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SANDIA SYSTEMATIC DECLASSIFICATION REVIEW
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31-52-15

ANALYSIS OF ENVIRONMENTAL CONDITIONS AT OPERATIONAL STORAGE SITES 1, 3, 4, 6, AND 10 DURING THE FIRST HALF OF 1952

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW

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Robert P. Crabb

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MAR 7'55

4162

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SEP 14 1965

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MAR 2 1959

BY ORG. 4722

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AUG 6 1964

CENTRAL M & R
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24193

3427-1

ABSTRACT

This memorandum contains an analysis of environmental conditions outside storag structures at operational storage sites for the first half of 1952. Frequency distributions for maximum and minimum temperatures and relative humidities are included for each site for three month periods. A graph showing the frequency of occurrence and amount of daily rainfall is presented.

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December 11, 1952

CENTRAL RECORD FILE
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(19 pages)

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Introduction

Because of the widely separated localities of operational storage sites, conditions of temperature and relative humidity vary among the different sites. At all sites except 4, 5, and 6, weapons are stored in quonset type structures. No equipment is installed in these structures to control temperature and humidity. Storage rooms at Sites 4, 5, and 6 are partially air-conditioned. Daily maximum and minimum temperatures and relative humidities outside structures are obtained from the records of weather stations near each site. Data on environmental conditions inside storage structures are not available. The data on environmental conditions at operational storage sites have been analyzed previously for the last half of 1950 and for 1951. This memorandum presents an analysis of the data accumulated at Sites 1, 3, 4, 6, and 10 for the first half of 1952.

Object

This report presents an overall picture of environmental conditions at operational storage sites during the first six months of 1952.

Summary

Site 3 had the highest average temperatures and relative humidities for the first half of 1952. Site 1 had the second highest relative humidities, and then came Sites 4, 6, and 10 with about the same values. After Site 3, in order of decreasing temperature, came Sites 4, 6, 1, and 10.

Rain fell at Site 3 on 80 per cent of the days. Site 1 had rain 64 per cent of the days Precipitation was recorded at Site 10 on 70 per cent of the days during May and June

Procedure

The data were grouped in classes of five degrees for maximum and minimum temperatures and classes of five per cent for maximum and minimum relative humidities. The frequency of occurrence was obtained for each class for the first three months of 1952. This was repeated for the next three month period. These class frequencies were changed to percentages of the total frequency for the appropriate period and were then plotted as bar graphs.

This six month period was divided into 28 periods of seven days each. The average weekly temperatures were then computed by summing the maximum and minimum temperatures in each seven day period and dividing by fourteen. These values were plotted as weekly averages.

The amount of rainfall each day was recorded at Sites 1, 3, and 10. Class widths of 0.10 inch were used to group the data. The frequency in each class was reduced to a percentage of the total frequency for three month periods and these percentages

presented on charts. Because so few values fell above 0.75 inch the horizontal scale used on the charts was not carried uniformly above this point but only the classes necessary were listed.

Site 10 was not activated until the year was well along. Consequently environmental data were recorded for May and June only, and ~~all data on Site 10 reported herein~~ cover these two months.

Results

Table I presents the most frequent daily maximum temperature, the per cent occurrence of this class, the average daily maximum temperature, and the extreme maximum temperature for each site and each quarter. Similar items are presented for minimum temperatures and for maximum and minimum relative humidities.

The chart on page 5 shows the extreme and nominal range of temperature and relative humidity at each site for the first half of 1952.

The frequency of occurrence of daily rainfall at Sites 1, 3, and 10 is shown on the chart, page 6. Some rain fell at Site 3 on 80 per cent of the days for this half year. At Operational Storage Site 1 precipitation occurred on 77 per cent of the days during the first quarter of the year, decreasing to 51 per cent for the second quarter Site 10 had rainfall 70 per cent of the days during May and June.

The frequency distributions on pages 7 through 15 show temperature and relative humidity conditions at each site for the two quarters of the year under consideration.

Site 1 was characterized by high humidities and temperatures around freezing during the first quarter. The climatic conditions at Site 3 were very stable with temperatures around 80 and relative humidity in the 90's almost every day. Sites 4 and 6 reported environmental conditions similar to each other, both exhibiting a rather large spread of values. The weather was considerably cooler at Site 10 than at the other sites. Relative humidities showed a large spread with the daily maximum centered around 88 per cent.

Seven day average temperatures are presented on the line graphs, pages 16 through 18.

ROBERT P. CRABB - 1522-2

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December 11, 1952

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TABLE I

Outside Structures

Site	1		3		4		6		10
Quarter	1st	2nd	1st	2nd	1st	2nd	1st	2nd	2nd
Most Frequent Daily Max. Temperature °F	36-40	61-65	81-85	81-85	81-85	71-75	61-65	66-70	51-55
Per Cent Occurrence	27	26	88	79	33	32	30	28	21
Average Daily Max. Temperature °F	44	65	82	84	75	74	59	75	56
Most Frequent Daily Min. Temperature °F	31-35	46-50	71-75	76-80	71-75	61-65	51-55	61-65	41-45
Per Cent Occurrence	38	35	60	87	33	32	39	25	28
Average Daily Min. Temperature °F	34	47	75	77	63	63	51	65	40
Extreme Max. Temperature °F	61-65	96-100	81-85	86-90	101-105	86-90	76-80	96-100	81-85
Extreme Min. Temperature °F	11-15	26-30	65-70	71-75	36-40	46-50	26-30	31-35	26-30
Most Frequent Daily Max. Relative Humidity %	96-100	91-95	86-90	91-95	81-85	86-90	81-85	81-85	86-90
Per Cent Occurrence	71	32	31	44	26	41	26	23	26
Average Daily Max. Relative Humidity %	96	91	90	92	80	86	82	79	88
Most Frequent Daily Min. Relative Humidity %	76-80	41-45	66-70	71-75	66-70	51-55	51-55	51-55	51-55
Per Cent Occurrence	19	16	35	50	17	15	20	15	16
Average Daily Min. Relative Humidity %	73	53	68	73	61	61	55	54	50
Extreme Max. Relative Humidity %	96-100	96-100	96-100	96-100	96-100	96-100	96-100	96-100	96-100
Extreme Min. Relative Humidity %	36-40	16-20	51-55	61-65	26-30	31-35	16-20	11-15	21-25

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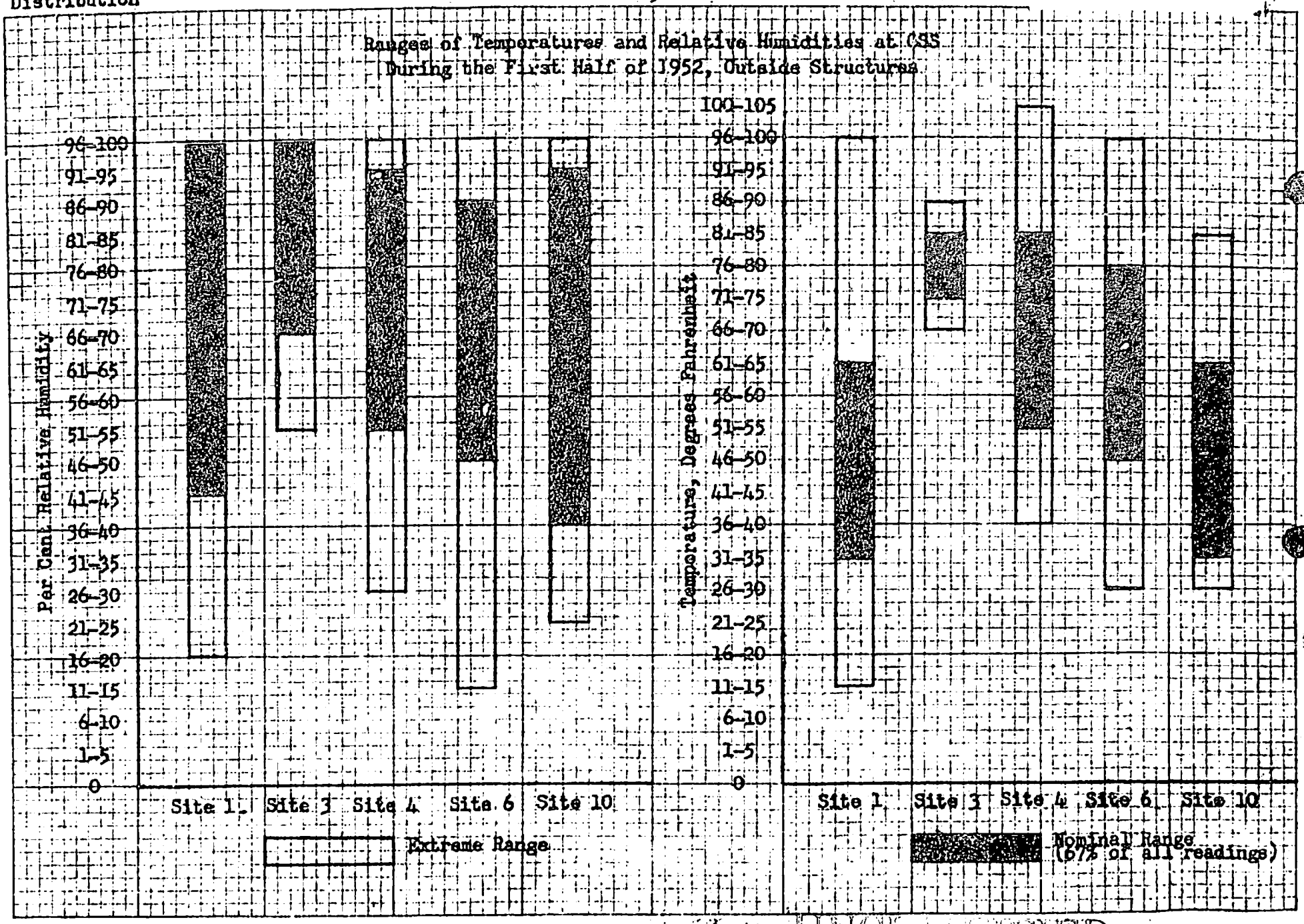

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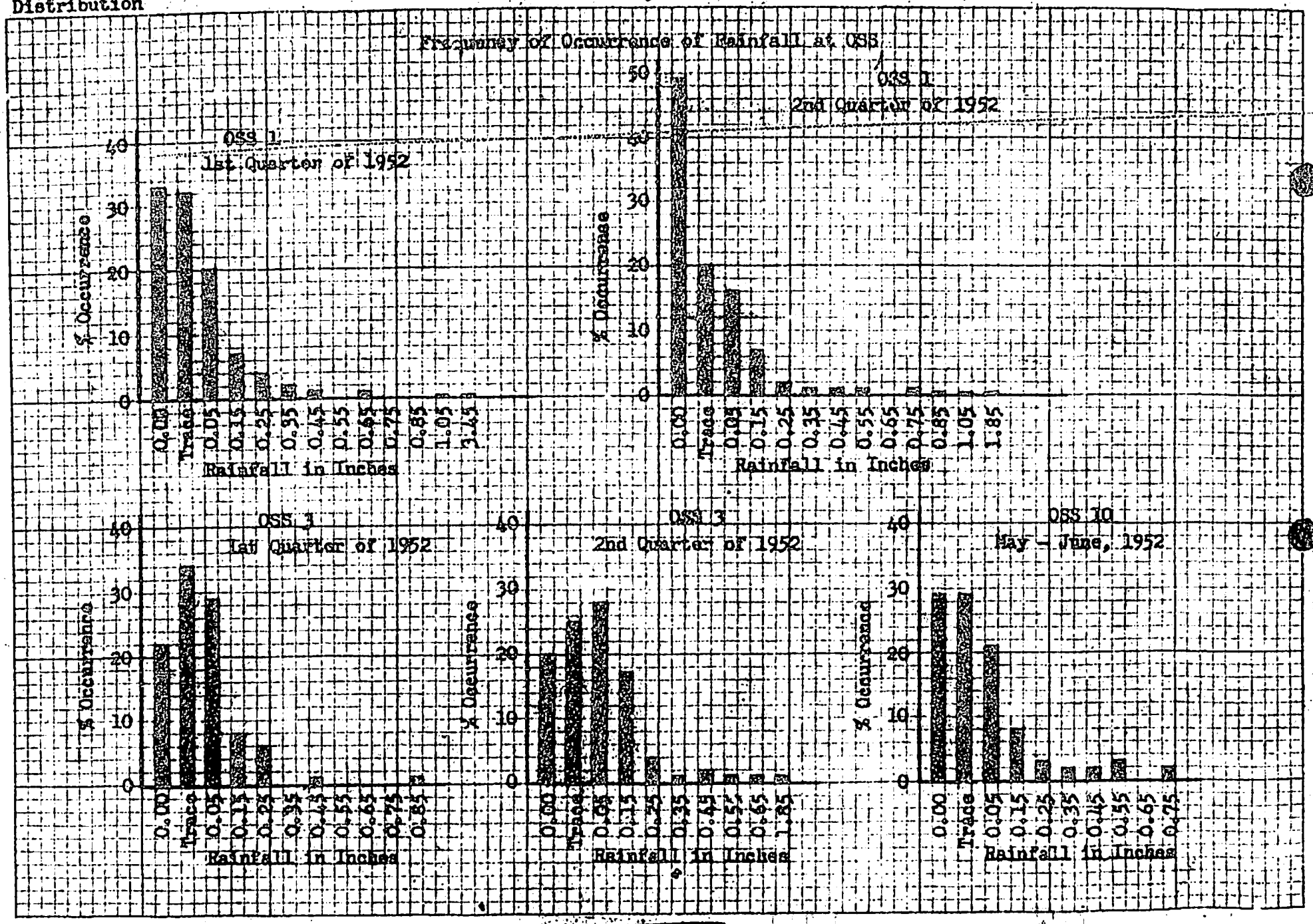

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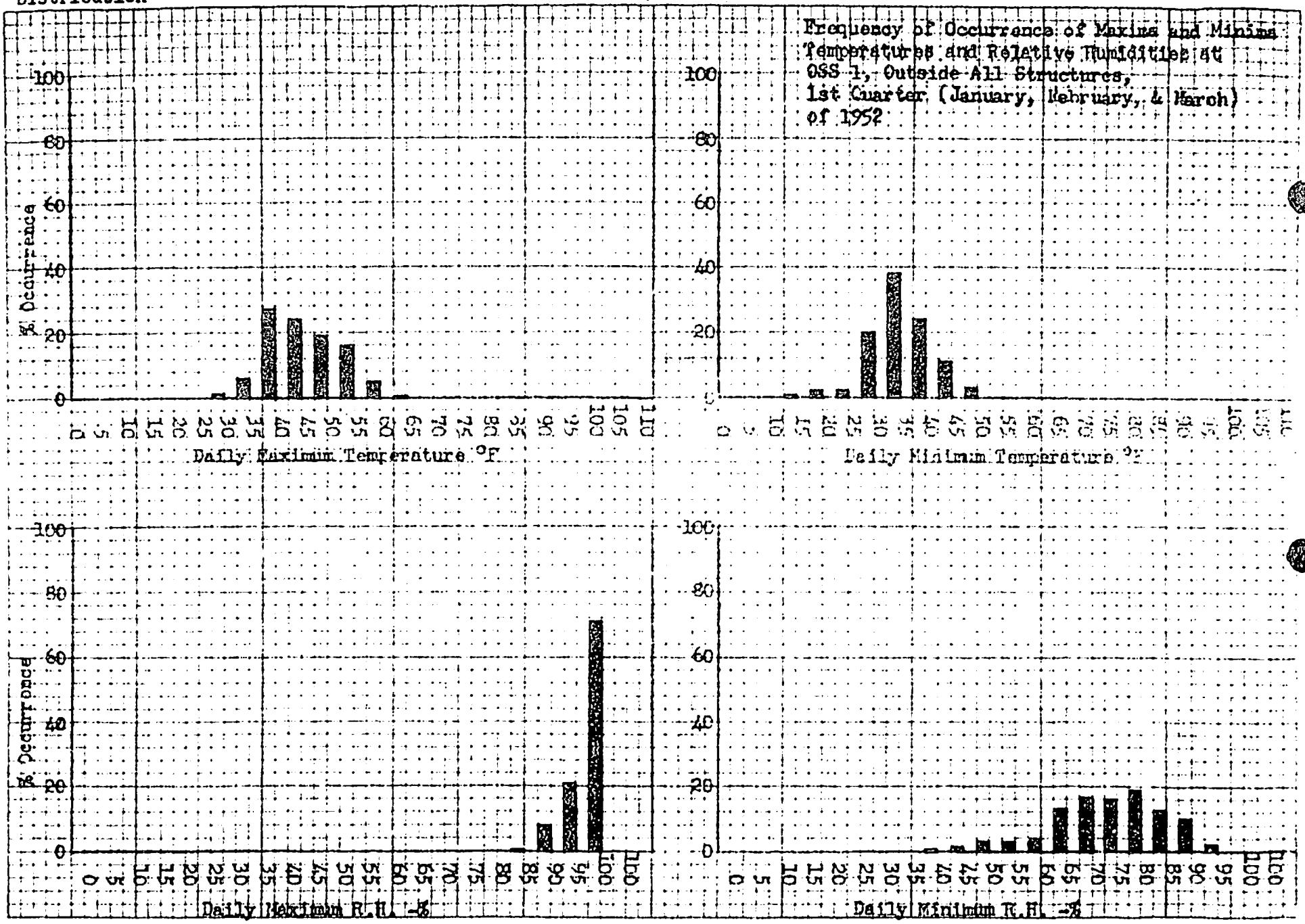

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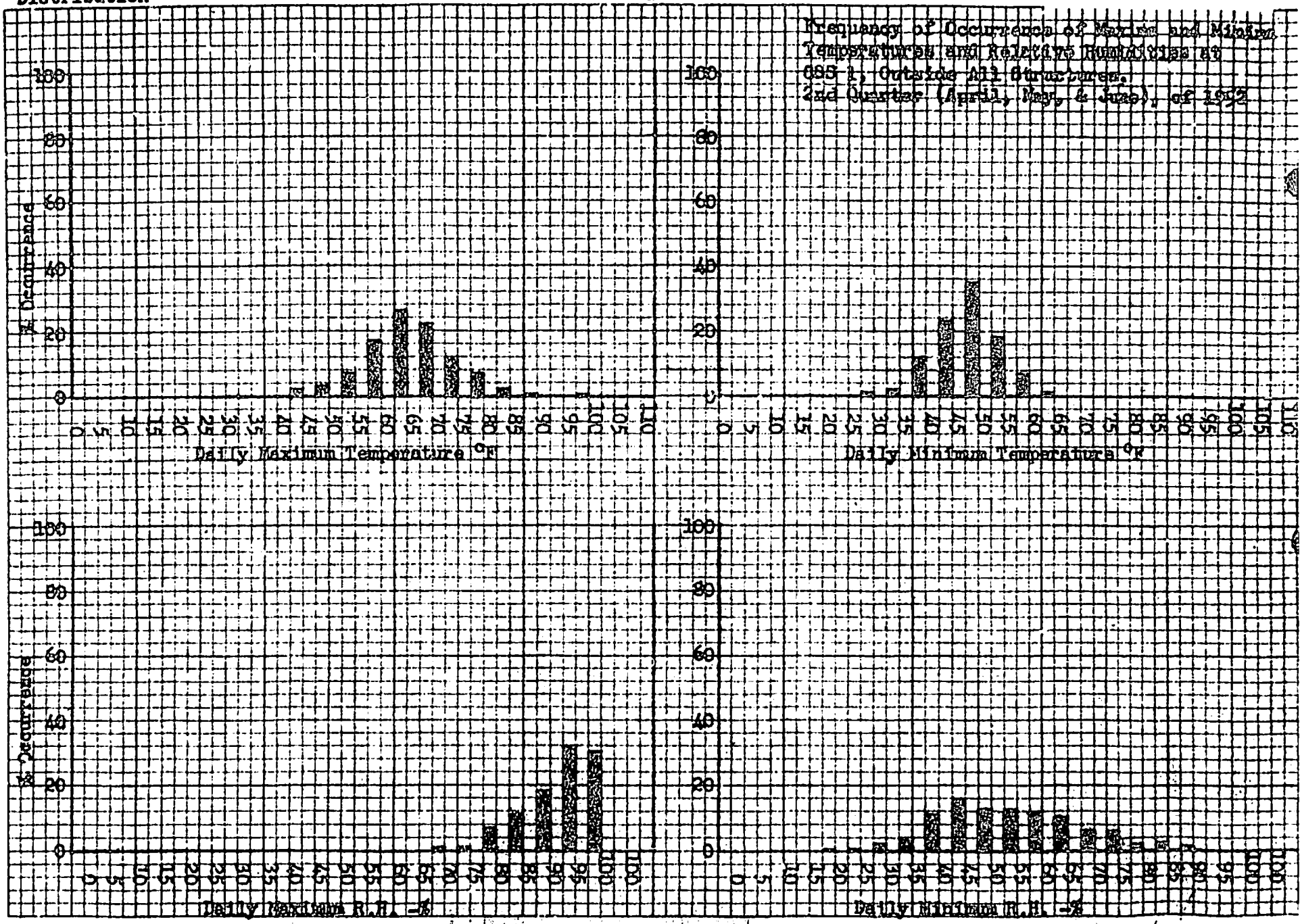

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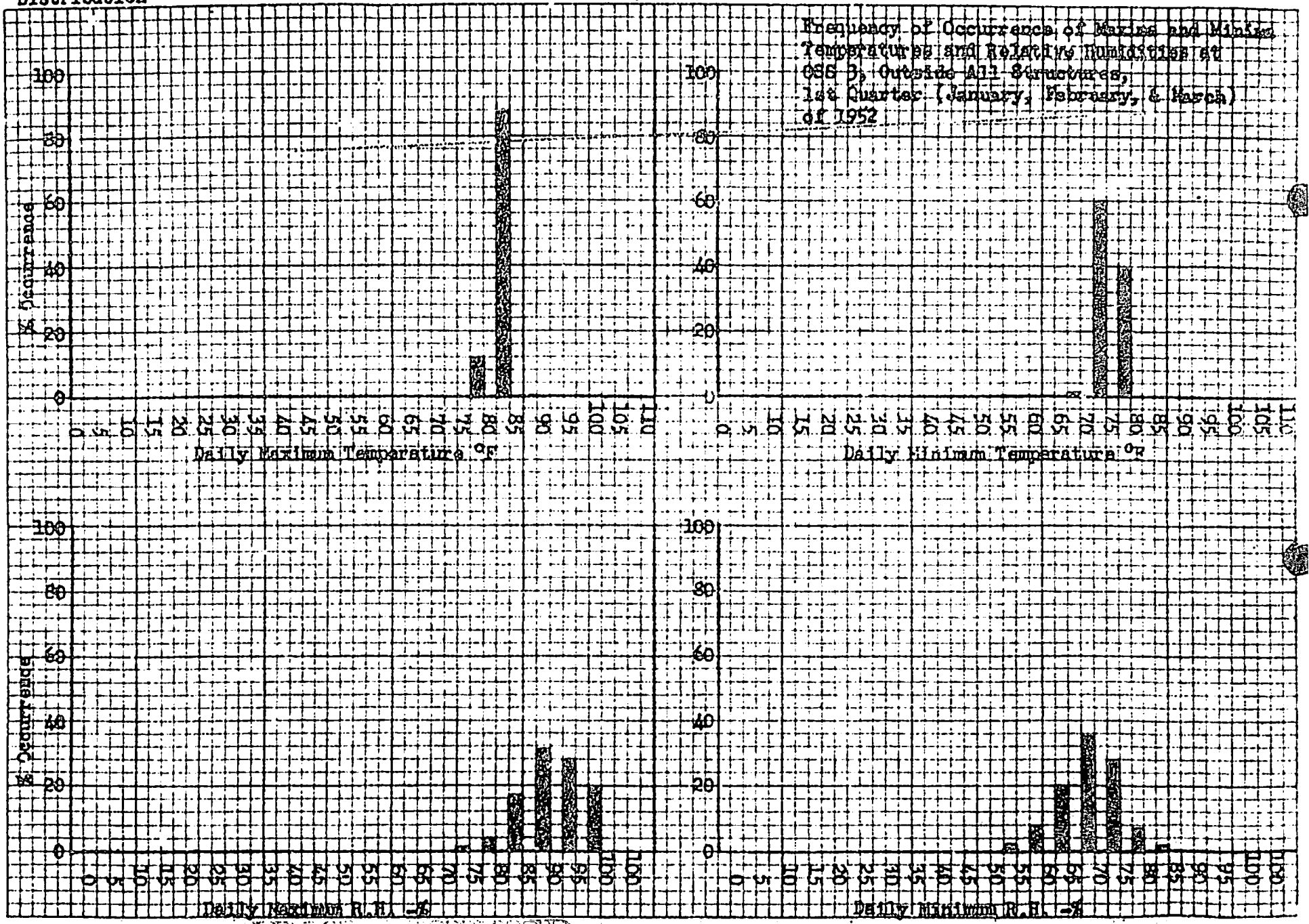

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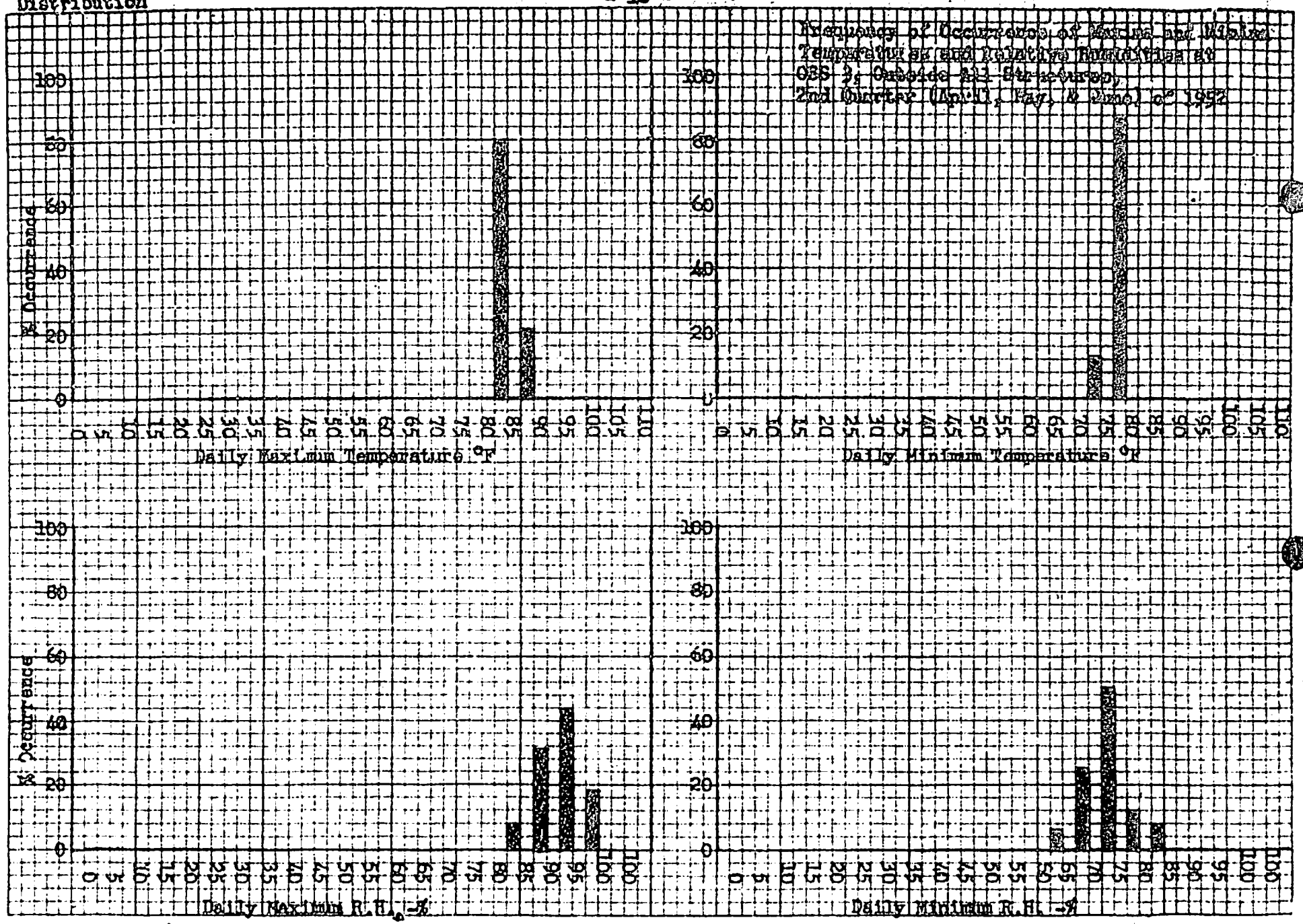
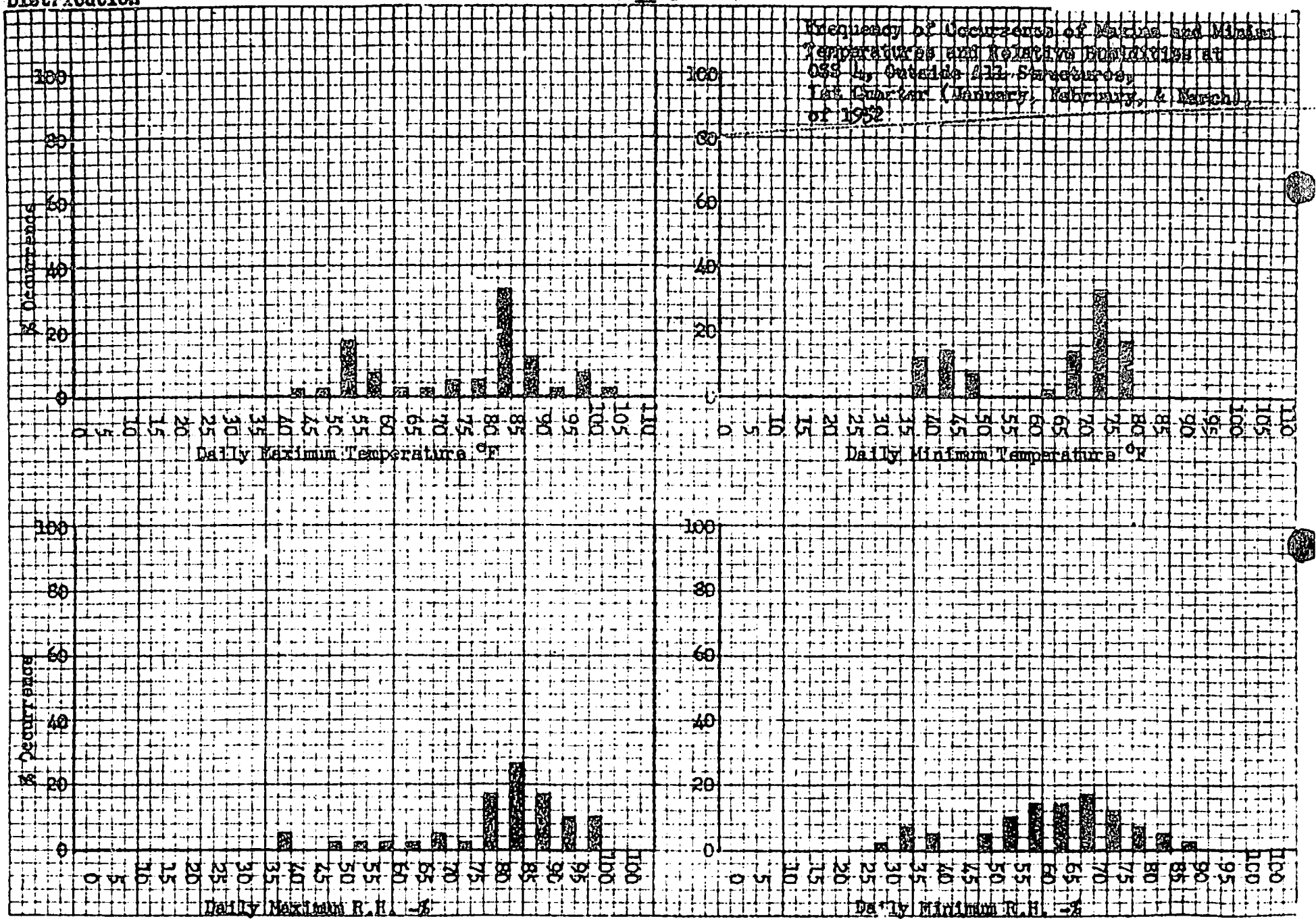


Frequency of Occurrence of Maxima and Minima Temperatures and Relative Humidity at OSS 4, Outside All Structures, 1st Quarter (January, February, & March) of 1952



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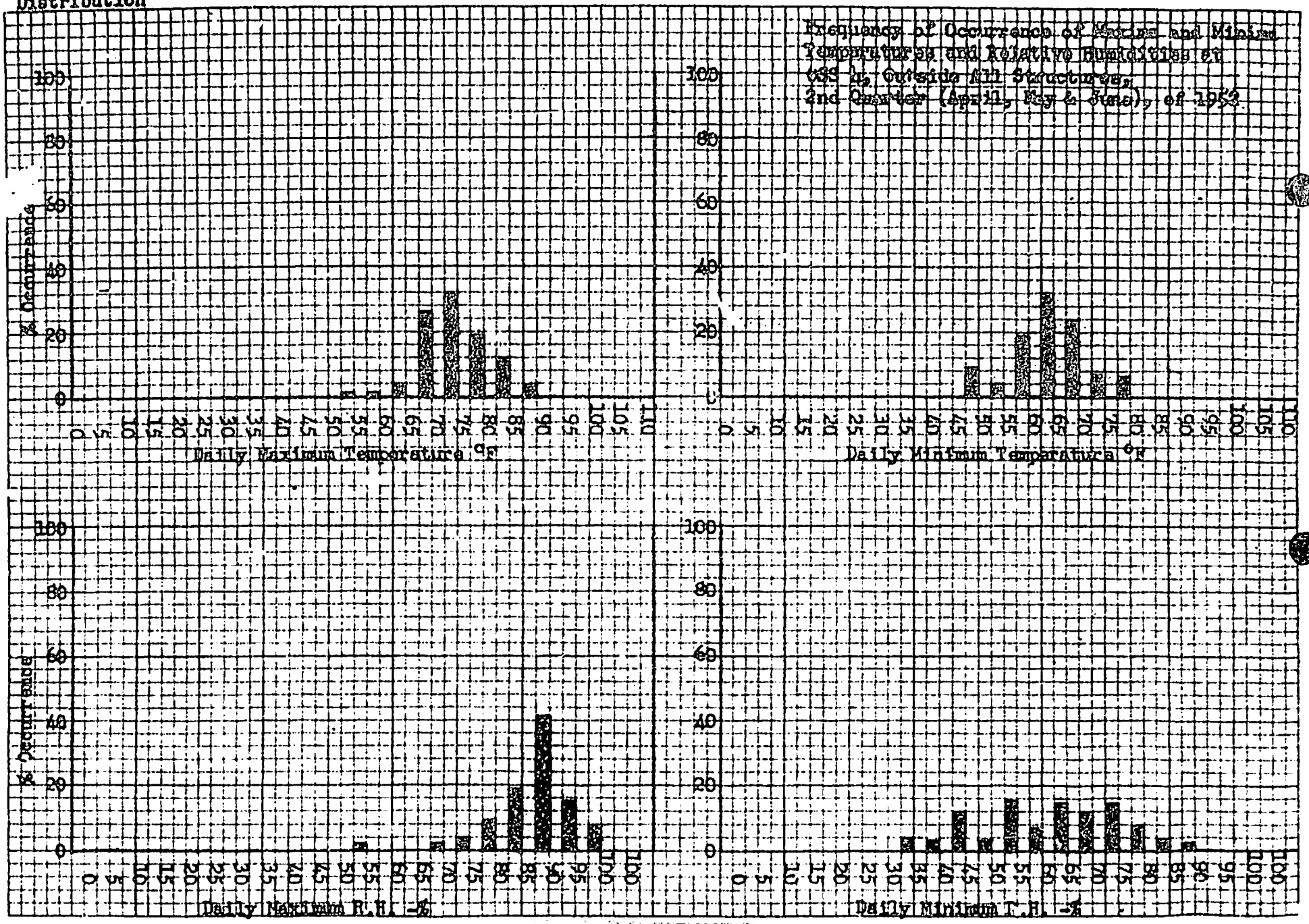
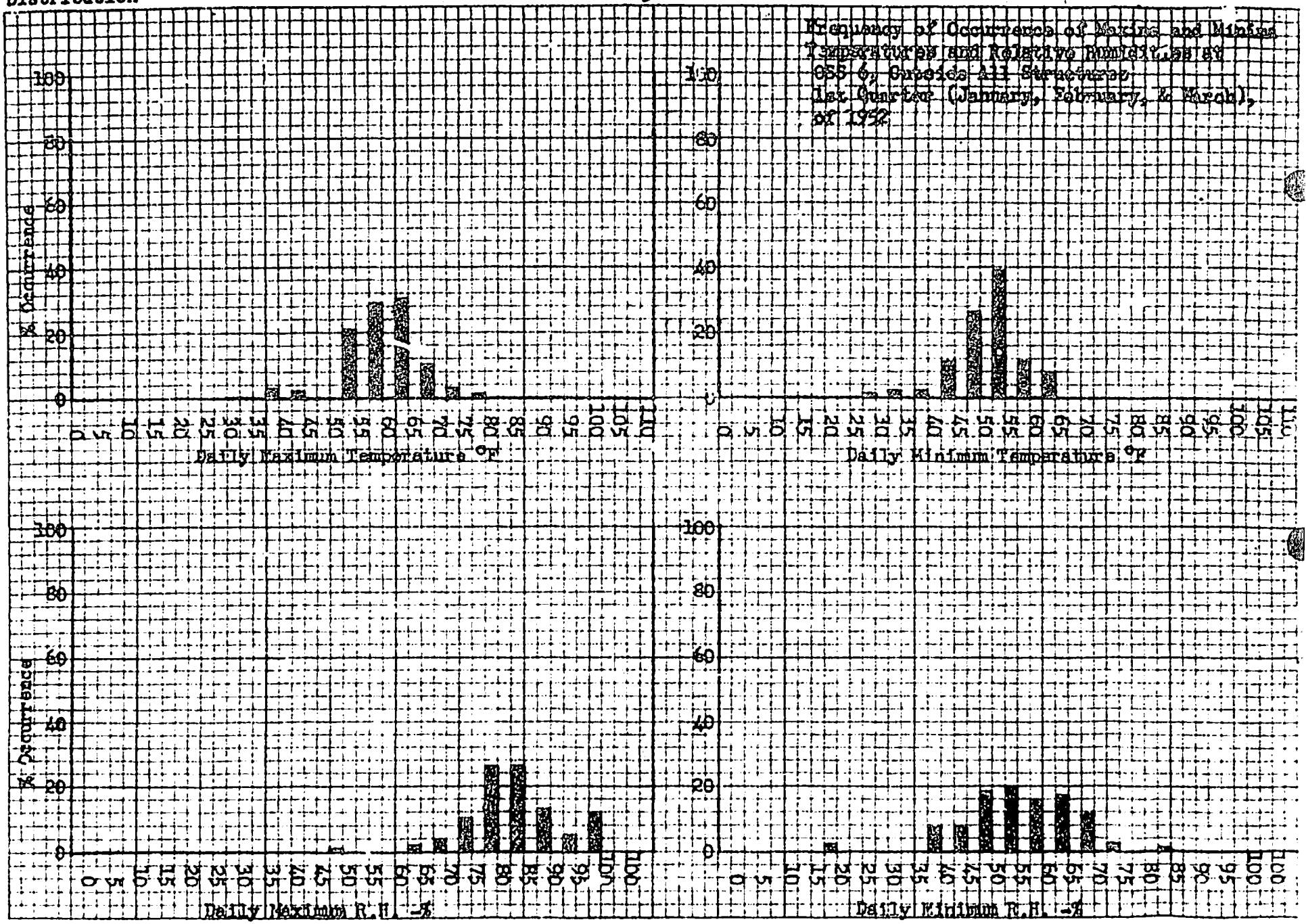


Frequency of Occurrence of Maxima and Minima Temperatures and Relative Humidities by OSS 6, Cupola All Structures 1st Quarter (January, February, & March), of 1952



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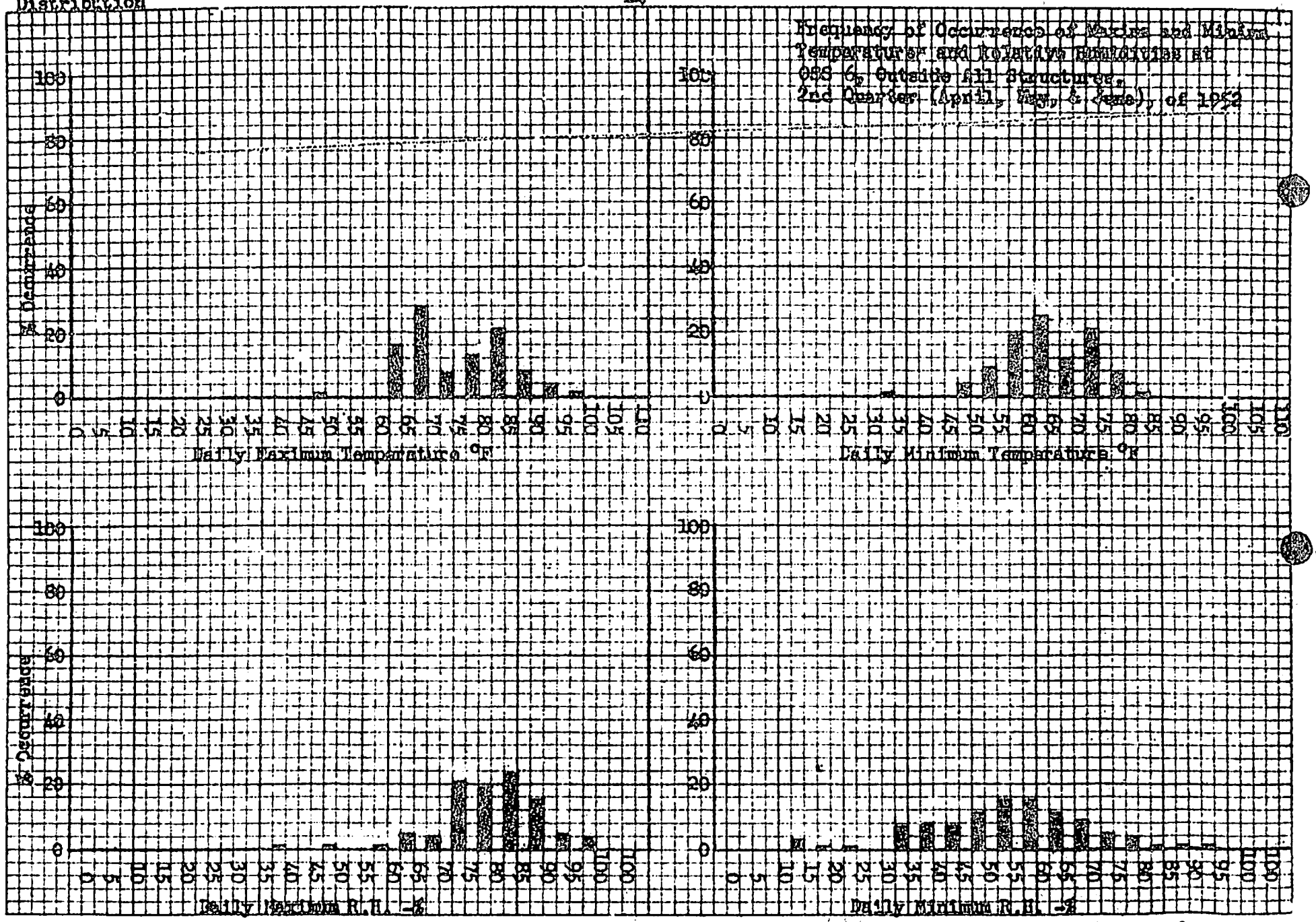

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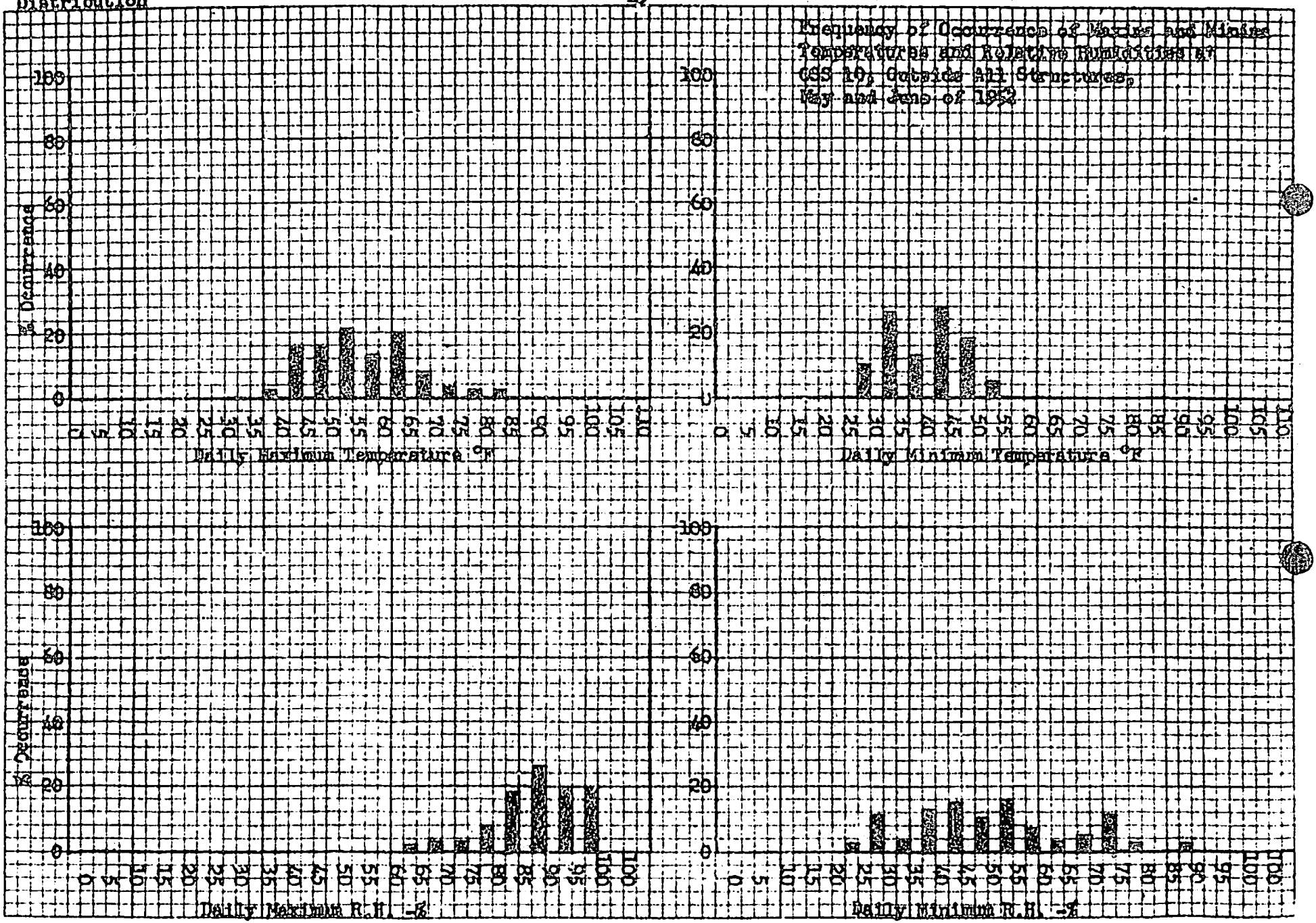
Frequency of Occurrence of Weekly and Minimum Temperatures and Relative Humidities at CCS 10, Outside All Structures, May and June of 1952



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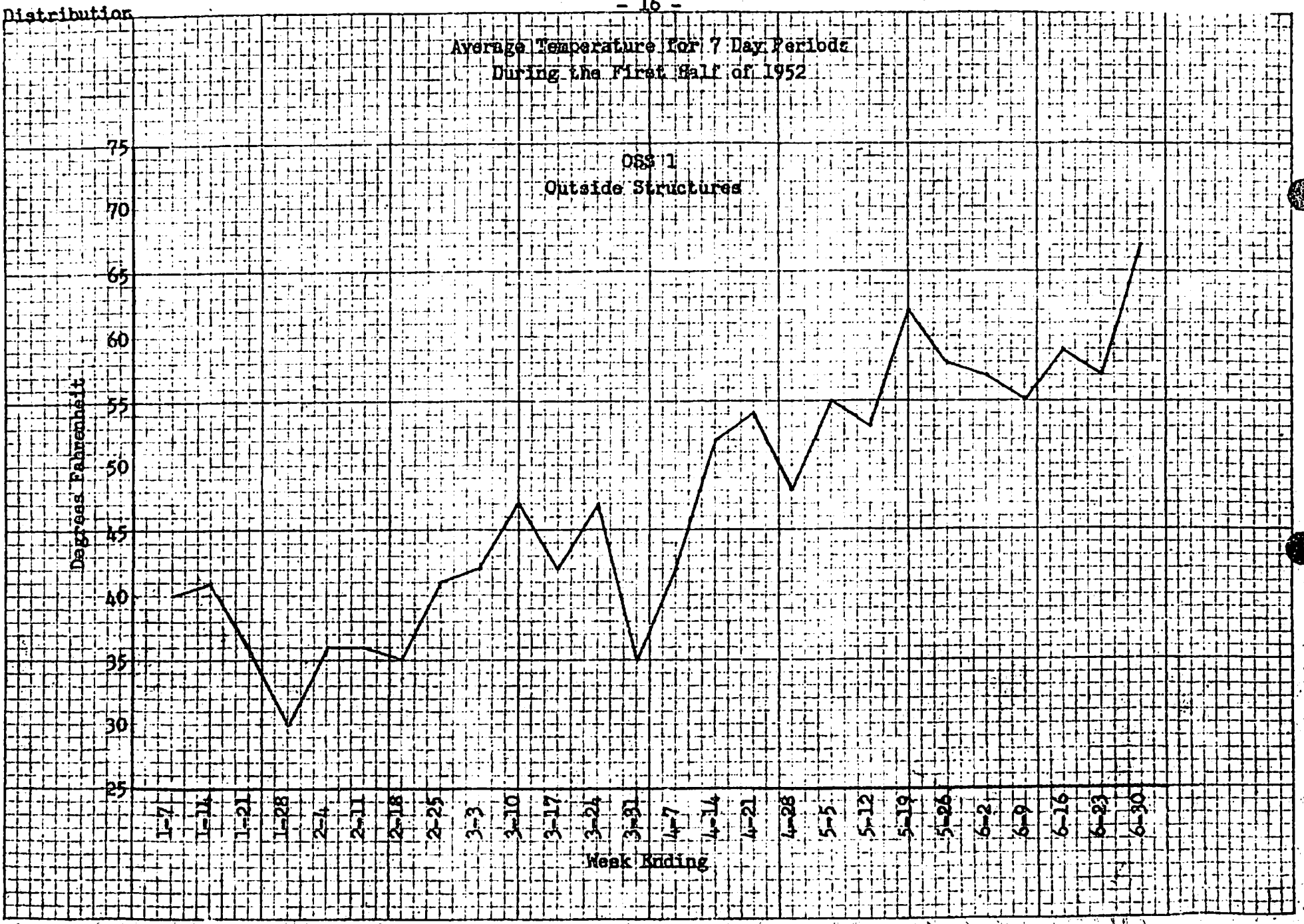

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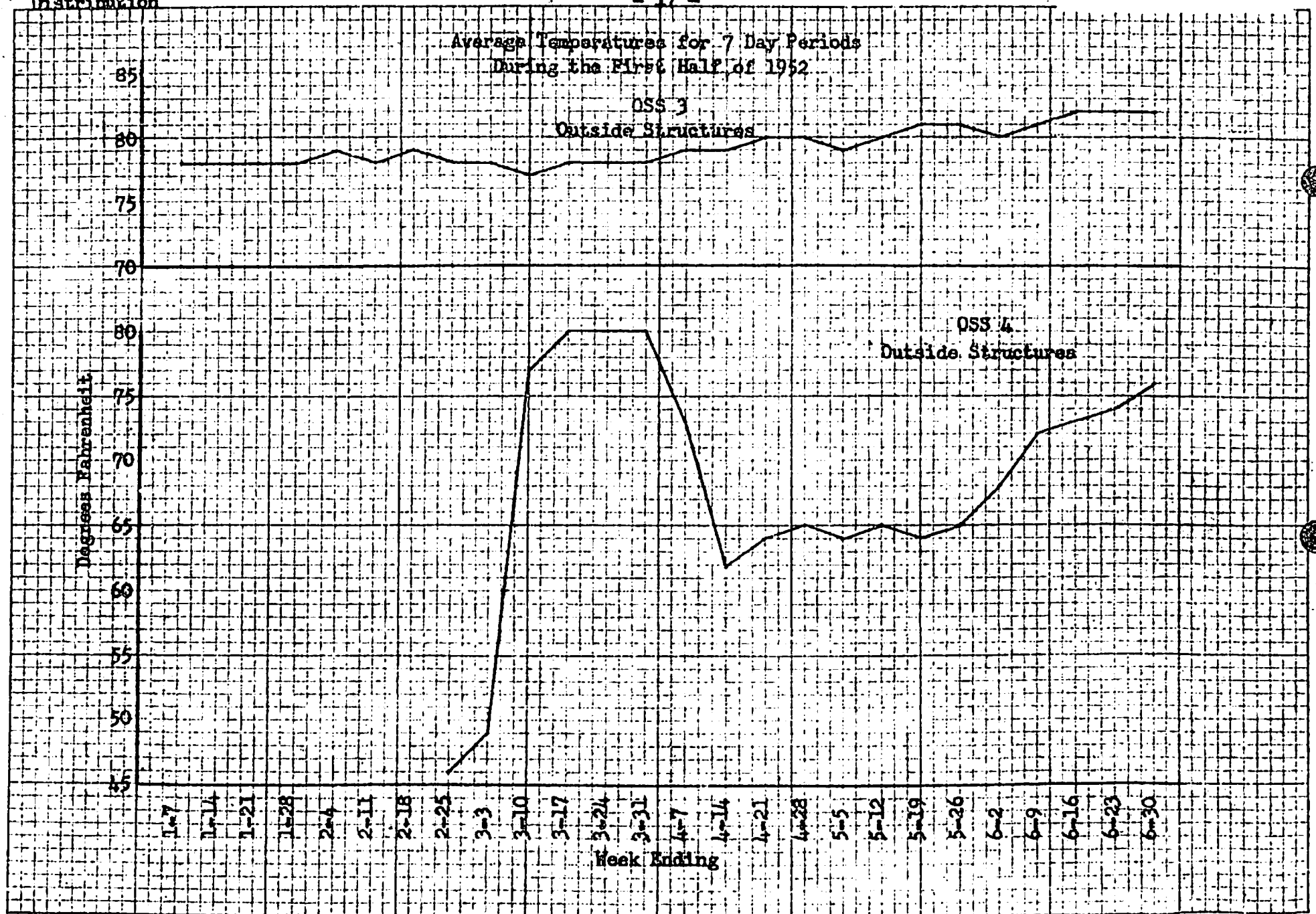

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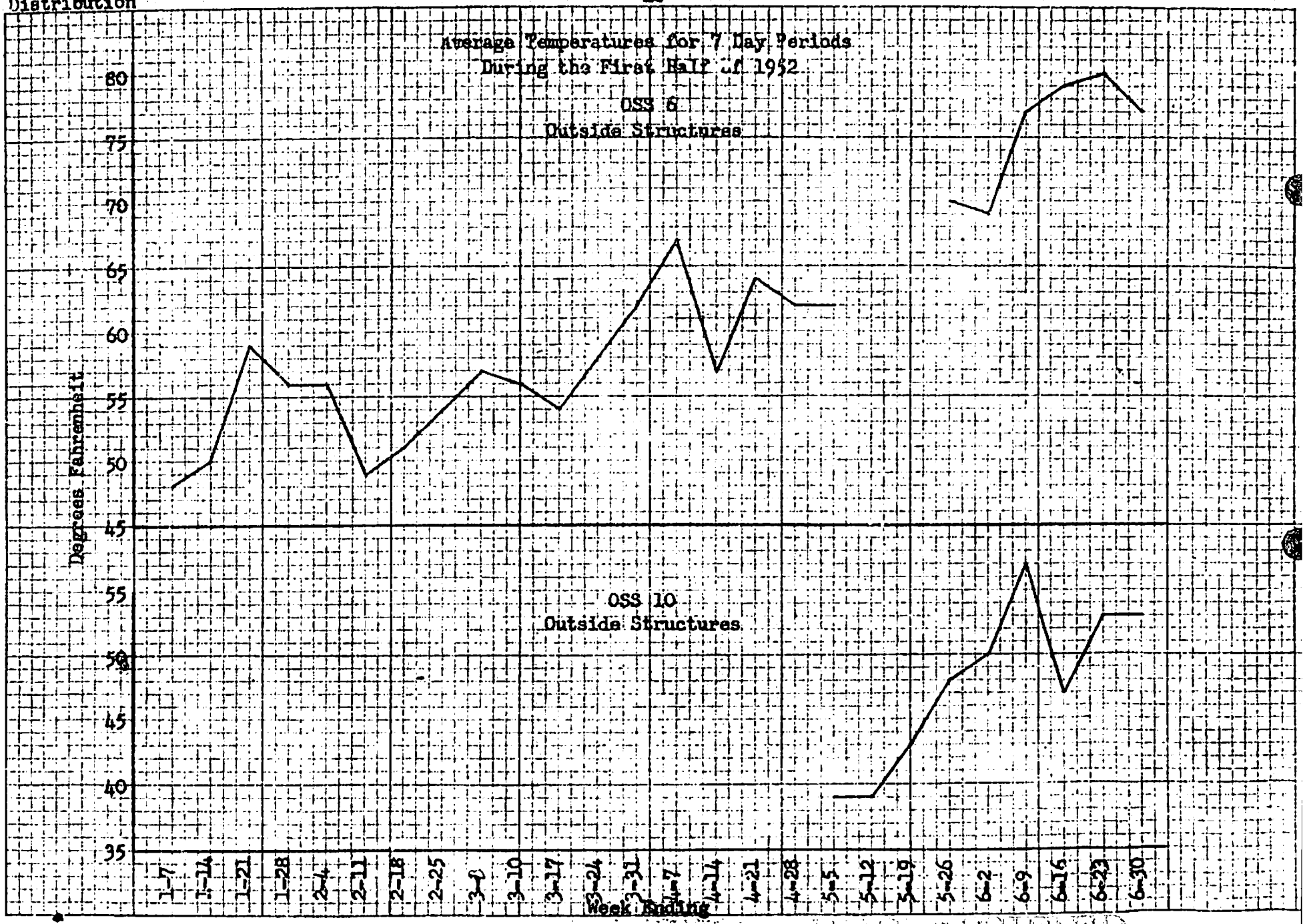

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