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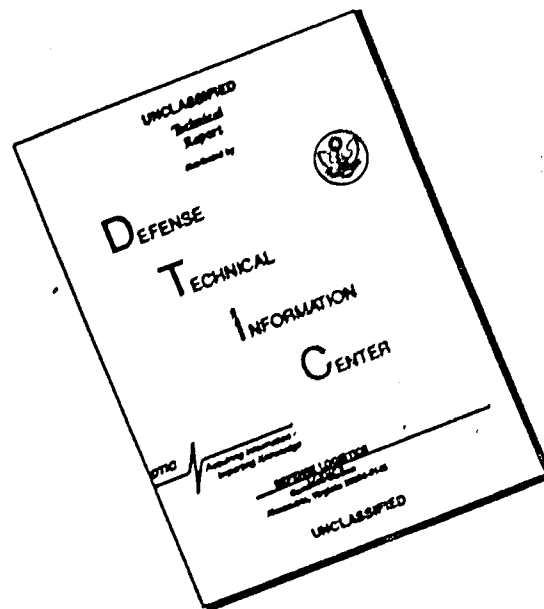


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Wave Spectra Estimated from Wave Records Obtained by  
the OWS WEATHER EXPLORER and  
the OWS WEATHER REPORTER (I)

By

L. Moskowitz

W. J. Pierson, Jr.

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Technical Report Prepared for  
U. S. Navy Oceanographic Office  
under contract  
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## Introduction

As a part of the problem of developing numerical wave forecasting procedures for the North Atlantic Ocean, selected sequences of the weather maps for the North Atlantic for which wave data were known to be available were studied in detail for the five year period beginning in April 1955 and ending in March 1960. Certain dates and times of observations were selected for a variety of reasons for study. For these dates and times, the National Institute of Oceanography provided copies of the wave records that were obtained by the OWS Weather Explorer and by the OWS Weather Reporter.

In total, about 800 wave records were provided, and a complete spectral analysis is planned for about 400 of these records.

This report is the first of a series of reports to present in tabular and graphical form the results of these analyses. The total number of spectra given is 114.

## Analysis procedures

The original wave records varied in length, but almost all of this first set were 15 minutes long. The crest to trough heights of the highest waves in a particular record (uncorrected for calibration effects) varied from a few feet to more than 60 feet in the complete set of records. Bounds were set on each record just above the highest wave crest and just below the lowest wave trough, and the records were read to an accuracy of one part in a thousand (nominally) over this range at an interval of 1.5 seconds throughout the record. Thus a 15 minute record was reduced to a time series

of 600 points. Where gaps or irregularities occurred, the records were smoothed by hand as accurately as possible.

The time series of 600 points was then analyzed on the CDC 1604 so as to estimate the energy spectrum of the waves at 60 points over the frequency range from zero to 0.333 cycles per second by means of the procedures given by Tukey (1949) as explained in detail by Blackman and Tukey (1958). The smoothing operation that was used to go from  $L$  to  $U$  in the equations of Blackman and Tukey was

$$(1) \quad U_h = 0.25L_{h-1} + 0.50L_h + 0.25L_{h+1}$$

with suitable corrections at the ends of the range.

The spectral estimates so obtained still had to be corrected for the response of the shipborne wave recorder (Tucker, 1956) and for the introduction of noise in both the original record and in the digitization procedure. The calibration of the shipborne recorder depends on the ship, and the calibration curves were provided by Mr. D. E. Cartwright for this purpose. The calibration curve for the Weather Explorer is given by Table 1. The calibration curve for the Weather Reporter is given by Table 2.

As in another investigation (Bretschneider, Crutcher, et al (in press)), it was found that the application of the above calibration curves to the spectra that were originally computed resulted first in a decrease and then a rapid increase in the spectra at high frequencies due to the presence of noise and other irregularities (possibly from nonlinear effects in the original wave records) at the high frequency end of the spectrum. To eliminate this effect,

the last part of the spectrum was smoothed by a three point running weighted mean (0.25, 0.50, and 0.25) and then the last ten values were averaged.\* This average was treated as white noise and subtracted from all spectral estimates. When the reduced values were multiplied by the appropriate calibration curves, the usual result was a fairly smooth spectrum that decreased regularly toward zero values at high frequency. By such a procedure some of the spectral values at high frequency will be negative. These values were automatically set equal to zero in the rest of the computations.

Inadvertently, Table 1 was applied where Table 2 ought to have been applied to some of the spectra. The result was exceptionally high values at high frequencies. Thus the calibrations given in these two tables do distinguish between the characteristics of the two ships as, when done correctly, reasonable results were obtained.

Even with these corrections, there were a few spectra that still became exceptionally large for frequencies greater than about 0.25 cycles per second. This behavior was apparently caused by the original quality of the record and not by the digitization procedure. These spectra were further modified by arbitrarily setting the calibration curve equal to one above a certain frequency that was selected by inspection of each spectrum.

The result of such a sequence of computations should yield fairly reliable spectral estimates for frequencies ranging from zero to 0.25 cycles per second, but the values at high frequencies should not be used to decide on any features of the high frequency end.

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\*See p. 6 for details.

### Sample parameter estimates

The spectral estimates that resulted from this sequence of operations were then processed further to obtain some additional useful information. Let  $U_h^*$ , for  $h = 0, 1, 2, \dots, 60$ , represent the spectral estimates (after subtraction of the noise and multiplication by the calibration for the shipborne recorder) in terms of the resolution of the variance of the wave record into frequency intervals. The following quantities were then also computed and tabulated with each spectrum.

$$(2) \quad \text{CORR VAR} = \text{corrected variance} = \sum U_h^*$$

$$(3) \quad \text{SIG HGT} = \bar{H}_{\frac{2}{3}} = 2.83 (2 \sum U_h^*)^{1/2}$$

$$(4) \quad \text{AVER T} = \tilde{T} = [\sum U_h^* / \sum f_h^2 U_h^*]^{1/2}$$

$$(5) \quad \text{TOTAL DF} = \text{Total degrees of freedom} = 10 [\sum U_h^*]^2 / [\sum U_h^2]$$

(for 600 points, 60 lags; i. e., 20 degrees of freedom per spectral estimate)

The confidence intervals on the corrected variance and on the significant height are given by

$$\text{Upper 95\% on CORR VAR} = (10^{+1/\sqrt{TDF}}) \text{ CORR VAR}$$

(6)

$$\text{Lower 5\% on CORR VAR} = (10^{-1/\sqrt{TDF}}) \text{ CORR VAR}$$

and by

$$\text{Upper 95\% on } \bar{H}_{\frac{1}{3}} = 10^{+1/2\sqrt{\text{TDF}}} \bar{H}_{\frac{1}{3}}$$

(7)

$$\text{Lower 5\% on } \bar{H}_{\frac{1}{3}} = 10^{-1/2\sqrt{\text{TDF}}} \bar{H}_{\frac{1}{3}}$$

in terms of the total degrees of freedom (TDF) to a high degree of accuracy since the total degrees of freedom are large.

The corrected variance, the significant height, and the total degrees of freedom are relatively insensitive to changes in the noise level and in the high frequency behavior of the spectrum. However, the average period can properly be viewed with caution.

The winds near the ship at the time of observation are also given to the nearest five knots as read directly from weather maps. These values are subject to later correction in terms of the logs of the weather ships.

#### Explanation of tables and graphs

The body of this report consists of supplementary tables, of tables that give the appropriate results for each of the original wave records, and of graphs of each of the estimated spectra along with the confidence intervals on the spectra.

The supplementary tables consist of Tables 1 through 4. Tables 1 and 2 have been described above.

Table 3 gives either the on station position of the ship, A, I, J, or K, or the latitude and longitude of the ship if it is going on or off station. The speed and direction of the ship is given.

Position A corresponds to 62°N, 33°W.

Position I corresponds to 59°N, 19°W.

Position J corresponds to 52.5°N, 20°W.

Position K corresponds to 45°N, 16°W.

If the record was not 15 minutes long, less than 600 points were read. For these records, Table 4 gives the actual number of points used and the corrected total degrees of freedom. A correction to the upper and lower confidence limits, which would be quite small, would also be needed to be exact.

#### Spectral tabulations

A tabulated spectrum can be interpreted as follows:

- 1a) Supplementary data for each spectrum consist of the date, hour, wind speed, total degrees of freedom, average period, significant height, corrected variance, noise level, and record number. Some tables give the confidence limits for the height according to equation (7).
- 1b) In the first column, the spectral lag numbers (H) are given.
- 2) In the second column (FRE) the frequency according to the equation  $f = H/180 \text{ (sec}^{-1}\text{)}$  is given.
- 3) In the third column (UNIT =  $\text{FT}^2$ ), the spectrum as computed from the original data is given in units of  $(\text{ft})^2$ .
- 4) In the fourth column (FILTERED), a smoothing operator for  $H > 40$  is applied. It is actually
 
$$F_H = 0.25U_{H-1} + 0.50U_H + 0.25F_{H+1}$$
 (where F = Filtered, and U = Unit)
- 5) In the fifth column (LESS NOISE), the noise level shown at the top is subtracted from each estimate.

- 6) In the sixth column (CORR FT 2), the LESS NOISE column is multiplied by the calibration curve for the shipborne record according to either Table 1 or Table 2. If this column agrees with the previous column, at high frequencies, the calibration curve has been arbitrarily set equal to one to avoid extreme values at high frequency.
- 7) In the last two columns, the upper and lower 95% and 5% confidence bounds are shown.

#### The graphs of the spectra

The graph that accompanies the spectral tabulation shows the spectrum and the 95% and 5% confidence bounds. The scale is chosen so that the highest 95% confidence value is at the top of the graph and the vertical axis of the coordinate system shows the spectral values for that spectrum in units of (feet)<sup>2</sup>. The scales change with each spectrum and comparisons between spectra by means of the graphs should be made cautiously.

#### Acknowledgments

We wish to thank the National Institute of Oceanography of the United Kingdom for providing us with the wave records. Dr. J. Darbyshire sent some of the records to us from South Africa. Mr. D. E. Cartwright and Mr. L. Draper were most helpful in assembling other records at N. I. O. having them copied and forwarding the records to us. The records were digitized at Johns Hopkins University and at Davidson Laboratory of Stevens Institute of Technology.

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Table 1. Calibration factors for the Weather Explorer.

|          |          |          |          |          |          |
|----------|----------|----------|----------|----------|----------|
| 1.0000   |          |          |          |          |          |
| 1.0000   | 1.0000   | 1.0000   | 1.0000   | 1.0000   | 1.6157   |
| 1.3740   | 1.2452   | 1.1746   | 1.1399   | 1.1291   | 1.1343   |
| 1.1547   | 1.1870   | 1.2304   | 1.2845   | 1.3504   | 1.4277   |
| 1.5193   | 1.6241   | 1.7444   | 1.8828   | 2.0415   | 2.2243   |
| 2.4349   | 2.6765   | 2.9523   | 3.2725   | 3.6414   | 4.0714   |
| 4.5654   | 5.1490   | 5.8190   | 6.6136   | 7.5383   | 8.6338   |
| 9.9169   | 11.4459  | 13.2691  | 15.4245  | 18.0095  | 21.1086  |
| 24.8366  | 29.3522  | 34.8079  | 41.4485  | 49.5464  | 59.4548  |
| 71.5502  | 86.5947  | 105.1503 | 128.1186 | 156.7723 | 192.5202 |
| 237.3987 | 293.8682 | 365.1736 | 455.5306 | 570.2699 | 716.8705 |

Table 2. Calibration factors for the Weather Reporter.

|         |         |         |         |         |         |
|---------|---------|---------|---------|---------|---------|
| 1.0000  |         |         |         |         |         |
| 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.0000  | 1.5755  |
| 1.3277  | 1.1908  | 1.1099  | 1.0630  | 1.0375  | 1.0257  |
| 1.0260  | 1.0350  | 1.0514  | 1.0633  | 1.1034  | 1.1384  |
| 1.1805  | 1.2280  | 1.2817  | 1.3424  | 1.4105  | 1.4871  |
| 1.5731  | 1.6684  | 1.7736  | 1.8918  | 2.0229  | 2.1704  |
| 2.3321  | 2.5169  | 2.7181  | 2.9479  | 3.2018  | 3.4899  |
| 3.8088  | 4.1715  | 4.5826  | 5.0408  | 5.5616  | 6.1512  |
| 6.8201  | 7.5845  | 8.4517  | 9.4439  | 10.5785 | 11.8784 |
| 13.3689 | 15.0856 | 17.0596 | 19.3530 | 22.0055 | 25.0761 |
| 28.6529 | 32.8206 | 37.6868 | 43.3807 | 50.0432 | 57.8872 |

Table 3. Position and speed of ship for each record

| <u>Record No.</u> | <u>Position</u> | <u>Heading</u> | <u>Speed (kts)</u> |
|-------------------|-----------------|----------------|--------------------|
| DL 1              | I               |                | stopped            |
| 2                 | I               |                | stopped            |
| 3                 | I               |                | stopped            |
| 4                 | I               |                | stopped            |
| 5                 | I               |                | stopped            |
| 6                 | I               |                | stopped            |
| 7                 | I               |                | stopped            |
| 8                 | I               |                | stopped            |
| 9                 | I               | 345°           | 1                  |
| 10                | I               | 360°           | 2                  |
| 11                | I               | 360°           | 1                  |
| 12                | I               |                | stopped            |
| 13                | I               |                | stopped            |
| 14                | I               |                | stopped            |
| 15                | J               | 280°           | 1                  |
| 16                | J               | 280°           | 1                  |
| 17                | J               |                | stopped            |
| 18                | J               | 290°           | 1                  |
| 19                | J               | 290°           | 1/2                |
| 20                | J               |                | stopped            |
| 21                | J               |                | stopped            |
| 22                | J               | 280°           | 1                  |
| 23                | J               | 280°           | 1                  |
| 24                | J               |                | hove to            |
| 25                | J               |                | stopped            |
| 26                | J               | 260°           | 1/2                |
| 27                | J               | 280°           | 0                  |
| 28                | J               | 280°           | 1/2                |
| 29                | J               |                | stopped            |
| 30                | J               |                | stopped            |

Table 3. (cont.)

| <u>Record No.</u> | <u>Position</u> | <u>Heading</u> | <u>Speed (kts)</u> |
|-------------------|-----------------|----------------|--------------------|
| DL 31             | I               |                | stopped            |
| 32                | I               |                | stopped            |
| 33                | I               | 190°           | 1                  |
| 34                | I               | 190°           | 2                  |
| 35                | I               | 250°           | 1                  |
| 36                | I               | 230°           | 1                  |
| 37                | I               | 230°           | 1                  |
| 38                | I               | 240°           | 1/2                |
| 39                | I               | 240°           | 1/2                |
| 40                | I               | 240°           | 1                  |
| 41                | I               | 250°           | 1                  |
| 42                | I               |                | stopped            |
| 43                | A               | 070°           | 2                  |
| 44                | A               |                | stopped            |
| 45                | A               |                | stopped            |
| 46                | I               | 250°           | 1                  |
| 47                | I               | 250°           | 1½                 |
| 48                | I               | 250°           | 2                  |
| 49                | I               | 250°           | 2                  |
| 50                | I               | 250°           | 1                  |
| 51                | I               | 260°           | 1                  |
| 52                | I               | 265°           | 1½                 |
| 53                | I               | 260°           | 2                  |
| 54                | I               | 265°           | 1                  |
| 55                | I               | 280°           | 2                  |
| 56                | I               |                | stopped            |
| 57                | I               | 305°           | 1½                 |
| 58                | I               |                | stopped            |
| 59                | I               |                | stopped            |
| 60                | I               |                | stopped            |

Table 3. (cont.)

| <u>Record No.</u> | <u>Position</u> | <u>Heading</u> | <u>Speed (kts)</u> |
|-------------------|-----------------|----------------|--------------------|
| JH 1              | A               | 040°           | 1                  |
| 2                 | A               | 090°           | 2                  |
| 3                 | A               | 050°           | 2                  |
| 4                 | A               | 040°           | 1                  |
| 5                 | A               | 040°           | 1                  |
| 6                 | A               |                | stopped            |
| 7                 | A               |                | stopped            |
| 8                 | K               |                | stopped            |
| 9                 | K               |                | stopped            |
| 10                | K               |                | stopped            |
| 11                | K               | 290°           | 1                  |
| 12                | K               | 280°           | 1/2                |
| 13                | K               | 275°           | 1/2                |
| 14                | K               | 275°           | 1                  |
| 15                | K               | 275°           | 1½                 |
| 16                | K               | 270°           | 1                  |
| 17                | K               | 275°           | 1                  |
| 18                | K               | 275°           | 1                  |
| 19                | K               |                | stopped            |
| 20                | A               | 085°           | 2                  |
| 21                | A               | 140°           | 2                  |
| 22                | A               | 160°           | 1½                 |
| 23                | A               | 240°           | 1                  |
| 24                | A               | 200°           | 2                  |
| 25                | A               | 200°           | 2                  |
| 26                | A               | 220°           | 2                  |
| 27                | A               | 250°           | 1                  |
| 28                | A               | 240°           | 2                  |
| 29                | A               | 235°           | 1½                 |
| 30                | A               | 240°           | 2                  |

Table 3. (cont.)

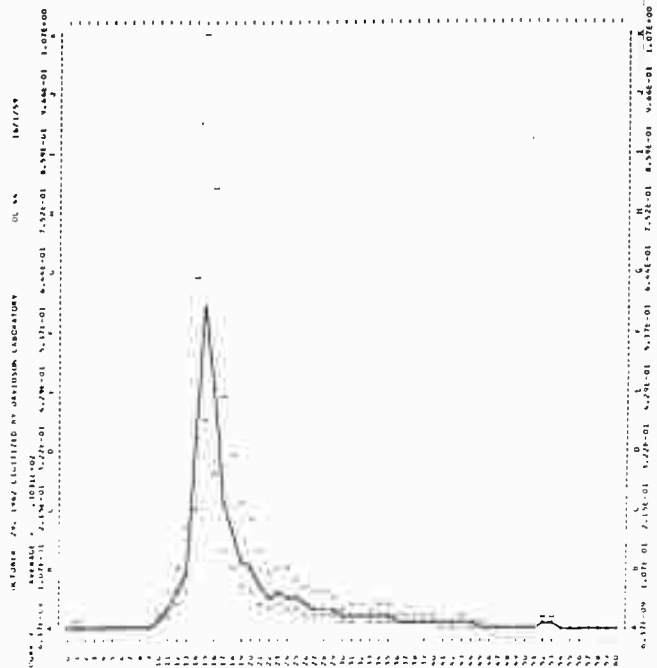
| <u>Record No.</u> | <u>Position</u>  | <u>Heading</u> | <u>Speed (kts)</u> |
|-------------------|------------------|----------------|--------------------|
| JH 31             | A                | 230°           | 1½                 |
| 32                | A                | 190°           | 2                  |
| 33                | A                | 190°           | 2                  |
| 34                | A                | 180°           | 2                  |
| 35                | A                |                | stopped            |
| 36                | A                | 230°           | 1½                 |
| 37                | A                | 240°           | 2                  |
| 38                | A                | 230°           | 1½                 |
| 39                | A                | 230°           | 2                  |
| 40                | A                | 220°           | 1                  |
| 41                | J                | 080°           | 1                  |
| 42                | J                | 090°           | 1                  |
| 43                | J                | 070°           | 1                  |
| 44                | 52°42'N, 19°W    | 065°           | 3                  |
| 45                | 53°N , 18°W      | 060°           | 7                  |
| 46                | 52°54'N, 16°54'W | 060°           | 7                  |
| 47                | 53°01'N, 16°36'W | 050°           | 4                  |
| 48                | 53°06'N, 16°20'W | 350°           | 4                  |
| 49                | 53°08'N, 16°15'W | 050°           | 5                  |
| 50                | 53°18'N, 16°16'W | 340°           | 1                  |
| 51                | 53°18'N, 16°16'W |                | hove to            |
| 52                | 53°17'N, 15°56'W | 120°           | 11                 |
| 53                | 52°48'N, 14°26'W | 120°           | 10                 |
| 54                | 52°30'N, 13°35'W | 120°           | 11½                |

Table 4. Data on short records for which less than 600 points were available.

| <u>Record No.</u> | <u>no. of<br/>points</u> | <u>Original<br/>TDF</u> | <u>Corrected<br/>TDF</u> |
|-------------------|--------------------------|-------------------------|--------------------------|
| DL 50             | 592                      | 144                     | 142                      |
| JH 4              | 561                      | 150                     | 140                      |
| JH 16             | 591                      | 134                     | 132                      |
| JH 17             | 592                      | 101                     | 100                      |
| JH 18             | 590                      | 128                     | 126                      |
| JH 19             | 581                      | 133                     | 129                      |
| JH 24             | 586                      | 151                     | 147                      |
| JH 36             | 585                      | 204                     | 199                      |

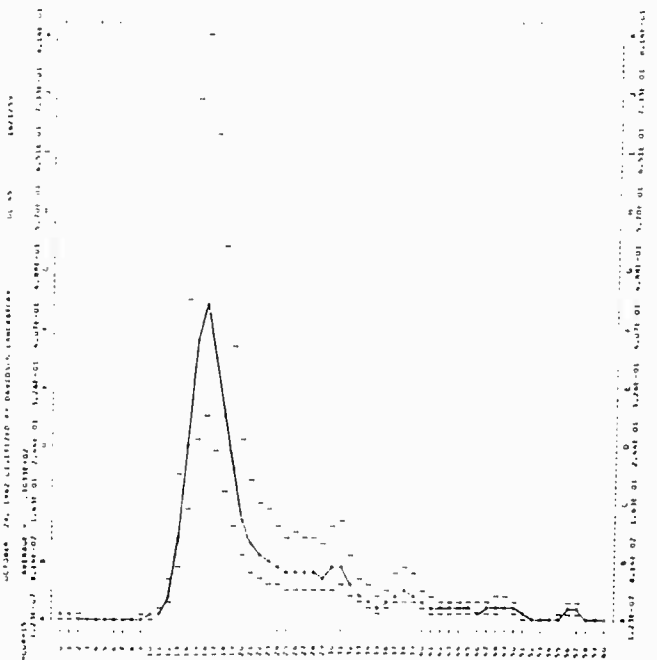
## SPECTRA RECASTING OCTOBER 29, 1962 DIGITIZED BY DAVIDSON LABORATORY

| DATE = 10/1/59 |      | AV. T =       |          | RECORD =     |            | DL 44 |       |
|----------------|------|---------------|----------|--------------|------------|-------|-------|
| HOUR = 8       |      | SIG. HGT. =   |          | UPPER HGT. = |            | 7.8   |       |
| TOTAL OF 105   |      | CORR. VAL. =  |          | LOWER HGT. = |            | 4.1   |       |
|                |      | NOISE LEVEL = |          | WIND SPEED = |            | 15    |       |
| H              | FREQ | UNIT-FREQ     | FILTERED | LESS NOISE   | CORR. FREQ | UPPER | LOWER |
| 0              | .000 | .0000         | .0000    | .0000        | .0000      | .0000 | .0000 |
| 1              | .001 | .0005         | .0005    | .0005        | .0005      | .0005 | .0005 |
| 2              | .002 | .0010         | .0010    | .0010        | .0010      | .0010 | .0010 |
| 3              | .003 | .0015         | .0015    | .0015        | .0015      | .0015 | .0015 |
| 4              | .004 | .0020         | .0020    | .0020        | .0020      | .0020 | .0020 |
| 5              | .005 | .0025         | .0025    | .0025        | .0025      | .0025 | .0025 |
| 6              | .006 | .0030         | .0030    | .0030        | .0030      | .0030 | .0030 |
| 7              | .007 | .0035         | .0035    | .0035        | .0035      | .0035 | .0035 |
| 8              | .008 | .0040         | .0040    | .0040        | .0040      | .0040 | .0040 |
| 9              | .009 | .0045         | .0045    | .0045        | .0045      | .0045 | .0045 |
| 10             | .010 | .0050         | .0050    | .0050        | .0050      | .0050 | .0050 |
| 11             | .011 | .0055         | .0055    | .0055        | .0055      | .0055 | .0055 |
| 12             | .012 | .0060         | .0060    | .0060        | .0060      | .0060 | .0060 |
| 13             | .013 | .0065         | .0065    | .0065        | .0065      | .0065 | .0065 |
| 14             | .014 | .0070         | .0070    | .0070        | .0070      | .0070 | .0070 |
| 15             | .015 | .0075         | .0075    | .0075        | .0075      | .0075 | .0075 |
| 16             | .016 | .0080         | .0080    | .0080        | .0080      | .0080 | .0080 |
| 17             | .017 | .0085         | .0085    | .0085        | .0085      | .0085 | .0085 |
| 18             | .018 | .0090         | .0090    | .0090        | .0090      | .0090 | .0090 |
| 19             | .019 | .0095         | .0095    | .0095        | .0095      | .0095 | .0095 |
| 20             | .020 | .0100         | .0100    | .0100        | .0100      | .0100 | .0100 |
| 21             | .021 | .0105         | .0105    | .0105        | .0105      | .0105 | .0105 |
| 22             | .022 | .0110         | .0110    | .0110        | .0110      | .0110 | .0110 |
| 23             | .023 | .0115         | .0115    | .0115        | .0115      | .0115 | .0115 |
| 24             | .024 | .0120         | .0120    | .0120        | .0120      | .0120 | .0120 |
| 25             | .025 | .0125         | .0125    | .0125        | .0125      | .0125 | .0125 |
| 26             | .026 | .0130         | .0130    | .0130        | .0130      | .0130 | .0130 |
| 27             | .027 | .0135         | .0135    | .0135        | .0135      | .0135 | .0135 |
| 28             | .028 | .0140         | .0140    | .0140        | .0140      | .0140 | .0140 |
| 29             | .029 | .0145         | .0145    | .0145        | .0145      | .0145 | .0145 |
| 30             | .030 | .0150         | .0150    | .0150        | .0150      | .0150 | .0150 |
| 31             | .031 | .0155         | .0155    | .0155        | .0155      | .0155 | .0155 |
| 32             | .032 | .0160         | .0160    | .0160        | .0160      | .0160 | .0160 |
| 33             | .033 | .0165         | .0165    | .0165        | .0165      | .0165 | .0165 |
| 34             | .034 | .0170         | .0170    | .0170        | .0170      | .0170 | .0170 |
| 35             | .035 | .0175         | .0175    | .0175        | .0175      | .0175 | .0175 |
| 36             | .036 | .0180         | .0180    | .0180        | .0180      | .0180 | .0180 |
| 37             | .037 | .0185         | .0185    | .0185        | .0185      | .0185 | .0185 |
| 38             | .038 | .0190         | .0190    | .0190        | .0190      | .0190 | .0190 |
| 39             | .039 | .0195         | .0195    | .0195        | .0195      | .0195 | .0195 |
| 40             | .040 | .0200         | .0200    | .0200        | .0200      | .0200 | .0200 |
| 41             | .041 | .0205         | .0205    | .0205        | .0205      | .0205 | .0205 |
| 42             | .042 | .0210         | .0210    | .0210        | .0210      | .0210 | .0210 |
| 43             | .043 | .0215         | .0215    | .0215        | .0215      | .0215 | .0215 |
| 44             | .044 | .0220         | .0220    | .0220        | .0220      | .0220 | .0220 |
| 45             | .045 | .0225         | .0225    | .0225        | .0225      | .0225 | .0225 |
| 46             | .046 | .0230         | .0230    | .0230        | .0230      | .0230 | .0230 |
| 47             | .047 | .0235         | .0235    | .0235        | .0235      | .0235 | .0235 |
| 48             | .048 | .0240         | .0240    | .0240        | .0240      | .0240 | .0240 |
| 49             | .049 | .0245         | .0245    | .0245        | .0245      | .0245 | .0245 |
| 50             | .050 | .0250         | .0250    | .0250        | .0250      | .0250 | .0250 |
| 51             | .051 | .0255         | .0255    | .0255        | .0255      | .0255 | .0255 |
| 52             | .052 | .0260         | .0260    | .0260        | .0260      | .0260 | .0260 |
| 53             | .053 | .0265         | .0265    | .0265        | .0265      | .0265 | .0265 |
| 54             | .054 | .0270         | .0270    | .0270        | .0270      | .0270 | .0270 |
| 55             | .055 | .0275         | .0275    | .0275        | .0275      | .0275 | .0275 |
| 56             | .056 | .0280         | .0280    | .0280        | .0280      | .0280 | .0280 |
| 57             | .057 | .0285         | .0285    | .0285        | .0285      | .0285 | .0285 |
| 58             | .058 | .0290         | .0290    | .0290        | .0290      | .0290 | .0290 |
| 59             | .059 | .0295         | .0295    | .0295        | .0295      | .0295 | .0295 |
| 60             | .060 | .0300         | .0300    | .0300        | .0300      | .0300 | .0300 |

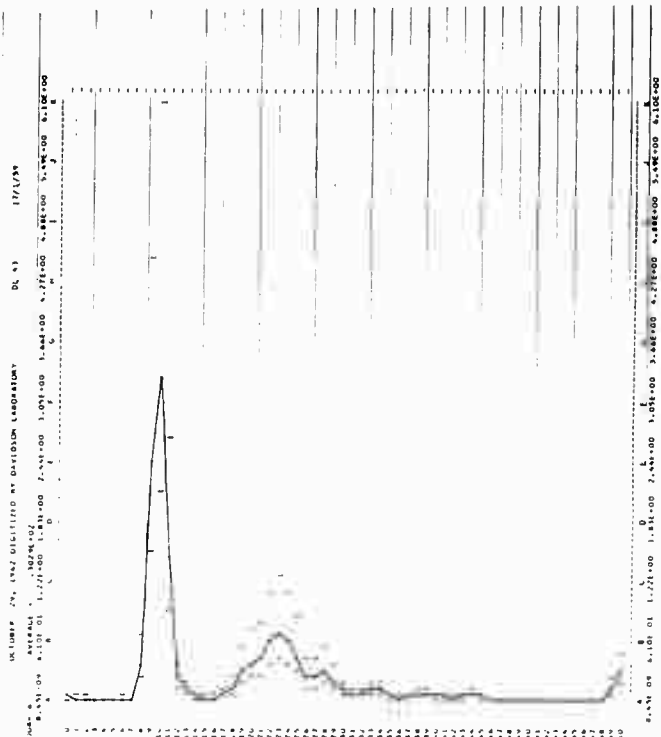
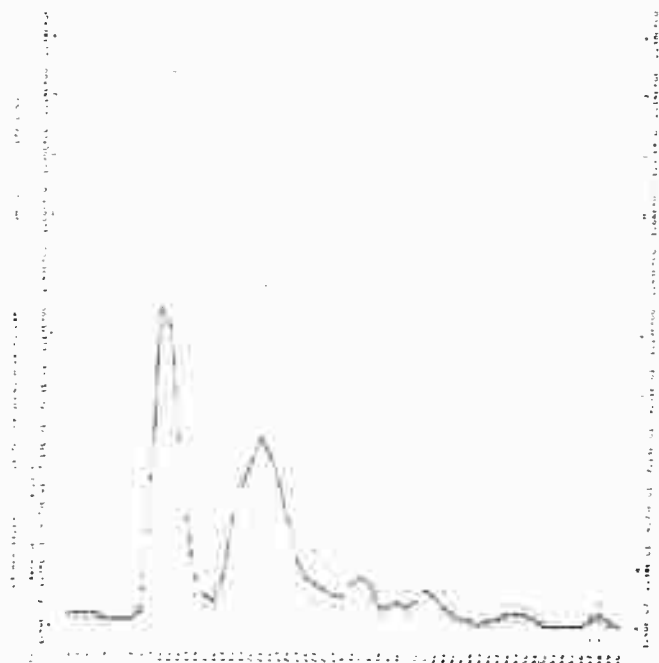


## SPECTRA RECASTING OCTOBER 29, 1962 DIGITIZED BY DAVIDSON LABORATORY

| DATE = 10/1/59 |      | AV. T =       |          | RECORD =     |            | DL 45 |       |
|----------------|------|---------------|----------|--------------|------------|-------|-------|
| HOUR = 15      |      | SIG. HGT. =   |          | UPPER HGT. = |            | 8.2   |       |
| TOTAL OF 105   |      | CORR. VAL. =  |          | LOWER HGT. = |            | 4.6   |       |
|                |      | NOISE LEVEL = |          | WIND SPEED = |            | 21    |       |
| H              | FREQ | UNIT-FREQ     | FILTERED | LESS NOISE   | CORR. FREQ | UPPER | LOWER |
| 0              | .000 | .0000         | .0000    | .0000        | .0000      | .0000 | .0000 |
| 1              | .001 | .0005         | .0005    | .0005        | .0005      | .0005 | .0005 |
| 2              | .002 | .0010         | .0010    | .0010        | .0010      | .0010 | .0010 |
| 3              | .003 | .0015         | .0015    | .0015        | .0015      | .0015 | .0015 |
| 4              | .004 | .0020         | .0020    | .0020        | .0020      | .0020 | .0020 |
| 5              | .005 | .0025         | .0025    | .0025        | .0025      | .0025 | .0025 |
| 6              | .006 | .0030         | .0030    | .0030        | .0030      | .0030 | .0030 |
| 7              | .007 | .0035         | .0035    | .0035        | .0035      | .0035 | .0035 |
| 8              | .008 | .0040         | .0040    | .0040        | .0040      | .0040 | .0040 |
| 9              | .009 | .0045         | .0045    | .0045        | .0045      | .0045 | .0045 |
| 10             | .010 | .0050         | .0050    | .0050        | .0050      | .0050 | .0050 |
| 11             | .011 | .0055         | .0055    | .0055        | .0055      | .0055 | .0055 |
| 12             | .012 | .0060         | .0060    | .0060        | .0060      | .0060 | .0060 |
| 13             | .013 | .0065         | .0065    | .0065        | .0065      | .0065 | .0065 |
| 14             | .014 | .0070         | .0070    | .0070        | .0070      | .0070 | .0070 |
| 15             | .015 | .0075         | .0075    | .0075        | .0075      | .0075 | .0075 |
| 16             | .016 | .0080         | .0080    | .0080        | .0080      | .0080 | .0080 |
| 17             | .017 | .0085         | .0085    | .0085        | .0085      | .0085 | .0085 |
| 18             | .018 | .0090         | .0090    | .0090        | .0090      | .0090 | .0090 |
| 19             | .019 | .0095         | .0095    | .0095        | .0095      | .0095 | .0095 |
| 20             | .020 | .0100         | .0100    | .0100        | .0100      | .0100 | .0100 |
| 21             | .021 | .0105         | .0105    | .0105        | .0105      | .0105 | .0105 |
| 22             | .022 | .0110         | .0110    | .0110        | .0110      | .0110 | .0110 |
| 23             | .023 | .0115         | .0115    | .0115        | .0115      | .0115 | .0115 |
| 24             | .024 | .0120         | .0120    | .0120        | .0120      | .0120 | .0120 |
| 25             | .025 | .0125         | .0125    | .0125        | .0125      | .0125 | .0125 |
| 26             | .026 | .0130         | .0130    | .0130        | .0130      | .0130 | .0130 |
| 27             | .027 | .0135         | .0135    | .0135        | .0135      | .0135 | .0135 |
| 28             | .028 | .0140         | .0140    | .0140        | .0140      | .0140 | .0140 |
| 29             | .029 | .0145         | .0145    | .0145        | .0145      | .0145 | .0145 |
| 30             | .030 | .0150         | .0150    | .0150        | .0150      | .0150 | .0150 |
| 31             | .031 | .0155         | .0155    | .0155        | .0155      | .0155 | .0155 |
| 32             | .032 | .0160         | .0160    | .0160        | .0160      | .0160 | .0160 |
| 33             | .033 | .0165         | .0165    | .0165        | .0165      | .0165 | .0165 |
| 34             | .034 | .0170         | .0170    | .0170        | .0170      | .0170 | .0170 |
| 35             | .035 | .0175         | .0175    | .0175        | .0175      | .0175 | .0175 |
| 36             | .036 | .0180         | .0180    | .0180        | .0180      | .0180 | .0180 |
| 37             | .037 | .0185         | .0185    | .0185        | .0185      | .0185 | .0185 |
| 38             | .038 | .0190         | .0190    | .0190        | .0190      | .0190 | .0190 |
| 39             | .039 | .0195         | .0195    | .0195        | .0195      | .0195 | .0195 |
| 40             | .040 | .0200         | .0200    | .0200        | .0200      | .0200 | .0200 |
| 41             | .041 | .0205         | .0205    | .0205        | .0205      | .0205 | .0205 |
| 42             | .042 | .0210         | .0210    | .0210        | .0210      | .0210 | .0210 |
| 43             | .043 | .0215         | .0215    | .0215        | .0215      | .0215 | .0215 |
| 44             | .044 | .0220         | .0220    | .0220        | .0220      | .0220 | .0220 |
| 45             | .045 | .0225         | .0225    | .0225        | .0225      | .0225 | .0225 |
| 46             | .046 | .0230         | .0230    | .0230        | .0230      | .0230 | .0230 |
| 47             | .047 | .0235         | .0235    | .0235        | .0235      | .0235 | .0235 |
| 48             | .048 | .0240         | .0240    | .0240        | .0240      | .0240 | .0240 |
| 49             | .049 | .0245         | .0245    | .0245        | .0245      | .0245 | .0245 |
| 50             | .050 | .0250         | .0250    | .0250        | .0250      | .0250 | .0250 |
| 51             | .051 | .0255         | .0255    | .0255        | .0255      | .0255 | .0255 |
| 52             | .052 | .0260         | .0260    | .0260        | .0260      | .0260 | .0260 |
| 53             | .053 | .0265         | .0265    | .0265        | .0265      | .0265 | .0265 |
| 54             | .054 | .0270         | .0270    | .0270        | .0270      | .0270 | .0270 |
| 55             | .055 | .0275         | .0275    | .0275        | .0275      | .0275 | .0275 |
| 56             | .056 | .0280         | .0280    | .0280        | .0280      | .0280 | .0280 |
| 57             | .057 | .0285         | .0285    | .0285        | .0285      | .0285 | .0285 |
| 58             | .058 | .0290         | .0290    | .0290        | .0290      | .0290 | .0290 |
| 59             | .059 | .0295         | .0295    | .0295        | .0295      | .0295 | .0295 |
| 60             | .060 | .0300         | .0300    | .0300        | .0300      | .0300 | .0300 |



| DATE = 11/2/59 |      | AV. T = 1.7        |          | RECORD =      |            | DL 45 |       |
|----------------|------|--------------------|----------|---------------|------------|-------|-------|
| HOUR = 5       |      | SIG. MEAN = 13.0   |          | UPPER MEAN =  |            | 18.8  |       |
| TOTAL OF = 91  |      | CORE. VAR. = 14.0  |          | LOWER MEAN =  |            | 13.3  |       |
|                |      | NOISE LEVEL = 10.0 |          | MINO. SPEED = |            |       |       |
| N              | PSD  | UNIT F.T.2         | FILTERED | LESS NOISE    | CORR. F.T. | UPPER | LOWER |
| 0              | .000 | .000               | .000     | .000          | .000       | .000  | .000  |
| 1              | .004 | .002               | .003     | .002          | .002       | .002  | .002  |
| 2              | .001 | .000               | .000     | .000          | .000       | .000  | .000  |
| 3              | .004 | .002               | .001     | .001          | .001       | .001  | .001  |
| 4              | .001 | .000               | .000     | .000          | .000       | .000  | .000  |
| 5              | .002 | .001               | .000     | .000          | .000       | .000  | .000  |
| 6              | .001 | .000               | .000     | .000          | .000       | .000  | .000  |
| 7              | .002 | .001               | .000     | .000          | .000       | .000  | .000  |
| 8              | .003 | .002               | .001     | .001          | .001       | .001  | .001  |
| 9              | .003 | .002               | .001     | .001          | .001       | .001  | .001  |
| 10             | .004 | .002               | .001     | .001          | .001       | .001  | .001  |
| 11             | .005 | .003               | .002     | .002          | .002       | .002  | .002  |
| 12             | .006 | .004               | .003     | .003          | .003       | .003  | .003  |
| 13             | .007 | .005               | .004     | .004          | .004       | .004  | .004  |
| 14             | .008 | .006               | .005     | .005          | .005       | .005  | .005  |
| 15             | .009 | .007               | .006     | .006          | .006       | .006  | .006  |
| 16             | .010 | .008               | .007     | .007          | .007       | .007  | .007  |
| 17             | .011 | .009               | .008     | .008          | .008       | .008  | .008  |
| 18             | .012 | .010               | .009     | .009          | .009       | .009  | .009  |
| 19             | .013 | .011               | .010     | .010          | .010       | .010  | .010  |
| 20             | .014 | .012               | .011     | .011          | .011       | .011  | .011  |
| 21             | .015 | .013               | .012     | .012          | .012       | .012  | .012  |
| 22             | .016 | .014               | .013     | .013          | .013       | .013  | .013  |
| 23             | .017 | .015               | .014     | .014          | .014       | .014  | .014  |
| 24             | .018 | .016               | .015     | .015          | .015       | .015  | .015  |
| 25             | .019 | .017               | .016     | .016          | .016       | .016  | .016  |
| 26             | .020 | .018               | .017     | .017          | .017       | .017  | .017  |
| 27             | .021 | .019               | .018     | .018          | .018       | .018  | .018  |
| 28             | .022 | .020               | .019     | .019          | .019       | .019  | .019  |
| 29             | .023 | .021               | .020     | .020          | .020       | .020  | .020  |
| 30             | .024 | .022               | .021     | .021          | .021       | .021  | .021  |
| 31             | .025 | .023               | .022     | .022          | .022       | .022  | .022  |
| 32             | .026 | .024               | .023     | .023          | .023       | .023  | .023  |
| 33             | .027 | .025               | .024     | .024          | .024       | .024  | .024  |
| 34             | .028 | .026               | .025     | .025          | .025       | .025  | .025  |
| 35             | .029 | .027               | .026     | .026          | .026       | .026  | .026  |
| 36             | .030 | .028               | .027     | .027          | .027       | .027  | .027  |
| 37             | .031 | .029               | .028     | .028          | .028       | .028  | .028  |
| 38             | .032 | .030               | .029     | .029          | .029       | .029  | .029  |
| 39             | .033 | .031               | .030     | .030          | .030       | .030  | .030  |
| 40             | .034 | .032               | .031     | .031          | .031       | .031  | .031  |
| 41             | .035 | .033               | .032     | .032          | .032       | .032  | .032  |
| 42             | .036 | .034               | .033     | .033          | .033       | .033  | .033  |
| 43             | .037 | .035               | .034     | .034          | .034       | .034  | .034  |
| 44             | .038 | .036               | .035     | .035          | .035       | .035  | .035  |
| 45             | .039 | .037               | .036     | .036          | .036       | .036  | .036  |
| 46             | .040 | .038               | .037     | .037          | .037       | .037  | .037  |
| 47             | .041 | .039               | .038     | .038          | .038       | .038  | .038  |
| 48             | .042 | .040               | .039     | .039          | .039       | .039  | .039  |
| 49             | .043 | .041               | .040     | .040          | .040       | .040  | .040  |
| 50             | .044 | .042               | .041     | .041          | .041       | .041  | .041  |
| 51             | .045 | .043               | .042     | .042          | .042       | .042  | .042  |
| 52             | .046 | .044               | .043     | .043          | .043       | .043  | .043  |
| 53             | .047 | .045               | .044     | .044          | .044       | .044  | .044  |
| 54             | .048 | .046               | .045     | .045          | .045       | .045  | .045  |
| 55             | .049 |                    |          |               |            |       |       |

[illegible]

SPECTRA RECASTING OF TOWER 11, 1967

DATE: 12/17/71

TIME: 11:00

WIND SPEED: 15

WIND DIRECTION: 110

WIND GUST: 15

WIND VELOCITY: 15

WIND PRESSURE: 15

WIND TEMPERATURE: 15

WIND HUMIDITY: 15

WIND DENSITY: 15

WIND VISCOSITY: 15

WIND SURFACE: 15

WIND PROFILE: 15

WIND ANALYSIS: 15

WIND SYNTHESIS: 15

WIND RECASTING: 15

WIND RECASTING OF TOWER 11, 1967

DATE: 12/17/71

TIME: 11:00

WIND SPEED: 15

WIND DIRECTION: 110

WIND GUST: 15

WIND VELOCITY: 15

WIND PRESSURE: 15

WIND TEMPERATURE: 15

WIND HUMIDITY: 15

WIND DENSITY: 15

WIND VISCOSITY: 15

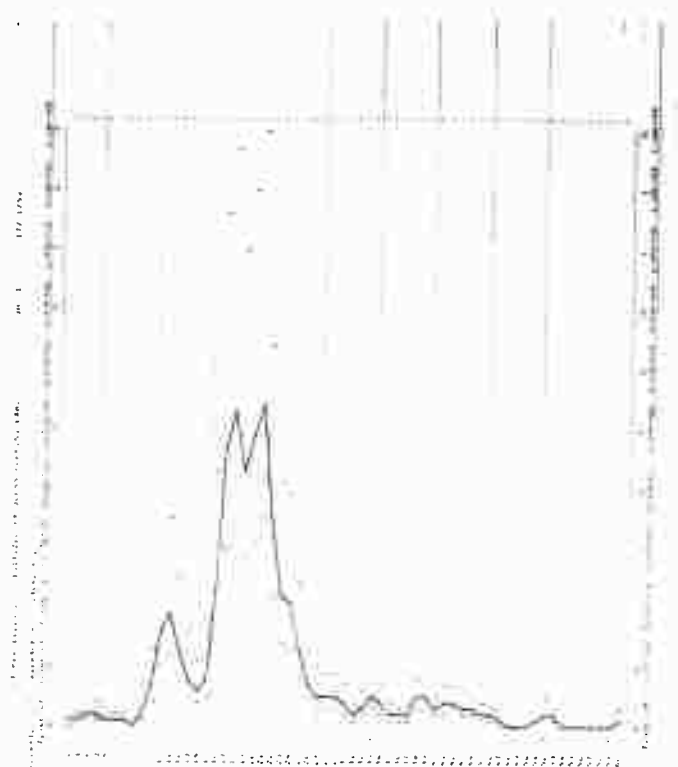
WIND SURFACE: 15

WIND PROFILE: 15

WIND ANALYSIS: 15

WIND SYNTHESIS: 15

WIND RECASTING: 15



SPECTRA RECASTING OF TOWER 11, 1967

DATE: 12/17/71

TIME: 11:00

WIND SPEED: 15

WIND DIRECTION: 110

WIND GUST: 15

WIND VELOCITY: 15

WIND PRESSURE: 15

WIND TEMPERATURE: 15

WIND HUMIDITY: 15

WIND DENSITY: 15

WIND VISCOSITY: 15

WIND SURFACE: 15

WIND PROFILE: 15

WIND ANALYSIS: 15

WIND SYNTHESIS: 15

WIND RECASTING: 15

SPECTRA RECASTING OF TOWER 11, 1967

DATE: 12/17/71

TIME: 11:00

WIND SPEED: 15

WIND DIRECTION: 110

WIND GUST: 15

WIND VELOCITY: 15

WIND PRESSURE: 15

WIND TEMPERATURE: 15

WIND HUMIDITY: 15

WIND DENSITY: 15

WIND VISCOSITY: 15

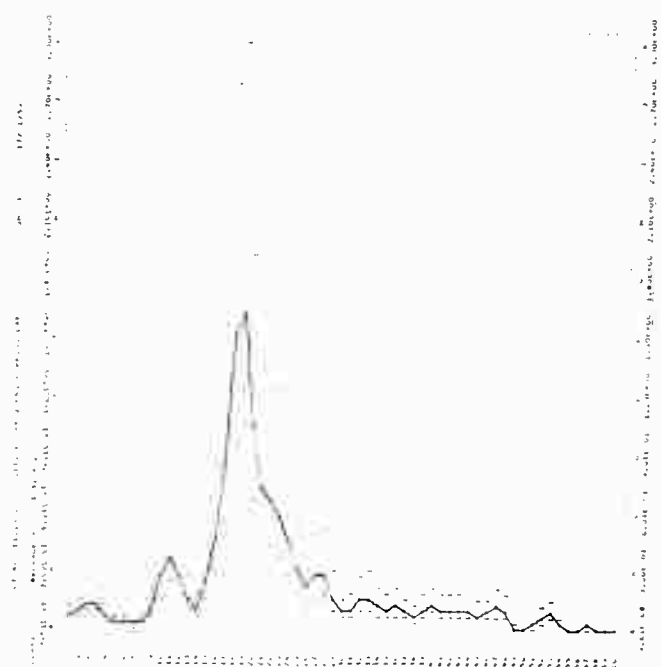
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WIND PROFILE: 15

WIND ANALYSIS: 15

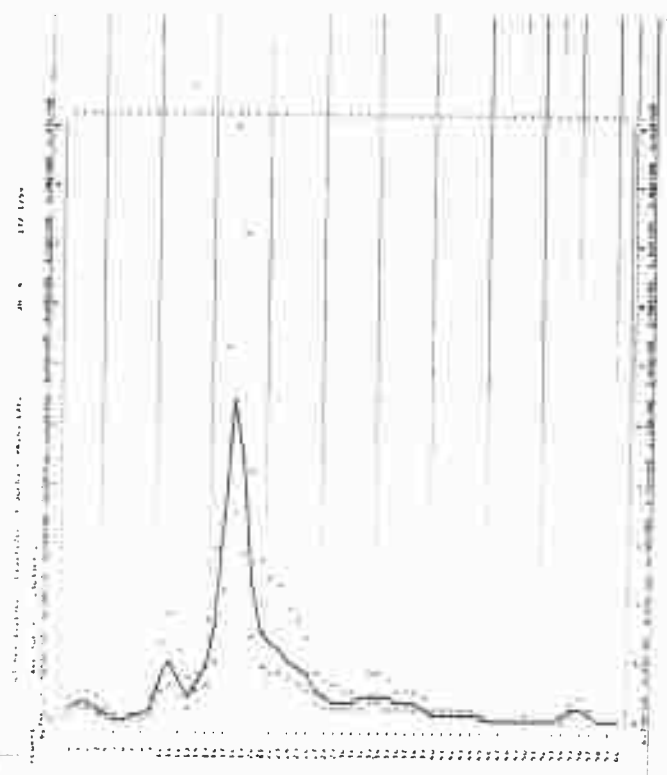
WIND SYNTHESIS: 15

WIND RECASTING: 15



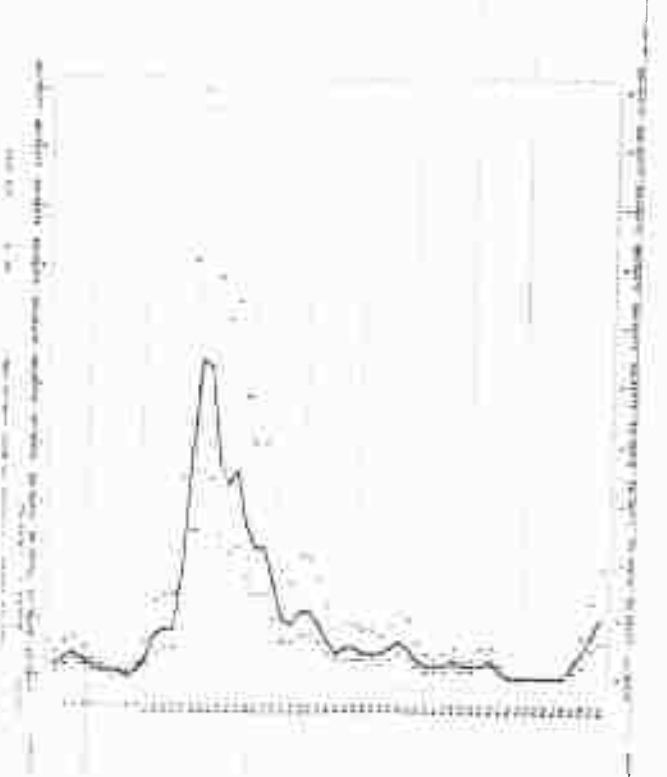
SPECTRA MEASURING OLYMPUS 11, 1962 CALIBRATED BY JONAS ROEPKE LAB.

| WAVELENGTH |      | WAVELENGTH |      | WAVELENGTH |      | WAVELENGTH |      | WAVELENGTH |      |
|------------|------|------------|------|------------|------|------------|------|------------|------|
| nm         |      | nm         |      | nm         |      | nm         |      | nm         |      |
| 1          | 4000 | 2          | 4000 | 3          | 4000 | 4          | 4000 | 5          | 4000 |
| 6          | 4000 | 7          | 4000 | 8          | 4000 | 9          | 4000 | 10         | 4000 |
| 11         | 4000 | 12         | 4000 | 13         | 4000 | 14         | 4000 | 15         | 4000 |
| 16         | 4000 | 17         | 4000 | 18         | 4000 | 19         | 4000 | 20         | 4000 |
| 21         | 4000 | 22         | 4000 | 23         | 4000 | 24         | 4000 | 25         | 4000 |
| 26         | 4000 | 27         | 4000 | 28         | 4000 | 29         | 4000 | 30         | 4000 |
| 31         | 4000 | 32         | 4000 | 33         | 4000 | 34         | 4000 | 35         | 4000 |
| 36         | 4000 | 37         | 4000 | 38         | 4000 | 39         | 4000 | 40         | 4000 |
| 41         | 4000 | 42         | 4000 | 43         | 4000 | 44         | 4000 | 45         | 4000 |
| 46         | 4000 | 47         | 4000 | 48         | 4000 | 49         | 4000 | 50         | 4000 |
| 51         | 4000 | 52         | 4000 | 53         | 4000 | 54         | 4000 | 55         | 4000 |
| 56         | 4000 | 57         | 4000 | 58         | 4000 | 59         | 4000 | 60         | 4000 |
| 61         | 4000 | 62         | 4000 | 63         | 4000 | 64         | 4000 | 65         | 4000 |
| 66         | 4000 | 67         | 4000 | 68         | 4000 | 69         | 4000 | 70         | 4000 |
| 71         | 4000 | 72         | 4000 | 73         | 4000 | 74         | 4000 | 75         | 4000 |
| 76         | 4000 | 77         | 4000 | 78         | 4000 | 79         | 4000 | 80         | 4000 |
| 81         | 4000 | 82         | 4000 | 83         | 4000 | 84         | 4000 | 85         | 4000 |
| 86         | 4000 | 87         | 4000 | 88         | 4000 | 89         | 4000 | 90         | 4000 |
| 91         | 4000 | 92         | 4000 | 93         | 4000 | 94         | 4000 | 95         | 4000 |
| 96         | 4000 | 97         | 4000 | 98         | 4000 | 99         | 4000 | 100        | 4000 |



SPECTRA MEASURING OLYMPUS 11, 1962 CALIBRATED BY JONAS ROEPKE LAB.

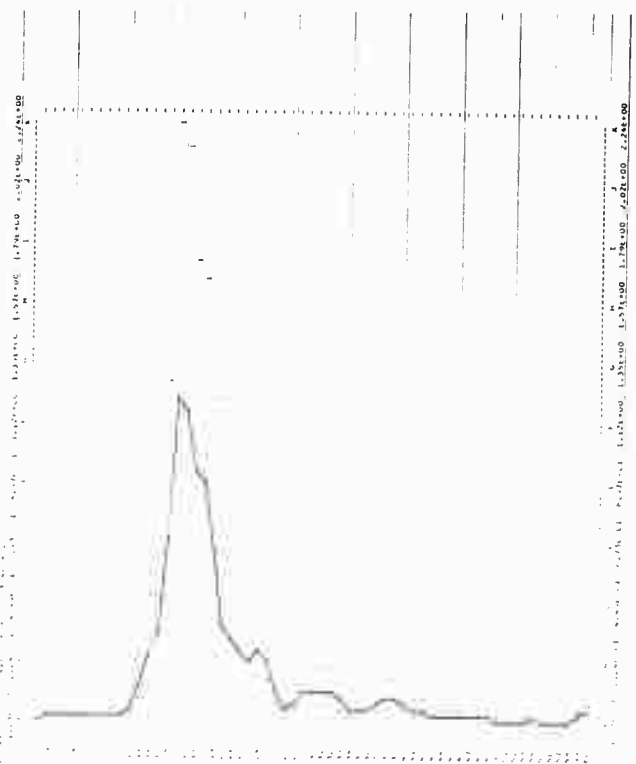
| WAVELENGTH |      | WAVELENGTH |      | WAVELENGTH |      | WAVELENGTH |      | WAVELENGTH |      |
|------------|------|------------|------|------------|------|------------|------|------------|------|
| nm         |      | nm         |      | nm         |      | nm         |      | nm         |      |
| 1          | 4000 | 2          | 4000 | 3          | 4000 | 4          | 4000 | 5          | 4000 |
| 6          | 4000 | 7          | 4000 | 8          | 4000 | 9          | 4000 | 10         | 4000 |
| 11         | 4000 | 12         | 4000 | 13         | 4000 | 14         | 4000 | 15         | 4000 |
| 16         | 4000 | 17         | 4000 | 18         | 4000 | 19         | 4000 | 20         | 4000 |
| 21         | 4000 | 22         | 4000 | 23         | 4000 | 24         | 4000 | 25         | 4000 |
| 26         | 4000 | 27         | 4000 | 28         | 4000 | 29         | 4000 | 30         | 4000 |
| 31         | 4000 | 32         | 4000 | 33         | 4000 | 34         | 4000 | 35         | 4000 |
| 36         | 4000 | 37         | 4000 | 38         | 4000 | 39         | 4000 | 40         | 4000 |
| 41         | 4000 | 42         | 4000 | 43         | 4000 | 44         | 4000 | 45         | 4000 |
| 46         | 4000 | 47         | 4000 | 48         | 4000 | 49         | 4000 | 50         | 4000 |
| 51         | 4000 | 52         | 4000 | 53         | 4000 | 54         | 4000 | 55         | 4000 |
| 56         | 4000 | 57         | 4000 | 58         | 4000 | 59         | 4000 | 60         | 4000 |
| 61         | 4000 | 62         | 4000 | 63         | 4000 | 64         | 4000 | 65         | 4000 |
| 66         | 4000 | 67         | 4000 | 68         | 4000 | 69         | 4000 | 70         | 4000 |
| 71         | 4000 | 72         | 4000 | 73         | 4000 | 74         | 4000 | 75         | 4000 |
| 76         | 4000 | 77         | 4000 | 78         | 4000 | 79         | 4000 | 80         | 4000 |
| 81         | 4000 | 82         | 4000 | 83         | 4000 | 84         | 4000 | 85         | 4000 |
| 86         | 4000 | 87         | 4000 | 88         | 4000 | 89         | 4000 | 90         | 4000 |
| 91         | 4000 | 92         | 4000 | 93         | 4000 | 94         | 4000 | 95         | 4000 |
| 96         | 4000 | 97         | 4000 | 98         | 4000 | 99         | 4000 | 100        | 4000 |



SPECTRA HANDCASTING OCTOBER 11, 1962 DIGITIZED BY JONAS HOPKINS LAB.

DATE = 10/1/59      SIG. IN. = 8.2      RECORD = 25  
 MARK = 0      SIG. IN. = 12.9  
 TOTAL LT. = 121.1      CURVE TYPE = 2      WIND SPEED = 25  
 NOISE LEVEL = .0045

| N  | FREQ. | CHIRP F.T. 2 | FILTERED | LESS NOISE | LOAR. F.T. 2 | UPPER | LOWER |
|----|-------|--------------|----------|------------|--------------|-------|-------|
| 0  | .000  | .0129        | .0129    | .0084      | .0084        | .0155 | .0054 |
| 1  | .008  | .0159        | .0159    | .0151      | .0151        | .0228 | .0099 |
| 2  | .016  | .0219        | .0219    | .0219      | .0219        | .0303 | .0184 |
| 3  | .024  | .0279        | .0279    | .0279      | .0279        | .0382 | .0263 |
| 4  | .032  | .0339        | .0339    | .0339      | .0339        | .0461 | .0340 |
| 5  | .040  | .0399        | .0399    | .0399      | .0399        | .0540 | .0419 |
| 6  | .048  | .0459        | .0459    | .0459      | .0459        | .0619 | .0498 |
| 7  | .056  | .0519        | .0519    | .0519      | .0519        | .0698 | .0577 |
| 8  | .064  | .0579        | .0579    | .0579      | .0579        | .0777 | .0656 |
| 9  | .072  | .0639        | .0639    | .0639      | .0639        | .0856 | .0735 |
| 10 | .080  | .0699        | .0699    | .0699      | .0699        | .0935 | .0814 |
| 11 | .088  | .0759        | .0759    | .0759      | .0759        | .1014 | .0893 |
| 12 | .096  | .0819        | .0819    | .0819      | .0819        | .1093 | .0972 |
| 13 | .104  | .0879        | .0879    | .0879      | .0879        | .1172 | .1051 |
| 14 | .112  | .0939        | .0939    | .0939      | .0939        | .1251 | .1130 |
| 15 | .120  | .1000        | .1000    | .1000      | .1000        | .1330 | .1209 |
| 16 | .128  | .1060        | .1060    | .1060      | .1060        | .1409 | .1288 |
| 17 | .136  | .1120        | .1120    | .1120      | .1120        | .1488 | .1367 |
| 18 | .144  | .1180        | .1180    | .1180      | .1180        | .1567 | .1446 |
| 19 | .152  | .1240        | .1240    | .1240      | .1240        | .1646 | .1525 |
| 20 | .160  | .1300        | .1300    | .1300      | .1300        | .1725 | .1604 |
| 21 | .168  | .1360        | .1360    | .1360      | .1360        | .1804 | .1683 |
| 22 | .176  | .1420        | .1420    | .1420      | .1420        | .1883 | .1762 |
| 23 | .184  | .1480        | .1480    | .1480      | .1480        | .1962 | .1841 |
| 24 | .192  | .1540        | .1540    | .1540      | .1540        | .2041 | .1920 |
| 25 | .200  | .1600        | .1600    | .1600      | .1600        | .2120 | .2000 |
| 26 | .208  | .1660        | .1660    | .1660      | .1660        | .2199 | .2079 |
| 27 | .216  | .1720        | .1720    | .1720      | .1720        | .2278 | .2158 |
| 28 | .224  | .1780        | .1780    | .1780      | .1780        | .2357 | .2237 |
| 29 | .232  | .1840        | .1840    | .1840      | .1840        | .2436 | .2316 |
| 30 | .240  | .1900        | .1900    | .1900      | .1900        | .2515 | .2395 |
| 31 | .248  | .1960        | .1960    | .1960      | .1960        | .2594 | .2474 |
| 32 | .256  | .2020        | .2020    | .2020      | .2020        | .2673 | .2553 |
| 33 | .264  | .2080        | .2080    | .2080      | .2080        | .2752 | .2632 |
| 34 | .272  | .2140        | .2140    | .2140      | .2140        | .2831 | .2711 |
| 35 | .280  | .2200        | .2200    | .2200      | .2200        | .2910 | .2790 |
| 36 | .288  | .2260        | .2260    | .2260      | .2260        | .2989 | .2869 |
| 37 | .296  | .2320        | .2320    | .2320      | .2320        | .3068 | .2948 |
| 38 | .304  | .2380        | .2380    | .2380      | .2380        | .3147 | .3027 |
| 39 | .312  | .2440        | .2440    | .2440      | .2440        | .3226 | .3106 |
| 40 | .320  | .2500        | .2500    | .2500      | .2500        | .3305 | .3185 |
| 41 | .328  | .2560        | .2560    | .2560      | .2560        | .3384 | .3264 |
| 42 | .336  | .2620        | .2620    | .2620      | .2620        | .3463 | .3343 |
| 43 | .344  | .2680        | .2680    | .2680      | .2680        | .3542 | .3422 |
| 44 | .352  | .2740        | .2740    | .2740      | .2740        | .3621 | .3501 |
| 45 | .360  | .2800        | .2800    | .2800      | .2800        | .3700 | .3580 |
| 46 | .368  | .2860        | .2860    | .2860      | .2860        | .3779 | .3659 |
| 47 | .376  | .2920        | .2920    | .2920      | .2920        | .3858 | .3738 |
| 48 | .384  | .2980        | .2980    | .2980      | .2980        | .3937 | .3817 |
| 49 | .392  | .3040        | .3040    | .3040      | .3040        | .4016 | .3896 |
| 50 | .400  | .3100        | .3100    | .3100      | .3100        | .4095 | .3975 |
| 51 | .408  | .3160        | .3160    | .3160      | .3160        | .4174 | .4054 |
| 52 | .416  | .3220        | .3220    | .3220      | .3220        | .4253 | .4133 |
| 53 | .424  | .3280        | .3280    | .3280      | .3280        | .4332 | .4212 |
| 54 | .432  | .3340        | .3340    | .3340      | .3340        | .4411 | .4291 |
| 55 | .440  | .3400        | .3400    | .3400      | .3400        | .4490 | .4370 |
| 56 | .448  | .3460        | .3460    | .3460      | .3460        | .4569 | .4449 |
| 57 | .456  | .3520        | .3520    | .3520      | .3520        | .4648 | .4528 |
| 58 | .464  | .3580        | .3580    | .3580      | .3580        | .4727 | .4607 |
| 59 | .472  | .3640        | .3640    | .3640      | .3640        | .4806 | .4686 |
| 60 | .480  | .3700        | .3700    | .3700      | .3700        | .4885 | .4765 |
| 61 | .488  | .3760        | .3760    | .3760      | .3760        | .4964 | .4844 |
| 62 | .496  | .3820        | .3820    | .3820      | .3820        | .5043 | .4923 |
| 63 | .504  | .3880        | .3880    | .3880      | .3880        | .5122 | .5002 |
| 64 | .512  | .3940        | .3940    | .3940      | .3940        | .5201 | .5081 |
| 65 | .520  | .4000        | .4000    | .4000      | .4000        | .5280 | .5160 |
| 66 | .528  | .4060        | .4060    | .4060      | .4060        | .5359 | .5239 |
| 67 | .536  | .4120        | .4120    | .4120      | .4120        | .5438 | .5318 |
| 68 | .544  | .4180        | .4180    | .4180      | .4180        | .5517 | .5397 |
| 69 | .552  | .4240        | .4240    | .4240      | .4240        | .5596 | .5476 |
| 70 | .560  | .4300        | .4300    | .4300      | .4300        | .5675 | .5555 |
| 71 | .568  | .4360        | .4360    | .4360      | .4360        | .5754 | .5634 |
| 72 | .576  | .4420        | .4420    | .4420      | .4420        | .5833 | .5713 |
| 73 | .584  | .4480        | .4480    | .4480      | .4480        | .5912 | .5792 |
| 74 | .592  | .4540        | .4540    | .4540      | .4540        | .5991 | .5871 |
| 75 | .600  | .4600        | .4600    | .4600      | .4600        | .6070 | .5950 |
| 76 | .608  | .4660        | .4660    | .4660      | .4660        | .6149 | .6029 |
| 77 | .616  | .4720        | .4720    | .4720      | .4720        | .6228 | .6108 |
| 78 | .624  | .4780        | .4780    | .4780      | .4780        | .6307 | .6187 |
| 79 | .632  | .4840        | .4840    | .4840      | .4840        | .6386 | .6266 |
| 80 | .640  | .4900        | .4900    | .4900      | .4900        | .6465 | .6345 |
| 81 | .648  | .4960        | .4960    | .4960      | .4960        | .6544 | .6424 |
| 82 | .656  | .5020        | .5020    | .5020      | .5020        | .6623 | .6503 |
| 83 | .664  | .5080        | .5080    | .5080      | .5080        | .6702 | .6582 |
| 84 | .672  | .5140        | .5140    | .5140      | .5140        | .6781 | .6661 |
| 85 | .680  | .5200        | .5200    | .5200      | .5200        | .6860 | .6740 |
| 86 | .688  | .5260        | .5260    | .5260      | .5260        | .6939 | .6819 |
| 87 | .696  | .5320        | .5320    | .5320      | .5320        | .7018 | .6898 |
| 88 | .704  | .5380        | .5380    | .5380      | .5380        | .7097 | .6977 |
| 89 | .712  | .5440        | .5440    | .5440      | .5440        | .7176 | .7056 |
| 90 | .720  | .5500        | .5500    | .5500      | .5500        | .7255 | .7135 |
| 91 | .728  | .5560        | .5560    | .5560      | .5560        | .7334 | .7214 |
| 92 | .736  | .5620        | .5620    | .5620      | .5620        | .7413 | .7293 |
| 93 | .744  | .5680        | .5680    | .5680      | .5680        | .7492 | .7372 |
| 94 | .752  | .5740        | .5740    | .5740      | .5740        | .7571 | .7451 |
| 95 | .760  | .5800        | .5800    | .5800      | .5800        | .7650 | .7530 |
| 96 | .768  | .5860        | .5860    | .5860      | .5860        | .7729 | .7609 |
| 97 | .776  | .5920        | .5920    | .5920      | .5920        | .7808 | .7688 |
| 98 | .784  | .5980        | .5980    | .5980      | .5980        | .7887 | .7767 |
| 99 | .792  | .6040        | .6040    | .6040      | .6040        | .7966 | .7846 |



SPECTRA HANDCASTING OCTOBER 11, 1962 DIGITIZED BY JONAS HOPKINS LAB.

DATE = 10/1/59      SIG. IN. = 8.2      RECORD = 25  
 MARK = 0      SIG. IN. = 12.9  
 TOTAL LT. = 121.1      CURVE TYPE = 2      WIND SPEED = 25  
 NOISE LEVEL = .0045

| N  | FREQ. | CHIRP F.T. 2 | FILTERED | LESS NOISE | LOAR. F.T. 2 | UPPER | LOWER |
|----|-------|--------------|----------|------------|--------------|-------|-------|
| 0  | .000  | .0129        | .0129    | .0084      | .0084        | .0155 | .0054 |
| 1  | .008  | .0159        | .0159    | .0151      | .0151        | .0228 | .0099 |
| 2  | .016  | .0219        | .0219    | .0219      | .0219        | .0303 | .0184 |
| 3  | .024  | .0279        | .0279    | .0279      | .0279        | .0382 | .0263 |
| 4  | .032  | .0339        | .0339    | .0339      | .0339        | .0461 | .0340 |
| 5  | .040  | .0399        | .0399    | .0399      | .0399        | .0540 | .0419 |
| 6  | .048  | .0459        | .0459    | .0459      | .0459        | .0619 | .0498 |
| 7  | .056  | .0519        | .0519    | .0519      | .0519        | .0698 | .0577 |
| 8  | .064  | .0579        | .0579    | .0579      | .0579        | .0777 | .0656 |
| 9  | .072  | .0639        | .0639    | .0639      | .0639        | .0856 | .0735 |
| 10 | .080  | .0699        | .0699    | .0699      | .0699        | .0935 | .0814 |
| 11 | .088  | .0759        | .0759    | .0759      | .0759        | .1014 | .0893 |
| 12 | .096  | .0819        | .0819    | .0819      | .0819        | .1093 | .0972 |
| 13 | .104  | .0879        | .0879    | .0879      | .0879        | .1172 | .1051 |
| 14 | .112  | .0939        | .0939    | .0939      | .0939        | .1251 | .1130 |
| 15 | .120  | .1000        | .1000    | .1000      | .1000        | .1330 | .1209 |
| 16 | .128  | .1060        | .1060    | .1060      | .1060        | .1409 | .1288 |
| 17 | .136  | .1120        | .1120    | .1120      | .1120        | .1488 | .1367 |
| 18 | .144  | .1180        | .1180    | .1180      | .1180        | .1567 | .1446 |
| 19 | .152  | .1240        | .1240    | .1240      | .1240        | .1646 | .1525 |
| 20 | .160  | .1300        | .1300    | .1300      | .1300        | .1725 | .1604 |
| 21 | .168  | .1360        | .1360    | .1360      | .1360        | .1804 | .1683 |
| 22 | .176  | .1420        | .1420    | .1420      | .1420        | .1883 | .1762 |
| 23 | .184  | .1480        | .1480    | .1480      | .1480        | .1962 | .1841 |
| 24 | .192  | .1540        | .1540    | .1540      | .1540        | .2041 | .1920 |
| 25 | .200  | .1600        | .1600    | .1600      | .1600        | .2120 | .2000 |
| 26 | .208  | .1660        | .1660    | .1660      | .1660        | .2199 | .2079 |
| 27 | .216  | .1720        | .1720    | .1720      | .1720        | .2278 | .2158 |
| 28 | .224  | .1780        | .1780    | .1780      | .1780        | .2357 | .2237 |
| 29 | .232  | .1840        | .1840    | .1840      | .1840        | .2436 | .2316 |
| 30 | .240  | .1900        | .1900    | .1900      | .1900        | .2515 | .2395 |
| 31 | .248  | .1960        | .1960    | .1960      | .1960        | .2594 | .2474 |
| 32 | .256  | .2020        | .2020    | .2020      | .2020        | .2673 | .2553 |
| 33 | .264  | .2080        | .2080    | .2080      | .2080        | .2752 | .2632 |
| 34 | .272  | .2140        | .2140    | .2140      | .2140        | .2831 | .2711 |
| 35 | .280  | .2200        | .2200    | .2200      | .2200        | .2910 | .2790 |
| 36 | .288  | .2260        | .2260    | .2260      | .2260        | .2989 | .2869 |
| 37 | .296  | .2320        | .2320    | .2320      | .2320        | .3068 | .2948 |
| 38 | .304  | .2380        | .2380    | .2380      | .2380        | .3147 | .3027 |
| 39 | .312  | .2440        | .2440    | .2440      | .2440        | .3226 | .3106 |
| 40 | .320  | .2500        | .2500    | .2500      | .2500        | .3305 | .3185 |
| 41 | .328  | .2560        | .2560    | .2560      | .2560        | .3384 | .3264 |
| 42 | .336  | .2620        | .2620    | .2620      | .2620        | .3463 | .3343 |
| 43 | .344  | .2680        | .2680    | .2680      | .2680        | .3542 | .3422 |
| 44 | .352  | .2740        | .2740    | .2740      | .2740        | .3621 | .3501 |
| 45 | .360  | .2800        | .2800    | .2800      | .2800        | .3700 | .3580 |
| 46 | .368  | .2860        | .2860    | .2860      | .2860        | .3779 | .3659 |
| 47 | .376  | .2920        | .2920    | .2920      | .2920        | .3858 | .3738 |
| 48 | .384  | .2980        | .2980    | .2980      | .2980        | .3937 | .3817 |
| 49 | .392  | .3040        | .3040    | .3040      | .3040        | .4016 | .3896 |
| 50 | .400  | .3100        | .3100    | .3100      | .3100        | .4095 | .3975 |
| 51 | .408  | .3160        | .3160    | .3160      | .3160        | .4174 | .4054 |
| 52 | .416  | .3220        | .3220    | .3220      | .3220        | .4253 | .4133 |
| 53 | .424  | .3280        | .3280    | .3280      | .3280        | .4332 | .4212 |
| 54 | .432  | .3340        | .3340    | .3340      | .3340        | .4411 | .4291 |
| 55 | .440  | .3400        | .3400    | .3400      | .3400        | .4490 | .4370 |
| 56 | .448  | .3460        | .3460    | .3460      | .3460        | .4569 | .4449 |
| 57 | .456  | .3520        | .3520    | .3520      | .3520        | .4648 | .4528 |

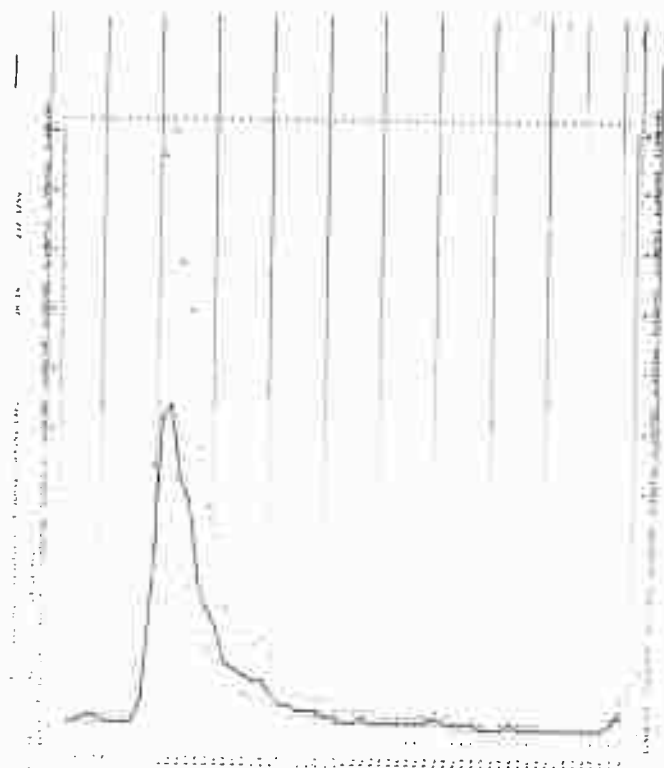




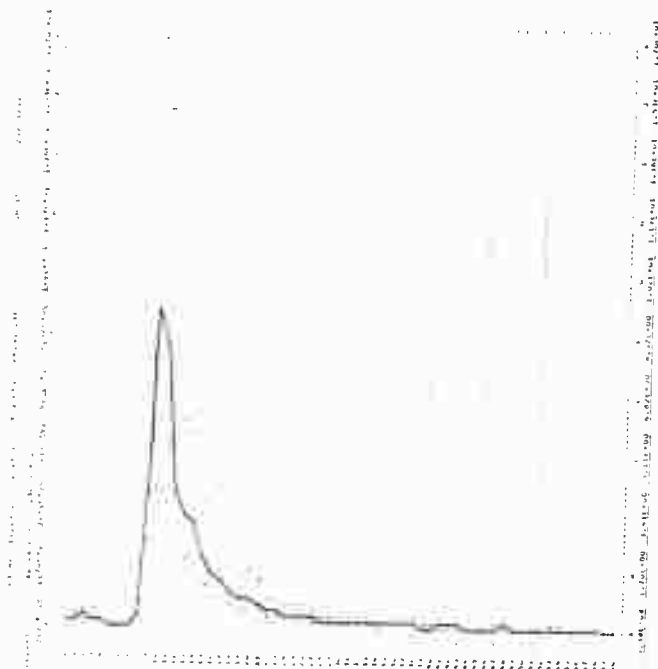


## SPECTRA HINGČASTING OČIŠČEN L1,1767 UGOSTREČE PY ŽOLTE MOHARINS LAB.

| DATE = 11/2/53  |      | APR. 14            |          | ALCOHOL = JM 14   |           |       |       |
|-----------------|------|--------------------|----------|-------------------|-----------|-------|-------|
| HOUR = 11       |      | SUN. POS. = 31.5   |          | SUN. ELEV. = 81.0 |           |       |       |
| LOCAL UT = 1310 |      | LOCAL TIME = 0.016 |          | WIND SPEED = 30   |           |       |       |
| N               | PAR. | UNIT-F1.2          | FILTERED | LESS NOISE        | UNIT-F1.2 | UPPER | LOWER |
| 0               | 000  | 1.011              | 1.011    | 1.018             | 1.018     | 1.110 | 0.951 |
| 1               | 008  | 1.016              | 1.016    | 1.013             | 1.013     | 1.021 | 1.010 |
| 2               | 011  | 1.017              | 1.017    | 1.009             | 1.009     | 1.022 | 1.010 |
| 3               | 017  | 1.016              | 1.016    | 1.015             | 1.015     | 1.011 | 1.007 |
| 4               | 022  | 1.011              | 1.011    | 1.016             | 1.016     | 1.016 | 1.011 |
| 5               | 025  | 1.013              | 1.013    | 1.010             | 1.010     | 1.017 | 1.013 |
| 6               | 033  | 1.013              | 1.013    | 1.010             | 1.010     | 1.009 | 1.015 |
| 7               | 039  | 1.008              | 1.008    | 1.011             | 1.011     | 1.012 | 1.008 |
| 8               | 044  | 1.008              | 1.008    | 1.010             | 1.010     | 1.013 | 1.005 |
| 9               | 050  | 1.002              | 1.002    | 1.000             | 1.000     | 1.006 | 0.992 |
| 10              | 056  | 1.001              | 1.001    | 1.001             | 1.001     | 1.000 | 0.998 |
| 11              | 061  | 1.016              | 1.016    | 1.015             | 1.015     | 1.018 | 1.013 |
| 12              | 067  | 1.012              | 1.012    | 1.013             | 1.013     | 1.011 | 1.008 |
| 13              | 072  | 1.001              | 1.001    | 1.000             | 1.000     | 1.003 | 0.998 |
| 14              | 078  | 1.012              | 1.012    | 1.009             | 1.009     | 1.012 | 1.009 |
| 15              | 081  | 1.008              | 1.008    | 1.008             | 1.008     | 1.003 | 1.003 |
| 16              | 085  | 1.001              | 1.001    | 1.000             | 1.000     | 1.003 | 0.998 |
| 17              | 089  | 1.016              | 1.016    | 1.015             | 1.015     | 1.009 | 1.016 |
| 18              | 093  | 1.001              | 1.001    | 1.000             | 1.000     | 1.003 | 0.998 |
| 19              | 101  | 1.011              | 1.011    | 1.010             | 1.010     | 1.013 | 1.008 |
| 20              | 111  | 1.008              | 1.008    | 1.007             | 1.007     | 1.011 | 1.005 |
| 21              | 117  | 1.001              | 1.001    | 1.000             | 1.000     | 1.003 | 0.998 |
| 22              | 122  | 1.018              | 1.018    | 1.015             | 1.015     | 1.006 | 1.006 |
| 23              | 128  | 1.008              | 1.008    | 1.012             | 1.012     | 1.007 | 1.004 |
| 24              | 133  | 1.011              | 1.011    | 1.010             | 1.010     | 1.011 | 1.007 |
| 25              | 139  | 1.011              | 1.011    | 1.008             | 1.008     | 1.010 | 1.011 |
| 26              | 146  | 1.008              | 1.008    | 1.008             | 1.008     | 1.015 | 1.005 |
| 27              | 150  | 1.001              | 1.001    | 1.000             | 1.000     | 1.003 | 0.998 |
| 28              | 156  | 1.001              | 1.001    | 1.000             | 1.000     | 1.003 | 0.998 |
| 29              | 163  | 1.011              | 1.011    | 1.010             | 1.010     | 1.012 | 1.008 |
| 30              | 169  | 1.011              | 1.011    | 1.010             | 1.010     | 1.011 | 1.008 |
| 31              | 176  | 1.012              | 1.012    | 1.010             | 1.010     | 1.010 | 1.005 |
| 32              | 184  | 1.016              | 1.016    | 1.015             | 1.015     | 1.010 | 1.005 |
| 33              | 193  | 1.015              | 1.015    | 1.015             | 1.015     | 1.016 | 1.010 |
| 34              | 199  | 1.001              | 1.001    | 1.000             | 1.000     | 1.003 | 0.998 |
| 35              | 196  | 1.011              | 1.011    | 1.010             | 1.010     | 1.011 | 1.008 |
| 36              | 206  | 1.015              | 1.015    | 1.015             | 1.015     | 1.011 | 1.005 |
| 37              | 208  | 1.008              | 1.008    | 1.008             | 1.008     | 1.011 | 1.002 |
| 38              | 214  | 1.000              | 1.000    | 1.000             | 1.000     | 1.003 | 0.998 |
| 39              | 217  | 1.015              | 1.015    | 1.015             | 1.015     | 1.012 | 1.007 |
| 40              | 223  | 1.001              | 1.001    | 1.000             | 1.000     | 1.003 | 0.998 |
| 41              | 229  | 1.001              | 1.001    | 1.000             | 1.000     | 1.003 | 0.998 |
| 42              | 233  | 1.007              | 1.007    | 1.005             | 1.005     | 1.007 | 1.004 |
| 43              | 239  | 1.001              | 1.001    | 1.000             | 1.000     | 1.003 | 0.998 |
| 44              | 246  | 1.001              | 1.001    | 1.000             | 1.000     | 1.003 | 0.998 |
| 45              | 251  | 1.016              | 1.016    | 1.015             | 1.015     | 1.012 | 1.007 |
| 46              | 254  | 1.011              | 1.011    | 1.010             | 1.010     | 1.011 | 1.008 |
| 47              | 261  | 1.001              | 1.001    | 1.000             | 1.000     | 1.003 | 0.998 |

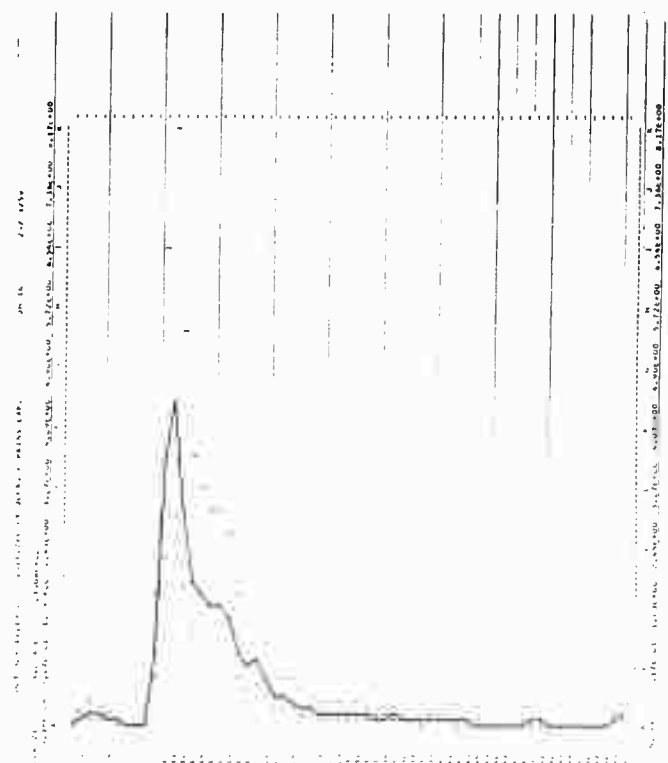

$$\{x_1, \dots, x_{n-1}, x_n\} \in \mathcal{X}_n \quad \text{if and only if} \quad x_1, \dots, x_{n-1} \in \mathcal{X}_{n-1} \quad \text{and} \quad x_n \in \mathcal{X}_n \setminus \mathcal{X}_{n-1}.$$

| №  | Дата | События | Политическая | ЦЕНЗ. ПОД. | Примеч. |
|----|------|---------|--------------|------------|---------|
| 1  | 1900 | 1-10    | 1-10         | 1-10       | 1-10    |
| 2  | 1901 | 1-10    | 1-10         | 1-10       | 1-10    |
| 3  | 1902 | 1-10    | 1-10         | 1-10       | 1-10    |
| 4  | 1903 | 1-10    | 1-10         | 1-10       | 1-10    |
| 5  | 1904 | 1-10    | 1-10         | 1-10       | 1-10    |
| 6  | 1905 | 1-10    | 1-10         | 1-10       | 1-10    |
| 7  | 1906 | 1-10    | 1-10         | 1-10       | 1-10    |
| 8  | 1907 | 1-10    | 1-10         | 1-10       | 1-10    |
| 9  | 1908 | 1-10    | 1-10         | 1-10       | 1-10    |
| 10 | 1909 | 1-10    | 1-10         | 1-10       | 1-10    |
| 11 | 1910 | 1-10    | 1-10         | 1-10       | 1-10    |
| 12 | 1911 | 1-10    | 1-10         | 1-10       | 1-10    |
| 13 | 1912 | 1-10    | 1-10         | 1-10       | 1-10    |
| 14 | 1913 | 1-10    | 1-10         | 1-10       | 1-10    |
| 15 | 1914 | 1-10    | 1-10         | 1-10       | 1-10    |
| 16 | 1915 | 1-10    | 1-10         | 1-10       | 1-10    |
| 17 | 1916 | 1-10    | 1-10         | 1-10       | 1-10    |
| 18 | 1917 | 1-10    | 1-10         | 1-10       | 1-10    |
| 19 | 1918 | 1-10    | 1-10         | 1-10       | 1-10    |
| 20 | 1919 | 1-10    | 1-10         | 1-10       | 1-10    |
| 21 | 1920 | 1-10    | 1-10         | 1-10       | 1-10    |
| 22 | 1921 | 1-10    | 1-10         | 1-10       | 1-10    |
| 23 | 1922 | 1-10    | 1-10         | 1-10       | 1-10    |
| 24 | 1923 | 1-10    | 1-10         | 1-10       | 1-10    |
| 25 | 1924 | 1-10    | 1-10         | 1-10       | 1-10    |
| 26 | 1925 | 1-10    | 1-10         | 1-10       | 1-10    |
| 27 | 1926 | 1-10    | 1-10         | 1-10       | 1-10    |
| 28 | 1927 | 1-10    | 1-10         | 1-10       | 1-10    |
| 29 | 1928 | 1-10    | 1-10         | 1-10       | 1-10    |
| 30 | 1929 | 1-10    | 1-10         | 1-10       | 1-10    |
| 31 | 1930 | 1-10    | 1-10         | 1-10       | 1-10    |
| 32 | 1931 | 1-10    | 1-10         | 1-10       | 1-10    |
| 33 | 1932 | 1-10    | 1-10         | 1-10       | 1-10    |
| 34 | 1933 | 1-10    | 1-10         | 1-10       | 1-10    |
| 35 | 1934 | 1-10    | 1-10         | 1-10       | 1-10    |
| 36 | 1935 | 1-10    | 1-10         | 1-10       | 1-10    |
| 37 | 1936 | 1-10    | 1-10         | 1-10       | 1-10    |
| 38 | 1937 | 1-10    | 1-10         | 1-10       | 1-10    |
| 39 | 1938 | 1-10    | 1-10         | 1-10       | 1-10    |
| 40 | 1939 | 1-10    | 1-10         | 1-10       | 1-10    |
| 41 | 1940 | 1-10    | 1-10         | 1-10       | 1-10    |
| 42 | 1941 | 1-10    | 1-10         | 1-10       | 1-10    |
| 43 | 1942 | 1-10    | 1-10         | 1-10       | 1-10    |
| 44 | 1943 | 1-10    | 1-10         | 1-10       | 1-10    |
| 45 | 1944 | 1-10    | 1-10         | 1-10       | 1-10    |
| 46 | 1945 | 1-10    | 1-10         | 1-10       | 1-10    |
| 47 | 1946 | 1-10    | 1-10         | 1-10       | 1-10    |
| 48 | 1947 | 1-10    | 1-10         | 1-10       | 1-10    |
| 49 | 1948 | 1-10    | 1-10         | 1-10       | 1-10    |
| 50 | 1949 | 1-10    | 1-10         | 1-10       | 1-10    |
| 51 | 1950 | 1-10    | 1-10         | 1-10       | 1-10    |
| 52 | 1951 | 1-10    | 1-10         | 1-10       | 1-10    |
| 53 | 1952 | 1-10    | 1-10         | 1-10       | 1-10    |
| 54 | 1953 | 1-10    | 1-10         | 1-10       | 1-10    |
| 55 | 1954 | 1-10    | 1-10         | 1-10       | 1-10    |
| 56 | 1955 | 1-10    | 1-10         | 1-10       | 1-10    |
| 57 | 1956 | 1-10    | 1-10         | 1-10       | 1-10    |
| 58 | 1957 | 1-10    | 1-10         | 1-10       | 1-10    |
| 59 | 1958 | 1-10    | 1-10         | 1-10       | 1-10    |
| 60 | 1959 | 1-10    | 1-10         | 1-10       | 1-10    |
| 61 | 1960 | 1-10    | 1-10         | 1-10       | 1-10    |
| 62 | 1961 | 1-10    | 1-10         | 1-10       | 1-10    |
| 63 | 1962 | 1-10    | 1-10         | 1-10       | 1-10    |
| 64 | 1963 | 1-10    | 1-10         | 1-10       | 1-10    |
| 65 | 1964 | 1-10    | 1-10         | 1-10       | 1-10    |
| 66 | 1965 | 1-10    | 1-10         | 1-10       | 1-10    |
| 67 | 1966 | 1-10    | 1-10         | 1-10       | 1-10    |
| 68 | 1967 | 1-10    | 1-10         | 1-10       | 1-10    |
| 69 | 1968 | 1-10    | 1-10         | 1-10       | 1-10    |
| 70 | 1969 | 1-10    | 1-10         | 1-10       | 1-10    |
| 71 | 1970 | 1-10    | 1-10         | 1-10       | 1-10    |

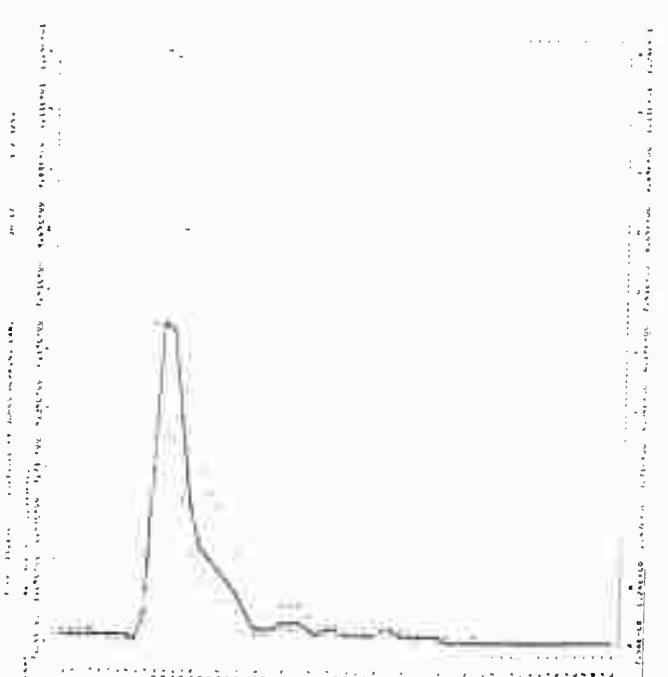


SPECTRA MINUCASTING UC1004X 11.1.1982 U101712L BY JOHN J. NOPIKINS LAB.

| DATE: 01/27/71 |      | TIME: 1:16  |         | SUNSPOT: 10    |           |       |       |
|----------------|------|-------------|---------|----------------|-----------|-------|-------|
| MAGN. OF LIPS  |      | CLOUDY: 26% |         | WIND SPEED: 25 |           |       |       |
| M              | PRG  | UNIT/PRG    | PICTURE | LESS ACID      | UNITS/PRG | MPH/4 | LOSER |
| 0              | 0000 | 0000        | 0000    | 0000           | 0000      | 0000  | 0000  |
| 1              | 0000 | 0000        | 0000    | 0000           | 0000      | 0000  | 0000  |
| 2              | 0001 | 0001        | 0001    | 0001           | 0001      | 0001  | 0001  |
| 3              | 0001 | 0001        | 0001    | 0001           | 0001      | 0001  | 0001  |
| 4              | 0002 | 0002        | 0002    | 0002           | 0002      | 0002  | 0002  |
| 5              | 0003 | 0003        | 0003    | 0003           | 0003      | 0003  | 0003  |
| 6              | 0003 | 0003        | 0003    | 0003           | 0003      | 0003  | 0003  |
| 7              | 0004 | 0004        | 0004    | 0004           | 0004      | 0004  | 0004  |
| 8              | 0004 | 0004        | 0004    | 0004           | 0004      | 0004  | 0004  |
| 9              | 0005 | 0005        | 0005    | 0005           | 0005      | 0005  | 0005  |
| 10             | 0006 | 0006        | 0006    | 0006           | 0006      | 0006  | 0006  |
| 11             | 0006 | 0006        | 0006    | 0006           | 0006      | 0006  | 0006  |
| 12             | 0007 | 0007        | 0007    | 0007           | 0007      | 0007  | 0007  |
| 13             | 0007 | 0007        | 0007    | 0007           | 0007      | 0007  | 0007  |
| 14             | 0008 | 0008        | 0008    | 0008           | 0008      | 0008  | 0008  |
| 15             | 0008 | 0008        | 0008    | 0008           | 0008      | 0008  | 0008  |
| 16             | 0009 | 0009        | 0009    | 0009           | 0009      | 0009  | 0009  |
| 17             | 0009 | 0009        | 0009    | 0009           | 0009      | 0009  | 0009  |
| 18             | 0009 | 0009        | 0009    | 0009           | 0009      | 0009  | 0009  |
| 19             | 0009 | 0009        | 0009    | 0009           | 0009      | 0009  | 0009  |
| 20             | 0010 | 0010        | 0010    | 0010           | 0010      | 0010  | 0010  |
| 21             | 0010 | 0010        | 0010    | 0010           | 0010      | 0010  | 0010  |
| 22             | 0010 | 0010        | 0010    | 0010           | 0010      | 0010  | 0010  |
| 23             | 0010 | 0010        | 0010    | 0010           | 0010      | 0010  | 0010  |
| 24             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 25             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 26             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 27             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 28             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 29             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 30             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 31             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 32             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 33             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 34             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 35             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 36             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 37             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 38             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 39             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 40             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 41             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 42             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 43             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 44             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 45             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 46             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 47             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 48             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 49             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 50             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |
| 51             | 0011 | 0011        | 0011    | 0011           | 0011      | 0011  | 0011  |


$$\{x \in G : |x| = n\} \cap (\pi_1^{-1}(N_{n-1}) \cup \pi_1^{-1}(N_n)) \neq \emptyset \quad \text{for } x \in G, \quad |x| \geq 1, \quad |x| \neq n+1.$$

| Date: 10/1/77   |       | Page: 1            |          | Sheet: 1         |        | Job: 1             |        |
|-----------------|-------|--------------------|----------|------------------|--------|--------------------|--------|
| Name: J. J. J.  |       | Address: J. J. J.  |          | City: J. J. J.   |        | State: J. J. J.    |        |
| Phone: J. J. J. |       | Fax: J. J. J.      |          | E-mail: J. J. J. |        | Web: J. J. J.      |        |
| Title: J. J. J. |       | Position: J. J. J. |          | Salary: J. J. J. |        | Benefits: J. J. J. |        |
| N               | Est.  | Unit Price         | Quantity | Unit Cost        | Amount | Price              | Amount |
| 0               | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 1               | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 2               | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 3               | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 4               | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 5               | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 6               | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 7               | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 8               | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 9               | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 10              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 11              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 12              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 13              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 14              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 15              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 16              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 17              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 18              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 19              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 20              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 21              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 22              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 23              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 24              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 25              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 26              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 27              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 28              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 29              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 30              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 31              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 32              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 33              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 34              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 35              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 36              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 37              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 38              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 39              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 40              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 41              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |
| 42              | 0.000 | 0.000              | 0.000    | 0.000            | 0.000  | 0.000              | 0.000  |





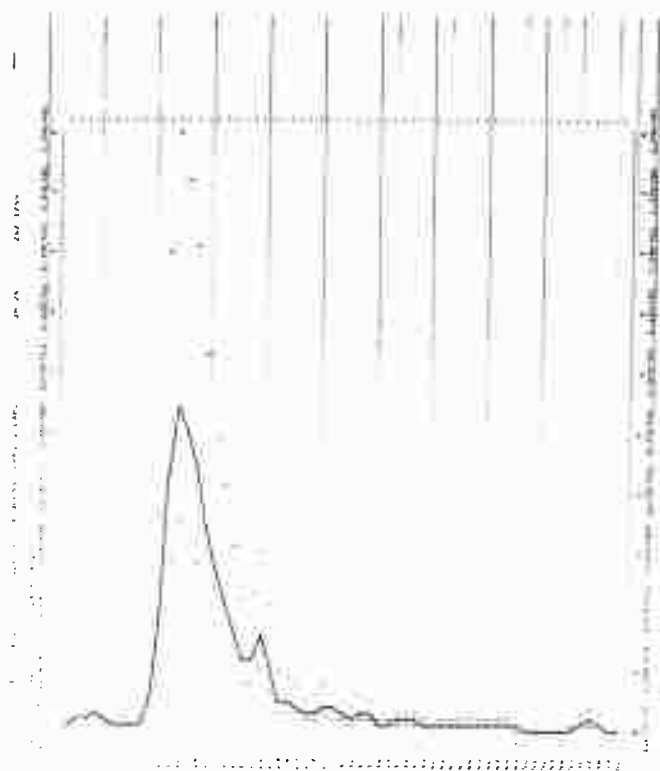
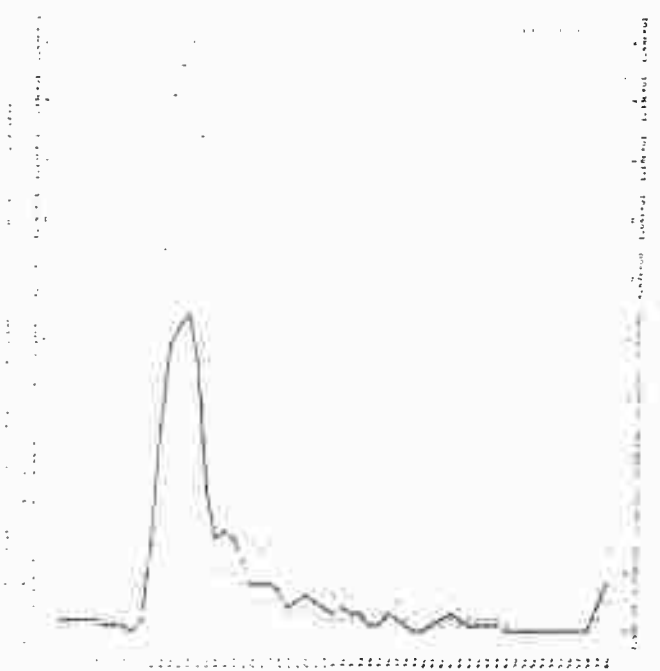




SPECTRA HINDCASTING OCTOBER 11, 1962 DISSEMINATED BY JOHN H MCPHIN, C.A.

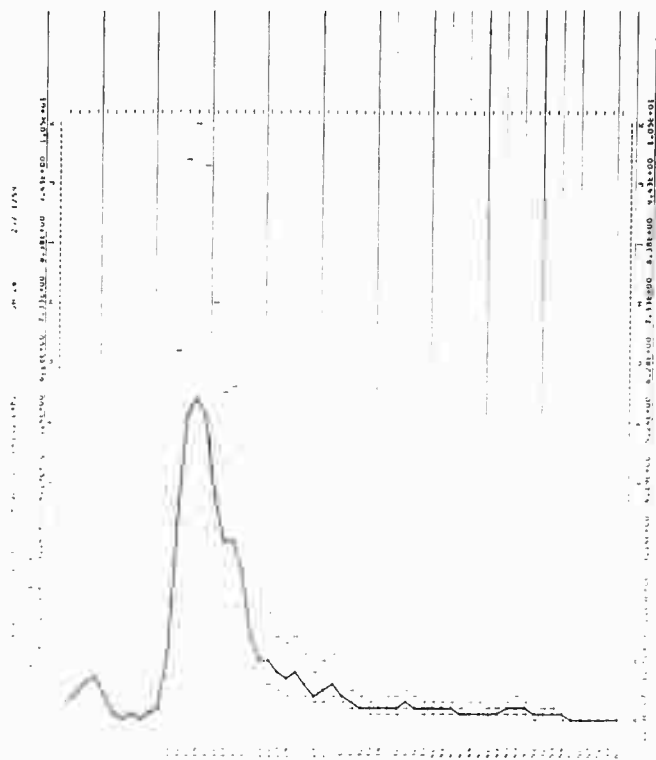
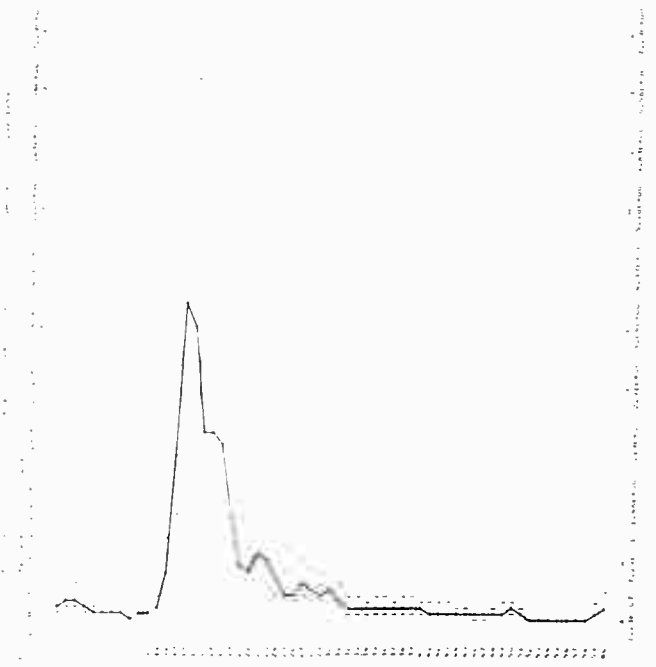
|                 |               |       |                |       |
|-----------------|---------------|-------|----------------|-------|
| DATA = 100 1/2V | AV, 10        | 7.5   | PS(QND) =      | JM 24 |
| MEAN = 12       | SIG, MGT. =   | 35.3  |                |       |
| 1.6 UF = 1.2    | QCM, 10M =    | 27.8  |                |       |
|                 | NOISE LEVEL = | 0.270 | 1.100 1/2V 0 = | 20    |

|     | M    | PRE.  | UNIT-PT.2 | FILTERED | LESS-NOISE | LOW-F.1.2 | UPPER | LOWER |
|-----|------|-------|-----------|----------|------------|-----------|-------|-------|
| 0   | .400 | .2817 | .2817     | .2319    | .2319      | .4311     | .1889 |       |
| 1   | .501 | .4332 | .4332     | .4423    | .4423      | .4730     | .4270 |       |
| 2   | .601 | .5849 | .5849     | .5725    | .5725      | .7603     | .4467 |       |
| 3   | .701 | .7219 | .7219     | .7310    | .7310      | .9287     | .2702 |       |
| 4   | .801 | .8537 | .8537     | .8628    | .8628      | .9581     | .0419 |       |
| 5   | .901 | .9727 | .9727     | .9818    | .9818      | .9836     | .0163 |       |
| 6   | .955 | .9721 | .9721     | .9813    | .9813      | .9776     | .0183 |       |
| 7   | .979 | .9720 | .9720     | .9812    | .9812      | .9775     | .0181 |       |
| 8   | .984 | .9715 | .9715     | .9808    | .9808      | .9768     | .0180 |       |
| 9   | .989 | .9714 | .9714     | .9807    | .9807      | .9767     | .0179 |       |
| 10  | .993 | .9713 | .9713     | .9806    | .9806      | .9766     | .0178 |       |
| 11  | .996 | .9712 | .9712     | .9805    | .9805      | .9765     | .0177 |       |
| 12  | .998 | .9711 | .9711     | .9804    | .9804      | .9764     | .0176 |       |
| 13  | .997 | .9710 | .9710     | .9803    | .9803      | .9763     | .0175 |       |
| 14  | .998 | .9709 | .9709     | .9802    | .9802      | .9762     | .0174 |       |
| 15  | .999 | .9708 | .9708     | .9801    | .9801      | .9761     | .0173 |       |
| 16  | .999 | .9707 | .9707     | .9800    | .9800      | .9760     | .0172 |       |
| 17  | .999 | .9706 | .9706     | .9799    | .9799      | .9759     | .0171 |       |
| 18  | .999 | .9705 | .9705     | .9798    | .9798      | .9758     | .0170 |       |
| 19  | .999 | .9704 | .9704     | .9797    | .9797      | .9757     | .0169 |       |
| 20  | .999 | .9703 | .9703     | .9796    | .9796      | .9756     | .0168 |       |
| 21  | .999 | .9702 | .9702     | .9795    | .9795      | .9755     | .0167 |       |
| 22  | .999 | .9701 | .9701     | .9794    | .9794      | .9754     | .0166 |       |
| 23  | .999 | .9700 | .9700     | .9793    | .9793      | .9753     | .0165 |       |
| 24  | .999 | .9699 | .9699     | .9792    | .9792      | .9752     | .0164 |       |
| 25  | .999 | .9698 | .9698     | .9791    | .9791      | .9751     | .0163 |       |
| 26  | .999 | .9697 | .9697     | .9790    | .9790      | .9750     | .0162 |       |
| 27  | .999 | .9696 | .9696     | .9789    | .9789      | .9749     | .0161 |       |
| 28  | .999 | .9695 | .9695     | .9788    | .9788      | .9748     | .0160 |       |
| 29  | .999 | .9694 | .9694     | .9787    | .9787      | .9747     | .0159 |       |
| 30  | .999 | .9693 | .9693     | .9786    | .9786      | .9746     | .0158 |       |
| 31  | .999 | .9692 | .9692     | .9785    | .9785      | .9745     | .0157 |       |
| 32  | .999 | .9691 | .9691     | .9784    | .9784      | .9744     | .0156 |       |
| 33  | .999 | .9690 | .9690     | .9783    | .9783      | .9743     | .0155 |       |
| 34  | .999 | .9689 | .9689     | .9782    | .9782      | .9742     | .0154 |       |
| 35  | .999 | .9688 | .9688     | .9781    | .9781      | .9741     | .0153 |       |
| 36  | .999 | .9687 | .9687     | .9780    | .9780      | .9740     | .0152 |       |
| 37  | .999 | .9686 | .9686     | .9779    | .9779      | .9739     | .0151 |       |
| 38  | .999 | .9685 | .9685     | .9778    | .9778      | .9738     | .0150 |       |
| 39  | .999 | .9684 | .9684     | .9777    | .9777      | .9737     | .0149 |       |
| 40  | .999 | .9683 | .9683     | .9776    | .9776      | .9736     | .0148 |       |
| 41  | .999 | .9682 | .9682     | .9775    | .9775      | .9735     | .0147 |       |
| 42  | .999 | .9681 | .9681     | .9774    | .9774      | .9734     | .0146 |       |
| 43  | .999 | .9680 | .9680     | .9773    | .9773      | .9733     | .0145 |       |
| 44  | .999 | .9679 | .9679     | .9772    | .9772      | .9732     | .0144 |       |
| 45  | .999 | .9678 | .9678     | .9771    | .9771      | .9731     | .0143 |       |
| 46  | .999 | .9677 | .9677     | .9770    | .9770      | .9730     | .0142 |       |
| 47  | .999 | .9676 | .9676     | .9769    | .9769      | .9729     | .0141 |       |
| 48  | .999 | .9675 | .9675     | .9768    | .9768      | .9728     | .0140 |       |
| 49  | .999 | .9674 | .9674     | .9767    | .9767      | .9727     | .0139 |       |
| 50  | .999 | .9673 | .9673     | .9766    | .9766      | .9726     | .0138 |       |
| 51  | .999 | .9672 | .9672     | .9765    | .9765      | .9725     | .0137 |       |
| 52  | .999 | .9671 | .9671     | .9764    | .9764      | .9724     | .0136 |       |
| 53  | .999 | .9670 | .9670     | .9763    | .9763      | .9723     | .0135 |       |
| 54  | .999 | .9669 | .9669     | .9762    | .9762      | .9722     | .0134 |       |
| 55  | .999 | .9668 | .9668     | .9761    | .9761      | .9721     | .0133 |       |
| 56  | .999 | .9667 | .9667     | .9760    | .9760      | .9720     | .0132 |       |
| 57  | .999 | .9666 | .9666     | .9759    | .9759      | .9719     | .0131 |       |
| 58  | .999 | .9665 | .9665     | .9758    | .9758      | .9718     | .0130 |       |
| 59  | .999 | .9664 | .9664     | .9757    | .9757      | .9717     | .0129 |       |
| 60  | .999 | .9663 | .9663     | .9756    | .9756      | .9716     | .0128 |       |
| 61  | .999 | .9662 | .9662     | .9755    | .9755      | .9715     | .0127 |       |
| 62  | .999 | .9661 | .9661     | .9754    | .9754      | .9714     | .0126 |       |
| 63  | .999 | .9660 | .9660     | .9753    | .9753      | .9713     | .0125 |       |
| 64  | .999 | .9659 | .9659     | .9752    | .9752      | .9712     | .0124 |       |
| 65  | .999 | .9658 | .9658     | .9751    | .9751      | .9711     | .0123 |       |
| 66  | .999 | .9657 | .9657     | .9750    | .9750      | .9710     | .0122 |       |
| 67  | .999 | .9656 | .9656     | .9749    | .9749      | .9709     | .0121 |       |
| 68  | .999 | .9655 | .9655     | .9748    | .9748      | .9708     | .0120 |       |
| 69  | .999 | .9654 | .9654     | .9747    | .9747      | .9707     | .0119 |       |
| 70  | .999 | .9653 | .9653     | .9746    | .9746      | .9706     | .0118 |       |
| 71  | .999 | .9652 | .9652     | .9745    | .9745      | .9705     | .0117 |       |
| 72  | .999 | .9651 | .9651     | .9744    | .9744      | .9704     | .0116 |       |
| 73  | .999 | .9650 | .9650     | .9743    | .9743      | .9703     | .0115 |       |
| 74  | .999 | .9649 | .9649     | .9742    | .9742      | .9702     | .0114 |       |
| 75  | .999 | .9648 | .9648     | .9741    | .9741      | .9701     | .0113 |       |
| 76  | .999 | .9647 | .9647     | .9740    | .9740      | .9700     | .0112 |       |
| 77  | .999 | .9646 | .9646     | .9739    | .9739      | .9699     | .0111 |       |
| 78  | .999 | .9645 | .9645     | .9738    | .9738      | .9698     | .0110 |       |
| 79  | .999 | .9644 | .9644     | .9737    | .9737      | .9697     | .0109 |       |
| 80  | .999 | .9643 | .9643     | .9736    | .9736      | .9696     | .0108 |       |
| 81  | .999 | .9642 | .9642     | .9735    | .9735      | .9695     | .0107 |       |
| 82  | .999 | .9641 | .9641     | .9734    | .9734      | .9694     | .0106 |       |
| 83  | .999 | .9640 | .9640     | .9733    | .9733      | .9693     | .0105 |       |
| 84  | .999 | .9639 | .9639     | .9732    | .9732      | .9692     | .0104 |       |
| 85  | .999 | .9638 | .9638     | .9731    | .9731      | .9691     | .0103 |       |
| 86  | .999 | .9637 | .9637     | .9730    | .9730      | .9690     | .0102 |       |
| 87  | .999 | .9636 | .9636     | .9729    | .9729      | .9689     | .0101 |       |
| 88  | .999 | .9635 | .9635     | .9728    | .9728      | .9688     | .0100 |       |
| 89  | .999 | .9634 | .9634     | .9727    | .9727      | .9687     | .0099 |       |
| 90  | .999 | .9633 | .9633     | .9726    | .9726      | .9686     | .0098 |       |
| 91  | .999 | .9632 | .9632     | .9725    | .9725      | .9685     | .0097 |       |
| 92  | .999 | .9631 | .9631     | .9724    | .9724      | .9684     | .0096 |       |
| 93  | .999 | .9630 | .9630     | .9723    | .9723      | .9683     | .0095 |       |
| 94  | .999 | .9629 | .9629     | .9722    | .9722      | .9682     | .0094 |       |
| 95  | .999 | .9628 | .9628     | .9721    | .9721      | .9681     | .0093 |       |
| 96  | .999 | .9627 | .9627     | .9720    | .9720      | .9680     | .0092 |       |
| 97  | .999 | .9626 | .9626     | .9719    | .9719      | .9679     | .0091 |       |
| 98  | .999 | .9625 | .9625     | .9718    | .9718      | .9678     | .0090 |       |
| 99  | .999 | .9624 | .9624     | .9717    | .9717      | .9677     | .0089 |       |
| 100 | .999 | .9623 | .9623     | .9716    | .9716      | .9676     | .0088 |       |


$$\| \mathbf{f} \|_{\mathbf{H}^1(\mathbb{R}^n)} = \left( \int_{\mathbb{R}^n} |\nabla \mathbf{f}|^2 dx \right)^{1/2} \quad \text{and} \quad \| \mathbf{f} \|_{\mathbf{H}^2(\mathbb{R}^n)} = \left( \int_{\mathbb{R}^n} |\nabla^2 \mathbf{f}|^2 dx \right)^{1/2}.$$
$$\begin{array}{l} \frac{-k_1^2 I_1}{m(\zeta_1) \theta} \theta \leq \frac{1}{2} \varepsilon \leq \frac{1}{2} \theta \\ k_1^2 \leq \frac{1}{2} \theta \leq \frac{1}{2} k_1^2 \end{array} \quad \begin{array}{l} \frac{\theta^2 I_1}{m(\zeta_1) \theta} \leq \theta \\ \theta \leq \frac{1}{2} \theta \leq \theta \end{array} \quad \begin{array}{l} \frac{\theta^2 I_1}{m(\zeta_1) \theta} \leq \theta \\ \theta \leq \frac{1}{2} \theta \leq \theta \end{array}$$
[illegible]



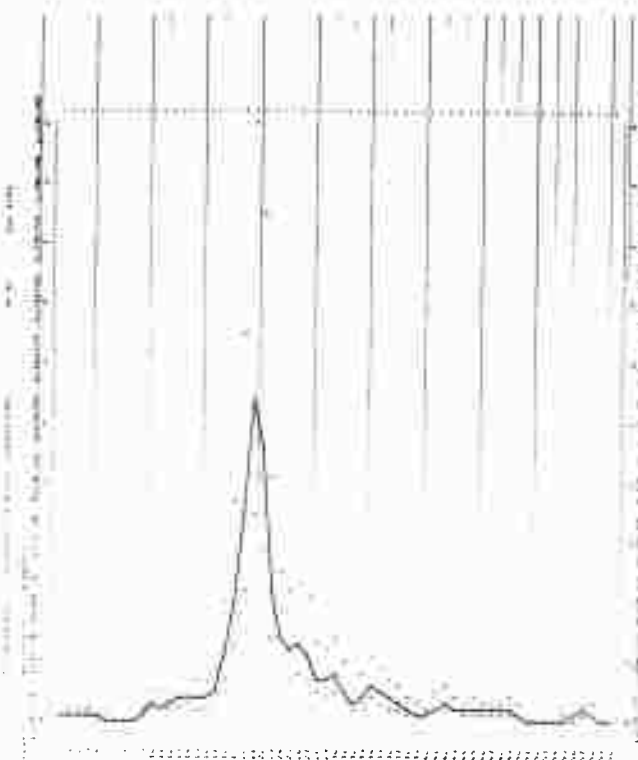
APR 18 1964  
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[illegible][illegible]



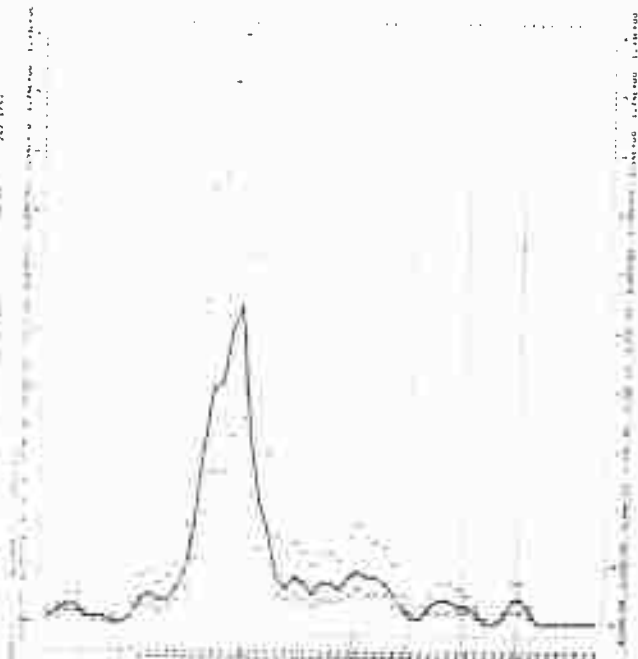
SPECTRA MONITORING OCTOBER 11, 1967 DIGITIZED BY JAMES HOPKINS LAB.

| DATE = 10/11/67     |            | SOLAR ACT. = 11.1 |          | SOLAR FLUX = 7.0 |            | SOLAR WAVELENGTH = 21.32 |       |
|---------------------|------------|-------------------|----------|------------------|------------|--------------------------|-------|
| TOTAL OF 1417       |            | SOLAR ACT. = 11.1 |          | SOLAR FLUX = 7.0 |            | SOLAR WAVELENGTH = 21.32 |       |
| NOISE LEVEL = .0007 |            | SOLAR ACT. = 11.1 |          | SOLAR FLUX = 7.0 |            | SOLAR WAVELENGTH = 21.32 |       |
| N                   | WAVELENGTH | UNIT-PT. 1        | FILTERED | LESS ACID        | LESS PT. 2 | UPPER                    | LOWER |
| 0                   | .000       | .0174             | .0174    | .0174            | .0174      | .0239                    | .0003 |
| 1                   | .001       | .0204             | .0204    | .0204            | .0204      | .0279                    | .0177 |
| 2                   | .002       | .0234             | .0234    | .0234            | .0234      | .0309                    | .0177 |
| 3                   | .003       | .0264             | .0264    | .0264            | .0264      | .0339                    | .0192 |
| 4                   | .004       | .0294             | .0294    | .0294            | .0294      | .0369                    | .0205 |
| 5                   | .005       | .0324             | .0324    | .0324            | .0324      | .0399                    | .0223 |
| 6                   | .006       | .0354             | .0354    | .0354            | .0354      | .0429                    | .0239 |
| 7                   | .007       | .0384             | .0384    | .0384            | .0384      | .0459                    | .0250 |
| 8                   | .008       | .0414             | .0414    | .0414            | .0414      | .0489                    | .0264 |
| 9                   | .009       | .0444             | .0444    | .0444            | .0444      | .0519                    | .0279 |
| 10                  | .010       | .0474             | .0474    | .0474            | .0474      | .0549                    | .0294 |
| 11                  | .011       | .0504             | .0504    | .0504            | .0504      | .0579                    | .0309 |
| 12                  | .012       | .0534             | .0534    | .0534            | .0534      | .0609                    | .0324 |
| 13                  | .013       | .0564             | .0564    | .0564            | .0564      | .0639                    | .0339 |
| 14                  | .014       | .0594             | .0594    | .0594            | .0594      | .0669                    | .0354 |
| 15                  | .015       | .0624             | .0624    | .0624            | .0624      | .0699                    | .0369 |
| 16                  | .016       | .0654             | .0654    | .0654            | .0654      | .0729                    | .0384 |
| 17                  | .017       | .0684             | .0684    | .0684            | .0684      | .0759                    | .0399 |
| 18                  | .018       | .0714             | .0714    | .0714            | .0714      | .0789                    | .0414 |
| 19                  | .019       | .0744             | .0744    | .0744            | .0744      | .0819                    | .0429 |
| 20                  | .020       | .0774             | .0774    | .0774            | .0774      | .0849                    | .0444 |
| 21                  | .021       | .0804             | .0804    | .0804            | .0804      | .0879                    | .0459 |
| 22                  | .022       | .0834             | .0834    | .0834            | .0834      | .0909                    | .0474 |
| 23                  | .023       | .0864             | .0864    | .0864            | .0864      | .0939                    | .0489 |
| 24                  | .024       | .0894             | .0894    | .0894            | .0894      | .0969                    | .0504 |
| 25                  | .025       | .0924             | .0924    | .0924            | .0924      | .0999                    | .0519 |
| 26                  | .026       | .0954             | .0954    | .0954            | .0954      | .1029                    | .0534 |
| 27                  | .027       | .0984             | .0984    | .0984            | .0984      | .1059                    | .0549 |
| 28                  | .028       | .1014             | .1014    | .1014            | .1014      | .1089                    | .0564 |
| 29                  | .029       | .1044             | .1044    | .1044            | .1044      | .1119                    | .0579 |
| 30                  | .030       | .1074             | .1074    | .1074            | .1074      | .1149                    | .0594 |
| 31                  | .031       | .1104             | .1104    | .1104            | .1104      | .1179                    | .0609 |
| 32                  | .032       | .1134             | .1134    | .1134            | .1134      | .1209                    | .0624 |
| 33                  | .033       | .1164             | .1164    | .1164            | .1164      | .1239                    | .0639 |
| 34                  | .034       | .1194             | .1194    | .1194            | .1194      | .1269                    | .0654 |
| 35                  | .035       | .1224             | .1224    | .1224            | .1224      | .1299                    | .0669 |
| 36                  | .036       | .1254             | .1254    | .1254            | .1254      | .1329                    | .0684 |
| 37                  | .037       | .1284             | .1284    | .1284            | .1284      | .1359                    | .0699 |
| 38                  | .038       | .1314             | .1314    | .1314            | .1314      | .1389                    | .0714 |
| 39                  | .039       | .1344             | .1344    | .1344            | .1344      | .1419                    | .0729 |
| 40                  | .040       | .1374             | .1374    | .1374            | .1374      | .1449                    | .0744 |
| 41                  | .041       | .1404             | .1404    | .1404            | .1404      | .1479                    | .0759 |
| 42                  | .042       | .1434             | .1434    | .1434            | .1434      | .1509                    | .0774 |
| 43                  | .043       | .1464             | .1464    | .1464            | .1464      | .1539                    | .0789 |
| 44                  | .044       | .1494             | .1494    | .1494            | .1494      | .1569                    | .0804 |
| 45                  | .045       | .1524             | .1524    | .1524            | .1524      | .1599                    | .0819 |
| 46                  | .046       | .1554             | .1554    | .1554            | .1554      | .1629                    | .0834 |
| 47                  | .047       | .1584             | .1584    | .1584            | .1584      | .1659                    | .0849 |
| 48                  | .048       | .1614             | .1614    | .1614            | .1614      | .1689                    | .0864 |
| 49                  | .049       | .1644             | .1644    | .1644            | .1644      | .1719                    | .0879 |
| 50                  | .050       | .1674             | .1674    | .1674            | .1674      | .1749                    | .0894 |
| 51                  | .051       | .1704             | .1704    | .1704            | .1704      | .1779                    | .0909 |
| 52                  | .052       | .1734             | .1734    | .1734            | .1734      | .1809                    | .0924 |
| 53                  | .053       | .1764             | .1764    | .1764            | .1764      | .1839                    | .0939 |
| 54                  | .054       | .1794             | .1794    | .1794            | .1794      | .1869                    | .0954 |
| 55                  | .055       | .1824             | .1824    | .1824            | .1824      | .1899                    | .0969 |
| 56                  | .056       | .1854             | .1854    | .1854            | .1854      | .1929                    | .0984 |
| 57                  | .057       | .1884             | .1884    | .1884            | .1884      | .1959                    | .0999 |
| 58                  | .058       | .1914             | .1914    | .1914            | .1914      | .1989                    | .1014 |
| 59                  | .059       | .1944             | .1944    | .1944            | .1944      | .2019                    | .1029 |
| 60                  | .060       | .1974             | .1974    | .1974            | .1974      | .2049                    | .1044 |



SPECTRA MONITORING OCTOBER 11, 1967 DIGITIZED BY JAMES HOPKINS LAB.

| DATE = 10/11/67     |            | SOLAR ACT. = 11.1 |          | SOLAR FLUX = 7.0 |            | SOLAR WAVELENGTH = 21.32 |       |
|---------------------|------------|-------------------|----------|------------------|------------|--------------------------|-------|
| TOTAL OF 1417       |            | SOLAR ACT. = 11.1 |          | SOLAR FLUX = 7.0 |            | SOLAR WAVELENGTH = 21.32 |       |
| NOISE LEVEL = .0007 |            | SOLAR ACT. = 11.1 |          | SOLAR FLUX = 7.0 |            | SOLAR WAVELENGTH = 21.32 |       |
| N                   | WAVELENGTH | UNIT-PT. 1        | FILTERED | LESS ACID        | LESS PT. 2 | UPPER                    | LOWER |
| 0                   | .000       | .0174             | .0174    | .0174            | .0174      | .0239                    | .0003 |
| 1                   | .001       | .0204             | .0204    | .0204            | .0204      | .0279                    | .0177 |
| 2                   | .002       | .0234             | .0234    | .0234            | .0234      | .0309                    | .0177 |
| 3                   | .003       | .0264             | .0264    | .0264            | .0264      | .0339                    | .0192 |
| 4                   | .004       | .0294             | .0294    | .0294            | .0294      | .0369                    | .0205 |
| 5                   | .005       | .0324             | .0324    | .0324            | .0324      | .0399                    | .0223 |
| 6                   | .006       | .0354             | .0354    | .0354            | .0354      | .0429                    | .0239 |
| 7                   | .007       | .0384             | .0384    | .0384            | .0384      | .0459                    | .0250 |
| 8                   | .008       | .0414             | .0414    | .0414            | .0414      | .0489                    | .0264 |
| 9                   | .009       | .0444             | .0444    | .0444            | .0444      | .0519                    | .0279 |
| 10                  | .010       | .0474             | .0474    | .0474            | .0474      | .0549                    | .0294 |
| 11                  | .011       | .0504             | .0504    | .0504            | .0504      | .0579                    | .0309 |
| 12                  | .012       | .0534             | .0534    | .0534            | .0534      | .0609                    | .0324 |
| 13                  | .013       | .0564             | .0564    | .0564            | .0564      | .0639                    | .0339 |
| 14                  | .014       | .0594             | .0594    | .0594            | .0594      | .0669                    | .0354 |
| 15                  | .015       | .0624             | .0624    | .0624            | .0624      | .0699                    | .0369 |
| 16                  | .016       | .0654             | .0654    | .0654            | .0654      | .0729                    | .0384 |
| 17                  | .017       | .0684             | .0684    | .0684            | .0684      | .0759                    | .0399 |
| 18                  | .018       | .0714             | .0714    | .0714            | .0714      | .0789                    | .0414 |
| 19                  | .019       | .0744             | .0744    | .0744            | .0744      | .0819                    | .0429 |
| 20                  | .020       | .0774             | .0774    | .0774            | .0774      | .0849                    | .0444 |
| 21                  | .021       | .0804             | .0804    | .0804            | .0804      | .0879                    | .0459 |
| 22                  | .022       | .0834             | .0834    | .0834            | .0834      | .0909                    | .0474 |
| 23                  | .023       | .0864             | .0864    | .0864            | .0864      | .0939                    | .0489 |
| 24                  | .024       | .0894             | .0894    | .0894            | .0894      | .0969                    | .0504 |
| 25                  | .025       | .0924             | .0924    | .0924            | .0924      | .0999                    | .0519 |
| 26                  | .026       | .0954             | .0954    | .0954            | .0954      | .1029                    | .0534 |
| 27                  | .027       | .0984             | .0984    | .0984            | .0984      | .1059                    | .0549 |
| 28                  | .028       | .1014             | .1014    | .1014            | .1014      | .1089                    | .0564 |
| 29                  | .029       | .1044             | .1044    | .1044            | .1044      | .1119                    | .0579 |
| 30                  | .030       | .1074             | .1074    | .1074            | .1074      | .1149                    | .0594 |
| 31                  | .031       | .1104             | .1104    | .1104            | .1104      | .1179                    | .0609 |
| 32                  | .032       | .1134             | .1134    | .1134            | .1134      | .1209                    | .0624 |
| 33                  | .033       | .1164             | .1164    | .1164            | .1164      | .1239                    | .0639 |
| 34                  | .034       | .1194             | .1194    | .1194            | .1194      | .1269                    | .0654 |
| 35                  | .035       | .1224             | .1224    | .1224            | .1224      | .1299                    | .0669 |
| 36                  | .036       | .1254             | .1254    | .1254            | .1254      | .1329                    | .0684 |
| 37                  | .037       | .1284             | .1284    | .1284            | .1284      | .1359                    | .0699 |
| 38                  | .038       | .1314             | .1314    | .1314            | .1314      | .1389                    | .0714 |
| 39                  | .039       | .1344             | .1344    | .1344            | .1344      | .1419                    | .0729 |
| 40                  | .040       | .1374             | .1374    | .1374            | .1374      | .1449                    | .0744 |
| 41                  | .041       | .1404             | .1404    | .1404            | .1404      | .1479                    | .0759 |
| 42                  | .042       | .1434             | .1434    | .1434            | .1434      | .1509                    | .0774 |
| 43                  | .043       | .1464             | .1464    | .1464            | .1464      | .1539                    | .0789 |
| 44                  | .044       | .1494             | .1494    | .1494            | .1494      | .1569                    | .0804 |
| 45                  | .045       | .1524             | .1524    | .1524            | .1524      | .1599                    | .0819 |
| 46                  | .046       | .1554             | .1554    | .1554            | .1554      | .1629                    | .0834 |
| 47                  | .047       | .1584             | .1584    | .1584            | .1584      | .1659                    | .0849 |
| 48                  | .048       | .1614             | .1614    | .1614            | .1614      | .1689                    | .0864 |
| 49                  | .049       | .1644             | .1644    | .1644            | .1644      | .1719                    | .0879 |
| 50                  | .050       | .1674             | .1674    | .1674            | .1674      | .1749                    | .0894 |
| 51                  | .051       | .1704             | .1704    | .1704            | .1704      | .1779                    | .0909 |
| 52                  | .052       | .1734             | .1734    | .1734            | .1734      | .1809                    | .0924 |
| 53                  | .053       | .1764             | .1764    | .1764            | .1764      | .1839                    | .0939 |
| 54                  | .054       | .1794             | .1794    | .1794            | .1794      | .1869                    | .0954 |
| 55                  | .055       | .1824             | .1824    | .1824            | .1824      | .1899                    | .0969 |
| 56                  | .056       | .1854             | .1854    | .1854            | .1854      | .1929                    | .0984 |
| 57                  | .057       | .1884             | .1884    | .1884            | .1884      | .1959                    | .0999 |
| 58                  | .058       | .1914             | .1914    | .1914            | .1914      | .1989                    | .1014 |
| 59                  | .059       | .1944             | .1944    | .1944            | .1944      | .2019                    | .1029 |
| 60                  | .060       | .1974             | .1974    | .1974            | .1974      | .2049                    | .1044 |



SPECTRA HANDCASTING OCTOBER 11, 1962 DIGITIZED BY JOHN HOPKINS LAB.

DATE = 10/11/62      SIG. IN = 1.2      RECORD = 10      JH 31  
 HOUR = 0      SIG. MOD. = 10.2  
 TOTAL OF 102      SDRS. VAR. = 10.4      WIND SPEED = 45  
 NOISE LEVEL = .0119

| N   | Pos. | UNIT-PT.2 | FILTERED | LESS ACISE | LOAR-PT.2 | UPPER | LOWER |
|-----|------|-----------|----------|------------|-----------|-------|-------|
| 0   | .000 | .0000     | .0000    | .0000      | .0000     | .0000 | .0000 |
| 1   | .000 | .0000     | .0000    | .0000      | .0000     | .0000 | .0000 |
| 2   | .001 | .0001     | .0001    | .0001      | .0001     | .0001 | .0001 |
| 3   | .002 | .0002     | .0002    | .0002      | .0002     | .0002 | .0002 |
| 4   | .003 | .0003     | .0003    | .0003      | .0003     | .0003 | .0003 |
| 5   | .004 | .0004     | .0004    | .0004      | .0004     | .0004 | .0004 |
| 6   | .005 | .0005     | .0005    | .0005      | .0005     | .0005 | .0005 |
| 7   | .006 | .0006     | .0006    | .0006      | .0006     | .0006 | .0006 |
| 8   | .007 | .0007     | .0007    | .0007      | .0007     | .0007 | .0007 |
| 9   | .008 | .0008     | .0008    | .0008      | .0008     | .0008 | .0008 |
| 10  | .009 | .0009     | .0009    | .0009      | .0009     | .0009 | .0009 |
| 11  | .010 | .0010     | .0010    | .0010      | .0010     | .0010 | .0010 |
| 12  | .011 | .0011     | .0011    | .0011      | .0011     | .0011 | .0011 |
| 13  | .012 | .0012     | .0012    | .0012      | .0012     | .0012 | .0012 |
| 14  | .013 | .0013     | .0013    | .0013      | .0013     | .0013 | .0013 |
| 15  | .014 | .0014     | .0014    | .0014      | .0014     | .0014 | .0014 |
| 16  | .015 | .0015     | .0015    | .0015      | .0015     | .0015 | .0015 |
| 17  | .016 | .0016     | .0016    | .0016      | .0016     | .0016 | .0016 |
| 18  | .017 | .0017     | .0017    | .0017      | .0017     | .0017 | .0017 |
| 19  | .018 | .0018     | .0018    | .0018      | .0018     | .0018 | .0018 |
| 20  | .019 | .0019     | .0019    | .0019      | .0019     | .0019 | .0019 |
| 21  | .020 | .0020     | .0020    | .0020      | .0020     | .0020 | .0020 |
| 22  | .021 | .0021     | .0021    | .0021      | .0021     | .0021 | .0021 |
| 23  | .022 | .0022     | .0022    | .0022      | .0022     | .0022 | .0022 |
| 24  | .023 | .0023     | .0023    | .0023      | .0023     | .0023 | .0023 |
| 25  | .024 | .0024     | .0024    | .0024      | .0024     | .0024 | .0024 |
| 26  | .025 | .0025     | .0025    | .0025      | .0025     | .0025 | .0025 |
| 27  | .026 | .0026     | .0026    | .0026      | .0026     | .0026 | .0026 |
| 28  | .027 | .0027     | .0027    | .0027      | .0027     | .0027 | .0027 |
| 29  | .028 | .0028     | .0028    | .0028      | .0028     | .0028 | .0028 |
| 30  | .029 | .0029     | .0029    | .0029      | .0029     | .0029 | .0029 |
| 31  | .030 | .0030     | .0030    | .0030      | .0030     | .0030 | .0030 |
| 32  | .031 | .0031     | .0031    | .0031      | .0031     | .0031 | .0031 |
| 33  | .032 | .0032     | .0032    | .0032      | .0032     | .0032 | .0032 |
| 34  | .033 | .0033     | .0033    | .0033      | .0033     | .0033 | .0033 |
| 35  | .034 | .0034     | .0034    | .0034      | .0034     | .0034 | .0034 |
| 36  | .035 | .0035     | .0035    | .0035      | .0035     | .0035 | .0035 |
| 37  | .036 | .0036     | .0036    | .0036      | .0036     | .0036 | .0036 |
| 38  | .037 | .0037     | .0037    | .0037      | .0037     | .0037 | .0037 |
| 39  | .038 | .0038     | .0038    | .0038      | .0038     | .0038 | .0038 |
| 40  | .039 | .0039     | .0039    | .0039      | .0039     | .0039 | .0039 |
| 41  | .040 | .0040     | .0040    | .0040      | .0040     | .0040 | .0040 |
| 42  | .041 | .0041     | .0041    | .0041      | .0041     | .0041 | .0041 |
| 43  | .042 | .0042     | .0042    | .0042      | .0042     | .0042 | .0042 |
| 44  | .043 | .0043     | .0043    | .0043      | .0043     | .0043 | .0043 |
| 45  | .044 | .0044     | .0044    | .0044      | .0044     | .0044 | .0044 |
| 46  | .045 | .0045     | .0045    | .0045      | .0045     | .0045 | .0045 |
| 47  | .046 | .0046     | .0046    | .0046      | .0046     | .0046 | .0046 |
| 48  | .047 | .0047     | .0047    | .0047      | .0047     | .0047 | .0047 |
| 49  | .048 | .0048     | .0048    | .0048      | .0048     | .0048 | .0048 |
| 50  | .049 | .0049     | .0049    | .0049      | .0049     | .0049 | .0049 |
| 51  | .050 | .0050     | .0050    | .0050      | .0050     | .0050 | .0050 |
| 52  | .051 | .0051     | .0051    | .0051      | .0051     | .0051 | .0051 |
| 53  | .052 | .0052     | .0052    | .0052      | .0052     | .0052 | .0052 |
| 54  | .053 | .0053     | .0053    | .0053      | .0053     | .0053 | .0053 |
| 55  | .054 | .0054     | .0054    | .0054      | .0054     | .0054 | .0054 |
| 56  | .055 | .0055     | .0055    | .0055      | .0055     | .0055 | .0055 |
| 57  | .056 | .0056     | .0056    | .0056      | .0056     | .0056 | .0056 |
| 58  | .057 | .0057     | .0057    | .0057      | .0057     | .0057 | .0057 |
| 59  | .058 | .0058     | .0058    | .0058      | .0058     | .0058 | .0058 |
| 60  | .059 | .0059     | .0059    | .0059      | .0059     | .0059 | .0059 |
| 61  | .060 | .0060     | .0060    | .0060      | .0060     | .0060 | .0060 |
| 62  | .061 | .0061     | .0061    | .0061      | .0061     | .0061 | .0061 |
| 63  | .062 | .0062     | .0062    | .0062      | .0062     | .0062 | .0062 |
| 64  | .063 | .0063     | .0063    | .0063      | .0063     | .0063 | .0063 |
| 65  | .064 | .0064     | .0064    | .0064      | .0064     | .0064 | .0064 |
| 66  | .065 | .0065     | .0065    | .0065      | .0065     | .0065 | .0065 |
| 67  | .066 | .0066     | .0066    | .0066      | .0066     | .0066 | .0066 |
| 68  | .067 | .0067     | .0067    | .0067      | .0067     | .0067 | .0067 |
| 69  | .068 | .0068     | .0068    | .0068      | .0068     | .0068 | .0068 |
| 70  | .069 | .0069     | .0069    | .0069      | .0069     | .0069 | .0069 |
| 71  | .070 | .0070     | .0070    | .0070      | .0070     | .0070 | .0070 |
| 72  | .071 | .0071     | .0071    | .0071      | .0071     | .0071 | .0071 |
| 73  | .072 | .0072     | .0072    | .0072      | .0072     | .0072 | .0072 |
| 74  | .073 | .0073     | .0073    | .0073      | .0073     | .0073 | .0073 |
| 75  | .074 | .0074     | .0074    | .0074      | .0074     | .0074 | .0074 |
| 76  | .075 | .0075     | .0075    | .0075      | .0075     | .0075 | .0075 |
| 77  | .076 | .0076     | .0076    | .0076      | .0076     | .0076 | .0076 |
| 78  | .077 | .0077     | .0077    | .0077      | .0077     | .0077 | .0077 |
| 79  | .078 | .0078     | .0078    | .0078      | .0078     | .0078 | .0078 |
| 80  | .079 | .0079     | .0079    | .0079      | .0079     | .0079 | .0079 |
| 81  | .080 | .0080     | .0080    | .0080      | .0080     | .0080 | .0080 |
| 82  | .081 | .0081     | .0081    | .0081      | .0081     | .0081 | .0081 |
| 83  | .082 | .0082     | .0082    | .0082      | .0082     | .0082 | .0082 |
| 84  | .083 | .0083     | .0083    | .0083      | .0083     | .0083 | .0083 |
| 85  | .084 | .0084     | .0084    | .0084      | .0084     | .0084 | .0084 |
| 86  | .085 | .0085     | .0085    | .0085      | .0085     | .0085 | .0085 |
| 87  | .086 | .0086     | .0086    | .0086      | .0086     | .0086 | .0086 |
| 88  | .087 | .0087     | .0087    | .0087      | .0087     | .0087 | .0087 |
| 89  | .088 | .0088     | .0088    | .0088      | .0088     | .0088 | .0088 |
| 90  | .089 | .0089     | .0089    | .0089      | .0089     | .0089 | .0089 |
| 91  | .090 | .0090     | .0090    | .0090      | .0090     | .0090 | .0090 |
| 92  | .091 | .0091     | .0091    | .0091      | .0091     | .0091 | .0091 |
| 93  | .092 | .0092     | .0092    | .0092      | .0092     | .0092 | .0092 |
| 94  | .093 | .0093     | .0093    | .0093      | .0093     | .0093 | .0093 |
| 95  | .094 | .0094     | .0094    | .0094      | .0094     | .0094 | .0094 |
| 96  | .095 | .0095     | .0095    | .0095      | .0095     | .0095 | .0095 |
| 97  | .096 | .0096     | .0096    | .0096      | .0096     | .0096 | .0096 |
| 98  | .097 | .0097     | .0097    | .0097      | .0097     | .0097 | .0097 |
| 99  | .098 | .0098     | .0098    | .0098      | .0098     | .0098 | .0098 |
| 100 | .099 | .0099     | .0099    | .0099      | .0099     | .0099 | .0099 |
| 101 | .100 | .0100     | .0100    | .0100      | .0100     | .0100 | .0100 |
| 102 | .101 | .0101     | .0101    | .0101      | .0101     | .0101 | .0101 |
| 103 | .102 | .0102     | .0102    | .0102      | .0102     | .0102 | .0102 |
| 104 | .103 | .0103     | .0103    | .0103      | .0103     | .0103 | .0103 |
| 105 | .104 | .0104     | .0104    | .0104      | .0104     | .0104 | .0104 |
| 106 | .105 | .0105     | .0105    | .0105      | .0105     | .0105 | .0105 |
| 107 | .106 | .0106     | .0106    | .0106      | .0106     | .0106 | .0106 |
| 108 | .107 | .0107     | .0107    | .0107      | .0107     | .0107 | .0107 |
| 109 | .108 | .0108     | .0108    | .0108      | .0108     | .0108 | .0108 |
| 110 | .109 | .0109     | .0109    | .0109      | .0109     | .0109 | .0109 |
| 111 | .110 | .0110     | .0110    | .0110      | .0110     | .0110 | .0110 |
| 112 | .111 | .0111     | .0111    | .0111      | .0111     | .0111 | .0111 |
| 113 | .112 | .0112     | .0112    | .0112      | .0112     | .0112 | .0112 |
| 114 | .113 | .0113     | .0113    | .0113      | .0113     | .0113 | .0113 |
| 115 | .114 | .0114     | .0114    | .0114      | .0114     | .0114 | .0114 |
| 116 | .115 | .0115     | .0115    | .0115      | .0115     | .0115 | .0115 |
| 117 | .116 | .0116     | .0116    | .0116      | .0116     | .0116 | .0116 |
| 118 | .117 | .0117     | .0117    | .0117      | .0117     | .0117 | .0117 |
| 119 | .118 | .0118     | .0118    | .0118      | .0118     | .0118 | .0118 |
| 120 | .119 | .0119     | .0119    | .0119      | .0119     | .0119 | .0119 |
| 121 | .120 | .0120     | .0120    | .0120      | .0120     | .0120 | .0120 |
| 122 | .121 | .0121     | .0121    | .0121      | .0121     | .0121 | .0121 |
| 123 | .122 | .0122     | .0122    | .0122      | .0122     | .0122 | .0122 |
| 124 | .123 | .0123     | .0123    | .0123      | .0123     | .0123 | .0123 |
| 125 | .124 | .0124     | .0124    | .0124      | .0124     | .0124 | .0124 |
| 126 | .125 | .0125     | .0125    | .0125      | .0125     | .0125 | .0125 |
| 127 | .126 | .0126     | .0126    | .0126      | .0126     | .0126 | .0126 |
| 128 | .127 | .0127     | .0127    | .0127      | .0127     | .0127 | .0127 |
| 129 | .128 | .0128     | .0128    | .0128      | .0128     | .0128 | .0128 |
| 130 | .129 | .0129     | .0129    | .0129      | .0129     | .0129 | .0129 |
| 131 | .130 | .0130     | .0130    | .0130      | .0130     | .0130 | .0130 |
| 132 | .131 | .0131     | .0131    | .0131      | .0131     | .0131 | .0131 |
| 133 | .132 | .0132     | .0132    | .0132      | .0132     | .0132 | .0132 |
| 134 | .133 | .0133     | .0133    | .0133      | .0133     | .0133 | .0133 |
| 135 | .134 | .0134     | .0134    | .0134      | .0134     | .0134 | .0134 |
| 136 | .135 | .0135     | .0135    | .0135      | .0135     | .0135 | .0135 |
| 137 | .136 | .0136     | .0136    | .0136      | .0136     | .0136 | .0136 |
| 138 | .137 | .0137     | .0137    | .0137      | .0137     | .0137 | .0137 |
| 139 | .138 | .0138     | .0138    | .0138      | .0138     | .0138 | .0138 |
| 140 | .139 | .0139     | .0139    | .0139      | .0139     | .0139 | .0139 |
| 141 | .140 | .0140     | .0140    | .0140      | .0140     | .0140 | .0140 |
| 142 | .141 | .0141     | .0141    | .0141      | .0141     | .0141 | .0141 |
| 143 | .142 | .0142     | .0142    | .0142      | .0142     | .0142 | .0142 |
| 144 | .143 | .0143     | .0143    | .0143      | .0143     | .0143 | .0143 |
| 145 | .144 | .0144     | .0144    | .0144      | .0144     | .0144 | .0144 |
| 146 | .145 | .0145     | .0145    | .0145      | .0145     | .0145 | .0145 |
| 147 | .146 | .0146     | .0146    | .0146      | .0146     | .0146 | .0146 |
| 148 | .147 | .0147     | .0147    | .0147      | .0147     | .0147 | .0147 |
| 149 | .148 | .0148     | .0148    | .0148      | .0148     | .0148 | .0148 |
| 150 | .149 | .0149     | .0149    | .0149      | .0149     | .0149 | .0149 |
| 151 | .150 | .0150     | .0150    | .0150      | .0150     | .0150 | .0150 |
| 152 | .151 | .0151     | .0151    | .0151      | .0151     | .0151 | .0151 |
| 153 | .152 | .0152     | .0152    | .0152      | .0152     | .0152 | .0152 |
| 154 | .153 | .0153     | .0153    | .0153      | .0153     | .0153 | .0153 |
| 155 | .154 | .0154     | .0154    | .0154      | .0154     | .0154 | .0154 |
| 156 | .155 | .0155     | .0155    | .0155      | .0155     | .0155 | .0155 |
| 157 | .156 | .0156     | .0156    | .0156      | .0156     | .0156 | .0156 |
| 158 | .157 | .0157     | .0157    | .0157      | .0157     | .0157 | .0157 |
| 159 | .158 | .0158     | .0158    | .0158      | .0158     | .0158 | .0158 |
| 160 | .159 | .0159     | .0159    | .0159      | .0159     | .0159 | .0159 |
| 161 | .160 | .0160     | .0160    | .0160      | .0160     | .0160 | .0160 |
| 162 | .161 | .0161     | .0161    | .0161      | .0161     | .0161 | .0161 |
| 163 |      |           |          |            |           |       |       |





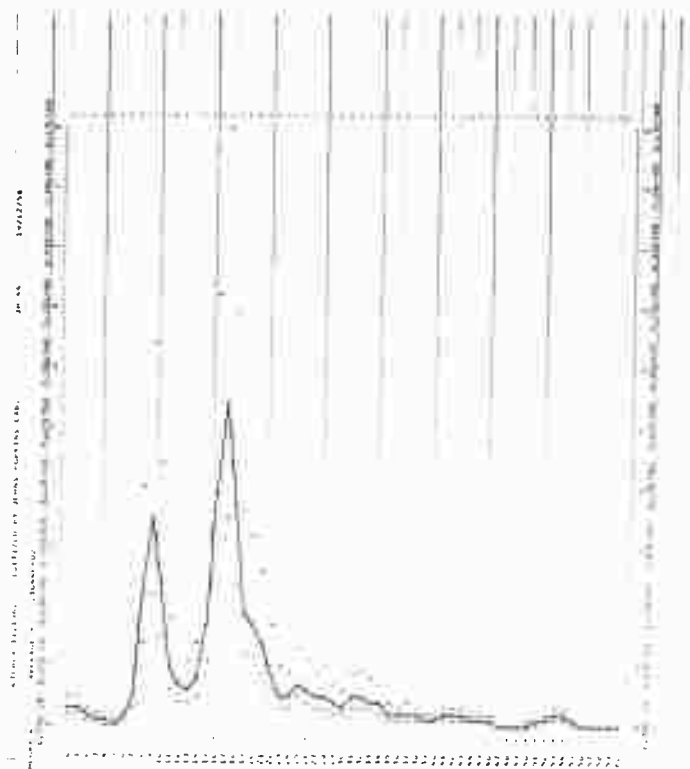
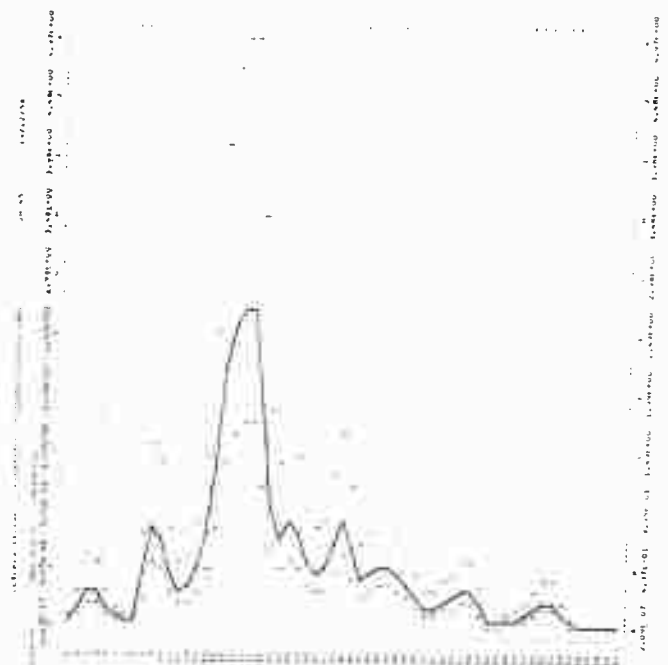
SPECTRA MEASUREMENTS IN TUBE 11,1942 DIGITIZED BY JAMES HOPKINS LAB.

| DATE = 12/1/78  |  | SITE =   |  | RUN =         |  | RECORD =     |  | IN 50          |  |
|-----------------|--|----------|--|---------------|--|--------------|--|----------------|--|
| LOCAL ID = 1140 |  | SIGNAL = |  | CUMUL. VAL. = |  | ACQ. LEVEL = |  | SIGNAL SPEED = |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
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|                 |  |          |  |               |  |              |  |                |  |
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|                 |  |          |  |               |  |              |  |                |  |
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|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
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|                 |  |          |  |               |  |              |  |                |  |
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|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
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|                 |  |          |  |               |  |              |  |                |  |
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|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |
|                 |  |          |  |               |  |              |  |                |  |



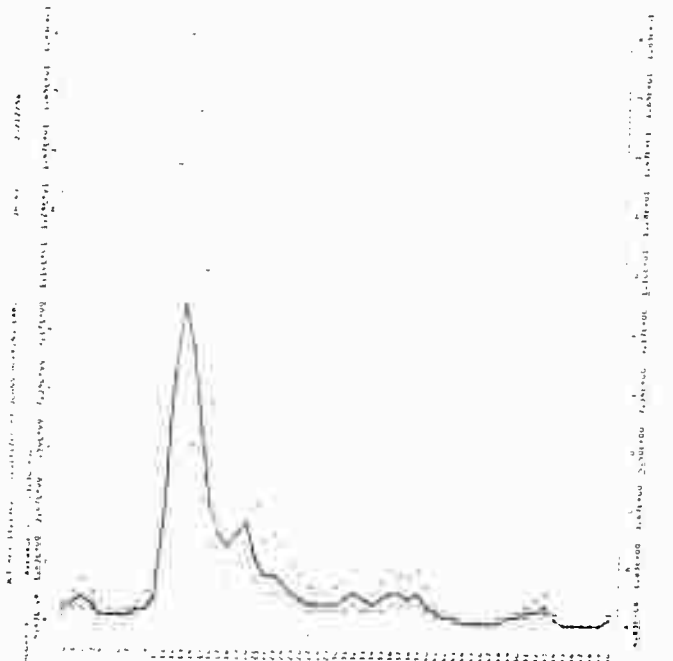
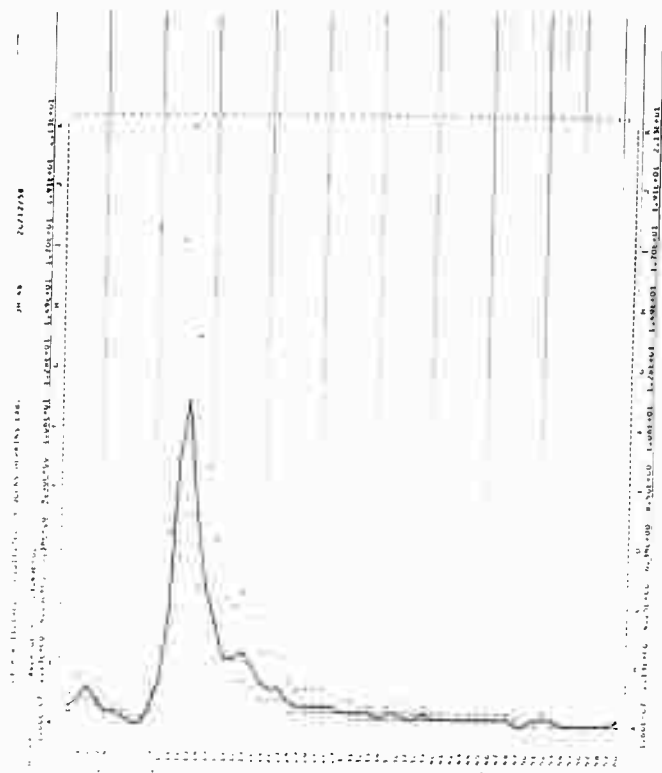
SPECTRA HANDLING OCTOBER 11, 1962 DIGITIZED BY JOHNS HOPKINS LAB.

|         | DATE = 07/17/98 | STATION =      | SUN          | WIND DIRECTION = | PHASE =  |       |       |
|---------|-----------------|----------------|--------------|------------------|----------|-------|-------|
|         | HOUR =          | VISUAL =       | CLOUDS =     | WIND SPEED =     |          |       |       |
|         | TOTAL DT = 171  | NATIVE LEVEL = | 25-1<br>25-1 | 25               |          |       |       |
|         | FALL            | UNIT=FEET      | HEIGHTS      | LESS ACFT        | COMPLIST | UPPER | LOWER |
| 0 .000  | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 1 .000  | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 2 .000  | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 3 .000  | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 4 .000  | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 5 .000  | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 6 .000  | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 7 .000  | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 8 .000  | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 9 .000  | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 10 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 11 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 12 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 13 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 14 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 15 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 16 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 17 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 18 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 19 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 20 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 21 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 22 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 23 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 24 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 25 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 26 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 27 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 28 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 29 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 30 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 31 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 32 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 33 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 34 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 35 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 36 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 37 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 38 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 39 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 40 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 41 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 42 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 43 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 44 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 45 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 46 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 47 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |
| 48 .000 | .0000           | .0000          | .0000        | .0000            | .0000    | .0000 | .0000 |


$$\text{NP}[\text{CTab}] = \text{NS}[\text{ASTING}, \text{Ct}, \text{Tg}, \text{PrB}], \quad \text{L}_{\text{A}}[1, \text{vot}] = \text{L}_{\text{A}}[1, \text{vot}], \quad \text{PrB}[2(\text{mcs})] = (\text{PrB}[1], \text{L}_{\text{A}}[2])$$
[illegible]

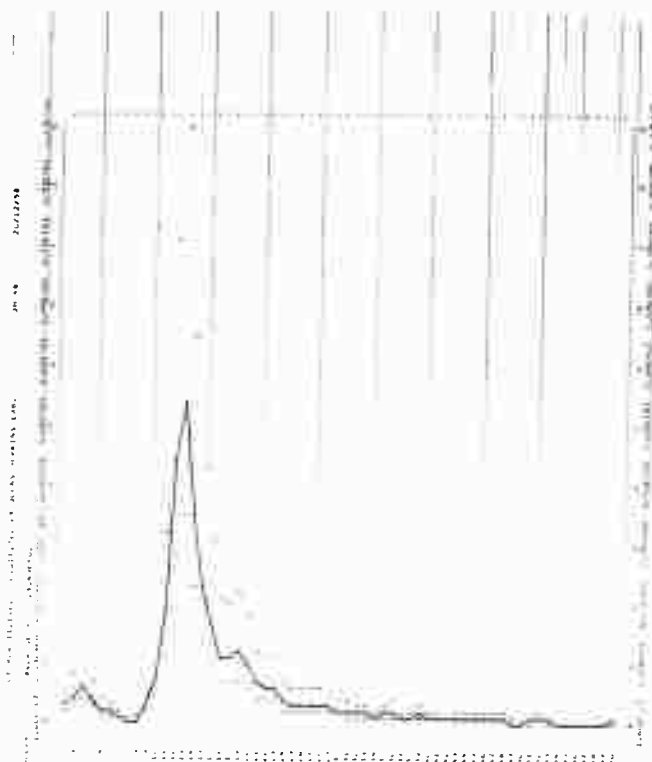


## SPEC. R. HINDCASTING, OCTUBER 11, 1967, DIGITIZED BY JAMES MCPHAIN LAB

[illegible]
$$\forall x \in U, f(x) = \{y \in U : x \neq y \wedge \exists z \in U, z \neq x \wedge z \neq y \wedge f(z) = \{x, y\}\} \wedge f(f(x)) = \{x, y\} \wedge f(f(y)) = \{x, y\}.$$
[illegible]

## SPECTRA MONITORING OF TOWER 11-1402 DIGITIZED BY JONAS DEPIENS LAB.

| DATE = 2011/12/10 |       | TIME = 11:14:02  |            | SPEED = 20.00 |            |
|-------------------|-------|------------------|------------|---------------|------------|
| TOTAL UP = 120    |       | SIGNAL = 11.1402 |            | SPEED = 20.00 |            |
| TOTAL UP = 120    |       | SIGNAL = 11.1402 |            | SPEED = 20.00 |            |
| W                 | FWHM  | WAVELENGTH       | WAVELENGTH | WAVELENGTH    | WAVELENGTH |
| 1                 | 0.000 | 1.0000           | 1.0000     | 1.0000        | 1.0000     |
| 2                 | 0.011 | 1.0111           | 1.0111     | 1.0111        | 1.0111     |
| 3                 | 0.017 | 1.0177           | 1.0177     | 1.0177        | 1.0177     |
| 4                 | 0.021 | 1.0211           | 1.0211     | 1.0211        | 1.0211     |
| 5                 | 0.028 | 1.0283           | 1.0283     | 1.0283        | 1.0283     |
| 6                 | 0.033 | 1.0333           | 1.0333     | 1.0333        | 1.0333     |
| 7                 | 0.039 | 1.0390           | 1.0390     | 1.0390        | 1.0390     |
| 8                 | 0.045 | 1.0450           | 1.0450     | 1.0450        | 1.0450     |
| 9                 | 0.051 | 1.0510           | 1.0510     | 1.0510        | 1.0510     |
| 10                | 0.056 | 1.0566           | 1.0566     | 1.0566        | 1.0566     |
| 11                | 0.061 | 1.0625           | 1.0625     | 1.0625        | 1.0625     |
| 12                | 0.067 | 1.0683           | 1.0683     | 1.0683        | 1.0683     |
| 13                | 0.071 | 1.0740           | 1.0740     | 1.0740        | 1.0740     |
| 14                | 0.076 | 1.0799           | 1.0799     | 1.0799        | 1.0799     |
| 15                | 0.081 | 1.0858           | 1.0858     | 1.0858        | 1.0858     |
| 16                | 0.086 | 1.0917           | 1.0917     | 1.0917        | 1.0917     |
| 17                | 0.091 | 1.0976           | 1.0976     | 1.0976        | 1.0976     |
| 18                | 0.096 | 1.1035           | 1.1035     | 1.1035        | 1.1035     |
| 19                | 0.101 | 1.1094           | 1.1094     | 1.1094        | 1.1094     |
| 20                | 0.106 | 1.1153           | 1.1153     | 1.1153        | 1.1153     |
| 21                | 0.111 | 1.1212           | 1.1212     | 1.1212        | 1.1212     |
| 22                | 0.116 | 1.1271           | 1.1271     | 1.1271        | 1.1271     |
| 23                | 0.121 | 1.1330           | 1.1330     | 1.1330        | 1.1330     |
| 24                | 0.126 | 1.1389           | 1.1389     | 1.1389        | 1.1389     |
| 25                | 0.131 | 1.1448           | 1.1448     | 1.1448        | 1.1448     |
| 26                | 0.136 | 1.1507           | 1.1507     | 1.1507        | 1.1507     |
| 27                | 0.141 | 1.1566           | 1.1566     | 1.1566        | 1.1566     |
| 28                | 0.146 | 1.1625           | 1.1625     | 1.1625        | 1.1625     |
| 29                | 0.151 | 1.1684           | 1.1684     | 1.1684        | 1.1684     |
| 30                | 0.156 | 1.1743           | 1.1743     | 1.1743        | 1.1743     |
| 31                | 0.161 | 1.1802           | 1.1802     | 1.1802        | 1.1802     |
| 32                | 0.166 | 1.1861           | 1.1861     | 1.1861        | 1.1861     |
| 33                | 0.171 | 1.1920           | 1.1920     | 1.1920        | 1.1920     |
| 34                | 0.176 | 1.1979           | 1.1979     | 1.1979        | 1.1979     |
| 35                | 0.181 | 1.2038           | 1.2038     | 1.2038        | 1.2038     |
| 36                | 0.186 | 1.2097           | 1.2097     | 1.2097        | 1.2097     |
| 37                | 0.191 | 1.2156           | 1.2156     | 1.2156        | 1.2156     |
| 38                | 0.196 | 1.2215           | 1.2215     | 1.2215        | 1.2215     |
| 39                | 0.201 | 1.2274           | 1.2274     | 1.2274        | 1.2274     |
| 40                | 0.206 | 1.2333           | 1.2333     | 1.2333        | 1.2333     |
| 41                | 0.211 | 1.2392           | 1.2392     | 1.2392        | 1.2392     |
| 42                | 0.216 | 1.2451           | 1.2451     | 1.2451        | 1.2451     |
| 43                | 0.221 | 1.2510           | 1.2510     | 1.2510        | 1.2510     |
| 44                | 0.226 | 1.2569           | 1.2569     | 1.2569        | 1.2569     |
| 45                | 0.231 | 1.2628           | 1.2628     | 1.2628        | 1.2628     |
| 46                | 0.236 | 1.2687           | 1.2687     | 1.2687        | 1.2687     |
| 47                | 0.241 | 1.2746           | 1.2746     | 1.2746        | 1.2746     |
| 48                | 0.246 | 1.2805           | 1.2805     | 1.2805        | 1.2805     |
| 49                | 0.251 | 1.2864           | 1.2864     | 1.2864        | 1.2864     |
| 50                | 0.256 | 1.2923           | 1.2923     | 1.2923        | 1.2923     |
| 51                | 0.261 | 1.2982           | 1.2982     | 1.2982        | 1.2982     |
| 52                | 0.266 | 1.3041           | 1.3041     | 1.3041        | 1.3041     |
| 53                | 0.271 | 1.3100           | 1.3100     | 1.3100        | 1.3100     |
| 54                | 0.276 | 1.3159           | 1.3159     | 1.3159        | 1.3159     |
| 55                | 0.281 | 1.3218           | 1.3218     | 1.3218        | 1.3218     |
| 56                | 0.286 | 1.3277           | 1.3277     | 1.3277        | 1.3277     |
| 57                | 0.291 | 1.3336           | 1.3336     | 1.3336        | 1.3336     |
| 58                | 0.296 | 1.3395           | 1.3395     | 1.3395        | 1.3395     |
| 59                | 0.301 | 1.3454           | 1.3454     | 1.3454        | 1.3454     |
| 60                | 0.306 | 1.3513           | 1.3513     | 1.3513        | 1.3513     |
| 61                | 0.311 | 1.3572           | 1.3572     | 1.3572        | 1.3572     |
| 62                | 0.316 | 1.3631           | 1.3631     | 1.3631        | 1.3631     |
| 63                | 0.321 | 1.3690           | 1.3690     | 1.3690        | 1.3690     |
| 64                | 0.326 | 1.3749           | 1.3749     | 1.3749        | 1.3749     |
| 65                | 0.331 | 1.3808           | 1.3808     | 1.3808        | 1.3808     |
| 66                | 0.336 | 1.3867           | 1.3867     | 1.3867        | 1.3867     |
| 67                | 0.341 | 1.3926           | 1.3926     | 1.3926        | 1.3926     |
| 68                | 0.346 | 1.3985           | 1.3985     | 1.3985        | 1.3985     |
| 69                | 0.351 | 1.4044           | 1.4044     | 1.4044        | 1.4044     |
| 70                | 0.356 | 1.4103           | 1.4103     | 1.4103        | 1.4103     |
| 71                | 0.361 | 1.4162           | 1.4162     | 1.4162        | 1.4162     |
| 72                | 0.366 | 1.4221           | 1.4221     | 1.4221        | 1.4221     |
| 73                | 0.371 | 1.4280           | 1.4280     | 1.4280        | 1.4280     |
| 74                | 0.376 | 1.4339           | 1.4339     | 1.4339        | 1.4339     |
| 75                | 0.381 | 1.4398           | 1.4398     | 1.4398        | 1.4398     |
| 76                | 0.386 | 1.4457           | 1.4457     | 1.4457        | 1.4457     |
| 77                | 0.391 | 1.4516           | 1.4516     | 1.4516        | 1.4516     |
| 78                | 0.396 | 1.4575           | 1.4575     | 1.4575        | 1.4575     |
| 79                | 0.401 | 1.4634           | 1.4634     | 1.4634        | 1.4634     |
| 80                | 0.406 | 1.4693           | 1.4693     | 1.4693        | 1.4693     |
| 81                | 0.411 | 1.4752           | 1.4752     | 1.4752        | 1.4752     |
| 82                | 0.416 | 1.4811           | 1.4811     | 1.4811        | 1.4811     |
| 83                | 0.421 | 1.4870           | 1.4870     | 1.4870        | 1.4870     |
| 84                | 0.426 | 1.4929           | 1.4929     | 1.4929        | 1.4929     |
| 85                | 0.431 | 1.4988           | 1.4988     | 1.4988        | 1.4988     |
| 86                | 0.436 | 1.5047           | 1.5047     | 1.5047        | 1.5047     |
| 87                | 0.441 | 1.5106           | 1.5106     | 1.5106        | 1.5106     |
| 88                | 0.446 | 1.5165           | 1.5165     | 1.5165        | 1.5165     |
| 89                | 0.451 | 1.5224           | 1.5224     | 1.5224        | 1.5224     |
| 90                | 0.456 | 1.5283           | 1.5283     | 1.5283        | 1.5283     |
| 91                | 0.461 | 1.5342           | 1.5342     | 1.5342        | 1.5342     |
| 92                | 0.466 | 1.5401           | 1.5401     | 1.5401        | 1.5401     |
| 93                | 0.471 | 1.5460           | 1.5460     | 1.5460        | 1.5460     |
| 94                | 0.476 | 1.5519           | 1.5519     | 1.5519        | 1.5519     |
| 95                | 0.481 | 1.5578           | 1.5578     | 1.5578        | 1.5578     |
| 96                | 0.486 | 1.5637           | 1.5637     | 1.5637        | 1.5637     |
| 97                | 0.491 | 1.5696           | 1.5696     | 1.5696        | 1.5696     |
| 98                | 0.496 | 1.5755           | 1.5755     | 1.5755        | 1.5755     |
| 99                | 0.501 | 1.5814           | 1.5814     | 1.5814        | 1.5814     |
| 100               | 0.506 | 1.5873           | 1.5873     | 1.5873        | 1.5873     |



## SPECTRA MONITORING OF TOWER 11-1402 DIGITIZED BY JONAS DEPIENS LAB.

| DATE = 2011/12/10 |       | TIME = 11:14:02  |            | SPEED = 20.00 |            |
|-------------------|-------|------------------|------------|---------------|------------|
| TOTAL UP = 120    |       | SIGNAL = 11.1402 |            | SPEED = 20.00 |            |
| TOTAL UP = 120    |       | SIGNAL = 11.1402 |            | SPEED = 20.00 |            |
| W                 | FWHM  | WAVELENGTH       | WAVELENGTH | WAVELENGTH    | WAVELENGTH |
| 1                 | 0.000 | 1.0000           | 1.0000     | 1.0000        | 1.0000     |
| 2                 | 0.011 | 1.0111           | 1.0111     | 1.0111        | 1.0111     |
| 3                 | 0.017 | 1.0177           | 1.0177     | 1.0177        | 1.0177     |
| 4                 | 0.021 | 1.0211           | 1.0211     | 1.0211        | 1.0211     |
| 5                 | 0.028 | 1.0283           | 1.0283     | 1.0283        | 1.0283     |
| 6                 | 0.033 | 1.0333           | 1.0333     | 1.0333        | 1.0333     |
| 7                 | 0.039 | 1.0390           | 1.0390     | 1.0390        | 1.0390     |
| 8                 | 0.045 | 1.0450           | 1.0450     | 1.0450        | 1.0450     |
| 9                 | 0.051 | 1.0510           | 1.0510     | 1.0510        | 1.0510     |
| 10                | 0.056 | 1.0566           | 1.0566     | 1.0566        | 1.0566     |
| 11                | 0.061 | 1.0625           | 1.0625     | 1.0625        | 1.0625     |
| 12                | 0.067 | 1.0683           | 1.0683     | 1.0683        | 1.0683     |
| 13                | 0.071 | 1.0740           | 1.0740     | 1.0740        | 1.0740     |
| 14                | 0.076 | 1.0799           | 1.0799     | 1.0799        | 1.0799     |
| 15                | 0.081 | 1.0858           | 1.0858     | 1.0858        | 1.0858     |
| 16                | 0.086 | 1.0917           | 1.0917     | 1.0917        | 1.0917     |
| 17                | 0.091 | 1.0976           | 1.0976     | 1.0976        | 1.0976     |
| 18                | 0.096 | 1.1035           | 1.1035     | 1.1035        | 1.1035     |
| 19                | 0.101 | 1.1094           | 1.1094     | 1.1094        | 1.1094     |
| 20                | 0.106 | 1.1153           | 1.1153     | 1.1153        | 1.1153     |
| 21                | 0.111 | 1.1212           | 1.1212     | 1.1212        | 1.1212     |
| 22                | 0.116 | 1.1271           | 1.1271     | 1.1271        | 1.1271     |
| 23                | 0.121 | 1.1330           | 1.1330     | 1.1330        | 1.1330     |
| 24                | 0.126 | 1.1389           | 1.1389     | 1.1389        | 1.1389     |
| 25                | 0.131 | 1.1448           | 1.1448     | 1.1448        | 1.1448     |
| 26                | 0.136 | 1.1507           | 1.1507     | 1.1507        | 1.1507     |
| 27                | 0.141 | 1.1566           | 1.1566     | 1.1566        | 1.1566     |
| 28                | 0.146 | 1.1625           | 1.1625     | 1.1625        | 1.1625     |
| 29                | 0.151 | 1.1684           | 1.1684     | 1.1684        | 1.1684     |
| 30                | 0.156 | 1.1743           | 1.1743     | 1.1743        | 1.1743     |
| 31                | 0.161 | 1.1802           | 1.1802     | 1.1802        | 1.1802     |
| 32                | 0.166 | 1.1861           | 1.1861     | 1.1861        | 1.1861     |
| 33                | 0.171 | 1.1920           | 1.1920     | 1.1920        | 1.1920     |
| 34                | 0.176 | 1.1979           | 1.1979     | 1.1979        | 1.1979     |
| 35                | 0.181 | 1.2038           | 1.2038     | 1.2038        | 1.2038     |
| 36                | 0.186 | 1.2097           | 1.2097     | 1.2097        | 1.2097     |
| 37                | 0.191 | 1.2156           | 1.2156     | 1.2156        | 1.2156     |
| 38                | 0.196 | 1.2215           | 1.2215     | 1.2215        | 1.2215     |
| 39                | 0.201 | 1.2274           | 1.2274     | 1.2274        | 1.2274     |
| 40                | 0.206 | 1.2333           | 1.2333     | 1.2333        | 1.2333     |
| 41                | 0.211 | 1.2392           | 1.2392     | 1.2392        | 1.2392     |
| 42                | 0.216 | 1.2451           | 1.2451     | 1.2451        | 1.2451     |
| 43                | 0.221 | 1.2510           | 1.2510     | 1.2510        | 1.2510     |
| 44                | 0.226 | 1.2569           | 1.2569     | 1.2569        | 1.2569     |
| 45                | 0.231 | 1.2628           | 1.2628     | 1.2628        | 1.2628     |
| 46                | 0.236 | 1.2687           | 1.2687     | 1.2687        | 1.2687     |
| 47                | 0.241 | 1.2746           | 1.2746     | 1.2746        | 1.2746     |
| 48                | 0.246 | 1.2805           | 1.2805     | 1.2805        | 1.2805     |
| 49                | 0.251 | 1.2864           | 1.2864     | 1.2864        | 1.2864     |
| 50                | 0.256 | 1.2923           | 1.2923     | 1.2923        | 1.2923     |
| 51                | 0.261 | 1.2982           | 1.2982     | 1.2982        | 1.2982     |
| 52                | 0.266 | 1.3041           | 1.3041     | 1.3041        | 1.3041     |
| 53                | 0.271 | 1.3100           | 1.3100     | 1.3100        | 1.3100     |
| 54                | 0.276 | 1.3159           | 1.3159     | 1.3159        | 1.3159     |
| 55                | 0.281 | 1.3218           | 1.3218     | 1.3218        | 1.3218     |
| 56                | 0.286 | 1.3277           | 1.3277     | 1.3277        | 1.3277     |
| 57                | 0.291 | 1.3336           | 1.3336     | 1.3336        | 1.3336     |
| 58                | 0.296 | 1.3395           | 1.3395     | 1.3395        | 1.3395     |
| 59                | 0.301 | 1.3454           | 1.3454     | 1.3454        | 1.3454     |
| 60                | 0.306 | 1.3513           | 1.3513     | 1.3513        | 1.3513     |
| 61                | 0.311 | 1.3572           | 1.3572     | 1.3572        | 1.3572     |
| 62                | 0.316 | 1.3631           | 1.3631     | 1.3631        | 1.3631     |
| 63                | 0.321 | 1.3690           | 1.3690     | 1.3690        | 1.3690     |
| 64                | 0.326 | 1.3749           | 1.3749     | 1.3749        | 1.3749     |
| 65                | 0.331 | 1.3808           | 1.3808     | 1.3808        | 1.3808     |
| 66                | 0.336 | 1.3867           | 1.3867     | 1.3867        | 1.3867     |
| 67                | 0.341 | 1.3926           | 1.3926     | 1.3926        | 1.3926     |
| 68                | 0.346 | 1.3985           | 1.3985     | 1.3985        | 1.3985     |
| 69                | 0.351 | 1.4044           | 1.4044     | 1.4044        | 1.4044     |
| 70                | 0.356 | 1.4103           | 1.4103     | 1.41          |            |





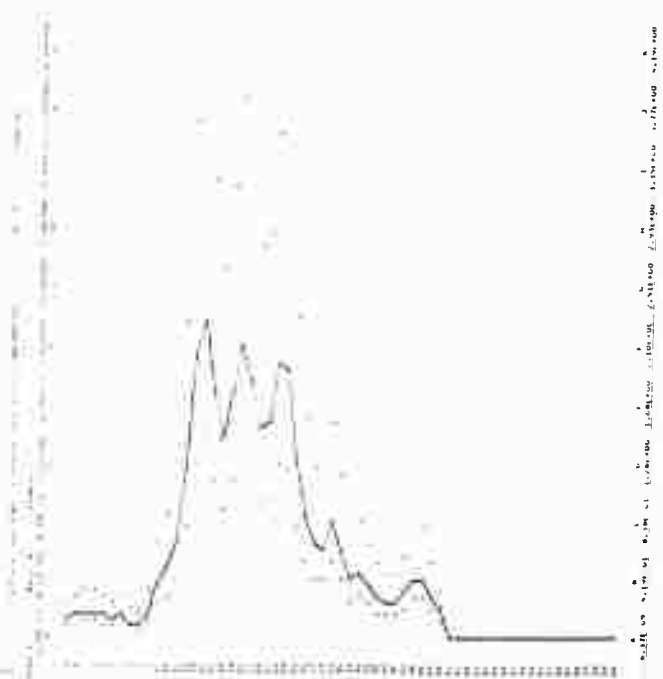
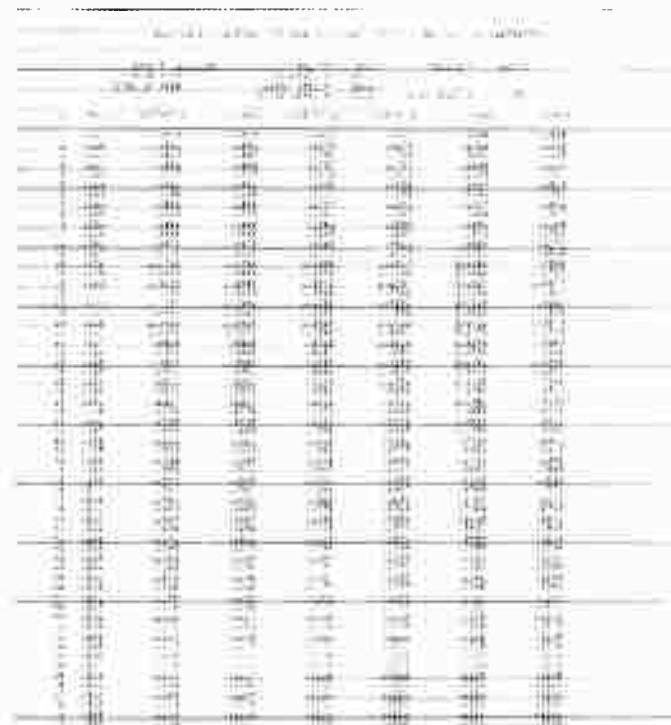
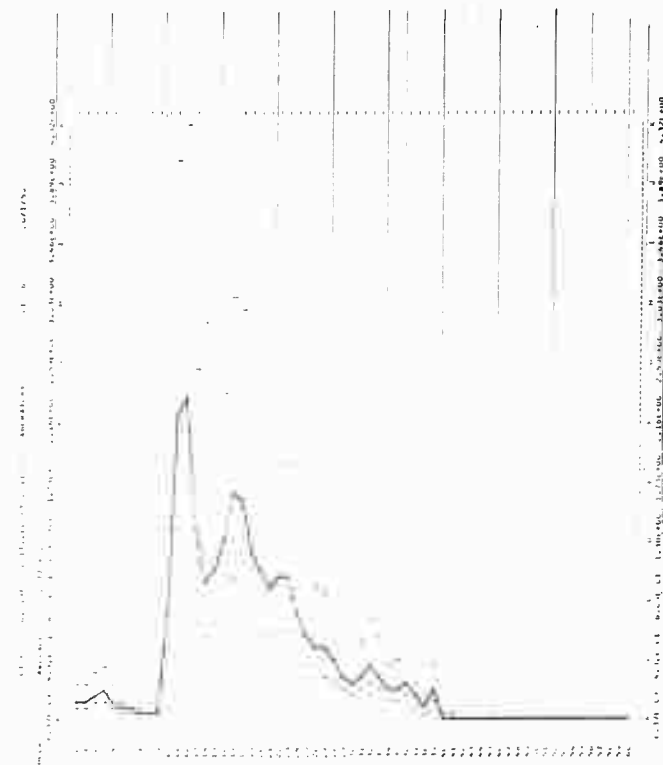


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10-11-78      10-11-78      10-11-78      10-11-78      10-11-78



The figure consists of two vertically stacked chromatograms. The top chromatogram represents the control, and the bottom one represents the 100% humidity treatment. Both plots show radioactivity (CPM) on the y-axis against time in hours on the x-axis, ranging from 0 to 144. The x-axis is marked at 0, 24, 48, 72, 96, 120, and 144. The y-axis has a scale from 0 to 100,000 CPM. Both chromatograms exhibit a large initial peak at approximately 24 hours, followed by a series of smaller peaks and a gradual decline towards the baseline by 144 hours. The overall pattern of peaks and their relative intensities are very similar between the control and the 100% humidity treatment, indicating that humidity had little effect on the degradation profile of the 14C-methyl parathion.

[illegible]



Time

Amplitude











Table 1. Spectral characteristics of the 100% solution of the compound.

| No. | Wavelength, nm | Absorbance                | Molar absorptivity, l/mole·cm | Wavelength, nm | Absorbance                | Molar absorptivity, l/mole·cm |
|-----|----------------|---------------------------|-------------------------------|----------------|---------------------------|-------------------------------|
|     |                |                           |                               |                |                           |                               |
| 1   | 200            | 0.005                     | 1000                          | 210            | 0.005                     | 1000                          |
| 2   | 210            | 0.010                     | 2000                          | 220            | 0.010                     | 2000                          |
| 3   | 220            | 0.020                     | 4000                          | 230            | 0.020                     | 4000                          |
| 4   | 230            | 0.040                     | 8000                          | 240            | 0.040                     | 8000                          |
| 5   | 240            | 0.080                     | 16000                         | 250            | 0.080                     | 16000                         |
| 6   | 250            | 0.160                     | 32000                         | 260            | 0.160                     | 32000                         |
| 7   | 260            | 0.320                     | 64000                         | 270            | 0.320                     | 64000                         |
| 8   | 270            | 0.640                     | 128000                        | 280            | 0.640                     | 128000                        |
| 9   | 280            | 1.280                     | 256000                        | 290            | 1.280                     | 256000                        |
| 10  | 290            | 2.560                     | 512000                        | 300            | 2.560                     | 512000                        |
| 11  | 300            | 5.120                     | 1024000                       | 310            | 5.120                     | 1024000                       |
| 12  | 310            | 10.240                    | 2048000                       | 320            | 10.240                    | 2048000                       |
| 13  | 320            | 20.480                    | 4096000                       | 330            | 20.480                    | 4096000                       |
| 14  | 330            | 40.960                    | 8192000                       | 340            | 40.960                    | 8192000                       |
| 15  | 340            | 81.920                    | 16384000                      | 350            | 81.920                    | 16384000                      |
| 16  | 350            | 163.840                   | 32768000                      | 360            | 163.840                   | 32768000                      |
| 17  | 360            | 327.680                   | 65536000                      | 370            | 327.680                   | 65536000                      |
| 18  | 370            | 655.360                   | 131072000                     | 380            | 655.360                   | 131072000                     |
| 19  | 380            | 1310.720                  | 262144000                     | 390            | 1310.720                  | 262144000                     |
| 20  | 390            | 2621.440                  | 524288000                     | 400            | 2621.440                  | 524288000                     |
| 21  | 400            | 5242.880                  | 1048576000                    | 410            | 5242.880                  | 1048576000                    |
| 22  | 410            | 10485.760                 | 2097152000                    | 420            | 10485.760                 | 2097152000                    |
| 23  | 420            | 20971.520                 | 4194304000                    | 430            | 20971.520                 | 4194304000                    |
| 24  | 430            | 41943.040                 | 8388608000                    | 440            | 41943.040                 | 8388608000                    |
| 25  | 440            | 83886.080                 | 16777216000                   | 450            | 83886.080                 | 16777216000                   |
| 26  | 450            | 167772.160                | 33554432000                   | 460            | 167772.160                | 33554432000                   |
| 27  | 460            | 335544.320                | 67108864000                   | 470            | 335544.320                | 67108864000                   |
| 28  | 470            | 671088.640                | 134217728000                  | 480            | 671088.640                | 134217728000                  |
| 29  | 480            | 1342177.280               | 268435456000                  | 490            | 1342177.280               | 268435456000                  |
| 30  | 490            | 2684354.560               | 536870912000                  | 500            | 2684354.560               | 536870912000                  |
| 31  | 500            | 5368709.120               | 1073741824000                 | 510            | 5368709.120               | 1073741824000                 |
| 32  | 510            | 10737418.240              | 2147483648000                 | 520            | 10737418.240              | 2147483648000                 |
| 33  | 520            | 21474836.480              | 4294967296000                 | 530            | 21474836.480              | 4294967296000                 |
| 34  | 530            | 42949672.960              | 8589934592000                 | 540            | 42949672.960              | 8589934592000                 |
| 35  | 540            | 85899345.920              | 17179869184000                | 550            | 85899345.920              | 17179869184000                |
| 36  | 550            | 171798691.840             | 34359738368000                | 560            | 171798691.840             | 34359738368000                |
| 37  | 560            | 343597383.680             | 68719476736000                | 570            | 343597383.680             | 68719476736000                |
| 38  | 570            | 687194767.360             | 137438953472000               | 580            | 687194767.360             | 137438953472000               |
| 39  | 580            | 1374389534.720            | 274877906944000               | 590            | 1374389534.720            | 274877906944000               |
| 40  | 590            | 2748779069.440            | 549755813888000               | 600            | 2748779069.440            | 549755813888000               |
| 41  | 600            | 5497558138.880            | 1099511627776000              | 610            | 5497558138.880            | 1099511627776000              |
| 42  | 610            | 10995116277.760           | 2199023255552000              | 620            | 10995116277.760           | 2199023255552000              |
| 43  | 620            | 21990232555.520           | 4398046511104000              | 630            | 21990232555.520           | 4398046511104000              |
| 44  | 630            | 43980465111.040           | 8796093022208000              | 640            | 43980465111.040           | 8796093022208000              |
| 45  | 640            | 87960930222.080           | 17592186044416000             | 650            | 87960930222.080           | 17592186044416000             |
| 46  | 650            | 175921860444.160          | 35184372088832000             | 660            | 175921860444.160          | 35184372088832000             |
| 47  | 660            | 351843720888.320          | 70368744177664000             | 670            | 351843720888.320          | 70368744177664000             |
| 48  | 670            | 703687441776.640          | 140737488355328000            | 680            | 703687441776.640          | 140737488355328000            |
| 49  | 680            | 1407374883553.280         | 281474976710656000            | 690            | 1407374883553.280         | 281474976710656000            |
| 50  | 690            | 2814749767106.560         | 562949953421312000            | 700            | 2814749767106.560         | 562949953421312000            |
| 51  | 700            | 5629499534213.120         | 1125899906842624000           | 710            | 5629499534213.120         | 1125899906842624000           |
| 52  | 710            | 11258999068426.240        | 2251799813685248000           | 720            | 11258999068426.240        | 2251799813685248000           |
| 53  | 720            | 22517998136852.480        | 4503599627370496000           | 730            | 22517998136852.480        | 4503599627370496000           |
| 54  | 730            | 45035996273704.960        | 9007199254740992000           | 740            | 45035996273704.960        | 9007199254740992000           |
| 55  | 740            | 90071992547409.920        | 18014398509481984000          | 750            | 90071992547409.920        | 18014398509481984000          |
| 56  | 750            | 180143985094819.840       | 36028797018963968000          | 760            | 180143985094819.840       | 36028797018963968000          |
| 57  | 760            | 360287970189639.680       | 72057594037927936000          | 770            | 360287970189639.680       | 72057594037927936000          |
| 58  | 770            | 720575940379279.360       | 144115188075855872000         | 780            | 720575940379279.360       | 144115188075855872000         |
| 59  | 780            | 144115188075855.872       | 288230376151711744000         | 790            | 144115188075855.872       | 288230376151711744000         |
| 60  | 790            | 288230376151711.744       | 576460752303423488000         | 800            | 288230376151711.744       | 576460752303423488000         |
| 61  | 800            | 576460752303423.488       | 1152921504606846976000        | 810            | 576460752303423.488       | 1152921504606846976000        |
| 62  | 810            | 1152921504606846.976      | 2305843009213693952000        | 820            | 1152921504606846.976      | 2305843009213693952000        |
| 63  | 820            | 2305843009213693.952      | 4611686018427387904000        | 830            | 2305843009213693.952      | 4611686018427387904000        |
| 64  | 830            | 4611686018427387.904      | 9223372036854775808000        | 840            | 4611686018427387.904      | 9223372036854775808000        |
| 65  | 840            | 9223372036854775.808      | 18446744073709551616000       | 850            | 9223372036854775.808      | 18446744073709551616000       |
| 66  | 850            | 18446744073709551.616     | 36893488147419103232000       | 860            | 18446744073709551.616     | 36893488147419103232000       |
| 67  | 860            | 36893488147419103.232     | 73786976294838206464000       | 870            | 36893488147419103.232     | 73786976294838206464000       |
| 68  | 870            | 73786976294838206.464     | 147573952589676412928000      | 880            | 73786976294838206.464     | 147573952589676412928000      |
| 69  | 880            | 147573952589676412.928    | 295147905179352825856000      | 890            | 147573952589676412.928    | 295147905179352825856000      |
| 70  | 890            | 295147905179352825.856    | 590295810358705651712000      | 900            | 295147905179352825.856    | 590295810358705651712000      |
| 71  | 900            | 590295810358705651.712    | 1180591620717411303424000     | 910            | 590295810358705651.712    | 1180591620717411303424000     |
| 72  | 910            | 1180591620717411303.424   | 2361183241434822606848000     | 920            | 1180591620717411303.424   | 2361183241434822606848000     |
| 73  | 920            | 2361183241434822606.848   | 4722366482869645213696000     | 930            | 2361183241434822606.848   | 4722366482869645213696000     |
| 74  | 930            | 4722366482869645213.696   | 9444732965739290427392000     | 940            | 4722366482869645213.696   | 9444732965739290427392000     |
| 75  | 940            | 9444732965739290427.392   | 18889465931478580854784000    | 950            | 9444732965739290427.392   | 18889465931478580854784000    |
| 76  | 950            | 18889465931478580854.784  | 37778931862957161709568000    | 960            | 18889465931478580854.784  | 37778931862957161709568000    |
| 77  | 960            | 37778931862957161709.568  | 75557863725914323419136000    | 970            | 37778931862957161709.568  | 75557863725914323419136000    |
| 78  | 970            | 75557863725914323419.136  | 151115727451828646838272000   | 980            | 75557863725914323419.136  | 151115727451828646838272000   |
| 79  | 980            | 151115727451828646838.272 | 302231454903657293676544000   | 990            | 151115727451828646838.272 | 302231454903657293676544000   |
| 80  | 990            | 302231454903657293676.544 | 604462909807314587353088000   | 1000           | 302231454903657293676.544 | 604462909807314587353088000   |

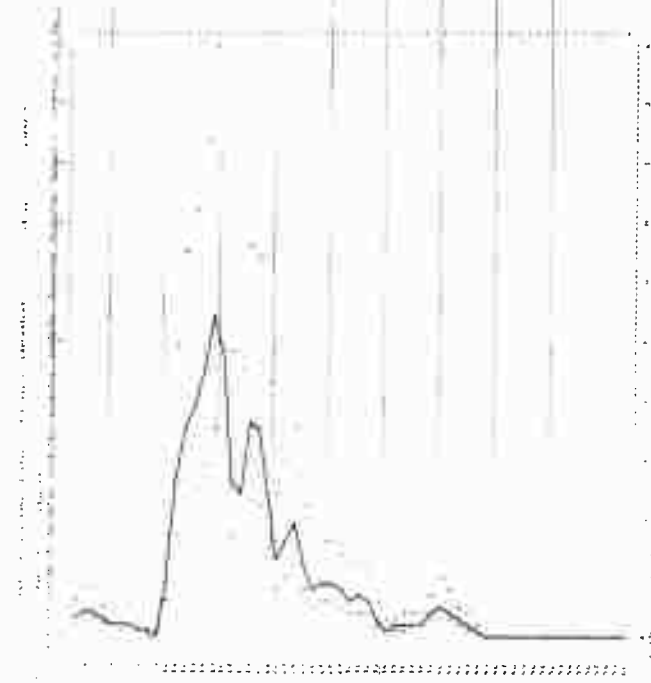


Table 2. Spectral characteristics of the 100% solution of the compound.

| No. | Wavelength, nm | Absorbance          | Molar absorptivity, l/mole·cm | Wavelength, nm | Absorbance          | Molar absorptivity, l/mole·cm |
|-----|----------------|---------------------|-------------------------------|----------------|---------------------|-------------------------------|
| 1   | 200            | 0.005               | 1000                          | 210            | 0.005               | 1000                          |
| 2   | 210            | 0.010               | 2000                          | 220            | 0.010               | 2000                          |
| 3   | 220            | 0.020               | 4000                          | 230            | 0.020               | 4000                          |
| 4   | 230            | 0.040               | 8000                          | 240            | 0.040               | 8000                          |
| 5   | 240            | 0.080               | 16000                         | 250            | 0.080               | 16000                         |
| 6   | 250            | 0.160               | 32000                         | 260            | 0.160               | 32000                         |
| 7   | 260            | 0.320               | 64000                         | 270            | 0.320               | 64000                         |
| 8   | 270            | 0.640               | 128000                        | 280            | 0.640               | 128000                        |
| 9   | 280            | 1.280               | 256000                        | 290            | 1.280               | 256000                        |
| 10  | 290            | 2.560               | 512000                        | 300            | 2.560               | 512000                        |
| 11  | 300            | 5.120               | 1024000                       | 310            | 5.120               | 1024000                       |
| 12  | 310            | 10.240              | 2048000                       | 320            | 10.240              | 2048000                       |
| 13  | 320            | 20.480              | 4096000                       | 330            | 20.480              | 4096000                       |
| 14  | 330            | 40.960              | 8192000                       | 340            | 40.960              | 8192000                       |
| 15  | 340            | 81.920              | 16384000                      | 350            | 81.920              | 16384000                      |
| 16  | 350            | 163.840             | 32768000                      | 360            | 163.840             | 32768000                      |
| 17  | 360            | 327.680             | 65536000                      | 370            | 327.680             | 65536000                      |
| 18  | 370            | 655.360             | 131072000                     | 380            | 655.360             | 131072000                     |
| 19  | 380            | 1310.720            | 262144000                     | 390            | 1310.720            | 262144000                     |
| 20  | 390            | 2621.440            | 524288000                     | 400            | 2621.440            | 524288000                     |
| 21  | 400            | 5242.880            | 1048576000                    | 410            | 5242.880            | 1048576000                    |
| 22  | 410            | 10485.760           | 2097152000                    | 420            | 10485.760           | 2097152000                    |
| 23  | 420            | 20971.520           | 4194304000                    | 430            | 20971.520           | 4194304000                    |
| 24  | 430            | 41943.040           | 8388608000                    | 440            | 41943.040           | 8388608000                    |
| 25  | 440            | 83886.080           | 16777216000                   | 450            | 83886.080           | 16777216000                   |
| 26  | 450            | 167772.160          | 33554432000                   | 460            | 167772.160          | 33554432000                   |
| 27  | 460            | 335544.320          | 67108864000                   | 470            | 335544.320          | 67108864000                   |
| 28  | 470            | 671088.640          | 134217728000                  | 480            | 671088.640          | 134217728000                  |
| 29  | 480            | 1342177.280         | 268435456000                  | 490            | 1342177.280         | 268435456000                  |
| 30  | 490            | 2684354.560         | 536870912000                  | 500            | 2684354.560         | 536870912000                  |
| 31  | 500            | 5368709.120         | 1073741824000                 | 510            | 5368709.120         | 1073741824000                 |
| 32  | 510            | 10737418.240        | 2147483648000                 | 520            | 10737418.240        | 2147483648000                 |
| 33  | 520            | 21474836.480        | 4294967296000                 | 530            | 21474836.480        | 4294967296000                 |
| 34  | 530            | 42949672.960        | 8589934592000                 | 540            | 42949672.960        | 8589934592000                 |
| 35  | 540            | 85899345.920        | 17179869184000                | 550            | 85899345.920        | 17179869184000                |
| 36  | 550            | 171798691.840       | 34359738368000                | 560            | 171798691.840       | 34359738368000                |
| 37  | 560            | 343597383.680       | 68719476736000                | 570            | 343597383.680       | 68719476736000                |
| 38  | 570            | 687194767.360       | 137438953472000               | 580            | 687194767.360       | 137438953472000               |
| 39  | 580            | 1374389.53472       | 274877906944000               | 590            | 1374389.53472       | 274877906944000               |
| 40  | 590            | 2748779.06944       | 549755813888000               | 600            | 2748779.06944       | 549755813888000               |
| 41  | 600            | 5497558.13888       | 1099511627776000              | 610            | 5497558.13888       | 1099511627776000              |
| 42  | 610            | 10995116.27776      | 2199023255552000              | 620            | 10995116.27776      | 2199023255552000              |
| 43  | 620            | 21990232.55552      | 4398046511104000              | 630            | 21990232.55552      | 4398046511104000              |
| 44  | 630            | 43980465.11104      | 8796093022208000              | 640            | 43980465.11104      | 8796093022208000              |
| 45  | 640            | 87960930.22208      | 17592186044416000             | 650            | 87960930.22208      | 17592186044416000             |
| 46  | 650            | 175921860.44416     | 35184372088832000             | 660            | 175921860.44416     | 35184372088832000             |
| 47  | 660            | 351843720.88832     | 70368744177664000             | 670            | 351843720.88832     | 70368744177664000             |
| 48  | 670            | 703687441.77664     | 140737488355328000            | 680            | 703687441.77664     | 140737488355328000            |
| 49  | 680            | 1407374883.55328    | 281474976710656000            | 690            | 1407374883.55328    | 281474976710656000            |
| 50  | 690            | 2814749767.10656    | 562949953421312000            | 700            | 2814749767.10656    | 562949953421312000            |
| 51  | 700            | 5629499534.21312    | 1125899906842624000           | 710            | 5629499534.21312    | 1125899906842624000           |
| 52  | 710            | 11258999068.42624   | 2251799813685248000           | 720            | 11258999068.42624   | 2251799813685248000           |
| 53  | 720            | 22517998136.85248   | 4503599627370496000           | 730            | 22517998136.85248   | 4503599627370496000           |
| 54  | 730            | 45035996273.70496   | 9007199254740992000           | 740            | 45035996273.70496   | 9007199254740992000           |
| 55  | 740            | 90071992547.40992   | 18014398509481984000          | 750            | 90071992547.40992   | 18014398509481984000          |
| 56  | 750            | 180143985094.81984  | 36028797018963968000          | 760            | 180143985094.81984  | 36028797018963968000          |
| 57  | 760            | 360287970189.63968  | 72057594037927936000          | 770            | 360287970189.63968  | 72057594037927936000          |
| 58  | 770            | 720575940379.27936  | 144115188075855872000         | 780            | 720575940379.27936  | 144115188075855872000         |
| 59  | 780            | 1441151880758.55872 | 288230376151711744000         | 790            | 1441151880758.55872 | 288230376151711744000         |
| 60  | 790            | 2882303761517.11744 | 576460752303423488000         | 800            | 2882303761517.11744 | 576460752303423488000         |

Concentration (mg/L)

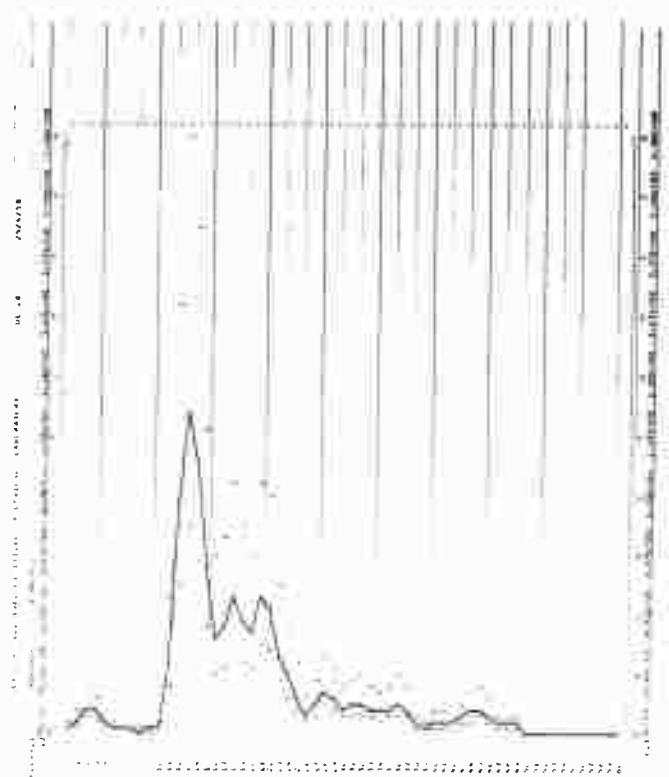
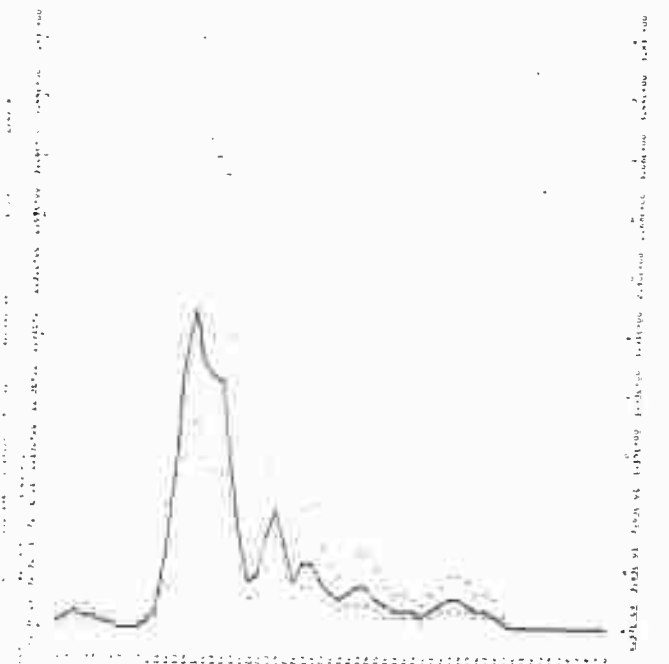
Time (min)



SPECTRA HINDCASTING OCTOBER 10, 1962 DIGITIZED BY DAVIDSON LABORATORY

SPECIES HYBRIDIZATION OCTOBER 10, 1962 DIVULGATED BY DAVIDSON LABORATORY

| DATE - 10/10/62 |      | AGE - 1         |       | SEX - M         |          | CL - 14         |       |
|-----------------|------|-----------------|-------|-----------------|----------|-----------------|-------|
| RCUM = 21       |      | SIG.HGT. = 18.4 |       | SIG.WGT. = 22.2 |          | WIND SPEED = 75 |       |
| TOTAL DT - 184  |      | NO. IN LEVER =  |       | CONC. = 7.2     |          | UPPER           |       |
| M               | REL. | UNIT-7.2        | FILED | LESS ACISE      | CONC.7.2 | UPPER           | LOW   |
| 0               | .000 | .0541           | .0541 | .0485           | .0485    | .0507           | .0513 |
| 1               | .008 | .1111           | .1111 | .1111           | .1111    | .1101           | .1113 |
| 2               | .011 | .1701           | .1701 | .1445           | .1445    | .1485           | .1491 |
| 3               | .017 | .1784           | .1784 | .1421           | .1421    | .1450           | .1465 |
| 4               | .027 | .0509           | .0509 | .0416           | .0416    | .0418           | .0418 |
| 5               | .042 | .0582           | .0582 | .0333           | .0333    | .0328           | .0332 |
| 6               | .053 | .0509           | .0509 | .0406           | .0406    | .0401           | .0406 |
| 7               | .057 | .0428           | .0428 | .0408           | .0408    | .0401           | .0408 |
| 8               | .064 | .0716           | .0716 | .0407           | .0407    | .0402           | .0402 |
| 9               | .068 | .0267           | .0267 | .0402           | .0402    | .0408           | .0408 |
| 10              | .059 | .0407           | .0407 | .0405           | .0405    | .0405           | .0405 |
| 11              | .081 | .0237           | .0237 | .0365           | .0365    | .0351           | .0351 |
| 12              | .084 | .1302           | .1302 | .1407           | .1407    | .1341           | .1341 |
| 13              | .077 | .1432           | .1432 | .1430           | .1430    | .1404           | .1404 |
| 14              | .074 | .0509           | .0509 | .0406           | .0406    | .0407           | .0406 |
| 15              | .082 | .1421           | .1421 | .1407           | .1407    | .1391           | .1391 |
| 16              | .085 | .0406           | .0406 | .0401           | .0401    | .0404           | .0404 |
| 17              | .081 | .0428           | .0428 | .0406           | .0406    | .0404           | .0404 |
| 18              | .100 | .0401           | .0401 | .0404           | .0404    | .0404           | .0404 |
| 19              | .106 | .1827           | .1827 | .1827           | .1827    | .1757           | .1757 |
| 20              | .111 | .0509           | .0509 | .0406           | .0406    | .0406           | .0406 |
| 21              | .117 | .0509           | .0509 | .0406           | .0406    | .0406           | .0406 |
| 22              | .122 | .0716           | .0716 | .0406           | .0406    | .0406           | .0406 |
| 23              | .168 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 24              | .133 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 25              | .122 | .1310           | .1310 | .1310           | .1310    | .1317           | .1317 |
| 26              | .154 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 27              | .126 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 28              | .138 | .1310           | .1310 | .1310           | .1310    | .1310           | .1310 |
| 29              | .181 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 30              | .151 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 31              | .172 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 32              | .178 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 33              | .181 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 34              | .188 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 35              | .188 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 36              | .200 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 37              | .208 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 38              | .211 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 39              | .217 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 40              | .222 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 41              | .231 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 42              | .233 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 43              | .234 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 44              | .236 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 45              | .236 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 46              | .236 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 47              | .236 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 48              | .236 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 49              | .236 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |
| 50              | .236 | .0406           | .0406 | .0406           | .0406    | .0406           | .0406 |


$$\frac{1}{2} \pi \approx 1.5708 \text{ rad} \approx 90^\circ$$
[illegible]

## SPECTRA HINDCASTING OCTOBER 29, 1992 DIGITIZED BY DAVIDSON LABORATORY

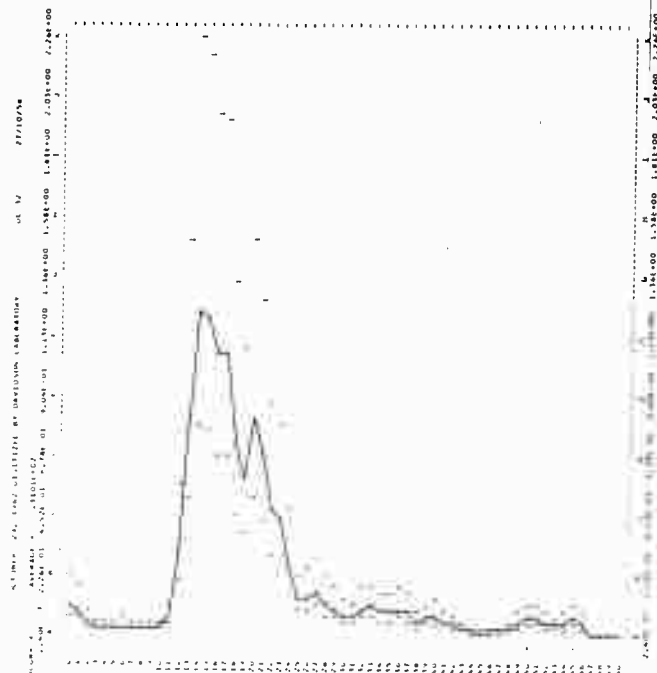
| DATE = 27/10/92 |       | AV. T <sub>0</sub> = 10.0                |                                          | RECORD = 10.0                            |                                          |                                          |                                          |
|-----------------|-------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|
| TOTAL OF 145    |       | SIGMA-MUL = 12.0                         |                                          | UPPER MUL = 11.0                         |                                          |                                          |                                          |
|                 |       | CORR. VAR. = 0.0                         |                                          | LOWER MUL = 1.5                          |                                          |                                          |                                          |
|                 |       | NOISE LEVEL = 0.005                      |                                          | KING SPEED = 1.0                         |                                          |                                          |                                          |
| N               | FREQ. | UNITARY F                                | FILTERED                                 | LESS NOISE                               | CORRECTED                                | UPPER                                    | LOWER                                    |
| 0               | 0.000 | 0.0000                                   | 0.0000                                   | 0.0000                                   | 0.0000                                   | 0.0000                                   | 0.0000                                   |
| 1               | 0.008 | 0.0001                                   | 0.0001                                   | 0.0001                                   | 0.0001                                   | 0.0001                                   | 0.0001                                   |
| 2               | 0.016 | 0.0004                                   | 0.0004                                   | 0.0004                                   | 0.0004                                   | 0.0004                                   | 0.0004                                   |
| 3               | 0.024 | 0.0016                                   | 0.0016                                   | 0.0016                                   | 0.0016                                   | 0.0016                                   | 0.0016                                   |
| 4               | 0.032 | 0.0064                                   | 0.0064                                   | 0.0064                                   | 0.0064                                   | 0.0064                                   | 0.0064                                   |
| 5               | 0.040 | 0.0256                                   | 0.0256                                   | 0.0256                                   | 0.0256                                   | 0.0256                                   | 0.0256                                   |
| 6               | 0.048 | 0.1024                                   | 0.1024                                   | 0.1024                                   | 0.1024                                   | 0.1024                                   | 0.1024                                   |
| 7               | 0.056 | 0.4096                                   | 0.4096                                   | 0.4096                                   | 0.4096                                   | 0.4096                                   | 0.4096                                   |
| 8               | 0.064 | 1.6384                                   | 1.6384                                   | 1.6384                                   | 1.6384                                   | 1.6384                                   | 1.6384                                   |
| 9               | 0.072 | 6.5536                                   | 6.5536                                   | 6.5536                                   | 6.5536                                   | 6.5536                                   | 6.5536                                   |
| 10              | 0.080 | 26.2144                                  | 26.2144                                  | 26.2144                                  | 26.2144                                  | 26.2144                                  | 26.2144                                  |
| 11              | 0.088 | 104.8576                                 | 104.8576                                 | 104.8576                                 | 104.8576                                 | 104.8576                                 | 104.8576                                 |
| 12              | 0.096 | 417.4336                                 | 417.4336                                 | 417.4336                                 | 417.4336                                 | 417.4336                                 | 417.4336                                 |
| 13              | 0.104 | 1669.7344                                | 1669.7344                                | 1669.7344                                | 1669.7344                                | 1669.7344                                | 1669.7344                                |
| 14              | 0.112 | 6678.9760                                | 6678.9760                                | 6678.9760                                | 6678.9760                                | 6678.9760                                | 6678.9760                                |
| 15              | 0.120 | 26715.9040                               | 26715.9040                               | 26715.9040                               | 26715.9040                               | 26715.9040                               | 26715.9040                               |
| 16              | 0.128 | 106863.6160                              | 106863.6160                              | 106863.6160                              | 106863.6160                              | 106863.6160                              | 106863.6160                              |
| 17              | 0.136 | 427374.4640                              | 427374.4640                              | 427374.4640                              | 427374.4640                              | 427374.4640                              | 427374.4640                              |
| 18              | 0.144 | 1709504.0000                             | 1709504.0000                             | 1709504.0000                             | 1709504.0000                             | 1709504.0000                             | 1709504.0000                             |
| 19              | 0.152 | 6837017.6000                             | 6837017.6000                             | 6837017.6000                             | 6837017.6000                             | 6837017.6000                             | 6837017.6000                             |
| 20              | 0.160 | 27348070.4000                            | 27348070.4000                            | 27348070.4000                            | 27348070.4000                            | 27348070.4000                            | 27348070.4000                            |
| 21              | 0.168 | 109392288.0000                           | 109392288.0000                           | 109392288.0000                           | 109392288.0000                           | 109392288.0000                           | 109392288.0000                           |
| 22              | 0.176 | 437569152.0000                           | 437569152.0000                           | 437569152.0000                           | 437569152.0000                           | 437569152.0000                           | 437569152.0000                           |
| 23              | 0.184 | 1750276608.0000                          | 1750276608.0000                          | 1750276608.0000                          | 1750276608.0000                          | 1750276608.0000                          | 1750276608.0000                          |
| 24              | 0.192 | 7001106304.0000                          | 7001106304.0000                          | 7001106304.0000                          | 7001106304.0000                          | 7001106304.0000                          | 7001106304.0000                          |
| 25              | 0.200 | 28004425600.0000                         | 28004425600.0000                         | 28004425600.0000                         | 28004425600.0000                         | 28004425600.0000                         | 28004425600.0000                         |
| 26              | 0.208 | 112017702080.0000                        | 112017702080.0000                        | 112017702080.0000                        | 112017702080.0000                        | 112017702080.0000                        | 112017702080.0000                        |
| 27              | 0.216 | 448070808320.0000                        | 448070808320.0000                        | 448070808320.0000                        | 448070808320.0000                        | 448070808320.0000                        | 448070808320.0000                        |
| 28              | 0.224 | 1792283233280.0000                       | 1792283233280.0000                       | 1792283233280.0000                       | 1792283233280.0000                       | 1792283233280.0000                       | 1792283233280.0000                       |
| 29              | 0.232 | 7169132932480.0000                       | 7169132932480.0000                       | 7169132932480.0000                       | 7169132932480.0000                       | 7169132932480.0000                       | 7169132932480.0000                       |
| 30              | 0.240 | 28676531731200.0000                      | 28676531731200.0000                      | 28676531731200.0000                      | 28676531731200.0000                      | 28676531731200.0000                      | 28676531731200.0000                      |
| 31              | 0.248 | 114706126924800.0000                     | 114706126924800.0000                     | 114706126924800.0000                     | 114706126924800.0000                     | 114706126924800.0000                     | 114706126924800.0000                     |
| 32              | 0.256 | 458824507699200.0000                     | 458824507699200.0000                     | 458824507699200.0000                     | 458824507699200.0000                     | 458824507699200.0000                     | 458824507699200.0000                     |
| 33              | 0.264 | 1835300030796800.0000                    | 1835300030796800.0000                    | 1835300030796800.0000                    | 1835300030796800.0000                    | 1835300030796800.0000                    | 1835300030796800.0000                    |
| 34              | 0.272 | 7341180123193600.0000                    | 7341180123193600.0000                    | 7341180123193600.0000                    | 7341180123193600.0000                    | 7341180123193600.0000                    | 7341180123193600.0000                    |
| 35              | 0.280 | 29364720492774400.0000                   | 29364720492774400.0000                   | 29364720492774400.0000                   | 29364720492774400.0000                   | 29364720492774400.0000                   | 29364720492774400.0000                   |
| 36              | 0.288 | 117458881971097600.0000                  | 117458881971097600.0000                  | 117458881971097600.0000                  | 117458881971097600.0000                  | 117458881971097600.0000                  | 117458881971097600.0000                  |
| 37              | 0.296 | 469835527884390400.0000                  | 469835527884390400.0000                  | 469835527884390400.0000                  | 469835527884390400.0000                  | 469835527884390400.0000                  | 469835527884390400.0000                  |
| 38              | 0.304 | 1879342111537561600.0000                 | 1879342111537561600.0000                 | 1879342111537561600.0000                 | 1879342111537561600.0000                 | 1879342111537561600.0000                 | 1879342111537561600.0000                 |
| 39              | 0.312 | 7517368446150246400.0000                 | 7517368446150246400.0000                 | 7517368446150246400.0000                 | 7517368446150246400.0000                 | 7517368446150246400.0000                 | 7517368446150246400.0000                 |
| 40              | 0.320 | 30734826275431400704000.0000             | 30734826275431400704000.0000             | 30734826275431400704000.0000             | 30734826275431400704000.0000             | 30734826275431400704000.0000             | 30734826275431400704000.0000             |
| 41              | 0.328 | 12589004842007101728202240000.0000       | 12589004842007101728202240000.0000       | 12589004842007101728202240000.0000       | 12589004842007101728202240000.0000       | 12589004842007101728202240000.0000       | 12589004842007101728202240000.0000       |
| 42              | 0.336 | 50356019368028406912808960000.0000       | 50356019368028406912808960000.0000       | 50356019368028406912808960000.0000       | 50356019368028406912808960000.0000       | 50356019368028406912808960000.0000       | 50356019368028406912808960000.0000       |
| 43              | 0.344 | 201424077472113627651235840000.0000      | 201424077472113627651235840000.0000      | 201424077472113627651235840000.0000      | 201424077472113627651235840000.0000      | 201424077472113627651235840000.0000      | 201424077472113627651235840000.0000      |
| 44              | 0.352 | 805696309888454510604947200000.0000      | 805696309888454510604947200000.0000      | 805696309888454510604947200000.0000      | 805696309888454510604947200000.0000      | 805696309888454510604947200000.0000      | 805696309888454510604947200000.0000      |
| 45              | 0.360 | 3222785239553818042419788800000.0000     | 3222785239553818042419788800000.0000     | 3222785239553818042419788800000.0000     | 3222785239553818042419788800000.0000     | 3222785239553818042419788800000.0000     | 3222785239553818042419788800000.0000     |
| 46              | 0.368 | 12891141058215272169679155200000.0000    | 12891141058215272169679155200000.0000    | 12891141058215272169679155200000.0000    | 12891141058215272169679155200000.0000    | 12891141058215272169679155200000.0000    | 12891141058215272169679155200000.0000    |
| 47              | 0.376 | 51564564232861086718716620800000.0000    | 51564564232861086718716620800000.0000    | 51564564232861086718716620800000.0000    | 51564564232861086718716620800000.0000    | 51564564232861086718716620800000.0000    | 51564564232861086718716620800000.0000    |
| 48              | 0.384 | 206258256931364346874866483200000.0000   | 206258256931364346874866483200000.0000   | 206258256931364346874866483200000.0000   | 206258256931364346874866483200000.0000   | 206258256931364346874866483200000.0000   | 206258256931364346874866483200000.0000   |
| 49              | 0.392 | 825033027725457387501465830400000.0000   | 825033027725457387501465830400000.0000   | 825033027725457387501465830400000.0000   | 825033027725457387501465830400000.0000   | 825033027725457387501465830400000.0000   | 825033027725457387501465830400000.0000   |
| 50              | 0.400 | 33001321109018295500058633216000000.0000 | 33001321109018295500058633216000000.0000 | 33001321109018295500058633216000000.0000 | 33001321109018295500058633216000000.0000 | 33001321109018295500058633216000000.0000 | 33001321109018295500058633216000000.0000 |

## SPECTRA HINDCASTING OCTOBER 29, 1992 DIGITIZED BY DAVIDSON LABORATORY

| DATE = 27/10/92 |       | AV. T <sub>0</sub> = 10.0                |                                          | RECORD = 10.0                            |                                          |                                          |                                          |
|-----------------|-------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|
| TOTAL OF 145    |       | SIGMA-MUL = 12.0                         |                                          | UPPER MUL = 11.0                         |                                          |                                          |                                          |
|                 |       | CORR. VAR. = 0.0                         |                                          | LOWER MUL = 1.5                          |                                          |                                          |                                          |
|                 |       | NOISE LEVEL = 0.005                      |                                          | KING SPEED = 1.0                         |                                          |                                          |                                          |
| N               | FREQ. | UNITARY F                                | FILTERED                                 | LESS NOISE                               | CORRECTED                                | UPPER                                    | LOWER                                    |
| 0               | 0.000 | 0.0000                                   | 0.0000                                   | 0.0000                                   | 0.0000                                   | 0.0000                                   | 0.0000                                   |
| 1               | 0.008 | 0.0001                                   | 0.0001                                   | 0.0001                                   | 0.0001                                   | 0.0001                                   | 0.0001                                   |
| 2               | 0.016 | 0.0004                                   | 0.0004                                   | 0.0004                                   | 0.0004                                   | 0.0004                                   | 0.0004                                   |
| 3               | 0.024 | 0.0016                                   | 0.0016                                   | 0.0016                                   | 0.0016                                   | 0.0016                                   | 0.0016                                   |
| 4               | 0.032 | 0.0064                                   | 0.0064                                   | 0.0064                                   | 0.0064                                   | 0.0064                                   | 0.0064                                   |
| 5               | 0.040 | 0.0256                                   | 0.0256                                   | 0.0256                                   | 0.0256                                   | 0.0256                                   | 0.0256                                   |
| 6               | 0.048 | 0.1024                                   | 0.1024                                   | 0.1024                                   | 0.1024                                   | 0.1024                                   | 0.1024                                   |
| 7               | 0.056 | 0.4096                                   | 0.4096                                   | 0.4096                                   | 0.4096                                   | 0.4096                                   | 0.4096                                   |
| 8               | 0.064 | 1.6384                                   | 1.6384                                   | 1.6384                                   | 1.6384                                   | 1.6384                                   | 1.6384                                   |
| 9               | 0.072 | 6.5536                                   | 6.5536                                   | 6.5536                                   | 6.5536                                   | 6.5536                                   | 6.5536                                   |
| 10              | 0.080 | 26.2144                                  | 26.2144                                  | 26.2144                                  | 26.2144                                  | 26.2144                                  | 26.2144                                  |
| 11              | 0.088 | 104.8576                                 | 104.8576                                 | 104.8576                                 | 104.8576                                 | 104.8576                                 | 104.8576                                 |
| 12              | 0.096 | 419.4304                                 | 419.4304                                 | 419.4304                                 | 419.4304                                 | 419.4304                                 | 419.4304                                 |
| 13              | 0.104 | 1677.7216                                | 1677.7216                                | 1677.7216                                | 1677.7216                                | 1677.7216                                | 1677.7216                                |
| 14              | 0.112 | 6710.9760                                | 6710.9760                                | 6710.9760                                | 6710.9760                                | 6710.9760                                | 6710.9760                                |
| 15              | 0.120 | 26843.8400                               | 26843.8400                               | 26843.8400                               | 26843.8400                               | 26843.8400                               | 26843.8400                               |
| 16              | 0.128 | 107375.3600                              | 107375.3600                              | 107375.3600                              | 107375.3600                              | 107375.3600                              | 107375.3600                              |
| 17              | 0.136 | 429501.4400                              | 429501.4400                              | 429501.4400                              | 429501.4400                              | 429501.4400                              | 429501.4400                              |
| 18              | 0.144 | 1718005.7600                             | 1718005.7600                             | 1718005.7600                             | 1718005.7600                             | 1718005.7600                             | 1718005.7600                             |
| 19              | 0.152 | 6872023.0400                             | 6872023.0400                             | 6872023.0400                             | 6872023.0400                             | 6872023.0400                             | 6872023.0400                             |
| 20              | 0.160 | 27488096.0000                            | 27488096.0000                            | 27488096.0000                            | 27488096.0000                            | 27488096.0000                            | 27488096.0000                            |
| 21              | 0.168 | 109552384.0000                           | 109552384.0000                           | 109552384.0000                           | 109552384.0000                           | 109552384.0000                           | 109552384.0000                           |
| 22              | 0.176 | 438209536.0000                           | 438209536.0000                           | 438209536.0000                           | 438209536.0000                           | 438209536.0000                           | 438209536.0000                           |
| 23              | 0.184 | 1752838144.0000                          | 1752838144.0000                          | 1752838144.0000                          | 1752838144.0000                          | 1752838144.0000                          | 1752838144.0000                          |
| 24              | 0.192 | 7011352704.0000                          | 7011352704.0000                          | 7011352704.0000                          | 7011352704.0000                          | 7011352704.0000                          | 7011352704.0000                          |
| 25              | 0.200 | 28045410816.0000                         | 28045410816.0000                         | 28045410816.0000                         | 28045410816.0000                         | 28045410816.0000                         | 28045410816.0000                         |
| 26              | 0.208 | 112181643264.0000                        | 112181643264.0000                        | 112181643264.0000                        | 112181643264.0000                        | 112181643264.0000                        | 112181643264.0000                        |
| 27              | 0.216 | 448726572160.0000                        | 448726572160.0000                        | 448726572160.0000                        | 448726572160.0000                        | 448726572160.0000                        | 448726572160.0000                        |
| 28              | 0.224 | 1794906287360.0000                       | 1794906287360.0000                       | 1794906287360.0000                       | 1794906287360.0000                       | 1794906287360.0000                       | 1794906287360.0000                       |
| 29              | 0.232 | 7179625149440.0000                       | 7179625149440.0000                       | 7179625149440.0000                       | 7179625149440.0000                       | 7179625149440.0000                       | 7179625149440.0000                       |
| 30              | 0.240 | 28718500587520.0000                      | 28718500587520.0000                      | 28718500587520.0000                      | 28718500587520.0000                      | 28718500587520.0000                      | 28718500587520.0000                      |
| 31              | 0.248 | 115274002350080.0000                     | 115274002350080.0000                     | 115274002350080.0000                     | 115274002350080.0000                     | 115274002350080.0000                     | 115274002350080.0000                     |
| 32              | 0.256 | 461096009400320.0000                     | 461096009400320.0000                     | 461096009400320.0000                     | 461096009400320.0000                     | 461096009400320.0000                     | 461096009400320.0000                     |
| 33              | 0.264 | 1844384037601280.0000                    | 1844384037601280.0000                    | 1844384037601280.0000                    | 1844384037601280.0000                    | 1844384037601280.0000                    | 1844384037601280.0000                    |
| 34              | 0.272 | 7377536150405120.0000                    | 7377536150405120.0000                    | 7377536150405120.0000                    | 7377536150405120.0000                    | 7377536150405120.0000                    | 7377536150405120.0000                    |
| 35              | 0.280 | 29510144601620480.0000                   | 29510144601620480.0000                   | 29510144601620480.0000                   | 29510144601620480.0000                   | 29510144601620480.0000                   | 29510144601620480.0000                   |
| 36              | 0.288 | 118040578406481920.0000                  | 118040578406481920.0000                  | 118040578406481920.0000                  | 118040578406481920.0000                  | 118040578406481920.0000                  | 118040578406481920.0000                  |
| 37              | 0.296 | 472162313626327040.0000                  | 472162313626327040.0000                  | 472162313626327040.0000                  | 472162313626327040.0000                  | 472162313626327040.0000                  | 472162313626327040.0000                  |
| 38              | 0.304 | 1888649254505310720.0000                 | 1888649254505310720.0000                 | 1888649254505310720.0000                 | 1888649254505310720.0000                 | 1888649254505310720.0000                 | 1888649254505310720.0000                 |
| 39              | 0.312 | 7554597018021243008.0000                 | 7554597018021243008.0000                 | 7554597018021243008.0000                 | 7554597018021243008.0000                 | 7554597018021243008.0000                 | 7554597018021243008.0000                 |
| 40              | 0.320 | 30218388072085017600.0000                | 30218388072085017600.0000                | 30218388072085017600.0000                | 30218388072085017600.0000                | 30218388072085017600.0000                | 30218388072085017600.0000                |
| 41              | 0.328 | 120873552288340070400.0000               | 120873552288340070400.0000               | 120873552288340070400.0000               | 120873552288340070400.0000               | 120873552288340070400.0000               | 120873552288340070400.0000               |
| 42              | 0.336 | 483494209153360281600.0000               | 483494209153360281600.0000               | 483494209153360281600.0000               | 483494209153360281600.0000               | 483494209153360281600.0000               | 483494209153360281600.0000               |
| 43              | 0.344 | 1933976836613441120000.0000              | 1933976836613441120000.0000              | 1933976836613441120000.0000              | 1933976836613441120000.0000              | 1933976836613441120000.0000              | 1933976836613441120000.0000              |
| 44              | 0.352 | 7735907346453764416000.0000              | 7735907346453764416000.0000              | 7735907346453764416000.0000              | 7735907346453764416000.0000              | 7735907346453764416000.0000              | 7735907346453764416000.0000              |
| 45              | 0.360 | 30943629385815057664000.0000             | 30943629385815057664000.0000             | 30943629385815057664000.0000             | 30943629385815057664000.0000             | 30943629385815057664000.0000             | 30943629385815057664000.0000             |
| 46              | 0.368 | 12377451754726023040000.0000             | 12377451754726023040000.0000             | 12377451754726023040000.0000             | 12377451754726023040000.0000             | 12377451754726023040000.0000             | 12377451754726023040000.0000             |
| 47              | 0.376 | 49509806978904092160000.0000             | 49509806978904092160000.0000             | 49509806978904092160000.0000             | 49509806978904092160000.0000             | 49509806978904092160000.0000             | 49509806978904092160000.0000             |
| 48              | 0.384 | 198039227915616368640000.0000            | 198039227915616368640000.0000            | 198039227915616368640000.0000            | 198039227915616368640000.0000            | 198039227915616368640000.0000            | 198039227915616368640000.0000            |
| 49              | 0.392 | 792156911662465473280000.0000            | 792156911662465473280000.0000            | 792156911662465473280000.0000            | 792156911662465473280000.0000            | 792156911662465473280000.0000            | 792156911662465473280000.0000            |
| 50              | 0.400 | 3168627646649861893120000.0000           | 3168627646649861893120000.0000           | 3168627646649861893120000.0000           | 3168627646649861893120000.0000           | 3168627646649861893120000.0000           | 3168627646649861893120000.0000           |
| 51              | 0.408 | 12674510586599447572480000.0000          | 12674510586599447572480000.0000          | 12674510586599447572480000.0000          | 12674510586599447572480000.0000          | 12674510586599447572480000.0000          | 12674510586599447572480000.0000          |
| 52              | 0.416 | 50698042346397790297600000.0000          | 50698042346397790297600000.0000          | 50698042346397790297600000.0000          | 50698042346397790297600000.0000          | 50698042346397790297600000.0000          | 50698042346397790297600000.0000          |
| 53              | 0.424 | 202792169385591161184000000.0000         | 202792169385591161184000000.0000         | 202792169385591161184000000.0000         | 202792169385591161184000000.0000         | 202792169385591161184000000.0000         | 202792169385591161184000000.0000         |
| 54              | 0.432 | 811168677542364644736000000.0000         | 811168677542364644736000000.0000         | 811168677542364644736000000.0000         | 811168677542364644736000000.0000         | 811168677542364644736000000.0000         | 811168677542364644736000000.0000         |
| 55              | 0.440 | 3244674710169458578816000000.0000        | 3244674710169458578816000000.0000        | 3244674710169458578816000000.0000        | 3244674710169458578816000000.0000        | 3244674710169458578816000000.0000        | 3244674710169458578816000000.0000        |
| 56              | 0.448 | 12978698840677834315392000000.0000       | 12978698840677834315392000000.0000       | 12978698840677834315392000000.0000       | 12978698840677834315392000000.0000       | 12978698840677834315392000000.0000       | 12978698840677834315392000000.0000       |
| 57              | 0.456 | 51914795362711337261568000000.0000       | 51914795362711337261568000000.0000       | 51914795362711337261568000000.0000       | 51914795362711337261568000000.0000       | 51914795362711337261568000000.0000       | 51914795362711337261568000000.0000       |
| 58              | 0.464 | 207659181450845349046272000000.0000      | 207659181450845349046272000000.0000      | 207659181450845349046272000000.0000      | 207659181450845349046272000000.0000      | 207659181450845349046272000000.0000      | 207659181450845349046272000000.0000      |
| 59              | 0.472 | 830636725803381396185088000000.0000      | 830636725803381396185088000000.0000      | 830636725803381396185088000000.0000      | 830636725803381396185088000000.0000      | 830636725803381396185088000000.0000      | 830636725803381396185088000000.0000      |
| 60              | 0.480 | 3322546903213525584740352000000.0000     | 3322546903213525584740352000000.0000     | 3322546903213525584740352000000.0000     | 3322546903213525584740352000000.0000     | 3322546903213525584740352000000.0000     | 3322546903213525584740352000000.0000     |
| 61              | 0.488 | 13308187612854102338961920000000.0000    | 13308187612854102338961920000000.0000    | 13308187612854102338961920000000.0000    | 13308187612854102338961920000000.0000    | 13308187612854102338961920000000.0000    | 13308187612854102338961920000000.0000    |
| 62              | 0.496 | 53232750451421609355847680000000.0000    | 53232750451421609355847680000000.0000    | 53232750451421609355847680000000.0000    | 53232750451421609355847680000000.0000    | 53232750451421609355847680000000.0000    | 53232750451421609355847680000000.0000    |
| 63              | 0.504 | 217731001805686437423390720000000.0000   | 217731001805686437423390720000000.0000   | 217731001805686437423390720000000.0000   | 217731001805686437423390720000000.0000   | 217731001805686437423390720000000.0000   | 217731001805686437423390720000000.0000   |
| 64              | 0.512 | 870924007222746550693562880000000.0000   | 870924007222746550693562880000000.0000   | 870924007222746550693562880000000.0000   | 870924007222746550693562880000000.0000   | 870924007222746550693562880000000.0000   | 870924007222746550693562880000000.0000   |
| 65              | 0.520 | 3483696028891066202774251520000000.0000  | 3483696028891066202774251520000000.0000  | 3483696028891066202774251520000000.0000  | 3483696028891066202774251520000000.0000  | 3483696028891066202774251520000000.0000  | 3483696028891066202774251520000000.0000  |
| 66              | 0.528 | 14134784115564264811097006080000000.0000 | 14134784115564264811097006080000000.0000 | 14134784115564264811097006080000000.0000 | 14134784115564264811097006080000000.0000 | 14134784115564264811097006080000000.0000 | 14134784115564264811097006080000000.0000 |
| 67              | 0.536 | 57339136462257059244388024320000000.0000 | 57339136462257059244388024320000000.0000 | 57339136462257059244388024320000000.0000 | 57339136462257059244388024320000000.0000 | 57339136462257059244388024320000000.0000 | 57339136462257059244388024320000000.0000 |
| 68              | 0.544 | 23335654584902823697755                  |                                          |                                          |                                          |                                          |                                          |

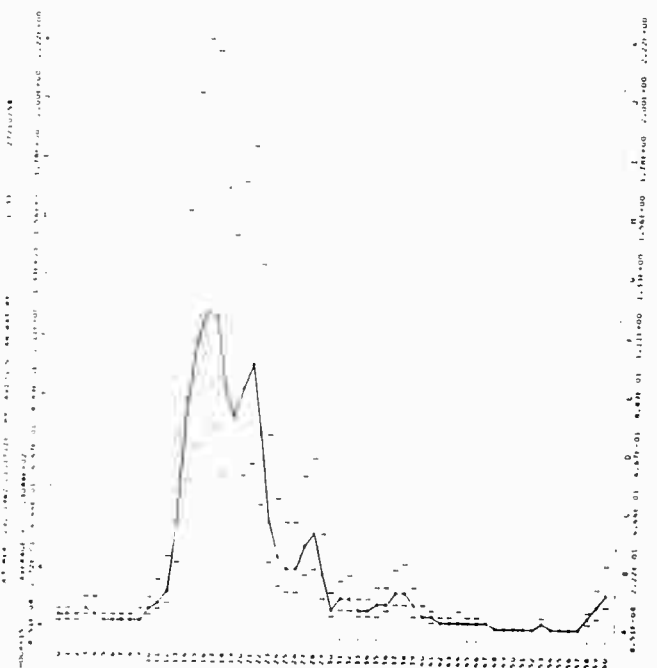
## SPECTRA HINDCASTING OCTOBER 29, 1962 DIGITIZED BY DAVIDSON LABORATORY

| DATE = 27/10/58 |      | AV. IN        |          | RECORD =     |           | DL 32  |       |
|-----------------|------|---------------|----------|--------------|-----------|--------|-------|
| HOUR = 9        |      | SIG-MET. =    |          | UPPER MGT. = |           | 13.1   |       |
| TOTAL DF = 174  |      | CORE. VAR. =  |          | LOWER MGT. = |           | 12.8   |       |
|                 |      | NOISE LEVEL = |          | WIND SPEED = |           | 35     |       |
| M               | PKG. | UNIT-FT.2     | FILTERED | LESS NOISE   | CORR.FT.2 | UPPER  | LOWER |
| 0               | .000 | .1267         | .1267    | .1700        | .1700     | .2211  | .0766 |
| 1               | .006 | .1003         | .1003    | .0916        | .0916     | .1775  | .0596 |
| 2               | .011 | .0532         | .0532    | .0466        | .0466     | .0856  | .0246 |
| 3               | .017 | .0338         | .0338    | .0270        | .0270     | .0499  | .0172 |
| 4               | .022 | .0329         | .0329    | .0262        | .0262     | .0483  | .0167 |
| 5               | .028 | .0277         | .0277    | .0220        | .0220     | .0485  | .0113 |
| 6               | .033 | .0266         | .0266    | .0193        | .0193     | .0377  | .0144 |
| 7               | .038 | .0275         | .0275    | .0178        | .0178     | .0369  | .0176 |
| 8               | .044 | .0268         | .0268    | .0180        | .0180     | .0399  | .0116 |
| 9               | .050 | .0266         | .0266    | .0174        | .0174     | .0402  | .0119 |
| 10              | .056 | .0266         | .0266    | .0174        | .0174     | .0402  | .0119 |
| 11              | .061 | .0273         | .0273    | .0165        | .0165     | .0394  | .0166 |
| 12              | .067 | .0266         | .0266    | .0166        | .0166     | .0396  | .0161 |
| 13              | .072 | .0266         | .0266    | .0166        | .0166     | .0396  | .0161 |
| 14              | .078 | .11918        | .11918   | .11848       | .11848    | .22602 | .0768 |
| 15              | .083 | .11381        | .11381   | .11311       | .11311    | .21221 | .0765 |
| 16              | .089 | .11051        | .11051   | .10981       | .10981    | .21221 | .0765 |
| 17              | .094 | .0855         | .0855    | .0848        | .0848     | .19498 | .0716 |
| 18              | .100 | .0852         | .0852    | .0845        | .0845     | .19498 | .0716 |
| 19              | .106 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 20              | .111 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 21              | .117 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 22              | .122 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 23              | .128 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 24              | .133 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 25              | .139 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 26              | .144 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 27              | .150 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 28              | .156 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 29              | .161 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 30              | .167 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 31              | .172 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 32              | .178 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 33              | .183 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 34              | .189 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 35              | .194 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 36              | .200 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 37              | .206 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 38              | .211 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 39              | .217 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 40              | .222 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 41              | .228 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 42              | .233 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 43              | .239 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 44              | .244 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 45              | .250 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 46              | .256 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 47              | .261 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 48              | .267 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 49              | .272 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 50              | .278 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 51              | .283 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 52              | .289 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 53              | .294 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 54              | .300 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 55              | .306 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 56              | .311 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 57              | .317 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 58              | .322 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 59              | .328 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 60              | .333 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |



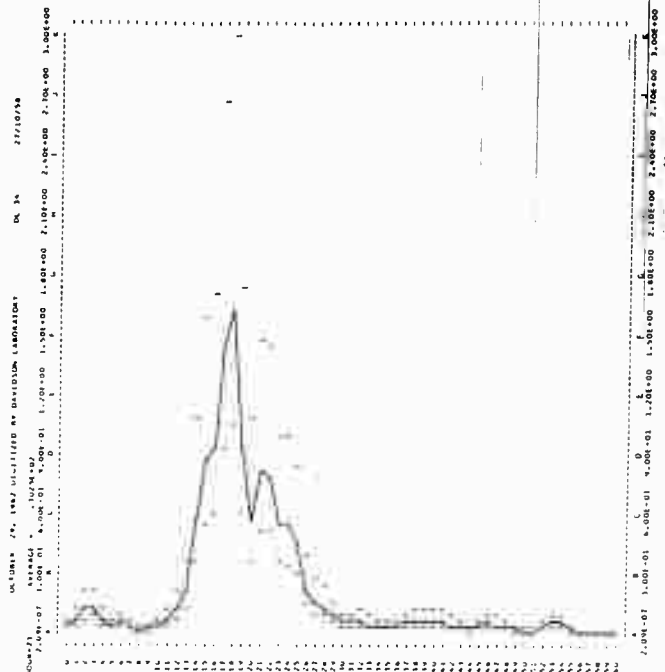
## SPECTRA HINDCASTING OCTOBER 29, 1962 DIGITIZED BY DAVIDSON LABORATORY

| DATE = 27/10/58 |      | AV. IN        |          | RECORD =     |           | DL 32  |       |
|-----------------|------|---------------|----------|--------------|-----------|--------|-------|
| HOUR = 9        |      | SIG-MET. =    |          | UPPER MGT. = |           | 13.1   |       |
| TOTAL DF = 174  |      | CORE. VAR. =  |          | LOWER MGT. = |           | 12.8   |       |
|                 |      | NOISE LEVEL = |          | WIND SPEED = |           | 35     |       |
| M               | PKG. | UNIT-FT.2     | FILTERED | LESS NOISE   | CORR.FT.2 | UPPER  | LOWER |
| 0               | .000 | .1267         | .1267    | .1700        | .1700     | .2211  | .0766 |
| 1               | .006 | .1003         | .1003    | .0916        | .0916     | .1775  | .0596 |
| 2               | .011 | .0532         | .0532    | .0466        | .0466     | .0856  | .0246 |
| 3               | .017 | .0338         | .0338    | .0270        | .0270     | .0499  | .0172 |
| 4               | .022 | .0329         | .0329    | .0262        | .0262     | .0483  | .0167 |
| 5               | .028 | .0277         | .0277    | .0220        | .0220     | .0485  | .0113 |
| 6               | .033 | .0266         | .0266    | .0193        | .0193     | .0377  | .0144 |
| 7               | .038 | .0275         | .0275    | .0178        | .0178     | .0369  | .0176 |
| 8               | .044 | .0268         | .0268    | .0180        | .0180     | .0399  | .0116 |
| 9               | .050 | .0266         | .0266    | .0174        | .0174     | .0402  | .0119 |
| 10              | .056 | .0266         | .0266    | .0174        | .0174     | .0402  | .0119 |
| 11              | .061 | .0273         | .0273    | .0165        | .0165     | .0394  | .0166 |
| 12              | .067 | .0266         | .0266    | .0166        | .0166     | .0396  | .0161 |
| 13              | .072 | .0266         | .0266    | .0166        | .0166     | .0396  | .0161 |
| 14              | .078 | .11918        | .11918   | .11848       | .11848    | .22602 | .0768 |
| 15              | .083 | .11381        | .11381   | .11311       | .11311    | .21221 | .0765 |
| 16              | .089 | .11051        | .11051   | .10981       | .10981    | .21221 | .0765 |
| 17              | .094 | .0855         | .0855    | .0848        | .0848     | .19498 | .0716 |
| 18              | .100 | .0852         | .0852    | .0845        | .0845     | .19498 | .0716 |
| 19              | .106 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 20              | .111 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 21              | .117 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 22              | .122 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 23              | .128 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 24              | .133 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 25              | .139 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 26              | .144 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 27              | .150 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 28              | .156 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 29              | .161 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 30              | .167 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 31              | .172 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 32              | .178 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 33              | .183 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 34              | .189 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 35              | .194 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 36              | .200 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 37              | .206 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 38              | .211 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 39              | .217 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 40              | .222 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 41              | .228 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 42              | .233 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 43              | .239 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 44              | .244 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 45              | .250 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 46              | .256 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 47              | .261 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 48              | .267 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 49              | .272 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 50              | .278 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 51              | .283 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 52              | .289 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 53              | .294 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 54              | .300 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 55              | .306 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 56              | .311 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 57              | .317 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 58              | .322 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 59              | .328 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |
| 60              | .333 | .0853         | .0853    | .0846        | .0846     | .19498 | .0716 |



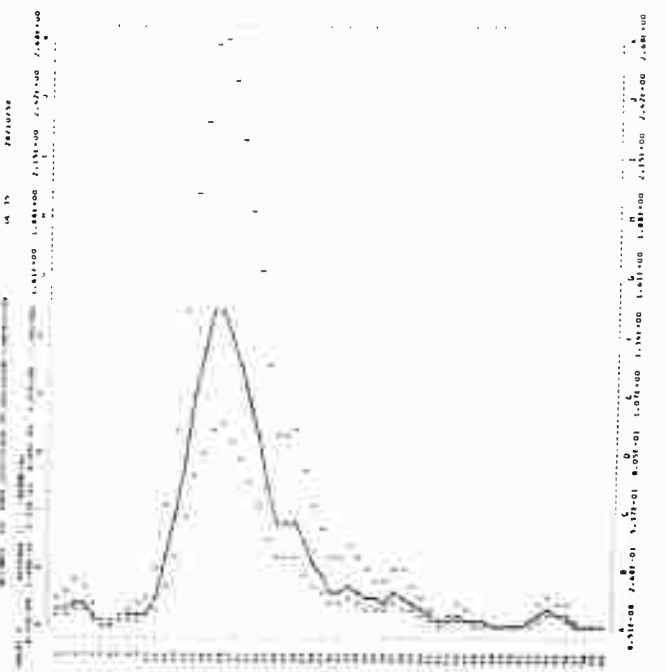
## SPECTRA RECASTING OCTOBER 29, 1962 DIGITIZED BY DAVIDSON LABORATORY

| DATE = 27/10/58 |       | AV. T =       |          | RECORD =     |           | DL 34  |        |
|-----------------|-------|---------------|----------|--------------|-----------|--------|--------|
| HOUR = 21       |       | SIG. MGT. =   |          | UPPER MGT. = |           | 13.6   |        |
| TOTAL OF 1037   |       | CORR. FREQ. = |          | LOWER MGT. = |           | 13.0   |        |
|                 |       | NOISE LEVEL = |          | WIND SPEED = |           | 30     |        |
| H               | FREQ. | UNIT-F1.2     | FILTERED | LESS NOISE   | CORR.F1.2 | UPPER  | LOWER  |
| 0               | .000  | .0394         | .0394    | .0391        | .0391     | .0400  | .0378  |
| 1               | .006  | .0461         | .0461    | .0461        | .0461     | .0465  | .0456  |
| 2               | .011  | .0502         | .0502    | .0502        | .0502     | .0505  | .0499  |
| 3               | .017  | .0543         | .0543    | .0543        | .0543     | .0545  | .0541  |
| 4               | .022  | .0674         | .0674    | .0674        | .0674     | .0675  | .0673  |
| 5               | .028  | .0649         | .0649    | .0649        | .0649     | .0650  | .0648  |
| 6               | .033  | .0600         | .0600    | .0600        | .0600     | .0600  | .0600  |
| 7               | .039  | .0582         | .0582    | .0582        | .0582     | .0583  | .0581  |
| 8               | .046  | .0518         | .0518    | .0518        | .0518     | .0519  | .0517  |
| 9               | .050  | .0576         | .0576    | .0576        | .0576     | .0577  | .0575  |
| 10              | .056  | .0587         | .0587    | .0587        | .0587     | .0588  | .0586  |
| 11              | .061  | .0634         | .0634    | .0634        | .0634     | .0635  | .0633  |
| 12              | .067  | .0598         | .0598    | .0598        | .0598     | .0599  | .0597  |
| 13              | .072  | .0576         | .0576    | .0576        | .0576     | .0577  | .0575  |
| 14              | .078  | .0675         | .0675    | .0675        | .0675     | .0676  | .0674  |
| 15              | .083  | .0721         | .0721    | .0721        | .0721     | .0722  | .0720  |
| 16              | .089  | .0727         | .0727    | .0727        | .0727     | .0728  | .0726  |
| 17              | .094  | 1.3192        | 1.3192   | 1.3192       | 1.3192    | 1.3193 | 1.3191 |
| 18              | .100  | 1.4336        | 1.4336   | 1.4287       | 1.4275    | 1.4288 | 1.4263 |
| 19              | .106  | .0803         | .0803    | .0803        | .0803     | .0804  | .0802  |
| 20              | .111  | .0801         | .0801    | .0801        | .0801     | .0802  | .0800  |
| 21              | .117  | .0874         | .0874    | .0874        | .0874     | .0875  | .0873  |
| 22              | .122  | .0886         | .0886    | .0886        | .0886     | .0887  | .0885  |
| 23              | .128  | .0890         | .0890    | .0890        | .0890     | .0891  | .0889  |
| 24              | .133  | .0945         | .0945    | .0945        | .0945     | .0946  | .0944  |
| 25              | .139  | .0942         | .0942    | .0942        | .0942     | .0943  | .0941  |
| 26              | .144  | .0931         | .0931    | .0931        | .0931     | .0932  | .0930  |
| 27              | .150  | .0848         | .0848    | .0848        | .0848     | .0849  | .0847  |
| 28              | .156  | .0691         | .0691    | .0691        | .0691     | .0692  | .0690  |
| 29              | .161  | .0656         | .0656    | .0656        | .0656     | .0657  | .0655  |
| 30              | .167  | .0710         | .0710    | .0710        | .0710     | .0711  | .0709  |
| 31              | .172  | .0742         | .0742    | .0742        | .0742     | .0743  | .0741  |
| 32              | .178  | .0717         | .0717    | .0717        | .0717     | .0718  | .0716  |
| 33              | .183  | .0700         | .0700    | .0700        | .0700     | .0701  | .0699  |
| 34              | .189  | .0718         | .0718    | .0718        | .0718     | .0719  | .0717  |
| 35              | .194  | .0718         | .0718    | .0718        | .0718     | .0719  | .0717  |
| 36              | .200  | .0741         | .0741    | .0741        | .0741     | .0742  | .0740  |
| 37              | .206  | .0718         | .0718    | .0718        | .0718     | .0719  | .0717  |
| 38              | .211  | .0709         | .0709    | .0709        | .0709     | .0710  | .0708  |
| 39              | .217  | .0718         | .0718    | .0718        | .0718     | .0719  | .0717  |
| 40              | .222  | .0718         | .0718    | .0718        | .0718     | .0719  | .0717  |
| 41              | .228  | .0717         | .0717    | .0717        | .0717     | .0718  | .0716  |
| 42              | .233  | .0705         | .0705    | .0705        | .0705     | .0706  | .0704  |
| 43              | .239  | .0678         | .0678    | .0678        | .0678     | .0679  | .0677  |
| 44              | .244  | .0683         | .0683    | .0683        | .0683     | .0684  | .0682  |
| 45              | .250  | .0678         | .0678    | .0678        | .0678     | .0679  | .0677  |
| 46              | .256  | .0699         | .0699    | .0699        | .0699     | .0700  | .0698  |
| 47              | .261  | .0681         | .0681    | .0681        | .0681     | .0682  | .0680  |
| 48              | .267  | .0662         | .0662    | .0662        | .0662     | .0663  | .0661  |
| 49              | .272  | .0657         | .0657    | .0657        | .0657     | .0658  | .0656  |
| 50              | .278  | .0640         | .0640    | .0640        | .0640     | .0641  | .0639  |
| 51              | .283  | .0641         | .0641    | .0641        | .0641     | .0642  | .0640  |
| 52              | .289  | .0644         | .0644    | .0644        | .0644     | .0645  | .0643  |
| 53              | .294  | .0644         | .0644    | .0644        | .0644     | .0645  | .0643  |
| 54              | .300  | .0658         | .0658    | .0658        | .0658     | .0659  | .0657  |
| 55              | .306  | .0647         | .0647    | .0647        | .0647     | .0648  | .0646  |
| 56              | .311  | .0643         | .0643    | .0643        | .0643     | .0644  | .0642  |
| 57              | .317  | .0621         | .0621    | .0621        | .0621     | .0622  | .0620  |
| 58              | .322  | .0618         | .0618    | .0618        | .0618     | .0619  | .0617  |
| 59              | .328  | .0610         | .0610    | .0610        | .0610     | .0611  | .0609  |
| 60              | .333  | .0617         | .0617    | .0617        | .0617     | .0618  | .0616  |



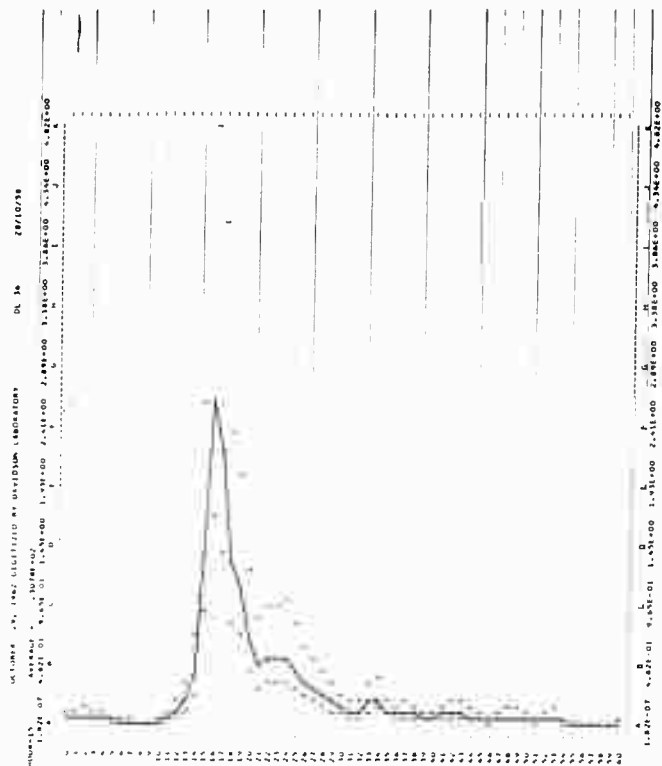
## SPECTRA RECASTING OCTOBER 29, 1962 DIGITIZED BY DAVIDSON LABORATORY

| DATE = 28/10/58 |       | AV. T =       |          | RECORD =     |           | DL 35  |        |
|-----------------|-------|---------------|----------|--------------|-----------|--------|--------|
| HOUR = 9        |       | SIG. MGT. =   |          | UPPER MGT. = |           | 18.0   |        |
| TOTAL OF 700    |       | CORR. FREQ. = |          | LOWER MGT. = |           | 15.1   |        |
|                 |       | NOISE LEVEL = |          | WIND SPEED = |           | 30     |        |
| H               | FREQ. | UNIT-F1.2     | FILTERED | LESS NOISE   | CORR.F1.2 | UPPER  | LOWER  |
| 0               | .000  | .0831         | .0831    | .0701        | .0701     | .0704  | .0698  |
| 1               | .006  | .0723         | .0723    | .0723        | .0723     | .0724  | .0722  |
| 2               | .011  | .0716         | .0716    | .0716        | .0716     | .0717  | .0715  |
| 3               | .017  | .0718         | .0718    | .0718        | .0718     | .0719  | .0717  |
| 4               | .022  | .0717         | .0717    | .0717        | .0717     | .0718  | .0716  |
| 5               | .028  | .0737         | .0737    | .0737        | .0737     | .0738  | .0736  |
| 6               | .033  | .0718         | .0718    | .0718        | .0718     | .0719  | .0717  |
| 7               | .039  | .0738         | .0738    | .0738        | .0738     | .0739  | .0737  |
| 8               | .046  | .0717         | .0717    | .0717        | .0717     | .0718  | .0716  |
| 9               | .050  | .0717         | .0717    | .0717        | .0717     | .0718  | .0716  |
| 10              | .056  | .0717         | .0717    | .0717        | .0717     | .0718  | .0716  |
| 11              | .061  | .0717         | .0717    | .0717        | .0717     | .0718  | .0716  |
| 12              | .067  | .0717         | .0717    | .0717        | .0717     | .0718  | .0716  |
| 13              | .072  | .0717         | .0717    | .0717        | .0717     | .0718  | .0716  |
| 14              | .078  | .0717         | .0717    | .0717        | .0717     | .0718  | .0716  |
| 15              | .083  | 1.0425        | 1.0425   | 1.0297       | 1.0297    | 1.0300 | 1.0294 |
| 16              | .089  | 1.1895        | 1.1895   | 1.1767       | 1.1767    | 1.1770 | 1.1764 |
| 17              | .094  | 1.3241        | 1.3241   | 1.3113       | 1.3113    | 1.3116 | 1.3110 |
| 18              | .100  | 1.2918        | 1.2918   | 1.2790       | 1.2790    | 1.2793 | 1.2787 |
| 19              | .106  | 1.2742        | 1.2742   | 1.2614       | 1.2614    | 1.2617 | 1.2611 |
| 20              | .111  | 1.0001        | 1.0001   | .9873        | .9873     | .9876  | .9870  |
| 21              | .117  | .0245         | .0245    | .0245        | .0245     | .0246  | .0244  |
| 22              | .122  | .0715         | .0715    | .0715        | .0715     | .0716  | .0714  |
| 23              | .128  | .0710         | .0710    | .0710        | .0710     | .0711  | .0709  |
| 24              | .133  | .0705         | .0705    | .0705        | .0705     | .0706  | .0704  |
| 25              | .139  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 26              | .144  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 27              | .150  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 28              | .156  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 29              | .161  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 30              | .167  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 31              | .172  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 32              | .178  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 33              | .183  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 34              | .189  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 35              | .194  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 36              | .200  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 37              | .206  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 38              | .211  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 39              | .217  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 40              | .222  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 41              | .228  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 42              | .233  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 43              | .239  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 44              | .244  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 45              | .250  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 46              | .256  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 47              | .261  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 48              | .267  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 49              | .272  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 50              | .278  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 51              | .283  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 52              | .289  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 53              | .294  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 54              | .300  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 55              | .306  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 56              | .311  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 57              | .317  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 58              | .322  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 59              | .328  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |
| 60              | .333  | .0707         | .0707    | .0707        | .0707     | .0708  | .0706  |



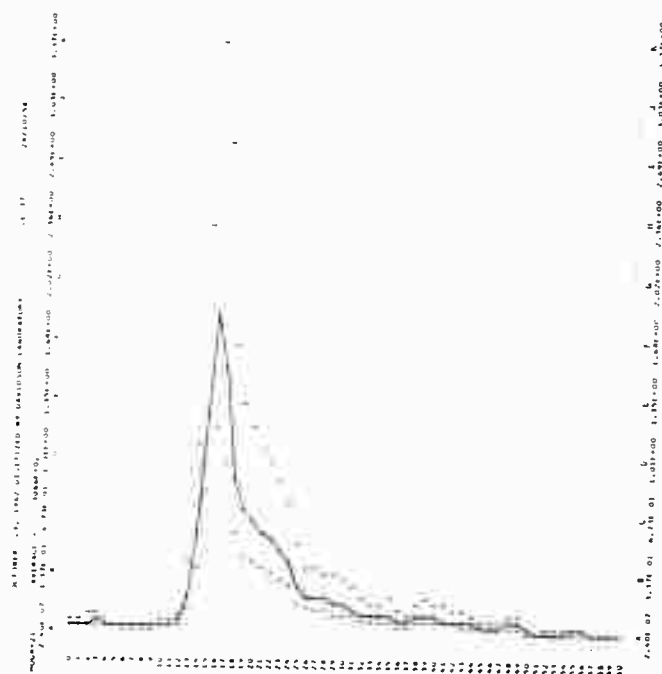
## SPECTRA HINDCASTING OCTOBER 29, 1992 DIGITIZED BY DAVIDSON LABORATORY

| DATE = 28/10/92     |      |           |          | SIG. HGT. = 14.0  |           | RECORD = 11.2     |       | DL 34             |  |
|---------------------|------|-----------|----------|-------------------|-----------|-------------------|-------|-------------------|--|
| TOTAL OF 134        |      |           |          | CORR. VAL. = 16.0 |           | UPPER HGT. = 14.5 |       | LOWER HGT. = 14.5 |  |
| NOISE LEVEL = .0076 |      |           |          | CORR. VAL. = 16.0 |           | UPPER HGT. = 14.5 |       | LOWER HGT. = 14.5 |  |
| NOISE LEVEL = .0076 |      |           |          | CORR. VAL. = 16.0 |           | UPPER HGT. = 14.5 |       | LOWER HGT. = 14.5 |  |
| H                   | PRE. | UNIT-FT.2 | FILTERED | LESS NOISE        | CORR.FT.2 | UPPER             | LOWER |                   |  |
| 0                   | .000 | .0543     | .0543    | .0467             | .0467     | .0861             | .0297 |                   |  |
| 1                   | .004 | .0457     | .0457    | .0381             | .0381     | .0771             | .0370 |                   |  |
| 2                   | .011 | .0376     | .0376    | .0300             | .0300     | .0678             | .0432 |                   |  |
| 3                   | .017 | .0289     | .0289    | .0212             | .0212     | .0579             | .0510 |                   |  |
| 4                   | .022 | .0205     | .0205    | .0128             | .0128     | .0478             | .0578 |                   |  |
| 5                   | .028 | .0121     | .0121    | .0045             | .0045     | .0372             | .0678 |                   |  |
| 6                   | .033 | .0036     | .0036    | .0000             | .0000     | .0271             | .0771 |                   |  |
| 7                   | .039 | .0000     | .0000    | .0000             | .0000     | .0171             | .0861 |                   |  |
| 8                   | .044 | .0000     | .0000    | .0000             | .0000     | .0071             | .0954 |                   |  |
| 9                   | .050 | .0000     | .0000    | .0000             | .0000     | .0000             | .1048 |                   |  |
| 10                  | .056 | .0000     | .0000    | .0000             | .0000     | .0000             | .1142 |                   |  |
| 11                  | .061 | .0000     | .0000    | .0000             | .0000     | .0000             | .1236 |                   |  |
| 12                  | .067 | .0000     | .0000    | .0000             | .0000     | .0000             | .1330 |                   |  |
| 13                  | .072 | .0000     | .0000    | .0000             | .0000     | .0000             | .1424 |                   |  |
| 14                  | .078 | .0000     | .0000    | .0000             | .0000     | .0000             | .1518 |                   |  |
| 15                  | .083 | .0000     | .0000    | .0000             | .0000     | .0000             | .1612 |                   |  |
| 16                  | .088 | .0000     | .0000    | .0000             | .0000     | .0000             | .1706 |                   |  |
| 17                  | .094 | .0000     | .0000    | .0000             | .0000     | .0000             | .1800 |                   |  |
| 18                  | .100 | .0000     | .0000    | .0000             | .0000     | .0000             | .1894 |                   |  |
| 19                  | .105 | .0000     | .0000    | .0000             | .0000     | .0000             | .1988 |                   |  |
| 20                  | .111 | .0000     | .0000    | .0000             | .0000     | .0000             | .2082 |                   |  |
| 21                  | .117 | .0000     | .0000    | .0000             | .0000     | .0000             | .2176 |                   |  |
| 22                  | .122 | .0000     | .0000    | .0000             | .0000     | .0000             | .2270 |                   |  |
| 23                  | .128 | .0000     | .0000    | .0000             | .0000     | .0000             | .2364 |                   |  |
| 24                  | .133 | .0000     | .0000    | .0000             | .0000     | .0000             | .2458 |                   |  |
| 25                  | .139 | .0000     | .0000    | .0000             | .0000     | .0000             | .2552 |                   |  |
| 26                  | .144 | .0000     | .0000    | .0000             | .0000     | .0000             | .2646 |                   |  |
| 27                  | .150 | .0000     | .0000    | .0000             | .0000     | .0000             | .2740 |                   |  |
| 28                  | .156 | .0000     | .0000    | .0000             | .0000     | .0000             | .2834 |                   |  |
| 29                  | .161 | .0000     | .0000    | .0000             | .0000     | .0000             | .2928 |                   |  |
| 30                  | .167 | .0000     | .0000    | .0000             | .0000     | .0000             | .3022 |                   |  |
| 31                  | .172 | .0000     | .0000    | .0000             | .0000     | .0000             | .3116 |                   |  |
| 32                  | .178 | .0000     | .0000    | .0000             | .0000     | .0000             | .3210 |                   |  |
| 33                  | .183 | .0000     | .0000    | .0000             | .0000     | .0000             | .3304 |                   |  |
| 34                  | .189 | .0000     | .0000    | .0000             | .0000     | .0000             | .3398 |                   |  |
| 35                  | .194 | .0000     | .0000    | .0000             | .0000     | .0000             | .3492 |                   |  |
| 36                  | .200 | .0000     | .0000    | .0000             | .0000     | .0000             | .3586 |                   |  |
| 37                  | .206 | .0000     | .0000    | .0000             | .0000     | .0000             | .3680 |                   |  |
| 38                  | .211 | .0000     | .0000    | .0000             | .0000     | .0000             | .3774 |                   |  |
| 39                  | .217 | .0000     | .0000    | .0000             | .0000     | .0000             | .3868 |                   |  |
| 40                  | .222 | .0000     | .0000    | .0000             | .0000     | .0000             | .3962 |                   |  |
| 41                  | .228 | .0000     | .0000    | .0000             | .0000     | .0000             | .4056 |                   |  |
| 42                  | .233 | .0000     | .0000    | .0000             | .0000     | .0000             | .4150 |                   |  |
| 43                  | .239 | .0000     | .0000    | .0000             | .0000     | .0000             | .4244 |                   |  |
| 44                  | .244 | .0000     | .0000    | .0000             | .0000     | .0000             | .4338 |                   |  |
| 45                  | .250 | .0000     | .0000    | .0000             | .0000     | .0000             | .4432 |                   |  |
| 46                  | .256 | .0000     | .0000    | .0000             | .0000     | .0000             | .4526 |                   |  |
| 47                  | .261 | .0000     | .0000    | .0000             | .0000     | .0000             | .4620 |                   |  |
| 48                  | .267 | .0000     | .0000    | .0000             | .0000     | .0000             | .4714 |                   |  |
| 49                  | .272 | .0000     | .0000    | .0000             | .0000     | .0000             | .4808 |                   |  |
| 50                  | .278 | .0000     | .0000    | .0000             | .0000     | .0000             | .4902 |                   |  |
| 51                  | .283 | .0000     | .0000    | .0000             | .0000     | .0000             | .5000 |                   |  |
| 52                  | .289 | .0000     | .0000    | .0000             | .0000     | .0000             | .5094 |                   |  |
| 53                  | .294 | .0000     | .0000    | .0000             | .0000     | .0000             | .5188 |                   |  |
| 54                  | .300 | .0000     | .0000    | .0000             | .0000     | .0000             | .5282 |                   |  |
| 55                  | .306 | .0000     | .0000    | .0000             | .0000     | .0000             | .5376 |                   |  |
| 56                  | .311 | .0000     | .0000    | .0000             | .0000     | .0000             | .5470 |                   |  |
| 57                  | .317 | .0000     | .0000    | .0000             | .0000     | .0000             | .5564 |                   |  |
| 58                  | .322 | .0000     | .0000    | .0000             | .0000     | .0000             | .5658 |                   |  |
| 59                  | .328 | .0000     | .0000    | .0000             | .0000     | .0000             | .5752 |                   |  |
| 60                  | .333 | .0000     | .0000    | .0000             | .0000     | .0000             | .5846 |                   |  |



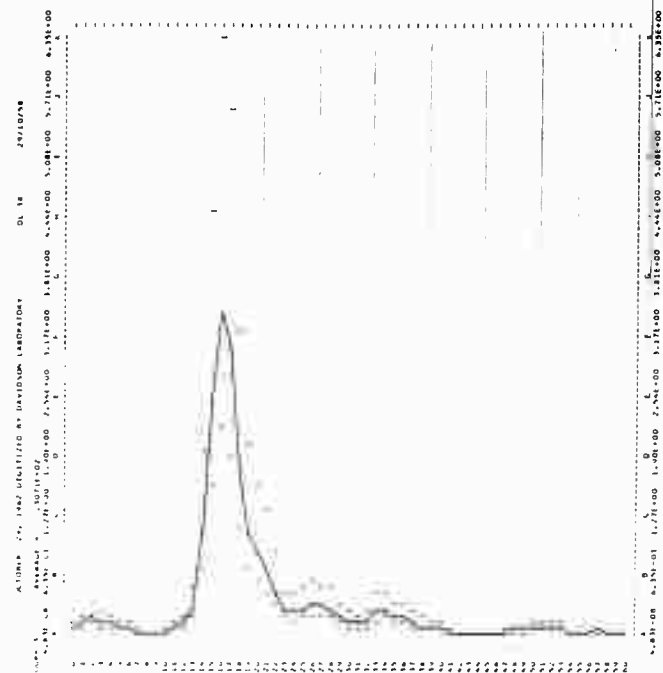
## SPECTRA HINDCASTING OCTOBER 29, 1992 DIGITIZED BY DAVIDSON LABORATORY

| DATE = 28/10/92     |      |           |          | SIG. HGT. = 14.0   | RECORD = 11.2     | DL 34             |       |
|---------------------|------|-----------|----------|--------------------|-------------------|-------------------|-------|
| HOUR = 22           |      |           |          | SUNSET TIME = 17.3 | UPPER HGT. = 14.5 | LOWER HGT. = 13.7 |       |
| TOTAL OF 134        |      |           |          | CORR. VAL. = 16.0  | CORR. HGT. = 14.5 | DL 34             |       |
| NOISE LEVEL = .0076 |      |           |          | CORR. VAL. = 16.0  | UPPER HGT. = 14.5 | LOWER HGT. = 13.7 |       |
| H                   | PRE. | UNIT-FT.2 | FILTERED | LESS NOISE         | CORR.FT.2         | UPPER             | LOWER |
| 0                   | .000 | .0376     | .0376    | .0300              | .0300             | .0579             | .0510 |
| 1                   | .004 | .0289     | .0289    | .0212              | .0212             | .0478             | .0613 |
| 2                   | .011 | .0205     | .0205    | .0128              | .0128             | .0372             | .0699 |
| 3                   | .017 | .0121     | .0121    | .0045              | .0045             | .0271             | .0771 |
| 4                   | .022 | .0036     | .0036    | .0000              | .0000             | .0171             | .0861 |
| 5                   | .028 | .0000     | .0000    | .0000              | .0000             | .0071             | .0954 |
| 6                   | .033 | .0000     | .0000    | .0000              | .0000             | .0000             | .1048 |
| 7                   | .039 | .0000     | .0000    | .0000              | .0000             | .0000             | .1142 |
| 8                   | .044 | .0000     | .0000    | .0000              | .0000             | .0000             | .1236 |
| 9                   | .050 | .0000     | .0000    | .0000              | .0000             | .0000             | .1330 |
| 10                  | .056 | .0000     | .0000    | .0000              | .0000             | .0000             | .1424 |
| 11                  | .061 | .0000     | .0000    | .0000              | .0000             | .0000             | .1518 |
| 12                  | .067 | .0000     | .0000    | .0000              | .0000             | .0000             | .1612 |
| 13                  | .072 | .0000     | .0000    | .0000              | .0000             | .0000             | .1706 |
| 14                  | .078 | .0000     | .0000    | .0000              | .0000             | .0000             | .1800 |
| 15                  | .083 | .0000     | .0000    | .0000              | .0000             | .0000             | .1894 |
| 16                  | .088 | .0000     | .0000    | .0000              | .0000             | .0000             | .1988 |
| 17                  | .094 | .0000     | .0000    | .0000              | .0000             | .0000             | .2082 |
| 18                  | .100 | .0000     | .0000    | .0000              | .0000             | .0000             | .2176 |
| 19                  | .105 | .0000     | .0000    | .0000              | .0000             | .0000             | .2270 |
| 20                  | .111 | .0000     | .0000    | .0000              | .0000             | .0000             | .2364 |
| 21                  | .117 | .0000     | .0000    | .0000              | .0000             | .0000             | .2458 |
| 22                  | .122 | .0000     | .0000    | .0000              | .0000             | .0000             | .2552 |
| 23                  | .128 | .0000     | .0000    | .0000              | .0000             | .0000             | .2646 |
| 24                  | .133 | .0000     | .0000    | .0000              | .0000             | .0000             | .2740 |
| 25                  | .139 | .0000     | .0000    | .0000              | .0000             | .0000             | .2834 |
| 26                  | .144 | .0000     | .0000    | .0000              | .0000             | .0000             | .2928 |
| 27                  | .150 | .0000     | .0000    | .0000              | .0000             | .0000             | .3022 |
| 28                  | .156 | .0000     | .0000    | .0000              | .0000             | .0000             | .3116 |
| 29                  | .161 | .0000     | .0000    | .0000              | .0000             | .0000             | .3210 |
| 30                  | .167 | .0000     | .0000    | .0000              | .0000             | .0000             | .3304 |
| 31                  | .172 | .0000     | .0000    | .0000              | .0000             | .0000             | .3398 |
| 32                  | .178 | .0000     | .0000    | .0000              | .0000             | .0000             | .3492 |
| 33                  | .183 | .0000     | .0000    | .0000              | .0000             | .0000             | .3586 |
| 34                  | .189 | .0000     | .0000    | .0000              | .0000             | .0000             | .3680 |
| 35                  | .194 | .0000     | .0000    | .0000              | .0000             | .0000             | .3774 |
| 36                  | .200 | .0000     | .0000    | .0000              | .0000             | .0000             | .3868 |
| 37                  | .206 | .0000     | .0000    | .0000              | .0000             | .0000             | .3962 |
| 38                  | .211 | .0000     | .0000    | .0000              | .0000             | .0000             | .4056 |
| 39                  | .217 | .0000     | .0000    | .0000              | .0000             | .0000             | .4150 |
| 40                  | .222 | .0000     | .0000    | .0000              | .0000             | .0000             | .4244 |
| 41                  | .228 | .0000     | .0000    | .0000              | .0000             | .0000             | .4338 |
| 42                  | .233 | .0000     | .0000    | .0000              | .0000             | .0000             | .4432 |
| 43                  | .239 | .0000     | .0000    | .0000              | .0000             | .0000             | .4526 |
| 44                  | .244 | .0000     | .0000    | .0000              | .0000             | .0000             | .4620 |
| 45                  | .250 | .0000     | .0000    | .0000              | .0000             | .0000             | .4714 |
| 46                  | .256 | .0000     | .0000    | .0000              | .0000             | .0000             | .4808 |
| 47                  | .261 | .0000     | .0000    | .0000              | .0000             | .0000             | .4902 |
| 48                  | .267 | .0000     | .0000    | .0000              | .0000             | .0000             | .5000 |
| 49                  | .272 | .0000     | .0000    | .0000              | .0000             | .0000             | .5094 |
| 50                  | .278 | .0000     | .0000    | .0000              | .0000             | .0000             | .5188 |
| 51                  | .283 | .0000     | .0000    | .0000              | .0000             | .0000             | .5282 |
| 52                  | .289 | .0000     | .0000    | .0000              | .0000             | .0000             | .5376 |
| 53                  | .294 | .0000     | .0000    | .0000              | .0000             | .0000             | .5470 |
| 54                  | .300 | .0000     | .0000    | .0000              | .0000             | .0000             | .5564 |
| 55                  | .306 | .0000     | .0000    | .0000              | .0000             | .0000             | .5658 |
| 56                  | .311 | .0000     | .0000    | .0000              | .0000             | .0000             | .5752 |
| 57                  | .317 | .0000     | .0000    | .0000              | .0000             | .0000             | .5846 |
| 58                  | .322 | .0000     | .0000    | .0000              | .0000             | .0000             | .5940 |
| 59                  | .328 | .0000     | .0000    | .0000              | .0000             | .0000             | .6034 |
| 60                  | .333 | .0000     | .0000    | .0000              | .0000             | .0000             | .6128 |



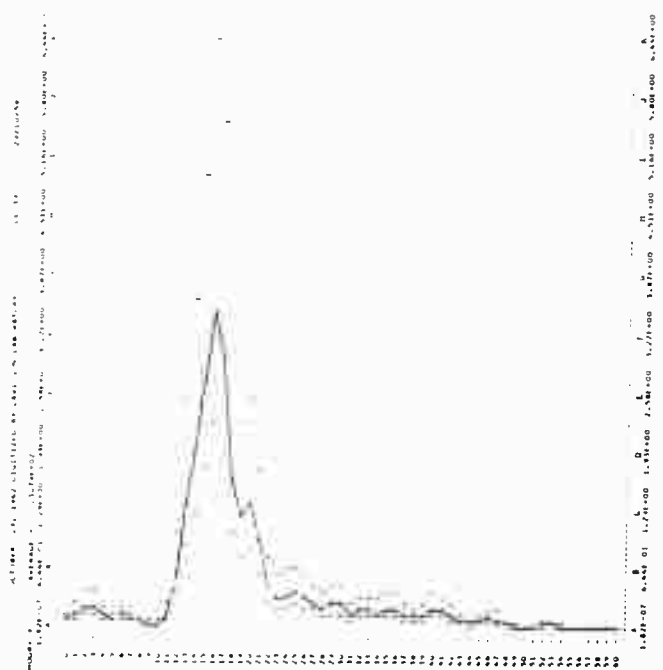
## SPECTRA HINDCASTING OCTOBER 29, 1962 UTILIZED BY DAYTON LABORATORY

| DATE = 29/10/68 |      | SIG. HGT. = 17.8    |          | RECORD = 19.8     |           | UL 38   |         |
|-----------------|------|---------------------|----------|-------------------|-----------|---------|---------|
| HOUR = 3        |      | CORR. VAR. = 20.0   |          | UPPER HGT. = 18.1 |           | 19.5    |         |
| TOTAL OF 1014   |      | NOISE LEVEL = .0119 |          | LOWER HGT. = 18.1 |           | 18.1    |         |
|                 |      |                     |          | WIND SPEED = 30   |           |         |         |
| M               | PAR. | UNIT-F1,2           | FILTERED | LESS NOISE        | CORR-F1,2 | UPPER   | LOWER   |
| 0               | .000 | .0731               | .0731    | .0612             | .0612     | .1128   | .0390   |
| 1               | .006 | .1267               | .1267    | .1128             | .1128     | .2079   | .0718   |
| 2               | .011 | .1796               | .1796    | .1675             | .1675     | .3087   | .1066   |
| 3               | .017 | .2408               | .2408    | .2288             | .2288     | .4263   | .1498   |
| 4               | .022 | .3121               | .3121    | .2999             | .2999     | .5517   | .1970   |
| 5               | .028 | .3935               | .3935    | .3808             | .3808     | .6847   | .2526   |
| 6               | .033 | .4847               | .4847    | .4707             | .4707     | .8259   | .3188   |
| 7               | .039 | .5856               | .5856    | .5698             | .5698     | .9747   | .3972   |
| 8               | .044 | .6962               | .6962    | .6788             | .6788     | 1.1319  | .4888   |
| 9               | .050 | .8167               | .8167    | .7978             | .7978     | 1.2977  | .5934   |
| 10              | .056 | .9471               | .9471    | .9268             | .9268     | 1.4719  | .7118   |
| 11              | .061 | 1.0875              | 1.0875   | 1.0658            | 1.0658    | 1.6537  | .8434   |
| 12              | .067 | 1.2379              | 1.2379   | 1.2148            | 1.2148    | 1.8437  | .9888   |
| 13              | .072 | 1.3983              | 1.3983   | 1.3738            | 1.3738    | 2.0419  | 1.1478  |
| 14              | .078 | 1.5687              | 1.5687   | 1.5428            | 1.5428    | 2.2477  | 1.3204  |
| 15              | .083 | 1.7491              | 1.7491   | 1.7218            | 1.7218    | 2.4617  | 1.5066  |
| 16              | .089 | 1.9395              | 1.9395   | 1.9108            | 1.9108    | 2.6837  | 1.7066  |
| 17              | .094 | 2.1399              | 2.1399   | 2.1098            | 2.1098    | 2.9137  | 1.9204  |
| 18              | .100 | 2.3499              | 2.3499   | 2.3188            | 2.3188    | 3.1517  | 2.1478  |
| 19              | .106 | 2.5699              | 2.5699   | 2.5378            | 2.5378    | 3.3977  | 2.3888  |
| 20              | .111 | 2.7999              | 2.7999   | 2.7668            | 2.7668    | 3.6517  | 2.6434  |
| 21              | .117 | 3.0399              | 3.0399   | 3.0058            | 3.0058    | 3.9137  | 2.9118  |
| 22              | .122 | 3.2899              | 3.2899   | 3.2548            | 3.2548    | 4.1837  | 3.1934  |
| 23              | .128 | 3.5499              | 3.5499   | 3.5138            | 3.5138    | 4.4617  | 3.4888  |
| 24              | .133 | 3.8099              | 3.8099   | 3.7728            | 3.7728    | 4.7477  | 3.7978  |
| 25              | .139 | 4.0799              | 4.0799   | 4.0418            | 4.0418    | 5.0417  | 4.1198  |
| 26              | .144 | 4.3499              | 4.3499   | 4.3108            | 4.3108    | 5.3437  | 4.4534  |
| 27              | .150 | 4.6199              | 4.6199   | 4.5798            | 4.5798    | 5.6517  | 4.7988  |
| 28              | .156 | 4.8899              | 4.8899   | 4.8488            | 4.8488    | 5.9657  | 5.1566  |
| 29              | .161 | 5.1599              | 5.1599   | 5.1178            | 5.1178    | 6.2857  | 5.5266  |
| 30              | .167 | 5.4299              | 5.4299   | 5.3868            | 5.3868    | 6.6117  | 5.9088  |
| 31              | .172 | 5.6999              | 5.6999   | 5.6558            | 5.6558    | 6.9437  | 6.3034  |
| 32              | .178 | 5.9699              | 5.9699   | 5.9248            | 5.9248    | 7.2817  | 6.7104  |
| 33              | .183 | 6.2399              | 6.2399   | 6.1938            | 6.1938    | 7.6257  | 7.1298  |
| 34              | .189 | 6.5099              | 6.5099   | 6.4678            | 6.4678    | 7.9757  | 7.5618  |
| 35              | .194 | 6.7799              | 6.7799   | 6.7368            | 6.7368    | 8.3317  | 8.0066  |
| 36              | .200 | 7.0499              | 7.0499   | 7.0058            | 7.0058    | 8.6937  | 8.4644  |
| 37              | .206 | 7.3199              | 7.3199   | 7.2748            | 7.2748    | 9.0617  | 8.9348  |
| 38              | .211 | 7.5899              | 7.5899   | 7.5438            | 7.5438    | 9.4357  | 9.4178  |
| 39              | .217 | 7.8599              | 7.8599   | 7.8128            | 7.8128    | 9.8157  | 9.9134  |
| 40              | .222 | 8.1299              | 8.1299   | 8.0818            | 8.0818    | 10.2017 | 10.4218 |
| 41              | .228 | 8.3999              | 8.3999   | 8.3508            | 8.3508    | 10.5937 | 10.9434 |
| 42              | .233 | 8.6699              | 8.6699   | 8.6198            | 8.6198    | 11.0017 | 11.4778 |
| 43              | .239 | 8.9399              | 8.9399   | 8.8888            | 8.8888    | 11.4157 | 12.0244 |
| 44              | .244 | 9.2099              | 9.2099   | 9.1578            | 9.1578    | 11.8357 | 12.5834 |
| 45              | .250 | 9.4799              | 9.4799   | 9.4258            | 9.4258    | 12.2617 | 13.1548 |
| 46              | .256 | 9.7499              | 9.7499   | 9.6948            | 9.6948    | 12.6937 | 13.7388 |
| 47              | .261 | 10.0199             | 10.0199  | 9.9668            | 9.9668    | 13.1317 | 14.3354 |
| 48              | .267 | 10.2899             | 10.2899  | 10.2368           | 10.2368   | 13.5757 | 14.9444 |
| 49              | .272 | 10.5599             | 10.5599  | 10.5038           | 10.5038   | 14.0257 | 15.5658 |
| 50              | .278 | 10.8299             | 10.8299  | 10.7718           | 10.7718   | 14.4817 | 16.1998 |
| 51              | .283 | 11.0999             | 11.0999  | 11.0398           | 11.0398   | 14.9437 | 16.8464 |
| 52              | .289 | 11.3699             | 11.3699  | 11.3078           | 11.3078   | 15.4117 | 17.5054 |
| 53              | .294 | 11.6399             | 11.6399  | 11.5758           | 11.5758   | 15.8857 | 18.1768 |
| 54              | .300 | 11.9099             | 11.9099  | 11.8438           | 11.8438   | 16.3657 | 18.8604 |
| 55              | .306 | 12.1799             | 12.1799  | 12.1118           | 12.1118   | 16.8517 | 19.5564 |
| 56              | .311 | 12.4499             | 12.4499  | 12.3798           | 12.3798   | 17.3437 | 20.2644 |
| 57              | .317 | 12.7199             | 12.7199  | 12.6478           | 12.6478   | 17.8417 | 20.9844 |
| 58              | .322 | 12.9899             | 12.9899  | 12.9158           | 12.9158   | 18.3457 | 21.7164 |
| 59              | .328 | 13.2599             | 13.2599  | 13.1838           | 13.1838   | 18.8557 | 22.4604 |
| 60              | .333 | 13.5299             | 13.5299  | 13.4518           | 13.4518   | 19.3717 | 23.2164 |



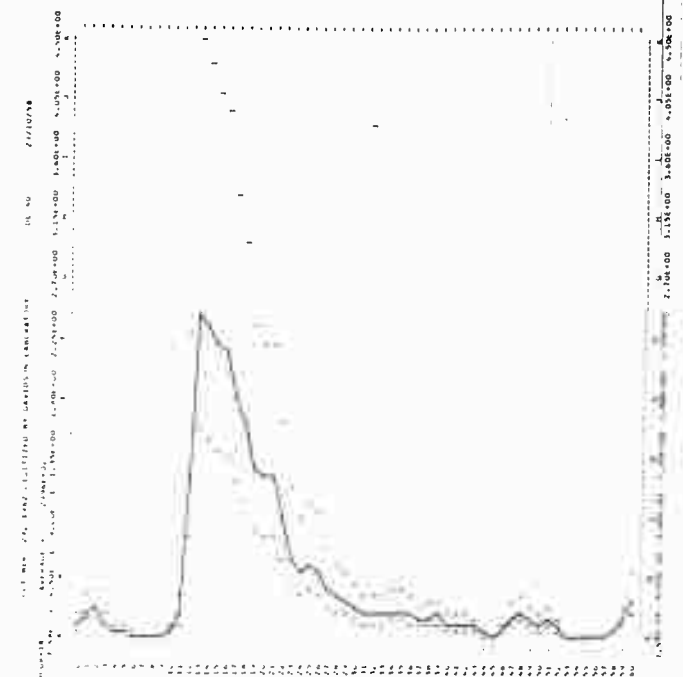
## SPECTRA HINDCASTING OCTOBER 29, 1962 UTILIZED BY DAYTON LABORATORY

|                 |      |                     |          |                   |           |         |         |
|-----------------|------|---------------------|----------|-------------------|-----------|---------|---------|
| DATE = 29/10/68 |      | SIG. HGT. = 17.8    |          | RECORD = 19.8     |           |         |         |
| HOUR = 3        |      | CORR. VAR. = 20.0   |          | UPPER HGT. = 18.1 |           |         |         |
| TOTAL OF 1014   |      | NOISE LEVEL = .0119 |          | LOWER HGT. = 18.1 |           |         |         |
|                 |      | WIND SPEED = 30     |          |                   |           |         |         |
| M               | PAR. | UNIT-F1,2           | FILTERED | LESS NOISE        | CONR-F1,2 | UPPER   | LOWER   |
| 0               | .000 | .0731               | .0731    | .0612             | .0612     | .1128   | .0390   |
| 1               | .006 | .1267               | .1267    | .1128             | .1128     | .2079   | .0718   |
| 2               | .011 | .1796               | .1796    | .1675             | .1675     | .3087   | .1066   |
| 3               | .017 | .2408               | .2408    | .2288             | .2288     | .4263   | .1498   |
| 4               | .022 | .3121               | .3121    | .2999             | .2999     | .5517   | .1970   |
| 5               | .028 | .3935               | .3935    | .3808             | .3808     | .6847   | .2526   |
| 6               | .033 | .4847               | .4847    | .4707             | .4707     | .8259   | .3188   |
| 7               | .039 | .5856               | .5856    | .5698             | .5698     | .9747   | .3972   |
| 8               | .044 | .6962               | .6962    | .6788             | .6788     | 1.1319  | .4888   |
| 9               | .050 | .8167               | .8167    | .7978             | .7978     | 1.2977  | .5934   |
| 10              | .056 | .9471               | .9471    | .9268             | .9268     | 1.4719  | .7118   |
| 11              | .061 | 1.0875              | 1.0875   | 1.0658            | 1.0658    | 1.6537  | .8434   |
| 12              | .067 | 1.2379              | 1.2379   | 1.2148            | 1.2148    | 1.8437  | .9888   |
| 13              | .072 | 1.3983              | 1.3983   | 1.3738            | 1.3738    | 2.0419  | 1.1478  |
| 14              | .078 | 1.5687              | 1.5687   | 1.5428            | 1.5428    | 2.2477  | 1.3204  |
| 15              | .083 | 1.7491              | 1.7491   | 1.7218            | 1.7218    | 2.4617  | 1.5066  |
| 16              | .089 | 1.9395              | 1.9395   | 1.9108            | 1.9108    | 2.6837  | 1.7066  |
| 17              | .094 | 2.1399              | 2.1399   | 2.1098            | 2.1098    | 2.9137  | 1.9204  |
| 18              | .100 | 2.3499              | 2.3499   | 2.3188            | 2.3188    | 3.1517  | 2.1478  |
| 19              | .106 | 2.5699              | 2.5699   | 2.5378            | 2.5378    | 3.3977  | 2.3888  |
| 20              | .111 | 2.7999              | 2.7999   | 2.7668            | 2.7668    | 3.6517  | 2.6434  |
| 21              | .117 | 3.0399              | 3.0399   | 3.0058            | 3.0058    | 3.9137  | 2.9118  |
| 22              | .122 | 3.2899              | 3.2899   | 3.2548            | 3.2548    | 4.1837  | 3.1934  |
| 23              | .128 | 3.5499              | 3.5499   | 3.5138            | 3.5138    | 4.4617  | 3.4888  |
| 24              | .133 | 3.8099              | 3.8099   | 3.7728            | 3.7728    | 4.7477  | 3.7978  |
| 25              | .139 | 4.0799              | 4.0799   | 4.0418            | 4.0418    | 5.0417  | 4.1198  |
| 26              | .144 | 4.3499              | 4.3499   | 4.3108            | 4.3108    | 5.3437  | 4.4534  |
| 27              | .150 | 4.6199              | 4.6199   | 4.5798            | 4.5798    | 5.6517  | 4.7988  |
| 28              | .156 | 4.8899              | 4.8899   | 4.8488            | 4.8488    | 5.9657  | 5.1566  |
| 29              | .161 | 5.1599              | 5.1599   | 5.1178            | 5.1178    | 6.2857  | 5.5266  |
| 30              | .167 | 5.4299              | 5.4299   | 5.3868            | 5.3868    | 6.6117  | 5.9088  |
| 31              | .172 | 5.6999              | 5.6999   | 5.6558            | 5.6558    | 6.9437  | 6.3034  |
| 32              | .178 | 5.9699              | 5.9699   | 5.9248            | 5.9248    | 7.2817  | 6.7104  |
| 33              | .183 | 6.2399              | 6.2399   | 6.1938            | 6.1938    | 7.6257  | 7.1298  |
| 34              | .189 | 6.5099              | 6.5099   | 6.4678            | 6.4678    | 7.9757  | 7.5618  |
| 35              | .194 | 6.7799              | 6.7799   | 6.7368            | 6.7368    | 8.3317  | 8.0066  |
| 36              | .200 | 7.0499              | 7.0499   | 7.0058            | 7.0058    | 8.6937  | 8.4644  |
| 37              | .206 | 7.3199              | 7.3199   | 7.2748            | 7.2748    | 9.0617  | 8.9348  |
| 38              | .211 | 7.5899              | 7.5899   | 7.5438            | 7.5438    | 9.4357  | 9.4178  |
| 39              | .217 | 7.8599              | 7.8599   | 7.8128            | 7.8128    | 9.8157  | 9.9134  |
| 40              | .222 | 8.1299              | 8.1299   | 8.0818            | 8.0818    | 10.2017 | 10.4218 |
| 41              | .228 | 8.3999              | 8.3999   | 8.3508            | 8.3508    | 10.5937 | 10.9434 |
| 42              | .233 | 8.6699              | 8.6699   | 8.6198            | 8.6198    | 11.0017 | 11.4778 |
| 43              | .239 | 8.9399              | 8.9399   | 8.8888            | 8.8888    | 11.4157 | 12.0244 |
| 44              | .244 | 9.2099              | 9.2099   | 9.1578            | 9.1578    | 11.8357 | 12.5834 |
| 45              | .250 | 9.4799              | 9.4799   | 9.4258            | 9.4258    | 12.2617 | 13.1548 |
| 46              | .256 | 9.7499              | 9.7499   | 9.6948            | 9.6948    | 12.6937 | 13.7388 |
| 47              | .261 | 10.0199             | 10.0199  | 9.9668            | 9.9668    | 13.1317 | 14.3354 |
| 48              | .267 | 10.2899             | 10.2899  | 10.2368           | 10.2368   | 13.5757 | 14.9444 |
| 49              | .272 | 10.5599             | 10.5599  | 10.5038           | 10.5038   | 14.0257 | 15.5658 |
| 50              | .278 | 10.8299             | 10.8299  | 10.7718           | 10.7718   | 14.4817 | 16.1998 |
| 51              | .283 | 11.0999             | 11.0999  | 11.0398           | 11.0398   | 14.9437 | 16.8464 |
| 52              | .289 | 11.3699             | 11.3699  | 11.3078           | 11.3078   | 15.4117 | 17.5054 |
| 53              | .294 | 11.6399             | 11.6399  | 11.5758           | 11.5758   | 15.8857 | 18.1768 |
| 54              | .300 | 11.9099             | 11.9099  | 11.8438           | 11.8438   | 16.3657 | 18.8604 |
| 55              | .306 | 12.1799             | 12.1799  | 12.1118           | 12.1118   | 16.8517 | 19.5564 |
| 56              | .311 | 12.4499             | 12.4499  | 12.3798           | 12.3798   | 17.3437 | 20.2644 |
| 57              | .317 | 12.7199             | 12.7199  | 12.6478           | 12.6478   | 17.8417 | 20.9844 |
| 58              | .322 | 12.9899             | 12.9899  | 12.9158           | 12.9158   | 18.3457 | 21.7164 |
| 59              | .328 | 13.2599             | 13.2599  | 13.1838           | 13.1838   | 18.8557 | 22.4604 |
| 60              | .333 | 13.5299             | 13.5299  | 13.4518           | 13.4518   | 19.3717 | 23.2164 |



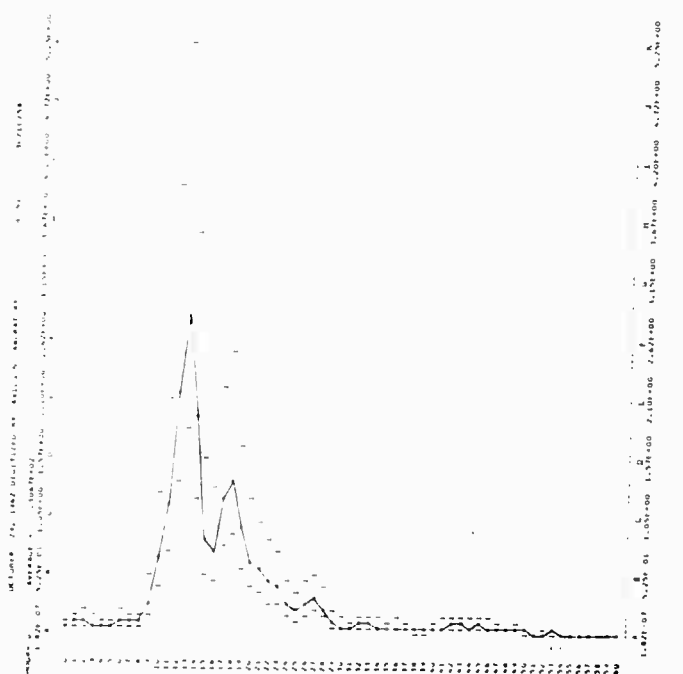
## SPECTRA HINDCASTING OCTOBER 29, 1962 DIGITIZED BY DAVIDSON LABORATORY

|                 |      |                     |          |                  |          |        |       |
|-----------------|------|---------------------|----------|------------------|----------|--------|-------|
| DATE = 29/10/58 |      | AV. 1 = 7.9         |          | RECORD = OL 40   |          |        |       |
| HOUR = 18       |      | SIG. MG. = 20.3     |          | UPPER MG. = 22.1 |          |        |       |
| TOTAL OF 184    |      | COR. VAR. = 25.7    |          | LOWER MG. = 18.6 |          |        |       |
|                 |      | NOISE LEVEL = .0171 |          | WIND SPEED = 50  |          |        |       |
| N               | WAVE | UNIT-2              | FILTERED | LESS NOISE       | CORR-2.2 | UPPER  | LOW-4 |
| 0               | .000 | .1191               | .1191    | .1020            | .1020    | .1481  | .0650 |
| 1               | .008 | .1951               | .1951    | .1770            | .1770    | .2261  | .1127 |
| 2               | .011 | .2230               | .2230    | .2059            | .2059    | .2540  | .1311 |
| 3               | .017 | .2749               | .2749    | .2578            | .2578    | .3059  | .1687 |
| 4               | .022 | .3068               | .3068    | .2897            | .2897    | .3378  | .1961 |
| 5               | .028 | .3587               | .3587    | .3416            | .3416    | .3897  | .2235 |
| 6               | .033 | .4106               | .4106    | .3935            | .3935    | .4416  | .2509 |
| 7               | .039 | .4625               | .4625    | .4454            | .4454    | .4935  | .2783 |
| 8               | .044 | .5144               | .5144    | .4973            | .4973    | .5454  | .3057 |
| 9               | .050 | .5663               | .5663    | .5492            | .5492    | .5973  | .3331 |
| 10              | .056 | .6182               | .6182    | .6011            | .6011    | .6492  | .3605 |
| 11              | .061 | .6701               | .6701    | .6530            | .6530    | .7011  | .3879 |
| 12              | .067 | .7220               | .7220    | .7049            | .7049    | .7530  | .4153 |
| 13              | .072 | .7739               | .7739    | .7568            | .7568    | .8049  | .4427 |
| 14              | .078 | .8258               | .8258    | .8087            | .8087    | .8568  | .4701 |
| 15              | .083 | .8777               | .8777    | .8606            | .8606    | .9087  | .4975 |
| 16              | .089 | .9296               | .9296    | .9125            | .9125    | .9606  | .5249 |
| 17              | .094 | .9815               | .9815    | .9644            | .9644    | .1015  | .5523 |
| 18              | .100 | 1.0334              | 1.0334   | 1.0163           | 1.0163   | 1.0634 | .5797 |
| 19              | .106 | 1.0853              | 1.0853   | 1.0682           | 1.0682   | 1.0953 | .6071 |
| 20              | .111 | 1.1372              | 1.1372   | 1.1201           | 1.1201   | 1.1472 | .6345 |
| 21              | .117 | 1.1891              | 1.1891   | 1.1720           | 1.1720   | 1.1991 | .6619 |
| 22              | .122 | 1.2410              | 1.2410   | 1.2239           | 1.2239   | 1.2510 | .6893 |
| 23              | .128 | 1.2929              | 1.2929   | 1.2758           | 1.2758   | 1.3029 | .7167 |
| 24              | .133 | 1.3448              | 1.3448   | 1.3277           | 1.3277   | 1.3548 | .7441 |
| 25              | .139 | 1.3967              | 1.3967   | 1.3796           | 1.3796   | 1.4067 | .7715 |
| 26              | .144 | 1.4486              | 1.4486   | 1.4315           | 1.4315   | 1.4586 | .7989 |
| 27              | .150 | 1.5005              | 1.5005   | 1.4834           | 1.4834   | 1.5105 | .8263 |
| 28              | .156 | 1.5524              | 1.5524   | 1.5353           | 1.5353   | 1.5624 | .8537 |
| 29              | .161 | 1.6043              | 1.6043   | 1.5872           | 1.5872   | 1.6143 | .8811 |
| 30              | .167 | 1.6562              | 1.6562   | 1.6391           | 1.6391   | 1.6662 | .9085 |
| 31              | .172 | 1.7081              | 1.7081   | 1.6910           | 1.6910   | 1.7181 | .9359 |
| 32              | .178 | 1.7600              | 1.7600   | 1.7429           | 1.7429   | 1.7700 | .9633 |
| 33              | .183 | 1.8119              | 1.8119   | 1.7948           | 1.7948   | 1.8219 | .9907 |
| 34              | .189 | 1.8638              | 1.8638   | 1.8467           | 1.8467   | 1.8738 | .1015 |
| 35              | .194 | 1.9157              | 1.9157   | 1.8986           | 1.8986   | 1.9257 | .1089 |
| 36              | .200 | 1.9676              | 1.9676   | 1.9505           | 1.9505   | 1.9776 | .1163 |
| 37              | .206 | 2.0195              | 2.0195   | 2.0024           | 2.0024   | 2.0295 | .1237 |
| 38              | .211 | 2.0714              | 2.0714   | 2.0543           | 2.0543   | 2.0814 | .1311 |
| 39              | .217 | 2.1233              | 2.1233   | 2.1062           | 2.1062   | 2.1333 | .1385 |
| 40              | .222 | 2.1752              | 2.1752   | 2.1581           | 2.1581   | 2.1852 | .1459 |
| 41              | .228 | 2.2271              | 2.2271   | 2.2100           | 2.2100   | 2.2301 | .1533 |
| 42              | .233 | 2.2790              | 2.2790   | 2.2619           | 2.2619   | 2.2820 | .1607 |
| 43              | .239 | 2.3309              | 2.3309   | 2.3138           | 2.3138   | 2.3449 | .1681 |
| 44              | .244 | 2.3828              | 2.3828   | 2.3657           | 2.3657   | 2.3968 | .1755 |
| 45              | .250 | 2.4347              | 2.4347   | 2.4176           | 2.4176   | 2.4487 | .1829 |
| 46              | .256 | 2.4866              | 2.4866   | 2.4695           | 2.4695   | 2.5006 | .1903 |
| 47              | .261 | 2.5385              | 2.5385   | 2.5214           | 2.5214   | 2.5515 | .1977 |
| 48              | .267 | 2.5904              | 2.5904   | 2.5733           | 2.5733   | 2.6044 | .2051 |
| 49              | .272 | 2.6423              | 2.6423   | 2.6252           | 2.6252   | 2.6563 | .2125 |
| 50              | .278 | 2.6942              | 2.6942   | 2.6771           | 2.6771   | 2.7082 | .2199 |
| 51              | .283 | 2.7461              | 2.7461   | 2.7290           | 2.7290   | 2.7601 | .2273 |
| 52              | .289 | 2.7980              | 2.7980   | 2.7809           | 2.7809   | 2.8110 | .2347 |
| 53              | .294 | 2.8499              | 2.8499   | 2.8328           | 2.8328   | 2.8639 | .2421 |
| 54              | .300 | 2.9018              | 2.9018   | 2.8847           | 2.8847   | 2.9158 | .2495 |
| 55              | .306 | 2.9537              | 2.9537   | 2.9366           | 2.9366   | 2.9707 | .2569 |
| 56              | .311 | 3.0056              | 3.0056   | 2.9885           | 2.9885   | 3.0226 | .2643 |
| 57              | .317 | 3.0575              | 3.0575   | 3.0404           | 3.0404   | 3.0745 | .2717 |
| 58              | .322 | 3.1094              | 3.1094   | 3.0923           | 3.0923   | 3.1264 | .2791 |
| 59              | .328 | 3.1613              | 3.1613   | 3.1442           | 3.1442   | 3.1783 | .2865 |
| 60              | .333 | 3.2132              | 3.2132   | 3.1961           | 3.1961   | 3.2302 | .2939 |



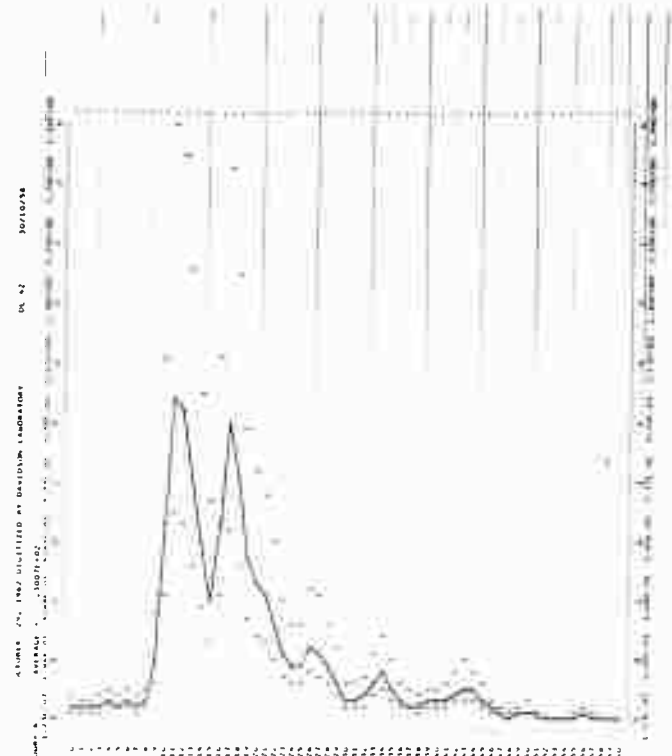
## SPECTRA HINDCASTING OCTOBER 29, 1962 DIGITIZED BY DAVIDSON LABORATORY

| DATE = 29/10/58 |      | AV. 1 = 7.9         |          | RECORD = OL 40   |        |
|-----------------|------|---------------------|----------|------------------|--------|
| HOUR = 18       |      | SIG. MG. = 20.3     |          | UPPER MG. = 22.1 |        |
| TOTAL OF 184    |      | COR. VARI. = 25.7   |          | LOWER MG. = 18.6 |        |
|                 |      | NOISE LEVEL = .0171 |          | WIND SPEED = 50  |        |
| N               | WAVE | UNITED-2            | FILTERED | LESS NOISE       | LOW-2  |
| 0               | .000 | .1191               | .1191    | .1020            | .1020  |
| 1               | .008 | .1951               | .1951    | .1770            | .1770  |
| 2               | .011 | .2230               | .2230    | .2059            | .2059  |
| 3               | .017 | .2749               | .2749    | .2578            | .2578  |
| 4               | .022 | .3068               | .3068    | .2897            | .2897  |
| 5               | .028 | .3587               | .3587    | .3416            | .3416  |
| 6               | .033 | .4106               | .4106    | .3935            | .3935  |
| 7               | .039 | .4625               | .4625    | .4454            | .4454  |
| 8               | .044 | .5144               | .5144    | .4973            | .4973  |
| 9               | .050 | .5663               | .5663    | .5492            | .5492  |
| 10              | .056 | .6182               | .6182    | .6011            | .6011  |
| 11              | .061 | .6701               | .6701    | .6530            | .6530  |
| 12              | .067 | .7220               | .7220    | .7049            | .7049  |
| 13              | .072 | .7739               | .7739    | .7568            | .7568  |
| 14              | .078 | .8258               | .8258    | .8087            | .8087  |
| 15              | .083 | .8777               | .8777    | .8606            | .8606  |
| 16              | .089 | .9296               | .9296    | .9125            | .9125  |
| 17              | .094 | .9815               | .9815    | .9644            | .9644  |
| 18              | .100 | 1.0334              | 1.0334   | 1.0163           | 1.0163 |
| 19              | .106 | 1.0853              | 1.0853   | 1.0682           | 1.0682 |
| 20              | .111 | 1.1372              | 1.1372   | 1.1201           | 1.1201 |
| 21              | .117 | 1.1891              | 1.1891   | 1.1720           | 1.1720 |
| 22              | .122 | 1.2410              | 1.2410   | 1.2239           | 1.2239 |
| 23              | .128 | 1.2929              | 1.2929   | 1.2758           | 1.2758 |
| 24              | .133 | 1.3448              | 1.3448   | 1.3277           | 1.3277 |
| 25              | .139 | 1.3967              | 1.3967   | 1.3796           | 1.3796 |
| 26              | .144 | 1.4486              | 1.4486   | 1.4315           | 1.4315 |
| 27              | .150 | 1.5005              | 1.5005   | 1.4834           | 1.4834 |
| 28              | .156 | 1.5524              | 1.5524   | 1.5353           | 1.5353 |
| 29              | .161 | 1.6043              | 1.6043   | 1.5872           | 1.5872 |
| 30              | .167 | 1.6562              | 1.6562   | 1.6391           | 1.6391 |
| 31              | .172 | 1.7081              | 1.7081   | 1.6910           | 1.6910 |
| 32              | .178 | 1.7600              | 1.7600   | 1.7429           | 1.7429 |
| 33              | .183 | 1.8119              | 1.8119   | 1.7948           | 1.7948 |
| 34              | .189 | 1.8638              | 1.8638   | 1.8467           | 1.8467 |
| 35              | .194 | 1.9157              | 1.9157   | 1.8986           | 1.8986 |
| 36              | .200 | 1.9676              | 1.9676   | 1.9505           | 1.9505 |
| 37              | .206 | 2.0195              | 2.0195   | 2.0024           | 2.0024 |
| 38              | .211 | 2.0714              | 2.0714   | 2.0543           | 2.0543 |
| 39              | .217 | 2.1233              | 2.1233   | 2.1062           | 2.1062 |
| 40              | .222 | 2.1752              | 2.1752   | 2.1581           | 2.1581 |
| 41              | .228 | 2.2271              | 2.2271   | 2.2100           | 2.2100 |
| 42              | .233 | 2.2790              | 2.2790   | 2.2619           | 2.2619 |
| 43              | .239 | 2.3309              | 2.3309   | 2.3138           | 2.3138 |
| 44              | .244 | 2.3828              | 2.3828   | 2.3657           | 2.3657 |
| 45              | .250 | 2.4347              | 2.4347   | 2.4176           | 2.4176 |
| 46              | .256 | 2.4866              | 2.4866   | 2.4695           | 2.4695 |
| 47              | .261 | 2.5385              | 2.5385   | 2.5214           | 2.5214 |
| 48              | .267 | 2.5904              | 2.5904   | 2.5733           | 2.5733 |
| 49              | .272 | 2.6423              | 2.6423   | 2.6252           | 2.6252 |
| 50              | .278 | 2.6942              | 2.6942   | 2.6771           | 2.6771 |
| 51              | .283 | 2.7461              | 2.7461   | 2.7290           | 2.7290 |
| 52              | .289 | 2.7980              | 2.7980   | 2.7809           | 2.7809 |
| 53              | .294 | 2.8499              | 2.8499   | 2.8328           | 2.8328 |
| 54              | .300 | 2.9018              | 2.9018   | 2.8847           | 2.8847 |
| 55              | .306 | 2.9537              | 2.9537   | 2.9366           | 2.9366 |
| 56              | .311 | 3.0056              | 3.0056   | 2.9885           | 2.9885 |
| 57              | .317 | 3.0575              | 3.0575   | 3.0404           | 3.0404 |
| 58              | .322 | 3.1094              | 3.1094   | 3.0923           | 3.0923 |
| 59              | .328 | 3.1613              | 3.1613   | 3.1442           | 3.1442 |
| 60              | .333 | 3.2132              | 3.2132   | 3.1961           | 3.1961 |



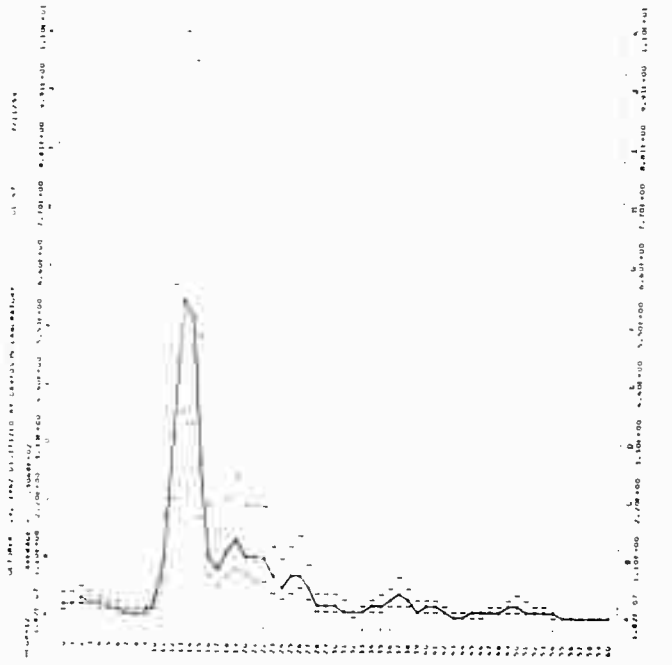
## SPECTRA MINDCASTING OCTOBER 29, 1962 DIGITIZED BY DAYLISON LABORATORY

| DATE = 10/10/1956 |       | REV. 1 =      |          | RECORD       |           | DL 1-3 |       |
|-------------------|-------|---------------|----------|--------------|-----------|--------|-------|
| HOUR = 19         |       | SIG. CH. =    |          | UPPER MOT. = |           | 14.9   |       |
| TOTAL DE J205     |       | CORR. PAR. =  |          | LOWER MOT. = |           | 12.7   |       |
|                   |       | NOISE LEVEL = |          | WIND SPEED = |           | 15     |       |
| M                 | PREL. | WPT#1-2       | FOLLOWER | LESS NOISE   | CORR.F1-2 | UPPER  | LOWER |
| 0                 | 0000  | 00437         | 00417    | 00391        | 00371     | 00721  | 00249 |
| 1                 | 0009  | 00401         | 00401    | 00356        | 00356     | 00676  | 00227 |
| 2                 | 0011  | 00388         | 00388    | 00313        | 00313     | 00576  | 00176 |
| 3                 | 0017  | 00454         | 00454    | 00408        | 00408     | 00711  | 00260 |
| 4                 | 0022  | 00517         | 00517    | 00531        | 00531     | 00849  | 00328 |
| 5                 | 0028  | 00517         | 00517    | 00471        | 00471     | 00749  | 00309 |
| 6                 | 0035  | 00596         | 00596    | 00550        | 00552     | 10017  | 00375 |
| 7                 | 0040  | 00659         | 00659    | 00616        | 00612     | 00876  | 00434 |
| 8                 | 0044  | 00485         | 00485    | 00440        | 00424     | 00645  | 00333 |
| 9                 | 0050  | 00700         | 00700    | 00656        | 00656     | 10048  | 00423 |
| 10                | 0054  | 00703         | 00703    | 00608        | 00608     | 00949  | 00459 |
| 11                | 0061  | 100204        | 100204   | 100158       | 100158    | 100455 | 00701 |
| 12                | 0067  | 00801         | 00801    | 00806        | 100088    | 100828 | 00711 |
| 13                | 0072  | 00801         | 00801    | 00756        | 100072    | 100702 | 00680 |
| 14                | 0078  | 00843         | 00843    | 00808        | 00808     | 100676 | 00689 |
| 15                | 0083  | 00863         | 00863    | 00817        | 00808     | 100706 | 00689 |
| 16                | 0088  | 00868         | 00868    | 00823        | 00823     | 100731 | 00693 |
| 17                | 0094  | 00922         | 00922    | 00876        | 00876     | 100832 | 00732 |
| 18                | 0099  | 00922         | 00922    | 00871        | 00871     | 100821 | 00732 |
| 19                | 0106  | 00926         | 00926    | 00876        | 00876     | 100826 | 00732 |
| 20                | 0111  | 00909         | 00909    | 00866        | 00866     | 00866  | 00736 |
| 21                | 0117  | 00956         | 00956    | 00911        | 00911     | 00911  | 00736 |
| 22                | 0122  | 00975         | 00975    | 00929        | 00927     | 00927  | 00741 |
| 23                | 0128  | 00966         | 00966    | 00919        | 00917     | 00917  | 00746 |
| 24                | 0133  | 01082         | 01082    | 01087        | 100800    | 100818 | 00756 |
| 25                | 0139  | 01047         | 01047    | 01001        | 00992     | 100801 | 00763 |
| 26                | 0144  | 00951         | 00951    | 00906        | 00906     | 00901  | 00763 |
| 27                | 0150  | 00951         | 00951    | 00906        | 00906     | 00901  | 00763 |
| 28                | 0156  | 00951         | 00951    | 00906        | 00906     | 00901  | 00763 |
| 29                | 0161  | 00951         | 00951    | 00906        | 00906     | 00901  | 00763 |
| 30                | 0167  | 00926         | 00926    | 00880        | 00880     | 100821 | 00763 |
| 31                | 0172  | 00905         | 00905    | 00859        | 00859     | 100818 | 00763 |
| 32                | 0178  | 00949         | 00949    | 00904        | 00904     | 100818 | 00763 |
| 33                | 0183  | 00961         | 00961    | 00915        | 00915     | 100800 | 00769 |
| 34                | 0188  | 00950         | 00950    | 00906        | 00906     | 00906  | 00769 |
| 35                | 0194  | 00951         | 00951    | 00907        | 00907     | 00907  | 00769 |
| 36                | 0200  | 00923         | 00923    | 00878        | 00878     | 00906  | 00769 |
| 37                | 0206  | 00919         | 00919    | 00873        | 00873     | 00883  | 00769 |
| 38                | 0211  | 00915         | 00915    | 00869        | 00869     | 00883  | 00769 |
| 39                | 0217  | 00940         | 00940    | 00892        | 00892     | 00883  | 00769 |
| 40                | 0223  | 00916         | 00916    | 00867        | 00867     | 00883  | 00769 |
| 41                | 0228  | 00916         | 00916    | 00867        | 00867     | 00883  | 00769 |
| 42                | 0233  | 00916         | 00916    | 00867        | 00867     | 00883  | 00769 |
| 43                | 0239  | 00916         | 00916    | 00867        | 00867     | 00883  | 00769 |
| 44                | 0244  | 00916         | 00916    | 00867        | 00867     | 00883  | 00769 |
| 45                | 0250  | 00916         | 00916    | 00867        | 00867     | 00883  | 00769 |
| 46                | 0256  | 00916         | 00916    | 00867        | 00867     | 00883  | 00769 |
| 47                | 0261  | 00957         | 00957    | 00916        | 00916     | 00916  | 00769 |
| 48                | 0267  | 00968         | 00968    | 00926        | 00926     | 00926  | 00769 |
| 49                | 0272  | 00963         | 00963    | 00918        | 00918     | 00918  | 00769 |
| 50                | 0278  | 00970         | 00970    | 00923        | 00923     | 00923  | 00769 |
| 51                | 0284  | 00975         | 00975    | 00928        | 00928     | 00928  | 00769 |
| 52                | 0289  | 00980         | 00980    | 00933        | 00933     | 00933  | 00769 |
| 53                | 0295  | 00985         | 00985    | 00938        | 00938     | 00938  | 00769 |
| 54                | 0300  | 00990         | 00990    | 00943        | 00943     | 00943  | 00769 |
| 55                | 0306  | 00995         | 00995    | 00948        | 00948     | 00948  | 00769 |
| 56                | 0311  | 00996         | 00996    | 00949        | 00949     | 00949  | 00769 |
| 57                | 0317  | 00997         | 00997    | 00950        | 00950     | 00950  | 00769 |
| 58                | 0322  | 00998         | 00998    | 00951        | 00951     | 00951  | 00769 |
| 59                | 0328  | 00999         | 00999    | 00952        | 00952     | 00952  | 00769 |
| 60                | 0333  | 00999         | 00999    | 00953        | 00953     | 00953  | 00769 |
| 61                | 0339  | 00999         | 00999    | 00954        | 00954     | 00954  | 00769 |
| 62                | 0344  | 00999         | 00999    | 00955        | 00955     | 00955  | 00769 |
| 63                | 0350  | 00999         | 00999    | 00956        | 00956     | 00956  | 00769 |
| 64                | 0355  | 00999         | 00999    | 00957        | 00957     | 00957  | 00769 |
| 65                | 0360  | 00999         | 00999    | 00958        | 00958     | 00958  | 00769 |
| 66                | 0366  | 00999         | 00999    | 00959        | 00959     | 00959  | 00769 |
| 67                | 0371  | 00999         | 00999    | 00960        | 00960     | 00960  | 00769 |
| 68                | 0376  | 00999         | 00999    | 00961        | 00961     | 00961  | 00769 |
| 69                | 0382  | 00999         | 00999    | 00962        | 00962     | 00962  | 00769 |
| 70                | 0387  | 00999         | 00999    | 00963        | 00963     | 00963  | 00769 |
| 71                | 0392  | 00999         | 00999    | 00964        | 00964     | 00964  | 00769 |
| 72                | 0398  | 00999         | 00999    | 00965        | 00965     | 00965  | 00769 |
| 73                | 0403  | 00999         | 00999    | 00966        | 00966     | 00966  | 00769 |
| 74                | 0408  | 00999         | 00999    | 00967        | 00967     | 00967  | 00769 |
| 75                | 0414  | 00999         | 00999    | 00968        | 00968     | 00968  | 00769 |
| 76                | 0419  | 00999         | 00999    | 00969        | 00969     | 00969  | 00769 |
| 77                | 0424  | 00999         | 00999    | 00970        | 00970     | 00970  | 00769 |
| 78                | 0430  | 00999         | 00999    | 00971        | 00971     | 00971  | 00769 |
| 79                | 0435  | 00999         | 00999    | 00972        | 00972     | 00972  | 00769 |
| 80                | 0440  | 00999         | 00999    | 00973        | 00973     | 00973  | 00769 |
| 81                | 0446  | 00999         | 00999    | 00974        | 00974     | 00974  | 00769 |
| 82                | 0451  | 00999         | 00999    | 00975        | 00975     | 00975  | 00769 |
| 83                | 0456  | 00999         | 00999    | 00976        | 00976     | 00976  | 00769 |
| 84                | 0462  | 00999         | 00999    | 00977        | 00977     | 00977  | 00769 |
| 85                | 0467  | 00999         | 00999    | 00978        | 00978     | 00978  | 00769 |
| 86                | 0472  | 00999         | 00999    | 00979        | 00979     | 00979  | 00769 |
| 87                | 0478  | 00999         | 00999    | 00980        | 00980     | 00980  | 00769 |
| 88                | 0483  | 00999         | 00999    | 00981        | 00981     | 00981  | 00769 |
| 89                | 0488  | 00999         | 00999    | 00982        | 00982     | 00982  | 00769 |
| 90                | 0494  | 00999         | 00999    | 00983        | 00983     | 00983  | 00769 |
| 91                | 0499  | 00999         | 00999    | 00984        | 00984     | 00984  | 00769 |
| 92                | 0504  | 00999         | 00999    | 00985        | 00985     | 00985  | 00769 |
| 93                | 0510  | 00999         | 00999    | 00986        | 00986     | 00986  | 00769 |
| 94                | 0515  | 00999         | 00999    | 00987        | 00987     | 00987  | 00769 |
| 95                | 0520  | 00999         | 00999    | 00988        | 00988     | 00988  | 00769 |
| 96                | 0526  | 00999         | 00999    | 00989        | 00989     | 00989  | 00769 |
| 97                | 0531  | 00999         | 00999    | 00990        | 00990     | 00990  | 00769 |
| 98                | 0536  | 00999         | 00999    | 00991        | 00991     | 00991  | 00769 |
| 99                | 0542  | 00999         | 00999    | 00992        | 00992     | 00992  | 00769 |
| 100               | 0547  | 00999         | 00999    | 00993        | 00993     | 00993  | 00769 |
| 101               | 0552  | 00999         | 00999    | 00994        | 00994     | 00994  | 00769 |
| 102               | 0558  | 00999         | 00999    | 00995        | 00995     | 00995  | 00769 |
| 103               | 0603  | 00999         | 00999    | 00996        | 00996     | 00996  | 00769 |
| 104               | 0608  | 00999         | 00999    | 00997        | 00997     | 00997  | 00769 |
| 105               | 0614  | 00999         | 00999    | 00998        | 00998     | 00998  | 00769 |
| 106               | 0619  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 107               | 0624  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 108               | 0630  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 109               | 0635  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 110               | 0640  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 111               | 0646  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 112               | 0651  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 113               | 0656  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 114               | 0702  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 115               | 0707  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 116               | 0712  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 117               | 0718  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 118               | 0723  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 119               | 0728  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 120               | 0734  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 121               | 0739  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 122               | 0744  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 123               | 0750  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 124               | 0755  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 125               | 0800  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 126               | 0806  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 127               | 0811  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 128               | 0816  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 129               | 0822  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 130               | 0827  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 131               | 0832  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 132               | 0838  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 133               | 0843  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 134               | 0848  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 135               | 0854  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 136               | 0859  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 137               | 0904  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 138               | 0909  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 139               | 0915  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 140               | 0920  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 141               | 0925  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 142               | 0931  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 143               | 0936  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 144               | 0941  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 145               | 0947  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 146               | 0952  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 147               | 0957  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 148               | 1003  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 149               | 1008  | 00999         | 00999    | 00999        | 00999     | 00999  | 00769 |
| 150               | 1013  | 00999         | 00999    |              |           |        |       |



SPECTRA = INDIANSTING DEC088 29, 1982 DIGITIZED BY GARCOSA LABORATORY

|    |                 |              |           |              |            |       |      |
|----|-----------------|--------------|-----------|--------------|------------|-------|------|
|    | DATE = 20190904 | Run No.      | 202       | Run Date     | 1:00       |       |      |
|    | MLW = 12        | SIG=0.00     | 200.0     | UPPER MLW =  | 1:00       |       |      |
|    | TCAL OF 101     | 0.0000       | 10.00     | LOWER MLW =  | 21.00      |       |      |
|    |                 | WELL DEPTH = |           | WELL DEPTH = | 0.00       |       |      |
| P  | TIME            | UNIT=VOLT    | FLUXRATIO | LESS NC150   | LESS NC150 | UPPER |      |
| 3  | 0006            | -27800       | -27800    | -27722       | -27642     | 1076  | 1330 |
| 4  | 0007            | -27800       | -27800    | -27722       | -27642     | 1076  | 1330 |
| 5  | 0011            | -27875       | -27875    | -27797       | -27717     | 1076  | 1330 |
| 6  | 0013            | -27875       | -27875    | -27797       | -27717     | 1076  | 1330 |
| 7  | 0014            | -27875       | -27875    | -27797       | -27717     | 1076  | 1330 |
| 8  | 0018            | -27950       | -27950    | -27875       | -27795     | 1076  | 1330 |
| 9  | 0020            | -27950       | -27950    | -27875       | -27795     | 1076  | 1330 |
| 10 | 0024            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 11 | 0026            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 12 | 0028            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 13 | 0030            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 14 | 0032            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 15 | 0034            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 16 | 0036            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 17 | 0038            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 18 | 0040            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 19 | 0042            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 20 | 0044            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 21 | 0046            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 22 | 0048            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 23 | 0050            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 24 | 0052            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 25 | 0054            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 26 | 0056            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 27 | 0058            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 28 | 0100            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 29 | 0102            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 30 | 0104            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 31 | 0106            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 32 | 0108            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 33 | 0110            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 34 | 0112            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 35 | 0114            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 36 | 0116            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 37 | 0118            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 38 | 0120            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 39 | 0122            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 40 | 0124            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 41 | 0126            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 42 | 0128            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 43 | 0130            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 44 | 0132            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 45 | 0134            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 46 | 0136            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 47 | 0138            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 48 | 0140            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 49 | 0142            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |
| 50 | 0144            | -28025       | -28025    | -27950       | -27870     | 1076  | 1330 |



```
DATE = 7/11/99          Av. Tn =      8.9           RECORD =      DI 40  
HOUR = 15                SIG.MGTL =     21.1           UPPER MGTL =     25.6  
TAL DP = SBL            CURR. WAB. =     55.0           LOWER MGTL =     21.7  
                           NOISE LEVEL =    .0176           WIND SPEED =     40
```

[illegible]

| $245 \pm 1$   | $245 \pm 1$   | $245 \pm 1$   | $245 \pm 1$   | $245 \pm 1$   |
|---------------|---------------|---------------|---------------|---------------|
| $1.0 \pm 0.1$ | $1.0 \pm 0.1$ | $1.0 \pm 0.1$ | $1.0 \pm 0.1$ | $1.0 \pm 0.1$ |
| $0.0 \pm 0.1$ | $0.0 \pm 0.1$ | $0.0 \pm 0.1$ | $0.0 \pm 0.1$ | $0.0 \pm 0.1$ |
| $0.0 \pm 0.1$ | $0.0 \pm 0.1$ | $0.0 \pm 0.1$ | $0.0 \pm 0.1$ | $0.0 \pm 0.1$ |
| $0.0 \pm 0.1$ | $0.0 \pm 0.1$ | $0.0 \pm 0.1$ | $0.0 \pm 0.1$ | $0.0 \pm 0.1$ |

## SPECTRA HINDCASTING OCTOBER 29, 1942 DIGITIZED BY DAYLIDSON LABORATORY

| DATE - 10/29/42 |       | SIG. F.       |          | S.C.       |          | NEEDLE       |       | DL. 44 |  |
|-----------------|-------|---------------|----------|------------|----------|--------------|-------|--------|--|
| TOTAL OF -154   |       | SIG. HGT. -   |          | 25.6       |          | UPPER HGT. - |       | 28.1   |  |
|                 |       | CODE - VAR. - |          | 11.1       |          | LOWER HGT. - |       | 21.4   |  |
|                 |       | NOISE LEVEL - |          | -0.011     |          | WIND SPEED - |       | 10     |  |
| M               | REL.  | UNIT-1-2      | FILTERED | LESS NOISE | CORR-1-2 | UPPER        | LOWER |        |  |
| 0               | 0.000 | 1.125         | 1.125    | 1.125      | 1.125    | 1.125        | 1.125 |        |  |
| 1               | 0.006 | 1.131         | 1.131    | 1.131      | 1.131    | 1.131        | 1.131 |        |  |
| 2               | 0.011 | 1.137         | 1.137    | 1.137      | 1.137    | 1.137        | 1.137 |        |  |
| 3               | 0.017 | 1.143         | 1.143    | 1.143      | 1.143    | 1.143        | 1.143 |        |  |
| 4               | 0.022 | 1.149         | 1.149    | 1.149      | 1.149    | 1.149        | 1.149 |        |  |
| 5               | 0.028 | 1.155         | 1.155    | 1.155      | 1.155    | 1.155        | 1.155 |        |  |
| 6               | 0.033 | 1.161         | 1.161    | 1.161      | 1.161    | 1.161        | 1.161 |        |  |
| 7               | 0.039 | 1.167         | 1.167    | 1.167      | 1.167    | 1.167        | 1.167 |        |  |
| 8               | 0.044 | 1.173         | 1.173    | 1.173      | 1.173    | 1.173        | 1.173 |        |  |
| 9               | 0.050 | 1.179         | 1.179    | 1.179      | 1.179    | 1.179        | 1.179 |        |  |
| 10              | 0.056 | 1.185         | 1.185    | 1.185      | 1.185    | 1.185        | 1.185 |        |  |
| 11              | 0.061 | 1.191         | 1.191    | 1.191      | 1.191    | 1.191        | 1.191 |        |  |
| 12              | 0.067 | 1.197         | 1.197    | 1.197      | 1.197    | 1.197        | 1.197 |        |  |
| 13              | 0.072 | 1.203         | 1.203    | 1.203      | 1.203    | 1.203        | 1.203 |        |  |
| 14              | 0.078 | 1.209         | 1.209    | 1.209      | 1.209    | 1.209        | 1.209 |        |  |
| 15              | 0.083 | 1.215         | 1.215    | 1.215      | 1.215    | 1.215        | 1.215 |        |  |
| 16              | 0.089 | 1.221         | 1.221    | 1.221      | 1.221    | 1.221        | 1.221 |        |  |
| 17              | 0.094 | 1.227         | 1.227    | 1.227      | 1.227    | 1.227        | 1.227 |        |  |
| 18              | 0.100 | 1.233         | 1.233    | 1.233      | 1.233    | 1.233        | 1.233 |        |  |
| 19              | 0.106 | 1.239         | 1.239    | 1.239      | 1.239    | 1.239        | 1.239 |        |  |
| 20              | 0.111 | 1.245         | 1.245    | 1.245      | 1.245    | 1.245        | 1.245 |        |  |
| 21              | 0.117 | 1.251         | 1.251    | 1.251      | 1.251    | 1.251        | 1.251 |        |  |
| 22              | 0.122 | 1.257         | 1.257    | 1.257      | 1.257    | 1.257        | 1.257 |        |  |
| 23              | 0.128 | 1.263         | 1.263    | 1.263      | 1.263    | 1.263        | 1.263 |        |  |
| 24              | 0.133 | 1.269         | 1.269    | 1.269      | 1.269    | 1.269        | 1.269 |        |  |
| 25              | 0.139 | 1.275         | 1.275    | 1.275      | 1.275    | 1.275        | 1.275 |        |  |
| 26              | 0.144 | 1.281         | 1.281    | 1.281      | 1.281    | 1.281        | 1.281 |        |  |
| 27              | 0.150 | 1.287         | 1.287    | 1.287      | 1.287    | 1.287        | 1.287 |        |  |
| 28              | 0.156 | 1.293         | 1.293    | 1.293      | 1.293    | 1.293        | 1.293 |        |  |
| 29              | 0.161 | 1.299         | 1.299    | 1.299      | 1.299    | 1.299        | 1.299 |        |  |
| 30              | 0.167 | 1.305         | 1.305    | 1.305      | 1.305    | 1.305        | 1.305 |        |  |
| 31              | 0.172 | 1.311         | 1.311    | 1.311      | 1.311    | 1.311        | 1.311 |        |  |
| 32              | 0.178 | 1.317         | 1.317    | 1.317      | 1.317    | 1.317        | 1.317 |        |  |
| 33              | 0.183 | 1.323         | 1.323    | 1.323      | 1.323    | 1.323        | 1.323 |        |  |
| 34              | 0.189 | 1.329         | 1.329    | 1.329      | 1.329    | 1.329        | 1.329 |        |  |
| 35              | 0.194 | 1.335         | 1.335    | 1.335      | 1.335    | 1.335        | 1.335 |        |  |
| 36              | 0.200 | 1.341         | 1.341    | 1.341      | 1.341    | 1.341        | 1.341 |        |  |
| 37              | 0.206 | 1.347         | 1.347    | 1.347      | 1.347    | 1.347        | 1.347 |        |  |
| 38              | 0.211 | 1.353         | 1.353    | 1.353      | 1.353    | 1.353        | 1.353 |        |  |
| 39              | 0.217 | 1.359         | 1.359    | 1.359      | 1.359    | 1.359        | 1.359 |        |  |
| 40              | 0.222 | 1.365         | 1.365    | 1.365      | 1.365    | 1.365        | 1.365 |        |  |
| 41              | 0.228 | 1.371         | 1.371    | 1.371      | 1.371    | 1.371        | 1.371 |        |  |
| 42              | 0.233 | 1.377         | 1.377    | 1.377      | 1.377    | 1.377        | 1.377 |        |  |
| 43              | 0.239 | 1.383         | 1.383    | 1.383      | 1.383    | 1.383        | 1.383 |        |  |
| 44              | 0.244 | 1.389         | 1.389    | 1.389      | 1.389    | 1.389        | 1.389 |        |  |
| 45              | 0.250 | 1.395         | 1.395    | 1.395      | 1.395    | 1.395        | 1.395 |        |  |
| 46              | 0.256 | 1.401         | 1.401    | 1.401      | 1.401    | 1.401        | 1.401 |        |  |
| 47              | 0.261 | 1.407         | 1.407    | 1.407      | 1.407    | 1.407        | 1.407 |        |  |
| 48              | 0.267 | 1.413         | 1.413    | 1.413      | 1.413    | 1.413        | 1.413 |        |  |
| 49              | 0.272 | 1.419         | 1.419    | 1.419      | 1.419    | 1.419        | 1.419 |        |  |
| 50              | 0.278 | 1.425         | 1.425    | 1.425      | 1.425    | 1.425        | 1.425 |        |  |
| 51              | 0.283 | 1.431         | 1.431    | 1.431      | 1.431    | 1.431        | 1.431 |        |  |
| 52              | 0.289 | 1.437         | 1.437    | 1.437      | 1.437    | 1.437        | 1.437 |        |  |
| 53              | 0.294 | 1.443         | 1.443    | 1.443      | 1.443    | 1.443        | 1.443 |        |  |
| 54              | 0.300 | 1.449         | 1.449    | 1.449      | 1.449    | 1.449        | 1.449 |        |  |
| 55              | 0.306 | 1.455         | 1.455    | 1.455      | 1.455    | 1.455        | 1.455 |        |  |
| 56              | 0.311 | 1.461         | 1.461    | 1.461      | 1.461    | 1.461        | 1.461 |        |  |
| 57              | 0.317 | 1.467         | 1.467    | 1.467      | 1.467    | 1.467        | 1.467 |        |  |
| 58              | 0.322 | 1.473         | 1.473    | 1.473      | 1.473    | 1.473        | 1.473 |        |  |
| 59              | 0.328 | 1.479         | 1.479    | 1.479      | 1.479    | 1.479        | 1.479 |        |  |
| 60              | 0.333 | 1.485         | 1.485    | 1.485      | 1.485    | 1.485        | 1.485 |        |  |

DATE - 10/29/42

SPECTRA HINDCASTING OCTOBER 29, 1942 DIGITIZED BY DAYLIDSON LABORATORY

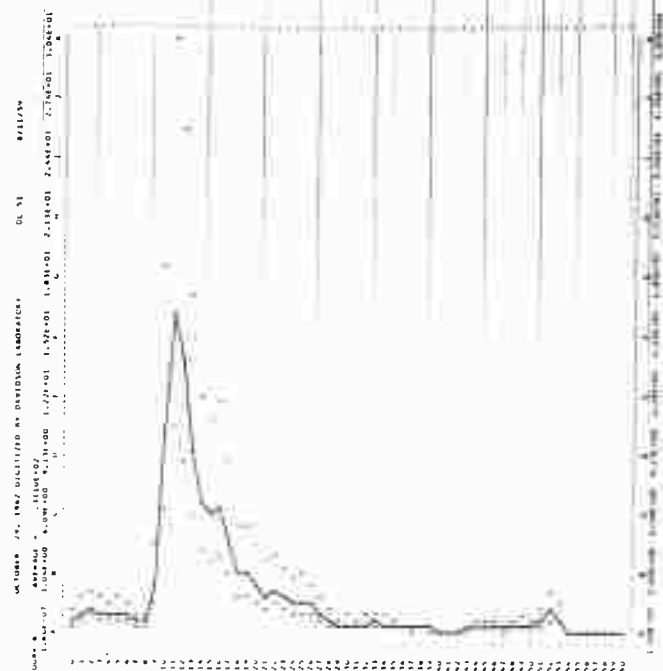
DATE - 10/29/42

## SPECTRA HINDCASTING OCTOBER 29, 1942 DIGITIZED BY DAYLIDSON LABORATORY

| DATE - 8/21/54 |       | SIG. F.       |          | S.C.       |          | NEEDLE       |       | DL. 44 |       |
|----------------|-------|---------------|----------|------------|----------|--------------|-------|--------|-------|
| MCHUR = 5      |       | SIG. HGT. -   |          | 24.2       |          | UPPER HGT. - |       | 32.6   |       |
| TOTAL OF -127  |       | CODE - VAR. - |          | 11.1       |          | LOWER HGT. - |       | 26.6   |       |
|                |       | NOISE LEVEL - |          | -0.004     |          | WIND SPEED - |       | 11     |       |
| M              | REL.  | UNIT-1-2      | FILTERED | LESS NOISE | CORR-1-2 | UPPER        | LOWER |        |       |
| 0              | 0.000 | 1.125         | 1.125    | 1.125      | 1.125    | 1.125        | 1.125 |        | 0.000 |
| 1              | 0.006 | 1.131         | 1.131    | 1.131      | 1.131    | 1.131        | 1.131 |        | 0.006 |
| 2              | 0.011 | 1.137         | 1.137    | 1.137      | 1.137    | 1.137        | 1.137 |        | 0.011 |
| 3              | 0.017 | 1.143         | 1.143    | 1.143      | 1.143    | 1.143        | 1.143 |        | 0.017 |
| 4              | 0.022 | 1.149         | 1.149    | 1.149      | 1.149    | 1.149        | 1.149 |        | 0.022 |
| 5              | 0.028 | 1.155         | 1.155    | 1.155      | 1.155    | 1.155        | 1.155 |        | 0.028 |
| 6              | 0.033 | 1.161         | 1.161    | 1.161      | 1.161    | 1.161        | 1.161 |        | 0.033 |
| 7              | 0.039 | 1.167         | 1.167    | 1.167      | 1.167    | 1.167        | 1.167 |        | 0.039 |
| 8              | 0.044 | 1.173         | 1.173    | 1.173      | 1.173    | 1.173        | 1.173 |        | 0.044 |
| 9              | 0.050 | 1.179         | 1.179    | 1.179      | 1.179    | 1.179        | 1.179 |        | 0.050 |
| 10             | 0.056 | 1.185         | 1.185    | 1.185      | 1.185    | 1.185        | 1.185 |        | 0.056 |
| 11             | 0.061 | 1.191         | 1.191    | 1.191      | 1.191    | 1.191        | 1.191 |        | 0.061 |
| 12             | 0.067 | 1.197         | 1.197    | 1.197      | 1.197    | 1.197        | 1.197 |        | 0.067 |
| 13             | 0.072 | 1.203         | 1.203    | 1.203      | 1.203    | 1.203        | 1.203 |        | 0.072 |
| 14             | 0.078 | 1.209         | 1.209    | 1.209      | 1.209    | 1.209        | 1.209 |        | 0.078 |
| 15             | 0.083 | 1.215         | 1.215    | 1.215      | 1.215    | 1.215        | 1.215 |        | 0.083 |
| 16             | 0.089 | 1.221         | 1.221    | 1.221      | 1.221    | 1.221        | 1.221 |        | 0.089 |
| 17             | 0.094 | 1.227         | 1.227    | 1.227      | 1.227    | 1.227        | 1.227 |        | 0.094 |
| 18             | 0.100 | 1.233         | 1.233    | 1.233      | 1.233    | 1.233        | 1.233 |        | 0.100 |
| 19             | 0.106 | 1.239         | 1.239    | 1.239      | 1.239    | 1.239        | 1.239 |        | 0.106 |
| 20             | 0.111 | 1.245         | 1.245    | 1.245      | 1.245    | 1.245        | 1.245 |        | 0.111 |
| 21             | 0.117 | 1.251         | 1.251    | 1.251      | 1.251    | 1.251        | 1.251 |        | 0.117 |
| 22             | 0.122 | 1.257         | 1.257    | 1.257      | 1.257    | 1.257        | 1.257 |        | 0.122 |
| 23             | 0.128 | 1.263         | 1.263    | 1.263      | 1.263    | 1.263        | 1.263 |        | 0.128 |
| 24             | 0.133 | 1.269         | 1.269    | 1.269      | 1.269    | 1.269        | 1.269 |        | 0.133 |
| 25             | 0.139 | 1.275         | 1.275    | 1.275      | 1.275    | 1.275        | 1.275 |        | 0.139 |
| 26             | 0.144 | 1.281         | 1.281    | 1.281      | 1.281    | 1.281        | 1.281 |        | 0.144 |
| 27             | 0.150 | 1.287         | 1.287    | 1.287      | 1.287    | 1.287        | 1.287 |        | 0.150 |
| 28             | 0.156 | 1.293         | 1.293    | 1.293      | 1.293    | 1.293        | 1.293 |        | 0.156 |
| 29             | 0.161 | 1.299         | 1.299    | 1.299      | 1.299    | 1.299        | 1.299 |        | 0.161 |
| 30             | 0.167 | 1.305         | 1.305    | 1.305      | 1.305    | 1.305        | 1.305 |        | 0.167 |
| 31             | 0.172 | 1.311         | 1.311    | 1.311      | 1.311    | 1.311        | 1.311 |        | 0.172 |
| 32             | 0.178 | 1.317         | 1.317    | 1.317      | 1.317    | 1.317        | 1.317 |        | 0.178 |
| 33             | 0.183 | 1.323         | 1.323    | 1.323      | 1.323    | 1.323        | 1.323 |        | 0.183 |
| 34             | 0.189 | 1.329         | 1.329    | 1.329      | 1.329    | 1.329        | 1.329 |        | 0.189 |
| 35             | 0.194 | 1.335         | 1.335    | 1.335      | 1.335    | 1.335        | 1.335 |        | 0.194 |
| 36             | 0.200 | 1.341         | 1.341    | 1.341      | 1.341    | 1.341        | 1.341 |        | 0.200 |
| 37             | 0.206 | 1.347         | 1.347    | 1.347      | 1.347    | 1.347        | 1.347 |        | 0.206 |
| 38             | 0.211 | 1.353         | 1.353    | 1.353      | 1.353    | 1.353        | 1.353 |        | 0.211 |
| 39             | 0.217 | 1.359         | 1.359    | 1.359      | 1.359    | 1.359        | 1.359 |        | 0.217 |
| 40             | 0.222 | 1.365         | 1.365    | 1.365      | 1.365    | 1.365        | 1.365 |        | 0.222 |
| 41             | 0.228 | 1.371         | 1.371    | 1.371      | 1.371    | 1.371        | 1.371 |        | 0.228 |
| 42             | 0.233 | 1.377         | 1.377    | 1.377      | 1.377    | 1.377        | 1.377 |        | 0.233 |
| 43             | 0.239 | 1.383         | 1.383    | 1.383      | 1.383    | 1.383        | 1.383 |        | 0.239 |
| 44             | 0.244 | 1.389         | 1.389    | 1.389      | 1.389    | 1.389        | 1.389 |        | 0.244 |
| 45             | 0.250 | 1.395         | 1.395    | 1.395      | 1.395    | 1.395        | 1.395 |        | 0.250 |
| 46             | 0.256 | 1.401         | 1.401    | 1.401      | 1.401    | 1.401        | 1.401 |        | 0.256 |
| 47             | 0.261 | 1.407         | 1.407    | 1.407      | 1.407    | 1.407        | 1.407 |        | 0.261 |
| 48             | 0.267 | 1.413         | 1.413    | 1.413      | 1.413    | 1.413        | 1.413 |        | 0.267 |
| 49             | 0.272 | 1.419         | 1.419    | 1.419      | 1.419    | 1.419        | 1.419 |        | 0.272 |
| 50             | 0.278 | 1.425         | 1.425    | 1.425      | 1.425    | 1.425        | 1.425 |        | 0.278 |
| 51             | 0.283 | 1.431         | 1.431    | 1.431      | 1.431    | 1.431        | 1.431 |        | 0.283 |
| 52             | 0.289 | 1.437         | 1.437    | 1.437      | 1.437    | 1.437        | 1.437 |        | 0.289 |
| 53             | 0.294 | 1.443         | 1.443    | 1.443      | 1.443    | 1.443        | 1.443 |        | 0.294 |
| 54             | 0.300 | 1.449         | 1.449    | 1.449      | 1.449    | 1.449        | 1.449 |        | 0.300 |
| 55             | 0.306 | 1.455         | 1.455    | 1.455      | 1.455    | 1.455        | 1.455 |        | 0.306 |
| 56             | 0.311 | 1.461         | 1.461    | 1.461      | 1.461    | 1.461        | 1.461 |        | 0.311 |
| 57             | 0.317 | 1.467         | 1.467    | 1.467      | 1.467    | 1.467        | 1.467 |        | 0.317 |
| 58             | 0.322 | 1.473         | 1.473    | 1.473      | 1.473    | 1.473        | 1.473 |        | 0.322 |
| 59             | 0.328 | 1.479         | 1.479    | 1.479      | 1.479    | 1.479        | 1.479 |        | 0.328 |
| 60             | 0.333 | 1.485         | 1.485    | 1.485      | 1.485    | 1.485        | 1.485 |        | 0.333 |
| 61             | 0.339 | 1.491         | 1.491    | 1.491      | 1.491    | 1.491        | 1.491 |        | 0.339 |
| 62             | 0.344 | 1.497         | 1.497    | 1.497      | 1.497    | 1.497        | 1.497 |        | 0.344 |
| 63             | 0.350 | 1.503         | 1.503    | 1.503      | 1.503    | 1.503        | 1.503 |        | 0.350 |
| 64             | 0.356 | 1.509         | 1.509    | 1.509      | 1.509    | 1.509        | 1.509 |        | 0.356 |
| 65             | 0.361 | 1.515         | 1.515    | 1.515      | 1.515    | 1.515        | 1.515 |        | 0.361 |
| 66             | 0.367 | 1.521         | 1.521    | 1.521      | 1.521    | 1.521        | 1.521 |        | 0.367 |
| 67             | 0.372 | 1.527         | 1.527    | 1.527      | 1.527    | 1.527        | 1.527 |        | 0.372 |
| 68             | 0.378 | 1.533         | 1.533    | 1.533      | 1.533    | 1.533        | 1.533 |        | 0.378 |
| 69             | 0.383 | 1.539         | 1.539    | 1.539      | 1.539    | 1.539        | 1.539 |        | 0.383 |
| 70             | 0.389 | 1.545         | 1.545    | 1.545      | 1.545    | 1.545        | 1.545 |        | 0.389 |
| 71             | 0.394 | 1.551         | 1.551    | 1.551      | 1.551    | 1.551        | 1.551 |        | 0.394 |
| 72             | 0.400 | 1.557         | 1.557    | 1.557      | 1.557    | 1.557        | 1.557 |        | 0.400 |
| 73             | 0.406 | 1.563         | 1.563    | 1.563      | 1.563    | 1.563        | 1.563 |        | 0.406 |
| 74             | 0.411 | 1.569         | 1.569    | 1.569      | 1.569    | 1.569        | 1.569 |        | 0.411 |
| 75             | 0.417 | 1.575         | 1.575    | 1.575      | 1.575    | 1.575        | 1.575 |        | 0.417 |
| 76             | 0.422 | 1.581         | 1.581    | 1.581      | 1.581    | 1.581        | 1.581 |        | 0.422 |
| 77             | 0.428 | 1.587         | 1.587    | 1.587      | 1.587    | 1.587        | 1.587 |        | 0.428 |
| 78             | 0.433 | 1.593         | 1.593    | 1.593      | 1.593    | 1.593        | 1.593 |        | 0.433 |
| 79             | 0.439 | 1.599         | 1.599    | 1.599      | 1.599    | 1.599        | 1.599 |        | 0.439 |
| 80             | 0.444 | 1.605         | 1.605    | 1.605      | 1.605    | 1.605        | 1.605 |        | 0.444 |
| 81             | 0.450 | 1.611         | 1.611    | 1.611      | 1.611    | 1.611        | 1.611 |        | 0.450 |
| 82             | 0.456 | 1.617         | 1.617    | 1.617      | 1.617    | 1.617        | 1.617 |        | 0.456 |
| 83             | 0.461 | 1.623         | 1.623    | 1.623      | 1.623    | 1.623        | 1.623 |        | 0.461 |
| 84             | 0.467 | 1.629         | 1.629    | 1.629      | 1.629    | 1.629        | 1.629 |        | 0.467 |
| 85             | 0.472 | 1.635         | 1.635    | 1.635      | 1.635    | 1.635        | 1.635 |        | 0.472 |
| 86             | 0.478 | 1.641         | 1.641    | 1.641      | 1.641    | 1.641        | 1.641 |        | 0.478 |
| 87             | 0.483 | 1.647         | 1.647    | 1.647      | 1.647    | 1.647        | 1.647 |        | 0.483 |
| 88             | 0.489 | 1.653         | 1.653    | 1.653      | 1.653    | 1.653        | 1.653 |        | 0.489 |
| 89             | 0.494 | 1.659         | 1.659    | 1.659      | 1.659    | 1.659        | 1.659 |        | 0.494 |
| 90             | 0.500 | 1.665         | 1.665    | 1.665      | 1.665    | 1.665        | 1.665 |        | 0.500 |
| 91             | 0.506 | 1.671         | 1.671    | 1.671      | 1.671    | 1.671        | 1.671 |        | 0.506 |
| 92             | 0.511 | 1.677         | 1.677    | 1.677      | 1.677    | 1.677        | 1.677 |        | 0.511 |
| 93             | 0.517 | 1.683         | 1.683    | 1.683      | 1.683    | 1.683        | 1.683 |        | 0.517 |
| 94             | 0.522 | 1.689         | 1.689    | 1.689      | 1.689    | 1.689        | 1.689 |        | 0.522 |
| 95             | 0.528 | 1.695         | 1.695    | 1.695      | 1.695    | 1.695        | 1.695 |        | 0.528 |
| 96             | 0.533 | 1.701         | 1.701    | 1.701      | 1.701    | 1.701        | 1.701 |        | 0.533 |
| 97             | 0.539 | 1.707         | 1.707    | 1.707      | 1.707    | 1.707        | 1.707 |        | 0.539 |
| 98             | 0.544 | 1.713         | 1.713    | 1.713      | 1.713    | 1.713        | 1.713 |        | 0.544 |
| 99             | 0.550 | 1.719         | 1.719    | 1.719      | 1.719    | 1.719        | 1.719 |        | 0.550 |
| 100            | 0.556 | 1.725         | 1.725    | 1.725      | 1.725    | 1.725        | 1.725 |        | 0.556 |

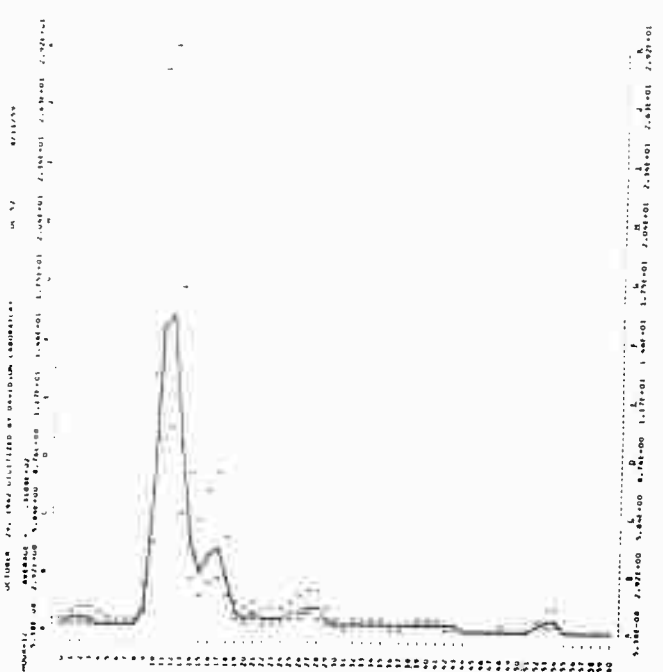
## SPECTRA HINDCASTING OCTOBER 29, 1962 DIGITIZED BY DAVIDSON LABORATORY

| DATE = 8/11/59 |      | SIG. MG. = 42.5     |          | RECORD = 46.8    |         |         |
|----------------|------|---------------------|----------|------------------|---------|---------|
| HOUR = 0       |      | CORR. PAR. = 113.3  |          | UPPER MG. = 38.8 |         |         |
| TOTAL OF -147  |      | NOISE LEVEL = .0710 |          | LOWER MG. = 35.7 |         |         |
|                |      |                     |          | WIND SPEED = 55  |         |         |
| H              | PRE. | UNIT-FL-2           | FILTERED | LESS NOISE       | UPPER   | LOWER   |
| 0              | .000 | .0000               | .0000    | .0000            | .0000   | .0000   |
| 1              | .004 | 1.0100              | 1.0100   | .9996            | .9996   | .9996   |
| 2              | .013 | 1.2749              | 1.2749   | 1.2059           | 1.2059  | .7478   |
| 3              | .017 | 1.0306              | 1.0306   | .9556            | .9556   | .6110   |
| 4              | .022 | .9312               | .9312    | .8602            | .8602   | .5528   |
| 5              | .028 | 1.0249              | 1.0249   | .9559            | .9559   | .6084   |
| 6              | .033 | .8655               | .8655    | .8165            | .8165   | .5788   |
| 7              | .039 | .9207               | .9207    | .8687            | .8687   | .5957   |
| 8              | .045 | .7760               | .7760    | .7408            | .7408   | .5277   |
| 9              | .050 | 2.2466              | 2.2466   | 2.1766           | 2.1766  | 1.5315  |
| 10             | .056 | 9.6759              | 9.6759   | 9.6059           | 9.6059  | 6.5211  |
| 11             | .061 | 15.9940             | 15.9940  | 15.9230          | 15.9230 | 10.5190 |
| 12             | .067 | 15.1487             | 15.1487  | 15.0777          | 15.0777 | 9.9330  |
| 13             | .072 | 9.2077              | 9.2077   | 9.1367           | 9.1367  | 5.9690  |
| 14             | .078 | 6.5189              | 6.5189   | 6.4479           | 6.4479  | 4.2680  |
| 15             | .083 | 5.7242              | 5.7242   | 5.6532           | 5.6532  | 3.7864  |
| 16             | .087 | 5.0805              | 5.0805   | 5.0095           | 5.0095  | 3.0331  |
| 17             | .094 | 4.4458              | 4.4458   | 4.3748           | 4.3748  | 2.6738  |
| 18             | .100 | 2.4804              | 2.4804   | 2.4094           | 2.4094  | 1.6315  |
| 19             | .106 | 2.5567              | 2.5567   | 2.4857           | 2.4857  | 1.6869  |
| 20             | .111 | 2.0249              | 2.0249   | 1.9539           | 1.9539  | 1.5218  |
| 21             | .117 | 1.5541              | 1.5541   | 1.4831           | 1.4831  | 1.2104  |
| 22             | .122 | 1.0922              | 1.0922   | 1.0212           | 1.0212  | 1.1215  |
| 23             | .128 | 1.1651              | 1.1651   | 1.0941           | 1.0941  | 1.1805  |
| 24             | .133 | 1.0472              | 1.0472   | .9762            | .9762   | .9633   |
| 25             | .139 | 1.1211              | 1.1211   | 1.0501           | 1.0501  | 1.0019  |
| 26             | .144 | .9079               | .9079    | .8369            | .8369   | .8891   |
| 27             | .150 | .8211               | .8211    | .7501            | .7501   | .8713   |
| 28             | .156 | .7843               | .7843    | .7133            | .7133   | .7774   |
| 29             | .161 | .7559               | .7559    | .6849            | .6849   | .7378   |
| 30             | .167 | .7272               | .7272    | .6562            | .6562   | .7046   |
| 31             | .172 | .7029               | .7029    | .6319            | .6319   | .6803   |
| 32             | .178 | .6782               | .6782    | .6072            | .6072   | .6565   |
| 33             | .183 | .6532               | .6532    | .5822            | .5822   | .6318   |
| 34             | .187 | .6278               | .6278    | .5568            | .5568   | .6071   |
| 35             | .194 | .6022               | .6022    | .5312            | .5312   | .5824   |
| 36             | .199 | .5765               | .5765    | .5055            | .5055   | .5577   |
| 37             | .206 | .5507               | .5507    | .4797            | .4797   | .5330   |
| 38             | .211 | .5249               | .5249    | .4539            | .4539   | .5083   |
| 39             | .217 | .5000               | .5000    | .4280            | .4280   | .4836   |
| 40             | .222 | .4749               | .4749    | .4021            | .4021   | .4589   |
| 41             | .228 | .4496               | .4496    | .3762            | .3762   | .4342   |
| 42             | .233 | .4242               | .4242    | .3503            | .3503   | .4095   |
| 43             | .239 | .4000               | .4000    | .3244            | .3244   | .3848   |
| 44             | .244 | .3749               | .3749    | .2985            | .2985   | .3601   |
| 45             | .250 | .3500               | .3500    | .2726            | .2726   | .3354   |
| 46             | .256 | .3249               | .3249    | .2467            | .2467   | .3107   |
| 47             | .261 | .3000               | .3000    | .2208            | .2208   | .2860   |
| 48             | .267 | .2749               | .2749    | .1949            | .1949   | .2613   |
| 49             | .272 | .2500               | .2500    | .1690            | .1690   | .2366   |
| 50             | .278 | .2249               | .2249    | .1431            | .1431   | .2119   |
| 51             | .283 | .2000               | .2000    | .1172            | .1172   | .1872   |
| 52             | .287 | .1749               | .1749    | .0913            | .0913   | .1625   |
| 53             | .294 | .1500               | .1500    | .0654            | .0654   | .1378   |
| 54             | .300 | .1249               | .1249    | .0395            | .0395   | .1131   |
| 55             | .306 | .1000               | .1000    | .0136            | .0136   | .0884   |
| 56             | .311 | .0749               | .0749    | .0000            | .0000   | .0637   |
| 57             | .317 | .0500               | .0500    | .0000            | .0000   | .0390   |
| 58             | .322 | .0249               | .0249    | .0000            | .0000   | .0143   |
| 59             | .328 | .0000               | .0000    | .0000            | .0000   | .0000   |
| 60             | .333 | .0000               | .0000    | .0000            | .0000   | .0000   |

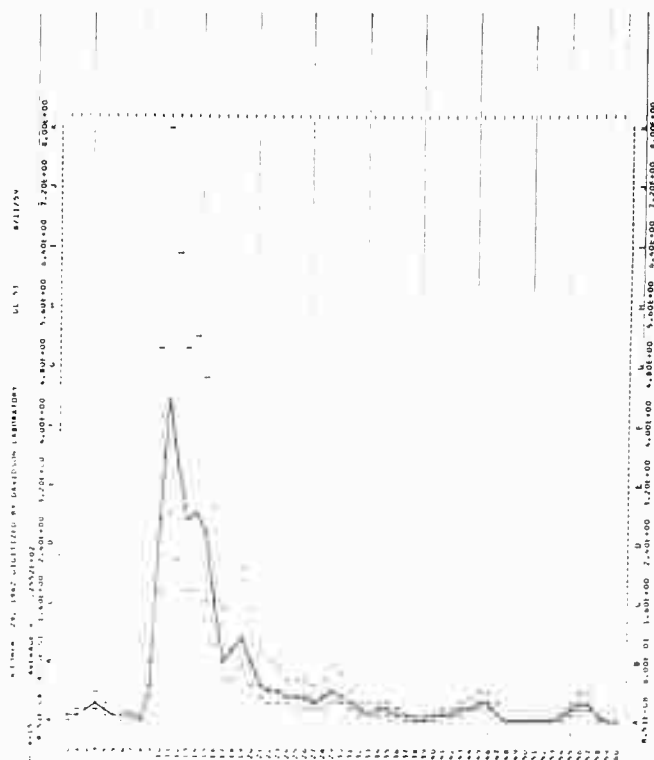
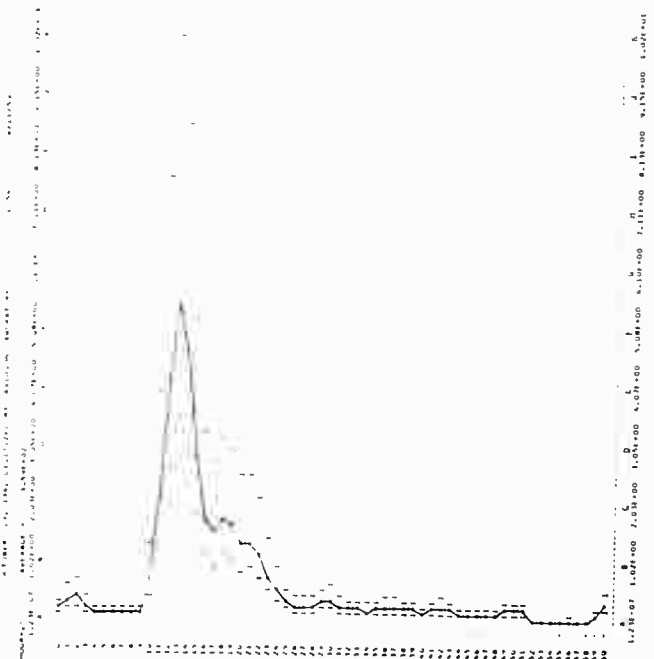


## SPECTRA HINDCASTING OCTOBER 29, 1962 DIGITIZED BY DAVIDSON LABORATORY

|                |      |                     |          |                  |       |       |
|----------------|------|---------------------|----------|------------------|-------|-------|
| DATE = 8/11/59 |      | SIG. MG. = 36.7     |          | RECORD = 41.2    |       |       |
| TOTAL OF -102  |      | CORR. PAR. = 96.3   |          | UPPER MG. = 32.8 |       |       |
|                |      | NOISE LEVEL = .0486 |          | LOWER MG. = 30.2 |       |       |
| H              | PRE. | UNIT-FL-2           | FILTERED | LESS NOISE       | UPPER | LOWER |
| 0              | .000 | .0000               | .0000    | .0000            | .0000 | .0000 |
| 1              | .004 | .0000               | .0000    | .0000            | .0000 | .0000 |
| 2              | .011 | .0001               | .0001    | .0001            | .0001 | .0001 |
| 3              | .017 | .0001               | .0001    | .0001            | .0001 | .0001 |
| 4              | .022 | .0001               | .0001    | .0001            | .0001 | .0001 |
| 5              | .028 | .0002               | .0002    | .0002            | .0002 | .0002 |
| 6              | .033 | .0002               | .0002    | .0002            | .0002 | .0002 |
| 7              | .039 | .0003               | .0003    | .0003            | .0003 | .0003 |
| 8              | .045 | .0003               | .0003    | .0003            | .0003 | .0003 |
| 9              | .050 | .0004               | .0004    | .0004            | .0004 | .0004 |
| 10             | .056 | .0005               | .0005    | .0005            | .0005 | .0005 |
| 11             | .061 | .0006               | .0006    | .0006            | .0006 | .0006 |
| 12             | .067 | .0007               | .0007    | .0007            | .0007 | .0007 |
| 13             | .072 | .0008               | .0008    | .0008            | .0008 | .0008 |
| 14             | .078 | .0009               | .0009    | .0009            | .0009 | .0009 |
| 15             | .083 | .0010               | .0010    | .0010            | .0010 | .0010 |
| 16             | .087 | .0011               | .0011    | .0011            | .0011 | .0011 |
| 17             | .094 | .0012               | .0012    | .0012            | .0012 | .0012 |
| 18             | .100 | .0013               | .0013    | .0013            | .0013 | .0013 |
| 19             | .106 | .0014               | .0014    | .0014            | .0014 | .0014 |
| 20             | .111 | .0015               | .0015    | .0015            | .0015 | .0015 |
| 21             | .117 | .0016               | .0016    | .0016            | .0016 | .0016 |
| 22             | .122 | .0017               | .0017    | .0017            | .0017 | .0017 |
| 23             | .128 | .0018               | .0018    | .0018            | .0018 | .0018 |
| 24             | .133 | .0019               | .0019    | .0019            | .0019 | .0019 |
| 25             | .139 | .0020               | .0020    | .0020            | .0020 | .0020 |
| 26             | .144 | .0021               | .0021    | .0021            | .0021 | .0021 |
| 27             | .150 | .0022               | .0022    | .0022            | .0022 | .0022 |
| 28             | .156 | .0023               | .0023    | .0023            | .0023 | .0023 |
| 29             | .161 | .0024               | .0024    | .0024            | .0024 | .0024 |
| 30             | .167 | .0025               | .0025    | .0025            | .0025 | .0025 |
| 31             | .172 | .0026               | .0026    | .0026            | .0026 | .0026 |
| 32             | .178 | .0027               | .0027    | .0027            | .0027 | .0027 |
| 33             | .183 | .0028               | .0028    | .0028            | .0028 | .0028 |
| 34             | .187 | .0029               | .0029    | .0029            | .0029 | .0029 |
| 35             | .194 | .0030               | .0030    | .0030            | .0030 | .0030 |
| 36             | .199 | .0031               | .0031    | .0031            | .0031 | .0031 |
| 37             | .206 | .0032               | .0032    | .0032            | .0032 | .0032 |
| 38             | .211 | .0033               | .0033    | .0033            | .0033 | .0033 |
| 39             | .217 | .0034               | .0034    | .0034            | .0034 | .0034 |
| 40             | .222 | .0035               | .0035    | .0035            | .0035 | .0035 |
| 41             | .228 | .0036               | .0036    | .0036            | .0036 | .0036 |
| 42             | .233 | .0037               | .0037    | .0037            | .0037 | .0037 |
| 43             | .239 | .0038               | .0038    | .0038            | .0038 | .0038 |
| 44             | .244 | .0039               | .0039    | .0039            | .0039 | .0039 |
| 45             | .250 | .0040               | .0040    | .0040            | .0040 | .0040 |
| 46             | .256 | .0041               | .0041    | .0041            | .0041 | .0041 |
| 47             | .261 | .0042               | .0042    | .0042            | .0042 | .0042 |
| 48             | .267 | .0043               | .0043    | .0043            | .0043 | .0043 |
| 49             | .272 | .0044               | .0044    | .0044            | .0044 | .0044 |
| 50             | .278 | .0045               | .0045    | .0045            | .0045 | .0045 |
| 51             | .283 | .0046               | .0046    | .0046            | .0046 | .0046 |
| 52             | .287 | .0047               | .0047    | .0047            | .0047 | .0047 |
| 53             | .294 | .0048               | .0048    | .0048            | .0048 | .0048 |
| 54             | .300 | .0049               | .0049    | .0049            | .0049 | .0049 |
| 55             | .306 | .0050               | .0050    | .0050            | .0050 | .0050 |
| 56             | .311 | .0051               | .0051    | .0051            | .0051 | .0051 |
| 57             | .317 | .0052               | .0052    | .0052            | .0052 | .0052 |
| 58             | .322 | .0053               | .0053    | .0053            | .0053 | .0053 |
| 59             | .328 | .0054               | .0054    | .0054            | .0054 | .0054 |
| 60             | .333 | .0055               | .0055    | .0055            | .0055 | .0055 |



| DATE 8/11/59 |          | SIG. MG. =    |           | ZLZ       |           | RECORD       |           | UL 51      |             |
|--------------|----------|---------------|-----------|-----------|-----------|--------------|-----------|------------|-------------|
| HQR 1-5      |          | CORR. WAVE =  |           | 31.5      |           | LONGR MG. =  |           | 20.4       |             |
| TOTAL OF 145 |          | NOISE LEVEL = |           | -0.19     |           | WIND SPEED = |           | 35         |             |
| M            | UNIT 1-5 | FILE UNIT     | LESS MG15 | LONGR 1-2 | LONGR 3-4 | LONGR 5-6    | LONGR 7-8 | LONGR 9-10 | LONGR 11-12 |
| 0            | 0000     | 0706A         | 0706A     | 00087     | 00087     | 00082        | 00082     | 00094      |             |
| 1            | 0001     | 07111         | 07111     | 00092     | 00092     | 00088        | 00088     | 00098      |             |
| 2            | 0011     | 00700         | 00700     | 00101     | 00101     | 00093        | 00093     | 00107      |             |
| 3            | 0022     | 00719         | 00719     | 00109     | 00109     | 00095        | 00095     | 00112      |             |
| 4            | 0033     | 00738         | 00738     | 00115     | 00115     | 00099        | 00099     | 00118      |             |
| 5            | 0028     | 00810         | 00810     | 00131     | 00131     | 00112        | 00112     | 00087      |             |
| 6            | 0039     | 00849         | 00849     | 00150     | 00150     | 00120        | 00120     | 00091      |             |
| 7            | 0039     | 00808         | 00808     | 00149     | 00149     | 00119        | 00119     | 00091      |             |
| 8            | 0048     | 00820         | 00820     | 00161     | 00161     | 00121        | 00121     | 00091      |             |
| 9            | 0058     | 00833         | 00833     | 00163     | 00163     | 00123        | 00123     | 00091      |             |
| 10           | 0058     | 01980         | 01980     | 00180     | 00180     | 00149        | 00149     | 00100      |             |
| 11           | 0068     | 00851         | 00851     | 00184     | 00184     | 00151        | 00151     | 00100      |             |
| 12           | 0067     | 00855         | 00855     | 00184     | 00184     | 00151        | 00151     | 00100      |             |
| 13           | 0072     | 00825         | 00825     | 00186     | 00186     | 00152        | 00152     | 00101      |             |
| 14           | 0078     | 00849         | 00849     | 00190     | 00190     | 00156        | 00156     | 00101      |             |
| 15           | 0083     | 01327         | 01327     | 00198     | 00198     | 00160        | 00160     | 00101      |             |
| 16           | 0084     | 01005         | 01005     | 00200     | 00200     | 00162        | 00162     | 00101      |             |
| 17           | 0094     | 00870         | 00870     | 00202     | 00202     | 00164        | 00164     | 00101      |             |
| 18           | 0100     | 00878         | 00878     | 00203     | 00203     | 00165        | 00165     | 00101      |             |
| 19           | 0100     | 00878         | 00878     | 00203     | 00203     | 00165        | 00165     | 00101      |             |
| 20           | 0111     | 00739         | 00739     | 00205     | 00205     | 00167        | 00167     | 00101      |             |
| 21           | 0117     | 00881         | 00881     | 00206     | 00206     | 00168        | 00168     | 00101      |             |
| 22           | 0127     | 00881         | 00881     | 00206     | 00206     | 00168        | 00168     | 00101      |             |
| 23           | 0134     | 00931         | 00931     | 00209     | 00209     | 00170        | 00170     | 00101      |             |
| 24           | 0135     | 00933         | 00933     | 00209     | 00209     | 00171        | 00171     | 00101      |             |
| 25           | 0139     | 00937         | 00937     | 00209     | 00209     | 00171        | 00171     | 00101      |             |
| 26           | 0144     | 00935         | 00935     | 00209     | 00209     | 00171        | 00171     | 00101      |             |
| 27           | 0144     | 00935         | 00935     | 00209     | 00209     | 00171        | 00171     | 00101      |             |
| 28           | 0154     | 00937         | 00937     | 00209     | 00209     | 00171        | 00171     | 00101      |             |
| 29           | 0159     | 00937         | 00937     | 00209     | 00209     | 00171        | 00171     | 00101      |             |
| 30           | 0167     | 00937         | 00937     | 00209     | 00209     | 00171        | 00171     | 00101      |             |
| 31           | 0172     | 00939         | 00939     | 00210     | 00210     | 00172        | 00172     | 00101      |             |
| 32           | 0178     | 00939         | 00939     | 00210     | 00210     | 00172        | 00172     | 00101      |             |
| 33           | 0183     | 00939         | 00939     | 00210     | 00210     | 00172        | 00172     | 00101      |             |
| 34           | 0188     | 00939         | 00939     | 00210     | 00210     | 00172        | 00172     | 00101      |             |
| 35           | 0196     | 00940         | 00940     | 00211     | 00211     | 00173        | 00173     | 00101      |             |
| 36           | 0200     | 00940         | 00940     | 00211     | 00211     | 00173        | 00173     | 00101      |             |
| 37           | 0201     | 00940         | 00940     | 00211     | 00211     | 00173        | 00173     | 00101      |             |
| 38           | 0211     | 00939         | 00939     | 00211     | 00211     | 00173        | 00173     | 00101      |             |
| 39           | 0222     | 00941         | 00941     | 002       |           |              |           |            |             |

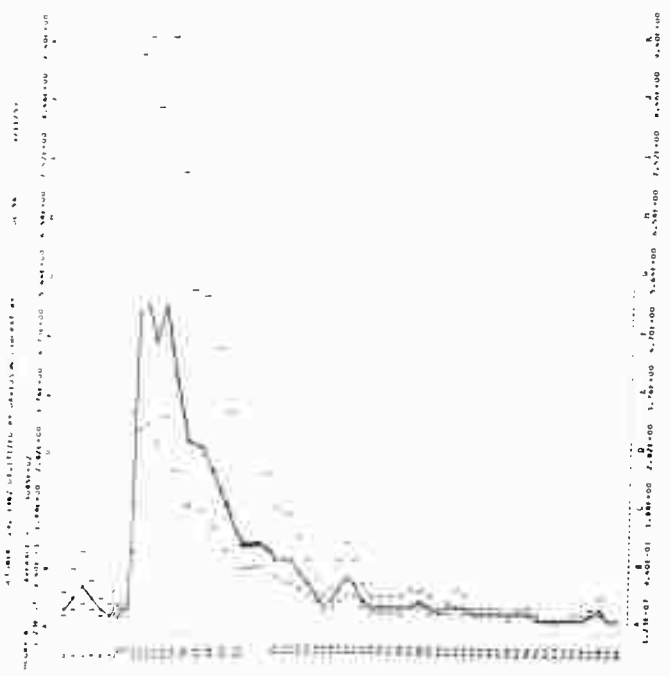
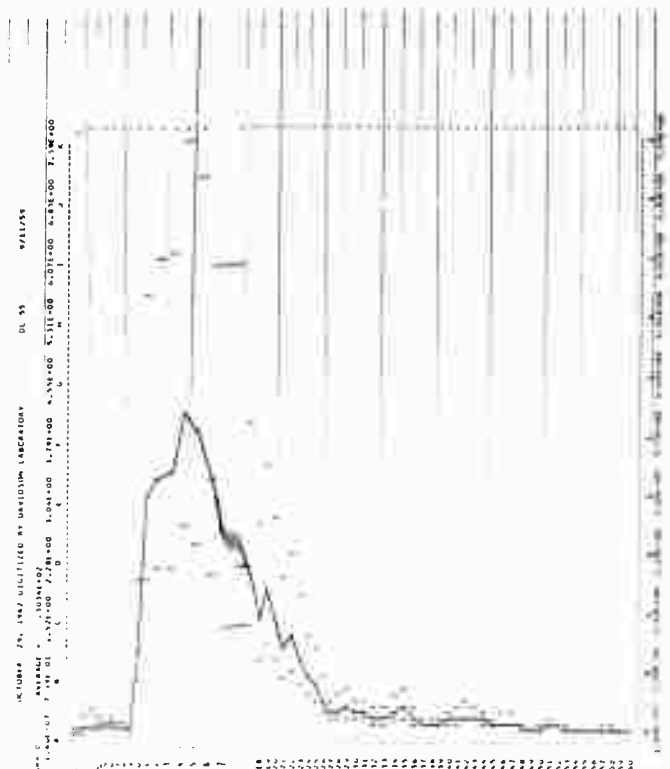
[illegible]

## SPECTRA HINDCASTING OCTOBER 29, 1962 DIGITIZED BY DAVIDSON LABORATORY

|                |      |                          |          |                    |             |       |       |
|----------------|------|--------------------------|----------|--------------------|-------------|-------|-------|
| DATE = 9/11/55 |      | AV. T <sub>0</sub> = 9.3 |          | RECORD = DL 55     |             |       |       |
| HOUR = 0       |      | SIG. NOISE = 28.8        |          | UPPER NOISE = 27.3 |             |       |       |
| TOTAL OF 162   |      | CORR. VAR. = 10.8        |          | LOWER NOISE = 22.7 |             |       |       |
|                |      | NOISE LEVEL = .014       |          | WIND SPEED = 40    |             |       |       |
| N              | PRE. | UNIT-PT. 2               | FILTERED | LESS NOISE         | CORR. PT. 2 | UPPER | LOWER |
| 0              | .000 | .1078                    | .1078    | .0913              | .0913       | .1083 | .0581 |
| 1              | .006 | .1066                    | .1066    | .1041              | .1041       | .1079 | .0963 |
| 2              | .011 | .1054                    | .1054    | .1079              | .1079       | .1063 | .1196 |
| 3              | .017 | .1037                    | .1037    | .1072              | .1072       | .1037 | .1093 |
| 4              | .022 | .1023                    | .1023    | .1068              | .1068       | .1023 | .1087 |
| 5              | .028 | .1013                    | .1013    | .1057              | .1057       | .1013 | .1085 |
| 6              | .033 | .0990                    | .0990    | .1034              | .1034       | .1013 | .1037 |
| 7              | .038 | .0979                    | .0979    | .1033              | .1033       | .1005 | .1045 |
| 8              | .045 | .0961                    | .0961    | .1015              | .1015       | .0971 | .1018 |
| 9              | .050 | .0940                    | .0940    | .1015              | .1015       | .0940 | .1023 |
| 10             | .056 | .0925                    | .0925    | .1000              | .1000       | .0925 | .1018 |
| 11             | .061 | .0914                    | .0914    | .0981              | .0981       | .0914 | .1013 |
| 12             | .067 | .0900                    | .0900    | .0981              | .0981       | .0900 | .1008 |
| 13             | .072 | .0885                    | .0885    | .0968              | .0968       | .0885 | .1003 |
| 14             | .078 | .0873                    | .0873    | .0966              | .0966       | .0873 | .1000 |
| 15             | .083 | .0863                    | .0863    | .0963              | .0963       | .0863 | .1000 |
| 16             | .089 | .0853                    | .0853    | .0953              | .0953       | .0853 | .1000 |
| 17             | .094 | .0843                    | .0843    | .0943              | .0943       | .0843 | .1000 |
| 18             | .100 | .0834                    | .0834    | .0934              | .0934       | .0834 | .1000 |
| 19             | .106 | .0824                    | .0824    | .0924              | .0924       | .0824 | .1000 |
| 20             | .111 | .0815                    | .0815    | .0915              | .0915       | .0815 | .1000 |
| 21             | .117 | .0805                    | .0805    | .0905              | .0905       | .0805 | .1000 |
| 22             | .122 | .0796                    | .0796    | .0896              | .0896       | .0796 | .1000 |
| 23             | .128 | .0786                    | .0786    | .0886              | .0886       | .0786 | .1000 |
| 24             | .133 | .0777                    | .0777    | .0877              | .0877       | .0777 | .1000 |
| 25             | .139 | .0767                    | .0767    | .0867              | .0867       | .0767 | .1000 |
| 26             | .144 | .0758                    | .0758    | .0858              | .0858       | .0758 | .1000 |
| 27             | .150 | .0748                    | .0748    | .0848              | .0848       | .0748 | .1000 |
| 28             | .156 | .0738                    | .0738    | .0838              | .0838       | .0738 | .1000 |
| 29             | .161 | .0729                    | .0729    | .0829              | .0829       | .0729 | .1000 |
| 30             | .167 | .0719                    | .0719    | .0819              | .0819       | .0719 | .1000 |
| 31             | .172 | .0710                    | .0710    | .0810              | .0810       | .0710 | .1000 |
| 32             | .178 | .0700                    | .0700    | .0800              | .0800       | .0700 | .1000 |
| 33             | .183 | .0691                    | .0691    | .0791              | .0791       | .0691 | .1000 |
| 34             | .189 | .0681                    | .0681    | .0781              | .0781       | .0681 | .1000 |
| 35             | .194 | .0672                    | .0672    | .0772              | .0772       | .0672 | .1000 |
| 36             | .200 | .0662                    | .0662    | .0762              | .0762       | .0662 | .1000 |
| 37             | .206 | .0653                    | .0653    | .0753              | .0753       | .0653 | .1000 |
| 38             | .211 | .0643                    | .0643    | .0743              | .0743       | .0643 | .1000 |
| 39             | .217 | .0634                    | .0634    | .0734              | .0734       | .0634 | .1000 |
| 40             | .222 | .0624                    | .0624    | .0724              | .0724       | .0624 | .1000 |
| 41             | .228 | .0615                    | .0615    | .0715              | .0715       | .0615 | .1000 |
| 42             | .233 | .0605                    | .0605    | .0705              | .0705       | .0605 | .1000 |
| 43             | .239 | .0596                    | .0596    | .0696              | .0696       | .0596 | .1000 |
| 44             | .244 | .0586                    | .0586    | .0686              | .0686       | .0586 | .1000 |
| 45             | .250 | .0577                    | .0577    | .0677              | .0677       | .0577 | .1000 |
| 46             | .256 | .0567                    | .0567    | .0667              | .0667       | .0567 | .1000 |
| 47             | .261 | .0558                    | .0558    | .0658              | .0658       | .0558 | .1000 |
| 48             | .267 | .0548                    | .0548    | .0648              | .0648       | .0548 | .1000 |
| 49             | .272 | .0539                    | .0539    | .0639              | .0639       | .0539 | .1000 |
| 50             | .278 | .0529                    | .0529    | .0629              | .0629       | .0529 | .1000 |
| 51             | .283 | .0519                    | .0519    | .0619              | .0619       | .0519 | .1000 |
| 52             | .289 | .0510                    | .0510    | .0610              | .0610       | .0510 | .1000 |
| 53             | .294 | .0500                    | .0500    | .0600              | .0600       | .0500 | .1000 |
| 54             | .300 | .0491                    | .0491    | .0591              | .0591       | .0491 | .1000 |
| 55             | .306 | .0481                    | .0481    | .0581              | .0581       | .0481 | .1000 |
| 56             | .311 | .0472                    | .0472    | .0572              | .0572       | .0472 | .1000 |
| 57             | .317 | .0462                    | .0462    | .0562              | .0562       | .0462 | .1000 |
| 58             | .322 | .0453                    | .0453    | .0553              | .0553       | .0453 | .1000 |
| 59             | .328 | .0443                    | .0443    | .0543              | .0543       | .0443 | .1000 |
| 60             | .333 | .0434                    | .0434    | .0534              | .0534       | .0434 | .1000 |

## SPECTRA HINDCASTING OCTOBER 29, 1962 DIGITIZED BY DAVIDSON LABORATORY

| DATE = 9/11/55 |      | AV. T <sub>0</sub> = 9.3 |          | RECORD = DL 55     |             |       |       |
|----------------|------|--------------------------|----------|--------------------|-------------|-------|-------|
| TOTAL OF 162   |      | SIG. NOISE = 28.8        |          | UPPER NOISE = 27.3 |             |       |       |
|                |      | NOISE LEVEL = .0145      |          | LOWER NOISE = 22.7 |             |       |       |
| N              | PRE. | UNIT-PT. 2               | FILTERED | LESS NOISE         | CORR. PT. 2 | UPPER | LOWER |
| 0              | .000 | .1078                    | .1078    | .0913              | .0913       | .1083 | .0581 |
| 1              | .006 | .1066                    | .1066    | .1041              | .1041       | .1079 | .0963 |
| 2              | .011 | .1054                    | .1054    | .1079              | .1079       | .1063 | .1196 |
| 3              | .017 | .1037                    | .1037    | .1072              | .1072       | .1037 | .1093 |
| 4              | .022 | .1023                    | .1023    | .1068              | .1068       | .1023 | .1087 |
| 5              | .028 | .1013                    | .1013    | .1057              | .1057       | .1013 | .1085 |
| 6              | .033 | .0990                    | .0990    | .0934              | .0934       | .1013 | .1037 |
| 7              | .038 | .0979                    | .0979    | .0933              | .0933       | .1005 | .1045 |
| 8              | .045 | .0961                    | .0961    | .0915              | .0915       | .0971 | .1018 |
| 9              | .050 | .0940                    | .0940    | .0915              | .0915       | .0940 | .1023 |
| 10             | .056 | .0925                    | .0925    | .0900              | .0900       | .0925 | .1018 |
| 11             | .061 | .0914                    | .0914    | .0891              | .0891       | .0914 | .1013 |
| 12             | .067 | .0900                    | .0900    | .0881              | .0881       | .0900 | .1008 |
| 13             | .072 | .0885                    | .0885    | .0868              | .0868       | .0885 | .1003 |
| 14             | .078 | .0873                    | .0873    | .0856              | .0856       | .0873 | .1000 |
| 15             | .083 | .0863                    | .0863    | .0846              | .0846       | .0863 | .1000 |
| 16             | .089 | .0853                    | .0853    | .0836              | .0836       | .0853 | .1000 |
| 17             | .094 | .0843                    | .0843    | .0826              | .0826       | .0843 | .1000 |
| 18             | .100 | .0834                    | .0834    | .0817              | .0817       | .0834 | .1000 |
| 19             | .106 | .0824                    | .0824    | .0807              | .0807       | .0824 | .1000 |
| 20             | .111 | .0815                    | .0815    | .0798              | .0798       | .0815 | .1000 |
| 21             | .117 | .0805                    | .0805    | .0788              | .0788       | .0805 | .1000 |
| 22             | .122 | .0796                    | .0796    | .0779              | .0779       | .0796 | .1000 |
| 23             | .128 | .0786                    | .0786    | .0769              | .0769       | .0786 | .1000 |
| 24             | .133 | .0777                    | .0777    | .0760              | .0760       | .0777 | .1000 |
| 25             | .139 | .0767                    | .0767    | .0750              | .0750       | .0767 | .1000 |
| 26             | .144 | .0758                    | .0758    | .0741              | .0741       | .0758 | .1000 |
| 27             | .150 | .0748                    | .0748    | .0731              | .0731       | .0748 | .1000 |
| 28             | .156 | .0738                    | .0738    | .0721              | .0721       | .0738 | .1000 |
| 29             | .161 | .0729                    | .0729    | .0712              | .0712       | .0729 | .1000 |
| 30             | .167 | .0719                    | .0719    | .0702              | .0702       | .0719 | .1000 |
| 31             | .172 | .0710                    | .0710    | .0693              | .0693       | .0710 | .1000 |
| 32             | .178 | .0700                    | .0700    | .0683              | .0683       | .0700 | .1000 |
| 33             | .183 | .0691                    | .0691    | .0674              | .0674       | .0691 | .1000 |
| 34             | .189 | .0681                    | .0681    | .0664              | .0664       | .0681 | .1000 |
| 35             | .194 | .0672                    | .0672    | .0655              | .0655       | .0672 | .1000 |
| 36             | .200 | .0662                    | .0662    | .0645              | .0645       | .0662 | .1000 |
| 37             | .206 | .0653                    | .0653    | .0636              | .0636       | .0653 | .1000 |
| 38             | .211 | .0643                    | .0643    | .0626              | .0626       | .0643 | .1000 |
| 39             | .217 | .0634                    | .0634    | .0617              | .0617       | .0634 | .1000 |
| 40             | .222 | .0624                    | .0624    | .0607              | .0607       | .0624 | .1000 |
| 41             | .228 | .0615                    | .0615    | .0598              | .0598       | .0615 | .1000 |
| 42             | .233 | .0605                    | .0605    | .0588              | .0588       | .0605 | .1000 |
| 43             | .239 | .0596                    | .0596    | .0579              | .0579       | .0596 | .1000 |
| 44             | .244 | .0586                    | .0586    | .0569              | .0569       | .0586 | .1000 |
| 45             | .250 | .0577                    | .0577    | .0560              | .0560       | .0577 | .1000 |
| 46             | .256 | .0567                    | .0567    | .0550              | .0550       | .0567 | .1000 |
| 47             | .261 | .0558                    | .0558    | .0541              | .0541       | .0558 | .1000 |
| 48             | .267 | .0548                    | .0548    | .0531              | .0531       | .0548 | .1000 |
| 49             | .272 | .0539                    | .0539    | .0522              | .0522       | .0539 | .1000 |
| 50             | .278 | .0529                    | .0529    | .0512              | .0512       | .0529 | .1000 |
| 51             | .283 | .0519                    | .0519    | .0502              | .0502       | .0519 | .1000 |
| 52             | .289 | .0510                    | .0510    | .0493              | .0493       | .0510 | .1000 |
| 53             | .294 | .0500                    | .0500    | .0483              | .0483       | .0500 | .1000 |
| 54             | .300 | .0491                    | .0491    | .0474              | .0474       | .0491 | .1000 |
| 55             | .306 | .0481                    | .0481    | .0464              | .0464       | .0481 | .1000 |
| 56             | .311 | .0472                    | .0472    | .0455              | .0455       | .0472 | .1000 |
| 57             | .317 | .0462                    | .0462    | .0445              | .0445       | .0462 | .1000 |
| 58             | .322 | .0453                    | .0453    | .0436              | .0436       | .0453 | .1000 |
| 59             | .328 | .0443                    | .0443    | .0426              | .0426       | .0443 | .1000 |
| 60             | .333 | .0434                    | .0434    | .0417              | .0417       | .0434 | .1000 |



## SPECTRA HINDCASTING OCTOBER 29, 1962 DIGITIZED BY DAVIDSON LABORATORY

DATE = 9/11/59  
HOUR = 12  
TOTAL OF 117SEG. HGT. = 20.7  
CORR. PAR. = 24.8  
NOISE LEVEL = .0176

R.A.

RECORD =

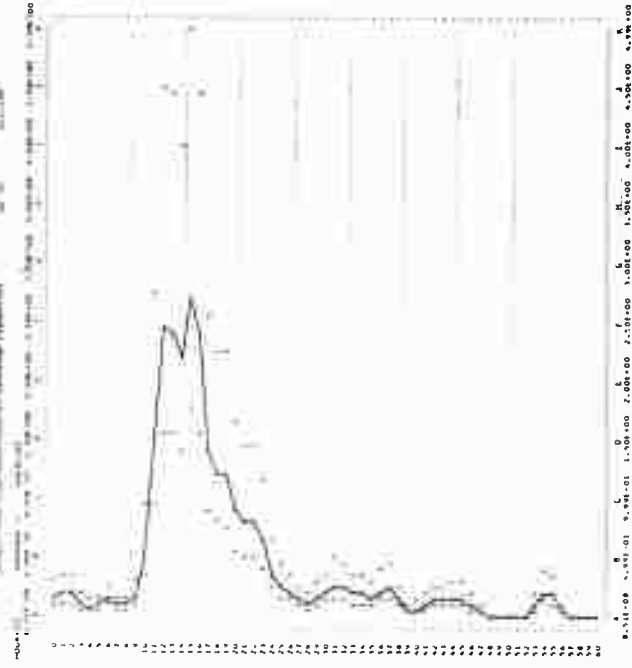
UL 52

22.8

14.0

30

| N  | FREQ | UNFILT. | FILTERED | LESS NOISE | CORR.FT.2 | UPPER | LOWER |
|----|------|---------|----------|------------|-----------|-------|-------|
| 0  | .000 | .1748   | .1748    | .1572      | .1572     | .1596 | .1501 |
| 1  | .006 | .1750   | .1750    | .1574      | .1574     | .1598 | .1503 |
| 2  | .011 | .1752   | .1752    | .1576      | .1576     | .1600 | .1505 |
| 3  | .017 | .1754   | .1754    | .1578      | .1578     | .1602 | .1507 |
| 4  | .022 | .1756   | .1756    | .1580      | .1580     | .1604 | .1509 |
| 5  | .028 | .1758   | .1758    | .1582      | .1582     | .1606 | .1511 |
| 6  | .033 | .1760   | .1760    | .1584      | .1584     | .1608 | .1513 |
| 7  | .039 | .1762   | .1762    | .1586      | .1586     | .1610 | .1515 |
| 8  | .044 | .1764   | .1764    | .1588      | .1588     | .1612 | .1517 |
| 9  | .050 | .1766   | .1766    | .1590      | .1590     | .1614 | .1519 |
| 10 | .055 | .1768   | .1768    | .1592      | .1592     | .1616 | .1521 |
| 11 | .061 | .1770   | .1770    | .1594      | .1594     | .1618 | .1523 |
| 12 | .067 | .1772   | .1772    | .1596      | .1596     | .1620 | .1525 |
| 13 | .072 | .1774   | .1774    | .1598      | .1598     | .1622 | .1527 |
| 14 | .078 | .1776   | .1776    | .1600      | .1600     | .1624 | .1529 |
| 15 | .083 | .1778   | .1778    | .1602      | .1602     | .1626 | .1531 |
| 16 | .089 | .1780   | .1780    | .1604      | .1604     | .1628 | .1533 |
| 17 | .094 | .1782   | .1782    | .1606      | .1606     | .1630 | .1535 |
| 18 | .100 | .1784   | .1784    | .1608      | .1608     | .1632 | .1537 |
| 19 | .105 | .1786   | .1786    | .1610      | .1610     | .1634 | .1539 |
| 20 | .111 | .1788   | .1788    | .1612      | .1612     | .1636 | .1541 |
| 21 | .117 | .1790   | .1790    | .1614      | .1614     | .1638 | .1543 |
| 22 | .122 | .1792   | .1792    | .1616      | .1616     | .1640 | .1545 |
| 23 | .128 | .1794   | .1794    | .1618      | .1618     | .1642 | .1547 |
| 24 | .133 | .1796   | .1796    | .1620      | .1620     | .1644 | .1549 |
| 25 | .139 | .1798   | .1798    | .1622      | .1622     | .1646 | .1551 |
| 26 | .144 | .1800   | .1800    | .1624      | .1624     | .1648 | .1553 |
| 27 | .150 | .1802   | .1802    | .1626      | .1626     | .1650 | .1555 |
| 28 | .155 | .1804   | .1804    | .1628      | .1628     | .1652 | .1557 |
| 29 | .161 | .1806   | .1806    | .1630      | .1630     | .1654 | .1559 |
| 30 | .167 | .1808   | .1808    | .1632      | .1632     | .1656 | .1561 |
| 31 | .172 | .1810   | .1810    | .1634      | .1634     | .1658 | .1563 |
| 32 | .178 | .1812   | .1812    | .1636      | .1636     | .1660 | .1565 |
| 33 | .183 | .1814   | .1814    | .1638      | .1638     | .1662 | .1567 |
| 34 | .189 | .1816   | .1816    | .1640      | .1640     | .1664 | .1569 |
| 35 | .194 | .1818   | .1818    | .1642      | .1642     | .1666 | .1571 |
| 36 | .200 | .1820   | .1820    | .1644      | .1644     | .1668 | .1573 |
| 37 | .205 | .1822   | .1822    | .1646      | .1646     | .1670 | .1575 |
| 38 | .211 | .1824   | .1824    | .1648      | .1648     | .1672 | .1577 |
| 39 | .217 | .1826   | .1826    | .1650      | .1650     | .1674 | .1579 |
| 40 | .222 | .1828   | .1828    | .1652      | .1652     | .1676 | .1581 |
| 41 | .228 | .1830   | .1830    | .1654      | .1654     | .1678 | .1583 |
| 42 | .233 | .1832   | .1832    | .1656      | .1656     | .1680 | .1585 |
| 43 | .239 | .1834   | .1834    | .1658      | .1658     | .1682 | .1587 |
| 44 | .244 | .1836   | .1836    | .1660      | .1660     | .1684 | .1589 |
| 45 | .250 | .1838   | .1838    | .1662      | .1662     | .1686 | .1591 |
| 46 | .255 | .1840   | .1840    | .1664      | .1664     | .1688 | .1593 |
| 47 | .261 | .1842   | .1842    | .1666      | .1666     | .1690 | .1595 |
| 48 | .267 | .1844   | .1844    | .1668      | .1668     | .1692 | .1597 |
| 49 | .272 | .1846   | .1846    | .1670      | .1670     | .1694 | .1599 |
| 50 | .278 | .1848   | .1848    | .1672      | .1672     | .1696 | .1601 |
| 51 | .283 | .1850   | .1850    | .1674      | .1674     | .1698 | .1603 |
| 52 | .289 | .1852   | .1852    | .1676      | .1676     | .1700 | .1605 |
| 53 | .294 | .1854   | .1854    | .1678      | .1678     | .1702 | .1607 |
| 54 | .300 | .1856   | .1856    | .1680      | .1680     | .1704 | .1609 |
| 55 | .305 | .1858   | .1858    | .1682      | .1682     | .1706 | .1611 |
| 56 | .311 | .1860   | .1860    | .1684      | .1684     | .1708 | .1613 |
| 57 | .317 | .1862   | .1862    | .1686      | .1686     | .1710 | .1615 |
| 58 | .322 | .1864   | .1864    | .1688      | .1688     | .1712 | .1617 |
| 59 | .328 | .1866   | .1866    | .1690      | .1690     | .1714 | .1619 |
| 60 | .333 | .1868   | .1868    | .1692      | .1692     | .1716 | .1621 |



## SPECTRA HINDCASTING OCTOBER 29, 1962 DIGITIZED BY DAVIDSON LABORATORY

DATE = 9/11/59  
HOUR = 18  
TOTAL OF 117SEG. HGT. = 20.7  
CORR. PAR. = 24.8  
NOISE LEVEL = .0176

R.A.

RECORD =

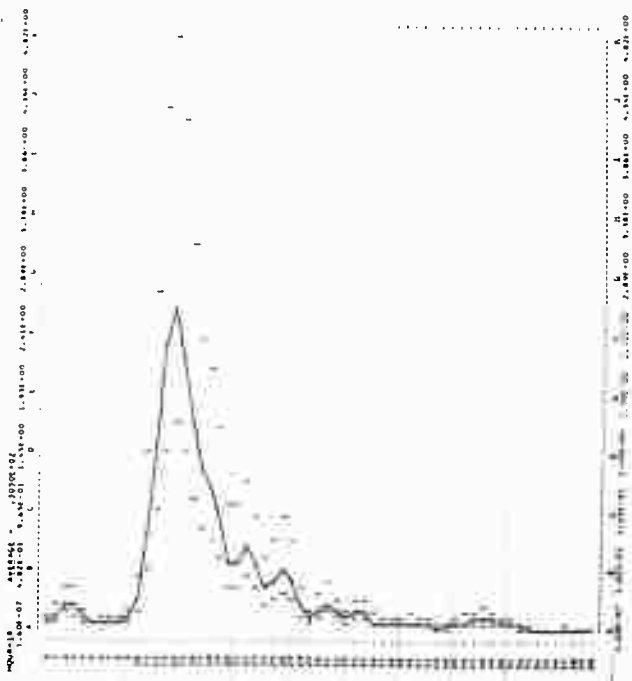
UL 52

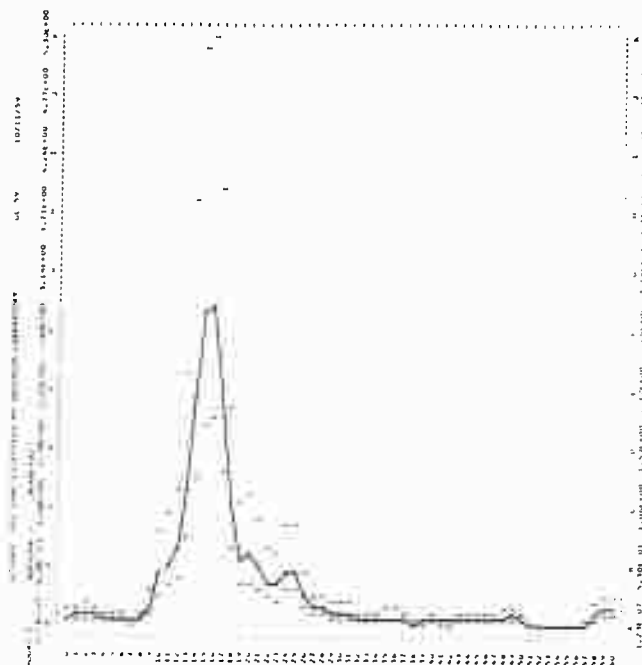
22.8

14.0

30

| N  | FREQ | UNFILT. | FILTERED | LESS NOISE | CORR.FT.2 | UPPER | LOWER |
|----|------|---------|----------|------------|-----------|-------|-------|
| 0  | .000 | .1748   | .1748    | .1572      | .1572     | .1596 | .1501 |
| 1  | .006 | .1750   | .1750    | .1574      | .1574     | .1598 | .1503 |
| 2  | .011 | .1752   | .1752    | .1576      | .1576     | .1600 | .1505 |
| 3  | .017 | .1754   | .1754    | .1578      | .1578     | .1602 | .1507 |
| 4  | .022 | .1756   | .1756    | .1580      | .1580     | .1604 | .1509 |
| 5  | .028 | .1758   | .1758    | .1582      | .1582     | .1606 | .1511 |
| 6  | .033 | .1760   | .1760    | .1584      | .1584     | .1608 | .1513 |
| 7  | .039 | .1762   | .1762    | .1586      | .1586     | .1610 | .1515 |
| 8  | .044 | .1764   | .1764    | .1588      | .1588     | .1612 | .1517 |
| 9  | .050 | .1766   | .1766    | .1590      | .1590     | .1614 | .1519 |
| 10 | .055 | .1768   | .1768    | .1592      | .1592     | .1616 | .1521 |
| 11 | .061 | .1770   | .1770    | .1594      | .1594     | .1618 | .1523 |
| 12 | .067 | .1772   | .1772    | .1596      | .1596     | .1620 | .1525 |
| 13 | .072 | .1774   | .1774    | .1598      | .1598     | .1622 | .1527 |
| 14 | .078 | .1776   | .1776    | .1600      | .1600     | .1624 | .1529 |
| 15 | .083 | .1778   | .1778    | .1602      | .1602     | .1626 | .1531 |
| 16 | .089 | .1780   | .1780    | .1604      | .1604     | .1628 | .1533 |
| 17 | .094 | .1782   | .1782    | .1606      | .1606     | .1630 | .1535 |
| 18 | .100 | .1784   | .1784    | .1608      | .1608     | .1632 | .1537 |
| 19 | .105 | .1786   | .1786    | .1610      | .1610     | .1634 | .1539 |
| 20 | .111 | .1788   | .1788    | .1612      | .1612     | .1636 | .1541 |
| 21 | .117 | .1790   | .1790    | .1614      | .1614     | .1638 | .1543 |
| 22 | .122 | .1792   | .1792    | .1616      | .1616     | .1640 | .1545 |
| 23 | .128 | .1794   | .1794    | .1618      | .1618     | .1642 | .1547 |
| 24 | .133 | .1796   | .1796    | .1620      | .1620     | .1644 | .1549 |
| 25 | .139 | .1798   | .1798    | .1622      | .1622     | .1646 | .1551 |
| 26 | .144 | .1800   | .1800    | .1624      | .1624     | .1648 | .1553 |
| 27 | .150 | .1802   | .1802    | .1626      | .1626     | .1650 | .1555 |
| 28 | .155 | .1804   | .1804    | .1628      | .1628     | .1652 | .1557 |
| 29 | .161 | .1806   | .1806    | .1630      | .1630     | .1654 | .1559 |
| 30 | .167 | .1808   | .1808    | .1632      | .1632     | .1656 | .1561 |
| 31 | .172 | .1810   | .1810    | .1634      | .1634     | .1658 | .1563 |
| 32 | .178 | .1812   | .1812    | .1636      | .1636     | .1660 | .1565 |
| 33 | .183 | .1814   | .1814    | .1638      | .1638     | .1662 | .1567 |
| 34 | .189 | .1816   | .1816    | .1640      | .1640     | .1664 | .1569 |
| 35 | .194 | .1818   | .1818    | .1642      | .1642     | .1666 | .1571 |
| 36 | .200 | .1820   | .1820    | .1644      | .1644     | .1668 | .1573 |
| 37 | .205 | .1822   | .1822    | .1646      | .1646     | .1670 | .1575 |
| 38 | .211 | .1824   | .1824    | .1648      | .1648     | .1672 | .1577 |
| 39 | .217 | .1826   | .1826    | .1650      | .1650     | .1674 | .1579 |
| 40 | .222 | .1828   | .1828    | .1652      | .1652     | .1676 | .1581 |
| 41 | .228 | .1830   | .1830    | .1654      | .1654     | .1678 | .1583 |
| 42 | .233 | .1832   | .1832    | .1656      | .1656     | .1680 | .1585 |
| 43 | .239 | .1834   | .1834    | .1658      | .1658     | .1682 | .1587 |
| 44 | .244 | .1836   | .1836    | .1660      | .1660     | .1684 | .1589 |
| 45 | .250 | .1838   | .1838    | .1662      | .1662     | .1686 | .1591 |
| 46 | .255 | .1840   | .1840    | .1664      | .1664     | .1688 | .1593 |
| 47 | .261 | .1842   | .1842    | .1666      | .1666     | .1690 | .1595 |
| 48 | .267 | .1844   | .1844    | .1668      | .1668     | .1692 | .1597 |
| 49 | .272 | .1846   | .1846    | .1670      | .1670     | .1694 | .1599 |
| 50 | .278 | .1848   | .1848    | .1672      | .1672     | .1696 | .1601 |
| 51 | .283 | .1850   | .1850    | .1674      | .1674     | .1698 | .1603 |
| 52 | .289 | .1852   | .1852    | .1676      | .1676     | .1700 | .1605 |
| 53 | .294 | .1854   | .1854    | .1678      | .1678     | .1702 | .1607 |
| 54 | .300 | .1856   | .1856    | .1680      | .1680     | .1704 | .1609 |
| 55 | .305 | .1858   | .1858    | .1682      | .1682     | .1706 | .1611 |
| 56 | .311 | .1860   | .1860    | .1684      | .1684     | .1708 | .1613 |
| 57 | .317 | .1862   | .1862    | .1686      | .1686     | .1710 | .1615 |
| 58 | .322 | .1864   | .1864    | .1688      | .1688     | .1712 | .1617 |
| 59 | .328 | .1866   | .1866    | .1690      | .1690     | .1714 | .1619 |
| 60 | .333 | .1868   | .1868    | .1692      | .1692     | .1716 | .1621 |



[illegible][illegible]