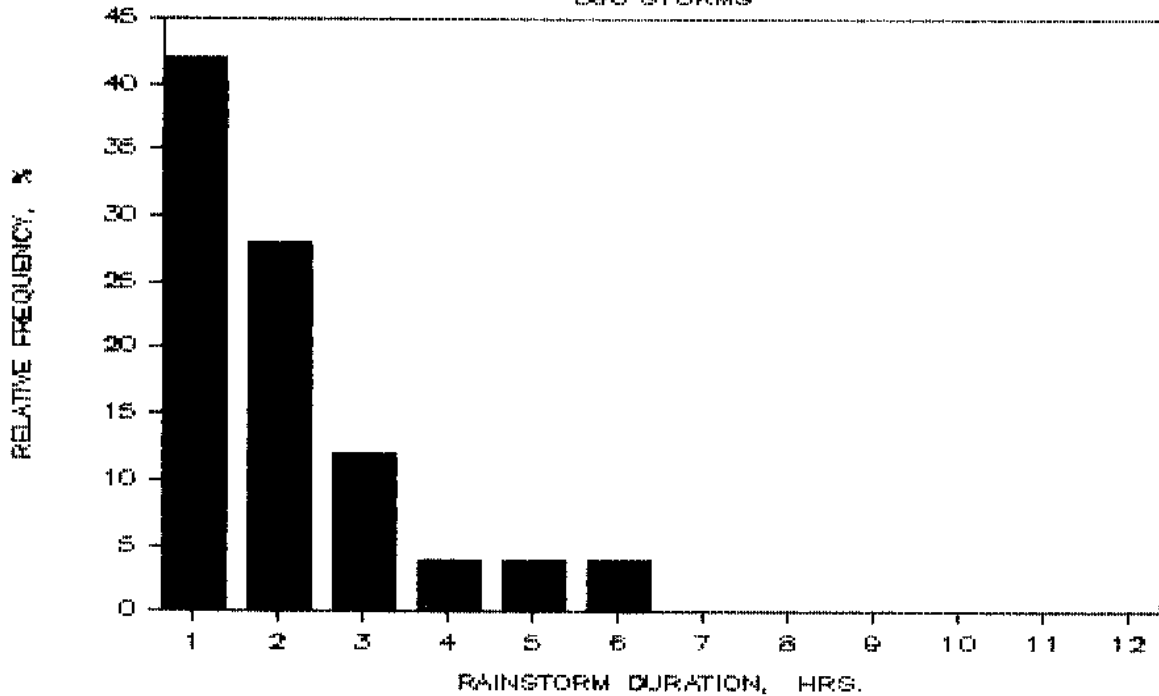
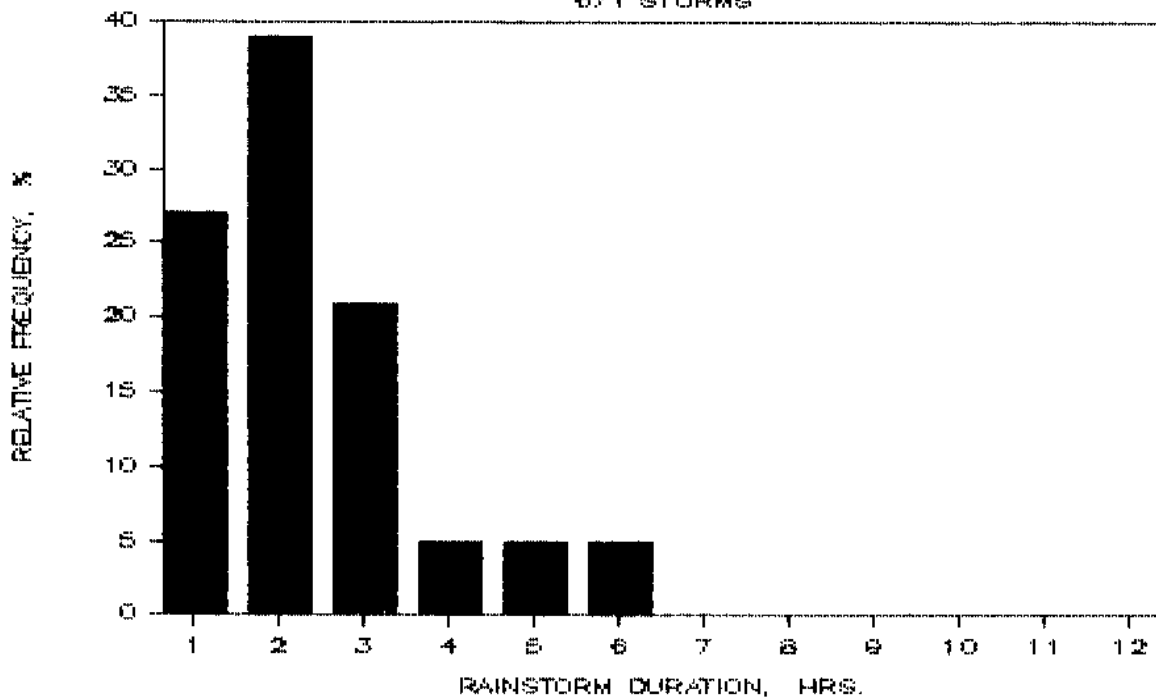


Figure A21. Continued

i. SAN SEBASTIAN : INDEX NO. 8881
871 STORMS



j. YABUCOA 1 NNE : INDEX NO. 9829
1053 STORMS

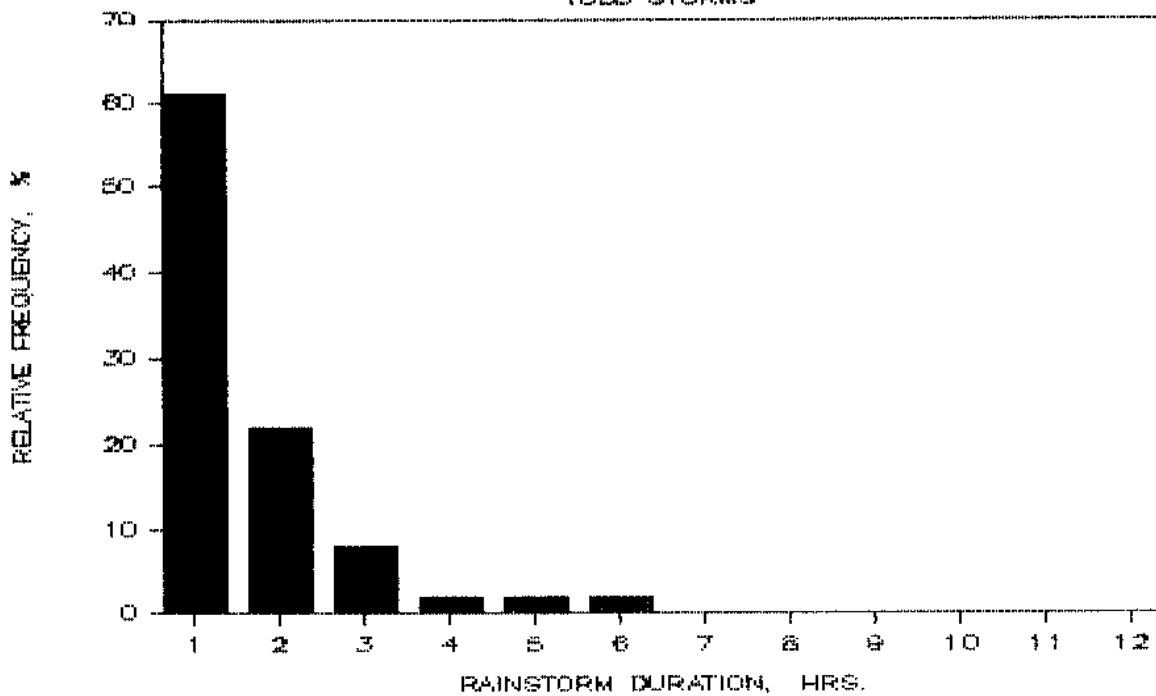


Table A3 Frequency of Rainstorms Stratified by Rainfall Intensity and Duration
Minimum Time Between Storms = 6 hrs

a. Botijas 2- Orocovis Station: Index No. 0988

Inten- sity (in/hr)	Storm Durations																													
	All						1				2				3				4-6				7-12				>12			
	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F
0.2-0.3	121	51	51	55	60	60	24	35	35	13	54	54	17	50	50	6	60	60	6	60	60	6	60	60	6	60	60	6	67	67
0.3-3.4	48	20	71	20	22	82	12	17	52	2	8	63	9	26	76	2	20	80	2	20	80	3	33	100	-	-	-	-	-	-
0.4-0.5	29	12	83	11	12	93	13	19	71	4	17	79	1	3	79	0	0	80	0	0	80	-	-	-	-	-	-	-	-	-
0.5-0.6	14	6	89	2	2	96	6	9	80	3	13	92	1	3	82	2	20	100	2	20	100	-	-	-	-	-	-	-	-	-
0.6-0.7	10	4	93	0	0	96	7	10	90	0	0	92	3	9	91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.7-0.8	8	3	97	2	2	98	3	4	94	1	4	96	2	6	97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.8-1.0	5	2	99	0	0	98	3	4	99	1	4	100	1	3	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.0-1.5	2	1	100	2	2	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5-2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. of Storms	238			92		69	24			24			34			10			10			9								

b. Cayey 1 E Station: Index No. 1901

0.2-0.3	120	57	57	68	61	61	25	58	58	9	50	50	11	52	52	7	54	54	7	54	54	0	0	0	0	0	0	0	0	0
0.3-0.4	46	22	79	20	18	79	7	16	74	4	22	72	8	38	90	5	38	92	5	38	92	2	40	40	2	40	40	2	40	40
0.4-0.5	17	8	87	6	5	85	6	14	88	2	11	83	1	5	95	0	0	92	0	0	92	2	40	80	2	40	80	2	40	80
0.5-0.6	8	4	91	3	3	87	3	7	95	1	6	89	0	0	95	0	0	92	0	0	92	1	20	100	1	20	100	1	20	100
0.6-0.7	8	4	94	5	5	92	0	0	95	1	6	94	1	5	100	1	8	100	1	8	100	-	-	-	-	-	-	-	-	-
0.7-0.8	5	2	97	5	5	96	0	0	95	0	0	94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.8-1.0	5	2	99	2	2	98	2	5	100	1	6	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.0-1.5	1	-	100	1	1	99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5-2.0	1	-	-	1	1	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. of Storms	211			43		43	18			18			21			13			13			5								

Table A3 Continued

c. Corozal Substation: Index No. 2934

Inten- sity (in/hr)	Storm Durations																							
	All			1			2			3			4-6			7-12			>12					
	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F			
0.2-0.3	174	49	58	89	58	58	32	34	34	10	24	24	26	57	57	12	80	80	5	71	71	5	71	71
0.3-0.4	59	16	65	26	17	75	17	18	52	9	21	45	6	13	70	1	7	87	0	0	71	0	0	71
0.4-0.5	45	13	78	13	8	84	13	14	65	9	21	67	7	15	85	2	13	100	1	14	86	1	14	86
0.5-0.6	31	9	86	9	6	90	15	16	81	3	7	74	3	7	91	-	-	-	-	-	-	1	14	100
0.6-0.7	17	5	91	5	3	93	9	9	91	3	7	81	0	0	91	-	-	-	-	-	-	-	-	-
0.7-0.8	9	3	94	4	3	95	1	1	92	2	5	86	2	4	96	-	-	-	-	-	-	-	-	-
0.8-1.0	9	3	96	3	2	97	1	1	93	4	10	95	1	2	98	-	-	-	-	-	-	-	-	-
1.0-1.5	12	3	99	2	1	99	7	7	100	2	5	100	1	2	100	-	-	-	-	-	-	-	-	-
1.5-2.0	1	0	100	1	1	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. of Storms	358			153			95			42			46			15			7			7		

d. Dos Bocas Station: Index 3431

Inten- sity (in/hr)	Storm Durations																							
	All			1			2			3			4-6			7-12			>12					
	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F			
0.2-0.3	202	38	38	89	44	44	44	30	30	22	27	27	30	42	42	14	64	64	3	43	43	3	43	43
0.3-0.4	96	18	56	37	18	68	25	17	46	12	15	43	13	18	61	5	23	86	4	57	100	4	57	100
0.4-0.5	67	13	68	22	11	73	21	14	60	10	13	55	12	17	77	2	9	95	-	-	-	-	-	-
0.5-0.6	41	8	76	9	4	77	13	9	69	11	14	69	7	10	87	1	5	100	-	-	-	-	-	-
0.6-0.7	32	6	82	13	6	83	11	7	77	4	5	74	4	6	93	-	-	-	-	-	-	-	-	-
0.7-0.8	23	4	86	6	3	86	9	6	83	7	9	83	1	1	94	-	-	-	-	-	-	-	-	-
0.8-1.0	35	7	93	11	5	92	10	7	89	10	13	95	4	6	100	-	-	-	-	-	-	-	-	-
1.0-1.5	28	5	98	13	6	98	11	7	97	4	5	100	-	-	-	-	-	-	-	-	-	-	-	-
1.5-2.0	7	1	100	2	1	99	5	3	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. of Storms	533			204			149			80			71			22			7			7		

Table A3 Continued

e. Fajardo Station: Index No. 3657

Inten- sity (in/hr)	Storm Durations																				
	All			1			2.			3			4-6			7-12			>12		
	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F
0.2-0.3	201	51	51	125	51	51	21	36	36	17	65	65	21	75	75	10	40	40	7	64	64
0.3-0.4	102	26	77	63	26	77	21	36	72	4	15	81	4	14	89	7	28	68	3	27	91
0.4-0.5	43	11	88	30	12	89	7	12	84	3	12	92	1	4	93	2	8	76	0	0	91
0.5-0.6	22	6	94	12	5	94	5	9	93	1	4	96	1	4	96	2	8	84	1	9	100
0.6-0.7	8	2	96	4	2	96	1	2	95	1	4	100	0	0	96	2	8	92	-	-	-
0.7-0.8	4	1	97	3	1	97	1	2	97	-	-	-	0	0	96	0	0	92	-	-	-
0.8-1.0	7	2	99	5	2	99	0	0	97	-	-	-	1	4	100	1	4	96	-	-	-
1.0-1.5	5	1	100	2	1	100	2	3	100	-	-	-	-	-	-	1	4	100	-	-	-
1.5-2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NG of Storms	392			244			58			26			28			25			11		

f. Maricao 2 SSW Station: Index No. 5908

0.2-0.3	250	36	36	90	42	42	47	28	28	35	31	31	59	38	38	15	52	52	4	57	57
0.3-0.4	148	22	58	47	22	64	26	16	44	23	20	51	40	26	63	10	34	86	2	29	86
0.4-0.5	81	12	70	25	12	75	26	16	60	12	11	61	14	9	72	3	10	97	1	14	100
0.5-0.6	61	9	79	17	8	83	18	11	71	10	9	70	15	10	82	1	3	100	-	-	-
0.6-0.7	44	6	85	11	5	88	11	7	78	9	8	78	13	8	90	-	-	-	-	-	-
0.7-0.8	31	5	90	8	4	92	7	4	82	10	9	87	6	4	94	-	-	-	-	-	-
0.8-1.0	31	5	94	5	2	94	11	7	88	9	8	95	6	4	98	-	-	-	-	-	-
1.0-1.5	34	5	99	9	4	99	17	10	99	5	4	99	3	2	100	-	-	-	-	-	-
1.5-2.0	5	1	100	2	1	100	2	1	100	1	1	100	-	-	-	-	-	-	-	-	-
NG of Storms	686			215			165			114			156			29			7		

Table A3 Continued

g. Ponce 4 E Station: Index No. 7292

Intensity (in/hr)	Storm Durations																				
	All			1			2			3			4-6			7-12			>12		
	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F
0.2-0.3	121	52	52	56	50	50	35	51	51	13	68	68	10	56	56	4	50	50	3	60	60
0.3-0.4	50	22	74	25	22	72	15	22	72	4	21	89	2	11	67	3	38	88	1	20	80
0.4-0.5	29	13	86	13	12	83	11	16	88	0	0	89	3	7	83	1	13	100	1	20	100
0.5-0.6	12	5	91	9	8	91	1	1	90	1	5	95	1	6	89	-	-	-	-	-	-
0.6-0.7	7	3	94	1	1	92	4	6	96	1	5	100	1	6	94	-	-	-	-	-	-
0.7-0.8	4	2	96	2	2	94	1	1	97	-	-	-	1	6	100	-	-	-	-	-	-
0.8-1.0	4	2	98	2	2	96	2	3	100	-	-	-	-	-	-	-	-	-	-	-	-
1.0-1.5	5	2	100	5	4	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5-2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N _g of Storms	232	-	-	113	-	-	69	-	-	19	-	-	18	-	-	8	-	-	5	-	-

h. San Juan WSFO Station: Index No. 8812

0.2-0.3	94	54	54	43	63	63	20	47	47	8	44	44	9	45	45	11	61	61	3	50	50
0.3-0.4	35	20	74	9	13	76	10	23	70	4	22	66	6	30	75	4	22	83	2	33	83
0.4-0.5	19	11	86	8	12	88	6	14	84	2	11	78	1	5	80	1	6	83	1	17	100
0.5-0.6	7	4	90	2	3	91	2	5	88	1	6	83	2	10	90	0	0	83	-	-	-
0.6-0.7	10	6	95	4	6	97	3	7	95	2	11	94	0	0	90	1	6	94	-	-	-
0.7-0.8	3	2	97	1	1	99	1	2	98	0	0	94	1	5	95	0	0	94	-	-	-
0.8-1.0	4	2	99	1	1	100	0	0	98	1	6	100	1	5	100	1	6	100	-	-	-
1.0-1.5	1	1	100	-	-	-	1	2	100	-	-	-	-	-	-	-	-	-	-	-	-
1.5-2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N _g of Storms	173	-	-	68	-	-	43	-	-	18	-	-	20	-	-	18	-	-	6	-	-

Table A3 Continued

i. San Sebastian 2 WNW Station: Index No. 8881

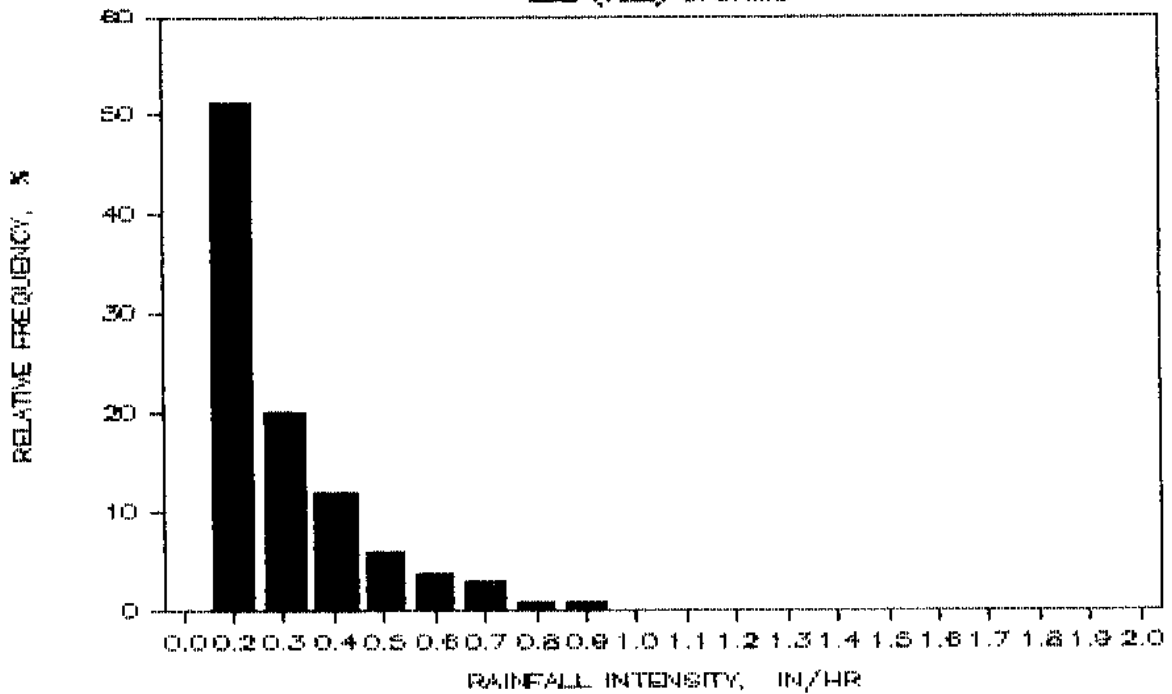
Inten- sity (in/hr)	Storm Durations																				
	All			1			2			3			4-6			7-12			>12		
	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F
0.2-0.3	170	32	32	26	29	29	55	28	28	27	24	24	47	45	45	14	54	54	1	100	100
0.3-0.4	119	22	55	20	22	51	41	21	50	28	25	48	25	24	69	5	19	73	-	-	-
0.4-0.5	85	16	71	10	11	62	31	16	66	22	19	68	19	18	87	3	12	85	-	-	-
0.5-0.6	53	10	81	8	9	71	20	10	76	15	13	81	6	6	92	4	15	100	-	-	-
0.6-0.7	27	5	86	5	6	77	14	7	83	6	5	86	2	2	94	-	-	-	-	-	-
0.7-0.8	22	4	90	6	7	83	7	4	87	4	4	89	5	5	99	-	-	-	-	-	-
0.8-1.0	26	5	95	4	4	88	12	6	93	9	8	97	1	1	100	-	-	-	-	-	-
1.0-1.5	21	4	99	6	7	94	12	6	99	3	3	100	-	-	-	-	-	-	-	-	-
1.5-2.0	3	1	99	2	2	97	1	1	100	-	-	-	-	-	-	-	-	-	-	-	-
N_g of Storms	529			90			193				114			105	26			1			

j. Yabucoa 1 NNE Station: Index No. 9829

Inten- sity (in/hr)	Storm Durations																				
	All			1			2			3			4-6			7-12			>12		
	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F	n	f	F
0.2-0.3	259	60	60	142	63	63	43	53	53	18	55	55	31	60	60	20	71	71	5	50	50
0.3-0.4	75	17	78	40	18	81	12	15	68	7	21	76	8	15	75	4	14	86	4	40	90
0.4-0.5	47	11	89	23	10	91	12	15	83	3	9	85	9	17	92	0	0	86	0	0	90
0.5-0.6	23	5	94	10	4	96	7	9	91	3	9	94	0	0	92	2	7	93	1	10	100
0.6-0.7	14	3	97	5	2	98	4	5	96	0	0	94	3	6	98	2	7	100	-	-	-
0.7-0.8	5	1	99	1	0	98	2	2	99	2	6	100	-	-	-	-	-	-	-	-	-
0.8-1.0	4	1	100	3	1	100	1	1	100	0	-	-	-	-	-	-	-	-	-	-	-
1.0-1.5	1	0	-	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5-2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N_g of Storms	429			225			81				33	52	28	10							

Figure A22. Probability Distribution of Storm Intensities Stratified by Storm Duration at Botijas 2- Orocovis Station. Minimum Time Between Storms = 1 hr

a. BOTIJAS 2 - OROCOVIS : INDEX NO. 0988
238 (ALL) STORMS



b. BOTIJAS 2 - OROCOVIS : INDEX NO. 0988
82 (1 HOUR) STORMS

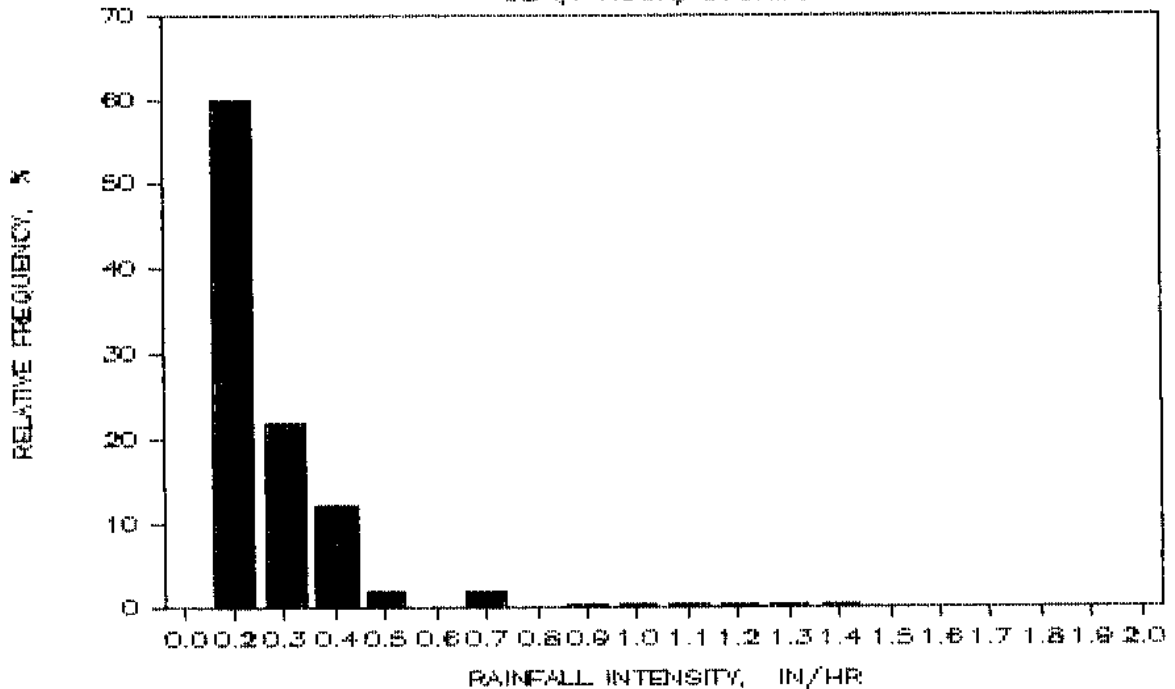
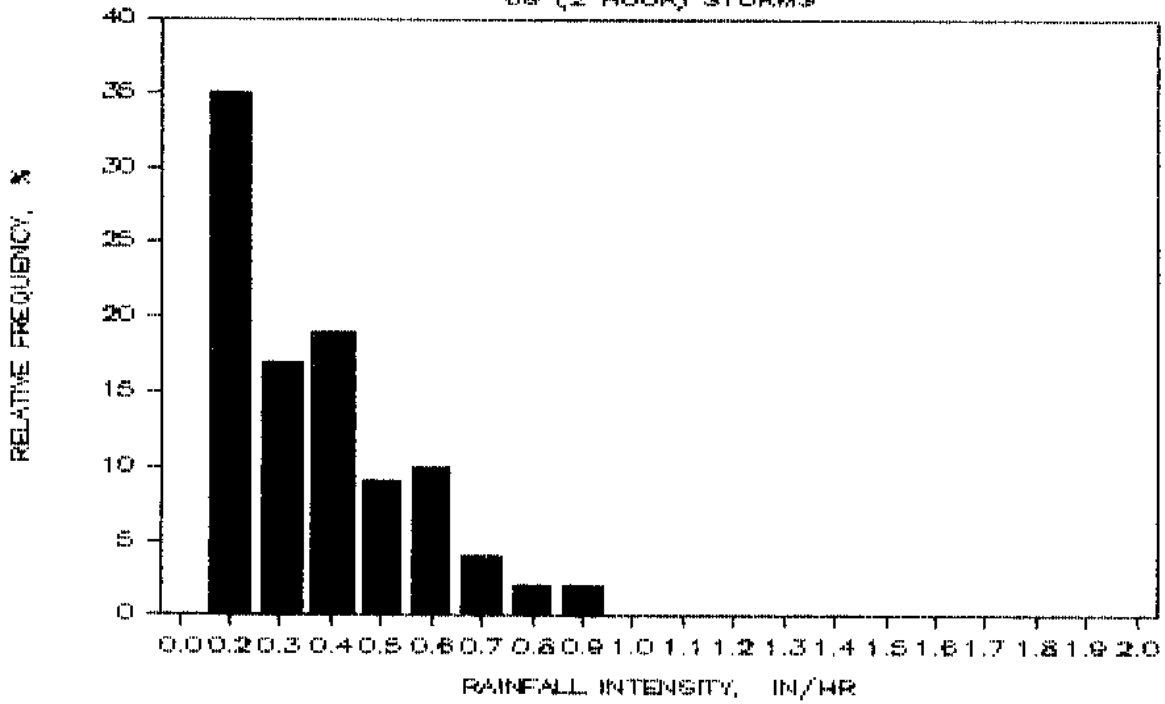


Figure A22. Continued

c. BOTIJAS 2 - OROCOVIS : INDEX NO. 0988
66 (2 HOUR) STORMS



a. BOTIJAS 2 - OROCOVIS : INDEX NO. 0988
24 (3 HOUR) STORMS

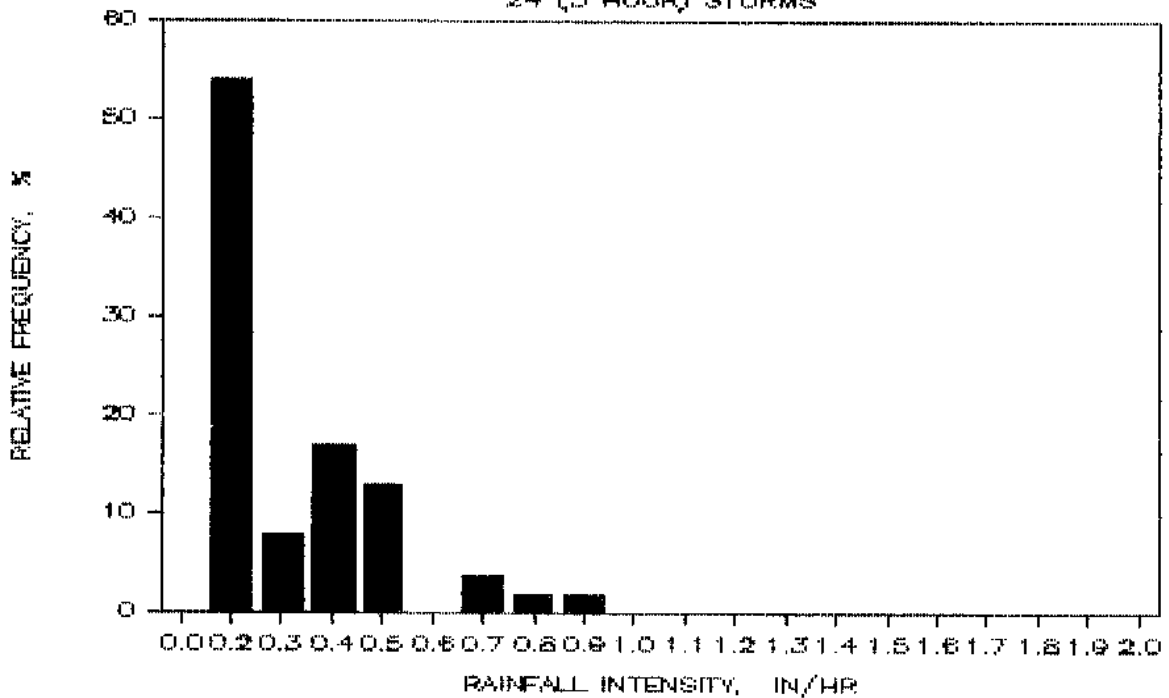
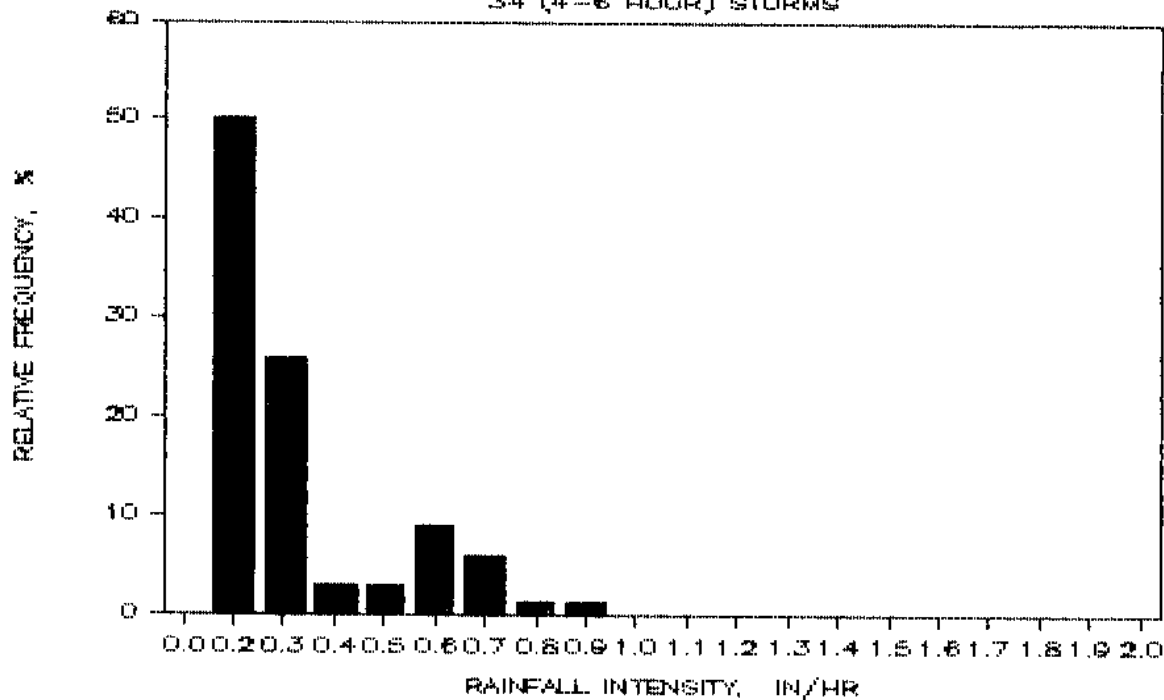


Figure A22. Continued

e. BOTIJAS 2 - OROCOVIS : INDEX NO. 0988
34 (4-6 HOUR) STORMS



f. BOTIJAS 2 - OROCOVIS : INDEX NO. 0988
10 (6-12 HOUR) STORMS

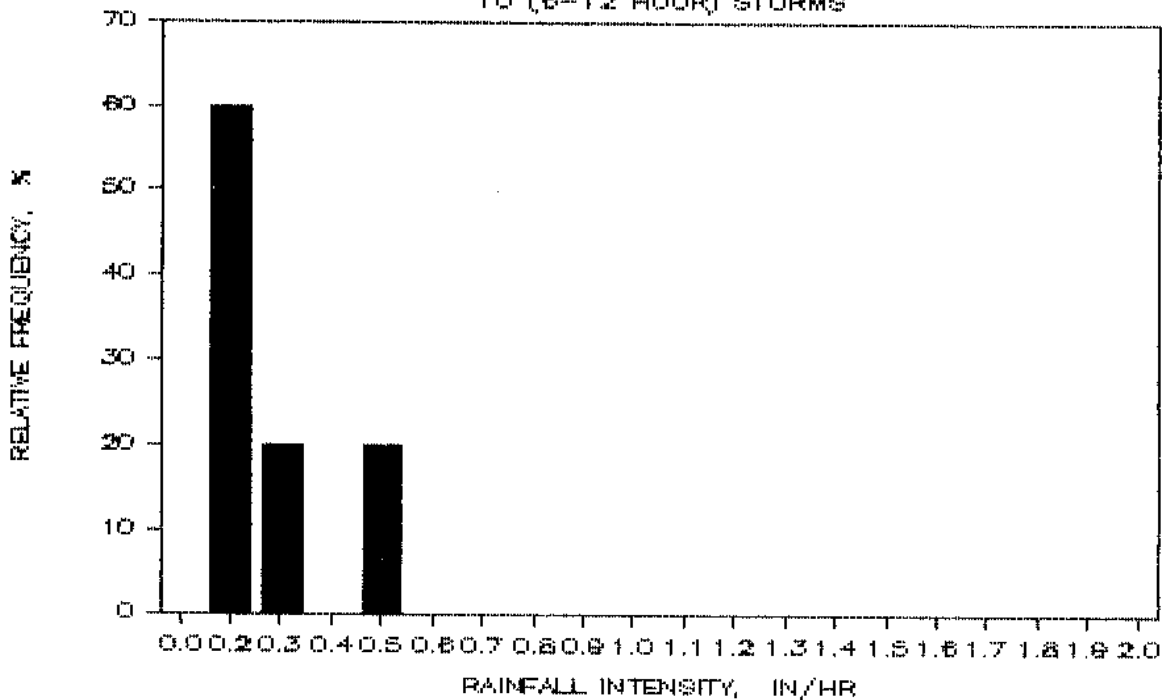


Figure A22. Continued

g. BOTIJAS 2 - OROCOVIS : INDEX NO. 0988
(>12 HOUR) STORMS

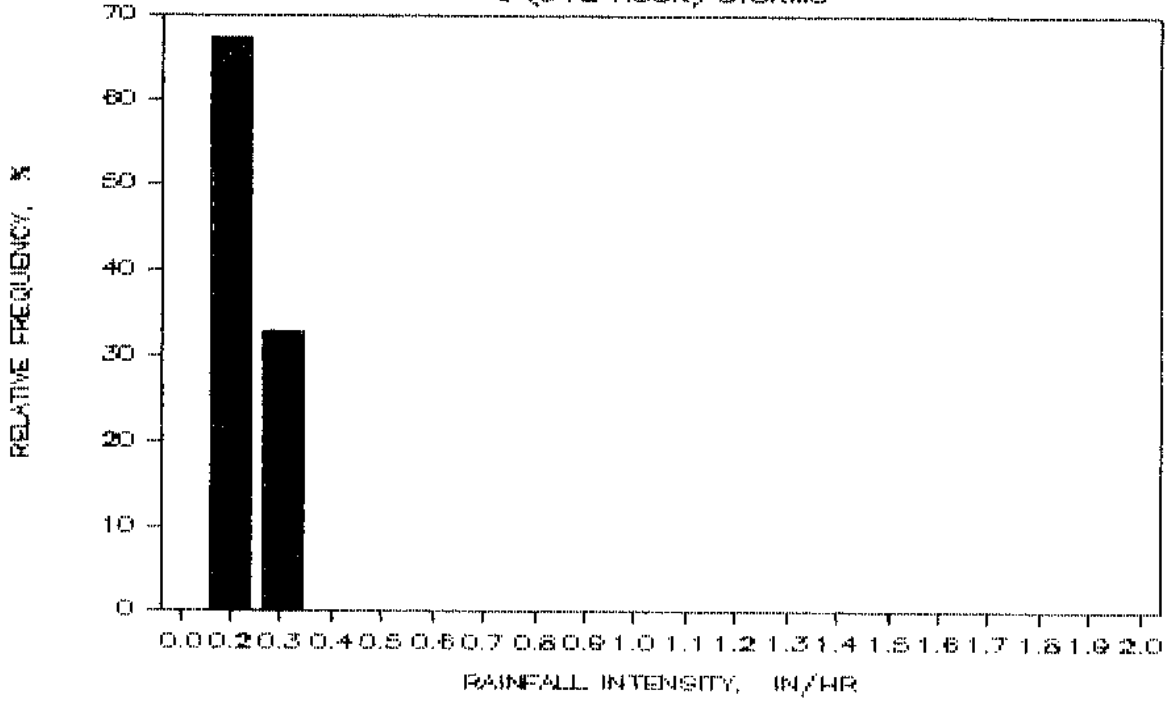
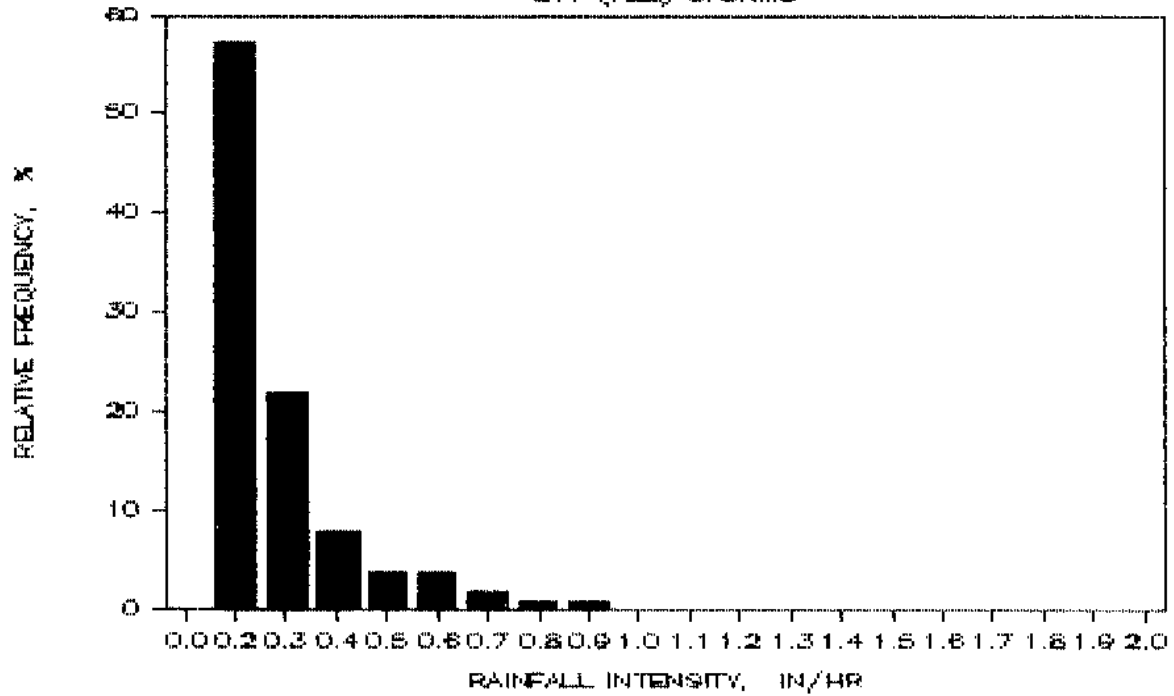


Figure A23. Probability Distribution of Storm Intensities Stratified Storm Duration at Cayey 1 E Station.
Minimum Time Between Storms = 1 hr

a. CAYEY 1 E : INDEX NO. 1901
211 (ALL) STORMS



b. CAYEY 1 E : INDEX NO. 1901
43 (1 HOUR) STORMS

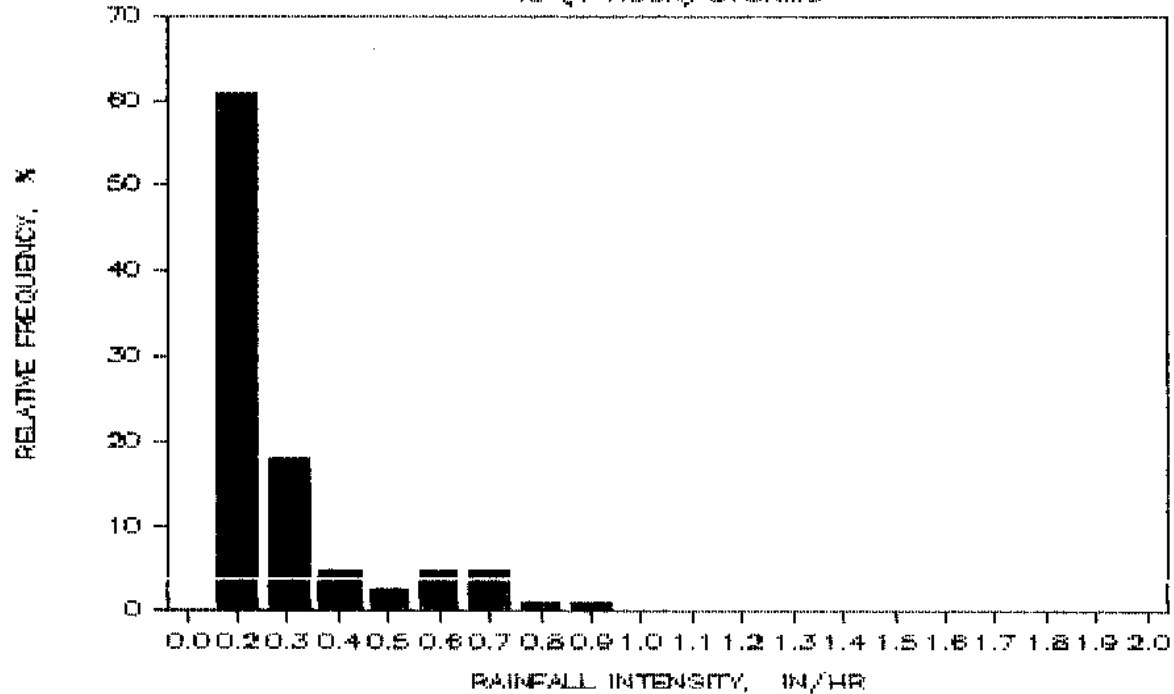


Figure A23. Continued

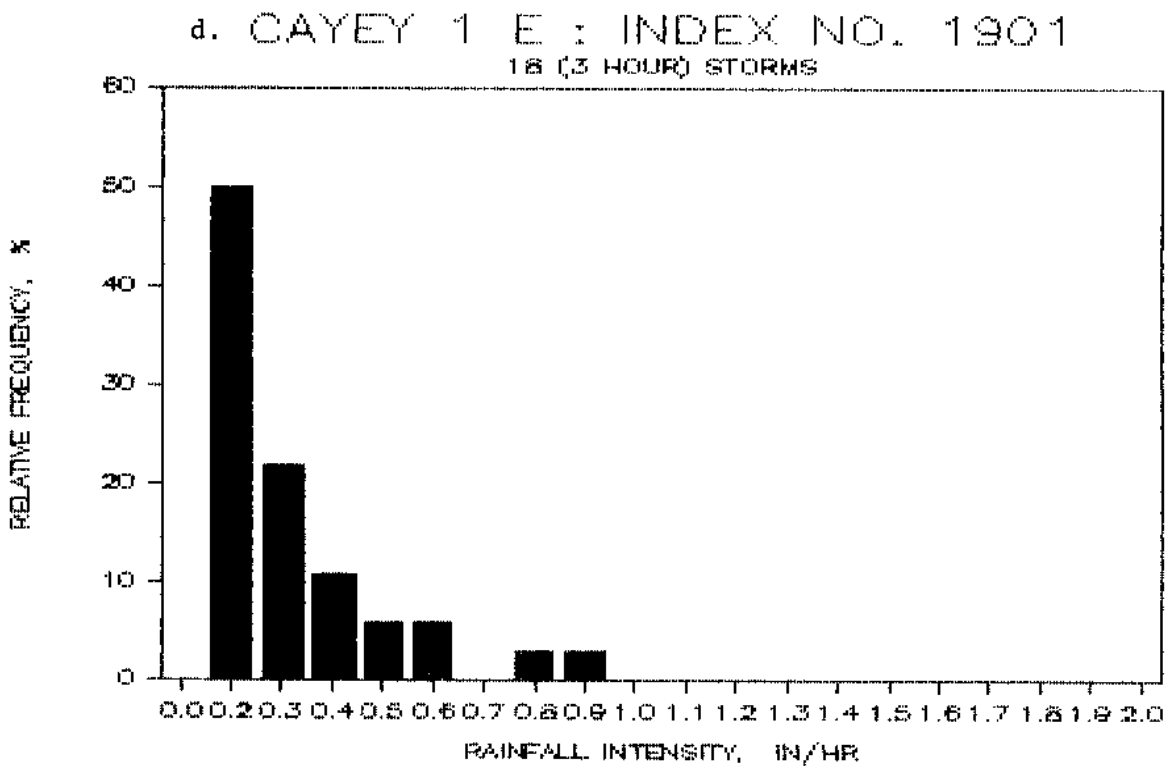
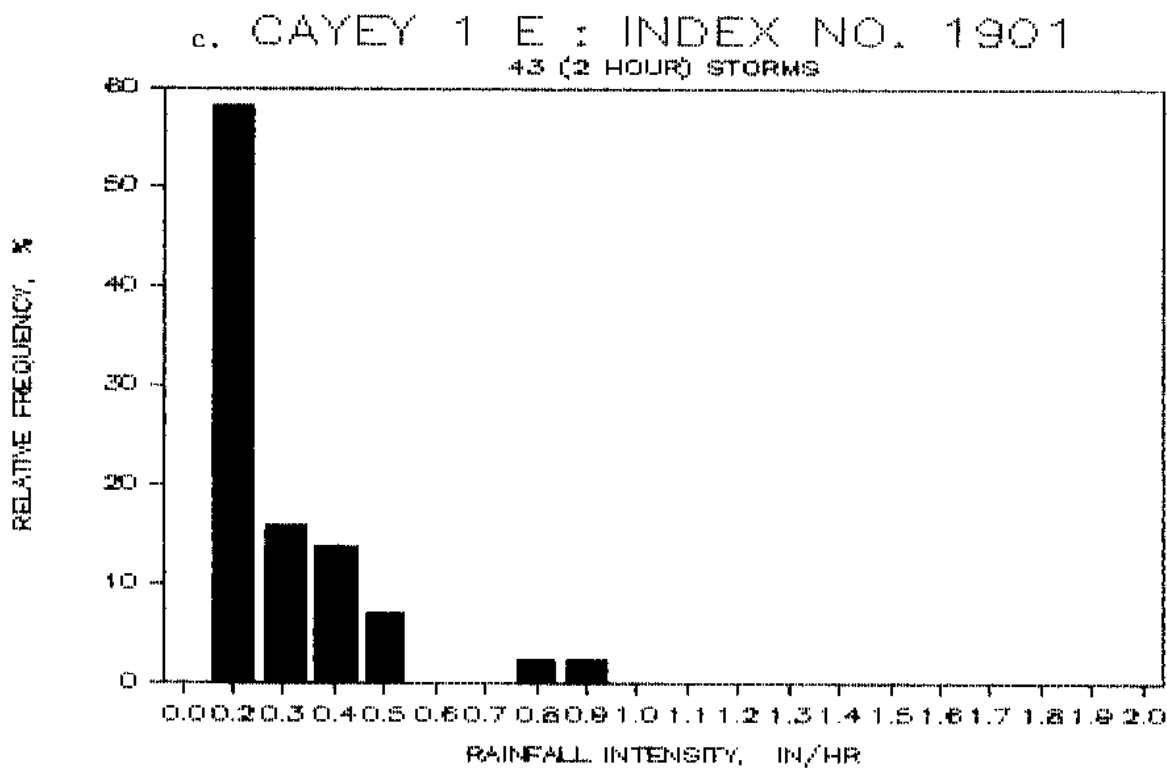
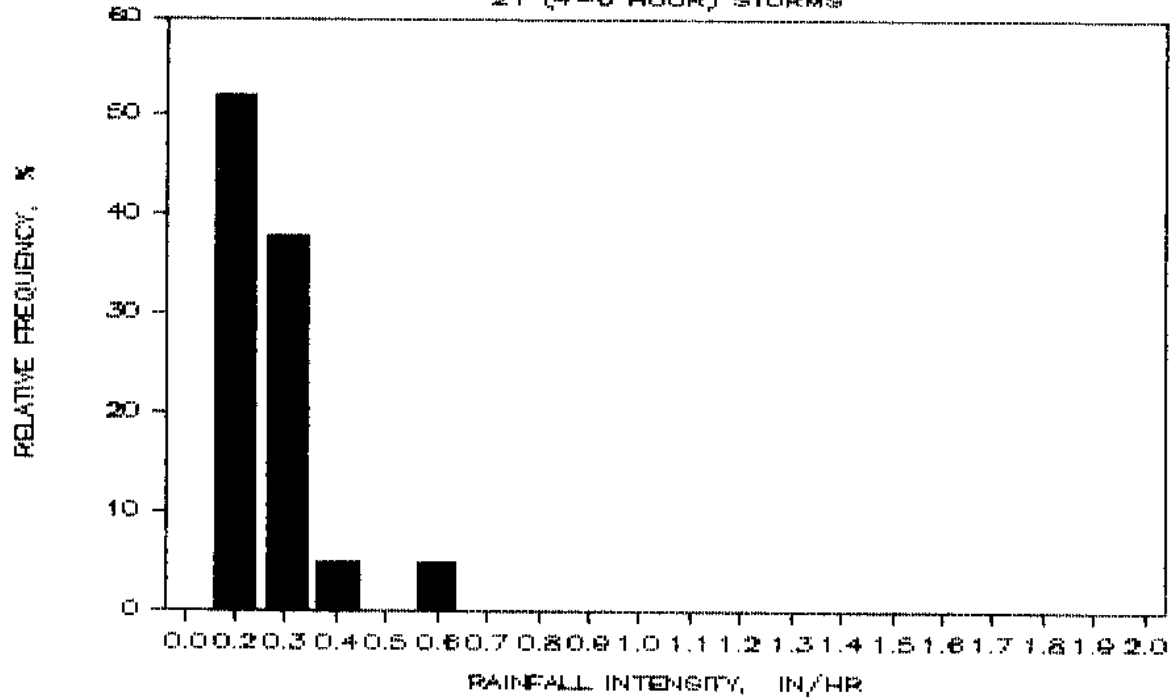


Figure A23. Continued

e. CAYEY 1 E : INDEX NO. 1901
21 (4-6 HOUR) STORMS



f. CAYEY 1 E : INDEX NO. 1901
13 (8-12 HOUR) STORMS

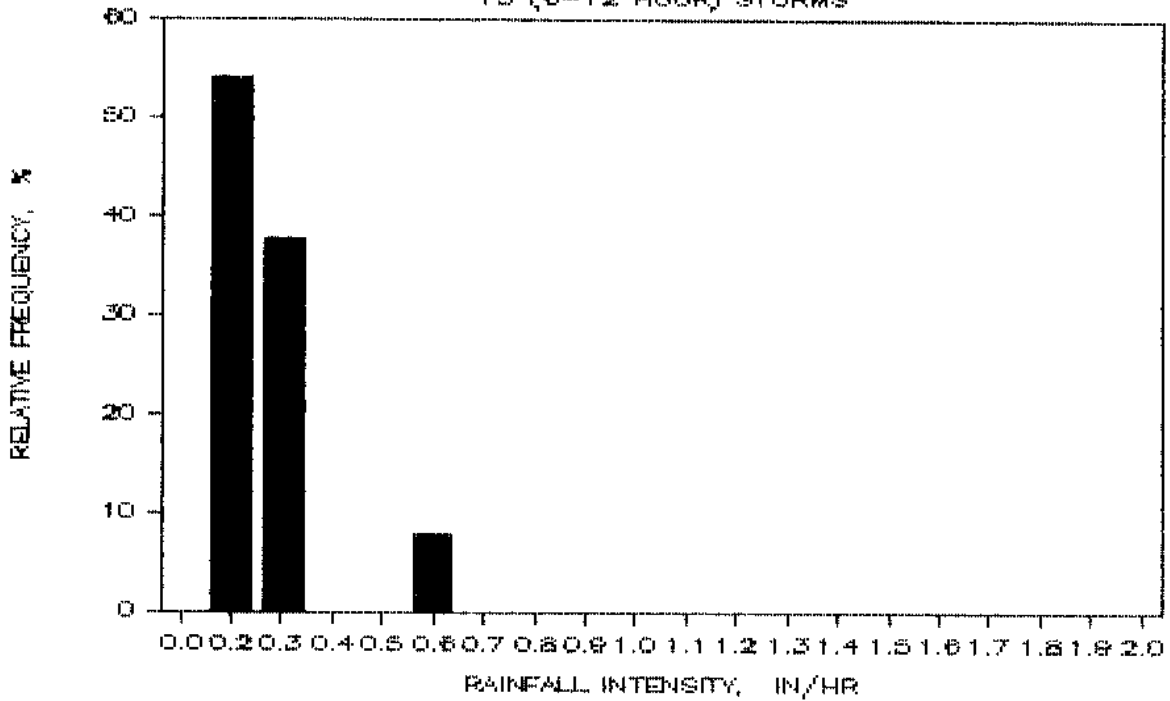


Figure A23. Continued

g. CAYEY 1 E : INDEX NO. 1901
S (>12 HOUR) STORMS

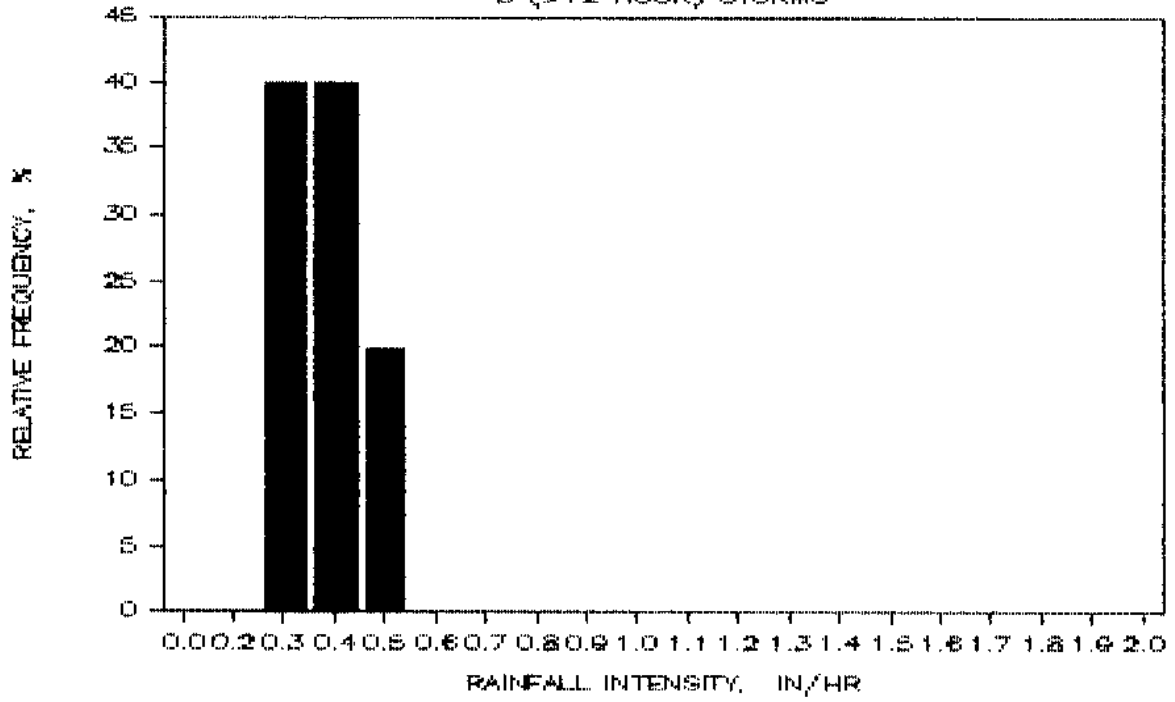
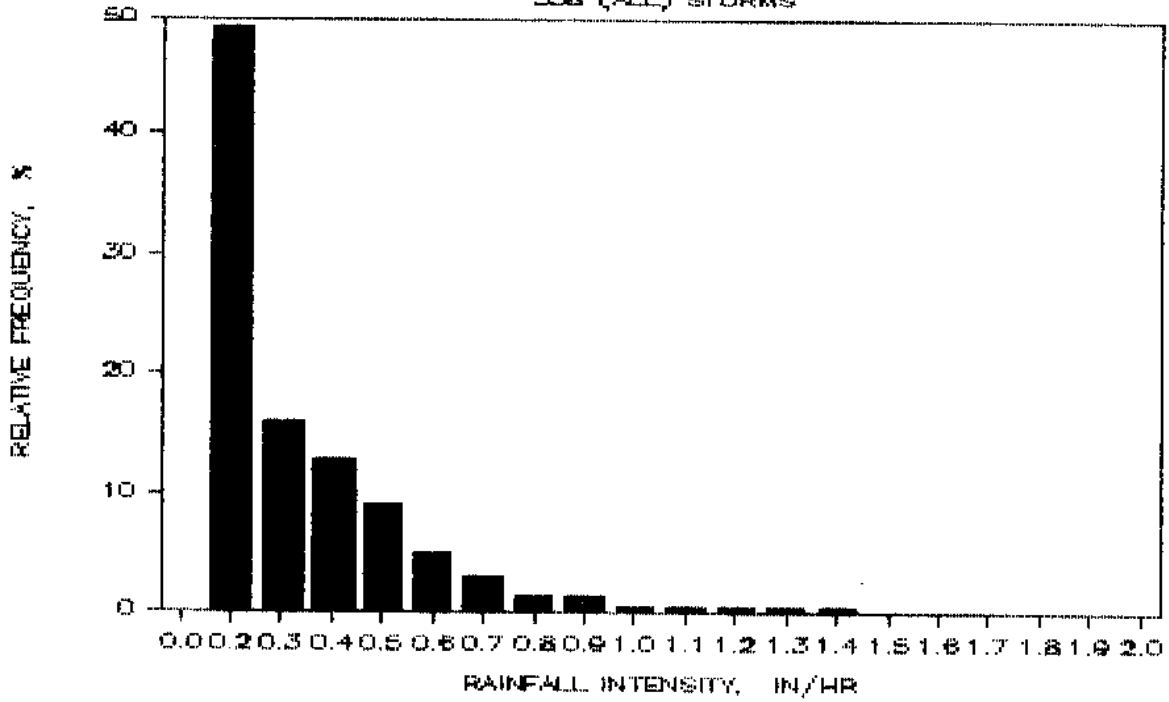


Figure A24. Probability Distribution of Storm Intensities Stratified by Storm Duration at Corozal Station.

Minimum Time Between Storms = 1 hr

a. COROZAL : INDEX NO. 2934

355 (ALL) STORMS



b. COROZAL : INDEX NO. 2934

153 (1 HOUR) STORMS

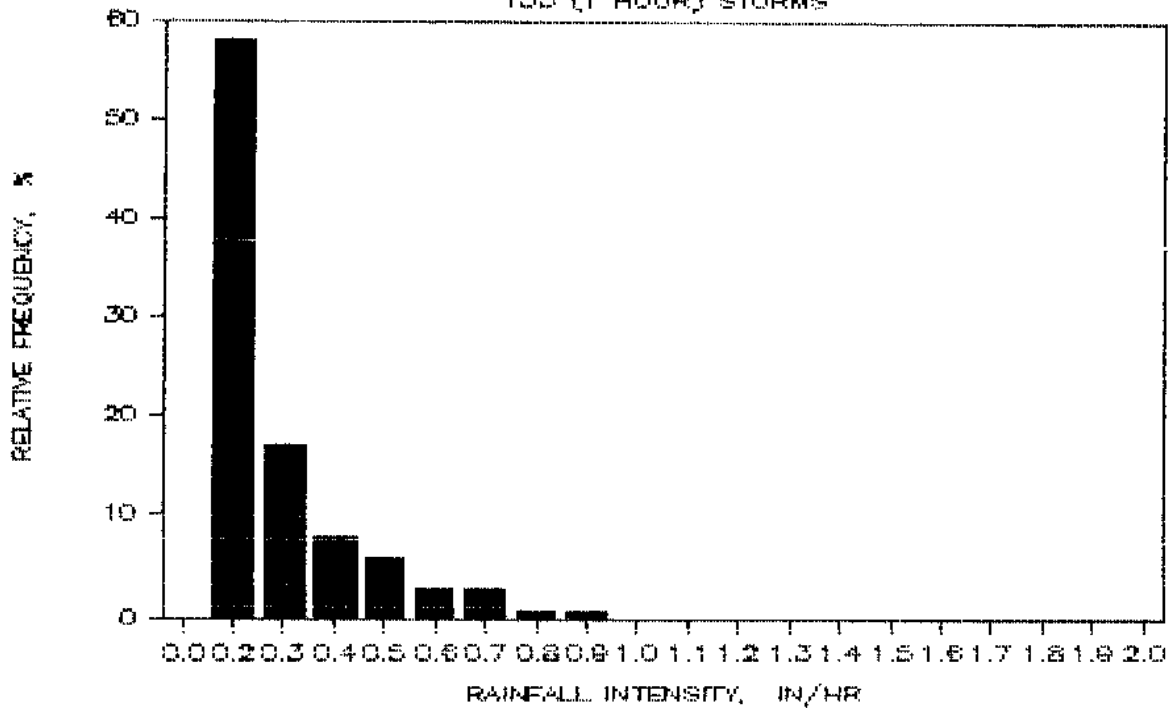
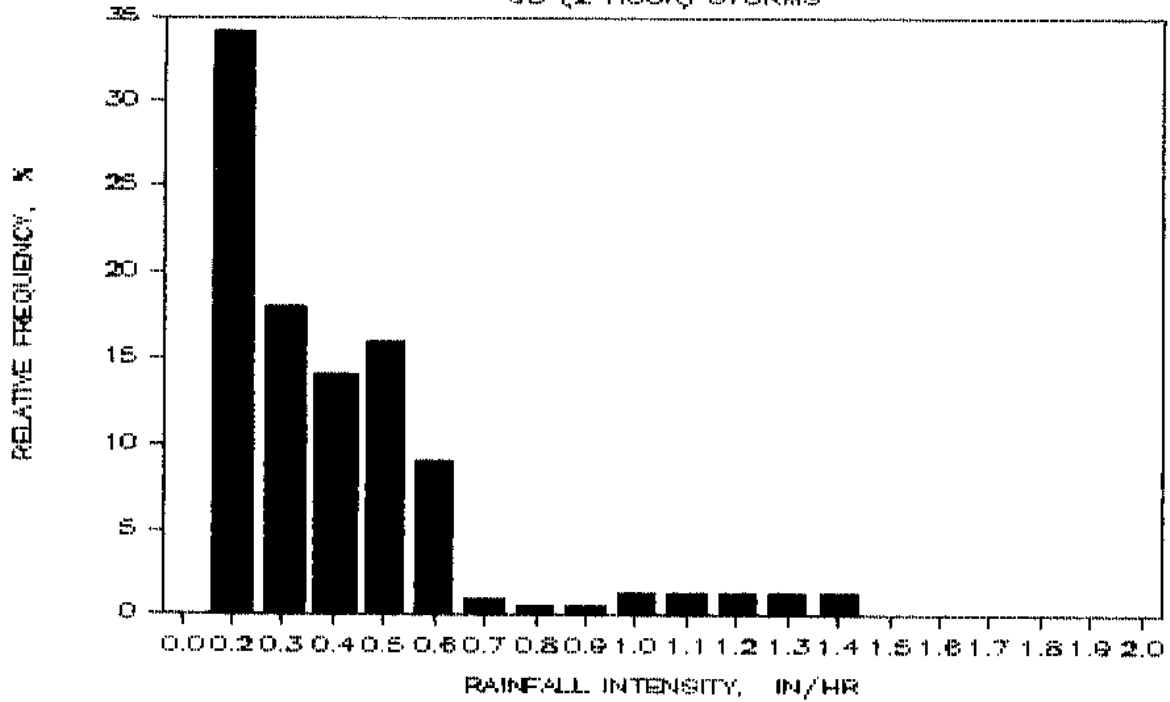


Figure A24. Continued

c. COROZAL : INDEX NO. 2934
96 (2 HOUR) STORMS



d. COROZAL : INDEX NO. 2934
42 (3 HOUR) STORMS

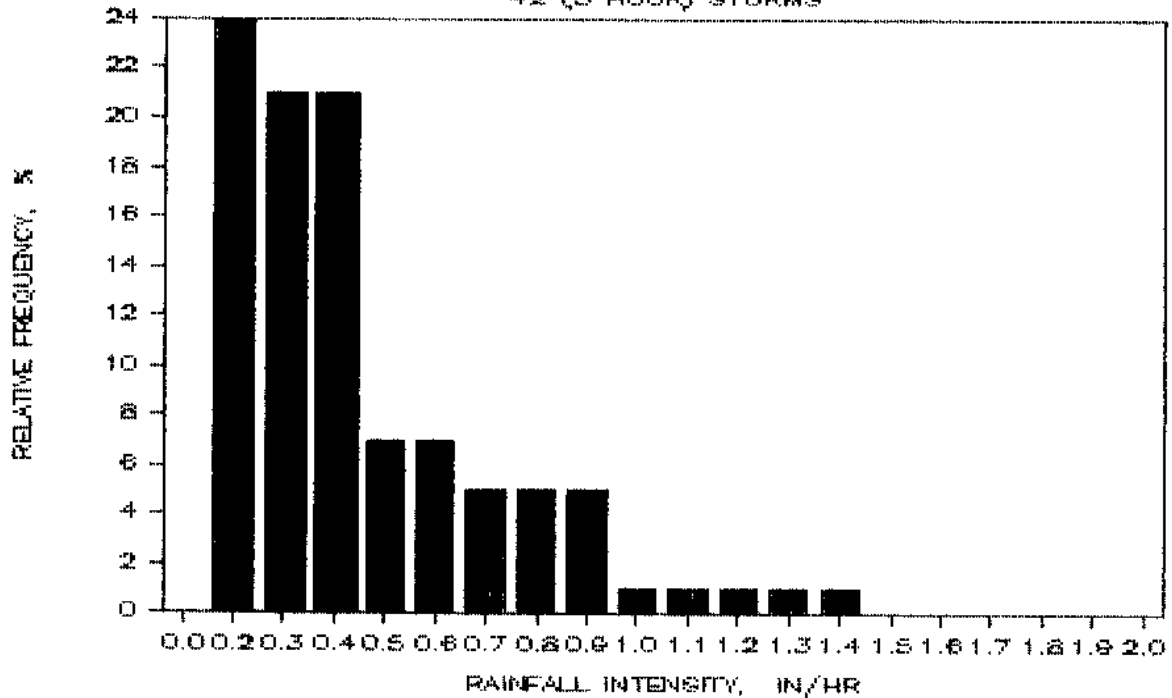
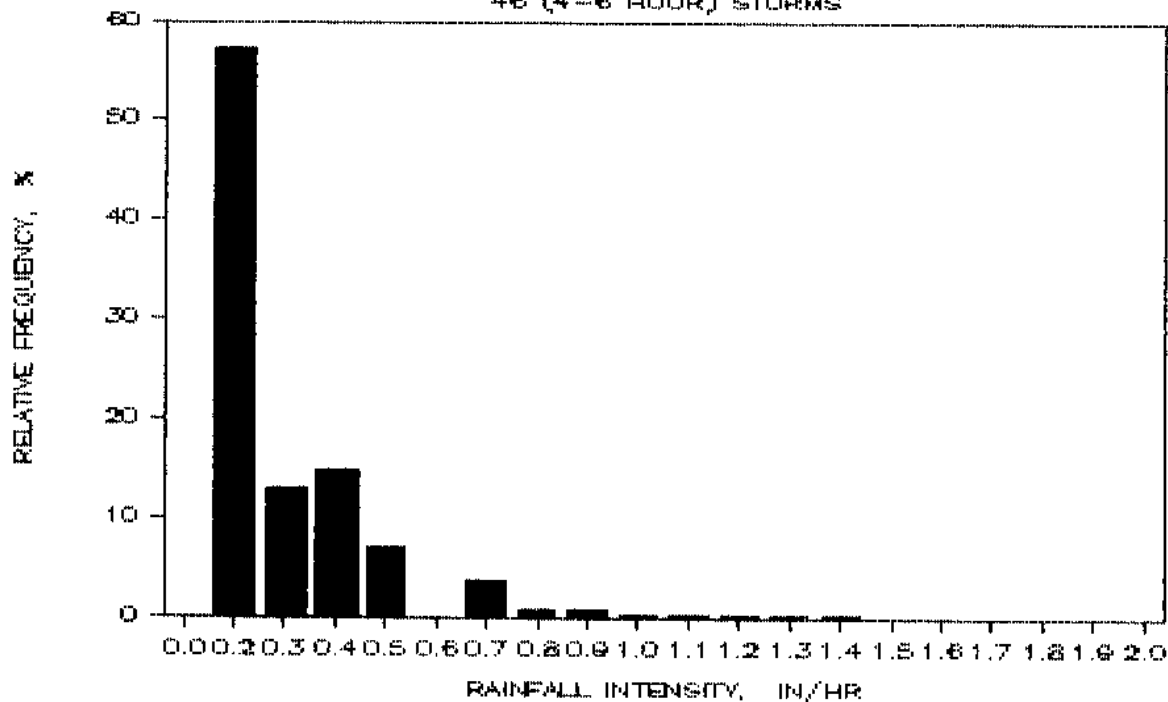


Figure A24. Continued

e. COROZAL : INDEX NO. 2934
46 (4-6 HOUR) STORMS



f. COROZAL : INDEX NO. 2934
15 (6-12 HOUR) STORMS

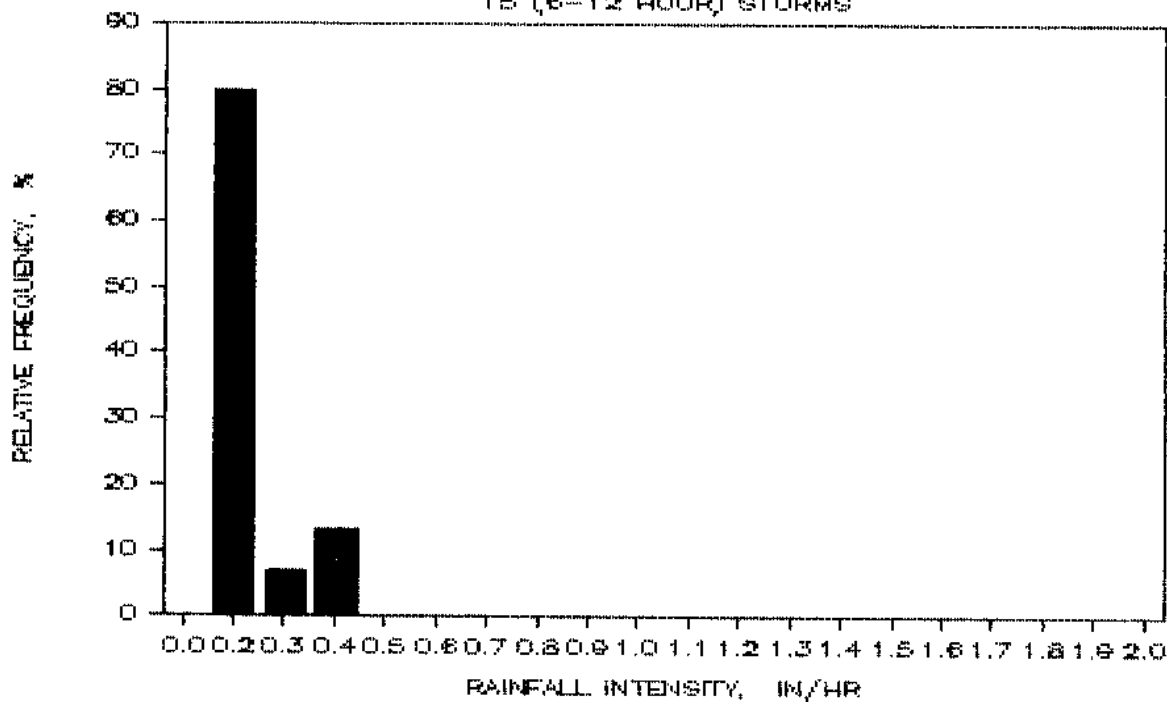


Figure A24. Continued

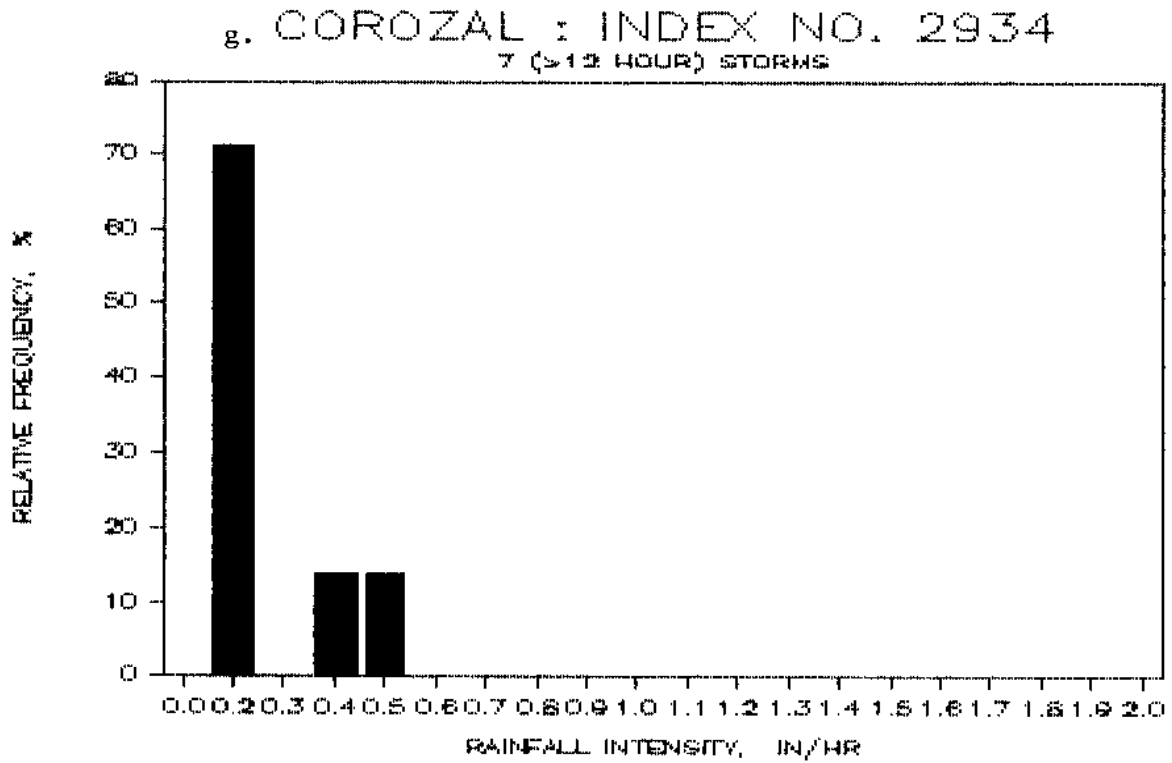
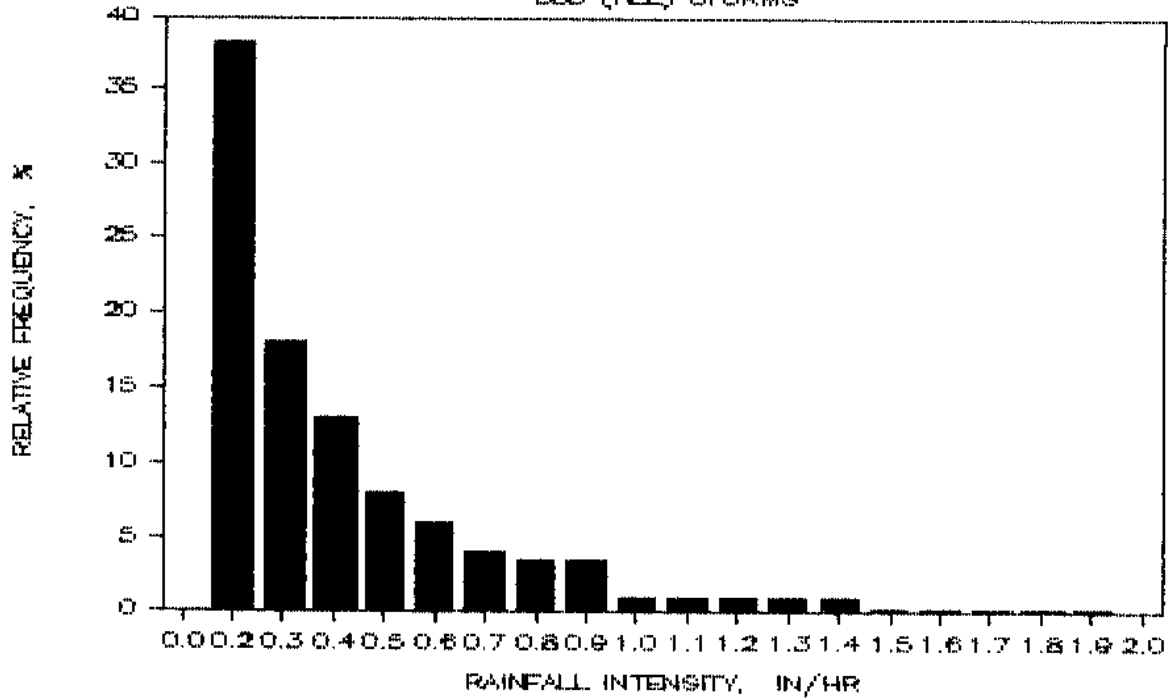


Figure A25. Probability Distribution of Storm Intensities Stratified by Storm Duration at Dos Bocas Station.
Minimum Time Between Storms = 1 hr

a. DOS BOCAS : INDEX NO. 3431
533 (ALL) STORMS



b. DOS BOCAS : INDEX NO. 3431
204 (1 HOUR) STORMS

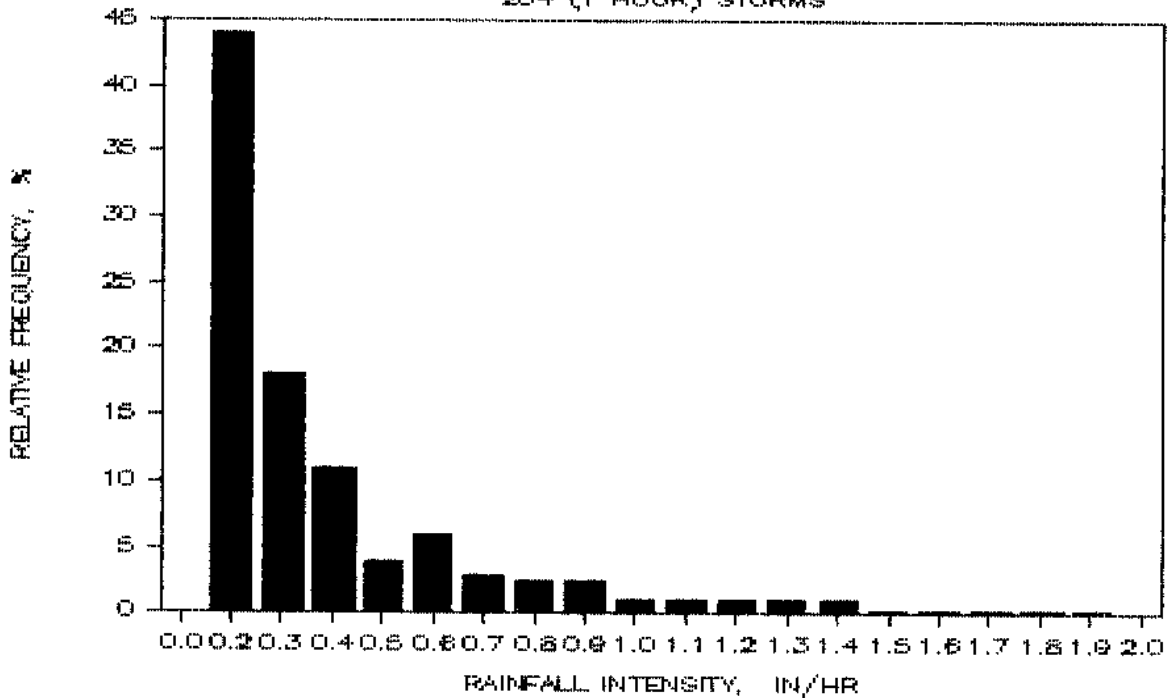
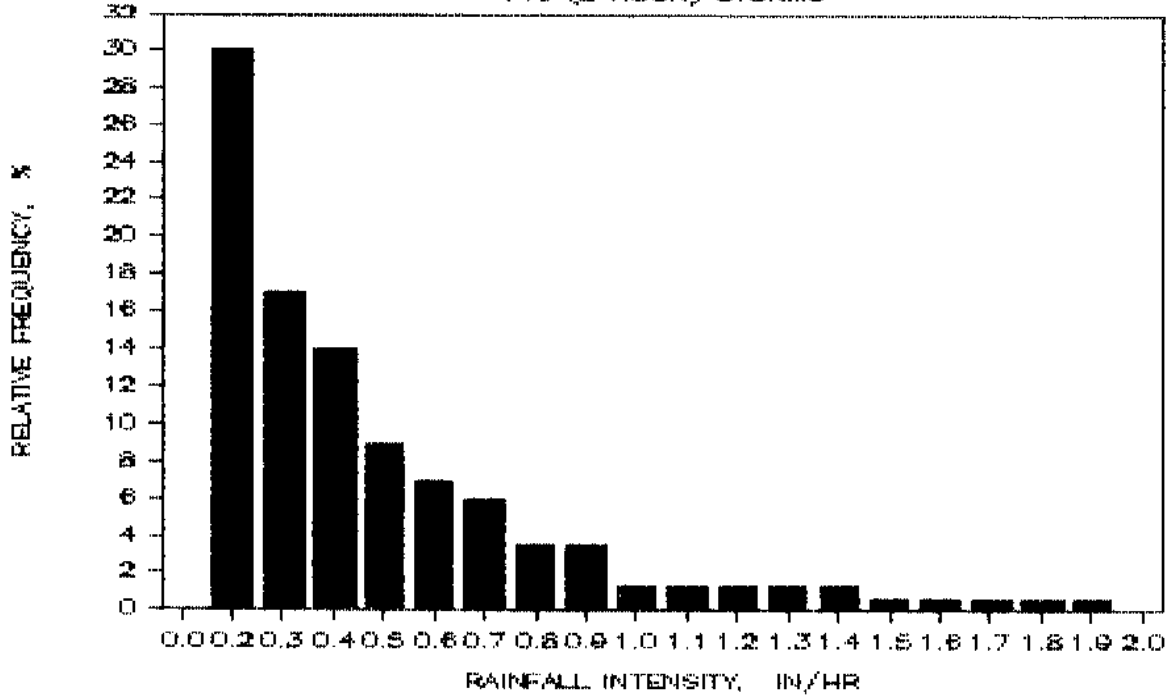


Figure A25. Continued

c. DOS BOCAS : INDEX NO. 3431
149 (2 HOUR) STORMS



d. DOS BOCAS : INDEX NO. 3431
80 (3 HOUR) STORMS

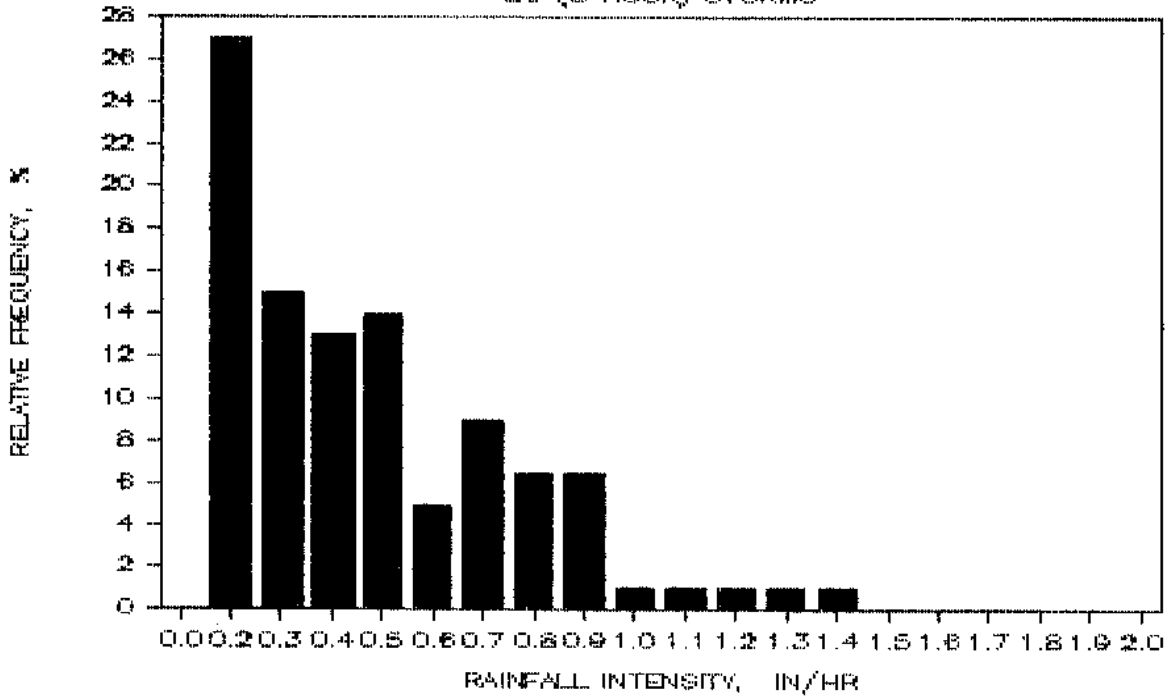
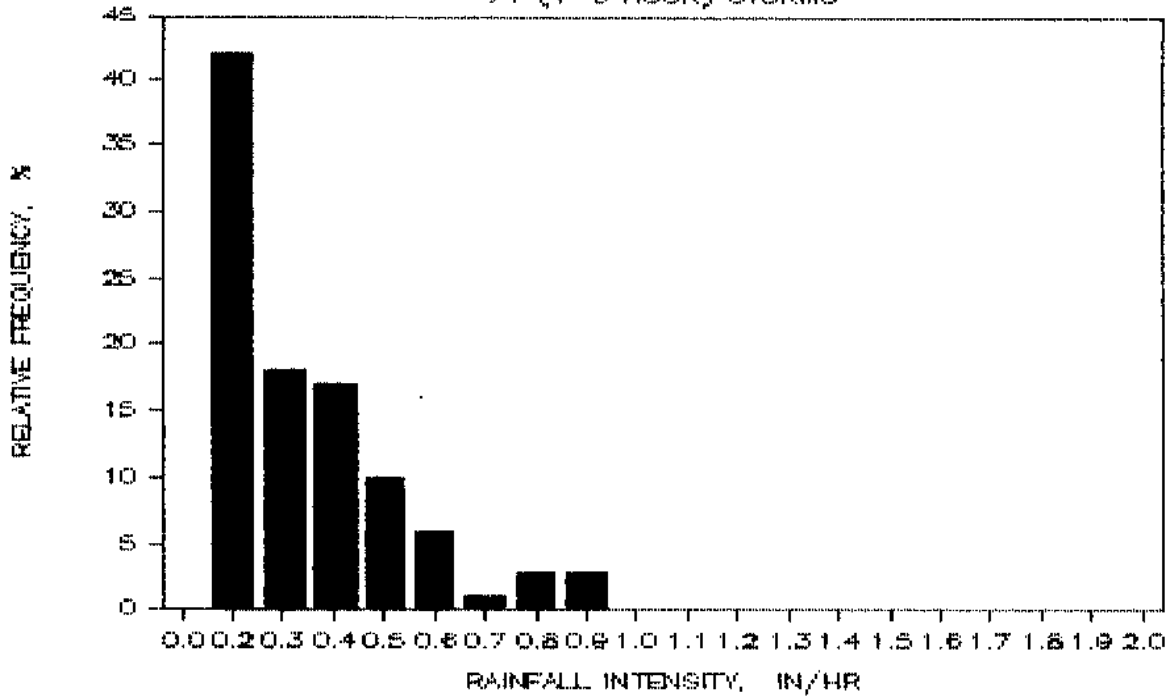


Figure A25. Continued

e. DOS BOCAS : INDEX NO. 3431
71 (4-6 HOUR) STORMS



f. DOS BOCAS : INDEX NO. 3431
22 (6-12 HOUR) STORMS

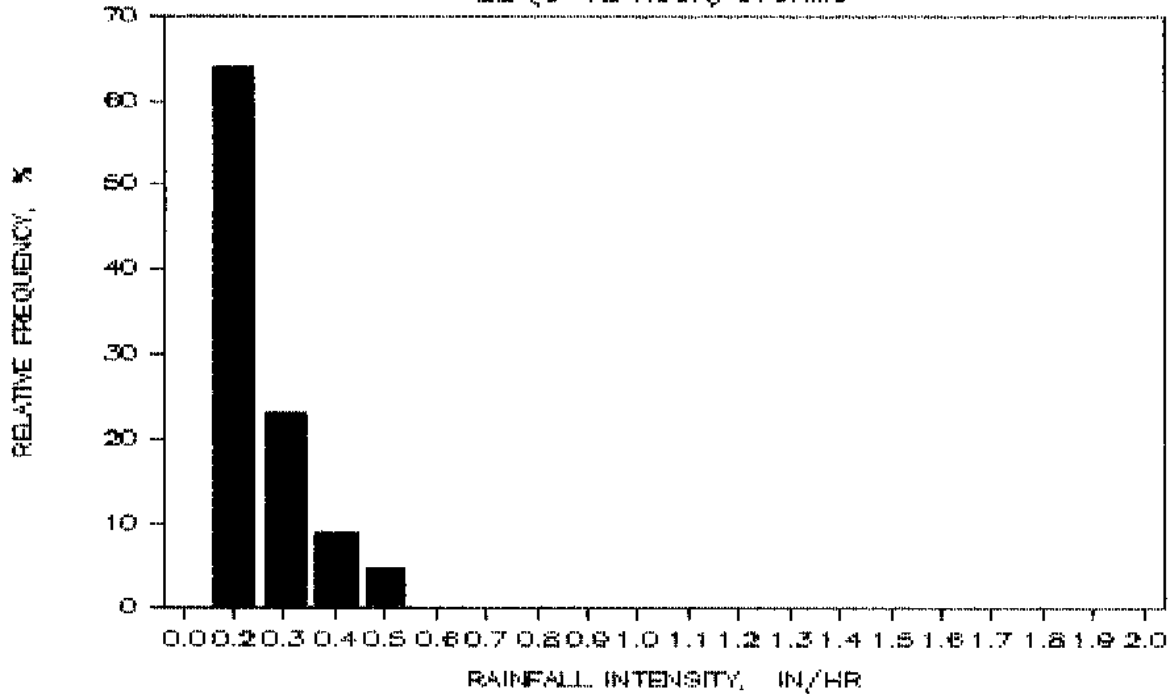


Figure 25. Continued

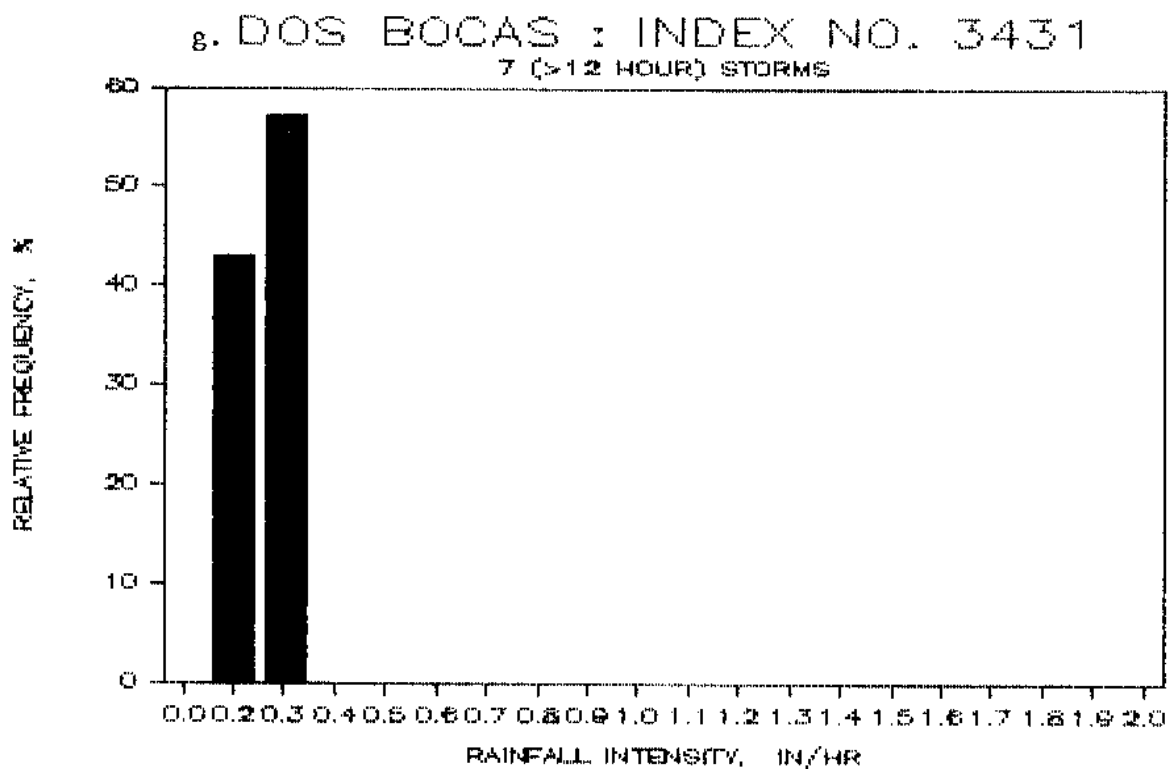
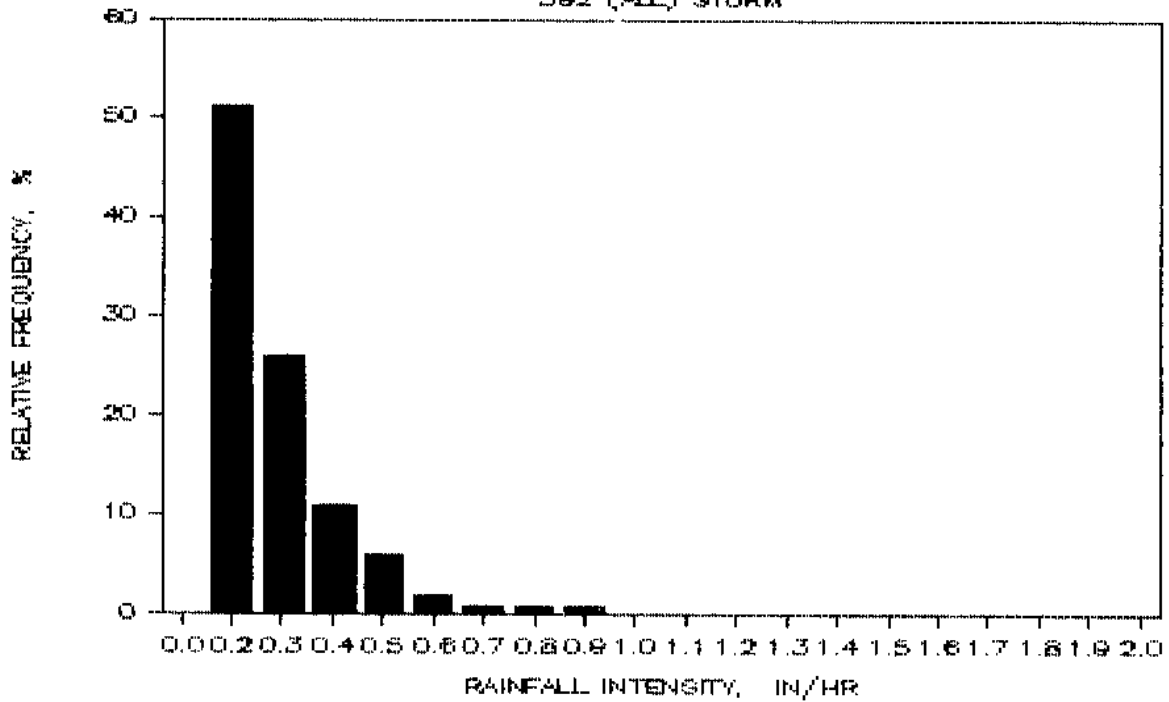


Figure A26. Probability Distribution of Storm Intensities Stratified by Storm Duration at Fajardo Station.
Minimum Time Between Storms = 1 hr

a. FAJARDO : INDEX NO. 3857
392 (ALL) STORM



b. FAJARDO : INDEX NO. 3857
244 (1 HOUR) STORM

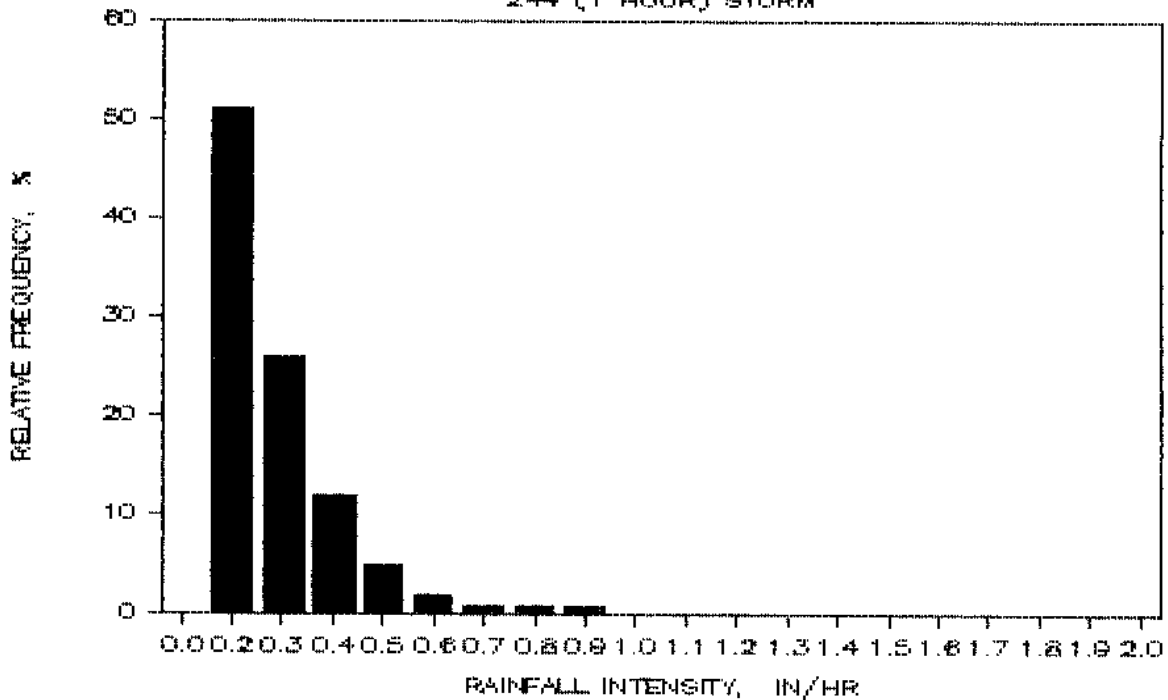
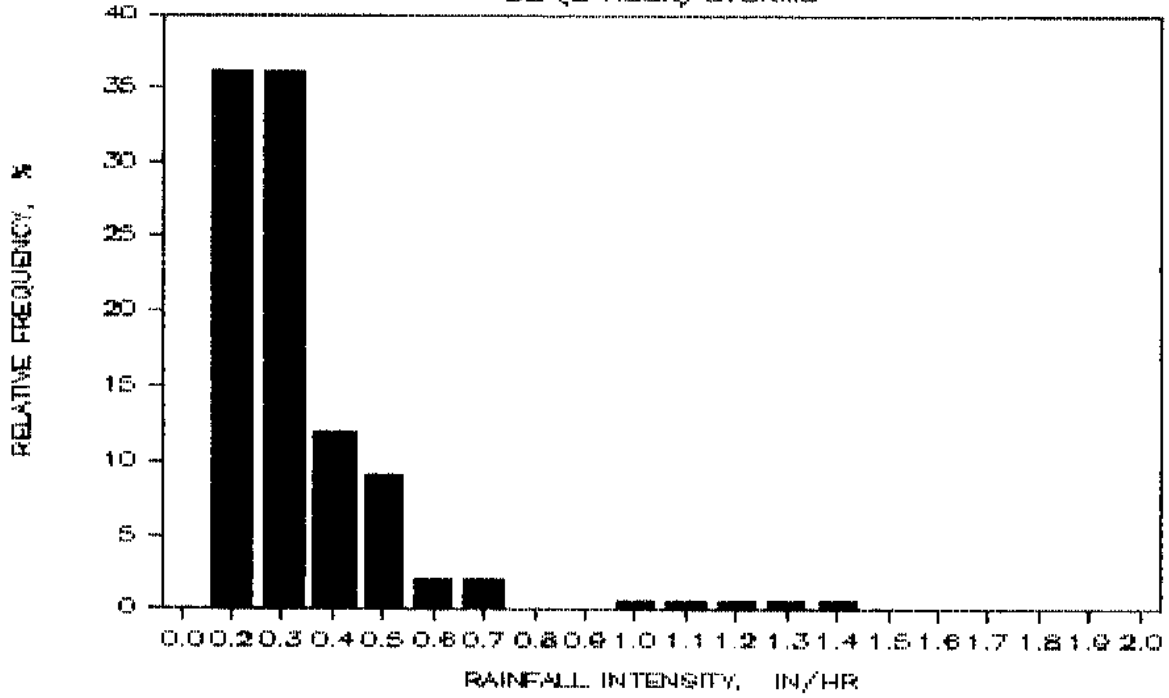


Figure A26. Continued

c. FAJARDO : INDEX NO. 3857
58 (2 HOUR) STORMS



d. FAJARDO : INDEX NO. 3857
26 (3 HOUR) STORMS

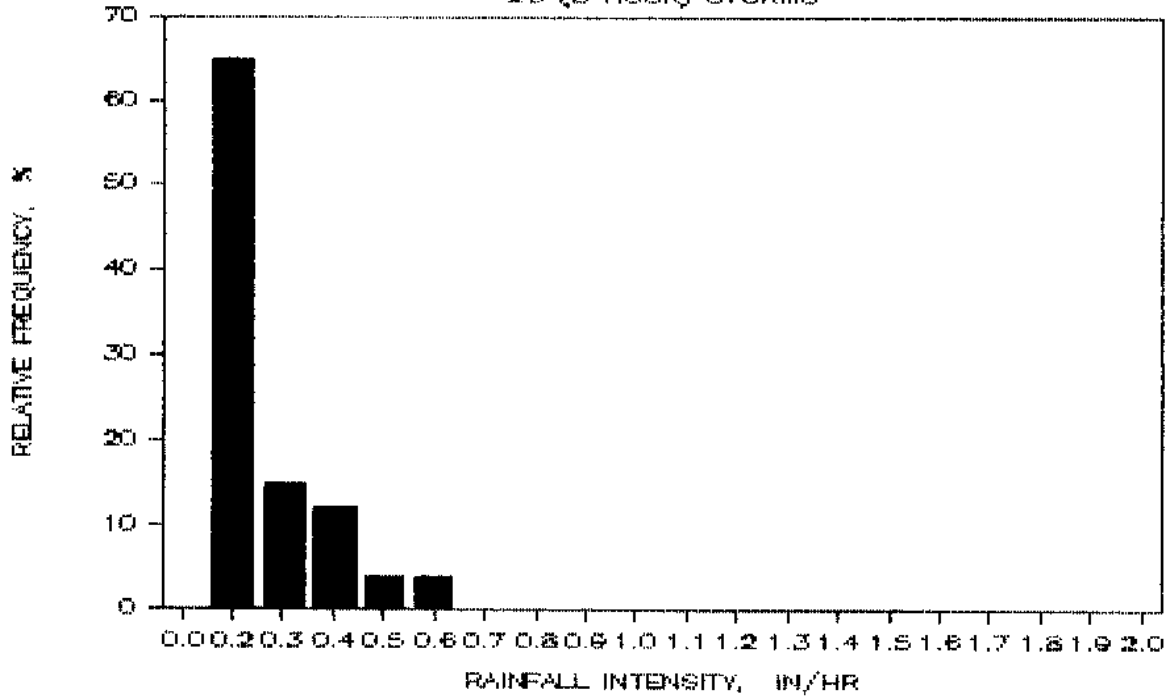
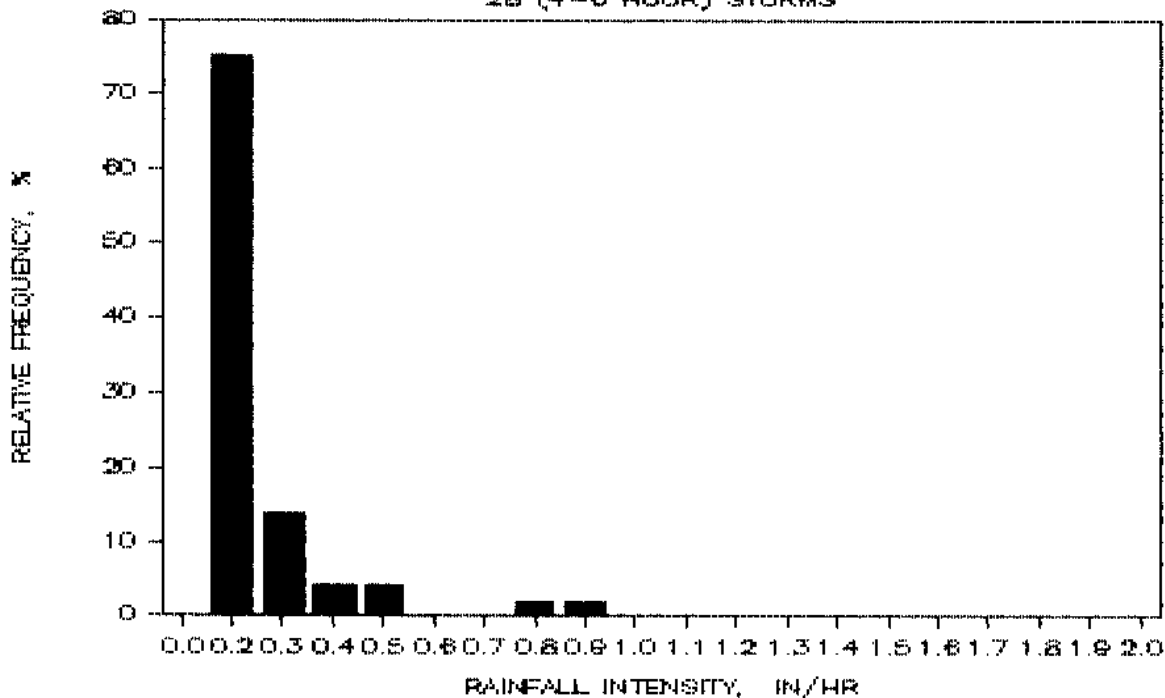


Figure A26. Continued

e. FAJARDO : INDEX NO. 3657
28 (4-6 HOUR) STORMS



f. FAJARDO : INDEX NO. 3657
25 (6-12 HOUR) STORMS

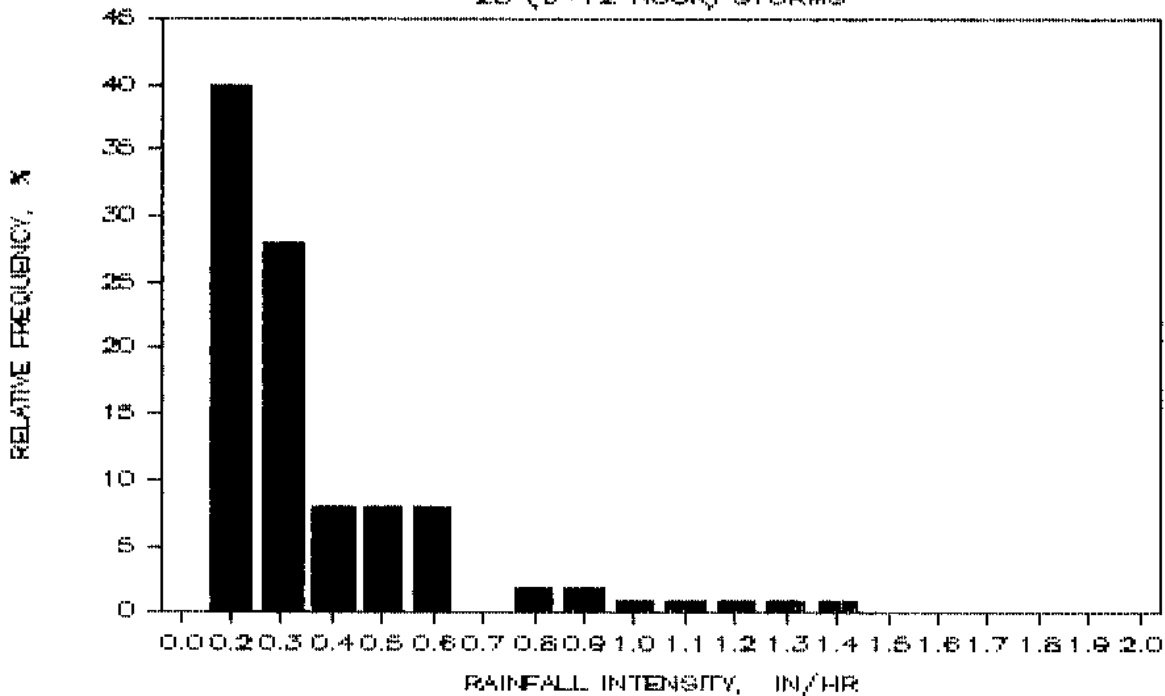


Figure A26. Continued

g. FAJARDO : INDEX NO. 3857
11 (>12 HOUR) STORMS

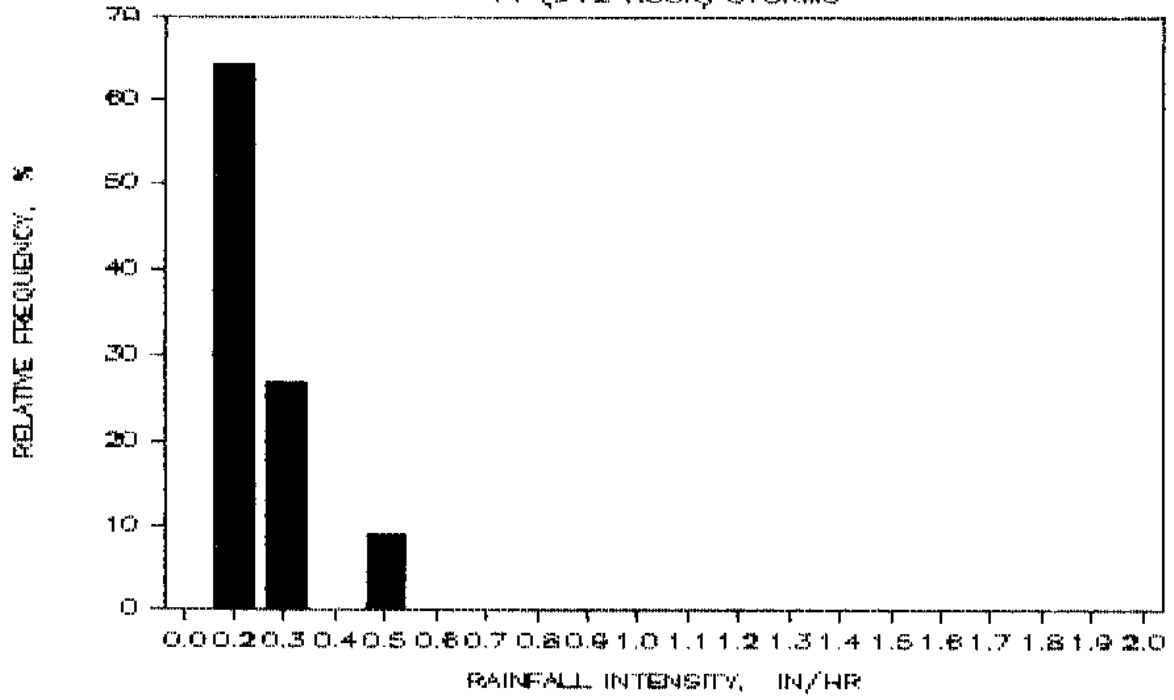
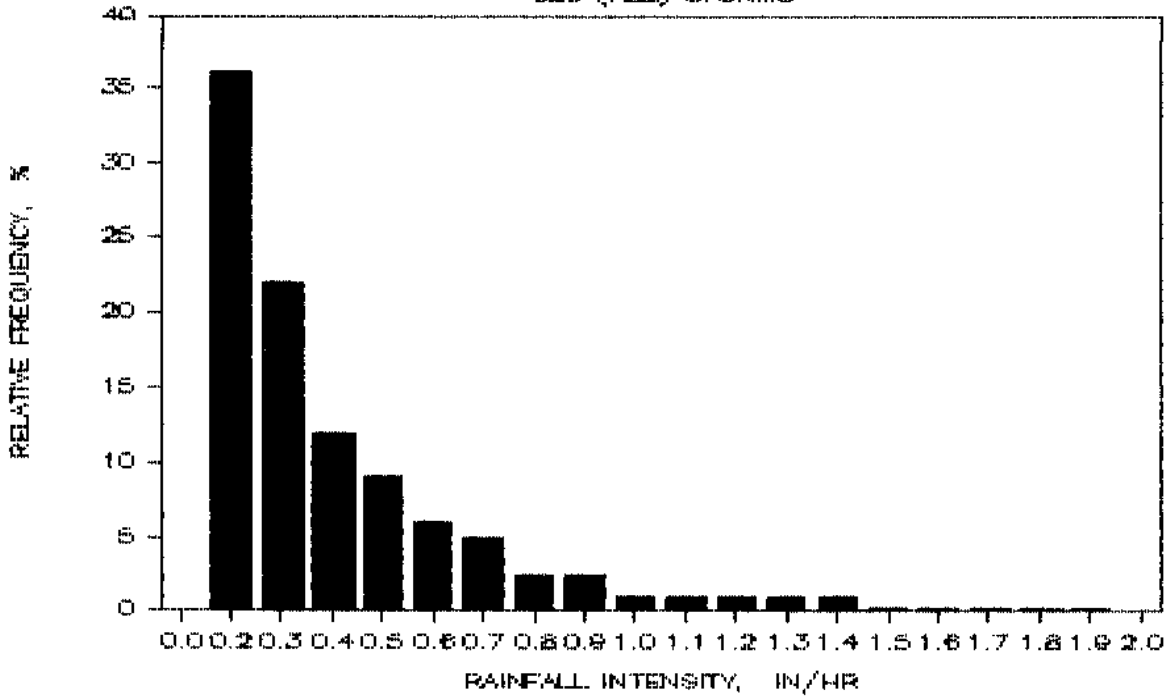


Figure A27. Probability Distribution of Storm Intensities Stratified by Storm Duration at Maricao 2 SSW Station.

Minimum Time Between Storms = 1 hr

a. MARICAO 2 SSW : INDEX NO. 5908
636 (ALL) STORMS



b. MARICAO 2 SSW : INDEX NO. 5908
215 (1 HOUR) STORMS

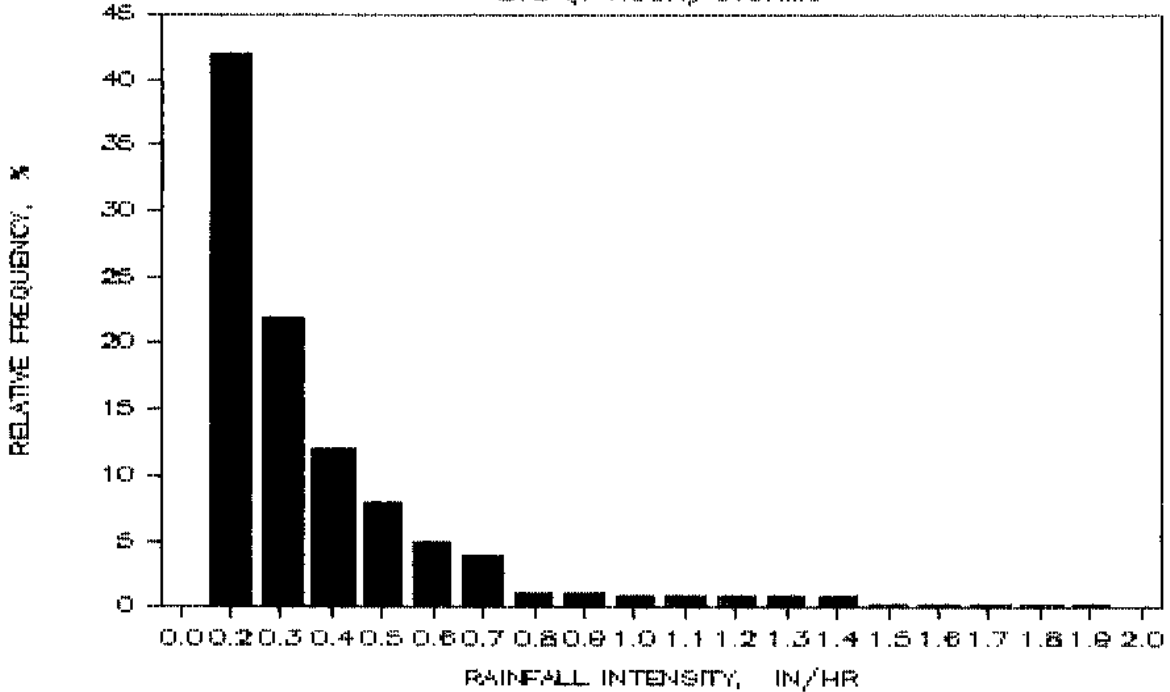
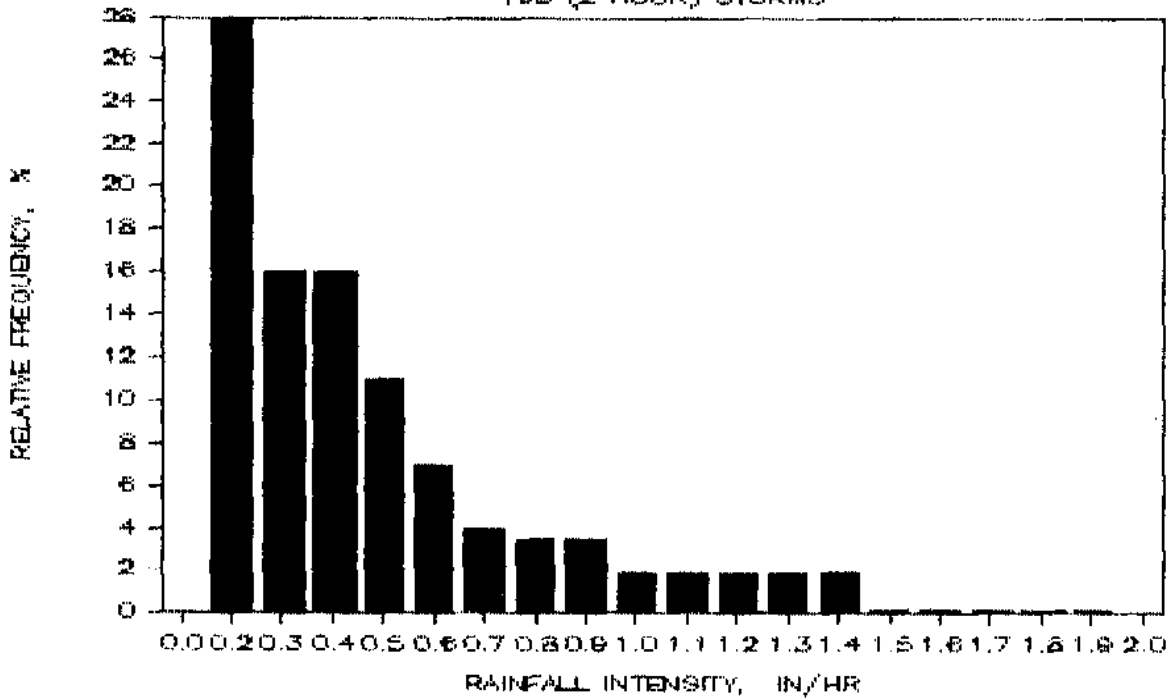


Figure A27. Continued

c. MARICAO 2 SSW : INDEX NO. 5908
165 (2 HOUR) STORMS



d. MARICAO 2 SSW : INDEX NO. 5908
114 (3 HOUR) STORMS

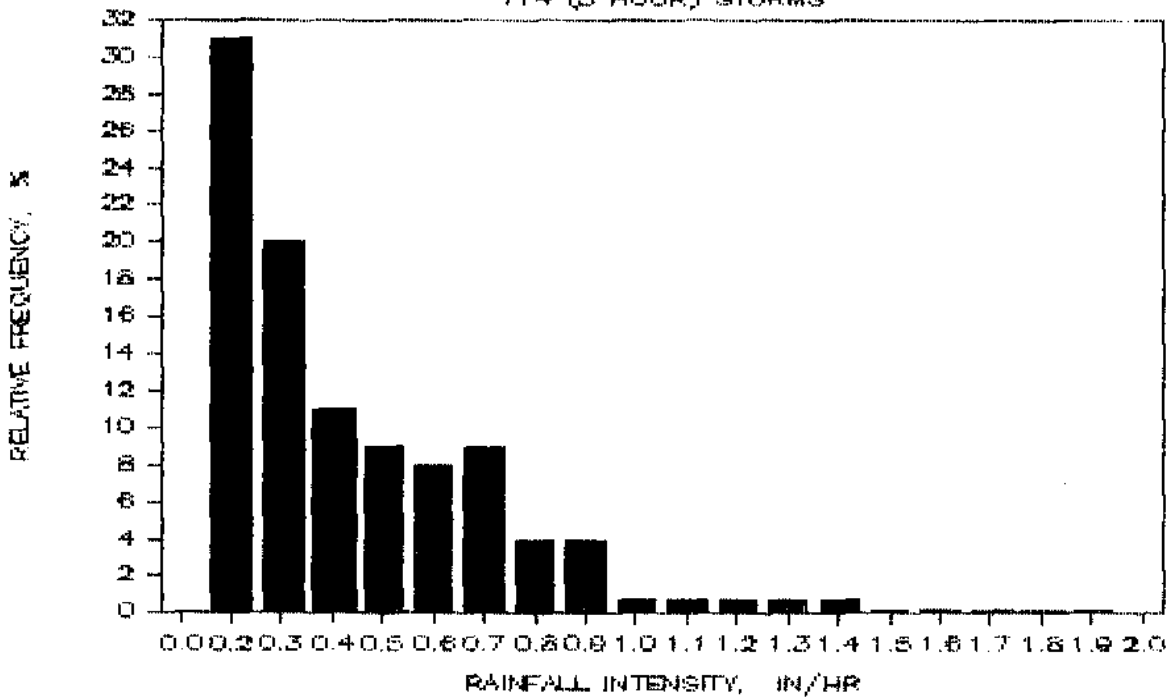
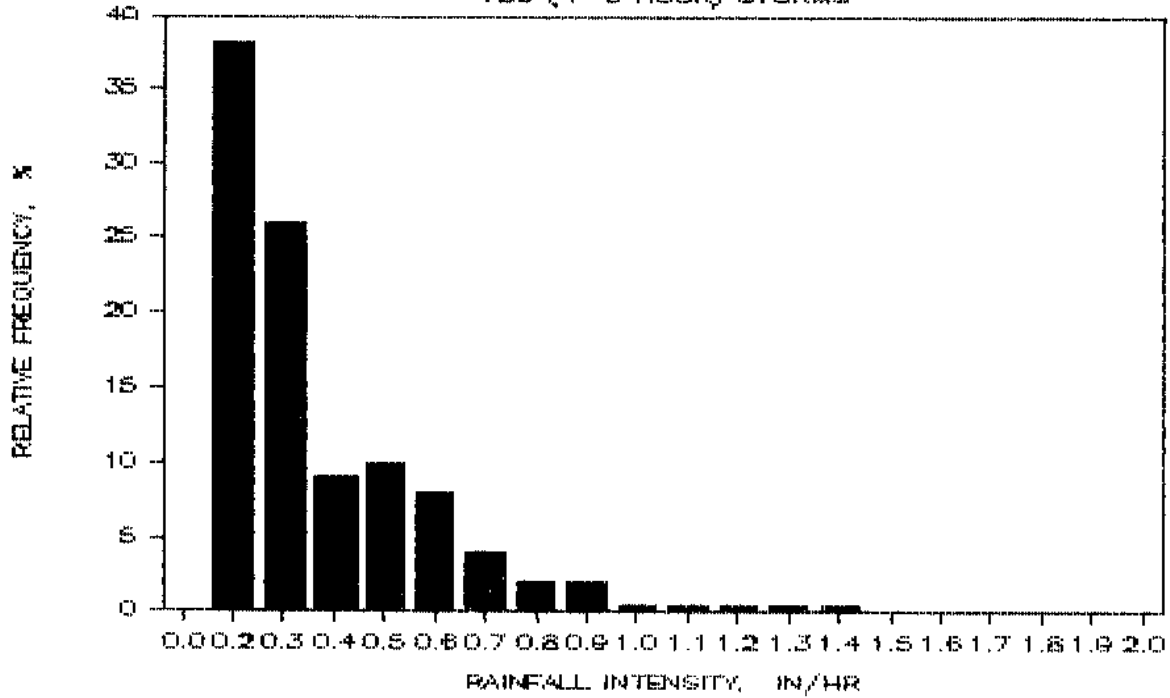


Figure A27. Continued

e. MARICAO 2 SSW : INDEX NO. 5908
156 (4-6 HOUR) STORMS



f. MARICAO 2 SSW : INDEX NO. 5908
26 (6-12 HOUR) STORMS

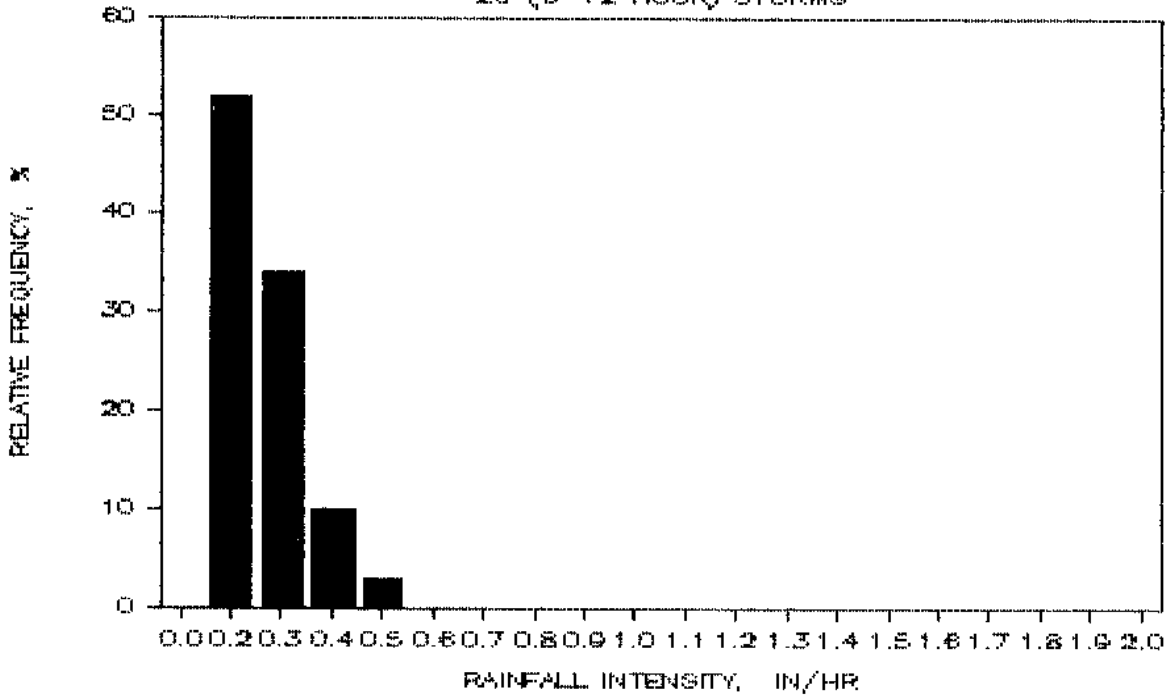


Figure A27. Continued

g. MARICAO 2 SSW : INDEX NO. 5908
7 (>12 HOUR) STORMS

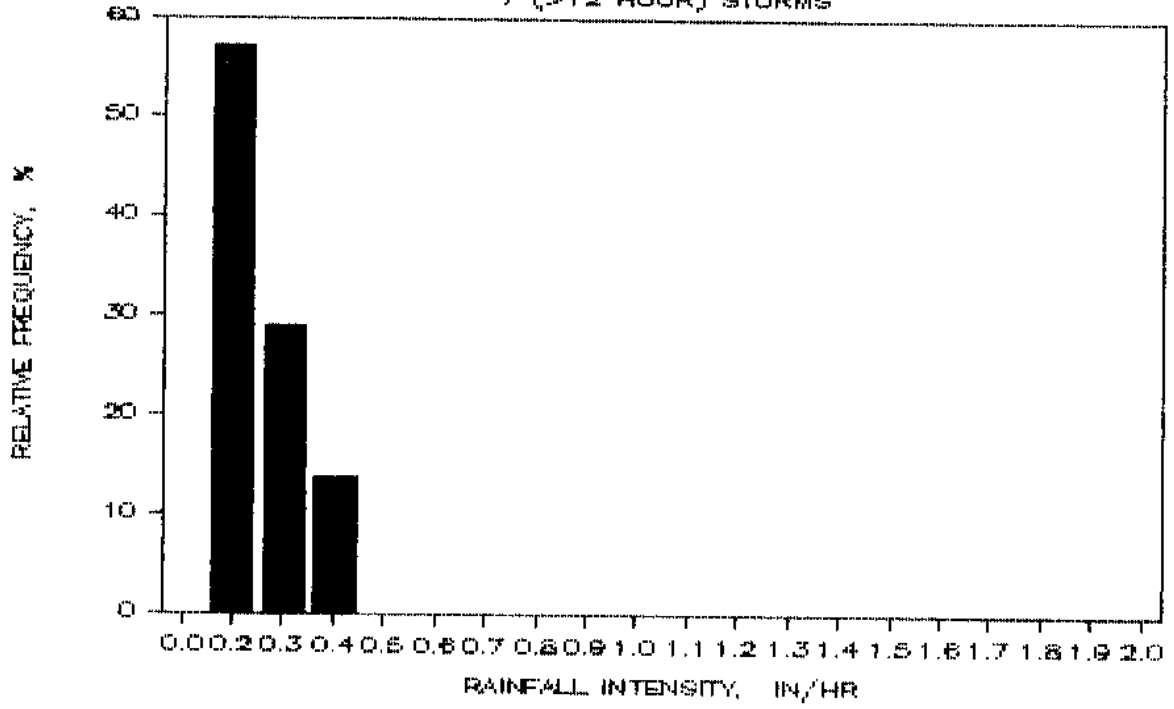
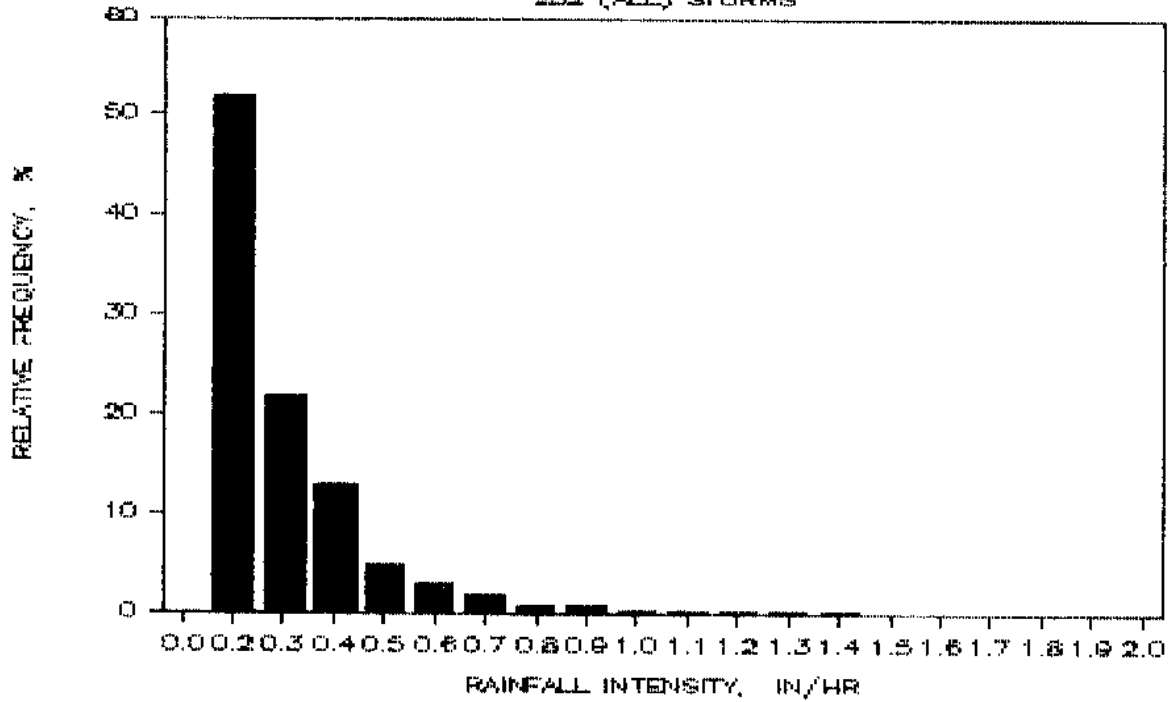


Figure A28. Probability Distribution of Storm Intensities Stratified by Storm Duration at Ponce 4 E Station.
Minimum Time Between Storms = 1 hr

a. PONCE 4 E : INDEX NO. 7292
232 (ALL) STORMS



b. PONCE 4 E : INDEX NO. 7292
113 (1 HOUR) STORMS

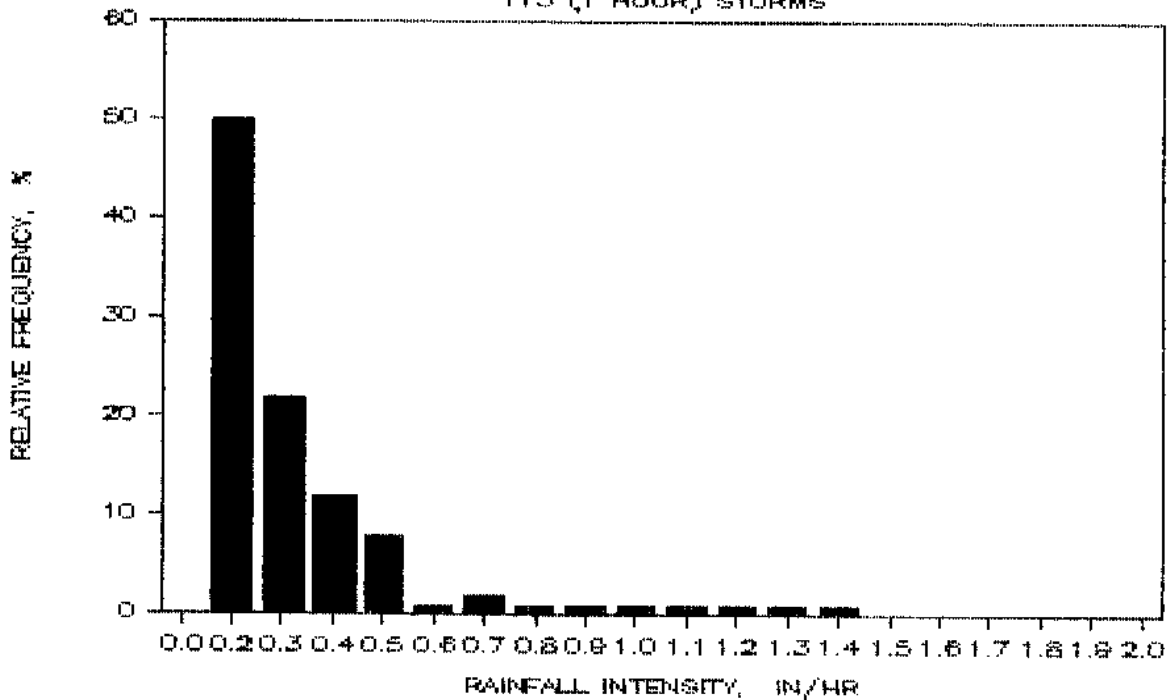
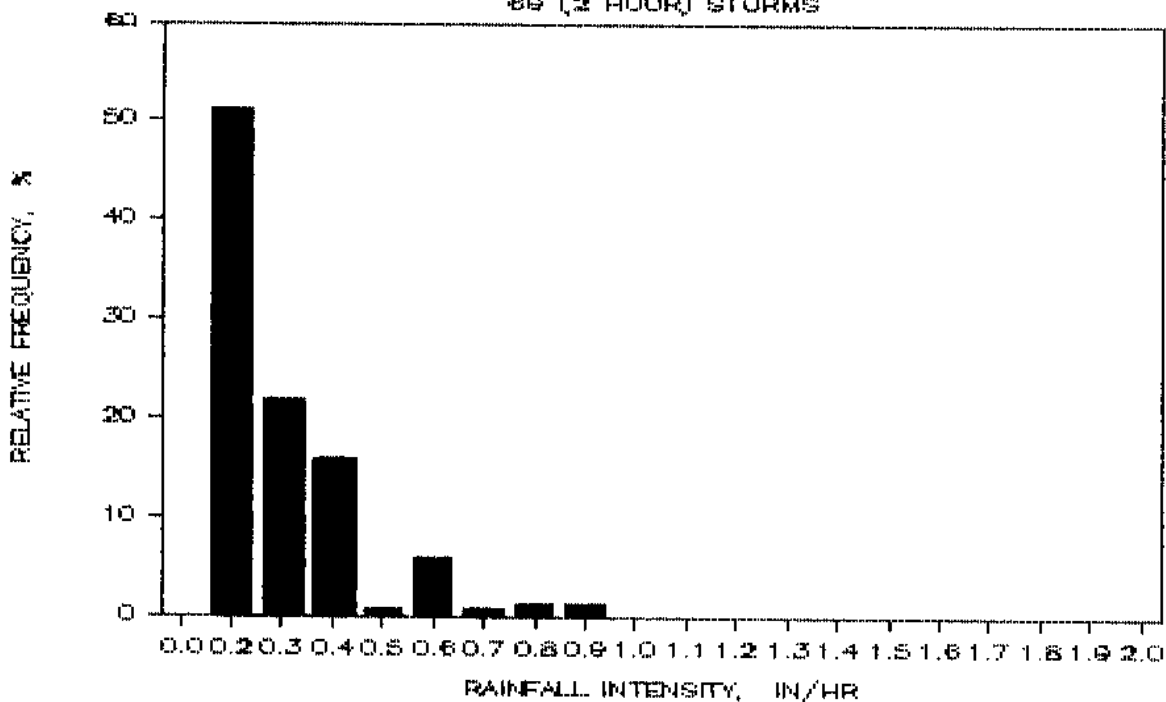


Figure A28. Continued

c. PONCE 4 E : INDEX NO. 7292
89 (2 HOUR) STORMS



d. PONCE 4 E : INDEX NO. 7292
19 (3 HOUR) STORMS

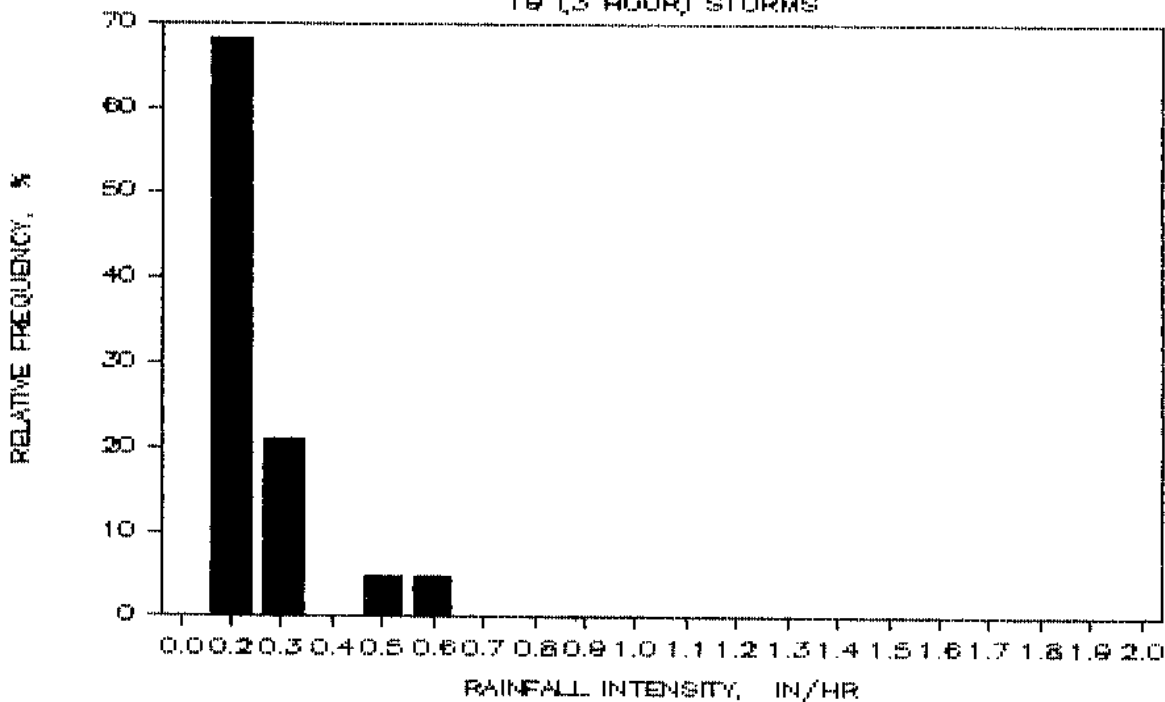
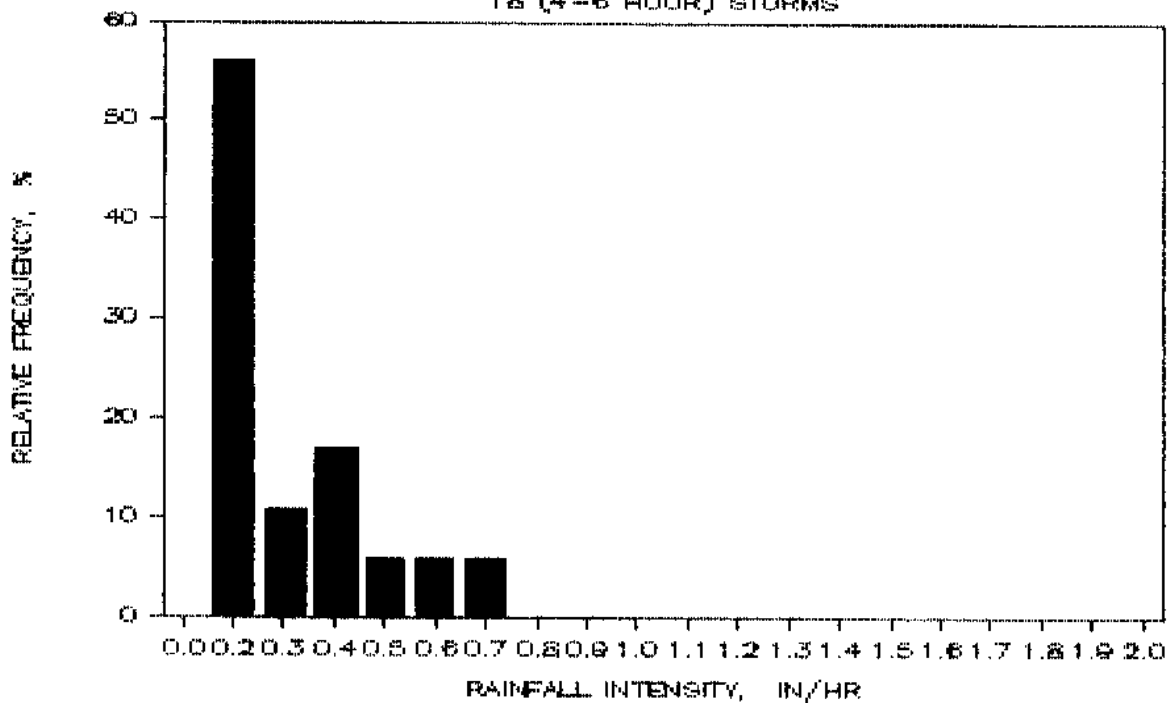


Figure A28. Continued

e. PONCE 4 E : INDEX NO. 7292
18 (4-6 HOUR) STORMS



f. PONCE 4 E : INDEX NO. 7292
8 (6-12 HOUR) STORMS

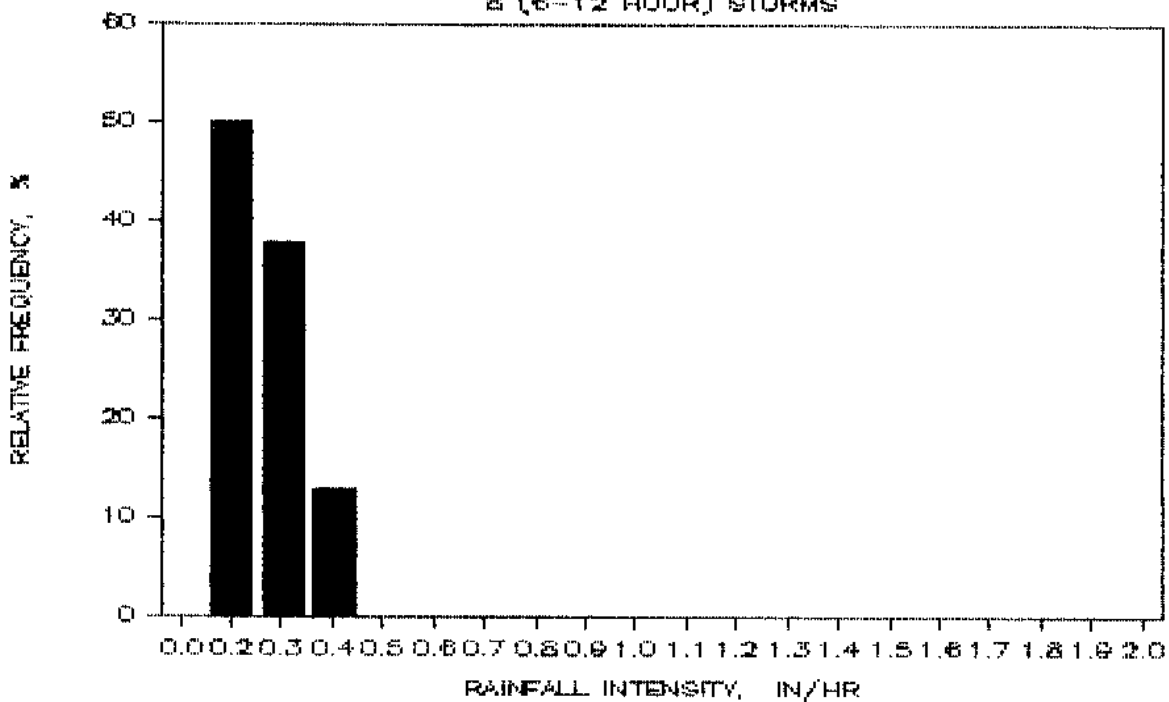


Figure A28. Continued

g. PONCE 4 E : INDEX NO. 7292
5 (>12 HOUR) STORMS

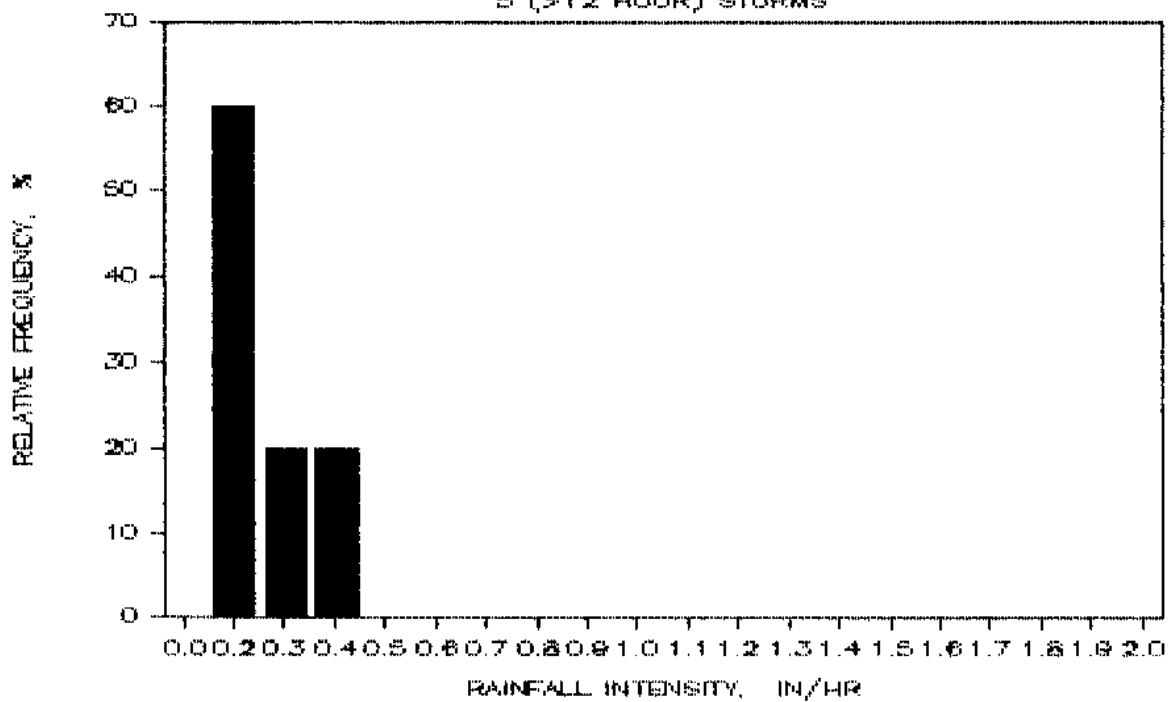
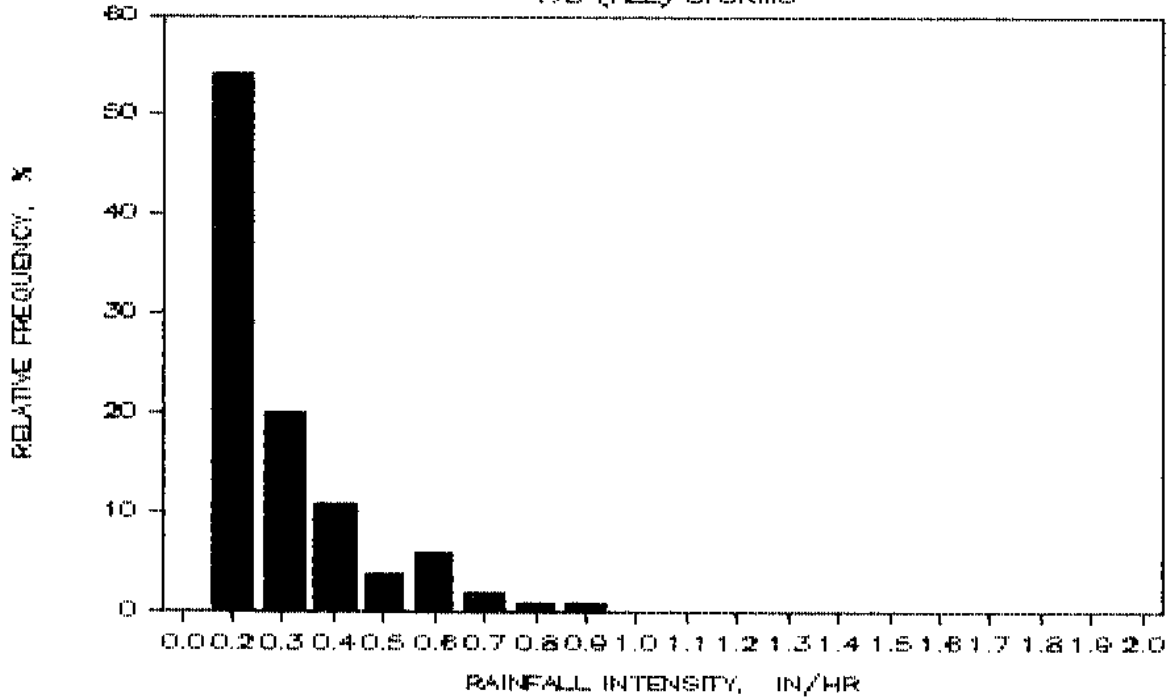


Figure A29. Probability Distribution of Storm Intensities Stratified by Storm Duration at San Juan Station.
Minimum Time Between Storms = 1 hr

a. SAN JUAN : INDEX NO. 8812
173 (ALL) STORMS



b. SAN JUAN : INDEX NO. 8812
68 (1 HOUR) STORMS

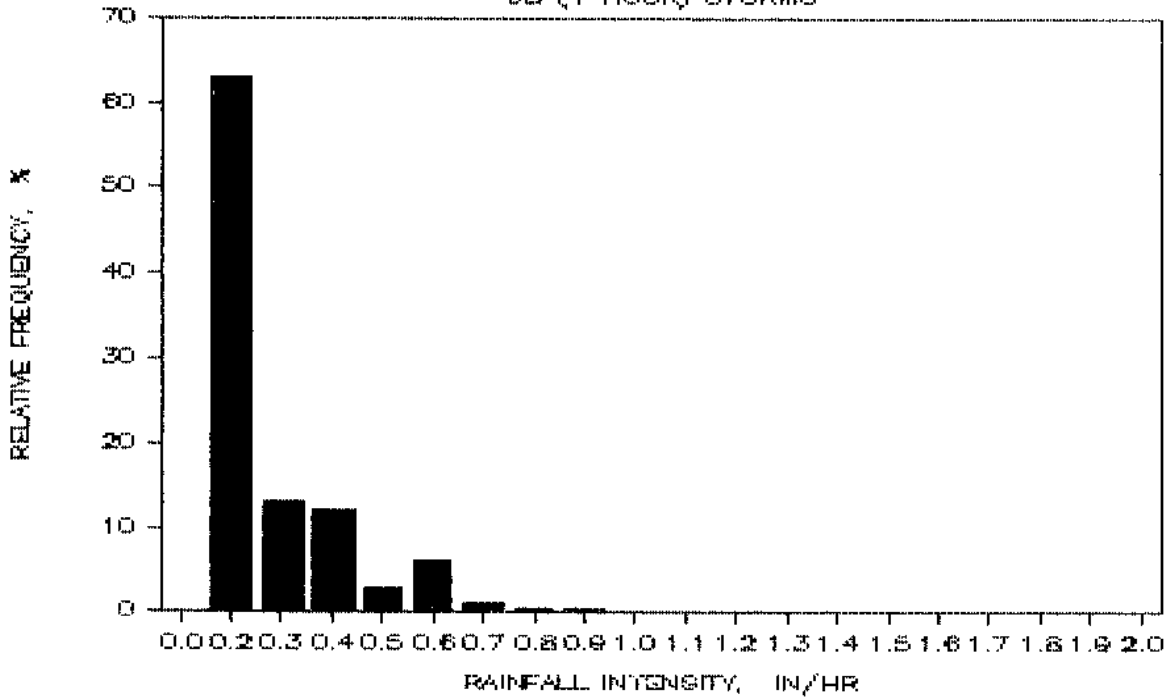
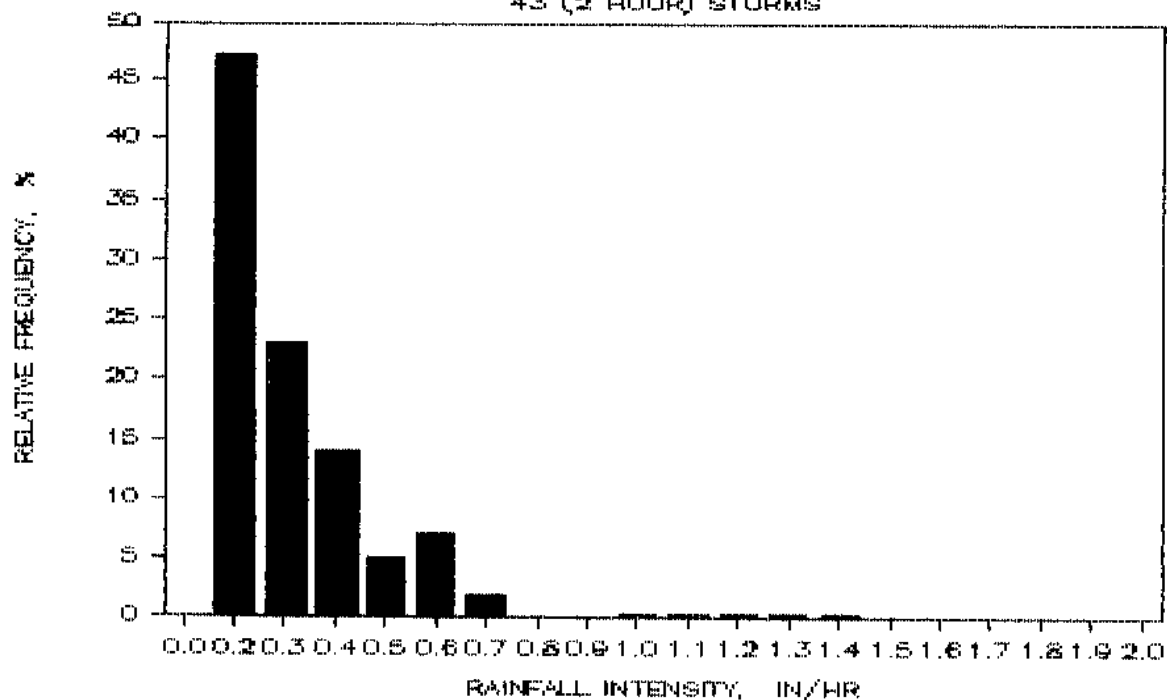


Figure A29. Continued

c. SAN JUAN : INDEX NO. 8812
43 (2 HOUR) STORMS



d. SAN JUAN : INDEX NO. 8812
18 (3 HOUR) STORMS

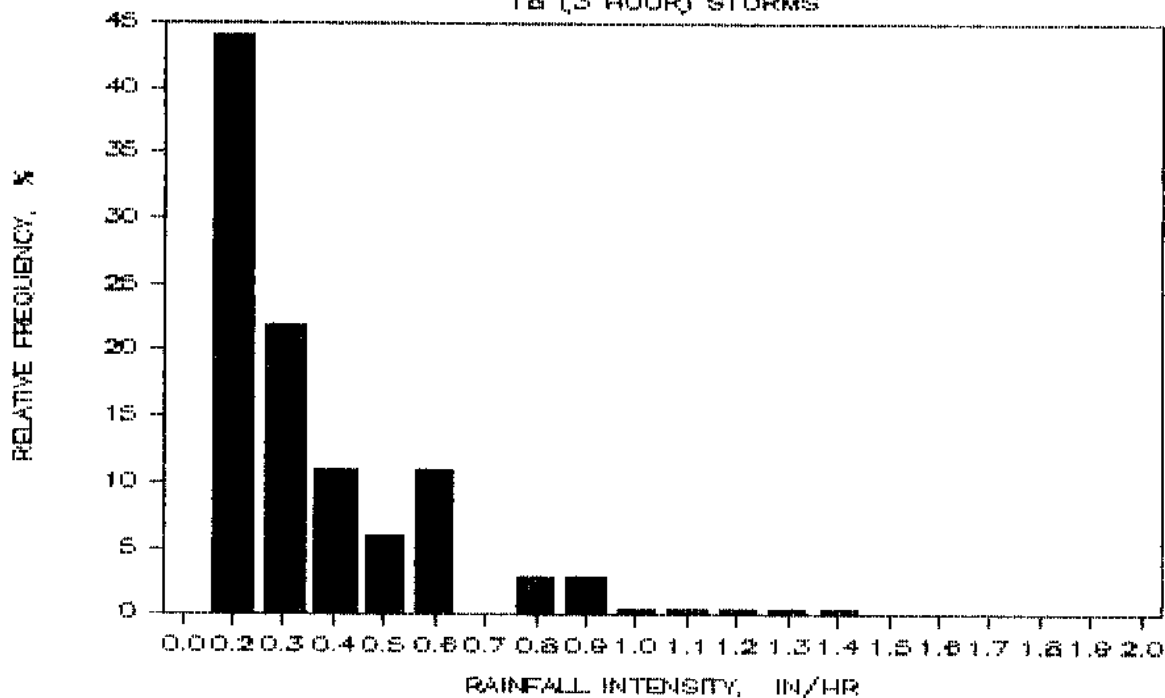
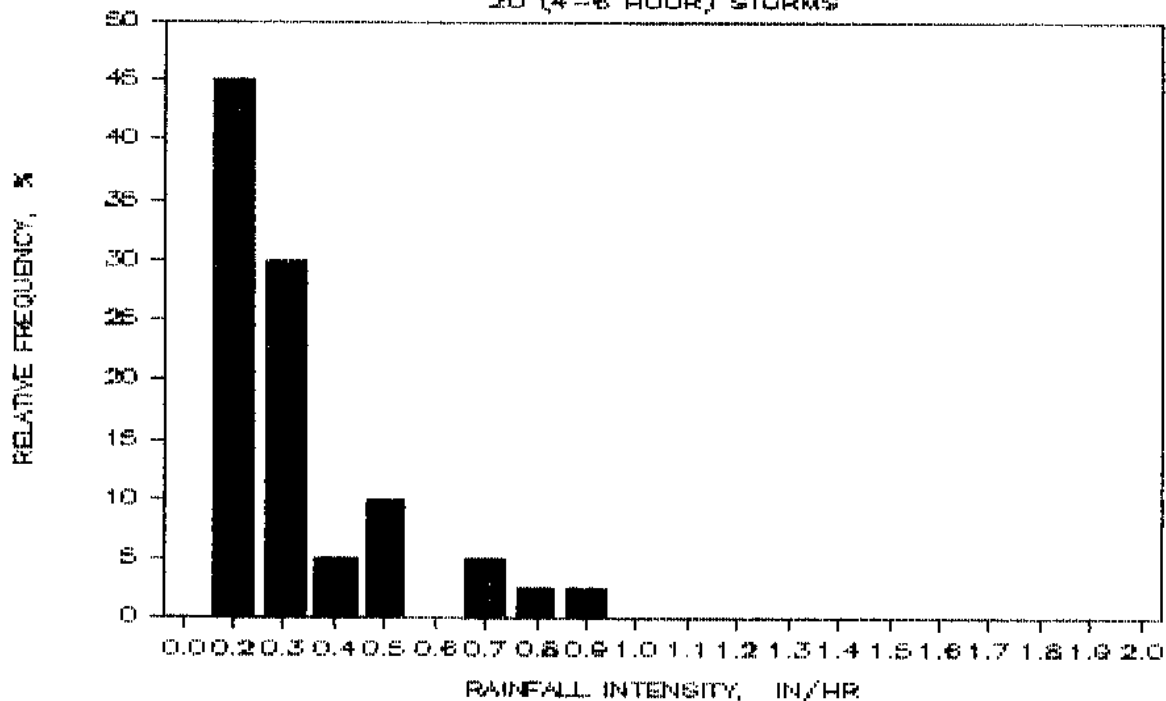


Figure A29. Continued

e. SAN JUAN : INDEX NO. 8812
20 (4-6 HOUR) STORMS



f. SAN JUAN : INDEX NO. 8812
18 (6-12 HOUR) STORMS

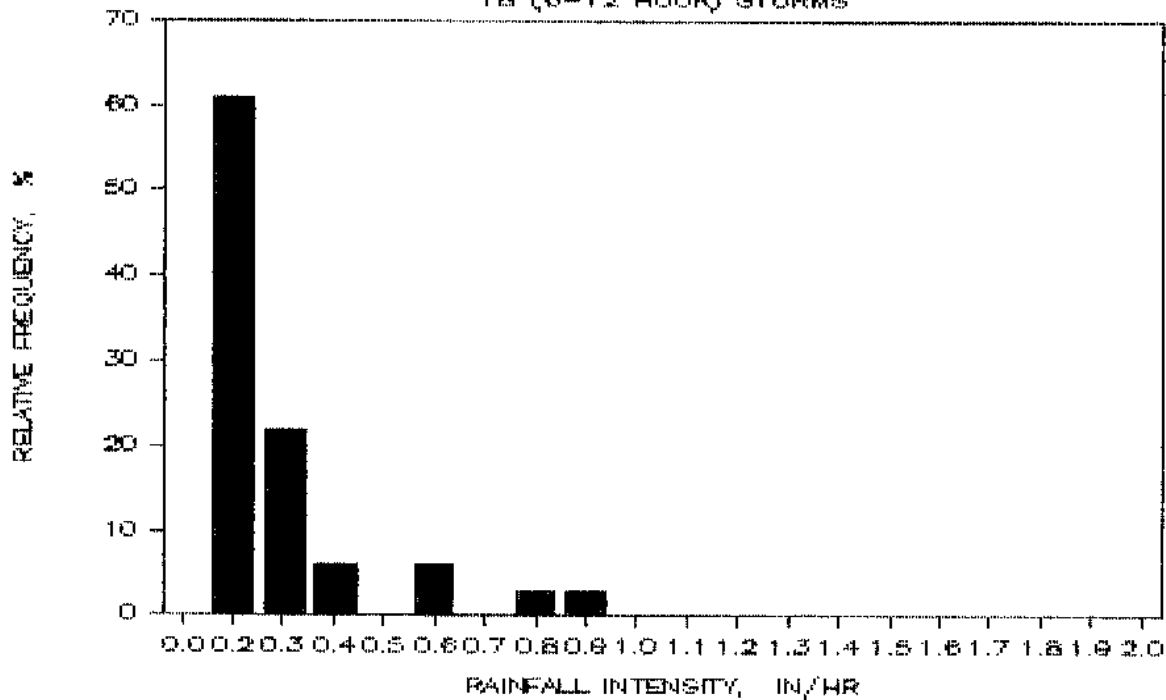


Figure A29. Continued

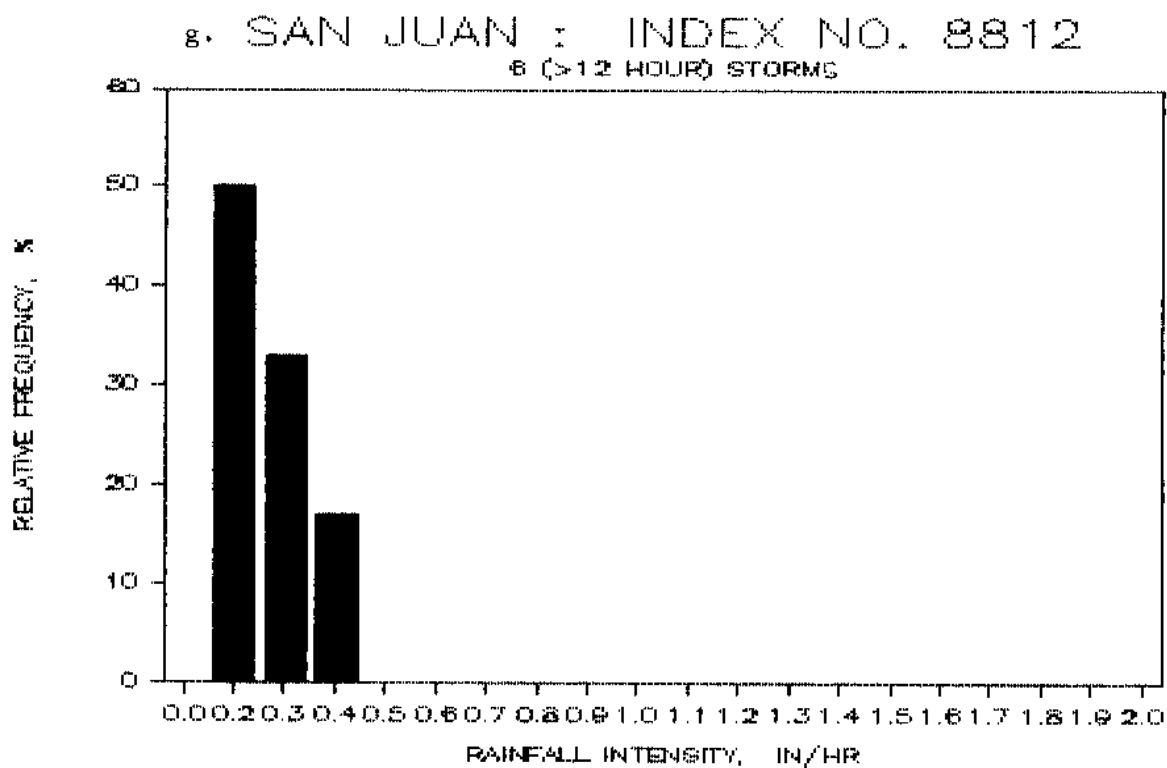
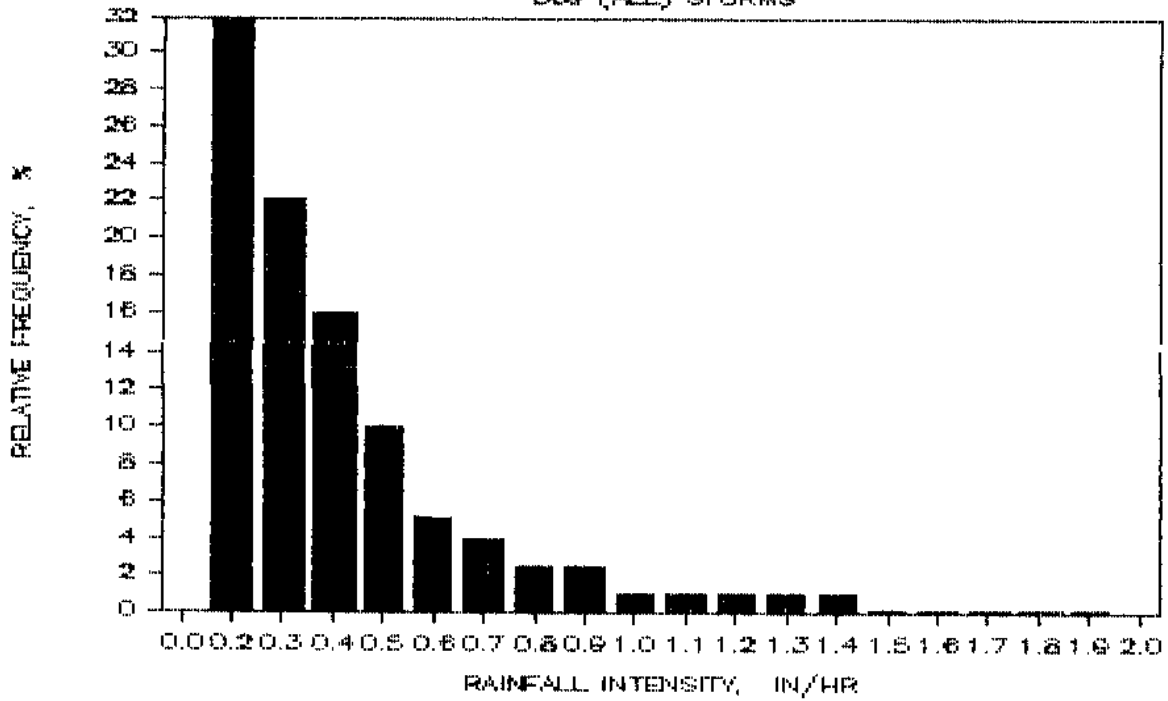


Figure A30. Probability Distribution of Storm Intensities Stratified by Storm Duration at San Sebastian Station.
Minimum Time Between Storms = 1 hr

a. SAN SEBASTIAN : INDEX NO. 8881
569 (ALL) STORMS



b. SAN SEBASTIAN : INDEX NO. 8881
107 (1 HOUR) STORMS

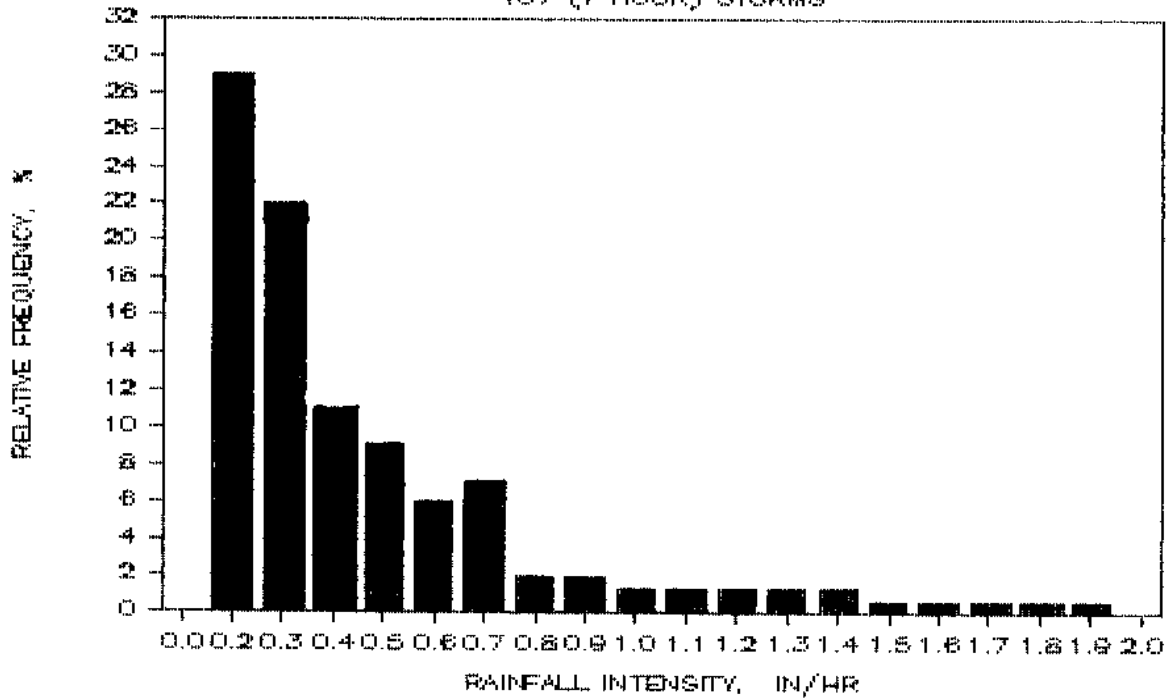
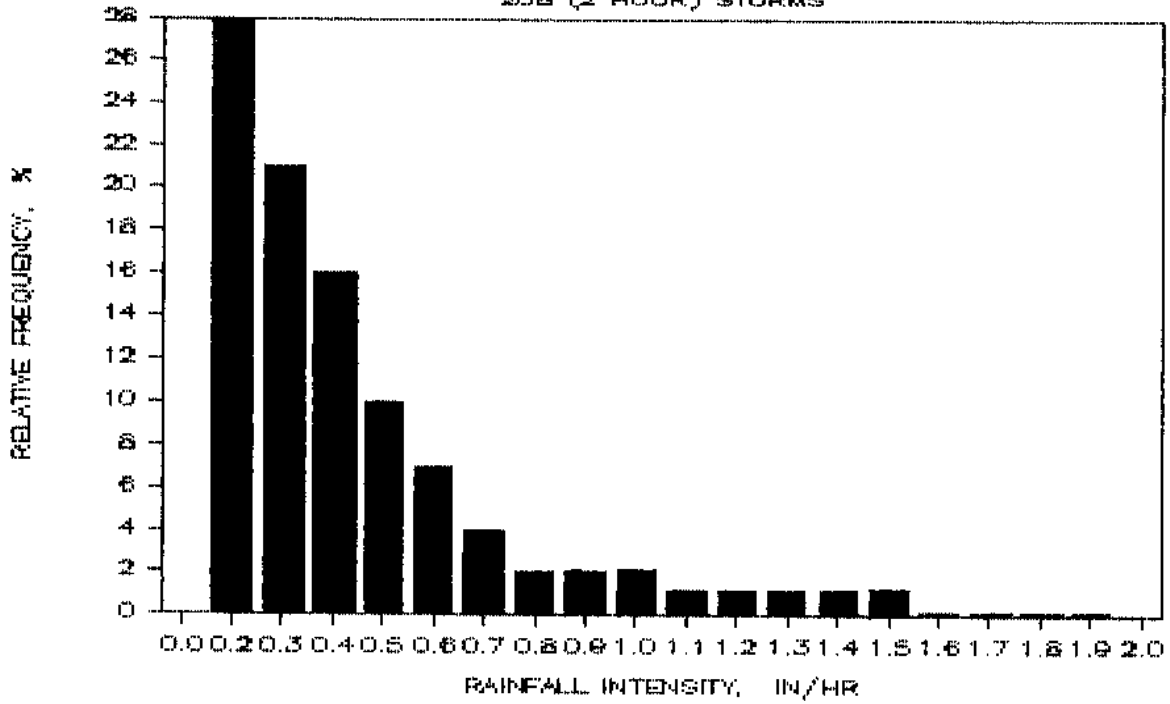


Figure A30. Continued

c. SAN SEBASTIAN : INDEX NO. 8881
208 (2 HOUR) STORMS



d. SAN SEBASTIAN : INDEX NO. 8881
128 (3 HOUR) STORMS

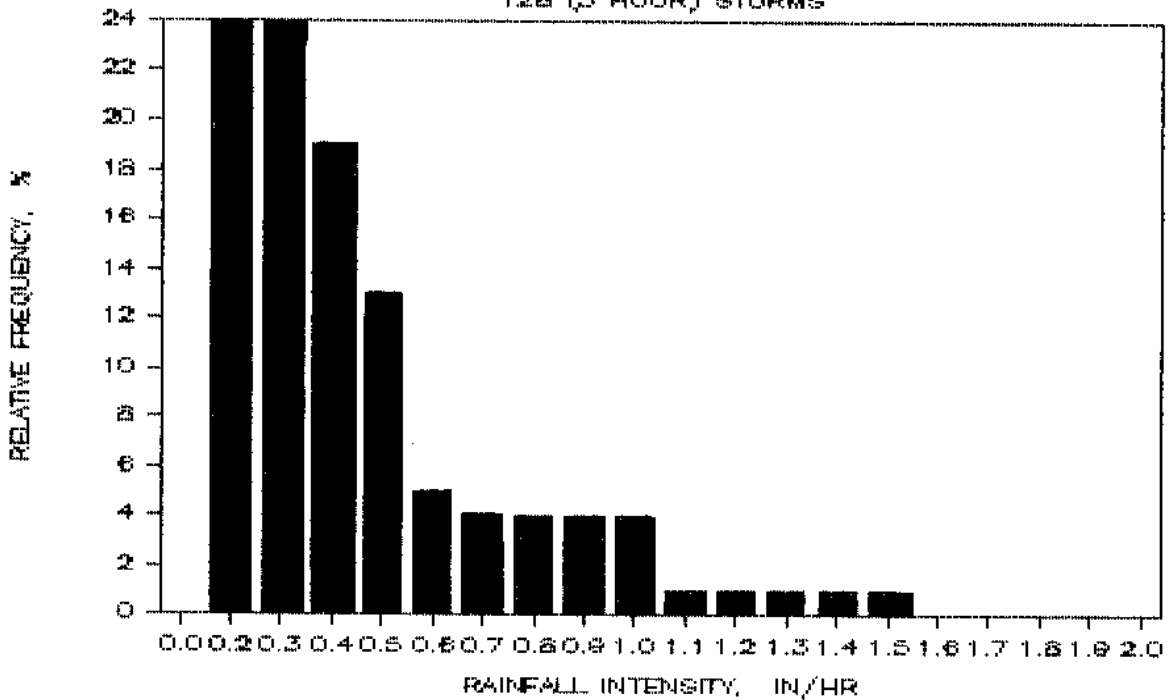
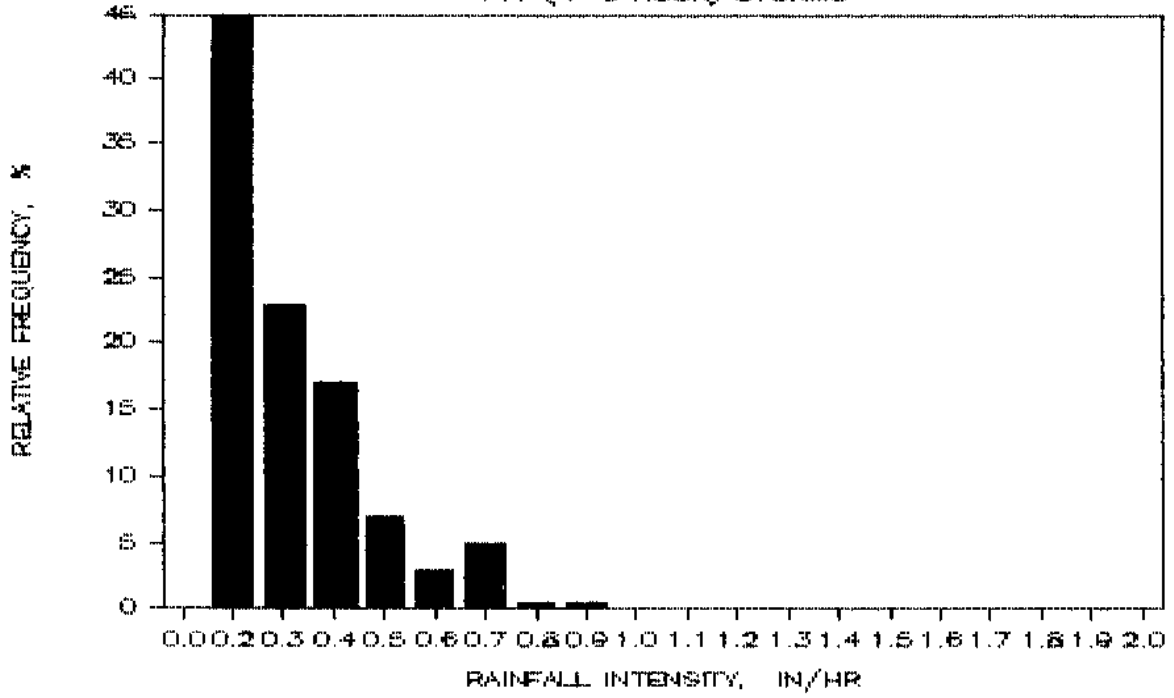


Figure A30. Continued

e. SAN SEBASTIAN : INDEX NO. 8881
111 (4-6 HOUR) STORMS



f. SAN SEBASTIAN : INDEX NO. 8881
14 (6-12 HOUR) STORMS

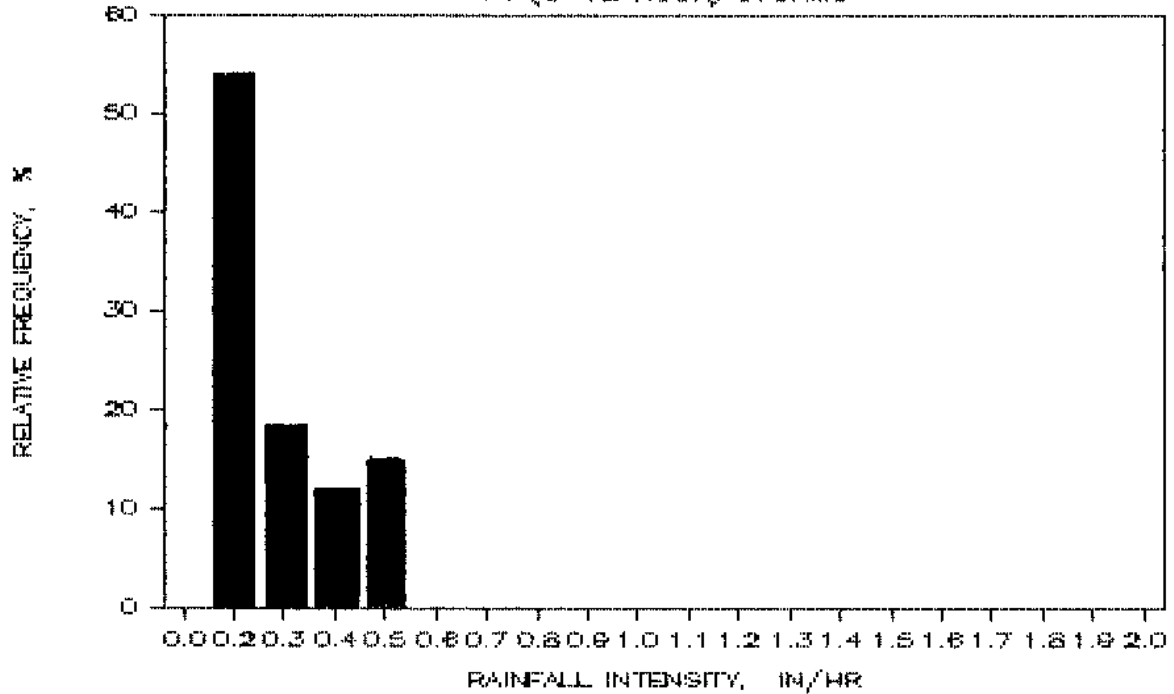


Figure A31. Probability Distribution of Storm Intensities Stratified by Storm Duration at Yabucoa 1 NNE Station. Minimum Time Between Storms = 1 hr

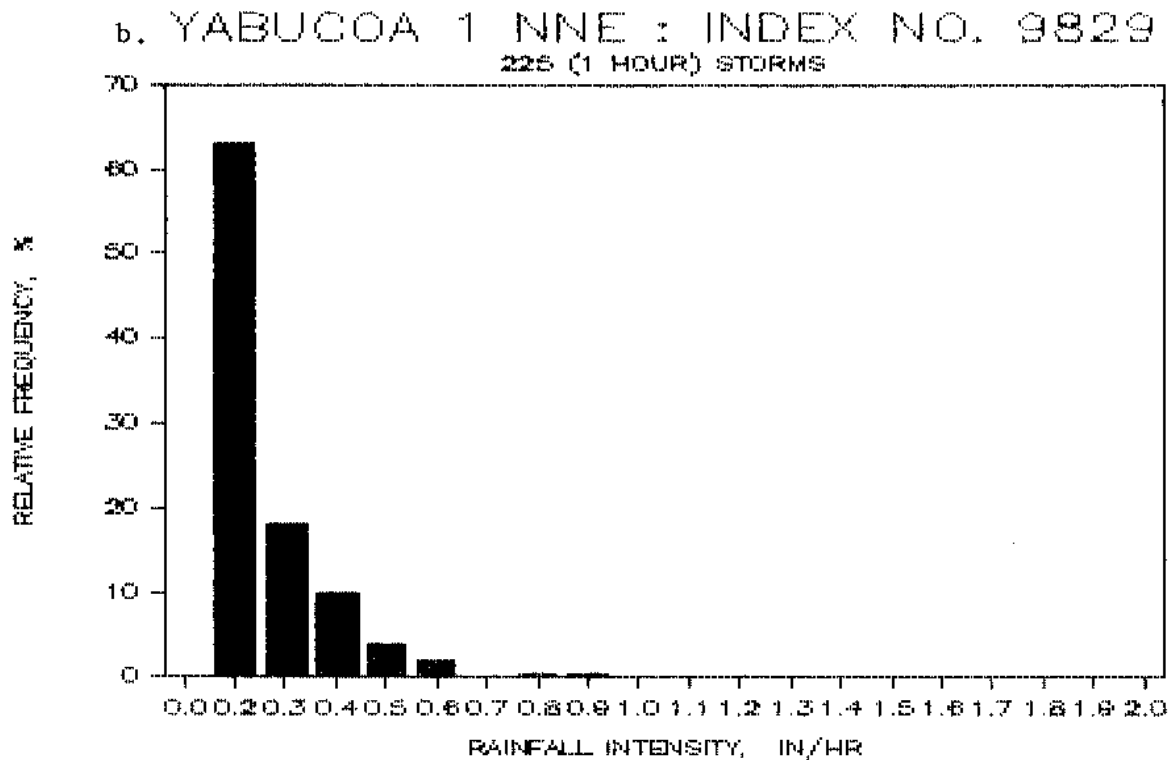
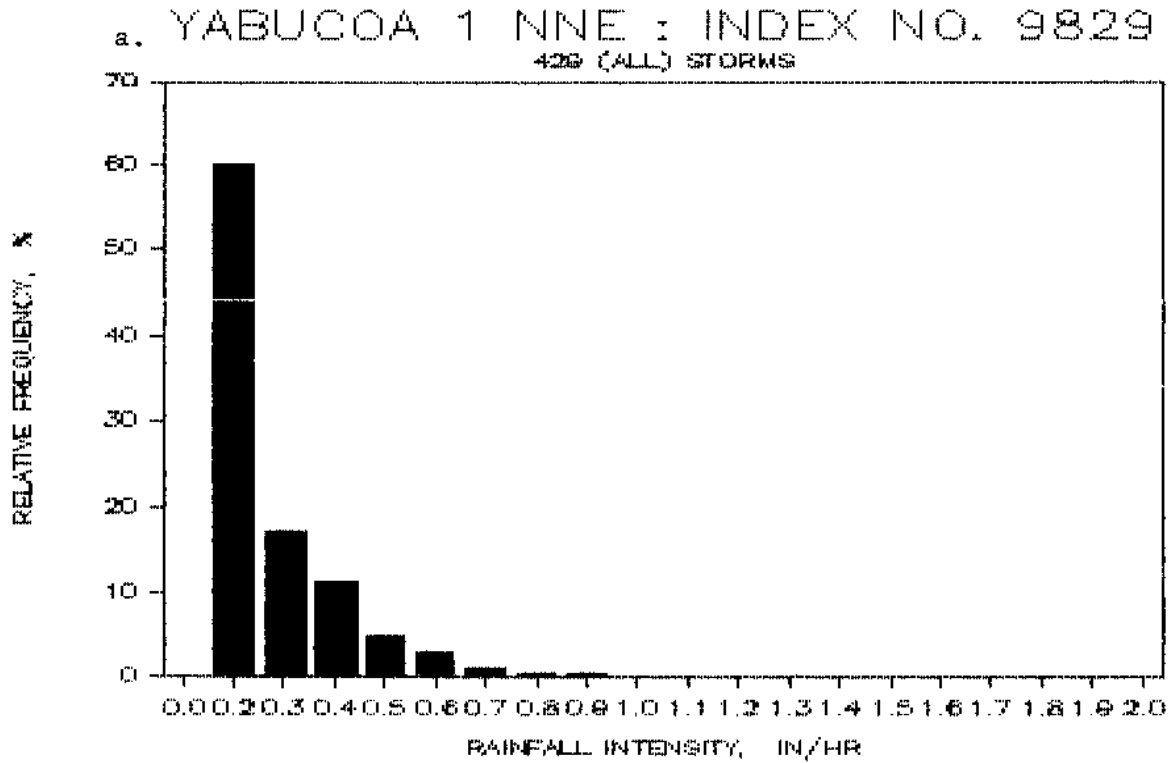


Figure A31. Continued

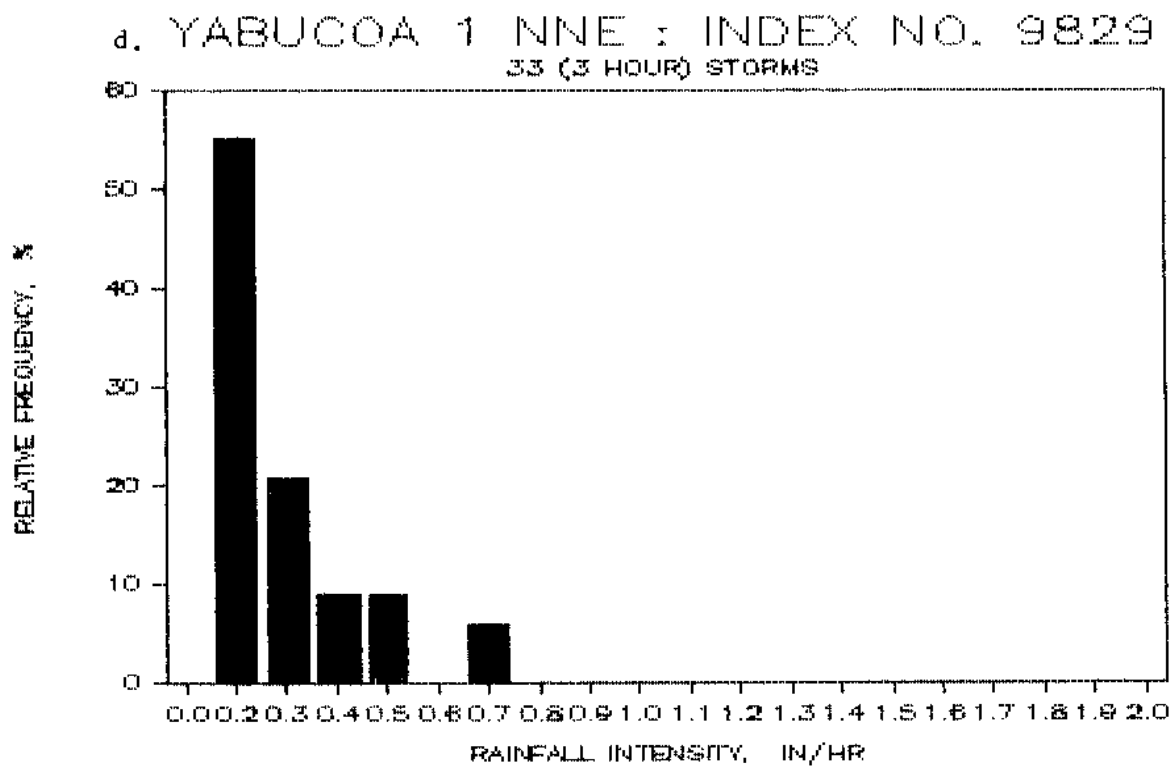
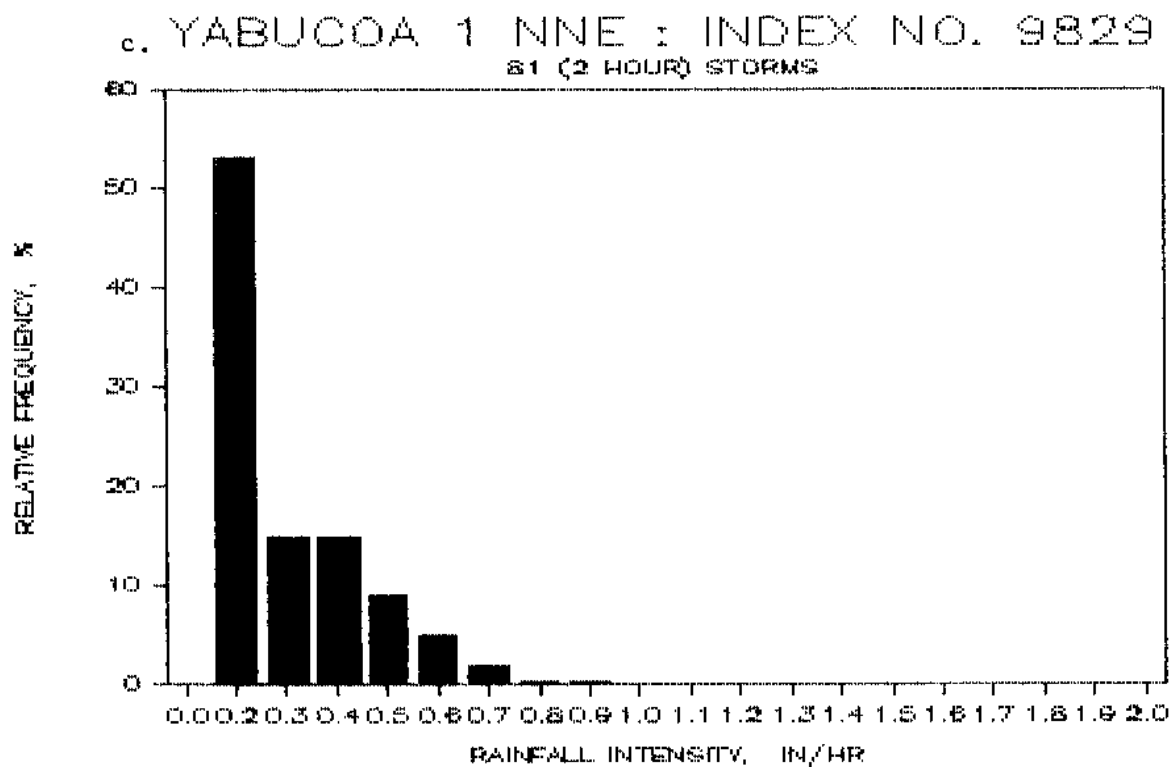


Figure A31. Continued

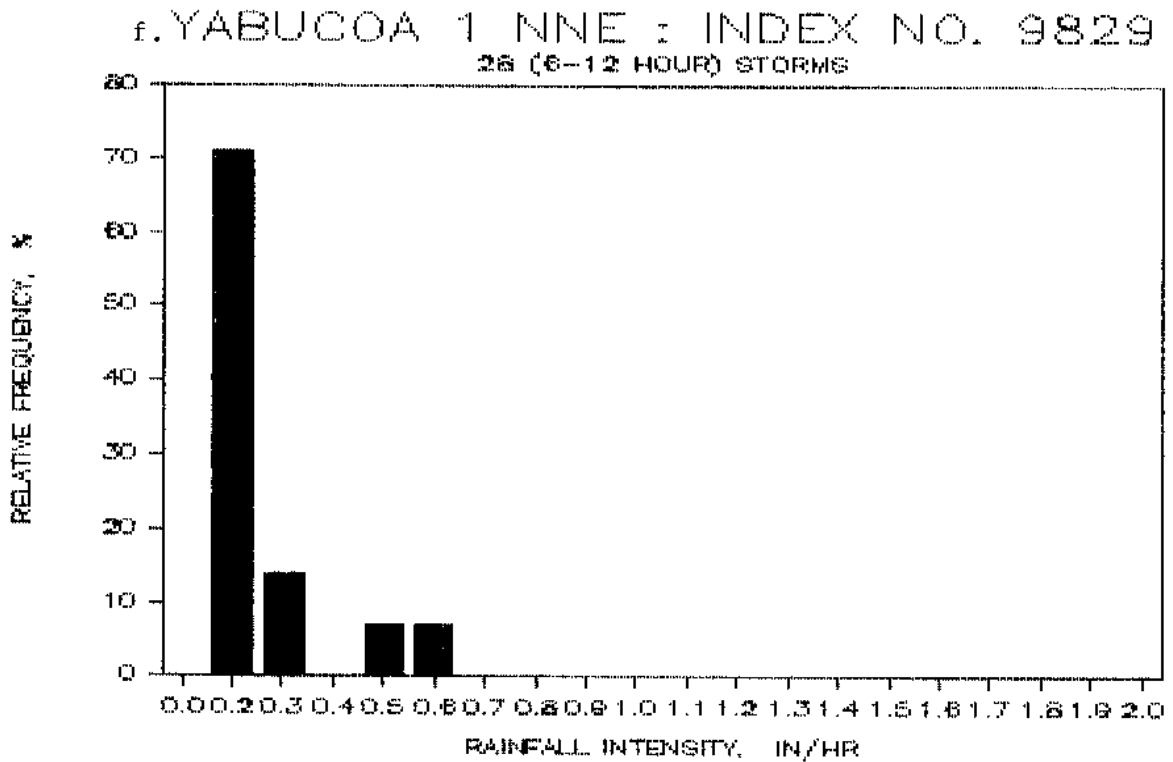
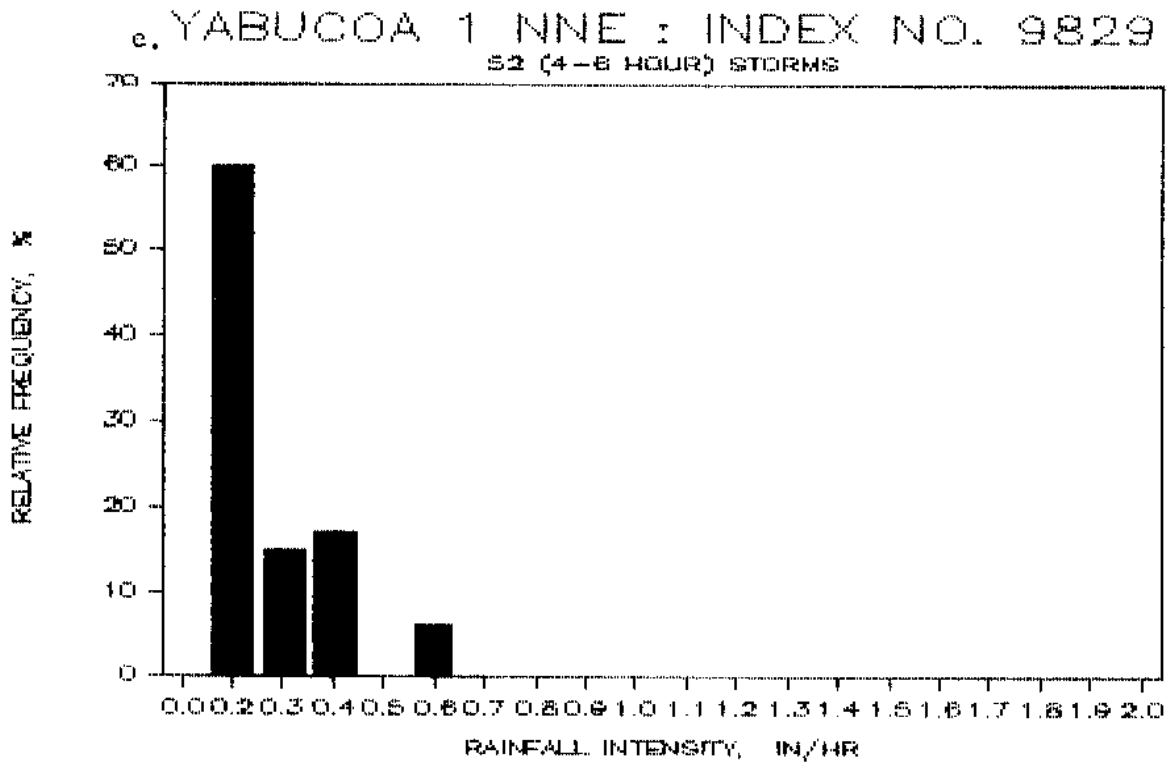


Figure A31. Continued

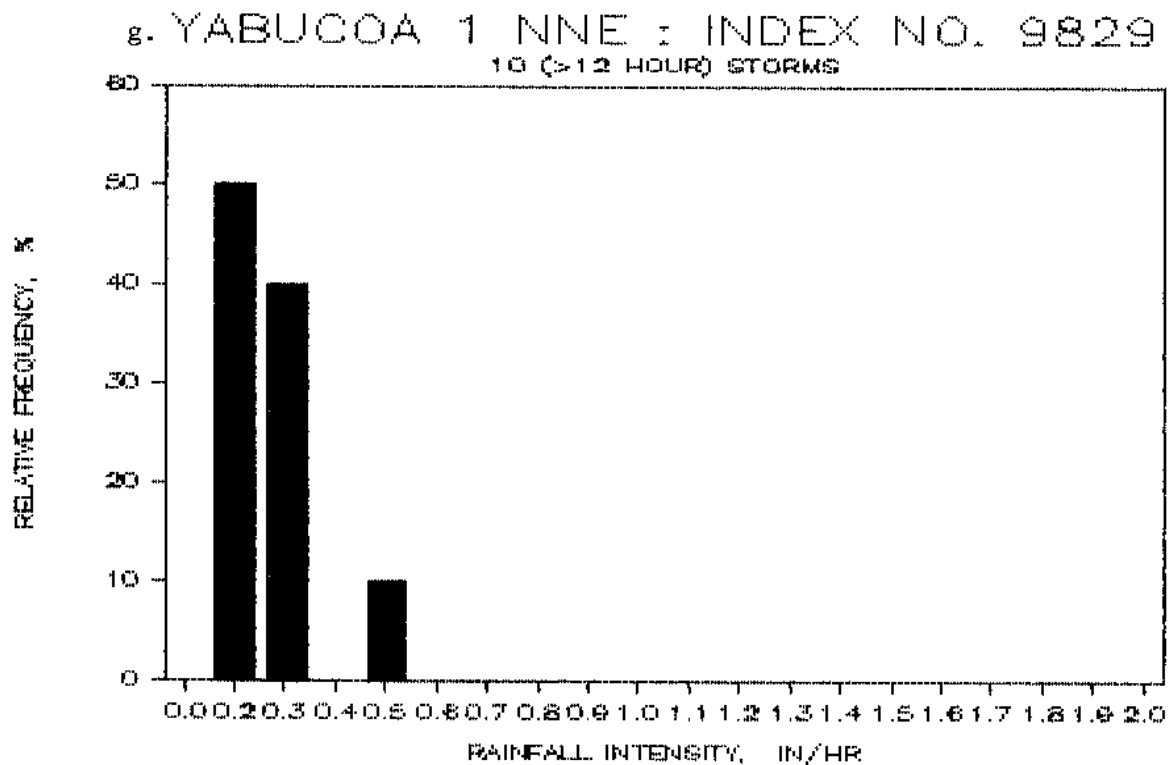
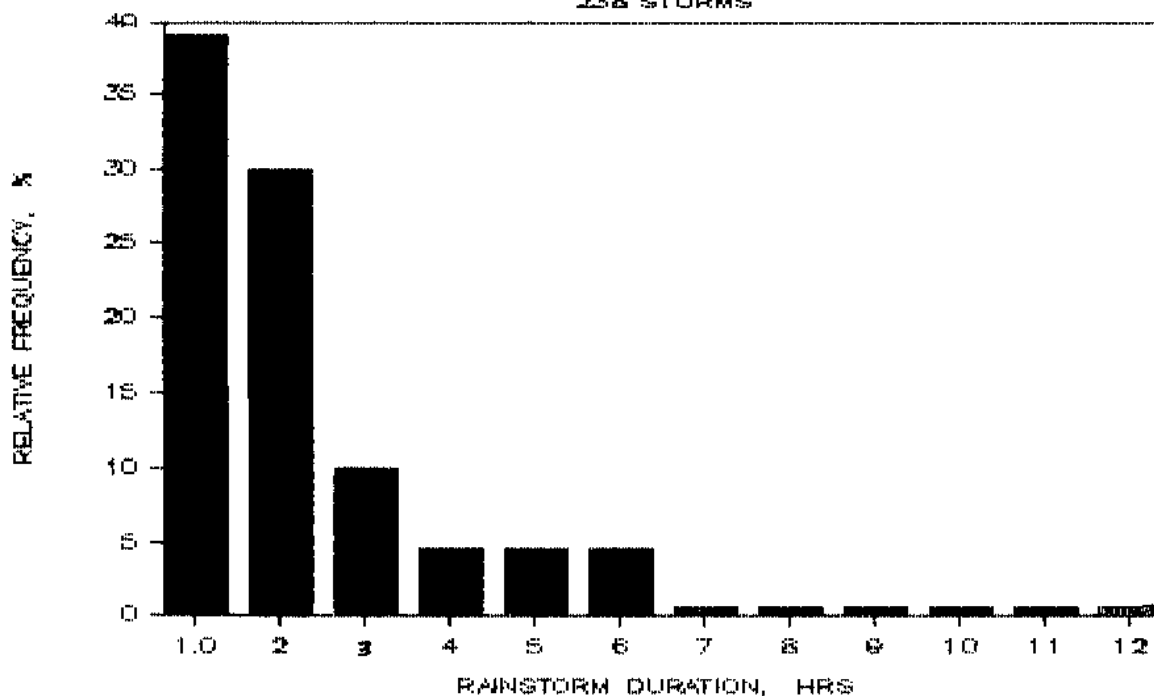


Figure A32. Probability Distribution of Storm Intensities Stratified by Storm Duration at Various Selected Station.
Minimum Time Between Storms = 1 hr

a. BOTIJAS 2 - OROCOVIS : INDEX NO. 0988
238 STORMS



b. CAYEY 1 E : INDEX NO. 1901
211 STORMS

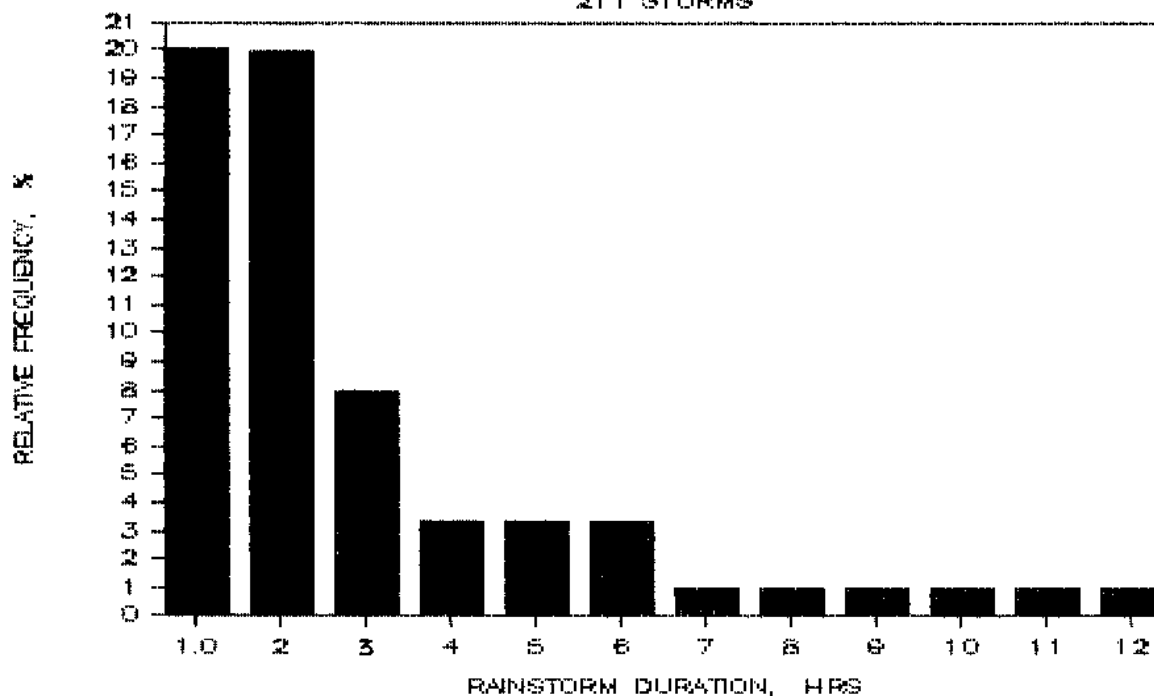
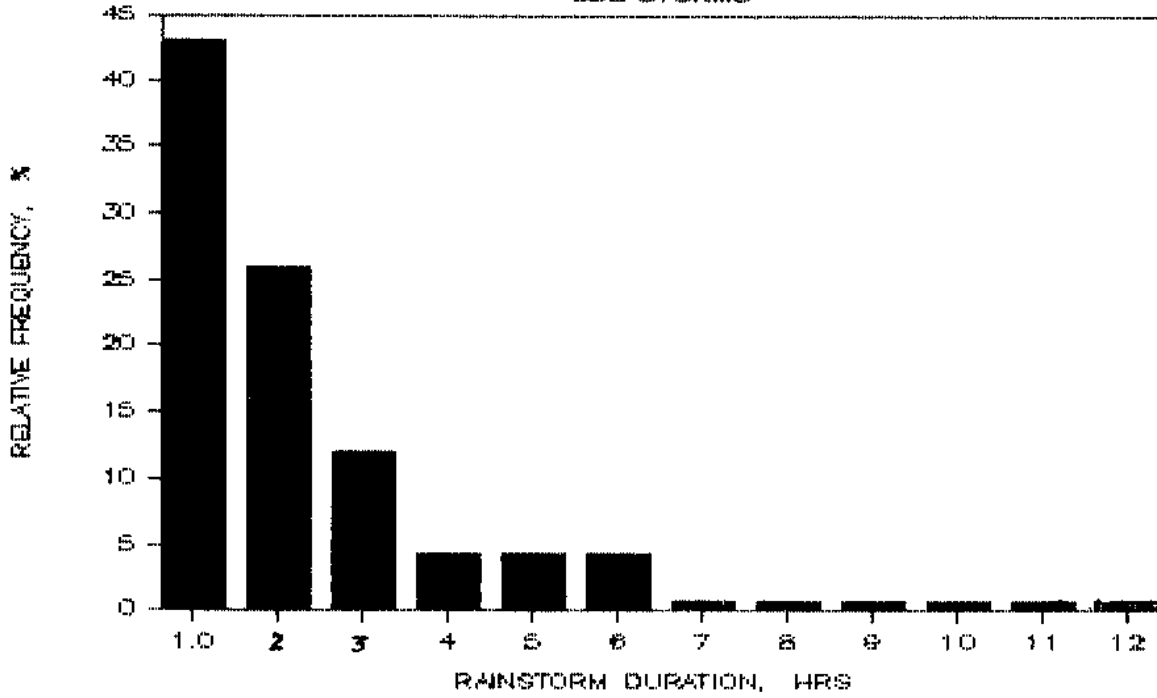


Figure A32. Continued

c. COROZAL : INDEX NO. 2934
358 STORMS



a. DOS BOCAS : INDEX NO. 3431
533 STORMS

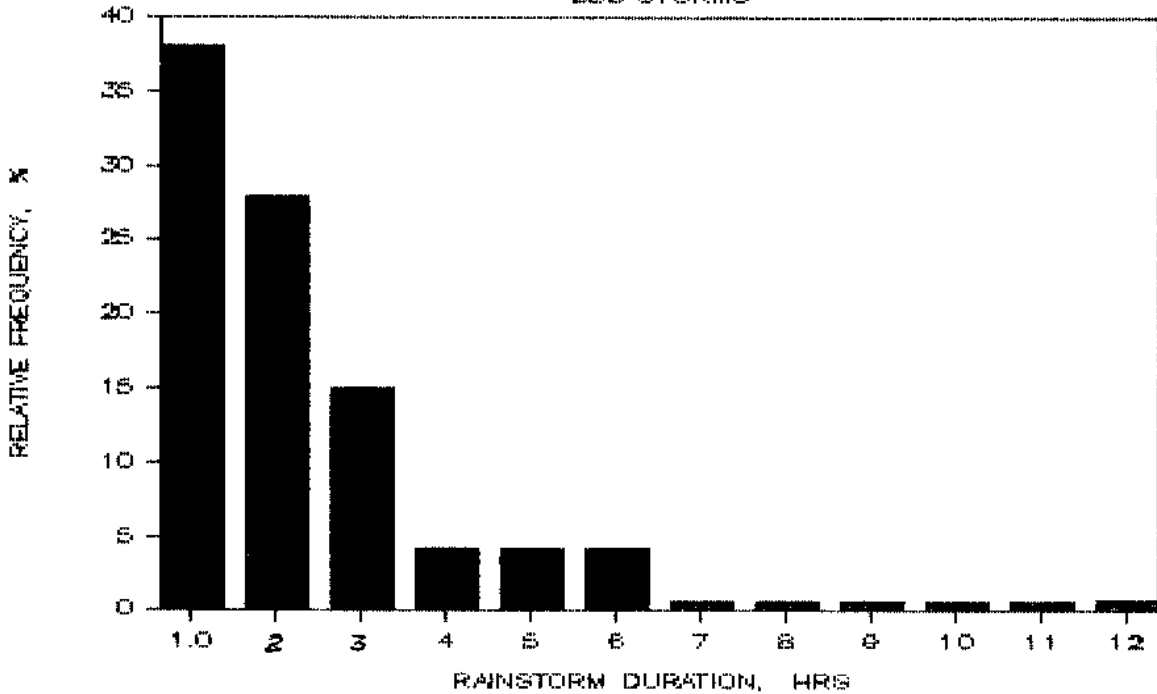
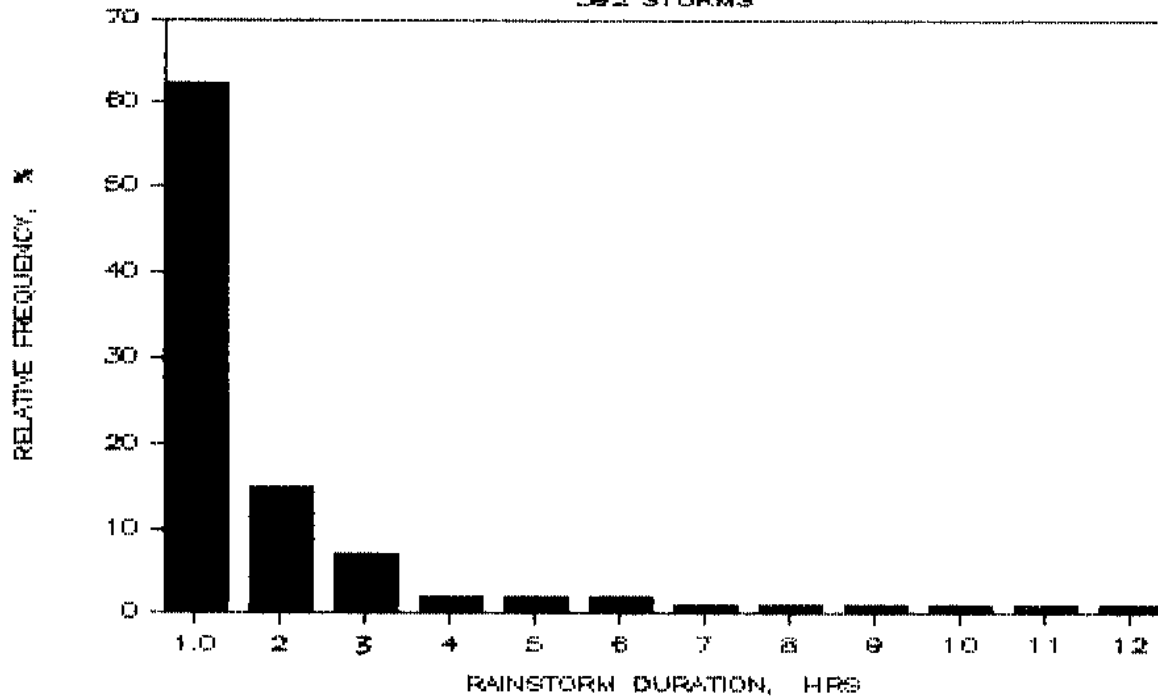


Figure A32. Continued

e. FAJARDO : INDEX NO. 3657
392 STORMS



f. MARICAO 2 SSW : INDEX NO. 5908
686 STORMS

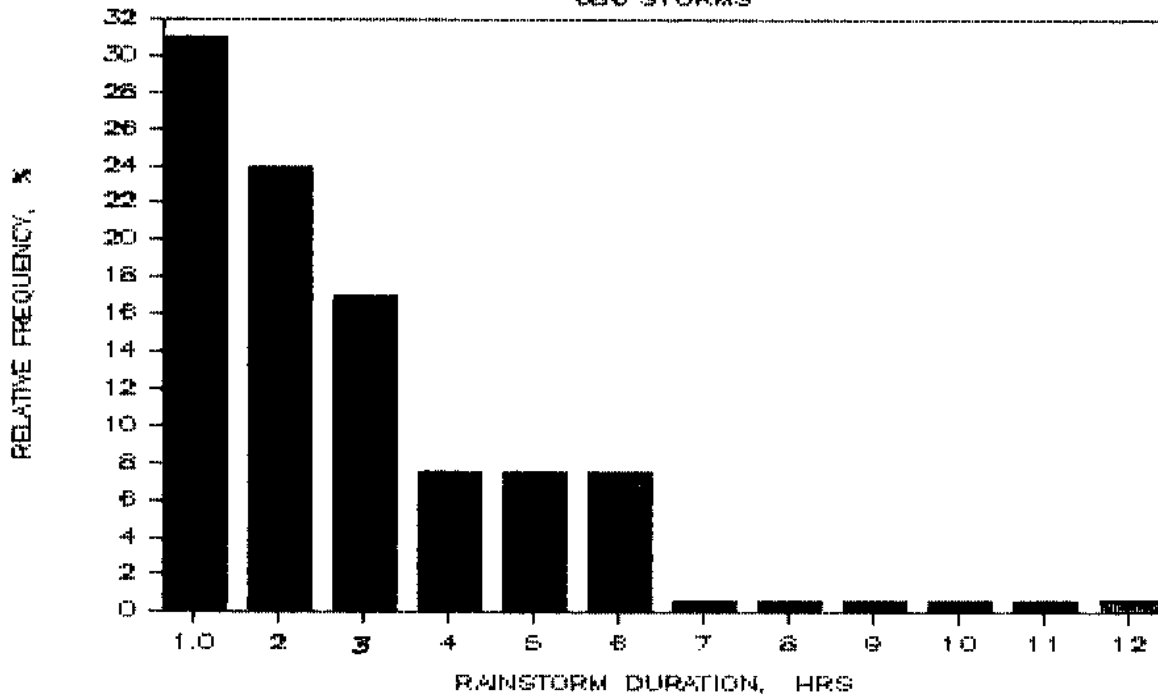
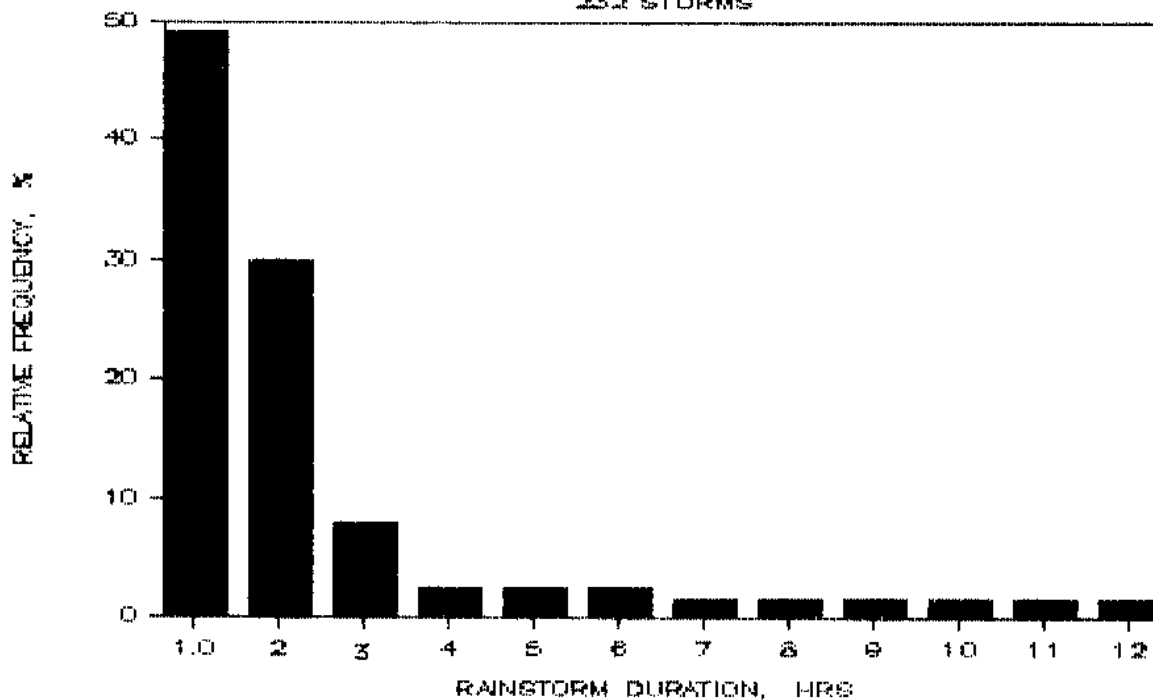


Figure A32. Continued

g. PONCE 4 E : INDEX NO. 7292
232 STORMS



h. SAN JUAN : INDEX NO. 8812
173 STORMS

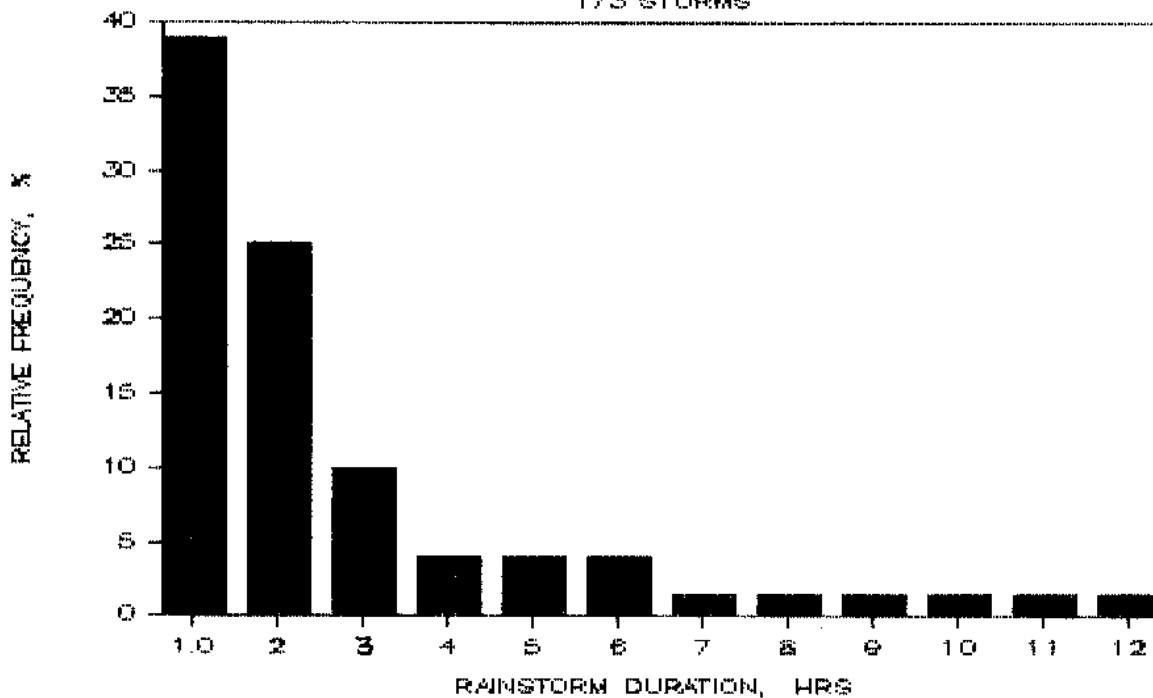
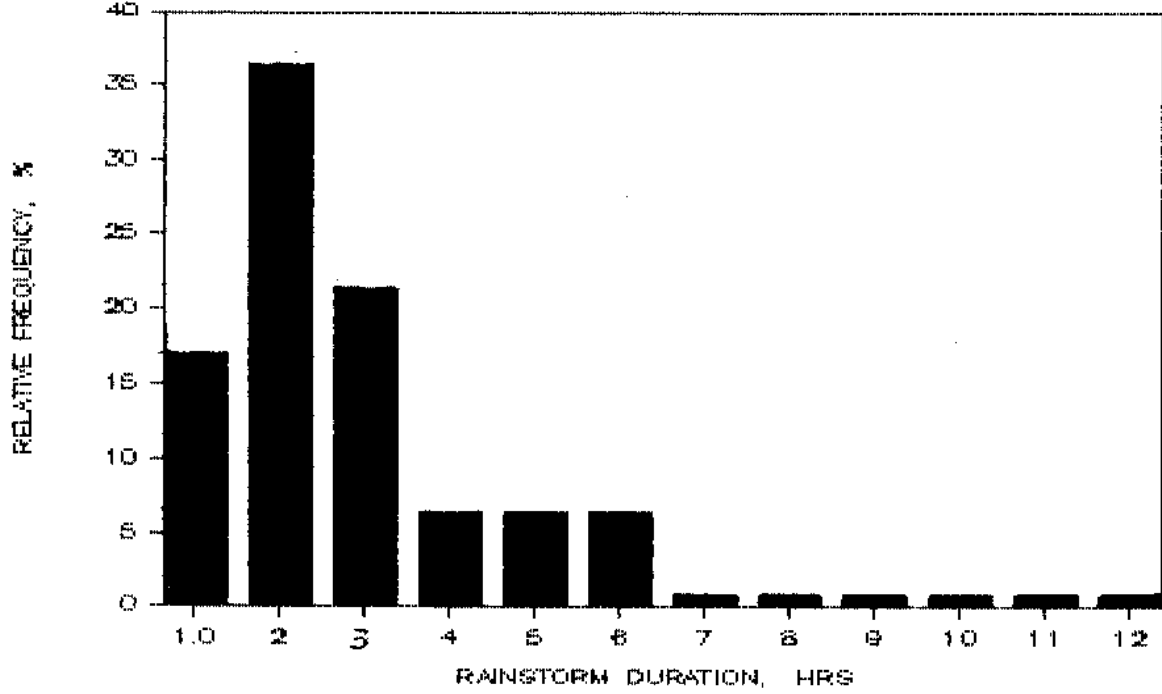


Figure A32. Continued

i. SAN SEBASTIAN : INDEX NO. 8881
529 STORMS



j. YABUCOA 1 NNE : INDEX NO. 9829
429 STORMS

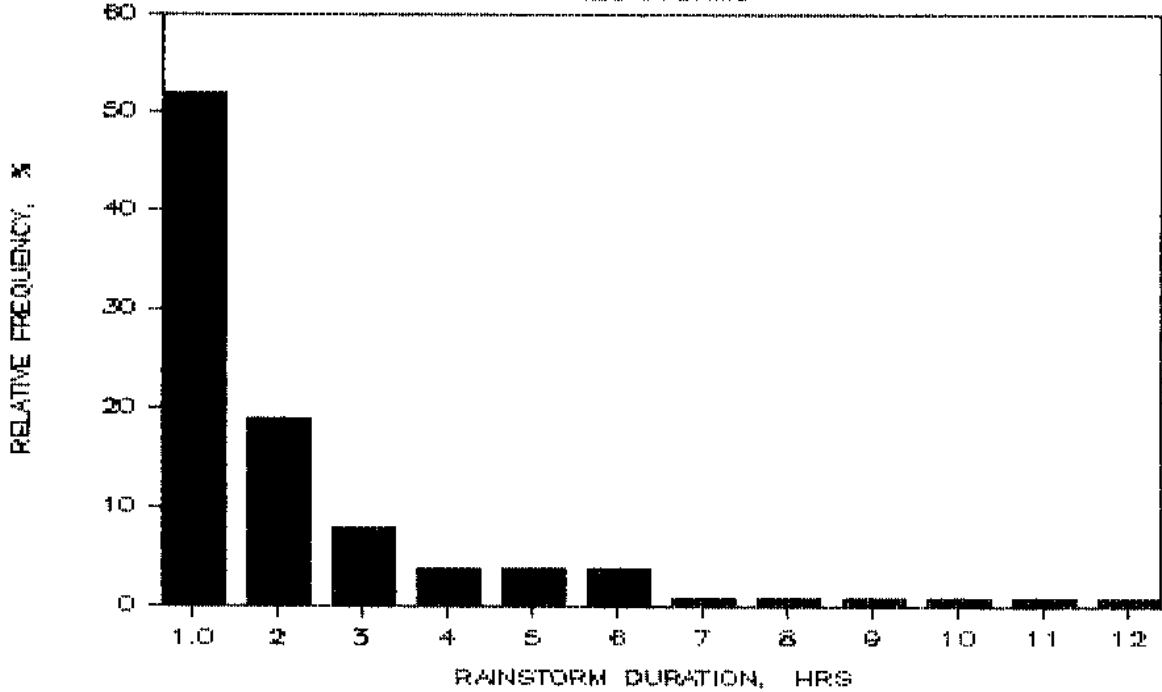


TABLE A4 Daily Rainfall Distribution Stratified by Rainfall Intensity and Hour of Occurrence

a. Botijas 2 - Orocovis Station: Index No. 0988

I_{hr} (cm/hr)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0.1	49	65	69	61	61	59	61	80	97	82	80	91	129	131	140	153	145	110	84	64	76	62	64	57
0.2	7	10	9	13	6	11	8	10	9	10	14	19	26	34	41	43	33	18	15	9	9	6	8	8
0.3	6	6	2	1	5	2	5	4	1	4	4	5	11	20	23	21	8	8	8	3	2	1	2	3
0.4		1	1	3		3	2	6		2		9	7	15	9	15	10	6	8	2	3	2	2	3
0.5	2			1	5	3				1	3	4	6	6	6	2	2	1	3	1		2	2	1
0.6	1		1		1	1		2	1		2	1	2	5	11	4	4	1		1				
0.7							1			1			1	4	7	3	4	2	1	1	2			
0.8	2	1	1	2			1		1		2			2	3	1	1							
0.9			1	1		1	1						3		1	2		2	2		1			1
1.0									1				2	1	3		2	0	0	2				
1.2		1		1	1	1				1	2	2	2		4	5	1	1		2	1			
1.4											1			1	4		1							
1.6		1											2		1		1			1				
1.8																1								
2.0														1										
2.5											1				1									
3.0																2								
3.5																								
4.0																								
Total	67	85	84	83	79	81	79	102	110	101	106	132	191	220	254	212	252	150	121	86	94	74	79	72

TABLE A4 Continued

b. Cayey 1 E Station: Index No. 1901

$\frac{1}{2}$ (hr/yr)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0.1	88	85	96	87	100	114	107	120	161	102	118	122	123	115	128	112	109	98	88	79	66	83	69	59
0.2	12	12	18	16	11	13	11	19	14	12	18	15	18	36	24	22	22	21	24	11	14	9	1	10
0.3	5	8	8	3	8	6	4	3	2	10	5	10	12	11	8	11	9	10	4	1	6	7	7	4
0.4	2	3	4	1	5	4	2	3	2	4	6	6	6	7	14	6	5	3	4	5	4	1		3
0.5	2	3	3	3		1			1	3		3	1	5	5	6	4	4	2	1		5	5	2
0.6	3	2		2			2	2		2			4	1	3	4	2	5			1	1	1	
0.7			1	1	1		1	1	1	1	1			1	2	2	1		2	1		1		2
0.8	1		1		2			1				1	1	3	4	5	2	3		1				
0.9		2							1			1	1		1		2	1			1			
1.0	1				1		2							1	1					2		1		
1.2			1		1	2		1			1	1	2		1		1		2	1				1
1.4	1	1				1		1								1								
1.6												1								1				
1.8		1														1								
2.0																								
2.5															1									
3.0																								
3.5																								
4.0																								
Total	115	117	132	113	129	141	129	151	182	134	149	160	168	180	192	170	157	145	126	103	92	108	83	81

TABLE A4 Continued

c. Corozal Substation: Index No. 2934

I_1 (ft/yr)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0.1	60	86	81	67	90	78	76	86	79	68	85	105	129	137	156	135	152	125	118	97	102	90	88	82
0.2	10	13	10	12	13	13	15	13	11	18	21	30	34	60	54	52	49	41	26	18	14	18	14	8
0.3	4	4	8	6	3	3	4	4	2	9	10	7	17	16	25	26	19	21	11	4	6	1	4	5
0.4	1	3	1		3	6	1	1	1	3	5	4	9	12	8	18	11	9	8	7	1	2		3
0.5		1		2	2		1	1	1	1	2		6	9	6	10	4	8	4	2	3	3	1	1
0.6	2					2	4				1		5	5	11	12	8	3	7	2			1	1
0.7						1		1		1		4	4	5	7	4	3	2	1	2				
0.8						1			2			5	3	4	6	4	7	2				1		2
0.9	1							1	1		1	1	3		6	2		3		2				
1.0			1	1	1		1							3	3	2	2	2	1		1			
1.2	2	1								1				2	4	4	2		3	1	1			
1.4					1		1	1					1	2	1	2	2	1				1		
1.6												1		1	2	2			1					
1.8														1	3	2	2							
2.0														2	1	2	1							
2.5													2		1	1	1							
3.0														1		2								
3.5																								
4.0																								
Total	80	108	101	88	113	104	103	108	97	101	125	157	213	245	294	280	263	217	180	135	118	119	111	102

TABLE A4 Continued

d. Dos Bocas Station: Index No. 3431

^a L _i (car/hr)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0.1	43	41	54	43	48	61	55	56	64	81	84	107	141	167	192	187	184	145	101	76	68	61	50	52
0.2	7	7	8	3	9	7	7	7	5	4	15	20	27	48	66	66	56	36	30	23	17	14	7	10
0.3	4	3	1	1	1	1	2	4	4	3	4	9	21	21	50	32	28	17	8	5	3	2	5	2
0.4	1	1	1		1	2			1	2	1	3	15	20	22	28	15	9	9	7	6	3		2
0.5	1	1			1		3	1	1	2	1	1	7	18	11	12	16	6	5	4	1	2	2	2
0.6			1					1		1	1	1	4	9	8	19	11	5	6	3	5		1	
0.7					1								8	8	13	9	6	3	4		3			2
0.8					2	1				1	1	2	2	7	6	7	5	3		3	1	1		
0.9	2										1		2	5	9	12	3	2	2					
1.0			1					1				1	3	5	1	10	3			1				
1.2								1		1	1		1	12	7	8	5	5	2	2				
1.4				1								1	1	4	4	6	1	2						
1.6														1	13	4	5							1
1.8												1		2	1	3	2	3	1	2				
2.0													1	1	3	1	3							
2.5													1	2	4	1	2	2						
3.0													1	3	2	1		2						
3.5																		1						
4.0																								
Total	58	53	66	50	62	71	67	69	77	95	109	146	235	333	412	406	345	241	168	126	104	83	67	70

TABLE A4 Continued

e. Fajardo Station: Index No. 3657

$\frac{1}{2}$ (Index)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0.1	93	142	108	104	116	126	136	133	161	137	98	97	103	113	109	91	90	114	96	77	82	85	97	74
0.2	18	18	28	24	28	20	23	24	25	23	19	19	27	32	28	32	31	26	33	31	22	20	23	24
0.3	17	11	13	11	17	17	9	7	13	10	10	8	15	10	13	13	8	13	13	8	14	9	12	11
0.4	4	2	12	5	7	2	8	1	4	4	4	5	2	11	11	10	6	11	7	6	2	11	1	4
0.5	2	4	4	7	6	2	4	7	3	1	7	2	1	7	5	4	6	4	5	2	5	1	2	2
0.6	1	3	2		2	2	3	3	5	1	1	2	3	2	3	3	4	6	3	4	5			4
0.7		1		1			1	1	1	1	1		3	3		3	1	2	4	4	3		1	1
0.8		3		3		1				1	1			1	1	2	1	3	2	3		1		1
0.9	1	2	1					3				2	1	1	2	2						1		2
1.0	1		2			2		1	1			1	2		2	1	1	1		2			1	
1.2		1	2			1						2		2	2	2		3	2	1		1	1	2
1.4	1		1	1									1		1	1	3		1	1	1			
1.6	1	1	1											1				3				1	1	
1.8						1													1		1			
2.0	1		1													2								
2.5				1																				
3.0		1																	1					
3.5						1																		
4.0																								
Total	140	189	175	157	176	175	184	180	213	178	141	138	158	183	177	165	153	162	165	139	135	130	139	135

TABLE A4 Continued

f. Maricao 2 SSW Station; Index No. 5908

$\frac{1}{2}$ (Inches)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0.1	21	18	24	23	23	24	23	37	60	51	61	74	134	199	241	234	234	165	130	83	56	27	32	24
0.2	6	4	4	3	6	1	4	2	3	8	8	20	45	55	77	77	85	53	45	19	6	8	5	5
0.3	2	2	4	2	2	4	3	2		2	11	15	26	38	50	54	35	33	12	9	9	4	2	3
0.4	1					1	2	2	4	1	4	6	19	21	29	28	24	21	13	4		1		
0.5	1		1		1	1		1	3		2	6	9	24	22	21	27	8	7	4	1			1
0.6		2				1	1			1	1	2	5	13	28	21	7	13	3	2	1	2		1
0.7	1	2				1			2		1	1	8	11	17	14	13	1	4	1				1
0.8								1					4	11	12	16	4	6	1	1				
0.9									2		1		3	9	10	10	7	4						
1.0	1	2						1				1	2	8	6	7	5	2	4		1			
1.2	1						4				1	1	3	13	11	13	11	2	3	1		1		1
1.4								1		2			3	4	11	8	3	2	1					1
1.6								1					3	6	4	3	3	2	1					
1.8										1				1	4	5	2			1				
2.0											1		1	6	3	2	3	2				1		
2.5											1		2	5	4	5	3	2	1					
3.0													1		2	3	1						1	
3.5																								
4.0									1															
Total	34	30	33	28	32	33	37	48	75	66	92	126	268	424	531	521	467	316	225	125	74	44	40	42

TABLE A4 Continued

g. Ponce 4 E Station: Index No. 7292

X_p (hr/hr)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0.1	29	36	28	45	35	27	30	38	44	58	51	62	59	81	66	84	73	72	56	40	30	30	30	25
0.2	6	13	7	5	6	1	9	7	4	12	8	16	12	15	26	29	26	15	12	7	7	8	5	9
0.3	9	5	3	2	2	4	3	1	4	3	9	3	5	8	9	13	17	14	4	5	4	1	5	1
0.4	3	4	3	2	2	2	3	3	4	1	2	5	6	5	13	9	9	7	6	1	1	1	1	1
0.5	1	1	1	2	2	2	1	1	1	2	1	2	6	1	6	4	4	3	2	1	1	1	1	1
0.6	2			1		1	1	2			2	4	3	3	3	5	3	2	2	2	2			
0.7	2		1		1			1	2						2	4	1	3	1	2	2	2		
0.8			2	1						1					1	1	2	2	1	1				
0.9					1		1			1						1	3							
1.0		2						1							1	2	1	1						
1.2										1	1	1	1	1	4	5	1			1				
1.4						1							1	1	2									
1.6										1				1		1	1		1				1	
1.8																								
2.0																								
2.5																			1					
3.0																								
3.5																								
4.0																								
Total	52	61	45	58	49	37	49	53	59	77	74	91	93	116	133	158	141	119	85	60	47	47	42	38

TABLE A4 Continued

h. San Juan WSFO Station: Index No. 8812

L_p (dB/hr)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0.1	385	379	377	449	418	384	393	402	303	279	285	275	271	272	281	280	283	306	303	322	300	376	374	388
0.2	45	50	59	55	43	55	39	37	37	42	42	38	53	55	59	43	49	44	46	40	42	54	39	38
0.3	12	15	16	14	19	14	18	12	7	21	15	21	19	30	24	24	17		15	24	17	17	19	15
0.4	12	6	6	1	6	10	6	6	8	6	6	5	14	14	11	11	8		16	10	9	6	6	11
0.5	5	5	5	1	6	4	4	3	3	3	4	11	7	9		10	6	5	5	4	5	5	4	3
0.6	1	2		3	1	4	1	3	3		4	6	5	5	6	1	4	2	1	1	4	3	2	
0.7	2	2	3	3	1	1	2		1	1	1	7	4	5	1	2	3	3	2	1	2	2	2	1
0.8	1			1	1			1		2	1	1	1	2	4	2	3	4	3		2	2	2	3
0.9	2	1	2	2			1	2				1	1	2	5	6	3	1		1	1		1	1
1.0	2								2	1		1	1	2	1		2		1			1	2	
1.2		1								1	1	1	3	2		1	1			1	2			1
1.4					1							1	4	2		2			1			1		
1.6	1			1							1		1		1	1		1	1					1
1.8															1				1					
2.0													1											
2.5			1									1			1		1							
3.0																							1	
3.5																								
4.0																								
Total	468	461	469	530	490	472	464	468	427	356	360	369	385	400	395	383	380	366	395	404	384	467	452	462

TABLE A4 Continued

i. San Sebastián 2 WNW Station: Index No. 8881

I_p (in/hr)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0.1	44	51	48	37	43	44	50	51	52	57	43	50	90	175	310	340	355	254	174	118	65	65	58	56
0.2	5	5	4	6	1	2	2	8	7	6	3	8	31	69	80	103	65	42	28	13	13	7	4	6
0.3	1	3	2	4	1	1			1	2	2	4	13	25	51	53	37	35	13	9	6	5	4	5
0.4	1	2		1		2		2	1		2	5	7	40	43	47	25	13	5	5	2	1	1	1
0.5									1		3	3	10	26	31	34	12	13	3	2	1			1
0.6			1	1	3			1			1		10	23	21	18	11	4	1	1		1		
0.7					2							1	2	14	27	15	8	4	5	2				
0.8			1				1	1				2	5	10	16	12	5	3	1		2	1		
0.9									1				5	10	8	9	4	3	2					
1.0										1				14	8	5	5					1		
1.2							1						5	13	28	16	12	2		1				
1.4											1	1	4	4	7	8	3	2	1					
1.6													1	3	11	1	2							
1.8													1	3	5	3	2		1		1			
2.0									1				1	2	2	3								
2.5													2	3	7	1	1							
3.0											1		2		2									
3.5															1									
4.0																								
Total	51	61	56	44	50	49	54	63	64	66	55	74	189	434	656	670	546	375	235	151	90	80	69	68

TABLE A4 Continued

j. Yabucoa 1 NNE Station: Index No. 9829

$\frac{1}{2}$ (in/hr)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0.1	98	128	111	146	146	161	221	228	180	181	167	158	132	144	169	128	104	104	88	104	103	90	109	94
0.2	30	44	43	43	44	40	57	39	34	30	30	28	23	32	21	23	24	27	28	23	26	31	20	25
0.3	14	17	16	19	19	21	17	24	21	11	16	9	13	14	14	11	10	11	16	14	12	9	8	10
0.4	3	13	15	14	15	10	7	15	8	7	8	4	10	9	6	12	9	5	8	8	9	5	7	6
0.5	1	4	9	6	6	9	6	4	6	2	2	5	4	4	4	8	7	5	5	3	8	4	3	3
0.6		4	1	4	4	5	5	3		1	4	1	4	4	4		8	3	3	4	3	4	3	5
0.7	2	3	4	5	2	3	2	2	2	3	3		1	2	3	2	4		4	3	1	1		3
0.8		5		3	2	3	3	1	1	3	4			2		4		2	2	1	2	1	2	2
0.9	4	1	2	2	1	1	5	1				2	1	1	2	4	2	1	2	2		3		
1.0	3	2			4	1		1	1					1	3	1		1		2		1		
1.2	1	1	1	1	2	1	1	2	1	1	2	2	2	1		1	2	2	1	1	3		2	2
1.4				1		2			1						1		1			1				
1.6	1		1				1	2			1	1					1	1					1	
1.8	1													1					1					
2.0				1																				
2.5												1				1								
3.0		1																						
3.5														1										
4.0																								
Total	158	223	203	245	245	257	325	322	255	239	234	210	191	216	227	195	172	162	158	166	167	149	154	152

Table A5.a Rainstorm Ordering for 1 Hour Duration Events
 Botijas 2-Orocovis Station : Index No. 0988
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	9-10-1975	1700	9-10-1975	1700	1700	1.50	1.50	8.00	12.50
2	9-29-1977	1600	9-29-1977	1600	1600	1.10	1.10	16.00	6.25
3	10-23-1983	1500	10-23-1983	1500	1500	1.10	1.10	24.00	4.17
4	11- 6-1982	1400	11- 6-1982	1400	1400	1.00	1.00	32.00	3.13
5	6-10-1979	1700	6-10-1979	1700	1700	1.00	1.00	40.00	2.50
6	5-15-1979	1300	5-15-1979	1300	1300	0.90	0.90	48.00	2.08
7	9-12-1982	1300	9-12-1982	1300	1300	0.90	0.90	56.00	1.79
8	8-21-1979	1500	8-21-1979	1500	1500	0.70	0.70	64.00	1.56
9	8- 1-1980	1300	8- 1-1980	1300	1300	0.70	0.70	72.00	1.39
10	9- 2-1975	1500	9- 2-1975	1500	1500	0.70	0.70	80.00	1.25
11	5-25-1979	1000	5-25-1979	1000	1000	0.70	0.70	88.00	1.14
12	3-12-1983	1600	3-12-1983	1600	1600	0.70	0.70	96.00	1.04
13	3- 2-1978	1500	3- 2-1978	1500	1500	0.70	0.70	*****	0.96
14	8-29-1974	1600	8-29-1974	1600	1600	0.60	0.60	*****	0.89
15	10- 5-1981	1700	10- 5-1981	1700	1700	0.60	0.60	*****	0.83
16	6- 8-1979	2400	6- 8-1979	2400	2400	0.50	0.50	*****	0.78
17	10-13-1976	600	10-13-1976	600	600	0.50	0.50	*****	0.74
18	6-11-1979	1200	6-11-1979	1200	1200	0.50	0.50	*****	0.69
19	9-25-1977	1500	9-25-1977	1500	1500	0.50	0.50	*****	0.66
20	10-21-1983	1500	10-21-1983	1500	1500	0.50	0.50	*****	0.63
21	5-21-1974	1300	5-21-1974	1300	1300	0.50	0.50	*****	0.60
22	10-26-1976	1500	10-26-1976	1500	1500	0.40	0.40	*****	0.57
23	8-29-1977	1600	8-29-1977	1600	1600	0.40	0.40	*****	0.54
24	9-30-1974	1900	9-30-1974	1900	1900	0.40	0.40	*****	0.52
25	8-20-1979	1200	8-20-1979	1200	1200	0.40	0.40	*****	0.50
26	7-31-1974	1200	7-31-1974	1200	1200	0.40	0.40	*****	0.48
27	8-29-1979	2200	8-29-1979	2200	2200	0.40	0.40	*****	0.46
28	9- 4-1979	1200	9- 4-1979	1200	1200	0.40	0.40	*****	0.45
29	10- 6-1979	1700	10- 6-1979	1700	1700	0.40	0.40	*****	0.43
30	6-11-1980	400	6-11-1980	400	400	0.40	0.40	*****	0.42
31	11- 1-1977	1800	11- 1-1977	1800	1800	0.40	0.40	*****	0.40
32	9- 1-1980	1400	9- 1-1980	1400	1400	0.40	0.40	*****	0.39
33	10-17-1980	1300	10-17-1980	1300	1300	0.40	0.40	*****	0.38
34	12- 2-1980	1700	12- 2-1980	1700	1700	0.40	0.40	*****	0.37
35	1- 6-1981	800	1- 6-1981	800	800	0.40	0.40	*****	0.36
36	8- 7-1974	1700	8- 7-1974	1700	1700	0.40	0.40	*****	0.35
37	4- 2-1982	2000	4- 2-1982	2000	2000	0.40	0.40	*****	0.34
38	8-10-1982	1600	8-10-1982	1600	1600	0.40	0.40	*****	0.33
39	6-13-1978	1700	6-13-1978	1700	1700	0.40	0.40	*****	0.32
40	9-13-1982	1200	9-13-1982	1200	1200	0.40	0.40	*****	0.31

Table A5.b Rainstorm Ordering for 2 Hour Duration Events
 Minimum Time Between Storms = 1 hr
 Botijas 2-Orocovis Station : Index No. 0988

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	5- 8-1977	1500	5- 8-1977	1600	4.10	2.05	8.00	12.50	
2	9-29-1978	1300	9-29-1978	1400	2.10	1.05	16.00	6.25	
3	4-27-1974	1500	4-27-1974	1600	1.90	0.95	24.00	4.17	
4	9-15-1980	1500	9-15-1980	1600	1.90	0.95	32.00	3.13	
5	8-21-1977	2000	8-21-1977	2100	1.70	0.85	40.00	2.50	
6	5-27-1982	500	5-27-1982	600	1.60	0.80	48.00	2.08	
7	10-17-1983	1400	10-17-1983	1500	1.60	0.80	56.00	1.79	
8	7-20-1982	1400	7-20-1982	1500	1.50	0.75	64.00	1.56	
9	10-23-1981	1400	10-23-1981	1500	1.50	0.75	72.00	1.39	
10	10-30-1978	2000	10-30-1978	2100	1.40	0.70	80.00	1.25	
11	7- 9-1978	900	7- 9-1978	1000	1.40	0.70	88.00	1.14	
12	11-13-1977	1600	11-13-1977	1700	1.40	0.70	96.00	1.04	
13	9- 6-1981	1700	9- 6-1981	1800	1.30	0.65	*****	0.96	
14	9-29-1981	1800	9-29-1981	1900	1.30	0.65	*****	0.89	
15	5-22-1974	1300	5-22-1974	1400	1.30	0.65	*****	0.83	
16	12-13-1981	600	12-13-1981	700	1.30	0.65	*****	0.78	
17	6-13-1979	100	6-13-1979	200	1.30	0.65	*****	0.74	
18	4- 8-1980	1500	4- 8-1980	1600	1.30	0.65	*****	0.69	
19	4- 9-1978	1400	4- 9-1978	1500	1.30	0.65	*****	0.66	
20	11- 6-1979	1300	11- 6-1979	1400	1.20	0.60	*****	0.63	
21	7-24-1981	1600	7-24-1981	1700	1.20	0.60	*****	0.60	
22	6-27-1973	1300	6-27-1973	1400	1.20	0.60	*****	0.57	
23	9- 1-1976	1800	9- 1-1976	1900	1.10	0.55	*****	0.54	
24	10-20-1979	1700	10-20-1979	1800	1.10	0.55	*****	0.52	
25	4-26-1980	1600	4-26-1980	1700	1.10	0.55	*****	0.50	
26	11- 4-1979	1300	11- 4-1979	1400	1.10	0.55	*****	0.48	
27	5- 7-1979	1500	5- 7-1979	1600	1.00	0.50	*****	0.46	
28	9- 9-1974	1800	9- 9-1974	1900	1.00	0.50	*****	0.45	
29	9- 5-1976	1600	9- 5-1976	1700	0.90	0.45	*****	0.43	
30	1-12-1981	400	1-12-1981	500	0.90	0.45	*****	0.42	
31	2- 5-1982	300	2- 5-1982	400	0.90	0.45	*****	0.40	
32	12- 3-1976	1500	12- 3-1976	1600	0.90	0.45	*****	0.39	
33	9-18-1979	1200	9-18-1979	1300	0.90	0.45	*****	0.38	
34	5-19-1976	1300	5-19-1976	1400	0.90	0.45	*****	0.37	
35	10-23-1980	1600	10-23-1980	1700	0.80	0.40	*****	0.36	
36	9-15-1974	1500	9-15-1974	1600	0.80	0.40	*****	0.35	
37	10- 4-1978	1500	10- 4-1978	1600	0.80	0.40	*****	0.34	
38	10- 5-1978	1400	10- 5-1978	1500	0.80	0.40	*****	0.33	
39	11-15-1977	1400	11-15-1977	1500	0.80	0.40	*****	0.32	
40	12-20-1979	500	12-20-1979	600	0.80	0.40	*****	0.31	

Table A5.c Rainstorm Ordering for 3 Hour Duration Events
 Minimum Time Between Storms = 1 hr
 Botijas 2-Orocovis Station : Index No. 0988

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	11-10-1977	1400	11-10-1977	1600	2.50	0.83	8.00	12.50	
2	9-30-1979	1300	9-30-1979	1500	2.10	0.70	16.00	6.25	
3	9-29-1976	1600	9-29-1976	1800	2.00	0.67	24.00	4.17	
4	6-16-1983	300	6-16-1983	500	1.90	0.63	32.00	3.13	
5	8-22-1976	1500	8-22-1976	1700	1.70	0.57	40.00	2.50	
6	9-25-1973	1400	9-25-1973	1600	1.60	0.53	48.00	2.08	
7	12-13-1981	2200	12-13-1981	2400	1.40	0.47	56.00	1.79	
8	10-15-1976	1700	10-15-1976	1900	1.40	0.47	64.00	1.56	
9	2-11-1979	1600	2-11-1979	1800	1.30	0.43	72.00	1.39	
10	11- 9-1981	800	11- 9-1981	1000	1.30	0.43	80.00	1.25	
11	10- 6-1974	1500	10- 6-1974	1700	1.20	0.40	88.00	1.14	
12	5-14-1979	1300	5-14-1979	1500	1.20	0.40	96.00	1.04	
13	11-15-1975	1400	11-15-1975	1600	1.20	0.40	*****	0.96	
14	8-30-1974	200	8-30-1974	400	1.20	0.40	*****	0.89	
15	3-31-1978	1900	3-31-1978	2100	1.20	0.40	*****	0.83	
16	6-15-1983	1700	6-15-1983	1900	1.20	0.40	*****	0.78	
17	4- 3-1978	1400	4- 3-1978	1600	1.20	0.40	*****	0.74	
18	9-19-1974	100	9-19-1974	300	1.10	0.37	*****	0.69	
19	8-18-1980	1600	8-18-1980	1800	1.00	0.33	*****	0.66	
20	9-30-1980	1500	9-30-1980	1700	0.90	0.30	*****	0.63	
21	10-28-1982	1400	10-28-1982	1600	0.90	0.30	*****	0.60	
22	8-17-1983	1300	8-17-1983	1500	0.90	0.30	*****	0.57	
23	11-26-1981	1400	11-26-1981	1600	0.80	0.27	*****	0.54	
24	5-27-1977	1000	5-27-1977	1200	0.80	0.27	*****	0.52	
25	11- 8-1979	1400	11- 8-1979	1600	0.80	0.27	*****	0.50	
26	11-22-1982	1100	11-22-1982	1300	0.80	0.27	*****	0.48	
27	4-29-1976	1400	4-29-1976	1600	0.80	0.27	*****	0.46	
28	7- 3-1974	1900	7- 3-1974	2100	0.80	0.27	*****	0.45	
29	8-29-1979	1300	8-29-1979	1500	0.80	0.27	*****	0.43	
30	10-30-1981	1400	10-30-1981	1600	0.70	0.23	*****	0.42	
31	2-27-1974	1800	2-27-1974	2000	0.70	0.23	*****	0.40	
32	10-27-1978	1500	10-27-1978	1700	0.70	0.23	*****	0.39	
33	10-11-1976	1800	10-11-1976	2000	0.70	0.23	*****	0.38	
34	10-13-1982	1300	10-13-1982	1500	0.70	0.23	*****	0.37	
35	5- 4-1982	1700	5- 4-1982	1900	0.60	0.20	*****	0.36	
36	8-29-1982	1300	8-29-1982	1500	0.60	0.20	*****	0.35	
37	10-10-1973	1100	10-10-1973	1300	0.60	0.20	*****	0.34	
38	10-19-1980	1500	10-19-1980	1700	0.60	0.20	*****	0.33	
39	9-29-1973	1900	9-29-1973	2100	0.60	0.20	*****	0.32	
40	12-26-1982	1700	12-26-1982	1900	0.60	0.20	*****	0.31	

Table A5.d Rainstorm Ordering for 4 Hour Duration Events
 Minimum Time Between Storms = 1 hr
 Botijas 2-Orocovis Station : Index No. 0988

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)	
1	9-	8-1978	1500	9-	8-1978	1800	3.60	0.90	8.00	12.50
2	8-	9-1977	1400	8-	9-1977	1700	2.60	0.65	16.00	6.25
3	4-	17-1983	2000	4-	17-1983	2300	2.50	0.63	24.00	4.17
4	4-	30-1976	1400	4-	30-1976	1700	2.40	0.60	32.00	3.13
5	4-	10-1978	1400	4-	10-1978	1700	2.40	0.60	40.00	2.50
6	10-	26-1978	500	10-	26-1978	800	2.20	0.55	48.00	2.08
7	11-	12-1982	1900	11-	12-1982	2200	1.50	0.38	56.00	1.79
8	10-	17-1981	1500	10-	17-1981	1800	1.50	0.38	64.00	1.56
9	4-	14-1976	1600	4-	14-1976	1900	1.40	0.35	72.00	1.39
10	12-	10-1981	2300	12-	11-1981	200	1.40	0.35	80.00	1.25
11	10-	26-1981	1400	10-	26-1981	1700	1.30	0.32	88.00	1.14
12	11-	30-1982	300	11-	30-1982	600	1.20	0.30	96.00	1.04
13	11-	25-1979	1100	11-	25-1979	1400	1.20	0.30	*****	0.96
14	8-	29-1974	2100	8-	29-1974	2400	1.10	0.27	*****	0.89
15	11-	16-1975	1500	11-	16-1975	1800	1.00	0.25	*****	0.83
16	1-	19-1979	1500	1-	19-1979	1800	0.90	0.22	*****	0.78
17	9-	6-1977	1200	9-	6-1977	1500	0.90	0.22	*****	0.74
18	5-	28-1980	100	5-	28-1980	400	0.90	0.22	*****	0.69
19	11-	4-1983	300	11-	4-1983	600	0.90	0.22	*****	0.66
20	8-	17-1978	1200	8-	17-1978	1500	0.80	0.20	*****	0.63
21	11-	4-1977	1500	11-	4-1977	1800	0.80	0.20	*****	0.60
22	7-	16-1977	1600	7-	16-1977	1900	0.80	0.20	*****	0.57
23	5-	6-1982	600	5-	6-1982	900	0.80	0.20	*****	0.54

Table A5.e Rainstorm Ordering for 5 Hour Duration Events
 Botijas 2-Orocovis Station : Index No. 0988
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	5-12-1980	1100	5-12-1980	1500	3.60	0.72	8.00	12.50	
2	5-16-1979	1400	5-16-1979	1800	3.50	0.70	16.00	6.25	
3	5-19-1979	2400	5-20-1979	400	2.20	0.44	24.00	4.17	
4	4-16-1976	1700	4-16-1976	2100	1.90	0.38	32.00	3.13	
5	5-10-1982	1200	5-10-1982	1600	1.90	0.38	40.00	2.50	
6	12-12-1981	2400	12-13-1981	400	1.50	0.30	48.00	2.08	
7	10-30-1976	1400	10-30-1976	1800	1.40	0.28	56.00	1.79	
8	7-21-1975	1200	7-21-1975	1600	1.40	0.28	64.00	1.56	
9	4-11-1980	1400	4-11-1980	1800	1.40	0.28	72.00	1.39	
10	5-23-1977	600	5-23-1977	1000	1.20	0.24	80.00	1.25	
11	3- 5-1980	1300	3- 5-1980	1700	1.00	0.20	88.00	1.14	

Table A6.a Rainstorm Ordering for 1 Hour Duration Events
 Cayey 1E Station ; Index No. 1901
 Minimum Time Between Storms = 1 hr

Rank	Date		Date		Depth	I	P(X>x)	T
	from	at	to	at	(in)	(in/hr)	(%)	(yrs)
1	5-30-1973	1600	5-30-1973	1600	1.80	1.80	8.05	12.42
2	9-11-1975	1500	9-11-1975	1500	1.10	1.10	16.10	6.21
3	4-10-1980	1900	4-10-1980	1900	1.10	1.10	24.15	4.14
4	3- 4-1981	2000	3- 4-1981	2000	1.10	1.10	32.21	3.10
5	5-19-1983	800	5-19-1983	800	1.10	1.10	40.26	2.48
6	11- 8-1971	1700	11- 8-1971	1700	0.90	0.90	48.31	2.07
7	10- 9-1980	1200	10- 9-1980	1200	0.90	0.90	56.36	1.77
8	11- 3-1979	1500	11- 3-1979	1500	0.80	0.80	64.41	1.55
9	9- 1-1972	1100	9- 1-1972	1100	0.70	0.70	72.46	1.38
10	7- 6-1980	1000	7- 6-1980	1000	0.70	0.70	80.52	1.24
11	11-11-1977	1700	11-11-1977	1700	0.70	0.70	88.57	1.13
12	10-15-1980	1900	10-15-1980	1900	0.70	0.70	96.62	1.03
13	6-29-1979	2200	6-29-1979	2200	0.70	0.70	*****	0.96
14	9-17-1974	1900	9-17-1974	1900	0.70	0.70	*****	0.89
15	10- 2-1977	1800	10- 2-1977	1800	0.60	0.60	*****	0.83
16	10- 6-1972	1400	10- 6-1972	1400	0.60	0.60	*****	0.78
17	9- 9-1980	1500	9- 9-1980	1500	0.60	0.60	*****	0.73
18	6-13-1978	1800	6-13-1978	1800	0.60	0.60	*****	0.69
19	9-18-1974	1600	9-18-1974	1600	0.60	0.60	*****	0.65
20	3-19-1974	1600	3-19-1974	1600	0.60	0.60	*****	0.62
21	5-18-1983	100	5-18-1983	100	0.60	0.60	*****	0.59
22	12-22-1979	1600	12-22-1979	1600	0.60	0.60	*****	0.56
23	8- 8-1980	400	8- 8-1980	400	0.50	0.50	*****	0.54
24	8-10-1972	2300	8-10-1972	2300	0.50	0.50	*****	0.52
25	9-26-1976	1400	9-26-1976	1400	0.50	0.50	*****	0.50
26	10-15-1976	1600	10-15-1976	1600	0.50	0.50	*****	0.48
27	8- 5-1974	1000	8- 5-1974	1000	0.50	0.50	*****	0.46
28	11-25-1981	1600	11-25-1981	1600	0.50	0.50	*****	0.44
29	6- 7-1982	1200	6- 7-1982	1200	0.50	0.50	*****	0.43
30	3-12-1983	2300	3-12-1983	2300	0.50	0.50	*****	0.41
31	8-21-1975	100	8-21-1975	100	0.50	0.50	*****	0.40
32	11-22-1977	2400	11-22-1977	2400	0.50	0.50	*****	0.39
33	10- 3-1983	2200	10- 3-1983	2200	0.50	0.50	*****	0.38
34	9-15-1972	500	9-15-1972	500	0.40	0.40	*****	0.37
35	3-23-1974	1700	3-23-1974	1700	0.40	0.40	*****	0.35
36	8-22-1976	1500	8-22-1976	1500	0.40	0.40	*****	0.34
37	3-11-1972	1800	3-11-1972	1800	0.40	0.40	*****	0.34
38	4-12-1980	500	4-12-1980	500	0.40	0.40	*****	0.33
39	10-13-1976	300	10-13-1976	300	0.40	0.40	*****	0.32
40	6-29-1972	1300	6-29-1972	1300	0.40	0.40	*****	0.31

Table A6.b Rainstorm Ordering for 2 Hour Duration Events
 Cayey IE Station : Index No. 1901
 Minimum Time Between Storms = 1 hr

Rank	Date		Date		Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
	from	at	to	at				
1	10-14-1971	1200	10-14-1971	1300	2.50	1.25	8.05	12.42
2	9-19-1974	100	9-19-1974	200	1.90	0.95	16.10	6.21
3	9-27-1976	1500	9-27-1976	1600	1.80	0.90	24.15	4.14
4	10- 6-1977	1200	10- 6-1977	1300	1.60	0.80	32.21	3.10
5	5-27-1978	300	5-27-1978	400	1.60	0.80	40.26	2.48
6	8-17-1978	1400	8-17-1978	1500	1.60	0.80	48.31	2.07
7	12-23-1975	2200	12-23-1975	2300	1.10	0.55	56.36	1.77
8	9-27-1980	2000	9-27-1980	2100	1.10	0.55	64.41	1.55
9	3-24-1973	1800	3-24-1973	1900	1.00	0.50	72.46	1.38
10	8-22-1976	1700	8-22-1976	1800	1.00	0.50	80.52	1.24
11	11-24-1977	1500	11-24-1977	1600	1.00	0.50	88.57	1.13
12	10-29-1974	1600	10-29-1974	1700	0.90	0.45	96.62	1.03
13	6- 9-1980	300	6- 9-1980	400	0.90	0.45	*****	0.96
14	11-15-1977	1400	11-15-1977	1500	0.90	0.45	*****	0.89
15	7-19-1981	1500	7-19-1981	1600	0.90	0.45	*****	0.83
16	9- 4-1981	1700	9- 4-1981	1800	0.90	0.45	*****	0.78
17	12-27-1981	1400	12-27-1981	1500	0.90	0.45	*****	0.73
18	6-26-1979	1700	6-26-1979	1800	0.80	0.40	*****	0.69
19	11-23-1977	1500	11-23-1977	1600	0.80	0.40	*****	0.65
20	3-27-1972	1500	3-27-1972	1600	0.80	0.40	*****	0.62
21	4-10-1978	1500	4-10-1978	1600	0.80	0.40	*****	0.59
22	9- 2-1981	1500	9- 2-1981	1600	0.80	0.40	*****	0.56
23	8- 6-1973	1400	8- 6-1973	1500	0.80	0.40	*****	0.54
24	3- 9-1973	2000	3- 9-1973	2100	0.80	0.40	*****	0.52
25	6-27-1979	600	6-27-1979	700	0.70	0.35	*****	0.50
26	7-18-1979	600	7-18-1979	700	0.70	0.35	*****	0.48
27	7-18-1979	1400	7-18-1979	1500	0.70	0.35	*****	0.46
28	2- 7-1973	200	2- 7-1973	300	0.70	0.35	*****	0.44
29	2-11-1978	400	2-11-1978	500	0.70	0.35	*****	0.43
30	11-24-1972	1400	11-24-1972	1500	0.70	0.35	*****	0.41
31	11- 8-1974	900	11- 8-1974	1000	0.70	0.35	*****	0.40
32	12-10-1975	200	12-10-1975	300	0.70	0.35	*****	0.39
33	8-25-1973	1900	8-25-1973	2000	0.70	0.35	*****	0.38
34	10-27-1974	1500	10-27-1974	1600	0.60	0.30	*****	0.37
35	8-22-1979	1200	8-22-1979	1300	0.60	0.30	*****	0.35
36	11- 7-1979	1400	11- 7-1979	1500	0.60	0.30	*****	0.34
37	11- 3-1977	1400	11- 3-1977	1500	0.60	0.30	*****	0.34
38	9- 5-1980	1300	9- 5-1980	1400	0.60	0.30	*****	0.33
39	9- 2-1972	200	9- 2-1972	300	0.60	0.30	*****	0.32
40	5-19-1979	1500	5-19-1979	1600	0.60	0.30	*****	0.31

Table A6.c Rainstorm Ordering for 3 Hour Duration Events
 Cayey 1E Station : Index No. 1901
 Minimum Time Between Storms = 1 hr

Rank	Date				Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
	from	at	to	at				
1	10- 6-1972	2400	10- 7-1972	200	2.40	0.80	8.05	12.42
2	9- 6-1982	1500	9- 6-1982	1700	1.80	0.60	16.10	6.21
3	3-12-1983	1900	3-12-1983	2100	1.80	0.60	24.15	4.14
4	4-21-1973	1300	4-21-1973	1500	1.50	0.50	32.21	3.10
5	8-11-1972	100	8-11-1972	300	1.40	0.47	40.26	2.48
6	8-21-1977	1900	8-21-1977	2100	1.20	0.40	48.31	2.07
7	10-28-1979	1600	10-28-1979	1800	1.20	0.40	56.36	1.77
8	8-13-1979	1600	8-13-1979	1800	1.10	0.37	64.41	1.55
9	2-13-1973	1700	2-13-1973	1900	1.00	0.33	72.46	1.38
10	11-23-1977	700	11-23-1977	900	1.00	0.33	80.52	1.24
11	8- 3-1971	1400	8- 3-1971	1600	1.00	0.33	88.57	1.13
12	9- 2-1975	100	9- 2-1975	300	0.90	0.30	96.62	1.03
13	5-15-1979	1300	5-15-1979	1500	0.90	0.30	*****	0.96
14	3-30-1972	1200	3-30-1972	1400	0.90	0.30	*****	0.89
15	9-23-1973	1300	9-23-1973	1500	0.80	0.27	*****	0.83
16	3- 2-1972	1100	3- 2-1972	1300	0.80	0.27	*****	0.78
17	6- 9-1979	2100	6- 9-1979	2300	0.80	0.27	*****	0.73
18	10-11-1976	300	10-11-1976	500	0.80	0.27	*****	0.69
19	7-13-1977	700	7-13-1977	900	0.80	0.27	*****	0.65
20	5- 1-1981	2000	5- 1-1981	2200	0.80	0.27	*****	0.62
21	11- 6-1972	1400	11- 6-1972	1600	0.80	0.27	*****	0.59
22	11-10-1977	1400	11-10-1977	1600	0.80	0.27	*****	0.56
23	10-10-1977	2300	10-11-1977	100	0.70	0.23	*****	0.54
24	5-29-1979	100	5-29-1979	300	0.70	0.23	*****	0.52
25	7- 9-1981	2200	7- 9-1981	2400	0.70	0.23	*****	0.50
26	8-20-1981	1400	8-20-1981	1600	0.70	0.23	*****	0.48
27	8-21-1977	1300	8-21-1977	1500	0.70	0.23	*****	0.46
28	9-10-1974	1400	9-10-1974	1600	0.70	0.23	*****	0.44
29	9-10-1974	600	9-10-1974	800	0.60	0.20	*****	0.43
30	11-10-1972	2400	11-11-1972	200	0.60	0.20	*****	0.41
31	12-25-1977	900	12-25-1977	1100	0.60	0.20	*****	0.40
32	10-25-1978	500	10-25-1978	700	0.60	0.20	*****	0.39
33	7-17-1981	1400	7-17-1981	1600	0.60	0.20	*****	0.38
34	8-11-1973	1600	8-11-1973	1800	0.60	0.20	*****	0.37
35	9-21-1977	1100	9-21-1977	1300	0.60	0.20	*****	0.35
36	8- 5-1971	2100	8- 5-1971	2300	0.60	0.20	*****	0.34

Table A6.d Rainstorm Ordering for 4 Hour Duration Events
 Cayey 1E Station : Index No. 1901
 Minimum Time Between Storms = 1 hr

Rank	Date		Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)		
	from	at					to	at
1	8- 4-1978	2300	8- 5-1978	200	1.90	0.48	8.05	12.42
2	10-17-1974	1900	10-17-1974	2200	1.70	0.43	16.10	6.21
3	9-12-1982	1900	9-12-1982	2200	1.70	0.43	24.15	4.14
4	5- 6-1982	700	5- 6-1982	1000	1.50	0.38	32.21	3.10
5	6-25-1979	2000	6-25-1979	2300	1.50	0.38	40.26	2.48
6	4-18-1983	200	4-18-1983	500	1.50	0.38	48.31	2.07
7	10-31-1975	1400	10-31-1975	1700	1.40	0.35	56.36	1.77
8	7-18-1979	900	7-18-1979	1200	1.10	0.27	64.41	1.55
9	9- 6-1977	1200	9- 6-1977	1500	1.10	0.27	72.46	1.38
10	11-25-1977	200	11-25-1977	500	1.10	0.27	80.52	1.24
11	6-28-1979	1800	6-28-1979	2100	1.10	0.27	88.57	1.13
12	10-30-1980	700	10-30-1980	1000	1.00	0.25	96.62	1.03
13	11-12-1974	100	11-12-1974	400	1.00	0.25	*****	0.96
14	5-20-1979	100	5-20-1979	400	0.90	0.22	*****	0.89
15	5-13-1973	700	5-13-1973	1000	0.90	0.22	*****	0.83
16	11-25-1979	1000	11-25-1979	1300	0.90	0.22	*****	0.78
17	6-16-1980	2200	6-17-1980	100	0.90	0.23	*****	0.73
18	4- 5-1981	1300	4- 5-1981	1600	0.80	0.20	*****	0.69
19	8-14-1979	200	8-14-1979	500	0.80	0.20	*****	0.65
20	8-30-1979	800	8-30-1979	1100	0.80	0.20	*****	0.62
21	10- 4-1979	900	10- 4-1979	1200	0.80	0.20	*****	0.59

Table A6.e Rainstorm Ordering for 5 Hour Duration Events
 Cayey 1E Station : Index No. 1901
 Minimum Time Between Storms = 1 hr

Rank	Date		Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)		
	from	at					to	at
1	5-23-1977	200	5-23-1977	600	2.70	0.54	8.05	12.42
2	6-28-1979	500	6-28-1979	900	2.20	0.44	16.10	6.21
3	6-30-1979	1300	6-30-1979	1700	2.20	0.44	24.15	4.14
4	6- 3-1979	1200	6- 3-1979	1600	1.70	0.34	32.21	3.10
5	10-23-1978	1700	10-23-1978	2100	1.60	0.32	40.26	2.48
6	7-13-1978	600	7-13-1978	1000	1.60	0.32	48.31	2.07
7	7-17-1980	900	7-17-1980	1300	1.60	0.32	56.36	1.77
8	9- 8-1981	1700	9- 8-1981	2100	1.60	0.32	64.41	1.55
9	5-27-1980	2200	5-28-1980	200	1.50	0.30	72.46	1.38
10	7-31-1979	1600	7-31-1979	2000	1.40	0.28	80.52	1.24
11	4-16-1981	1500	4-16-1981	1900	1.30	0.26	88.57	1.13
12	12- 9-1975	500	12- 9-1975	900	1.20	0.24	96.62	1.03
13	8-29-1974	1900	8-29-1974	2300	1.10	0.22	*****	0.96
14	10-26-1978	500	10-26-1978	900	1.10	0.22	*****	0.89
15	9-13-1982	700	9-13-1982	1100	1.10	0.22	*****	0.83
16	7-24-1972	100	7-24-1972	500	1.00	0.20	*****	0.78

Table A7.a Rainstorm Ordering for 1 Hour Duration Events
Corozal Substation : Index No. 2934
Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	10-21-1972	1300	10-21-1972	1300	1300	2.40	2.40	8.05	12.42
2	8- 9-1977	1500	8- 9-1977	1500	1500	1.90	1.90	16.10	6.21
3	10-29-1976	1600	10-29-1976	1600	1600	1.70	1.70	24.15	4.14
4	10-12-1981	1600	10-12-1981	1600	1600	1.50	1.50	32.21	3.10
5	9-29-1972	1700	9-29-1972	1700	1700	1.40	1.40	40.26	2.48
6	11-18-1975	1500	11-18-1975	1500	1500	1.20	1.20	48.31	2.07
7	4-21-1979	1400	4-21-1979	1400	1400	1.10	1.10	56.36	1.77
8	10-18-1982	1900	10-18-1982	1900	1900	1.10	1.10	64.41	1.55
9	7-18-1979	700	7-18-1979	700	700	1.00	1.00	72.46	1.38
10	8-19-1980	1800	8-19-1980	1800	1800	1.00	1.00	80.52	1.24
11	9-24-1980	1300	9-24-1980	1300	1300	0.90	0.90	88.57	1.13
12	10-11-1972	1200	10-11-1972	1200	1200	0.80	0.80	96.62	1.03
13	11-26-1977	1700	11-26-1977	1700	1700	0.80	0.80	*****	0.96
14	8-13-1975	1500	8-13-1975	1500	1500	0.80	0.80	*****	0.89
15	4- 6-1982	1700	4- 6-1982	1700	1700	0.80	0.80	*****	0.83
16	8- 4-1977	1500	8- 4-1977	1500	1500	0.80	0.80	*****	0.78
17	8- 2-1983	1200	8- 2-1983	1200	1200	0.80	0.80	*****	0.73
18	7-29-1977	1600	7-29-1977	1600	1600	0.70	0.70	*****	0.69
19	8- 1-1981	1200	8- 1-1981	1200	1200	0.70	0.70	*****	0.65
20	8-22-1981	1300	8-22-1981	1300	1300	0.70	0.70	*****	0.62
21	10-11-1981	1600	10-11-1981	1600	1600	0.70	0.70	*****	0.59
22	8- 7-1975	1600	8- 7-1975	1600	1600	0.70	0.70	*****	0.56
23	10-30-1981	1600	10-30-1981	1600	1600	0.70	0.70	*****	0.54
24	10-31-1981	1500	10-31-1981	1500	1500	0.70	0.70	*****	0.52
25	2-18-1974	2200	2-18-1974	2200	2200	0.70	0.70	*****	0.50
26	5-18-1980	1500	5-18-1980	1500	1500	0.70	0.70	*****	0.48
27	11- 9-1982	1500	11- 9-1982	1500	1500	0.70	0.70	*****	0.46
28	9-11-1977	2000	9-11-1977	2000	2000	0.70	0.70	*****	0.44
29	8-22-1981	1500	8-22-1981	1500	1500	0.60	0.60	*****	0.43
30	9- 1-1981	1500	9- 1-1981	1500	1500	0.60	0.60	*****	0.41
31	5-27-1977	1400	5-27-1977	1400	1400	0.60	0.60	*****	0.40
32	7-12-1972	1900	7-12-1972	1900	1900	0.60	0.60	*****	0.39
33	8- 4-1979	1600	8- 4-1979	1600	1600	0.60	0.60	*****	0.38
34	5- 1-1973	1400	5- 1-1973	1400	1400	0.60	0.60	*****	0.37
35	9- 4-1972	1700	9- 4-1972	1700	1700	0.60	0.60	*****	0.35
36	4-28-1974	100	4-28-1974	100	100	0.60	0.60	*****	0.34
37	5- 3-1977	700	5- 3-1977	700	700	0.60	0.60	*****	0.34
38	5-22-1983	1600	5-22-1983	1600	1600	0.60	0.60	*****	0.33
39	8-18-1978	1300	8-18-1978	1300	1300	0.60	0.60	*****	0.32
40	8-17-1983	1600	8-17-1983	1600	1600	0.60	0.60	*****	0.31

Table A7.b Rainstorm Ordering for 2 Hour Duration Events
 Corozal Substation : Index No. 2934
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	5-29-1980	1200	5-29-1980	1300		2.90	1.45	8.05	12.42
2	9-23-1980	1300	9-23-1980	1400		2.70	1.35	16.10	6.21
3	5-15-1979	1300	5-15-1979	1400		2.60	1.30	24.15	4.14
4	8-24-1972	1600	8-24-1972	1700		2.50	1.25	32.21	3.10
5	9-28-1981	1600	9-28-1981	1700		2.40	1.20	40.26	2.48
6	7-18-1974	1300	7-18-1974	1400		2.30	1.15	48.31	2.07
7	11-14-1975	1600	11-14-1975	1700		2.30	1.15	56.36	1.77
8	10-13-1972	1700	10-13-1972	1800		2.10	1.05	64.41	1.55
9	11-13-1977	1700	11-13-1977	1800		2.10	1.05	72.46	1.38
10	5-13-1982	1400	5-13-1982	1500		2.10	1.05	80.52	1.24
11	10-15-1972	1500	10-15-1972	1600		2.00	1.00	88.57	1.13
12	9- 7-1974	1700	9- 7-1974	1800		1.90	0.95	96.62	1.03
13	11-10-1982	1400	11-10-1982	1500		1.90	0.95	*****	0.96
14	2-14-1979	1600	2-14-1979	1700		1.70	0.85	*****	0.89
15	10-14-1971	900	10-14-1971	1000		1.60	0.80	*****	0.83
16	10-18-1971	1000	10-18-1971	1100		1.60	0.80	*****	0.78
17	3-11-1972	1500	3-11-1972	1600		1.50	0.75	*****	0.73
18	6-12-1972	1500	6-12-1972	1600		1.50	0.75	*****	0.69
19	5-22-1974	1700	5-22-1974	1800		1.30	0.65	*****	0.65
20	1-22-1977	1400	1-22-1977	1500		1.30	0.65	*****	0.62
21	5-31-1973	1400	5-31-1973	1500		1.30	0.65	*****	0.59
22	6-10-1973	1300	6-10-1973	1400		1.30	0.65	*****	0.56
23	9-25-1974	1500	9-25-1974	1600		1.30	0.65	*****	0.54
24	4-22-1983	1900	4-22-1983	2000		1.30	0.65	*****	0.52
25	9- 9-1973	1700	9- 9-1973	1800		1.20	0.60	*****	0.50
26	11-25-1981	600	11-25-1981	700		1.20	0.60	*****	0.48
27	12-11-1975	1400	12-11-1975	1500		1.20	0.60	*****	0.46
28	5- 7-1975	1500	5- 7-1975	1600		1.20	0.60	*****	0.44
29	10-15-1975	1500	10-15-1975	1600		1.20	0.60	*****	0.43
30	9-19-1979	1600	9-19-1979	1700		1.10	0.55	*****	0.41
31	9-25-1975	1500	9-25-1975	1600		1.10	0.55	*****	0.40
32	9-26-1976	1400	9-26-1976	1500		1.10	0.55	*****	0.39
33	1-11-1981	1600	1-11-1981	1700		1.10	0.55	*****	0.38
34	3-24-1981	1900	3-24-1981	2000		1.10	0.55	*****	0.37
35	6-23-1981	1200	6-23-1981	1300		1.10	0.55	*****	0.35
36	9-29-1976	1700	9-29-1976	1800		1.10	0.55	*****	0.34
37	10-22-1981	1500	10-22-1981	1600		1.10	0.55	*****	0.34
38	10-14-1975	1400	10-14-1975	1500		1.10	0.55	*****	0.33
39	3-24-1975	1700	3-24-1975	1800		1.10	0.55	*****	0.32
40	11- 6-1975	1500	11- 6-1975	1600		1.10	0.55	*****	0.31

Table A7.c Rainstorm Ordering for 3 Hour Duration Events
 Corozal Substation : Index No. 2934
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	10-10-1974	1300	10-10-1974	1500	1500	3.30	1.10	8.05	12.42
2	9- 8-1974	1500	9- 8-1974	1700	1700	3.00	1.00	16.10	6.21
3	11- 7-1979	1500	11- 7-1979	1700	1700	2.70	0.90	24.15	4.14
4	10-20-1981	1500	10-20-1981	1700	1700	2.70	0.90	32.21	3.10
5	11- 1-1971	1100	11- 1-1971	1300	1300	2.60	0.87	40.26	2.48
6	5-10-1982	1400	5-10-1982	1600	1600	2.40	0.80	48.31	2.07
7	11- 4-1977	1500	11- 4-1977	1700	1700	2.20	0.73	56.36	1.77
8	8- 1-1980	1200	8- 1-1980	1400	1400	2.10	0.70	64.41	1.55
9	4-29-1978	1500	4-29-1978	1700	1700	2.10	0.70	72.46	1.38
10	12-20-1979	200	12-20-1979	400	400	2.10	0.70	80.52	1.24
11	4-10-1980	1400	4-10-1980	1600	1600	2.00	0.67	88.57	1.13
12	2- 4-1980	1800	2- 4-1980	2000	2000	2.00	0.67	96.62	1.03
13	12-13-1981	500	12-13-1981	700	700	1.90	0.63	*****	0.96
14	10-24-1981	1400	10-24-1981	1600	1600	1.90	0.63	*****	0.89
15	9-23-1978	1300	9-23-1978	1500	1500	1.70	0.57	*****	0.83
16	9-17-1973	1600	9-17-1973	1800	1800	1.60	0.53	*****	0.78
17	12- 5-1980	1500	12- 5-1980	1700	1700	1.50	0.50	*****	0.73
18	9- 7-1983	1500	9- 7-1983	1700	1700	1.50	0.50	*****	0.69
19	7-17-1977	1300	7-17-1977	1500	1500	1.40	0.47	*****	0.65
20	1-30-1976	1900	1-30-1976	2100	2100	1.30	0.43	*****	0.62
21	9- 9-1978	2100	9- 9-1978	2300	2300	1.30	0.43	*****	0.59
22	10-27-1974	1600	10-27-1974	1800	1800	1.20	0.40	*****	0.56
23	9-17-1972	1300	9-17-1972	1500	1500	1.20	0.40	*****	0.54
24	5-15-1978	1500	5-15-1978	1700	1700	1.20	0.40	*****	0.52
25	5- 8-1983	1500	5- 8-1983	1700	1700	1.20	0.40	*****	0.50
26	5-30-1974	1300	5-30-1974	1500	1500	1.20	0.40	*****	0.48
27	9-18-1979	1400	9-18-1979	1600	1600	1.10	0.37	*****	0.46
28	11- 6-1979	1500	11- 6-1979	1700	1700	1.10	0.37	*****	0.44
29	7-19-1975	1300	7-19-1975	1500	1500	1.10	0.37	*****	0.43
30	11- 3-1981	1600	11- 3-1981	1800	1800	1.10	0.37	*****	0.41
31	10- 7-1977	1600	10- 7-1977	1800	1800	1.10	0.37	*****	0.40
32	6-11-1978	1100	6-11-1978	1300	1300	1.10	0.37	*****	0.39
33	2-27-1974	1700	2-27-1974	1900	1900	1.10	0.37	*****	0.38
34	4- 3-1978	1400	4- 3-1978	1600	1600	1.10	0.37	*****	0.37
35	7- 3-1972	1100	7- 3-1972	1300	1300	1.00	0.33	*****	0.35
36	9-19-1971	1000	9-19-1971	1200	1200	1.00	0.33	*****	0.34
37	9- 7-1976	1400	9- 7-1976	1600	1600	1.00	0.33	*****	0.34
38	9-28-1982	1400	9-28-1982	1600	1600	1.00	0.33	*****	0.33
39	9- 4-1973	1200	9- 4-1973	1400	1400	1.00	0.33	*****	0.32
40	7-16-1979	1700	7-16-1979	1900	1900	1.00	0.33	*****	0.31

Table A7.d Rainstorm Ordering for 4 Hour Duration Events
 Corozal Substation : Index No. 2934
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	5-14-1982	1400	5-14-1982	1700	3.20	0.80	8.05	12.42	
2	10-14-1976	1500	10-14-1976	1800	3.10	0.77	16.10	6.21	
3	9-18-1983	1500	9-18-1983	1800	2.30	0.58	24.15	4.14	
4	9- 1-1972	1000	9- 1-1972	1300	1.80	0.45	32.21	3.10	
5	5-13-1983	1700	5-13-1983	2000	1.70	0.43	40.26	2.48	
6	5-18-1983	1200	5-18-1983	1500	1.70	0.43	48.31	2.07	
7	8-21-1977	1300	8-21-1977	1600	1.70	0.43	56.36	1.77	
8	12-10-1981	2300	12-11-1981	200	1.60	0.40	64.41	1.55	
9	10- 7-1976	1600	10- 7-1976	1900	1.50	0.38	72.46	1.38	
10	1-14-1972	1300	1-14-1972	1600	1.50	0.38	80.52	1.24	
11	3-29-1981	400	3-29-1981	700	1.40	0.35	88.57	1.13	
12	12- 7-1980	600	12- 7-1980	900	1.40	0.35	96.62	1.03	
13	7-29-1982	1700	7-29-1982	2000	1.30	0.32	*****	0.96	
14	2-19-1981	500	2-19-1981	800	1.20	0.30	*****	0.89	
15	8- 1-1982	1400	8- 1-1982	1700	1.10	0.27	*****	0.83	
16	5- 4-1982	1600	5- 4-1982	1900	1.10	0.27	*****	0.78	
17	3-31-1978	1800	3-31-1978	2100	1.10	0.27	*****	0.73	
18	8-18-1980	1700	8-18-1980	2000	1.10	0.27	*****	0.69	
19	1- 6-1979	500	1- 6-1979	800	0.90	0.22	*****	0.65	
20	2-20-1979	2300	2-21-1979	200	0.90	0.22	*****	0.62	
21	1- 1-1975	400	1- 1-1975	700	0.90	0.22	*****	0.59	
22	10-15-1980	1500	10-15-1980	1800	0.90	0.22	*****	0.56	
23	1-20-1977	1400	1-20-1977	1700	0.90	0.22	*****	0.54	
24	9- 8-1981	1700	9- 8-1981	2000	0.80	0.20	*****	0.52	
25	10-12-1971	1000	10-12-1971	1300	0.80	0.20	*****	0.50	
26	5-21-1983	1700	5-21-1983	2000	0.80	0.20	*****	0.48	
27	3-12-1972	1700	3-12-1972	2000	0.80	0.20	*****	0.46	
28	11-14-1983	300	11-14-1983	600	0.80	0.20	*****	0.44	

Table A7.e Rainstorm Ordering for 5 Hour Duration Events
 Coroza Substation : Index No. 2934
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	3-26-1981	1500	3-26-1981	1900		5.70	1.14	8.05	12.42
2	12-13-1981	2100	12-14-1981	100		3.90	0.78	16.10	6.21
3	9-30-1976	1500	9-30-1976	1900		2.40	0.48	24.15	4.14
4	10-26-1974	1300	10-26-1974	1700		2.00	0.40	32.21	3.10
5	10-22-1974	2200	10-23-1974	200		1.50	0.30	40.26	2.48
6	3-18-1976	1500	3-18-1976	1900		1.40	0.28	48.31	2.07
7	4-26-1974	1300	4-26-1974	1700		1.20	0.24	56.36	1.77
8	4-21-1978	1200	4-21-1978	1600		1.20	0.24	64.41	1.55
9	4-14-1976	1500	4-14-1976	1900		1.10	0.22	72.46	1.38
10	1- 6-1979	1000	1- 6-1979	1400		1.10	0.22	80.52	1.24
11	10-26-1978	500	10-26-1978	900		1.00	0.20	88.57	1.13
12	8-15-1973	1400	8-15-1973	1800		1.00	0.20	96.62	1.03

Table A8.a Rainstorm Ordering for 1 Hour Duration Events
 Dos Bocas Station : Index No. 3431
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	5- 6-1975	1600	5- 6-1975	1600	1600	2.10	2.10	8.05	12.42
2	6- 8-1978	1500	6- 8-1978	1500	1500	2.00	2.00	16.10	6.21
3	5-16-1980	1300	5-16-1980	1300	1300	2.00	2.00	24.15	4.14
4	7-10-1973	1700	7-10-1973	1700	1700	1.90	1.90	32.21	3.10
5	9- 5-1978	1700	9- 5-1978	1700	1700	1.60	1.60	40.26	2.48
6	9-12-1977	1600	9-12-1977	1600	1600	1.60	1.60	48.31	2.07
7	4-25-1972	1700	4-25-1972	1700	1700	1.50	1.50	56.36	1.77
8	6-12-1973	1500	6-12-1973	1500	1500	1.50	1.50	64.41	1.55
9	11- 8-1982	1500	11- 8-1982	1500	1500	1.40	1.40	72.46	1.38
10	9- 7-1980	1600	9- 7-1980	1600	1600	1.30	1.30	80.52	1.24
11	6-15-1975	1500	6-15-1975	1500	1500	1.20	1.20	88.57	1.13
12	9-12-1975	1500	9-12-1975	1500	1500	1.20	1.20	96.62	1.03
13	4-29-1976	1600	4-29-1976	1600	1600	1.20	1.20	*****	0.96
14	8-28-1973	1500	8-28-1973	1500	1500	1.20	1.20	*****	0.89
15	11- 5-1977	1100	11- 5-1977	1100	1100	1.20	1.20	*****	0.83
16	12-23-1979	2000	12-23-1979	2000	2000	1.10	1.10	*****	0.78
17	6-17-1978	1900	6-17-1978	1900	1900	1.10	1.10	*****	0.73
18	8- 5-1977	1700	8- 5-1977	1700	1700	1.10	1.10	*****	0.69
19	10- 4-1981	1600	10- 4-1981	1600	1600	1.10	1.10	*****	0.65
20	12- 4-1979	1400	12- 4-1979	1400	1400	1.10	1.10	*****	0.62
21	10-21-1974	1700	10-21-1974	1700	1700	1.00	1.00	*****	0.59
22	10- 5-1976	1600	10- 5-1976	1600	1600	1.00	1.00	*****	0.56
23	9-30-1978	1500	9-30-1978	1500	1500	1.00	1.00	*****	0.54
24	11-16-1980	1500	11-16-1980	1500	1500	1.00	1.00	*****	0.52
25	8-21-1979	1300	8-21-1979	1300	1300	1.00	1.00	*****	0.50
26	12- 3-1973	900	12- 3-1973	900	900	1.00	1.00	*****	0.48
27	6-24-1976	1600	6-24-1976	1600	1600	0.90	0.90	*****	0.46
28	6-16-1979	1700	6-16-1979	1700	1700	0.90	0.90	*****	0.44
29	9- 4-1974	1500	9- 4-1974	1500	1500	0.90	0.90	*****	0.43
30	9-25-1972	1400	9-25-1972	1400	1400	0.90	0.90	*****	0.41
31	1-28-1982	1600	1-28-1982	1600	1600	0.90	0.90	*****	0.40
32	5- 1-1973	1500	5- 1-1973	1500	1500	0.90	0.90	*****	0.39
33	4-29-1983	1700	4-29-1983	1700	1700	0.90	0.90	*****	0.38
34	5-22-1983	1600	5-22-1983	1600	1600	0.90	0.90	*****	0.37
35	9- 8-1983	1600	9- 8-1983	1600	1600	0.90	0.90	*****	0.35
36	11- 6-1975	1400	11- 6-1975	1400	1400	0.80	0.80	*****	0.34
37	6-13-1982	1600	6-13-1982	1600	1600	0.80	0.80	*****	0.34
38	7-25-1973	1600	7-25-1973	1600	1600	0.80	0.80	*****	0.33
39	1-25-1973	2100	1-25-1973	2100	2100	0.80	0.80	*****	0.32
40	9-17-1973	1800	9-17-1973	1800	1800	0.80	0.80	*****	0.31

Table A8.b Rainstorm Ordering for 2 Hour Duration Events
 Dos Bocas Station : Index No. 3431
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	10-26-1976	1300	10-26-1976	1400	1400	3.90	1.95	8.05	12.42
2	11-22-1974	1600	11-22-1974	1700	1700	3.40	1.70	16.10	6.21
3	10- 5-1982	1500	10- 5-1982	1600	1600	3.30	1.65	24.15	4.14
4	7-27-1980	1500	7-27-1980	1600	1600	3.00	1.50	32.21	3.10
5	8- 8-1982	1500	8- 8-1982	1600	1600	3.00	1.50	40.26	2.48
6	2-11-1974	1700	2-11-1974	1800	1800	3.00	1.50	48.31	2.07
7	6-15-1979	1400	6-15-1979	1500	1500	2.90	1.45	56.36	1.77
8	10-11-1974	1600	10-11-1974	1700	1700	2.80	1.40	64.41	1.55
9	9-13-1977	1600	9-13-1977	1700	1700	2.70	1.35	72.46	1.38
10	5-15-1979	1400	5-15-1979	1500	1500	2.70	1.35	80.52	1.24
11	6-19-1981	1300	6-19-1981	1400	1400	2.60	1.30	88.57	1.13
12	11-17-1977	1400	11-17-1977	1500	1500	2.60	1.30	96.62	1.03
13	9-29-1973	1900	9-29-1973	2000	2000	2.60	1.30	*****	0.96
14	5-10-1976	1800	5-10-1976	1900	1900	2.50	1.25	*****	0.89
15	5-19-1976	1400	5-19-1976	1500	1500	2.30	1.15	*****	0.83
16	3-25-1981	1500	3-25-1981	1600	1600	2.20	1.10	*****	0.78
17	11- 5-1981	1600	11- 5-1981	1700	1700	2.20	1.10	*****	0.73
18	10-14-1976	1100	10-14-1976	1200	1200	2.00	1.00	*****	0.69
19	9- 8-1971	1500	9- 8-1971	1600	1600	2.00	1.00	*****	0.65
20	8-26-1976	1300	8-26-1976	1400	1400	1.90	0.95	*****	0.62
21	5-20-1982	1400	5-20-1982	1500	1500	1.90	0.95	*****	0.59
22	9- 6-1972	1600	9- 6-1972	1700	1700	1.90	0.95	*****	0.56
23	8-17-1981	1400	8-17-1981	1500	1500	1.90	0.95	*****	0.54
24	5- 9-1979	1500	5- 9-1979	1600	1600	1.80	0.90	*****	0.52
25	5- 5-1981	1400	5- 5-1981	1500	1500	1.80	0.90	*****	0.50
26	3- 3-1975	1500	3- 3-1975	1600	1600	1.70	0.85	*****	0.48
27	9-19-1972	1500	9-19-1972	1600	1600	1.70	0.85	*****	0.46
28	7-17-1973	1500	7-17-1973	1600	1600	1.70	0.85	*****	0.44
29	9-18-1982	1500	9-18-1982	1600	1600	1.70	0.85	*****	0.43
30	9-30-1980	1500	9-30-1980	1600	1600	1.70	0.85	*****	0.41
31	6- 3-1980	1300	6- 3-1980	1400	1400	1.60	0.80	*****	0.40
32	9-16-1978	1500	9-16-1978	1600	1600	1.60	0.80	*****	0.39
33	6- 1-1973	1600	6- 1-1973	1700	1700	1.60	0.80	*****	0.38
34	9-28-1972	1500	9-28-1972	1600	1600	1.50	0.75	*****	0.37
35	6-26-1981	1500	6-26-1981	1600	1600	1.50	0.75	*****	0.35
36	9-30-1979	1200	9-30-1979	1300	1300	1.50	0.75	*****	0.34
37	9-24-1980	1300	9-24-1980	1400	1400	1.50	0.75	*****	0.34
38	10- 6-1974	1500	10- 6-1974	1600	1600	1.40	0.70	*****	0.33
39	10- 4-1973	1400	10- 4-1973	1500	1500	1.40	0.70	*****	0.32
40	10-22-1981	1400	10-22-1981	1500	1500	1.40	0.70	*****	0.31

Table A8.c Rainstorm Ordering for 3 Hour Duration Events
 Dos Bocas Station : Index No. 3431
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	3-28-1981	1700	3-28-1981	1900	1900	4.50	1.50	8.05	12.42
2	4-26-1974	1400	4-26-1974	1600	1600	3.80	1.27	16.10	6.21
3	3-17-1977	1700	3-17-1977	1900	1900	3.70	1.23	24.15	4.14
4	6-24-1981	1300	6-24-1981	1500	1500	3.70	1.23	32.21	3.10
5	5-12-1980	1200	5-12-1980	1400	1400	3.20	1.07	40.26	2.48
6	1- 9-1981	1700	1- 9-1981	1900	1900	3.10	1.03	48.31	2.07
7	5-25-1978	1500	5-25-1978	1700	1700	3.00	1.00	56.36	1.77
8	8-16-1981	1300	8-16-1981	1500	1500	3.00	1.00	64.41	1.55
9	3-14-1979	1600	3-14-1979	1800	1800	2.90	0.97	72.46	1.38
10	10- 1-1972	1300	10- 1-1972	1500	1500	2.70	0.90	80.52	1.24
11	9-23-1978	1300	9-23-1978	1500	1500	2.70	0.90	88.57	1.13
12	10- 5-1978	1400	10- 5-1978	1600	1600	2.70	0.90	96.62	1.03
13	5-13-1983	1600	5-13-1983	1800	1800	2.60	0.87	*****	0.96
14	5-18-1983	1400	5-18-1983	1600	1600	2.60	0.87	*****	0.89
15	10- 4-1982	1500	10- 4-1982	1700	1700	2.50	0.83	*****	0.83
16	5-15-1972	1400	5-15-1972	1600	1600	2.50	0.83	*****	0.78
17	6-24-1978	1400	6-24-1978	1600	1600	2.50	0.83	*****	0.73
18	5-22-1976	1300	5-22-1976	1500	1500	2.40	0.80	*****	0.69
19	11- 9-1982	1600	11- 9-1982	1800	1800	2.40	0.80	*****	0.65
20	8-23-1976	1700	8-23-1976	1900	1900	2.30	0.77	*****	0.62
21	5-13-1982	1300	5-13-1982	1500	1500	2.30	0.77	*****	0.59
22	5-31-1973	1500	5-31-1973	1700	1700	2.20	0.73	*****	0.56
23	11-15-1977	1500	11-15-1977	1700	1700	2.20	0.73	*****	0.54
24	1- 5-1981	1900	1- 5-1981	2100	2100	2.20	0.73	*****	0.52
25	8-29-1971	1400	8-29-1971	1600	1600	2.10	0.70	*****	0.50
26	4-27-1974	1900	4-27-1974	2100	2100	2.10	0.70	*****	0.48
27	11- 2-1977	1400	11- 2-1977	1600	1600	2.10	0.70	*****	0.46
28	10- 2-1974	1400	10- 2-1974	1600	1600	2.10	0.70	*****	0.44
29	8-29-1973	1400	8-29-1973	1600	1600	2.10	0.70	*****	0.43
30	10-15-1971	1600	10-15-1971	1800	1800	1.90	0.63	*****	0.41
31	5- 9-1982	1700	5- 9-1982	1900	1900	1.80	0.60	*****	0.40
32	9- 7-1974	1500	9- 7-1974	1700	1700	1.80	0.60	*****	0.39
33	9- 7-1972	1300	9- 7-1972	1500	1500	1.80	0.60	*****	0.38
34	9-24-1978	1500	9-24-1978	1700	1700	1.70	0.57	*****	0.37
35	11- 1-1971	1600	11- 1-1971	1800	1800	1.70	0.57	*****	0.35
36	5-25-1974	1300	5-25-1974	1500	1500	1.70	0.57	*****	0.34
37	8- 7-1978	1400	8- 7-1978	1600	1600	1.70	0.57	*****	0.34
38	7- 9-1973	1500	7- 9-1973	1700	1700	1.70	0.57	*****	0.33
39	8-17-1983	1400	8-17-1983	1600	1600	1.70	0.57	*****	0.32
40	5-16-1972	1500	5-16-1972	1700	1700	1.60	0.53	*****	0.31

Table A8.d Rainstorm Ordering for 4 Hour Duration Events
 Dos Bocas Station : Index No. 3431
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	3-10-1973	1500	3-10-1973	1800	3.50	0.88	8.05	12.42	
2	11-13-1977	1600	11-13-1977	1900	3.50	0.88	16.10	6.21	
3	9-29-1979	1000	9-29-1979	1300	2.90	0.73	24.15	4.14	
4	5-12-1979	1300	5-12-1979	1600	2.40	0.60	32.21	3.10	
5	11-18-1975	1700	11-18-1975	2000	2.40	0.60	40.26	2.48	
6	5- 4-1977	1800	5- 4-1977	2100	2.10	0.52	48.31	2.07	
7	8-25-1975	1500	8-25-1975	1800	2.10	0.52	56.36	1.77	
8	9- 1-1972	1000	9- 1-1972	1300	2.10	0.52	64.41	1.55	
9	6- 8-1976	1600	6- 8-1976	1900	2.10	0.52	72.46	1.38	
10	5- 7-1978	1500	5- 7-1978	1800	2.00	0.50	80.52	1.24	
11	9-16-1973	1400	9-16-1973	1700	1.90	0.48	88.57	1.13	
12	3- 8-1975	1600	3- 8-1975	1900	1.70	0.43	96.62	1.03	
13	5-11-1973	1400	5-11-1973	1700	1.60	0.40	*****	0.96	
14	10-31-1977	1300	10-31-1977	1600	1.60	0.40	*****	0.89	
15	9-18-1973	1300	9-18-1973	1600	1.60	0.40	*****	0.83	
16	2-13-1973	2000	2-13-1973	2300	1.50	0.38	*****	0.78	
17	6-27-1981	1300	6-27-1981	1600	1.50	0.38	*****	0.73	
18	3-29-1981	400	3-29-1981	700	1.30	0.32	*****	0.69	
19	4-14-1976	1400	4-14-1976	1700	1.30	0.32	*****	0.65	
20	1-21-1977	300	1-21-1977	600	1.10	0.27	*****	0.62	
21	5- 6-1979	1600	5- 6-1979	1900	1.10	0.27	*****	0.59	
22	12-23-1975	1800	12-23-1975	2100	1.00	0.25	*****	0.56	
23	6-16-1975	1500	6-16-1975	1800	1.00	0.25	*****	0.54	
24	8-30-1974	300	8-30-1974	600	1.00	0.25	*****	0.52	
25	8-28-1982	1300	8-28-1982	1600	1.00	0.25	*****	0.50	
26	5-11-1978	1300	5-11-1978	1600	0.90	0.22	*****	0.48	
27	1-23-1977	2200	1-24-1977	100	0.80	0.20	*****	0.46	

Table A8.e Rainstorm Ordering for 5 Hour Duration Events
 Dos Bocas Station : Index No. 3431
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	4-11-1980	1400	4-11-1980	1800	3.50	0.70	8.05	12.42	
2	6-16-1981	1800	6-16-1981	2200	3.00	0.60	16.10	6.21	
3	4-20-1973	1300	4-20-1973	1700	2.70	0.54	24.15	4.14	
4	4- 7-1972	2200	4- 8-1972	200	2.60	0.52	32.21	3.10	
5	11- 8-1981	2000	11- 8-1981	2400	2.50	0.50	40.26	2.48	
6	1-23-1977	1400	1-23-1977	1800	2.00	0.40	48.31	2.07	
7	10-27-1974	1500	10-27-1974	1900	2.00	0.40	56.36	1.77	
8	1-14-1972	1300	1-14-1972	1700	1.80	0.36	64.41	1.55	
9	3-24-1973	2000	3-24-1973	2400	1.80	0.36	72.46	1.38	
10	12-12-1981	2300	12-13-1981	300	1.60	0.32	80.52	1.24	
11	4-25-1980	1500	4-25-1980	1900	1.50	0.30	88.57	1.13	
12	11-13-1973	1700	11-13-1973	2100	1.40	0.28	96.62	1.03	
13	9-15-1980	1500	9-15-1980	1900	1.40	0.28	*****	0.96	
14	2-20-1983	2100	2-21-1983	100	1.40	0.28	*****	0.89	
15	12- 7-1980	600	12- 7-1980	1000	1.30	0.26	*****	0.83	
16	2-14-1981	1700	2-14-1981	2100	1.30	0.26	*****	0.78	

Table A9.a Rainstorm Ordering for 1 Hour Duration Events
 Fajardo Station : Index No. 3657
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	7-13-1977	1900	7-13-1977	1900	1.30	1.30	8.05	12.42	
2	4-19-1979	2100	4-19-1979	2100	1.30	1.30	16.10	6.21	
3	9-23-1978	1200	9-23-1978	1200	1.10	1.10	24.15	4.14	
4	5-17-1980	1500	5-17-1980	1500	1.00	1.00	32.21	3.10	
5	10- 7-1975	1500	10- 7-1975	1500	0.90	0.90	40.26	2.48	
6	3- 1-1972	1600	3- 1-1972	1600	0.90	0.90	48.31	2.07	
7	5-14-1979	200	5-14-1979	200	0.90	0.90	56.36	1.77	
8	4- 3-1978	1600	4- 3-1978	1600	0.90	0.90	64.41	1.55	
9	4-11-1972	2400	4-11-1972	2400	0.80	0.80	72.46	1.38	
10	5-15-1972	1800	5-15-1972	1800	0.80	0.80	80.52	1.24	
11	8- 4-1975	1800	8- 4-1975	1800	0.80	0.80	88.57	1.13	
12	10-15-1971	1700	10-15-1971	1700	0.80	0.80	96.62	1.03	
13	11-22-1979	400	11-22-1979	400	0.80	0.80	*****	0.96	
14	10-13-1971	2000	10-13-1971	2000	0.80	0.80	*****	0.89	
15	2-14-1981	1900	2-14-1981	1900	0.80	0.80	*****	0.83	
16	7-15-1981	1000	7-15-1981	1000	0.80	0.80	*****	0.78	
17	1-12-1972	2000	1-12-1972	2000	0.70	0.70	*****	0.73	
18	9- 4-1974	1400	9- 4-1974	1400	0.70	0.70	*****	0.69	
19	9-27-1980	1800	9-27-1980	1800	0.70	0.70	*****	0.65	
20	9-30-1976	2100	9-30-1976	2100	0.70	0.70	*****	0.62	
21	3- 2-1975	1100	3- 2-1975	1100	0.70	0.70	*****	0.59	
22	9-28-1982	1400	9-28-1982	1400	0.70	0.70	*****	0.56	
23	8-26-1972	1400	8-26-1972	1400	0.60	0.60	*****	0.54	
24	5- 9-1979	900	5- 9-1979	900	0.60	0.60	*****	0.52	
25	9- 1-1972	1900	9- 1-1972	1900	0.60	0.60	*****	0.50	
26	5-15-1979	600	5-15-1979	600	0.60	0.60	*****	0.48	
27	9-29-1972	800	9-29-1972	800	0.60	0.60	*****	0.46	
28	4-25-1980	1300	4-25-1980	1300	0.60	0.60	*****	0.44	
29	10-13-1976	1100	10-13-1976	1100	0.60	0.60	*****	0.43	
30	8- 5-1971	2000	8- 5-1971	2000	0.60	0.60	*****	0.41	
31	10- 6-1980	1500	10- 6-1980	1500	0.60	0.60	*****	0.40	
32	10- 1-1977	2400	10- 1-1977	2400	0.60	0.60	*****	0.39	
33	11- 8-1974	500	11- 8-1974	500	0.60	0.60	*****	0.38	
34	10-29-1981	1700	10-29-1981	1700	0.60	0.60	*****	0.37	
35	11- 8-1981	2400	11- 8-1981	2400	0.60	0.60	*****	0.35	
36	7-18-1982	1300	7-18-1982	1300	0.60	0.60	*****	0.34	
37	7-12-1972	2100	7-12-1972	2100	0.60	0.60	*****	0.34	
38	5- 7-1983	900	5- 7-1983	900	0.60	0.60	*****	0.33	
39	8-25-1983	1300	8-25-1983	1300	0.60	0.60	*****	0.32	
40	10-15-1979	900	10-15-1979	900	0.50	0.50	*****	0.31	

Table A9.b Rainstorm Ordering for 2 Hour Duration Events
 Fajardo Station : Index No. 3657
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	4-21-1979	500	4-21-1979	600	3.50	1.75	8.05	12.42	
2	3- 3-1975	1700	3- 3-1975	1800	2.10	1.05	16.10	6.21	
3	11- 4-1981	1200	11- 4-1981	1300	2.10	1.05	24.15	4.14	
4	5-13-1982	600	5-13-1982	700	2.00	1.00	32.21	3.10	
5	5-18-1983	2200	5-18-1983	2300	1.80	0.90	40.26	2.48	
6	6-23-1981	1700	6-23-1981	1800	1.70	0.85	48.31	2.07	
7	11-11-1975	1500	11-11-1975	1600	1.60	0.80	56.36	1.77	
8	5-16-1983	2300	5-16-1983	2400	1.50	0.75	64.41	1.55	
9	6- 1-1982	1500	6- 1-1982	1600	1.50	0.75	72.46	1.38	
10	10-30-1981	1700	10-30-1981	1800	1.40	0.70	80.52	1.24	
11	3-28-1981	2200	3-28-1981	2300	1.40	0.70	88.57	1.13	
12	11- 8-1974	1400	11- 8-1974	1500	1.40	0.70	96.62	1.03	
13	11-12-1977	1300	11-12-1977	1400	1.30	0.65	*****	0.96	
14	6- 5-1976	300	6- 5-1976	400	1.30	0.65	*****	0.89	
15	5-14-1979	900	5-14-1979	1000	1.30	0.65	*****	0.83	
16	1-27-1981	1500	1-27-1981	1600	1.30	0.65	*****	0.78	
17	5-23-1977	600	5-23-1977	700	1.20	0.60	*****	0.73	
18	9- 6-1977	700	9- 6-1977	800	1.20	0.60	*****	0.69	
19	2- 5-1982	1100	2- 5-1982	1200	1.10	0.55	*****	0.65	
20	4-16-1981	1300	4-16-1981	1400	1.10	0.55	*****	0.62	
21	6-29-1979	2000	6-29-1979	2100	1.10	0.55	*****	0.59	
22	11-11-1972	300	11-11-1972	400	1.10	0.55	*****	0.56	
23	10-27-1978	1400	10-27-1978	1500	1.10	0.55	*****	0.54	
24	12-11-1975	1600	12-11-1975	1700	1.00	0.50	*****	0.52	
25	8-20-1979	1300	8-20-1979	1400	1.00	0.50	*****	0.50	
26	5-22-1982	200	5-22-1982	300	1.00	0.50	*****	0.48	
27	4-11-1980	800	4-11-1980	900	1.00	0.50	*****	0.46	
28	10- 7-1972	2400	10- 8-1972	100	1.00	0.50	*****	0.44	
29	1-30-1981	1500	1-30-1981	1600	1.00	0.50	*****	0.43	
30	11- 4-1976	300	11- 4-1976	400	0.90	0.45	*****	0.41	
31	12-27-1981	100	12-27-1981	200	0.90	0.45	*****	0.40	
32	10- 7-1977	900	10- 7-1977	1000	0.90	0.45	*****	0.39	
33	10-22-1971	1300	10-22-1971	1400	0.90	0.45	*****	0.38	
34	11- 7-1977	400	11- 7-1977	500	0.80	0.40	*****	0.37	
35	10-13-1971	1500	10-13-1971	1600	0.80	0.40	*****	0.35	
36	10-31-1979	1900	10-31-1979	2000	0.80	0.40	*****	0.34	
37	8-20-1978	2400	8-21-1978	100	0.80	0.40	*****	0.34	
38	6-12-1980	100	6-12-1980	200	0.80	0.40	*****	0.33	
39	1-19-1981	300	1-19-1981	400	0.80	0.40	*****	0.32	
40	8- 4-1977	1800	8- 4-1977	1900	0.80	0.40	*****	0.31	

Table A9.c Rainstorm Ordering for 3 Hour Duration Events
 Fajardo Station : Index No. 3657
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	4-23-1973	1500	4-23-1973	1700	3.40	1.13	8.05	12.42	
2	11-19-1982	300	11-19-1982	500	3.00	1.00	16.10	6.21	
3	3- 8-1983	1900	3- 8-1983	2100	2.00	0.67	24.15	4.14	
4	8-18-1976	1600	8-18-1976	1800	1.80	0.60	32.21	3.10	
5	11-14-1978	400	11-14-1978	600	1.70	0.57	40.26	2.48	
6	5-30-1979	1500	5-30-1979	1700	1.60	0.53	48.31	2.07	
7	6-24-1979	1200	6-24-1979	1400	1.60	0.53	56.36	1.77	
8	3-12-1983	1400	3-12-1983	1600	1.60	0.53	64.41	1.55	
9	11- 8-1979	700	11- 8-1979	900	1.50	0.50	72.46	1.38	
10	4-11-1972	1700	4-11-1972	1900	1.50	0.50	80.52	1.24	
11	6- 7-1980	1400	6- 7-1980	1600	1.40	0.47	88.57	1.13	
12	8- 1-1976	1500	8- 1-1976	1700	1.30	0.43	96.62	1.03	
13	5-16-1979	1200	5-16-1979	1400	1.30	0.43	*****	0.96	
14	1-27-1982	200	1-27-1982	400	1.30	0.43	*****	0.89	
15	11-22-1979	1400	11-22-1979	1600	1.20	0.40	*****	0.83	
16	11- 6-1975	700	11- 6-1975	900	1.20	0.40	*****	0.78	
17	7-12-1983	300	7-12-1983	500	1.20	0.40	*****	0.73	
18	5-15-1979	1700	5-15-1979	1900	1.10	0.37	*****	0.69	
19	5-14-1980	2400	5-15-1980	200	1.10	0.37	*****	0.65	
20	11- 2-1975	300	11- 2-1975	500	1.00	0.33	*****	0.62	
21	9- 4-1979	900	9- 4-1979	1100	1.00	0.33	*****	0.59	
22	5-27-1980	1700	5-27-1980	1900	1.00	0.33	*****	0.56	
23	10-22-1975	1200	10-22-1975	1400	1.00	0.33	*****	0.54	
24	12-27-1981	1300	12-27-1981	1500	1.00	0.33	*****	0.52	
25	8-23-1977	1600	8-23-1977	1800	0.90	0.30	*****	0.50	
26	9- 5-1979	1600	9- 5-1979	1800	0.90	0.30	*****	0.48	
27	6-27-1983	1000	6-27-1983	1200	0.90	0.30	*****	0.46	
28	12-12-1979	1500	12-12-1979	1700	0.90	0.30	*****	0.44	
29	9-15-1975	2000	9-15-1975	2200	0.80	0.27	*****	0.43	
30	6- 9-1979	1100	6- 9-1979	1300	0.80	0.27	*****	0.41	
31	2-21-1983	200	2-21-1983	400	0.80	0.27	*****	0.40	
32	8-11-1973	1300	8-11-1973	1500	0.80	0.27	*****	0.39	
33	11-17-1978	200	11-17-1978	400	0.80	0.27	*****	0.38	
34	8- 2-1976	1900	8- 2-1976	2100	0.80	0.27	*****	0.37	
35	10-11-1973	1600	10-11-1973	1800	0.80	0.27	*****	0.35	
36	8-29-1982	300	8-29-1982	500	0.70	0.23	*****	0.34	
37	5-28-1979	2100	5-28-1979	2300	0.70	0.23	*****	0.34	
38	6-30-1979	1900	6-30-1979	2100	0.70	0.23	*****	0.33	
39	8-24-1971	1000	8-24-1971	1200	0.70	0.23	*****	0.32	
40	10-31-1977	1400	10-31-1977	1600	0.70	0.23	*****	0.31	

Table A9.d Rainstorm Ordering for 4 Hour Duration Events
 Fajardo Station : Index No. 3657
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	6-15-1972	100	6-15-1972	400	3.00	0.75	8.05	12.42	
2	10-30-1981	2300	10-31-1981	200	2.80	0.70	16.10	6.21	
3	11- 9-1977	600	11- 9-1977	900	2.00	0.50	24.15	4.14	
4	5-14-1979	2100	5-14-1979	2400	1.80	0.45	32.21	3.10	
5	6-29-1979	1500	6-29-1979	1800	1.60	0.40	40.26	2.48	
6	8-30-1974	100	8-30-1974	400	1.60	0.40	48.31	2.07	
7	12-21-1982	1900	12-21-1982	2200	1.60	0.40	56.36	1.77	
8	4-14-1976	2300	4-15-1976	200	1.50	0.38	64.41	1.55	
9	1-17-1973	700	1-17-1973	1000	1.40	0.35	72.46	1.38	
10	11-20-1974	500	11-20-1974	800	1.40	0.35	80.52	1.24	
11	9-26-1978	1000	9-26-1978	1300	1.30	0.32	88.57	1.13	
12	10- 1-1973	600	10- 1-1973	900	1.20	0.30	96.62	1.03	
13	11- 7-1974	200	11- 7-1974	500	1.20	0.30	*****	0.96	
14	11-22-1974	1900	11-22-1974	2200	1.10	0.27	*****	0.89	
15	9- 8-1976	1900	9- 8-1976	2200	1.10	0.27	*****	0.83	
16	5-15-1983	800	5-15-1983	1100	1.10	0.27	*****	0.78	
17	10-30-1976	1700	10-30-1976	2000	1.00	0.25	*****	0.73	
18	11-11-1982	1400	11-11-1982	1700	1.00	0.25	*****	0.69	
19	5-23-1977	900	5-23-1977	1200	1.00	0.25	*****	0.65	
20	3- 5-1974	1900	3- 5-1974	2200	1.00	0.25	*****	0.62	
21	11- 2-1974	1700	11- 2-1974	2000	0.90	0.22	*****	0.59	
22	12-14-1981	700	12-14-1981	1000	0.80	0.20	*****	0.56	
23	11- 5-1977	600	11- 5-1977	900	0.80	0.20	*****	0.54	
24	8-10-1980	600	8-10-1980	900	0.80	0.20	*****	0.52	
25	4-20-1976	1300	4-20-1976	1600	0.80	0.20	*****	0.50	

Table A9.e Rainstorm Ordering for 5 Hour Duration Events
 Fajardo Station : Index No. 3657
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	5-13-1983	1500	5-13-1983	1900		2.80	0.56	8.05	12.42
2	5-16-1979	1900	5-16-1979	2300		2.40	0.48	16.10	6.21
3	8- 7-1980	2100	8- 8-1980	100		2.20	0.44	24.15	4.14
4	9- 4-1973	1000	9- 4-1973	1400		2.10	0.42	32.21	3.10
5	5-16-1979	400	5-16-1979	800		1.80	0.36	40.26	2.48
6	11-12-1982	1800	11-12-1982	2200		1.80	0.36	48.31	2.07
7	4-25-1976	1300	4-25-1976	1700		1.80	0.36	56.36	1.77
8	10-11-1973	500	10-11-1973	900		1.60	0.32	64.41	1.55
9	3-29-1979	800	3-29-1979	1200		1.40	0.28	72.46	1.38
10	3-27-1977	1000	3-27-1977	1400		1.40	0.28	80.52	1.24
11	9-29-1976	1900	9-29-1976	2300		1.20	0.24	88.57	1.13
12	3- 8-1973	1700	3- 8-1973	2100		1.20	0.24	96.62	1.03
13	7-18-1979	500	7-18-1979	900		1.10	0.22	*****	0.96
14	10-10-1973	2300	10-11-1973	300		1.10	0.22	*****	0.89
15	10-26-1978	1500	10-26-1978	1900		1.00	0.20	*****	0.83
16	9- 3-1972	100	9- 3-1972	500		1.00	0.20	*****	0.78

Table A10.a Rainstorm Ordering for 1 Hour Duration Events
 Maricao 2 SSW Station : Index No. 5908
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	10-17-1972	1300	10-17-1972	1300	1300	2.50	2.50	8.05	12.42
2	11-23-1975	1500	11-23-1975	1500	1500	2.50	2.50	16.10	6.21
3	4-22-1972	1400	4-22-1972	1400	1400	2.00	2.00	24.15	4.14
4	3- 7-1972	1700	3- 7-1972	1700	1700	1.90	1.90	32.21	3.10
5	8-24-1975	2000	8-24-1975	2000	2000	1.70	1.70	40.26	2.48
6	7-19-1980	1300	7-19-1980	1300	1300	1.50	1.50	48.31	2.07
7	4-27-1974	1400	4-27-1974	1400	1400	1.40	1.40	56.36	1.77
8	11-23-1974	1500	11-23-1974	1500	1500	1.30	1.30	64.41	1.55
9	6-19-1976	1600	6-19-1976	1600	1600	1.20	1.20	72.46	1.38
10	7-10-1978	1400	7-10-1978	1400	1400	1.20	1.20	80.52	1.24
11	9-29-1978	1500	9-29-1978	1500	1500	1.20	1.20	88.57	1.13
12	6-24-1973	1600	6-24-1973	1600	1600	1.20	1.20	96.62	1.03
13	9-20-1980	1400	9-20-1980	1400	1400	1.20	1.20	*****	0.96
14	11-25-1981	1500	11-25-1981	1500	1500	1.20	1.20	*****	0.89
15	8-30-1982	1400	8-30-1982	1400	1400	1.20	1.20	*****	0.83
16	2-22-1972	1800	2-22-1972	1800	1800	1.10	1.10	*****	0.78
17	10-27-1974	700	10-27-1974	700	700	1.10	1.10	*****	0.73
18	1-27-1982	1600	1-27-1982	1600	1600	1.10	1.10	*****	0.69
19	9-24-1976	1600	9-24-1976	1600	1600	1.10	1.10	*****	0.65
20	6-17-1973	1500	6-17-1973	1500	1500	1.00	1.00	*****	0.62
21	8-28-1979	1500	8-28-1979	1500	1500	0.90	0.90	*****	0.59
22	7-28-1976	1700	7-28-1976	1700	1700	0.90	0.90	*****	0.56
23	3-14-1974	1800	3-14-1974	1800	1800	0.90	0.90	*****	0.54
24	9-25-1977	1400	9-25-1977	1400	1400	0.90	0.90	*****	0.52
25	8-20-1974	1700	8-20-1974	1700	1700	0.90	0.90	*****	0.50
26	11-29-1974	1400	11-29-1974	1400	1400	0.90	0.90	*****	0.48
27	4-29-1983	1500	4-29-1983	1500	1500	0.90	0.90	*****	0.46
28	7- 2-1971	1300	7- 2-1971	1300	1300	0.80	0.80	*****	0.44
29	10-20-1979	1800	10-20-1979	1800	1800	0.80	0.80	*****	0.43
30	10- 8-1976	1500	10- 8-1976	1500	1500	0.80	0.80	*****	0.41
31	7-26-1977	1700	7-26-1977	1700	1700	0.80	0.80	*****	0.40
32	10-18-1977	1300	10-18-1977	1300	1300	0.70	0.70	*****	0.39
33	8- 3-1975	1500	8- 3-1975	1500	1500	0.70	0.70	*****	0.38
34	3-25-1974	1900	3-25-1974	1900	1900	0.70	0.70	*****	0.37
35	10-11-1972	1400	10-11-1972	1400	1400	0.70	0.70	*****	0.35
36	7-15-1974	1500	7-15-1974	1500	1500	0.70	0.70	*****	0.34
37	11- 4-1979	1600	11- 4-1979	1600	1600	0.70	0.70	*****	0.34
38	10-22-1972	1400	10-22-1972	1400	1400	0.70	0.70	*****	0.33
39	8- 9-1980	1900	8- 9-1980	1900	1900	0.70	0.70	*****	0.32
40	8-21-1976	1500	8-21-1976	1500	1500	0.70	0.70	*****	0.31

Table A10.b Rainstorm Ordering for 2 Hour Duration Events
 Maricao 2 SSW Station : Index No. 5908
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	6-21-1981	1600	6-21-1981	1700	1700	3.60	1.80	8.05	12.42
2	8-13-1980	1600	8-13-1980	1700	1700	3.50	1.75	16.10	6.21
3	9- 9-1975	1500	9- 9-1975	1600	1600	3.00	1.50	24.15	4.14
4	8- 8-1982	1400	8- 8-1982	1500	1500	2.90	1.45	32.21	3.10
5	5-12-1983	1800	5-12-1983	1900	1900	2.90	1.45	40.26	2.48
6	10-15-1980	1700	10-15-1980	1800	1800	2.80	1.40	48.31	2.07
7	11-17-1979	1700	11-17-1979	1800	1800	2.80	1.40	56.36	1.77
8	4- 9-1972	1600	4- 9-1972	1700	1700	2.70	1.35	64.41	1.55
9	4- 7-1980	1600	4- 7-1980	1700	1700	2.50	1.25	72.46	1.38
10	10- 3-1981	1600	10- 3-1981	1700	1700	2.50	1.25	80.52	1.24
11	9-14-1975	1600	9-14-1975	1700	1700	2.50	1.25	88.57	1.13
12	8-12-1974	1600	8-12-1974	1700	1700	2.50	1.25	96.62	1.03
13	9-24-1974	1500	9-24-1974	1600	1600	2.40	1.20	*****	0.96
14	6- 2-1975	1500	6- 2-1975	1600	1600	2.40	1.20	*****	0.89
15	6-16-1973	1600	6-16-1973	1700	1700	2.30	1.15	*****	0.83
16	8-18-1979	1500	8-18-1979	1600	1600	2.30	1.15	*****	0.78
17	3-25-1972	1600	3-25-1972	1700	1700	2.20	1.10	*****	0.73
18	11- 3-1977	1300	11- 3-1977	1400	1400	2.20	1.10	*****	0.69
19	10- 3-1978	1400	10- 3-1978	1500	1500	2.20	1.10	*****	0.65
20	9-27-1974	1300	9-27-1974	1400	1400	2.10	1.05	*****	0.62
21	9- 1-1981	1700	9- 1-1981	1800	1800	2.10	1.05	*****	0.59
22	8- 2-1978	1800	8- 2-1978	1900	1900	2.10	1.05	*****	0.56
23	9- 8-1974	1700	9- 8-1974	1800	1800	2.10	1.05	*****	0.54
24	7-11-1977	1900	7-11-1977	2000	2000	2.10	1.05	*****	0.52
25	4-11-1972	1600	4-11-1972	1700	1700	2.00	1.00	*****	0.50
26	4- 7-1977	1500	4- 7-1977	1600	1600	2.00	1.00	*****	0.48
27	9- 3-1975	1700	9- 3-1975	1800	1800	2.00	1.00	*****	0.46
28	8- 7-1971	1500	8- 7-1971	1600	1600	2.00	1.00	*****	0.44
29	8-16-1971	1400	8-16-1971	1500	1500	1.90	0.95	*****	0.43
30	6-13-1979	1800	6-13-1979	1900	1900	1.90	0.95	*****	0.41
31	11-11-1975	1300	11-11-1975	1400	1400	1.90	0.95	*****	0.40
32	6-22-1978	1400	6-22-1978	1500	1500	1.90	0.95	*****	0.39
33	7- 1-1978	1300	7- 1-1978	1400	1400	1.90	0.95	*****	0.38
34	7- 5-1971	1400	7- 5-1971	1500	1500	1.90	0.95	*****	0.37
35	4-17-1978	1500	4-17-1978	1600	1600	1.80	0.90	*****	0.35
36	5- 4-1983	1500	5- 4-1983	1600	1600	1.80	0.90	*****	0.34
37	7-17-1972	1400	7-17-1972	1500	1500	1.80	0.90	*****	0.34
38	9- 5-1982	1700	9- 5-1982	1800	1800	1.70	0.85	*****	0.33
39	12-31-1977	1700	12-31-1977	1800	1800	1.70	0.85	*****	0.32
40	8-27-1975	1400	8-27-1975	1500	1500	1.70	0.85	*****	0.31

Table A10.c Rainstorm Ordering for 3 Hour Duration Events
 Maricao 2 SSW Station : Index No. 5908
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	8-23-1982	1400	8-23-1982	1600	1600	4.50	1.50	8.05	12.42
2	2-11-1976	1600	2-11-1976	1800	1800	3.50	1.17	16.10	6.21
3	9-10-1983	1400	9-10-1983	1600	1600	3.50	1.17	24.15	4.14
4	7-18-1974	1400	7-18-1974	1600	1600	3.10	1.03	32.21	3.10
5	10-13-1972	1600	10-13-1972	1800	1800	3.10	1.03	40.26	2.48
6	7- 4-1972	1200	7- 4-1972	1400	1400	3.00	1.00	48.31	2.07
7	5-12-1979	1400	5-12-1979	1600	1600	3.00	1.00	56.36	1.77
8	11-12-1977	1500	11-12-1977	1700	1700	2.90	0.97	64.41	1.55
9	8-25-1978	1500	8-25-1978	1700	1700	2.80	0.93	72.46	1.38
10	9-26-1981	1500	9-26-1981	1700	1700	2.80	0.93	80.52	1.24
11	8-20-1979	1300	8-20-1979	1500	1500	2.70	0.90	88.57	1.13
12	11-10-1977	1300	11-10-1977	1500	1500	2.50	0.83	96.62	1.03
13	10-19-1972	1500	10-19-1972	1700	1700	2.50	0.83	*****	0.96
14	8-27-1973	1500	8-27-1973	1700	1700	2.50	0.83	*****	0.89
15	6-30-1977	1400	6-30-1977	1600	1600	2.50	0.83	*****	0.83
16	3- 8-1980	1400	3- 8-1980	1600	1600	2.40	0.80	*****	0.78
17	9-25-1976	1200	9-25-1976	1400	1400	2.40	0.80	*****	0.73
18	9-14-1980	1400	9-14-1980	1600	1600	2.30	0.77	*****	0.69
19	9- 7-1976	1400	9- 7-1976	1600	1600	2.30	0.77	*****	0.65
20	10-29-1981	1300	10-29-1981	1500	1500	2.30	0.77	*****	0.62
21	2-15-1974	1600	2-15-1974	1800	1800	2.30	0.77	*****	0.59
22	9-30-1978	1400	9-30-1978	1600	1600	2.30	0.77	*****	0.56
23	9- 2-1980	1400	9- 2-1980	1600	1600	2.20	0.73	*****	0.54
24	3-26-1979	1500	3-26-1979	1700	1700	2.20	0.73	*****	0.52
25	11-12-1975	1400	11-12-1975	1600	1600	2.20	0.73	*****	0.50
26	7-17-1979	1400	7-17-1979	1600	1600	2.10	0.70	*****	0.48
27	10-16-1975	1400	10-16-1975	1600	1600	2.10	0.70	*****	0.46
28	5-31-1973	1000	5-31-1973	1200	1200	2.10	0.70	*****	0.44
29	10-20-1983	1300	10-20-1983	1500	1500	2.10	0.70	*****	0.43
30	10-27-1974	900	10-27-1974	1100	1100	2.00	0.67	*****	0.41
31	11- 8-1981	1400	11- 8-1981	1600	1600	2.00	0.67	*****	0.40
32	8- 4-1982	1600	8- 4-1982	1800	1800	2.00	0.67	*****	0.39
33	3- 4-1975	1200	3- 4-1975	1400	1400	2.00	0.67	*****	0.38
34	11- 1-1971	1600	11- 1-1971	1800	1800	2.00	0.67	*****	0.37
35	10- 1-1971	1300	10- 1-1971	1500	1500	2.00	0.67	*****	0.35
36	10- 9-1978	1300	10- 9-1978	1500	1500	1.90	0.63	*****	0.34
37	10-15-1983	1300	10-15-1983	1500	1500	1.90	0.63	*****	0.34
38	5-19-1983	1300	5-19-1983	1500	1500	1.90	0.63	*****	0.33
39	4-14-1972	1400	4-14-1972	1600	1600	1.80	0.60	*****	0.32
40	10-10-1983	1400	10-10-1983	1600	1600	1.80	0.60	*****	0.31

Table A10.d Rainstorm Ordering for 4 Hour Duration Events
 Maricao 2 SSW Station : Index No. 5908
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	5-18-1983	1300	5-18-1983	1600	5.20	1.30	8.05	12.42	
2	11-17-1982	1300	11-17-1982	1600	5.00	1.25	16.10	6.21	
3	10-10-1975	1600	10-10-1975	1900	4.80	1.20	24.15	4.14	
4	10-30-1978	1300	10-30-1978	1600	4.10	1.03	32.21	3.10	
5	10-18-1982	1800	10-18-1982	2100	3.90	0.98	40.26	2.48	
6	4-10-1980	1500	4-10-1980	1800	3.90	0.98	48.31	2.07	
7	12-16-1981	1400	12-16-1981	1700	3.90	0.98	56.36	1.77	
8	9- 1-1974	1300	9- 1-1974	1600	3.80	0.95	64.41	1.55	
9	10-18-1972	1500	10-18-1972	1800	3.20	0.80	72.46	1.38	
10	5-16-1980	1200	5-16-1980	1500	3.20	0.80	80.52	1.24	
11	7- 3-1972	1200	7- 3-1972	1500	3.00	0.75	88.57	1.13	
12	9- 1-1971	1300	9- 1-1971	1600	3.00	0.75	96.62	1.03	
13	11- 8-1973	1500	11- 8-1973	1800	3.00	0.75	*****	0.96	
14	11-13-1977	1300	11-13-1977	1600	2.90	0.73	*****	0.89	
15	7-12-1972	1200	7-12-1972	1500	2.80	0.70	*****	0.83	
16	10-21-1972	1600	10-21-1972	1900	2.60	0.65	*****	0.78	
17	9-27-1980	1400	9-27-1980	1700	2.60	0.65	*****	0.73	
18	10-21-1974	1000	10-21-1974	1300	2.50	0.63	*****	0.69	
19	10-17-1981	1500	10-17-1981	1800	2.50	0.63	*****	0.65	
20	9- 4-1973	1200	9- 4-1973	1500	2.50	0.63	*****	0.62	
21	4- 9-1980	1600	4- 9-1980	1900	2.40	0.60	*****	0.59	
22	11-11-1974	1700	11-11-1974	2000	2.40	0.60	*****	0.56	
23	7-17-1982	1400	7-17-1982	1700	2.40	0.60	*****	0.54	
24	9-28-1982	1400	9-28-1982	1700	2.30	0.58	*****	0.52	
25	11-20-1975	1400	11-20-1975	1700	2.30	0.58	*****	0.50	
26	11-20-1978	1300	11-20-1978	1600	2.30	0.58	*****	0.48	
27	4-30-1975	1600	4-30-1975	1900	2.30	0.58	*****	0.46	
28	8-31-1979	1000	8-31-1979	1300	2.20	0.55	*****	0.44	
29	10-25-1974	600	10-25-1974	900	2.20	0.55	*****	0.43	
30	10-14-1971	1400	10-14-1971	1700	2.20	0.55	*****	0.41	
31	7- 6-1975	1400	7- 6-1975	1700	2.10	0.52	*****	0.40	
32	10-15-1973	1600	10-15-1973	1900	2.10	0.52	*****	0.39	
33	10-26-1974	700	10-26-1974	1000	2.10	0.52	*****	0.38	
34	8-25-1983	1400	8-25-1983	1700	2.10	0.52	*****	0.37	
35	10-21-1971	1400	10-21-1971	1700	2.00	0.50	*****	0.35	
36	8- 4-1977	1700	8- 4-1977	2000	2.00	0.50	*****	0.34	
37	8-31-1975	1400	8-31-1975	1700	1.90	0.48	*****	0.34	
38	10- 1-1977	1300	10- 1-1977	1600	1.90	0.48	*****	0.33	
39	8-16-1980	1500	8-16-1980	1800	1.80	0.45	*****	0.32	
40	3-13-1973	1500	3-13-1973	1800	1.70	0.43	*****	0.31	

Table A10.e Rainstorm Ordering for 5 Hour Duration Events
 Maricao 2 SSW Station : Index No. 5908
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	4-20-1983	2200	4-21-1983		200	4.60	0.92	8.05	12.42
2	9-28-1980	1500	9-28-1980		1900	4.10	0.82	16.10	6.21
3	5-23-1978	1500	5-23-1978		1900	3.80	0.76	24.15	4.14
4	10-26-1971	1300	10-26-1971		1700	3.20	0.64	32.21	3.10
5	3- 9-1972	1500	3- 9-1972		1900	3.00	0.60	40.26	2.48
6	3-23-1972	1700	3-23-1972		2100	2.70	0.54	48.31	2.07
7	11-30-1974	1600	11-30-1974		2000	2.50	0.50	56.36	1.77
8	8-13-1975	1400	8-13-1975		1800	2.20	0.44	64.41	1.55
9	10- 5-1981	1300	10- 5-1981		1700	1.90	0.38	72.46	1.38
10	6-24-1979	1400	6-24-1979		1800	1.80	0.36	80.52	1.24
11	7-16-1974	1200	7-16-1974		1600	1.80	0.36	88.57	1.13
12	11-18-1981	1600	11-18-1981		2000	1.70	0.34	96.62	1.03
13	5- 4-1982	1300	5- 4-1982		1700	1.70	0.34	*****	0.96
14	4-12-1980	1200	4-12-1980		1600	1.70	0.34	*****	0.89
15	9- 8-1981	1900	9- 8-1981		2300	1.60	0.32	*****	0.83
16	8-31-1979	1500	8-31-1979		1900	1.60	0.32	*****	0.78
17	8-26-1982	1400	8-26-1982		1800	1.60	0.32	*****	0.73
18	10-16-1981	1500	10-16-1981		1900	1.60	0.32	*****	0.69
19	6-10-1979	2400	6-11-1979		400	1.20	0.24	*****	0.65
20	4- 6-1982	1100	4- 6-1982		1500	1.10	0.22	*****	0.62
21	4- 4-1982	1600	4- 4-1982		2000	1.10	0.22	*****	0.59

Table All.a Rainstorm Ordering for 1 Hour Duration Events
 Ponce 4E Station : Index No. 7292
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	9-11-1975	1600	9-11-1975	1600	1600	1.20	1.20	8.05	12.42
2	10-10-1973	1200	10-10-1973	1200	1200	1.10	1.10	16.10	6.21
3	10-17-1981	1600	10-17-1981	1600	1600	1.10	1.10	24.15	4.14
4	8-17-1983	1600	8-17-1983	1600	1600	1.10	1.10	32.21	3.10
5	4-27-1974	1600	4-27-1974	1600	1600	1.00	1.00	40.26	2.48
6	10- 6-1973	1800	10- 6-1973	1800	1800	1.00	1.00	48.31	2.07
7	6- 4-1973	1800	6- 4-1973	1800	1800	0.80	0.80	56.36	1.77
8	11- 4-1977	1900	11- 4-1977	1900	1900	0.80	0.80	64.41	1.55
9	12-24-1975	100	12-24-1975	100	100	0.70	0.70	72.46	1.38
10	4-27-1974	2200	4-27-1974	2200	2200	0.70	0.70	80.52	1.24
11	5- 4-1981	2000	5- 4-1981	2000	2000	0.70	0.70	88.57	1.13
12	10-22-1975	2200	10-22-1975	2200	2200	0.70	0.70	96.62	1.03
13	12-10-1975	1500	12-10-1975	1500	1500	0.70	0.70	*****	0.96
14	10-30-1978	1200	10-30-1978	1200	1200	0.60	0.60	*****	0.89
15	4-29-1975	1600	4-29-1975	1600	1600	0.60	0.60	*****	0.83
16	8-16-1971	1400	8-16-1971	1400	1400	0.60	0.60	*****	0.78
17	8-14-1974	700	8-14-1974	700	700	0.60	0.60	*****	0.73
18	8-11-1972	100	8-11-1972	100	100	0.50	0.50	*****	0.69
19	8-30-1977	500	8-30-1977	500	500	0.50	0.50	*****	0.65
20	9- 2-1975	400	9- 2-1975	400	400	0.50	0.50	*****	0.62
21	11-24-1977	1300	11-24-1977	1300	1300	0.50	0.50	*****	0.59
22	8-15-1978	200	8-15-1978	200	200	0.50	0.50	*****	0.56
23	8-18-1972	1500	8-18-1972	1500	1500	0.50	0.50	*****	0.54
24	9-15-1975	1500	9-15-1975	1500	1500	0.50	0.50	*****	0.52
25	6-20-1981	1800	6-20-1981	1800	1800	0.50	0.50	*****	0.50
26	8-24-1981	900	8-24-1981	900	900	0.50	0.50	*****	0.48
27	8- 3-1971	1500	8- 3-1971	1500	1500	0.50	0.50	*****	0.46
28	6-15-1972	400	6-15-1972	400	400	0.50	0.50	*****	0.44
29	9- 2-1973	1600	9- 2-1973	1600	1600	0.40	0.40	*****	0.43
30	8- 6-1977	1900	8- 6-1977	1900	1900	0.40	0.40	*****	0.41
31	8-13-1977	1700	8-13-1977	1700	1700	0.40	0.40	*****	0.40
32	8-29-1974	1600	8-29-1974	1600	1600	0.40	0.40	*****	0.39
33	11-29-1974	1700	11-29-1974	1700	1700	0.40	0.40	*****	0.38
34	8- 7-1971	1600	8- 7-1971	1600	1600	0.40	0.40	*****	0.37
35	3- 2-1978	1800	3- 2-1978	1800	1800	0.40	0.40	*****	0.35
36	3-24-1978	100	3-24-1978	100	100	0.40	0.40	*****	0.34
37	3-24-1978	600	3-24-1978	600	600	0.40	0.40	*****	0.34
38	4-27-1978	200	4-27-1978	200	200	0.40	0.40	*****	0.33
39	5-20-1975	1100	5-20-1975	1100	1100	0.40	0.40	*****	0.32
40	8-17-1978	1200	8-17-1978	1200	1200	0.40	0.40	*****	0.31

Table All.b Rainstorm Ordering for 2 Hour Duration Events
 Ponce 4E Station : Index No. 7292
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	10-29-1976	2000	10-29-1976	2100	1.80	0.90	8.05	12.42	
2	10-30-1978	1700	10-30-1978	1800	1.80	0.90	16.10	6.21	
3	10-15-1976	1600	10-15-1976	1700	1.70	0.85	24.15	4.14	
4	10-21-1983	1500	10-21-1983	1600	1.70	0.85	32.21	3.10	
5	8-28-1980	1600	8-28-1980	1700	1.40	0.70	40.26	2.48	
6	12-13-1981	700	12-13-1981	800	1.30	0.65	48.31	2.07	
7	7-30-1973	1600	7-30-1973	1700	1.30	0.65	56.36	1.77	
8	4-22-1973	1500	4-22-1973	1600	1.20	0.60	64.41	1.55	
9	4-28-1972	1400	4-28-1972	1500	1.20	0.60	72.46	1.38	
10	11- 5-1983	1800	11- 5-1983	1900	1.20	0.60	80.52	1.24	
11	10-22-1971	1300	10-22-1971	1400	1.00	0.50	88.57	1.13	
12	8-10-1975	1000	8-10-1975	1100	1.00	0.50	96.62	1.03	
13	11- 8-1981	1600	11- 8-1981	1700	1.00	0.50	*****	0.96	
14	6-22-1978	1600	6-22-1978	1700	0.90	0.45	*****	0.89	
15	10-31-1971	1500	10-31-1971	1600	0.90	0.45	*****	0.83	
16	6-12-1973	1700	6-12-1973	1800	0.90	0.45	*****	0.78	
17	3- 8-1981	1800	3- 8-1981	1900	0.90	0.45	*****	0.73	
18	8-20-1979	1400	8-20-1979	1500	0.80	0.40	*****	0.69	
19	1- 6-1980	1700	1- 6-1980	1800	0.80	0.40	*****	0.65	
20	11-11-1974	2000	11-11-1974	2100	0.80	0.40	*****	0.62	
21	9-25-1980	1600	9-25-1980	1700	0.80	0.40	*****	0.59	
22	10-15-1980	1600	10-15-1980	1700	0.80	0.40	*****	0.56	
23	8-25-1977	900	8-25-1977	1000	0.80	0.40	*****	0.54	
24	11-12-1977	1800	11-12-1977	1900	0.80	0.40	*****	0.52	
25	3-31-1978	2000	3-31-1978	2100	0.80	0.40	*****	0.50	
26	6-16-1972	500	6-16-1972	600	0.80	0.40	*****	0.48	
27	4- 3-1972	1600	4- 3-1972	1700	0.80	0.40	*****	0.46	
28	12-20-1978	1600	12-20-1978	1700	0.70	0.35	*****	0.44	
29	9- 2-1974	1500	9- 2-1974	1600	0.70	0.35	*****	0.43	
30	9-17-1974	2400	9-18-1974	100	0.70	0.35	*****	0.41	
31	7-26-1980	1300	7-26-1980	1400	0.70	0.35	*****	0.40	
32	7-23-1973	1500	7-23-1973	1600	0.70	0.35	*****	0.39	
33	11-11-1977	1500	11-11-1977	1600	0.70	0.35	*****	0.38	
34	11-11-1974	2300	11-11-1974	2400	0.70	0.35	*****	0.37	
35	11-16-1971	1700	11-16-1971	1800	0.70	0.35	*****	0.35	
36	4-22-1981	1600	4-22-1981	1700	0.70	0.35	*****	0.34	
37	3-18-1976	1800	3-18-1976	1900	0.70	0.35	*****	0.34	
38	10-27-1978	1500	10-27-1978	1600	0.70	0.35	*****	0.33	
39	10- 7-1976	1400	10- 7-1976	1500	0.70	0.35	*****	0.32	
40	11-14-1978	1200	11-14-1978	1300	0.70	0.35	*****	0.31	

Table All.c Rainstorm Ordering for 3 Hour Duration Events
 Ponce 4E Station : Index No. 7292
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	11-10-1983	1900	11-10-1983	2100		1.90	0.63	8.05	12.42
2	7-21-1975	1500	7-21-1975	1700		1.80	0.60	16.10	6.21
3	11-26-1981	1400	11-26-1981	1600		1.70	0.57	24.15	4.14
4	9-19-1981	1400	9-19-1981	1600		1.60	0.53	32.21	3.10
5	5-15-1983	1600	5-15-1983	1800		1.10	0.37	40.26	2.48
6	4- 3-1978	1300	4- 3-1978	1500		1.00	0.33	48.31	2.07
7	8-15-1973	1300	8-15-1973	1500		0.90	0.30	56.36	1.77
8	10- 8-1976	1300	10- 8-1976	1500		0.90	0.30	64.41	1.55
9	5-22-1977	2400	5-23-1977	200		0.90	0.30	72.46	1.38
10	12-11-1981	100	12-11-1981	300		0.90	0.30	80.52	1.24
11	8-21-1977	1900	8-21-1977	2100		0.90	0.30	88.57	1.13
12	8-27-1977	1500	8-27-1977	1700		0.90	0.30	96.62	1.03
13	11- 8-1971	1800	11- 8-1971	2000		0.80	0.27	*****	0.96
14	7-31-1973	1100	7-31-1973	1300		0.80	0.27	*****	0.89
15	10- 9-1977	1000	10- 9-1977	1200		0.80	0.27	*****	0.83
16	8- 7-1974	1500	8- 7-1974	1700		0.70	0.23	*****	0.78
17	10-21-1971	1400	10-21-1971	1600		0.70	0.23	*****	0.73
18	5-13-1982	2000	5-13-1982	2200		0.70	0.23	*****	0.69
19	10- 2-1971	700	10- 2-1971	900		0.70	0.23	*****	0.65
20	9-26-1981	1600	9-26-1981	1800		0.70	0.23	*****	0.62
21	9- 6-1977	1200	9- 6-1977	1400		0.60	0.20	*****	0.59
22	5-20-1979	100	5-20-1979	300		0.60	0.20	*****	0.56
23	6- 4-1981	2000	6- 4-1981	2200		0.60	0.20	*****	0.54
24	7-18-1982	1600	7-18-1982	1800		0.60	0.20	*****	0.52
25	4-12-1972	1600	4-12-1972	1800		0.60	0.20	*****	0.50
26	11-25-1977	200	11-25-1977	400		0.60	0.20	*****	0.48

Table All.d Rainstorm Ordering for 4 Hour Duration Events
 Ponce 4E Station : Index No. 7292
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	10-30-1976	1500	10-30-1976	1800	2.90	0.73	8.05	12.42	
2	11- 7-1977	1500	11- 7-1977	1800	2.50	0.63	16.10	6.21	
3	9-29-1979	1200	9-29-1979	1500	2.00	0.50	24.15	4.14	
4	4-17-1983	2000	4-17-1983	2300	1.90	0.48	32.21	3.10	
5	9- 8-1981	1700	9- 8-1981	2000	1.70	0.43	40.26	2.48	
6	9- 4-1979	1700	9- 4-1979	2000	1.70	0.43	48.31	2.07	
7	3-21-1972	1500	3-21-1972	1800	1.60	0.40	56.36	1.77	
8	9- 4-1979	1100	9- 4-1979	1400	1.30	0.32	64.41	1.55	
9	9-23-1977	200	9-23-1977	500	1.10	0.27	72.46	1.38	
10	12-11-1975	100	12-11-1975	400	1.00	0.25	80.52	1.24	
11	8-30-1974	200	8-30-1974	500	0.80	0.20	88.57	1.13	
12	10-12-1971	1200	10-12-1971	1500	0.80	0.20	96.62	1.03	

Table All.e Rainstorm Ordering for 5 Hour Duration Events
 Ponce 4E Station : Index No. 7292
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	4-21-1983	100	4-21-1983	500	3.30	0.66	8.05	12.42	
2	9-26-1972	1100	9-26-1972	1500	1.80	0.36	16.10	6.21	
3	5-26-1977	2400	5-27-1977	400	1.60	0.32	24.15	4.14	
4	10-20-1973	1100	10-20-1973	1500	1.60	0.32	32.21	3.10	
5	10-11-1976	1700	10-11-1976	2100	1.40	0.28	40.26	2.48	
6	10-26-1978	300	10-26-1978	700	1.40	0.28	48.31	2.07	
7	3-12-1983	1300	3-12-1983	1700	1.30	0.26	56.36	1.77	
8	5-27-1980	1500	5-27-1980	1900	1.20	0.24	64.41	1.55	
9	5-18-1979	1100	5-18-1979	1500	1.20	0.24	72.46	1.38	
10	12-10-1981	1600	12-10-1981	2000	1.10	0.22	80.52	1.24	
11	5- 6-1982	500	5- 6-1982	900	1.10	0.22	88.57	1.13	
12	8-21-1983	1100	8-21-1983	1500	1.10	0.22	96.62	1.03	
13	11- 4-1983	200	11- 4-1983	600	1.10	0.22	*****	0.96	

Table A12.a Rainstorm Ordering for 1 Hour Duration Events
 San Juan WSFO Station : Index No. 8812
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	10-28-1969	1400	10-28-1969	1400	1400	0.84	0.84	5.91	16.92
2	3-29-1972	1400	3-29-1972	1400	1400	0.79	0.79	11.82	8.46
3	6- 5-1973	500	6- 5-1973	500	500	0.76	0.76	17.73	5.64
4	5-31-1970	2400	5-31-1970	2400	2400	0.69	0.69	23.64	4.23
5	11-19-1975	2300	11-19-1975	2300	2300	0.68	0.68	29.55	3.38
6	6-30-1968	1200	6-30-1968	1200	1200	0.65	0.65	35.46	2.82
7	10- 7-1980	1200	10- 7-1980	1200	1200	0.65	0.65	41.37	2.42
8	8-19-1981	1700	8-19-1981	1700	1700	0.64	0.64	47.28	2.11
9	9-15-1976	700	9-15-1976	700	700	0.63	0.63	53.19	1.88
10	8-18-1976	1300	8-18-1976	1300	1300	0.62	0.62	59.10	1.69
11	12-19-1978	500	12-19-1978	500	500	0.62	0.62	65.01	1.54
12	5-16-1978	1300	5-16-1978	1300	1300	0.59	0.59	70.92	1.41
13	7- 7-1979	1500	7- 7-1979	1500	1500	0.59	0.59	76.83	1.30
14	10- 9-1973	1100	10- 9-1973	1100	1100	0.58	0.58	82.74	1.21
15	8-20-1979	1100	8-20-1979	1100	1100	0.58	0.58	88.65	1.13
16	10-10-1967	1500	10-10-1967	1500	1500	0.57	0.57	94.56	1.06
17	6-29-1968	2200	6-29-1968	2200	2200	0.56	0.56	*****	1.00
18	5-21-1981	700	5-21-1981	700	700	0.54	0.54	*****	0.94
19	6-26-1967	1200	6-26-1967	1200	1200	0.52	0.52	*****	0.89
20	6-10-1969	1100	6-10-1969	1100	1100	0.51	0.51	*****	0.85
21	10-26-1980	2000	10-26-1980	2000	2000	0.49	0.49	*****	0.81
22	5-23-1968	500	5-23-1968	500	500	0.48	0.48	*****	0.77
23	5- 4-1968	1200	5- 4-1968	1200	1200	0.48	0.48	*****	0.74
24	6-20-1967	1400	6-20-1967	1400	1400	0.47	0.47	*****	0.70
25	11- 3-1975	2100	11- 3-1975	2100	2100	0.46	0.46	*****	0.68
26	5-20-1969	1400	5-20-1969	1400	1400	0.45	0.45	*****	0.65
27	10-30-1969	1600	10-30-1969	1600	1600	0.45	0.45	*****	0.63
28	10-10-1968	1700	10-10-1968	1700	1700	0.45	0.45	*****	0.60
29	11- 4-1967	2200	11- 4-1967	2200	2200	0.44	0.44	*****	0.58
30	4- 4-1981	2400	4- 4-1981	2400	2400	0.42	0.42	*****	0.56
31	8-26-1972	200	8-26-1972	200	200	0.42	0.42	*****	0.55
32	10- 1-1980	1300	10- 1-1980	1300	1300	0.42	0.42	*****	0.53
33	11-13-1978	2100	11-13-1978	2100	2100	0.41	0.41	*****	0.51
34	2-17-1982	800	2-17-1982	800	800	0.41	0.41	*****	0.50
35	6-25-1972	1900	6-25-1972	1900	1900	0.40	0.40	*****	0.48
36	4-13-1972	2100	4-13-1972	2100	2100	0.40	0.40	*****	0.47
37	8- 4-1968	600	8- 4-1968	600	600	0.39	0.39	*****	0.46
38	11-26-1971	2000	11-26-1971	2000	2000	0.39	0.39	*****	0.45
39	10- 5-1972	1500	10- 5-1972	1500	1500	0.38	0.38	*****	0.43
40	8-10-1976	600	8-10-1976	600	600	0.38	0.38	*****	0.42

Table A12.b Rainstorm Ordering for 2 Hour Duration Events
 San Juan WSFO Station : Index No. 8812
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	10-24-1981	1400	10-24-1981	1500	1500	2.67	1.33	5.91	16.92
2	5- 6-1981	1800	5- 6-1981	1900	1900	2.38	1.19	11.82	8.46
3	9-29-1972	2300	9-29-1972	2400	2400	1.79	0.90	17.73	5.64
4	8-18-1967	300	8-18-1967	400	400	1.77	0.88	23.64	4.23
5	10-22-1981	1300	10-22-1981	1400	1400	1.68	0.84	29.55	3.38
6	11-11-1975	1500	11-11-1975	1600	1600	1.60	0.80	35.46	2.82
7	11-28-1974	1200	11-28-1974	1300	1300	1.48	0.74	41.37	2.42
8	9-18-1979	1300	9-18-1979	1400	1400	1.44	0.72	47.28	2.11
9	5- 7-1970	1600	5- 7-1970	1700	1700	1.31	0.66	53.19	1.88
10	10- 1-1969	1200	10- 1-1969	1300	1300	1.30	0.65	59.10	1.69
11	8-25-1976	1300	8-25-1976	1400	1400	1.29	0.65	65.01	1.54
12	10- 9-1980	1300	10- 9-1980	1400	1400	1.28	0.64	70.92	1.41
13	10-25-1981	1600	10-25-1981	1700	1700	1.27	0.63	76.83	1.30
14	6- 4-1975	1700	6- 4-1975	1800	1800	1.19	0.59	82.74	1.21
15	11-22-1975	1200	11-22-1975	1300	1300	1.13	0.56	88.65	1.13
16	7-17-1981	1600	7-17-1981	1700	1700	1.10	0.55	94.56	1.06
17	9- 8-1976	1700	9- 8-1976	1800	1800	1.05	0.52	*****	1.00
18	12-20-1979	1000	12-20-1979	1100	1100	1.03	0.52	*****	0.94
19	10- 3-1967	1800	10- 3-1967	1900	1900	1.00	0.50	*****	0.89
20	12-21-1969	1700	12-21-1969	1800	1800	0.94	0.47	*****	0.85
21	10-26-1969	1400	10-26-1969	1500	1500	0.93	0.46	*****	0.81
22	5-12-1981	1100	5-12-1981	1200	1200	0.93	0.46	*****	0.77
23	2-12-1982	1900	2-12-1982	2000	2000	0.90	0.45	*****	0.74
24	9-25-1968	1800	9-25-1968	1900	1900	0.89	0.45	*****	0.70
25	11-14-1975	1800	11-14-1975	1900	1900	0.87	0.43	*****	0.68
26	9-28-1974	1500	9-28-1974	1600	1600	0.87	0.43	*****	0.65
27	7-19-1975	1400	7-19-1975	1500	1500	0.85	0.43	*****	0.63
28	10- 6-1980	1500	10- 6-1980	1600	1600	0.85	0.43	*****	0.60
29	5-13-1983	1900	5-13-1983	2000	2000	0.85	0.43	*****	0.58
30	4- 2-1978	2000	4- 2-1978	2100	2100	0.84	0.42	*****	0.56
31	4-12-1971	1500	4-12-1971	1600	1600	0.82	0.41	*****	0.55
32	9-15-1975	500	9-15-1975	600	600	0.81	0.41	*****	0.53
33	11- 7-1981	1500	11- 7-1981	1600	1600	0.80	0.40	*****	0.51
34	10-25-1967	1200	10-25-1967	1300	1300	0.79	0.39	*****	0.50
35	11-26-1970	200	11-26-1970	300	300	0.78	0.39	*****	0.48
36	6-19-1981	1400	6-19-1981	1500	1500	0.76	0.38	*****	0.47
37	3-25-1978	1400	3-25-1978	1500	1500	0.75	0.38	*****	0.46
38	5-20-1967	600	5-20-1967	700	700	0.75	0.38	*****	0.45
39	4-18-1983	1000	4-18-1983	1100	1100	0.72	0.36	*****	0.43
40	4-19-1979	2000	4-19-1979	2100	2100	0.72	0.36	*****	0.42

Table A12.c Rainstorm Ordering for 3 Hour Duration Events
 San Juan WSFO Station : Index No. 8812
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	9- 2-1978	1300	9- 2-1978	1500	2.56	0.85	5.91	16.92	
2	9-20-1967	1200	9-20-1967	1400	1.90	0.63	11.82	8.46	
3	10-31-1981	1400	10-31-1981	1600	1.90	0.63	17.73	5.64	
4	10-30-1970	1900	10-30-1970	2100	1.59	0.53	23.64	4.23	
5	12-10-1972	400	12-10-1972	600	1.48	0.49	29.55	3.38	
6	6-15-1974	1100	6-15-1974	1300	1.47	0.49	35.46	2.82	
7	9-30-1976	1800	9-30-1976	2000	1.35	0.45	41.37	2.42	
8	5-28-1979	2000	5-28-1979	2200	1.32	0.44	47.28	2.11	
9	7- 4-1976	1100	7- 4-1976	1300	1.32	0.44	53.19	1.88	
10	9- 1-1975	1700	9- 1-1975	1900	1.28	0.43	59.10	1.69	
11	3-20-1972	1200	3-20-1972	1400	1.22	0.41	65.01	1.54	
12	6-25-1970	1000	6-25-1970	1200	1.18	0.39	70.92	1.41	
13	5-16-1976	1300	5-16-1976	1500	1.17	0.39	76.83	1.30	
14	3- 2-1969	1400	3- 2-1969	1600	1.08	0.36	82.74	1.21	
15	7- 6-1981	1200	7- 6-1981	1400	1.04	0.35	88.65	1.13	
16	5-10-1968	500	5-10-1968	700	1.04	0.35	94.56	1.06	
17	9-27-1980	1700	9-27-1980	1900	1.00	0.33	*****	1.00	
18	11- 5-1975	100	11- 5-1975	300	0.97	0.32	*****	0.94	
19	12- 3-1972	1700	12- 3-1972	1900	0.92	0.31	*****	0.89	
20	5- 1-1981	1800	5- 1-1981	2000	0.83	0.28	*****	0.85	
21	11-10-1972	2400	11-11-1972	200	0.83	0.28	*****	0.81	
22	4-14-1976	2400	4-15-1976	200	0.83	0.28	*****	0.77	
23	5-30-1979	1100	5-30-1979	1300	0.78	0.26	*****	0.74	
24	12-11-1972	300	12-11-1972	500	0.77	0.26	*****	0.70	
25	11-17-1978	200	11-17-1978	400	0.77	0.26	*****	0.68	
26	7-19-1975	1900	7-19-1975	2100	0.76	0.25	*****	0.65	
27	9-21-1983	900	9-21-1983	1100	0.76	0.25	*****	0.63	
28	11-12-1973	2300	11-13-1973	100	0.75	0.25	*****	0.60	
29	9-22-1978	2000	9-22-1978	2200	0.75	0.25	*****	0.58	
30	8- 4-1975	2300	8- 5-1975	100	0.72	0.24	*****	0.56	
31	2-15-1979	1800	2-15-1979	2000	0.68	0.23	*****	0.55	
32	6-14-1970	1800	6-14-1970	2000	0.68	0.23	*****	0.53	
33	7-26-1967	300	7-26-1967	500	0.67	0.22	*****	0.51	
34	12- 7-1981	700	12- 7-1981	900	0.66	0.22	*****	0.50	
35	12-28-1982	600	12-28-1982	800	0.65	0.22	*****	0.48	
36	6- 2-1972	1300	6- 2-1972	1500	0.63	0.21	*****	0.47	
37	9- 1-1971	2000	9- 1-1971	2200	0.63	0.21	*****	0.46	
38	6- 3-1979	1000	6- 3-1979	1200	0.63	0.21	*****	0.45	
39	5- 1-1976	1200	5- 1-1976	1400	0.63	0.21	*****	0.43	
40	11-24-1977	800	11-24-1977	1000	0.63	0.21	*****	0.42	

Table A13.d Rainstorm Ordering for 4 Hour Duration Events
 San Juan WSFO Station : Index No. 8812
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	9- 5-1976	1300	9- 5-1976	1600	3.64	0.91	5.91	16.92	
2	3- 9-1973	100	3- 9-1973	400	3.11	0.78	11.82	8.46	
3	2-28-1969	2100	2-28-1969	2400	2.51	0.63	17.73	5.64	
4	12-27-1981	1200	12-27-1981	1500	1.64	0.41	23.64	4.23	
5	5- 7-1969	2000	5- 7-1969	2300	1.63	0.41	29.55	3.38	
6	9-19-1967	1100	9-19-1967	1400	1.53	0.38	35.46	2.82	
7	6-28-1973	1400	6-28-1973	1700	1.42	0.36	41.37	2.42	
8	6- 2-1970	1000	6- 2-1970	1300	1.39	0.35	47.28	2.11	
9	7-18-1969	2300	7-19-1969	200	1.38	0.35	53.19	1.88	
10	8-16-1978	1200	8-16-1978	1500	1.32	0.33	59.10	1.69	
11	12-10-1970	1900	12-10-1970	2200	1.29	0.32	65.01	1.54	
12	9-14-1976	2300	9-15-1976	200	1.21	0.30	70.92	1.41	
13	9-14-1968	1300	9-14-1968	1600	1.19	0.30	76.83	1.30	
14	9-23-1978	1100	9-23-1978	1400	1.15	0.29	82.74	1.21	
15	5-25-1978	1200	5-25-1978	1500	1.11	0.28	88.65	1.13	
16	9-29-1970	1500	9-29-1970	1800	1.09	0.27	94.56	1.06	
17	9-27-1976	2100	9-27-1976	2400	1.01	0.25	*****	1.00	
18	5-22-1980	700	5-22-1980	1000	0.99	0.25	*****	0.94	
19	7-17-1977	1500	7-17-1977	1800	0.97	0.24	*****	0.89	
20	5- 4-1981	1600	5- 4-1981	1900	0.95	0.24	*****	0.85	
21	6-10-1968	1100	6-10-1968	1400	0.95	0.24	*****	0.81	
22	8-17-1969	400	8-17-1969	700	0.93	0.23	*****	0.77	
23	4-19-1973	1500	4-19-1973	1800	0.92	0.23	*****	0.74	
24	2- 3-1982	1600	2- 3-1982	1900	0.88	0.22	*****	0.70	
25	8-11-1969	2000	8-11-1969	2300	0.82	0.21	*****	0.68	
26	6-11-1973	2400	6-12-1973	300	0.81	0.20	*****	0.65	

Table A12.e Rainstorm Ordering for 5 Hour Duration Events
 San Juan WSFO Station : Index No. 8812
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	11-17-1979	100	11-17-1979	500	500	2.64	0.53	5.91	16.92
2	6- 5-1982	1400	6- 5-1982	1800	1800	2.32	0.46	11.82	8.46
3	10- 6-1977	1100	10- 6-1977	1500	1500	2.16	0.43	17.73	5.64
4	7- 1-1983	1400	7- 1-1983	1800	1800	1.31	0.26	23.64	4.23
5	12- 2-1975	1800	12- 2-1975	2200	2200	1.24	0.25	29.55	3.38
6	8-30-1974	200	8-30-1974	600	600	1.20	0.24	35.46	2.82
7	10-26-1976	500	10-26-1976	900	900	1.15	0.23	41.37	2.42
8	7-17-1983	1600	7-17-1983	2000	2000	1.07	0.21	47.28	2.11
9	11-22-1979	600	11-22-1979	1000	1000	1.05	0.21	53.19	1.88

Table A13.a Rainstorm Ordering for 1 Hour Duration Events
 San Sebastian 2 WNW Station : Index No. 8881
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)	
1	6-	5-1982	1100	6-	5-1982	1100	2.90	2.90	8.05	12.42
2	4-	30-1978	1400	4-	30-1978	1400	2.15	2.15	16.10	6.21
3	5-	17-1976	1500	5-	17-1976	1500	2.00	2.00	24.15	4.14
4	6-	13-1983	1300	6-	13-1983	1300	2.00	2.00	32.21	3.10
5	6-	23-1982	900	6-	23-1982	900	1.90	1.90	40.26	2.48
6	8-	15-1982	2100	8-	15-1982	2100	1.80	1.80	48.31	2.07
7	5-	18-1980	1400	5-	18-1980	1400	1.50	1.50	56.36	1.77
8	10-	8-1983	1500	10-	8-1983	1500	1.50	1.50	64.41	1.55
9	7-	16-1980	1300	7-	16-1980	1300	1.30	1.30	72.46	1.38
10	9-	18-1979	1400	9-	18-1979	1400	1.30	1.30	80.52	1.24
11	5-	12-1979	1300	5-	12-1979	1300	1.30	1.30	88.57	1.13
12	8-	19-1982	1500	8-	19-1982	1500	1.10	1.10	96.62	1.03
13	6-	8-1983	1600	6-	8-1983	1600	1.10	1.10	*****	0.96
14	10-	19-1981	1700	10-	19-1981	1700	1.10	1.10	*****	0.89
15	6-	19-1981	1400	6-	19-1981	1400	1.10	1.10	*****	0.83
16	3-	22-1976	1600	3-	22-1976	1600	1.07	1.07	*****	0.78
17	10-	21-1977	1500	10-	21-1977	1500	1.05	1.05	*****	0.73
18	6-	18-1978	1500	6-	18-1978	1500	1.02	1.02	*****	0.69
19	11-	16-1980	1600	11-	16-1980	1600	1.00	1.00	*****	0.65
20	9-	24-1972	1400	9-	24-1972	1400	0.94	0.94	*****	0.62
21	7-	7-1977	1600	7-	7-1977	1600	0.90	0.90	*****	0.59
22	8-	18-1982	1400	8-	18-1982	1400	0.90	0.90	*****	0.56
23	3-	13-1982	1600	3-	13-1982	1600	0.90	0.90	*****	0.54
24	5-	25-1977	1300	5-	25-1977	1300	0.82	0.82	*****	0.52
25	6-	5-1983	1500	6-	5-1983	1500	0.80	0.80	*****	0.50
26	9-	8-1983	1500	9-	8-1983	1500	0.80	0.80	*****	0.48
27	3-	4-1981	1500	3-	4-1981	1500	0.80	0.80	*****	0.46
28	9-	16-1978	1400	9-	16-1978	1400	0.79	0.79	*****	0.44
29	9-	23-1974	1300	9-	23-1974	1300	0.75	0.75	*****	0.43
30	5-	9-1972	1500	5-	9-1972	1500	0.75	0.75	*****	0.41
31	6-	25-1978	1400	6-	25-1978	1400	0.74	0.74	*****	0.40
32	5-	24-1974	1500	5-	24-1974	1500	0.73	0.73	*****	0.39
33	5-	17-1973	1300	5-	17-1973	1300	0.71	0.71	*****	0.38
34	10-	23-1977	1600	10-	23-1977	1600	0.70	0.70	*****	0.37
35	5-	8-1979	1200	5-	8-1979	1200	0.70	0.70	*****	0.35
36	9-	10-1980	1500	9-	10-1980	1500	0.70	0.70	*****	0.34
37	5-	20-1975	1700	5-	20-1975	1700	0.65	0.65	*****	0.34
38	9-	25-1973	1500	9-	25-1973	1500	0.65	0.65	*****	0.33
39	8-	19-1982	400	8-	19-1982	400	0.60	0.60	*****	0.32
40	11-	5-1980	1500	11-	5-1980	1500	0.60	0.60	*****	0.31

Table A13.b Rainstorm Ordering for 2 Hour Duration Events
 San Sebastian 2 WNW Station : Index No. 8881
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	2-15-1981	1600	2-15-1981	1700	1700	3.70	1.85	8.05	12.42
2	5-30-1978	1600	5-30-1978	1700	1700	3.56	1.78	16.10	6.21
3	5-23-1980	1300	5-23-1980	1400	1400	3.00	1.50	24.15	4.14
4	11-23-1981	1800	11-23-1981	1900	1900	2.50	1.25	32.21	3.10
5	10-18-1983	1400	10-18-1983	1500	1500	2.40	1.20	40.26	2.48
6	10- 7-1979	1400	10- 7-1979	1500	1500	2.30	1.15	48.31	2.07
7	8-13-1974	1500	8-13-1974	1600	1600	2.22	1.11	56.36	1.77
8	6- 4-1982	1300	6- 4-1982	1400	1400	2.20	1.10	64.41	1.55
9	6-28-1981	1300	6-28-1981	1400	1400	2.20	1.10	72.46	1.38
10	10-27-1983	1600	10-27-1983	1700	1700	2.20	1.10	80.52	1.24
11	5-20-1976	1600	5-20-1976	1700	1700	2.18	1.09	88.57	1.13
12	7-17-1981	1400	7-17-1981	1500	1500	2.10	1.05	96.62	1.03
13	11- 8-1981	1500	11- 8-1981	1600	1600	2.10	1.05	*****	0.96
14	10-21-1980	1500	10-21-1980	1600	1600	2.10	1.05	*****	0.89
15	5-14-1974	1300	5-14-1974	1400	1400	2.09	1.05	*****	0.83
16	6-27-1981	1400	6-27-1981	1500	1500	2.00	1.00	*****	0.78
17	9- 1-1981	1600	9- 1-1981	1700	1700	2.00	1.00	*****	0.73
18	11- 4-1981	1400	11- 4-1981	1500	1500	2.00	1.00	*****	0.69
19	9-30-1980	1600	9-30-1980	1700	1700	2.00	1.00	*****	0.65
20	10- 4-1972	1500	10- 4-1972	1600	1600	1.95	0.98	*****	0.62
21	10-12-1979	1500	10-12-1979	1600	1600	1.90	0.95	*****	0.59
22	6- 9-1972	1400	6- 9-1972	1500	1500	1.87	0.94	*****	0.56
23	9-12-1974	1400	9-12-1974	1500	1500	1.77	0.88	*****	0.54
24	10- 1-1974	1600	10- 1-1974	1700	1700	1.74	0.87	*****	0.52
25	6- 9-1978	1500	6- 9-1978	1600	1600	1.72	0.86	*****	0.50
26	10- 7-1983	1400	10- 7-1983	1500	1500	1.70	0.85	*****	0.48
27	4-17-1978	1400	4-17-1978	1500	1500	1.68	0.84	*****	0.46
28	3-10-1973	1200	3-10-1973	1300	1300	1.65	0.83	*****	0.44
29	7-17-1975	1500	7-17-1975	1600	1600	1.63	0.81	*****	0.43
30	11-29-1971	1400	11-29-1971	1500	1500	1.63	0.81	*****	0.41
31	5-11-1976	1600	5-11-1976	1700	1700	1.62	0.81	*****	0.40
32	7-22-1972	1300	7-22-1972	1400	1400	1.62	0.81	*****	0.39
33	8-17-1982	700	8-17-1982	800	800	1.60	0.80	*****	0.38
34	8-30-1980	1500	8-30-1980	1600	1600	1.60	0.80	*****	0.37
35	9-28-1974	1400	9-28-1974	1500	1500	1.55	0.77	*****	0.35
36	7-13-1978	1500	7-13-1978	1600	1600	1.51	0.76	*****	0.34
37	10-22-1981	1600	10-22-1981	1700	1700	1.50	0.75	*****	0.34
38	10-29-1981	1500	10-29-1981	1600	1600	1.50	0.75	*****	0.33
39	7-22-1975	1500	7-22-1975	1600	1600	1.50	0.75	*****	0.32
40	11- 4-1979	1400	11- 4-1979	1500	1500	1.50	0.75	*****	0.31

Table A13.c Rainstorm Ordering for 3 Hour Duration Events
 San Sebastian 2 WNW Station : Index No. 8881
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)	
1	7-	7-1979	1300	7-	7-1979	1500	3.90	1.30	8.05	12.42
2	10-	16-1980	1200	10-	16-1980	1400	3.80	1.27	16.10	6.21
3	10-	24-1981	1400	10-	24-1981	1600	3.80	1.27	24.15	4.14
4	5-	3-1978	1500	5-	3-1978	1700	3.60	1.20	32.21	3.10
5	5-	19-1980	1600	5-	19-1980	1800	3.60	1.20	40.26	2.48
6	6-	10-1974	1400	6-	10-1974	1600	3.40	1.13	48.31	2.07
7	10-	3-1974	1400	10-	3-1974	1600	3.22	1.07	56.36	1.77
8	6-	12-1980	1200	6-	12-1980	1400	3.10	1.03	64.41	1.55
9	9-	12-1978	1400	9-	12-1978	1600	2.98	0.99	72.46	1.38
10	12-	5-1979	1500	12-	5-1979	1700	2.90	0.97	80.52	1.24
11	8-	28-1976	1400	8-	28-1976	1600	2.82	0.94	88.57	1.13
12	6-	1-1976	1500	6-	1-1976	1700	2.65	0.88	96.62	1.03
13	5-	1-1976	1400	5-	1-1976	1600	2.61	0.87	*****	0.96
14	12-	3-1976	1500	12-	3-1976	1700	2.61	0.87	*****	0.89
15	10-	9-1972	1400	10-	9-1972	1600	2.60	0.87	*****	0.83
16	11-	18-1981	1500	11-	18-1981	1700	2.60	0.87	*****	0.78
17	9-	25-1978	1400	9-	25-1978	1600	2.55	0.85	*****	0.73
18	7-	25-1971	1700	7-	25-1971	1900	2.43	0.81	*****	0.69
19	11-	9-1976	1500	11-	9-1976	1700	2.36	0.79	*****	0.65
20	12-	7-1974	1800	12-	7-1974	2000	2.35	0.78	*****	0.62
21	8-	13-1983	1400	8-	13-1983	1600	2.20	0.73	*****	0.59
22	10-	15-1971	1600	10-	15-1971	1800	2.17	0.72	*****	0.56
23	8-	1-1980	1400	8-	1-1980	1600	2.10	0.70	*****	0.54
24	6-	16-1977	1500	6-	16-1977	1700	2.08	0.69	*****	0.52
25	5-	13-1983	1500	5-	13-1983	1700	2.00	0.67	*****	0.50
26	4-	20-1977	1400	4-	20-1977	1600	2.00	0.67	*****	0.48
27	8-	26-1975	1500	8-	26-1975	1700	1.95	0.65	*****	0.46
28	5-	18-1975	1400	5-	18-1975	1600	1.92	0.64	*****	0.44
29	4-	15-1982	1600	4-	15-1982	1800	1.90	0.63	*****	0.43
30	9-	30-1977	1600	9-	30-1977	1800	1.90	0.63	*****	0.41
31	4-	11-1980	1400	4-	11-1980	1600	1.90	0.63	*****	0.40
32	9-	21-1978	1500	9-	21-1978	1700	1.82	0.61	*****	0.39
33	4-	6-1974	1500	4-	6-1974	1700	1.79	0.60	*****	0.38
34	10-	18-1977	1500	10-	18-1977	1700	1.75	0.58	*****	0.37
35	10-	1-1978	1400	10-	1-1978	1600	1.73	0.58	*****	0.35
36	8-	16-1981	1500	8-	16-1981	1700	1.70	0.57	*****	0.34
37	5-	26-1974	1400	5-	26-1974	1600	1.70	0.57	*****	0.34
38	10-	5-1983	1600	10-	5-1983	1800	1.70	0.57	*****	0.33
39	9-	1-1976	1500	9-	1-1976	1700	1.69	0.56	*****	0.32
40	8-	29-1975	1500	8-	29-1975	1700	1.60	0.53	*****	0.31

Table A13.d Rainstorm Ordering for 4 Hour Duration Events
 San Sebastian 2 WNW Station : Index No. 8881
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	3-26-1981	1700	3-26-1981	2000	3.70	0.92	8.05	12.42	
2	11- 4-1977	1600	11- 4-1977	1900	2.82	0.70	16.10	6.21	
3	1- 1-1981	1800	1- 1-1981	2100	2.70	0.67	24.15	4.14	
4	9-18-1976	1400	9-18-1976	1700	2.60	0.65	32.21	3.10	
5	9-23-1978	1300	9-23-1978	1600	2.30	0.58	40.26	2.48	
6	10-12-1974	1500	10-12-1974	1800	2.17	0.54	48.31	2.07	
7	7- 3-1974	1500	7- 3-1974	1800	2.04	0.51	56.36	1.77	
8	10-17-1977	1500	10-17-1977	1800	1.92	0.48	64.41	1.55	
9	4-25-1980	1600	4-25-1980	1900	1.90	0.48	72.46	1.38	
10	6- 9-1974	1400	6- 9-1974	1700	1.90	0.48	80.52	1.24	
11	6-20-1974	1400	6-20-1974	1700	1.90	0.48	88.57	1.13	
12	5-28-1979	1700	5-28-1979	2000	1.89	0.47	96.62	1.03	
13	9- 7-1980	1500	9- 7-1980	1800	1.80	0.45	*****	0.96	
14	10-11-1971	1500	10-11-1971	1800	1.75	0.44	*****	0.89	
15	7- 1-1977	1400	7- 1-1977	1700	1.65	0.41	*****	0.83	
16	6-11-1977	1600	6-11-1977	1900	1.61	0.40	*****	0.78	
17	6-24-1978	1400	6-24-1978	1700	1.61	0.40	*****	0.73	
18	4- 9-1980	1600	4- 9-1980	1900	1.60	0.40	*****	0.69	
19	7- 4-1971	1400	7- 4-1971	1700	1.58	0.39	*****	0.65	
20	8-16-1972	1400	8-16-1972	1700	1.56	0.39	*****	0.62	
21	5-14-1975	1500	5-14-1975	1800	1.54	0.39	*****	0.59	
22	3-20-1972	1500	3-20-1972	1800	1.51	0.38	*****	0.56	
23	4-28-1979	1400	4-28-1979	1700	1.44	0.36	*****	0.54	
24	5-29-1974	1500	5-29-1974	1800	1.40	0.35	*****	0.52	
25	9- 9-1978	1600	9- 9-1978	1900	1.40	0.35	*****	0.50	
26	5- 6-1982	400	5- 6-1982	700	1.40	0.35	*****	0.48	
27	5-25-1979	1300	5-25-1979	1600	1.38	0.34	*****	0.46	
28	2-13-1973	2100	2-13-1973	2400	1.34	0.34	*****	0.44	
29	9- 2-1975	1400	9- 2-1975	1700	1.32	0.33	*****	0.43	
30	1-14-1972	1500	1-14-1972	1800	1.30	0.32	*****	0.41	
31	10- 9-1979	1300	10- 9-1979	1600	1.30	0.32	*****	0.40	
32	9-15-1972	1400	9-15-1972	1700	1.23	0.31	*****	0.39	
33	11-19-1975	1400	11-19-1975	1700	1.21	0.30	*****	0.38	
34	10-31-1975	1400	10-31-1975	1700	1.20	0.30	*****	0.37	
35	5- 1-1981	1300	5- 1-1981	1600	1.20	0.30	*****	0.35	
36	7-13-1981	1400	7-13-1981	1700	1.20	0.30	*****	0.34	
37	7-21-1972	1200	7-21-1972	1500	1.20	0.30	*****	0.34	
38	4-24-1974	1500	4-24-1974	1800	1.18	0.30	*****	0.33	
39	8-15-1975	1400	8-15-1975	1700	1.15	0.29	*****	0.32	
40	7- 6-1978	1400	7- 6-1978	1700	1.12	0.28	*****	0.31	

Table Al3.e Rainstorm Ordering for 5 Hour Duration Events
 San Sebastian 2 WNW Station : Index No. 8881
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	10-21-1972	1500	10-21-1972	1900		3.83	0.77	8.05	12.42
2	11- 6-1975	1400	11- 6-1975	1800		3.74	0.75	16.10	6.21
3	4-20-1973	1300	4-20-1973	1700		3.25	0.65	24.15	4.14
4	9-19-1971	1300	9-19-1971	1700		3.07	0.61	32.21	3.10
5	4-25-1976	1500	4-25-1976	1900		2.85	0.57	40.26	2.48
6	11-20-1975	1400	11-20-1975	1800		2.80	0.56	48.31	2.07
7	6-14-1975	1300	6-14-1975	1700		2.64	0.53	56.36	1.77
8	10-29-1977	1400	10-29-1977	1800		2.19	0.44	64.41	1.55
9	10- 5-1976	1400	10- 5-1976	1800		2.17	0.43	72.46	1.38
10	4-19-1978	1500	4-19-1978	1900		2.17	0.43	80.52	1.24
11	4- 3-1981	1600	4- 3-1981	2000		1.90	0.38	88.57	1.13
12	6-25-1980	1300	6-25-1980	1700		1.80	0.36	96.62	1.03
13	10- 4-1974	1200	10- 4-1974	1600		1.74	0.35	*****	0.96
14	7-19-1978	1500	7-19-1978	1900		1.69	0.34	*****	0.89
15	8- 8-1983	1600	8- 8-1983	2000		1.60	0.32	*****	0.83
16	11-12-1971	1400	11-12-1971	1800		1.48	0.30	*****	0.78
17	9-30-1972	1400	9-30-1972	1800		1.40	0.28	*****	0.73
18	5-20-1977	1500	5-20-1977	1900		1.38	0.28	*****	0.69
19	3- 9-1975	1500	3- 9-1975	1900		1.24	0.25	*****	0.65
20	7-22-1971	1500	7-22-1971	1900		1.19	0.24	*****	0.62
21	5-12-1975	1500	5-12-1975	1900		1.15	0.23	*****	0.59
22	6- 4-1975	1500	6- 4-1975	1900		1.15	0.23	*****	0.56
23	5-11-1978	1400	5-11-1978	1800		1.14	0.23	*****	0.54
24	6-12-1972	1400	6-12-1972	1800		1.11	0.22	*****	0.52
25	5- 1-1983	1400	5- 1-1983	1800		1.00	0.20	*****	0.50
26	12-10-1981	2200	12-11-1981	200		1.00	0.20	*****	0.48

Table A14.a Rainstorm Ordering for 1 Hour Duration Events
 Yabucoa 1 NNE Station : Index No. 9829
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)		
1	7-	5-	1981	7-	5-	1981	400	1.20	1.20	8.05	12.42
2	10-	7-	1980	10-	7-	1980	1600	1.10	1.10	16.10	6.21
3	2-	11-	1978	2-	11-	1978	500	1.10	1.10	24.15	4.14
4	8-	1-	1976	8-	1-	1976	800	1.00	1.00	32.21	3.10
5	11-	20-	1982	11-	20-	1982	1400	1.00	1.00	40.26	2.48
6	9-	20-	1978	9-	20-	1978	700	0.90	0.90	48.31	2.07
7	7-	26-	1982	7-	26-	1982	1200	0.90	0.90	56.36	1.77
8	5-	8-	1975	5-	8-	1975	200	0.90	0.90	64.41	1.55
9	4-	18-	1983	4-	18-	1983	1200	0.90	0.90	72.46	1.38
10	9-	17-	1983	9-	17-	1983	1600	0.90	0.90	80.52	1.24
11	3-	3-	1975	3-	3-	1975	1600	0.80	0.80	88.57	1.13
12	5-	30-	1979	5-	30-	1979	2100	0.80	0.80	96.62	1.03
13	11-	8-	1979	11-	8-	1979	2200	0.80	0.80	*****	0.96
14	9-	1-	1972	9-	1-	1972	1000	0.80	0.80	*****	0.89
15	7-	8-	1975	7-	8-	1975	500	0.80	0.80	*****	0.83
16	5-	27-	1982	5-	27-	1982	1800	0.80	0.80	*****	0.78
17	11-	19-	1975	11-	19-	1975	1600	0.80	0.80	*****	0.73
18	9-	15-	1972	9-	15-	1972	2300	0.80	0.80	*****	0.69
19	10-	7-	1977	10-	7-	1977	800	0.80	0.80	*****	0.65
20	8-	20-	1983	8-	20-	1983	2400	0.80	0.80	*****	0.62
21	6-	26-	1973	6-	26-	1973	900	0.80	0.80	*****	0.59
22	9-	6-	1977	9-	6-	1977	800	0.70	0.70	*****	0.56
23	8-	3-	1973	8-	3-	1973	1900	0.70	0.70	*****	0.54
24	8-	23-	1979	8-	23-	1979	1900	0.70	0.70	*****	0.52
25	10-	14-	1972	10-	14-	1972	300	0.70	0.70	*****	0.50
26	5-	10-	1979	5-	10-	1979	1700	0.60	0.60	*****	0.48
27	5-	29-	1979	5-	29-	1979	1700	0.60	0.60	*****	0.46
28	12-	9-	1974	12-	9-	1974	1900	0.60	0.60	*****	0.44
29	9-	17-	1976	9-	17-	1976	2300	0.60	0.60	*****	0.43
30	6-	27-	1977	6-	27-	1977	500	0.60	0.60	*****	0.41
31	5-	11-	1980	5-	11-	1980	700	0.60	0.60	*****	0.40
32	5-	3-	1972	5-	3-	1972	400	0.60	0.60	*****	0.39
33	11-	15-	1980	11-	15-	1980	1100	0.60	0.60	*****	0.38
34	10-	8-	1971	10-	8-	1971	2400	0.60	0.60	*****	0.37
35	12-	25-	1981	12-	25-	1981	2400	0.60	0.60	*****	0.35
36	10-	30-	1977	10-	30-	1977	600	0.60	0.60	*****	0.34
37	11-	24-	1977	11-	24-	1977	1100	0.60	0.60	*****	0.34
38	8-	20-	1982	8-	20-	1982	2000	0.60	0.60	*****	0.33
39	10-	12-	1971	10-	12-	1971	2100	0.60	0.60	*****	0.32
40	6-	27-	1978	6-	27-	1978	200	0.60	0.60	*****	0.31

Table A14.b Rainstorm Ordering for 2 Hour Duration Events
 Yabucoa 1 NNE Station : Index No. 9829
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	12- 2-1983	700	12- 2-1983	800	3.30	1.65	8.05	12.42	
2	5-29-1982	100	5-29-1982	200	2.20	1.10	16.10	6.21	
3	10- 5-1977	2000	10- 5-1977	2100	2.20	1.10	24.15	4.14	
4	11-23-1979	400	11-23-1979	500	1.80	0.90	32.21	3.10	
5	10-17-1974	1900	10-17-1974	2000	1.70	0.85	40.26	2.48	
6	10-20-1974	2000	10-20-1974	2100	1.60	0.80	48.31	2.07	
7	5-31-1974	800	5-31-1974	900	1.40	0.70	56.36	1.77	
8	12-14-1980	2300	12-14-1980	2400	1.40	0.70	64.41	1.55	
9	9- 2-1971	2000	9- 2-1971	2100	1.40	0.70	72.46	1.38	
10	10-14-1978	100	10-14-1978	200	1.40	0.70	80.52	1.24	
11	5- 9-1982	2400	5-10-1982	100	1.30	0.65	88.57	1.13	
12	10-12-1977	600	10-12-1977	700	1.30	0.65	96.62	1.03	
13	9-11-1974	2400	9-12-1974	100	1.30	0.65	*****	0.96	
14	3- 8-1981	1800	3- 8-1981	1900	1.20	0.60	*****	0.89	
15	11- 4-1975	2400	11- 5-1975	100	1.20	0.60	*****	0.83	
16	7-14-1972	1300	7-14-1972	1400	1.20	0.60	*****	0.78	
17	9-17-1974	1900	9-17-1974	2000	1.20	0.60	*****	0.73	
18	10- 1-1973	400	10- 1-1973	500	1.10	0.55	*****	0.69	
19	9-15-1972	400	9-15-1972	500	1.10	0.55	*****	0.65	
20	11-26-1979	600	11-26-1979	700	1.10	0.55	*****	0.62	
21	11- 3-1974	1400	11- 3-1974	1500	1.10	0.55	*****	0.59	
22	6-11-1974	300	6-11-1974	400	1.10	0.55	*****	0.56	
23	9-13-1981	1400	9-13-1981	1500	1.10	0.55	*****	0.54	
24	6- 5-1976	900	6- 5-1976	1000	1.10	0.55	*****	0.52	
25	10-30-1972	500	10-30-1972	600	1.10	0.55	*****	0.50	
26	6-24-1973	1100	6-24-1973	1200	1.10	0.55	*****	0.48	
27	7-10-1973	2000	7-10-1973	2100	1.00	0.50	*****	0.46	
28	5-27-1978	1600	5-27-1978	1700	1.00	0.50	*****	0.44	
29	3- 3-1975	1800	3- 3-1975	1900	1.00	0.50	*****	0.43	
30	9-29-1979	1400	9-29-1979	1500	1.00	0.50	*****	0.41	
31	9- 2-1975	1400	9- 2-1975	1500	1.00	0.50	*****	0.40	
32	8-29-1971	400	8-29-1971	500	1.00	0.50	*****	0.39	
33	4-11-1980	200	4-11-1980	300	1.00	0.50	*****	0.38	
34	5-14-1980	1500	5-14-1980	1600	1.00	0.50	*****	0.37	
35	12-10-1972	500	12-10-1972	600	1.00	0.50	*****	0.35	
36	7-26-1976	2000	7-26-1976	2100	1.00	0.50	*****	0.34	
37	9-30-1976	2000	9-30-1976	2100	1.00	0.50	*****	0.34	
38	5- 6-1982	1300	5- 6-1982	1400	1.00	0.50	*****	0.33	
39	10-21-1972	1500	10-21-1972	1600	1.00	0.50	*****	0.32	
40	10- 6-1977	1500	10- 6-1977	1600	1.00	0.50	*****	0.31	

Table A14.c Rainstorm Ordering for 3 Hour Duration Events
Yabucoa 1 NNE Station : Index No. 9829
Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	8-22-1977	1500	8-22-1977	1700	1700	4.00	1.33	8.05	12.42
2	4-28-1972	400	4-28-1972	600	600	2.30	0.77	16.10	6.21
3	12-28-1981	1700	12-28-1981	1900	1900	2.30	0.77	24.15	4.14
4	11-18-1982	2200	11-18-1982	2400	2400	2.30	0.77	32.21	3.10
5	9- 1-1973	500	9- 1-1973	700	700	2.20	0.73	40.26	2.48
6	11-15-1982	2400	11-16-1982	200	200	2.10	0.70	48.31	2.07
7	10-16-1981	1100	10-16-1981	1300	1300	2.10	0.70	56.36	1.77
8	10-23-1978	1300	10-23-1978	1500	1500	1.90	0.63	64.41	1.55
9	5- 6-1982	900	5- 6-1982	1100	1100	1.70	0.57	72.46	1.38
10	4-25-1980	1100	4-25-1980	1300	1300	1.60	0.53	80.52	1.24
11	11- 7-1982	2100	11- 7-1982	2300	2300	1.60	0.53	88.57	1.13
12	9-12-1982	1600	9-12-1982	1800	1800	1.50	0.50	96.62	1.03
13	11- 5-1982	2200	11- 5-1982	2400	2400	1.50	0.50	*****	0.96
14	12- 9-1975	2000	12- 9-1975	2200	2200	1.50	0.50	*****	0.89
15	7-18-1979	1700	7-18-1979	1900	1900	1.50	0.50	*****	0.83
16	4-27-1974	1600	4-27-1974	1800	1800	1.50	0.50	*****	0.78
17	8-21-1983	1000	8-21-1983	1200	1200	1.50	0.50	*****	0.73
18	10-26-1979	500	10-26-1979	700	700	1.40	0.47	*****	0.69
19	7- 4-1983	1600	7- 4-1983	1800	1800	1.40	0.47	*****	0.65
20	12-26-1981	2400	12-27-1981	200	200	1.40	0.47	*****	0.62
21	6-28-1981	600	6-28-1981	800	800	1.30	0.43	*****	0.59
22	4-10-1972	2300	4-11-1972	100	100	1.30	0.43	*****	0.56
23	10-16-1975	800	10-16-1975	1000	1000	1.30	0.43	*****	0.54
24	11- 7-1974	2000	11- 7-1974	2200	2200	1.20	0.40	*****	0.52
25	6- 4-1981	1900	6- 4-1981	2100	2100	1.20	0.40	*****	0.50
26	4-28-1976	1100	4-28-1976	1300	1300	1.20	0.40	*****	0.48
27	2-28-1982	1900	2-28-1982	2100	2100	1.20	0.40	*****	0.46
28	1-24-1981	2400	1-25-1981	200	200	1.10	0.37	*****	0.44
29	11- 9-1977	400	11- 9-1977	600	600	1.10	0.37	*****	0.43
30	10- 8-1976	1300	10- 8-1976	1500	1500	1.10	0.37	*****	0.41
31	10-11-1976	1700	10-11-1976	1900	1900	1.10	0.37	*****	0.40
32	12- 7-1981	2100	12- 7-1981	2300	2300	1.10	0.37	*****	0.39
33	8-30-1979	400	8-30-1979	600	600	1.10	0.37	*****	0.38
34	2- 2-1976	400	2- 2-1976	600	600	1.10	0.37	*****	0.37
35	8-30-1977	1000	8-30-1977	1200	1200	1.10	0.37	*****	0.35
36	10-14-1971	600	10-14-1971	800	800	1.00	0.33	*****	0.34
37	9- 7-1971	1100	9- 7-1971	1300	1300	1.00	0.33	*****	0.34
38	10-10-1977	2000	10-10-1977	2200	2200	1.00	0.33	*****	0.33
39	5-20-1975	800	5-20-1975	1000	1000	1.00	0.33	*****	0.32
40	12- 2-1981	1600	12- 2-1981	1800	1800	1.00	0.33	*****	0.31

Table A14.d Rainstorm Ordering for 4 Hour Duration Events
 Yabucoa I NNE Station : Index No. 9829
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)
1	3- 8-1973	1900	3- 8-1973	2200	2.70	0.67	8.05	12.42	
2	10-14-1975	1900	10-14-1975	2200	2.50	0.63	16.10	6.21	
3	11- 8-1977	500	11- 8-1977	800	2.50	0.63	24.15	4.14	
4	10-26-1978	1500	10-26-1978	1800	2.30	0.58	32.21	3.10	
5	10-24-1978	1100	10-24-1978	1400	2.20	0.55	40.26	2.48	
6	8-15-1973	1500	8-15-1973	1800	2.10	0.52	48.31	2.07	
7	11-27-1977	900	11-27-1977	1200	2.10	0.52	56.36	1.77	
8	4-22-1973	1300	4-22-1973	1600	1.90	0.48	64.41	1.55	
9	12-26-1981	500	12-26-1981	800	1.90	0.48	72.46	1.38	
10	2- 4-1982	2400	2- 5-1982	300	1.90	0.48	80.52	1.24	
11	11-23-1977	100	11-23-1977	400	1.80	0.45	88.57	1.13	
12	6-29-1979	1400	6-29-1979	1700	1.80	0.45	96.62	1.03	
13	5-18-1979	1600	5-18-1979	1900	1.70	0.43	*****	0.96	
14	7-13-1973	600	7-13-1973	900	1.70	0.43	*****	0.89	
15	9-22-1979	500	9-22-1979	800	1.70	0.43	*****	0.83	
16	9- 2-1972	1900	9- 2-1972	2200	1.70	0.43	*****	0.78	
17	6-15-1972	100	6-15-1972	400	1.70	0.43	*****	0.73	
18	7-18-1982	1500	7-18-1982	1800	1.60	0.40	*****	0.69	
19	5-17-1983	800	5-17-1983	1100	1.60	0.40	*****	0.65	
20	5- 8-1976	800	5- 8-1976	1100	1.50	0.38	*****	0.62	
21	10-18-1981	2200	10-19-1981	100	1.50	0.38	*****	0.59	
22	6-15-1983	1600	6-15-1983	1900	1.40	0.35	*****	0.56	
23	6- 1-1979	500	6- 1-1979	800	1.30	0.32	*****	0.54	
24	5-15-1979	100	5-15-1979	400	1.30	0.32	*****	0.52	
25	5-22-1978	1800	5-22-1978	2100	1.30	0.32	*****	0.50	
26	4-17-1983	2200	4-18-1983	100	1.30	0.32	*****	0.48	
27	1-25-1980	600	1-25-1980	900	1.30	0.32	*****	0.46	
28	5-30-1979	1400	5-30-1979	1700	1.30	0.32	*****	0.44	
29	8-30-1974	100	8-30-1974	400	1.20	0.30	*****	0.43	
30	12- 2-1983	200	12- 2-1983	500	1.20	0.30	*****	0.41	
31	5-15-1983	800	5-15-1983	1100	1.10	0.27	*****	0.40	
32	5-26-1978	1600	5-26-1978	1900	1.10	0.27	*****	0.39	
33	11- 2-1975	300	11- 2-1975	600	1.10	0.27	*****	0.38	
34	4- 8-1975	2200	4- 9-1975	100	1.10	0.27	*****	0.37	
35	3- 5-1974	2400	3- 6-1974	300	1.00	0.25	*****	0.35	
36	10- 7-1979	300	10- 7-1979	600	1.00	0.25	*****	0.34	
37	3- 5-1974	1900	3- 5-1974	2200	1.00	0.25	*****	0.34	
38	8-29-1977	1600	8-29-1977	1900	1.00	0.25	*****	0.33	
39	10-25-1978	400	10-25-1978	700	1.00	0.25	*****	0.32	
40	12-12-1977	2200	12-13-1977	100	1.00	0.25	*****	0.31	

Table A14.e Rainstorm Ordering for 5 Hour Duration Events
 Yabucoa 1 NNE Station : Index No. 9829
 Minimum Time Between Storms = 1 hr

Rank	from	at	Date	to	at	Depth (in)	I (in/hr)	P(X>x) (%)	T (yrs)	
1	9-	6-1977	1100	9-	6-1977	1500	4.10	0.82	8.05	12.42
2	7-	18-1979	500	7-	18-1979	900	3.40	0.68	16.10	6.21
3	4-	3-1978	1300	4-	3-1978	1700	3.20	0.64	24.15	4.14
4	10-	6-1972	2300	10-	7-1972	300	3.10	0.62	32.21	3.10
5	10-	7-1977	1700	10-	7-1977	2100	2.70	0.54	40.26	2.48
6	9-	17-1974	2400	9-	18-1974	400	2.20	0.44	48.31	2.07
7	9-	13-1982	500	9-	13-1982	900	2.00	0.40	56.36	1.77
8	4-	11-1980	600	4-	11-1980	1000	1.70	0.34	64.41	1.55
9	6-	3-1979	400	6-	3-1979	800	1.60	0.32	72.46	1.38
10	5-	28-1979	400	5-	28-1979	800	1.60	0.32	80.52	1.24
11	2-	23-1982	200	2-	23-1982	600	1.40	0.28	88.57	1.13
12	8-	29-1974	1900	8-	29-1974	2300	1.40	0.28	96.62	1.03
13	5-	24-1983	200	5-	24-1983	600	1.40	0.28	*****	0.96
14	8-	10-1972	2400	8-	11-1972	400	1.30	0.26	*****	0.89
15	7-	20-1981	900	7-	20-1981	1300	1.20	0.24	*****	0.83
16	10-	11-1976	200	10-	11-1976	600	1.10	0.22	*****	0.78
17	11-	3-1983	700	11-	3-1983	1100	1.10	0.22	*****	0.73

Table A15 Rainfall Ordering for Hourly Precipitation Data
Botijas 2-Orocovis Station : Index No. 0988

Rank	Date	Time	Ppt	P (X>x)	T (Years)
1	5- 8-1977	1600	2.60	7.69	13.00
2	9- 8-1978	1600	2.60	15.38	6.50
3	5-12-1980	1200	2.20	23.08	4.33
4	5-16-1979	1500	2.10	30.77	3.25
5	4-25-1980	1400	2.00	38.46	2.60
6	4-30-1976	1600	1.80	46.15	2.17
7	9-29-1978	1300	1.70	53.85	1.86
8	9-29-1976	1700	1.70	61.54	1.63
9	9-30-1979	1500	1.60	69.23	1.44
10	8-21-1977	2000	1.60	76.92	1.30
11	5-20-1979	200	1.60	84.62	1.18
12	3-12-1983	1300	1.60	92.31	1.08
13	5- 8-1977	1500	1.50	*****	1.00
14	4-27-1974	1500	1.50	*****	0.93
15	9-10-1975	1700	1.50	*****	0.87
16	4-10-1978	1500	1.50	*****	0.81
17	11-10-1977	1500	1.40	*****	0.76
18	7-20-1982	1400	1.40	*****	0.72
19	9-29-1979	1100	1.40	*****	0.68
20	10-26-1978	600	1.30	*****	0.65
21	10-30-1978	2000	1.30	*****	0.62
22	4-25-1980	1500	1.30	*****	0.59
23	7- 9-1978	1000	1.30	*****	0.57
24	5-10-1982	1300	1.30	*****	0.54
25	11-13-1977	1600	1.30	*****	0.52
26	9-12-1982	2000	1.30	*****	0.50
27	8- 9-1977	1500	1.30	*****	0.48
28	4- 8-1980	1500	1.20	*****	0.46
29	6-13-1979	200	1.20	*****	0.45
30	9-15-1980	1600	1.20	*****	0.43
31	9- 6-1981	1700	1.20	*****	0.42
32	9-29-1979	1200	1.10	*****	0.41
33	7-24-1981	1600	1.10	*****	0.39
34	9-29-1977	1600	1.10	*****	0.38
35	6-27-1973	1300	1.10	*****	0.37
36	5-27-1982	500	1.10	*****	0.36
37	6- 8-1979	2100	1.10	*****	0.35
38	4-16-1976	1800	1.10	*****	0.34
39	3-12-1983	1200	1.10	*****	0.33
40	2-11-1979	1600	1.10	*****	0.32

Table A16 Rainfall Ordering for Hourly Precipitation Data
Cayey 1E Station : Index No. 1901

Rank	Date	Time	Ppt	P (X>x)	T (Years)
1	8-15-1973	1500	2.50	8.33	12.00
2	5-30-1973	1600	1.80	16.67	6.00
3	8-30-1974	200	1.80	25.00	4.00
4	9-29-1979	1200	1.60	33.33	3.00
5	3-12-1983	2000	1.60	41.67	2.40
6	10-23-1974	600	1.50	50.00	2.00
7	9-16-1975	200	1.50	58.33	1.71
8	9-27-1976	1600	1.40	66.67	1.50
9	10-23-1974	800	1.40	75.00	1.33
10	10- 7-1972	100	1.40	83.33	1.20
11	8-31-1979	500	1.30	91.67	1.09
12	10-14-1971	1300	1.30	*****	1.00
13	8- 4-1978	2400	1.30	*****	0.92
14	8-30-1979	1900	1.20	*****	0.86
15	10-14-1971	1200	1.20	*****	0.80
16	9-29-1979	1100	1.20	*****	0.75
17	10- 6-1977	1300	1.20	*****	0.71
18	9-16-1975	600	1.20	*****	0.67
19	5-23-1977	600	1.10	*****	0.63
20	9-11-1975	1500	1.10	*****	0.60
21	4-10-1980	1900	1.10	*****	0.57
22	3- 4-1981	2000	1.10	*****	0.55
23	6-30-1981	1700	1.10	*****	0.52
24	5-27-1978	300	1.10	*****	0.50
25	5-19-1983	800	1.10	*****	0.48
26	5-23-1977	500	1.00	*****	0.46
27	10-17-1974	2000	1.00	*****	0.44
28	10-11-1973	1500	1.00	*****	0.43
29	10-23-1974	700	1.00	*****	0.41
30	9-27-1980	2000	1.00	*****	0.40
31	9-19-1974	100	1.00	*****	0.39
32	6-28-1979	700	1.00	*****	0.38
33	10-30-1976	1400	1.00	*****	0.36
34	8-30-1979	2200	1.00	*****	0.35
35	6-25-1979	2100	0.90	*****	0.34
36	10-28-1979	1700	0.90	*****	0.33
37	4-21-1973	1300	0.90	*****	0.32
38	8-30-1979	1800	0.90	*****	0.32
39	10- 9-1980	1200	0.90	*****	0.31
40	8-11-1972	200	0.90	*****	0.30

Table A17 Rainfall Ordering for Hourly Precipitation Data
 Corozal Substation : Index No. 2934

Rank	Date	Time	Ppt	P (X>x)	T (Years)
1	10-10-1974	1400	2.90	8.33	12.00
2	9- 8-1974	1600	2.70	16.67	6.00
3	3-26-1981	1600	2.60	25.00	4.00
4	10-20-1981	1600	2.50	33.33	3.00
5	10-21-1972	1300	2.40	41.67	2.40
6	4-20-1973	1700	2.30	50.00	2.00
7	9-23-1980	1300	2.20	58.33	1.71
8	3-26-1981	1500	2.10	66.67	1.50
9	9-30-1976	1600	2.00	75.00	1.33
10	7-18-1974	1400	1.90	83.33	1.20
11	10-13-1972	1700	1.90	91.67	1.09
12	8- 9-1977	1500	1.90	*****	1.00
13	9-28-1981	1600	1.90	*****	0.92
14	5-15-1979	1400	1.90	*****	0.86
15	11- 7-1979	1500	1.80	*****	0.80
16	11-13-1977	1700	1.80	*****	0.75
17	11-14-1975	1600	1.70	*****	0.71
18	10-15-1972	1500	1.70	*****	0.67
19	10-29-1976	1600	1.70	*****	0.63
20	9- 7-1974	1700	1.70	*****	0.60
21	10-24-1981	1400	1.70	*****	0.57
22	12-13-1981	2200	1.70	*****	0.55
23	5-10-1982	1500	1.70	*****	0.52
24	11- 4-1977	1500	1.60	*****	0.50
25	2- 4-1980	1900	1.60	*****	0.48
26	5-29-1980	1200	1.50	*****	0.46
27	10-12-1981	1600	1.50	*****	0.44
28	10-14-1976	1600	1.50	*****	0.43
29	5-13-1982	1400	1.50	*****	0.41
30	5-14-1982	1500	1.50	*****	0.40
31	8-24-1972	1700	1.40	*****	0.39
32	10-14-1976	1500	1.40	*****	0.38
33	9-29-1972	1700	1.40	*****	0.36
34	4-20-1973	1600	1.40	*****	0.35
35	5-29-1980	1300	1.40	*****	0.34
36	6-12-1972	1600	1.40	*****	0.33
37	10-23-1974	500	1.40	*****	0.32
38	4-20-1973	1800	1.40	*****	0.32
39	3-12-1983	700	1.40	*****	0.31
40	3-12-1983	800	1.40	*****	0.30

Table A18 Rainfall: Ordering for Hourly Precipitation Data
 Dos Bocas Station : Index No. 3431

Rank	Date	Time	Ppt	P (X>x)	T (Years)
1	3-28-1981	1800	3.20	8.33	12.00
2	10-26-1976	1300	3.00	16.67	6.00
3	11-22-1974	1600	3.00	25.00	4.00
4	6-24-1981	1400	3.00	33.33	3.00
5	10-14-1971	1400	2.80	41.67	2.40
6	11-18-1981	1800	2.80	50.00	2.00
7	10- 5-1982	1500	2.80	58.33	1.71
8	3-17-1977	1800	2.70	66.67	1.50
9	5-25-1978	1500	2.70	75.00	1.33
10	6-15-1979	1400	2.60	83.33	1.20
11	2-11-1974	1700	2.50	91.67	1.09
12	8- 8-1982	1500	2.50	*****	1.00
13	4-11-1980	1500	2.50	*****	0.92
14	9-23-1978	1300	2.40	*****	0.86
15	4-26-1974	1400	2.40	*****	0.80
16	12-13-1981	1800	2.20	*****	0.75
17	8-16-1981	1500	2.20	*****	0.71
18	1- 9-1981	1800	2.20	*****	0.67
19	3-10-1973	1500	2.10	*****	0.63
20	3-14-1979	1700	2.10	*****	0.60
21	10- 1-1972	1400	2.10	*****	0.57
22	5- 6-1975	1600	2.10	*****	0.55
23	6- 8-1978	1500	2.00	*****	0.52
24	5-15-1979	1400	2.00	*****	0.50
25	5-16-1980	1300	2.00	*****	0.48
26	7-27-1980	1500	2.00	*****	0.46
27	5-13-1983	1700	2.00	*****	0.44
28	5-12-1980	1200	1.90	*****	0.43
29	10- 4-1982	1700	1.90	*****	0.41
30	7-10-1973	1700	1.90	*****	0.40
31	11- 9-1982	1600	1.90	*****	0.39
32	5-15-1972	1500	1.90	*****	0.38
33	11-18-1981	1700	1.80	*****	0.36
34	11-13-1977	1800	1.80	*****	0.35
35	5-12-1979	1400	1.80	*****	0.34
36	1- 5-1981	2000	1.80	*****	0.33
37	11-15-1977	1600	1.80	*****	0.32
38	5-10-1976	1800	1.80	*****	0.32
39	9-29-1973	1900	1.80	*****	0.31
40	11-18-1975	1800	1.80	*****	0.30

Table A19 Rainfall Ordering for Hourly Precipitation Data
 Fajardo Station : Index No. 3657

Rank	Date	Time	Ppt	P (X>x)	T (Years)
1	4-21-1979	600	3.20	8.33	12.00
2	10-24-1974	1900	2.70	16.67	6.00
3	1-21-1977	200	2.60	25.00	4.00
4	11-19-1982	400	2.40	33.33	3.00
5	8-15-1973	1700	2.00	41.67	2.40
6	4-23-1973	1600	2.00	50.00	2.00
7	9- 4-1979	1700	2.00	58.33	1.71
8	1-21-1977	100	2.00	66.67	1.50
9	4-21-1983	300	2.00	75.00	1.33
10	10- 7-1977	1900	1.80	83.33	1.20
11	3- 4-1981	2100	1.70	91.67	1.09
12	5-13-1982	600	1.70	*****	1.00
13	9- 6-1977	1400	1.70	*****	0.92
14	6-15-1972	300	1.70	*****	0.86
15	3- 3-1975	1800	1.60	*****	0.80
16	10-31-1981	100	1.60	*****	0.75
17	5-10-1982	200	1.60	*****	0.71
18	5-18-1983	2200	1.60	*****	0.67
19	12-12-1981	2300	1.50	*****	0.63
20	4-21-1983	400	1.50	*****	0.60
21	10-24-1974	1800	1.50	*****	0.57
22	6-17-1983	1800	1.50	*****	0.55
23	6-23-1981	1700	1.40	*****	0.52
24	6- 1-1982	1600	1.40	*****	0.50
25	12-12-1981	2000	1.40	*****	0.48
26	4-21-1983	100	1.40	*****	0.46
27	4-19-1979	2100	1.30	*****	0.44
28	7-13-1977	1900	1.30	*****	0.43
29	6-24-1979	1300	1.30	*****	0.41
30	4-11-1972	1700	1.30	*****	0.40
31	5-13-1983	1700	1.30	*****	0.39
32	9- 6-1977	1500	1.30	*****	0.38
33	9-16-1975	300	1.30	*****	0.36
34	12-12-1981	2400	1.20	*****	0.35
35	8-30-1974	200	1.20	*****	0.34
36	11-11-1974	2400	1.20	*****	0.33
37	9-16-1975	1400	1.20	*****	0.32
38	12-10-1975	300	1.20	*****	0.32
39	3- 8-1983	2000	1.20	*****	0.31
40	4-25-1976	1500	1.20	*****	0.30

Table A20 Rainfall Ordering for Hourly Precipitation Data
Maricao 2 SSW Station : Index No. 5908

Rank	Date	Time	Ppt	P (X>x)	T (Years)
1	9-16-1975	900	3.70	8.33	12.00
2	8-13-1980	1600	3.00	16.67	6.00
3	9- 9-1975	1500	2.90	25.00	4.00
4	4-10-1980	1600	2.80	33.33	3.00
5	4-20-1983	2300	2.70	41.67	2.40
6	5-12-1983	1900	2.70	50.00	2.00
7	10-30-1978	1300	2.60	58.33	1.71
8	11-17-1979	1700	2.60	66.67	1.50
9	5-23-1978	1600	2.60	75.00	1.33
10	9-10-1983	1500	2.60	83.33	1.20
11	6-21-1981	1600	2.50	91.67	1.09
12	11-23-1975	1500	2.50	*****	1.00
13	10-17-1972	1300	2.50	*****	0.92
14	10-18-1972	1600	2.50	*****	0.86
15	8-20-1979	1400	2.40	*****	0.80
16	11-17-1982	1500	2.40	*****	0.75
17	8-17-1977	1800	2.40	*****	0.71
18	10-10-1975	1600	2.40	*****	0.67
19	5-18-1983	1400	2.40	*****	0.63
20	9-14-1975	1600	2.40	*****	0.60
21	8-23-1982	1500	2.30	*****	0.57
22	10-13-1972	1700	2.30	*****	0.55
23	8-12-1974	1600	2.20	*****	0.52
24	10-18-1982	1800	2.20	*****	0.50
25	11-17-1982	1400	2.20	*****	0.48
26	10- 3-1981	1700	2.20	*****	0.46
27	9-25-1976	1300	2.10	*****	0.44
28	8-18-1979	1500	2.10	*****	0.43
29	10-10-1975	1700	2.10	*****	0.41
30	8- 8-1982	1400	2.10	*****	0.40
31	11- 3-1977	1400	2.10	*****	0.39
32	10-21-1974	1100	2.10	*****	0.38
33	9- 1-1971	1400	2.00	*****	0.36
34	9-12-1982	2200	2.00	*****	0.35
35	5-16-1980	1400	2.00	*****	0.34
36	5-27-1980	1400	2.00	*****	0.33
37	4-22-1972	1400	2.00	*****	0.32
38	11-13-1977	1400	2.00	*****	0.32
39	7-12-1972	1300	2.00	*****	0.31
40	10-17-1981	1500	2.00	*****	0.30

Table A21 Rainfall Ordering for Hourly Precipitation Data
Ponce 4E Station : Index No. 7292

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Rank      Date      Time      Ppt  P (X>x)  T (Years)
-----
  1      7-18-1979   1900     2.40    8.33    12.00
  2      4-21-1983    400     1.80   16.67     6.00
  3      5-10-1982   1400     1.70   25.00     4.00
  4      9-12-1982   2300     1.70   33.33     3.00
  5     10-29-1976   2000     1.70   41.67     2.40
  6     10-30-1976   1600     1.60   50.00     2.00
  7     10-30-1978   1700     1.60   58.33     1.71
  8      9-16-1975   1100     1.60   66.67     1.50
  9     10-11-1973   1500     1.50   75.00     1.33
 10     10-26-1978   1500     1.50   83.33     1.20
 11      8-31-1979    700     1.50   91.67     1.09
 12     10-11-1973   1400     1.40   *****     1.00
 13      9-16-1975   1400     1.30   *****     0.92
 14      9-29-1979   1300     1.30   *****     0.86
 15     11-26-1981   1500     1.30   *****     0.80
 16      9-11-1975   1600     1.20   *****     0.75
 17      8-28-1980   1600     1.20   *****     0.71
 18     11- 7-1977   1500     1.20   *****     0.67
 19     10-21-1983   1600     1.20   *****     0.63
 20     11-10-1983   2000     1.20   *****     0.60
 21      4-28-1972   1500     1.10   *****     0.57
 22      9-26-1972   1100     1.10   *****     0.55
 23     10-15-1976   1700     1.10   *****     0.52
 24     10-10-1973   1200     1.10   *****     0.50
 25      8-17-1983   1600     1.10   *****     0.48
 26      9-19-1981   1500     1.10   *****     0.46
 27     10-17-1981   1600     1.10   *****     0.44
 28      7-21-1975   1500     1.00   *****     0.43
 29     12-13-1981    800     1.00   *****     0.41
 30     10- 6-1973   1800     1.00   *****     0.40
 31      4-22-1973   1600     1.00   *****     0.39
 32      5-27-1977    200     1.00   *****     0.38
 33      4-27-1974   1600     1.00   *****     0.36
 34     11- 7-1977   1700     1.00   *****     0.35
 35     10-23-1975    200     1.00   *****     0.34
 36      9-16-1975   1000     0.90   *****     0.33
 37      3-21-1972   1700     0.90   *****     0.32
 38     10-23-1978    700     0.90   *****     0.32
 39     11- 2-1974   1700     0.90   *****     0.31
 40     10-30-1976   1700     0.90   *****     0.30
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Table A22 Rainfall Ordering for Hourly Precipitation Data
 San Juan WSFO Station : Index No. 8812

Rank	Date	Time	Ppt	P (X>x)	T (Years)
1	4-20-1983	2300	2.51	5.88	17.00
2	3- 9-1973	300	2.20	11.76	8.50
3	9-29-1979	1200	2.16	17.65	5.67
4	9- 5-1976	1500	2.07	23.53	4.25
5	1-26-1969	1700	2.03	29.41	3.40
6	11-25-1979	1300	1.90	35.29	2.83
7	5- 6-1981	1900	1.76	41.18	2.43
8	10-24-1981	1500	1.62	47.06	2.13
9	10-31-1981	1500	1.59	52.94	1.89
10	9-29-1972	2400	1.59	58.82	1.70
11	11-25-1979	1000	1.57	64.71	1.55
12	9- 2-1978	1300	1.56	70.59	1.42
13	11-25-1979	1100	1.54	76.47	1.31
14	4-15-1976	1800	1.54	82.35	1.21
15	11-11-1975	1600	1.53	88.24	1.13
16	10-30-1970	1900	1.51	94.12	1.06
17	12-10-1972	400	1.42	*****	1.00
18	4-11-1978	100	1.41	*****	0.94
19	10-30-1976	1400	1.36	*****	0.89
20	4-23-1973	1600	1.33	*****	0.85
21	3- 4-1981	2200	1.32	*****	0.81
22	5- 7-1970	1600	1.29	*****	0.77
23	10- 9-1980	1300	1.27	*****	0.74
24	8-25-1976	1300	1.27	*****	0.71
25	5-14-1979	500	1.24	*****	0.68
26	10- 1-1969	1200	1.23	*****	0.65
27	11-28-1974	1300	1.23	*****	0.63
28	9-18-1979	1400	1.22	*****	0.61
29	10-22-1981	1300	1.21	*****	0.59
30	9-30-1976	1900	1.21	*****	0.57
31	6- 2-1970	1000	1.20	*****	0.55
32	12-12-1981	2400	1.17	*****	0.53
33	5- 7-1969	2100	1.17	*****	0.52
34	8-29-1974	2000	1.16	*****	0.50
35	6- 4-1975	1700	1.15	*****	0.49
36	10- 6-1977	1300	1.15	*****	0.47
37	8-15-1973	1600	1.15	*****	0.46
38	1-13-1970	1400	1.10	*****	0.45
39	11-22-1975	1300	1.10	*****	0.44
40	1-20-1977	2100	1.09	*****	0.43

Table A23 Rainfall Ordering for Hourly Precipitation Data
 San Sebastian 2 WNW Station : Index No. 8881

Rank	Date	Time	Ppt	P (X>x)	T (Years)
1	10-24-1981	1500	3.10	8.33	12.00
2	10-16-1980	1300	3.00	16.67	6.00
3	6- 5-1982	1100	2.90	25.00	4.00
4	11- 6-1975	1600	2.78	33.33	3.00
5	5-23-1980	1300	2.70	41.67	2.40
6	5- 3-1978	1600	2.60	50.00	2.00
7	3-26-1981	1900	2.50	58.33	1.71
8	8-28-1976	1500	2.48	66.67	1.50
9	5- 1-1976	1500	2.42	75.00	1.33
10	2-15-1981	1600	2.40	83.33	1.20
11	6-13-1972	1500	2.37	91.67	1.09
12	10- 9-1972	1400	2.28	*****	1.00
13	9-25-1978	1500	2.28	*****	0.92
14	10-21-1972	1500	2.23	*****	0.86
15	8- 7-1978	1300	2.22	*****	0.80
16	7- 7-1979	1400	2.20	*****	0.75
17	10-18-1983	1500	2.20	*****	0.71
18	10- 3-1974	1500	2.17	*****	0.67
19	4-30-1978	1400	2.15	*****	0.63
20	9-19-1971	1300	2.10	*****	0.60
21	6-28-1981	1400	2.00	*****	0.57
22	6-13-1983	1300	2.00	*****	0.55
23	5-17-1976	1500	2.00	*****	0.52
24	6- 1-1976	1600	1.99	*****	0.50
25	9-12-1978	1400	1.98	*****	0.48
26	11- 4-1977	1600	1.98	*****	0.46
27	12- 3-1976	1600	1.91	*****	0.44
28	6-16-1977	1500	1.91	*****	0.43
29	8- 1-1980	1500	1.90	*****	0.41
30	6-23-1982	900	1.90	*****	0.40
31	6-12-1980	1300	1.90	*****	0.39
32	11- 8-1981	1500	1.90	*****	0.38
33	10-15-1971	1700	1.89	*****	0.36
34	9-18-1976	1400	1.88	*****	0.35
35	6-10-1974	1400	1.83	*****	0.34
36	10-17-1977	1600	1.82	*****	0.33
37	5-20-1976	1600	1.81	*****	0.32
38	9- 1-1981	1600	1.80	*****	0.32
39	4-19-1978	1700	1.80	*****	0.31
40	8-15-1982	2100	1.80	*****	0.30

Table A24 Rainfall Ordering for Hourly Precipitation Data
 Yabucoa 1 NNE Station : Index No. 9829

Rank	Date	Time	Ppt	P (X>x)	T (Years)
1	10-11-1973	1400	3.30	8.33	12.00
2	11-12-1974	200	2.70	16.67	6.00
3	8-22-1977	1600	2.30	25.00	4.00
4	9- 4-1973	1300	2.10	33.33	3.00
5	9-16-1975	400	2.00	41.67	2.40
6	10- 7-1977	1900	1.90	50.00	2.00
7	4- 3-1978	1400	1.90	58.33	1.71
8	5-29-1982	100	1.90	66.67	1.50
9	9-15-1975	2400	1.80	75.00	1.33
10	9-18-1974	100	1.70	83.33	1.20
11	12-28-1981	800	1.70	91.67	1.09
12	12-28-1981	1800	1.70	*****	1.00
13	8-23-1971	2400	1.70	*****	0.92
14	12- 2-1983	800	1.70	*****	0.86
15	9- 6-1977	1200	1.60	*****	0.80
16	11-25-1979	1700	1.60	*****	0.75
17	12- 2-1983	700	1.60	*****	0.71
18	10- 7-1972	300	1.60	*****	0.67
19	3- 8-1973	2000	1.50	*****	0.63
20	9- 1-1973	600	1.50	*****	0.60
21	8-22-1977	1500	1.40	*****	0.57
22	10-26-1978	1700	1.40	*****	0.55
23	7-18-1979	900	1.40	*****	0.52
24	9-22-1979	600	1.40	*****	0.50
25	4-28-1972	400	1.40	*****	0.48
26	7-18-1979	800	1.30	*****	0.46
27	9- 4-1973	1200	1.30	*****	0.44
28	8-31-1979	200	1.30	*****	0.43
29	10- 5-1977	2100	1.30	*****	0.41
30	10-14-1975	2000	1.30	*****	0.40
31	12-14-1980	2300	1.30	*****	0.39
32	11-27-1977	900	1.30	*****	0.38
33	10-17-1974	1900	1.30	*****	0.36
34	10-23-1978	1400	1.30	*****	0.35
35	11-18-1982	2300	1.30	*****	0.34
36	10-24-1978	1300	1.30	*****	0.33
37	9-16-1975	300	1.30	*****	0.32
38	10-16-1981	1200	1.20	*****	0.32
39	8-30-1979	1800	1.20	*****	0.31
40	5-31-1974	800	1.20	*****	0.30

APPENDIX B

Inverse Distance Technique for Geographical Interpolation

APPENDIX B

The increase distance technique for geographical interpolation has been discussed in the literature (Pagán-Trinidad, 1982). It states that if certain property P which is measured at various points i, interpolation of the property at points j within the known points can be achieved by taking a weighed mean of the property at the surrounding stations. The weight to each point is given inversely proportional to the distance between points i and j. Mathematically it can be expressed as follows:

$$P_j = \frac{\sum(P_i / L_i^x)}{\sum(\frac{1}{L_i^x})} \quad \text{B.1}$$

where

P_j = property (e.g., precipitation) at point j

P_i = property (e.g., precipitation) at point i

L_i = distance between points i and j

x = exponent

Storm rainfall distribution can be interpolated in space by repeating the spatial interpolation for various points in the non-dimensional curve. L_i can be determined by applying the inverse geodesic problem (Hosmer, 1946; Bonford, 1952; Ewing and Mitchell, 1970).

APPENDIX C

Examples of Various Computer Data Files Availables Upon Request

Appendix C

Various computer files containing reduced rainfall data from the stations analyzed are available from the study. They are not included in the report because of their extension. However, considering that most of the practicing engineers and some government agencies do not have computer facilities capable of reproducing the work, they will be kept temporarily and they can be furnished to the reader upon request at the cost of duplication, shipping and handling. Samples of computer outputs which are considered of importance for practicing engineers are:

1. Table C1: Listing of Rainstorm Data. It includes beginning and ending time of storm (hour and date), duration in hours, total storm rainfall in inches, and mean rainfall intensity in in/hr for storms with mean storm rainfall intensity greater or equal to 0.20 in/hr. There is one file per station with storms organized in chronological order for both rainstorm selection criteria: 1-hr and 6-hr minimum time between storms.
2. Table C2: Storm Hyetographs Stratified by Station and Storm Duration. It includes beginning and ending time and data of significant storms, duration in hours, total rainfall in inches and mean storm intensity in in/hr. Hourly rainfall in inches and percentage of total storm rainfall. It also includes the cumulative percentage of storm depth. The file contains all the significant storms at each station classified by durations. The mean non-dimensional distribution for each storm duration is presented at the end of the table. The standard deviation of the values at each selected percentage is presented.
3. Table C3: Statistics of Non-Dimensional Storm Rainfall Distributions. It presents basic statistics for storm rainfall distributions stratified by station storm duration, and storm

class withing the given duration. Basic statistics include mean, standard deviation, shewness, kurtosis, coefficient of shewness, and coefficient of kurtosis for each point estimated in the distribution (e.g., 10%, 20%, etc). The mean non-dimensional storm rainfall distributions are also shown.

Other computer outputs which are available but not shown in the Appendix are:

1. Frequencies of Storm Rainfall Stratified by Storm Duration and Mean Storm Rainfall Intensities: A summary of this file is shown in Tables A2 and Table A3. The file shows various basic statistics which are not shown in the tables. The computer output is stratifies rainfall intensities at 0.10 in/hr intervals, instead of defining variable class intervals.
2. A computer program was written in BASIC for the interpolation technique described in Appendix C. Copies of the computer program will be available to users.

INDEX NO 8812
 SAN JUAN WSFO STATION
 MIN. TIME BETWEEN STORMS 1:00 HOUR
 MIN. RAINFALL INTENSITY 0.20 IN/HR

FROM	AT	TO	AT	DUR.	RAIN	INT
3-15-1967	1000	3-15-1967	1000	1.00	0.36	0.36
4-10-1967	2400	4-10-1967	2400	1.00	0.24	0.24
5-20-1967	600	5-20-1967	700	2.00	0.75	0.38
6-20-1967	1400	6-20-1967	1400	1.00	0.47	0.47
6-23-1967	2400	6-23-1967	2400	1.00	0.31	0.31
6-25-1967	1200	6-25-1967	1300	2.00	0.66	0.33
6-25-1967	1900	6-25-1967	1900	1.00	0.36	0.36
6-26-1967	1200	6-26-1967	1200	1.00	0.52	0.52
7-26-1967	300	7-26-1967	500	3.00	0.67	0.22
8-18-1967	300	8-18-1967	400	2.00	1.77	0.88
9-19-1967	1100	9-19-1967	1400	4.00	1.53	0.38
9-20-1967	1200	9-20-1967	1400	3.00	1.90	0.63
10- 3-1967	1800	10- 3-1967	1900	2.00	1.00	0.50
10-10-1967	1500	10-10-1967	1500	1.00	0.57	0.57
10-18-1967	100	10-18-1967	100	1.00	0.21	0.21
10-19-1967	2200	10-19-1967	2200	1.00	0.26	0.26
10-23-1967	600	10-23-1967	600	1.00	0.21	0.21
10-25-1967	1200	10-25-1967	1300	2.00	0.79	0.39
11- 4-1967	800	11- 4-1967	800	1.00	0.29	0.29
11- 4-1967	2200	11- 4-1967	2200	1.00	0.44	0.44
2-25-1968	2300	2-25-1968	2400	2.00	0.48	0.24
5- 4-1968	1200	5- 4-1968	1200	1.00	0.48	0.48
5-10-1968	500	5-10-1968	700	3.00	1.04	0.35
5-23-1968	500	5-23-1968	500	1.00	0.48	0.48
5-24-1968	2100	5-24-1968	2100	1.00	0.22	0.22
6- 4-1968	1400	6- 4-1968	1400	1.00	0.20	0.20
6-10-1968	1100	6-10-1968	1400	4.00	0.95	0.24
6-29-1968	2200	6-29-1968	2200	1.00	0.56	0.56
6-30-1968	1200	6-30-1968	1200	1.00	0.65	0.65
7- 7-1968	1800	7- 7-1968	1800	1.00	0.22	0.22
7-13-1968	2200	7-13-1968	2300	2.00	0.55	0.27
8- 2-1968	1100	8- 2-1968	1200	2.00	0.63	0.32
8- 4-1968	600	8- 4-1968	600	1.00	0.39	0.39
8-19-1968	2000	8-19-1968	2100	2.00	0.66	0.33
8-30-1968	1500	8-30-1968	1600	2.00	0.60	0.30
9- 5-1968	1100	9- 5-1968	1100	1.00	0.31	0.31
9-13-1968	2400	9-13-1968	2400	1.00	0.26	0.26
9-14-1968	1300	9-14-1968	1600	4.00	1.19	0.30
9-15-1968	1300	9-15-1968	1400	2.00	0.69	0.34
9-24-1968	200	9-24-1968	200	1.00	0.26	0.26
9-24-1968	2300	9-24-1968	2300	1.00	0.33	0.33
9-25-1968	1800	9-25-1968	1900	2.00	0.89	0.45
10-10-1968	1700	10-10-1968	1700	1.00	0.45	0.45
11- 4-1968	1900	11- 4-1968	2000	2.00	0.53	0.27
11-14-1968	2200	11-14-1968	2300	2.00	0.43	0.21
11-15-1968	500	11-15-1968	1100	7.00	1.55	0.22
11-18-1968	2200	11-18-1968	2200	1.00	0.22	0.22
11-26-1968	700	11-26-1968	700	1.00	0.27	0.27
11-27-1968	1600	11-27-1968	2100	6.00	2.55	0.43
12-27-1968	2300	12-27-1968	2400	2.00	0.50	0.25

Table CI Listing of Rainstorm Data

INDEX NO 8812
SAN JUAN WSFO STATION
MIN. TIME BETWEEN STORMS 1:00 HOUR
MIN. RAINFALL INTENSITY 0.20 IN/HR

FROM	AT	TO	AT	DUR.	RAIN	INT
3-15-1967	1000	3-15-1967	1000	1.00	0.36	0.36
4-10-1967	2400	4-10-1967	2400	1.00	0.24	0.24
5-20-1967	600	5-20-1967	700	2.00	0.75	0.38
6-20-1967	1400	6-20-1967	1400	1.00	0.47	0.47
6-23-1967	2400	6-23-1967	2400	1.00	0.31	0.31
6-25-1967	1200	6-25-1967	1300	2.00	0.66	0.33
6-25-1967	1900	6-25-1967	1900	1.00	0.36	0.36
6-26-1967	1200	6-26-1967	1200	1.00	0.52	0.52
7-26-1967	300	7-26-1967	500	3.00	0.67	0.22
8-18-1967	300	8-18-1967	400	2.00	1.77	0.88
9-19-1967	1100	9-19-1967	1400	4.00	1.53	0.38
9-20-1967	1200	9-20-1967	1400	3.00	1.90	0.63
10- 3-1967	1800	10- 3-1967	1900	2.00	1.00	0.50
10-10-1967	1500	10-10-1967	1500	1.00	0.57	0.57
10-18-1967	100	10-18-1967	100	1.00	0.21	0.21
10-19-1967	2200	10-19-1967	2200	1.00	0.26	0.26
10-23-1967	600	10-23-1967	600	1.00	0.21	0.21
10-25-1967	1200	10-25-1967	1300	2.00	0.79	0.39
11- 4-1967	800	11- 4-1967	800	1.00	0.29	0.29
11- 4-1967	2200	11- 4-1967	2200	1.00	0.44	0.44
2-25-1968	2300	2-25-1968	2400	2.00	0.48	0.24
5- 4-1968	1200	5- 4-1968	1200	1.00	0.48	0.48
5-10-1968	500	5-10-1968	700	3.00	1.04	0.35
5-23-1968	500	5-23-1968	500	1.00	0.48	0.48
5-24-1968	2100	5-24-1968	2100	1.00	0.22	0.22
6- 4-1968	1400	6- 4-1968	1400	1.00	0.20	0.20
6-10-1968	1100	6-10-1968	1400	4.00	0.95	0.24
6-29-1968	2200	6-29-1968	2200	1.00	0.56	0.56
6-30-1968	1200	6-30-1968	1200	1.00	0.65	0.65
7- 7-1968	1800	7- 7-1968	1800	1.00	0.22	0.22
7-13-1968	2200	7-13-1968	2300	2.00	0.55	0.27
8- 2-1968	1100	8- 2-1968	1200	2.00	0.63	0.32
8- 4-1968	600	8- 4-1968	600	1.00	0.39	0.39
8-19-1968	2000	8-19-1968	2100	2.00	0.66	0.33
8-30-1968	1500	8-30-1968	1600	2.00	0.60	0.30
9- 5-1968	1100	9- 5-1968	1100	1.00	0.31	0.31
9-13-1968	2400	9-13-1968	2400	1.00	0.26	0.26
9-14-1968	1300	9-14-1968	1600	4.00	1.19	0.30
9-15-1968	1300	9-15-1968	1400	2.00	0.69	0.34
9-24-1968	200	9-24-1968	200	1.00	0.26	0.26
9-24-1968	2300	9-24-1968	2300	1.00	0.33	0.33
9-25-1968	1800	9-25-1968	1900	2.00	0.89	0.45
10-10-1968	1700	10-10-1968	1700	1.00	0.45	0.45
11- 4-1968	1900	11- 4-1968	2000	2.00	0.53	0.27
11-14-1968	2200	11-14-1968	2300	2.00	0.43	0.21
11-15-1968	500	11-15-1968	1100	7.00	1.55	0.22
11-18-1968	2200	11-18-1968	2200	1.00	0.22	0.22
11-26-1968	700	11-26-1968	700	1.00	0.27	0.27
11-27-1968	1600	11-27-1968	2100	6.00	2.55	0.43
12-27-1968	2300	12-27-1968	2400	2.00	0.50	0.25

INDEX NO 8812
 SAN JUAN WSFO STATION
 MIN. TIME BETWEEN STORMS 1:00 HOUR
 MIN. RAINFALL INTENSITY 0.20 IN/HR

STORM DURATION= 6.00 HOURS

FROM	AT	TO	AT	DUR	RAIN	INT.
11-27-1968	1600	11-27-1968	2100	6.00	2.55	0.43
HOUR	PPT	ACCUM.	%	% (ACCUM)		
1	0.33	0.33	12.94	12.94		
2	0.53	0.86	20.78	33.73		
3	0.50	1.36	19.61	53.33		
4	0.13	1.49	5.10	58.43		
5	0.30	1.79	11.76	70.20		
6	0.76	2.55	29.80	100.00		

FROM	AT	TO	AT	DUR	RAIN	INT.
8-16-1969	600	8-16-1969	1100	6.00	1.33	0.22
HOUR	PPT	ACCUM.	%	% (ACCUM)		
1	0.03	0.03	2.26	2.26		
2	0.01	0.04	0.75	3.01		
3	0.84	0.88	63.16	66.17		
4	0.08	0.96	6.02	72.18		
5	0.09	1.05	6.77	78.95		
6	0.28	1.33	21.05	100.00		

FROM	AT	TO	AT	DUR	RAIN	INT.
10-12-1971	1200	10-12-1971	1700	6.00	1.31	0.22
HOUR	PPT	ACCUM.	%	% (ACCUM)		
1	0.58	0.58	44.27	44.27		
2	0.01	0.59	0.76	45.04		
3	0.39	0.98	29.77	74.81		
4	0.23	1.21	17.56	92.37		
5	0.08	1.29	6.11	98.47		
6	0.02	1.31	1.53	100.00		

AVERAGE NON-DIMENTIONAL CURVE FOR 6.00 HOURS OF RAINFALL

HOUR	MEAN	S.DEV.
1	19.47	20.57
2	40.73	29.27
3	65.81	24.48
4	83.19	13.65
5	93.24	10.84
6	100.00	0.00

Table C2 Storm Hycetographs Stratified by Station and Storm Duration

INDEX NO 8812
 SAN JUAN WSFO STATION
 MIN. TIME BETWEEN STORMS 1:00 HOUR
 MIN. RAINFALL INTENSITY 0.20 IN/HR

STORM DURATION= 6.00 HOURS

FROM	AT	TO	AT	DUR	RAIN	INT.
11-27-1968	1600	11-27-1968	2100	6.00	2.55	0.43
HOUR	PPT	ACCUM.	%	%(ACCUM)		
1	0.33	0.33	12.94	12.94		
2	0.53	0.86	20.78	33.73		
3	0.50	1.36	19.61	53.33		
4	0.13	1.49	5.10	58.43		
5	0.30	1.79	11.76	70.20		
6	0.76	2.55	29.80	100.00		

FROM	AT	TO	AT	DUR	RAIN	INT.
8-16-1969	600	8-16-1969	1100	6.00	1.33	0.22
HOUR	PPT	ACCUM.	%	%(ACCUM)		
1	0.03	0.03	2.26	2.26		
2	0.01	0.04	0.75	3.01		
3	0.84	0.88	63.16	66.17		
4	0.08	0.96	6.02	72.18		
5	0.09	1.05	6.77	78.95		
6	0.28	1.33	21.05	100.00		

FROM	AT	TO	AT	DUR	RAIN	INT.
10-12-1971	1200	10-12-1971	1700	6.00	1.31	0.22
HOUR	PPT	ACCUM.	%	%(ACCUM)		
1	0.58	0.58	44.27	44.27		
2	0.01	0.59	0.76	45.04		
3	0.39	0.98	29.77	74.81		
4	0.23	1.21	17.56	92.37		
5	0.08	1.29	6.11	98.47		
6	0.02	1.31	1.53	100.00		

AVERAGE NON-DIMENTIONAL CURVE FOR 6.00 HOURS OF RAINFALL

HOUR	MEAN	S.DEV.
1	19.47	20.57
2	40.73	29.27
3	65.81	24.48
4	83.19	13.65
5	93.24	10.84
6	100.00	0.00

INDEX NO 8812
 SAN JUAN WSFO STATION
 MIN. TIME BETWEEN STORMS 1:00 HOUR
 MIN. RAINFALL INTENSITY 0.20IN/HR

AVERAGE NON-DIMENSIONAL CURVES PER CLASS INTERVAL

FROM 4 TO 6 HOURS

% AC.	MEAN	ST. DEV.	SKEWNESS	KURTOSIS	SKEW. COEF.	KURT. COEF
10.	12.22	11.53	1500.09	48974.42	0.98	2.77
20.	24.50	22.21	10056.10	657871.78	0.92	2.70
30.	38.58	26.18	10007.55	1058763.53	0.56	2.25
40.	52.15	27.11	-1943.65	981620.03	-0.10	1.82
50.	65.04	28.55	-12869.78	1300361.73	-0.55	1.96
60.	76.48	20.14	-5097.70	359969.87	-0.62	2.19
70.	86.05	14.48	-5697.37	337905.97	-1.88	7.69
80.	92.62	11.89	-4349.69	200051.14	-2.59	10.02
90.	96.38	6.13	-579.62	13183.81	-2.51	9.32
100.	100.00	0.00	0.00	0.00	0.00	0.00

AVERAGE CUMMULATIVE NON-DIMENSIONAL CURVES
 EVERY 25%

25.00	31.95
50.00	65.04
75.00	90.53
100.00	100.00

NUMBER OF STORMS = 44

 AVERAGE CUMMULATIVE NON-DIMENSIONAL CURVES
 PER CLASS INTERVAL PER QUARTILE

FROM 4 TO 6 HOURS

FIRST QUARTILE

% AC.	MEAN	ST. DEV.	SKEWNESS	KURTOSIS	SKEW. COEF.	KURT. COEF.
10.	27.27	8.45	-419.43	16056.75	-0.70	3.16
20.	53.69	15.15	-1773.88	135033.95	-0.51	2.56
30.	70.91	16.08	-3287.19	232695.59	-0.79	3.48
40.	79.55	13.59	-4031.48	184726.09	-1.61	5.42
50.	86.03	11.47	-2715.76	127409.36	-1.80	7.36
60.	90.27	7.91	-972.83	32655.41	-1.97	8.36
70.	94.54	4.68	-222.49	4274.16	-2.17	8.90
80.	97.41	2.64	-38.79	386.14	-2.10	7.92
90.	98.79	1.33	-5.32	26.63	-2.25	8.47
100.	100.00	0.00	0.00	0.00	0.00	0.00

NUMBER OF FIRST QUARTILE STORMS = 13

AVERAGE CUMMULATIVE NON-DIMENTIONAL CURVES
 EVERY 25% FOR FIRST QUARTILE

25.00	66.21
50.00	86.03
75.00	96.39
100.00	100.00

Table C3 Statistics of Non-Dimensional Rainfall Distribution

INDEX NO 8812
 SAN JUAN WSFO STATION
 MIN. TIME BETWEEN STORMS 1:00 HOUR
 MIN. RAINFALL INTENSITY 0.20IN/HR

AVERAGE NON-DIMENSIONAL CURVES PER CLASS INTERVAL

FROM 4 TO 6 HOURS

% AC.	MEAN	ST. DEV.	SKEWNESS	KURTOSIS	SKFW. COEF.	KURT. COEF.
10.	12.22	11.53	1500.09	48974.42	0.98	2.77
20.	24.50	22.21	10056.10	657871.78	0.92	2.70
30.	38.58	26.18	10007.55	1058763.53	0.56	2.25
40.	52.15	27.11	-1943.65	981620.03	-0.10	1.82
50.	65.04	28.55	-12869.78	1300361.73	-0.55	1.96
60.	76.48	20.14	-5097.70	359969.87	-0.62	2.19
70.	86.05	14.48	-5697.37	337905.97	-1.88	7.69
80.	92.62	11.89	-4349.69	200051.14	-2.59	10.02
90.	96.38	6.13	-579.62	13183.81	-2.51	9.32
100.	100.00	0.00	0.00	0.00	0.00	0.00

AVERAGE CUMMULATIVE NON-DIMENSIONAL CURVES

EVERY 25%

25.00	31.95
50.00	65.04
75.00	90.53
100.00	100.00

NUMBER OF STORMS = 44

 AVERAGE CUMMULATIVE NON-DIMENSIONAL CURVES
 PER CLASS INTERVAL PER QUARTILE

FROM 4 TO 6 HOURS

FIRST QUARTILE

% AC.	MEAN	ST. DEV.	SKEWNESS	KURTOSIS	SKFW. COEF.	KURT. COEF.
10.	27.27	8.45	-419.43	16056.75	-0.70	3.16
20.	53.69	15.15	-1773.88	135033.95	-0.51	2.56
30.	70.91	16.08	-3287.19	232695.59	-0.79	3.48
40.	79.55	13.59	-4031.48	184726.09	-1.61	5.42
50.	86.03	11.47	-2715.76	127409.36	-1.80	7.36
60.	90.27	7.91	-972.83	32655.41	-1.97	8.36
70.	94.54	4.68	-222.49	4274.16	-2.17	8.90
80.	97.41	2.64	-38.79	386.14	-2.10	7.92
90.	98.79	1.33	-5.32	26.63	-2.25	8.47
100.	100.00	0.00	0.00	0.00	0.00	0.00

NUMBER OF FIRST QUARTILE STORMS = 13

AVERAGE CUMMULATIVE NON-DIMENTIONAL CURVES
 EVERY 25% FOR FIRST QUARTILE

25.00	66.21
50.00	86.03
75.00	96.39
100.00	100.00