



OBSERVATIONS OF PARTICLE
MOTIONS IN OCEAN WAVES
(Vol. 2: Appendices)
by D. H. Shonting

July 67



**NAVAL UNDERWATER WEAPONS
RESEARCH AND ENGINEERING STATION
NEWPORT, RHODE ISLAND**

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NAVAL UNDERWATER WEAPONS RESEARCH AND ENGINEERING STATION
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TECHNICAL MEMORANDUM

OBSERVATIONS OF PARTICLE MOTIONS
IN OCEAN WAVES
(Vol. 2: Appendices)

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July 1967

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APPENDIX A

SUPPLEMENTARY DISCUSSIONS

Dynamics of a Ducted Meter

Response to a Step Input -- In discussing the dynamic characteristics of the ducted meter in chapter II, there is frequent mention of the terms "time constant", "response time", and "frequency response". Since these terms are often used (and also misused) in discussions of fluid flow sensors, it is desirable to clarify these meanings as they apply to the wave meters. The first step is to derive the relation for instrument response to a step increase in the driving force function.

The equation of motion representing the balance of forces on a ducted meter system can be written as:

$$\underset{\text{A}}{I} \frac{d\omega}{dt} = - \underset{\text{B}}{K_1} \omega + \underset{\text{C}}{K_2} u \quad ; \quad (\text{A-1})$$

where I is the moment of inertia of the impeller (gm cm^2), ω is the instantaneous angular velocity (sec^{-1}), u is the velocity of fluid through the meter, and K_1 and K_2 are proportionality constants.

Equation (A-1) represents the inertial force (term A) as equal to the sum of the drag force (B) produced by the impeller as it spins in the fluid and the dynamic thrust (C) caused by the moving fluid on the impeller. In other words, the drag force (B) is merely the reaction to the impressed force (C).

To investigate the solution $\omega(t)$, one must rewrite equation (A-1) in the form:

$$\frac{d\omega}{dt} + \frac{K_1}{I} \omega = \frac{K_2}{I} u. \quad (\text{A-2})$$

The initial conditions are given by:

$$\begin{aligned} \omega(t) = u(t) &= 0 \quad t < 0 ; \text{ and} \\ u(t) &= U_T = \text{constant} \quad t \geq 0. \end{aligned} \quad (\text{A-3})$$

These conditions imply that the driving velocity U_T is applied instantaneously to the impeller at time $t = 0$. The solution to equation (A-2) is obtained by substitution of:

$$\omega = \omega' + \frac{K_2}{K_1} u \quad ; \quad (\text{A-4})$$

giving

$$\frac{d\omega'}{dt} + \frac{k_2}{k_1} \frac{du}{dt} + \frac{k_1}{I} \omega' = 0. \quad (\text{A-5})$$

From conditions (A-3), the time derivative of U_1 is zero, producing the homogeneous equation:

$$\frac{d\omega'}{dt} + \frac{k_1}{I} \omega' = 0. \quad (\text{A-6})$$

Solving equation (A-6):

$$\omega' = K_3 e^{-\frac{k_1}{I} t}; \quad (\text{A-7})$$

where K_3 is an integration constant. Substituting this in equation (A-4) yields the complete solution:

$$\omega = K_3 e^{-\frac{k_1}{I} t} + \frac{k_2}{k_1} u. \quad (\text{A-8})$$

At time $t=0$, from the initial conditions (A-3), one can evaluate:

$$K_3 = -\frac{k_2}{k_1} U_T. \quad (\text{A-9})$$

Thus:

$$\omega = -\frac{k_2}{k_1} U_T e^{-\frac{k_1}{I} t} + \frac{k_2}{k_1} u. \quad (\text{A-10})$$

This is the general solution of (A-2), which contains the sum of the transient and steady state solutions.

It is evident that:

$$\lim_{t \rightarrow \infty} \omega(t) = \frac{k_2}{k_1} U_T = \omega_T. \quad (\text{A-11})$$

For steady flow, the frequency of the impeller is directly proportional to the linear speed U_T . This important property is borne out by the calibration curves of the three ducted meter systems in figures II-5, II-9, and II-20.

Referring to chapter II, the ducted meter is subjected to a step input of velocity U_T at a point in time where:

$$t = \frac{I}{K_1} = T_R \quad . \quad (A-12)$$

In equation (A-10) $\omega(t)$ can be evaluated, utilizing (A-11), as:

$$\omega(t) = \omega \frac{I}{K_1} = \frac{K_2}{K_1} U_T \left(1 - \frac{1}{e}\right) \approx 63\% \omega_T \quad . \quad (A-13)$$

The value $T_R = I/K_1$ is defined as the response time. Likewise, T^{-1} (sec^{-1}) may be defined as the frequency response. Generally speaking, the instrument is incapable of registering fluctuations in flow greater than T_R^{-1} cps. The dividing line is completely arbitrary. However, for OMDUM III, having $T_R \approx 600$ milliseconds, this response time is surely small enough to observe fluctuations due to surface waves which are of the order of 3000-4000 milliseconds.

Response to a Sinusoidal Input -- The next step is to examine the response characteristics of the ducted meter to a sinusoidal driving function, which might be crudely compared to a single Fourier component of an ocean wave.

One can assume the same equation of motion given in equation (A-2), except that u is given as a sinusoidal function. Thus, instead of (A-2):

$$\frac{dw}{dt} + \frac{K_1}{I} \omega = \frac{K_2}{I} \cos \Omega t. \quad (A-14)$$

The Ω is the driving frequency given by $2\pi T_F^{-1}$; where T_F is the period of the forcing function on the right hand side of (A-14).

Letting $K_1/I = \Omega_0$, the auxiliary equation becomes:

$$\omega = A e^{-\Omega_0 t} \quad . \quad (A-15)$$

It is assumed that $A=A(t)$ can serve as part of the solution to equation (A-14). Substituting (A-15) into (A-14), with the necessary adjustment, gives:

$$A = \frac{K_2}{I} \int e^{-\Omega_0 t} \cos \Omega t dt. \quad (A-16)$$

The term B is an integration constant. Substituting (A-16) into (A-15) and integrating:

$$\omega = \frac{K_2}{I} \left[\frac{\Omega_0 \cos \Omega t + \Omega \sin \Omega t}{\Omega_0^2 + \Omega^2} \right] + B e^{-\Omega_0 t} \quad (A-17)$$

(A') (B')

or simplifying with trigonometric relationships:

$$\omega = \frac{K_2}{I \sqrt{\Omega_0^2 + \Omega^2}} \cos(\Omega t - \alpha) + B e^{-\Omega_0 t} \quad (A-18)$$

(A') (B')

Equation (A-12) has been used in (A-18) to define:

$$\alpha = \text{ARCTAN} \frac{\Omega}{\Omega_0} = \text{ARCTAN} \Omega T_r \quad (A-19)$$

As with the solution (A-10) for response to a step function, solution (A-18) contains a steady oscillatory component term (A') and a time variable solution term (B'). The angle α can be thought of as the phase shift angle between the response function ω and the driving function $K_2 \cos \Omega t$. It is clear from (A-19) that the phase angle α increases with an increasing time constant T_r . Likewise, for a system with a constant T_r , the phase angle α increases as the frequency of the driving function. Also, the amplitude of the instrument response decreases as Ω increases.

In chapter II a test was made of the response of OMDUM II to a vertical oscillation. The period of oscillation was about 0.7 second. The phase angle α was found to be about 12° . Substituting these values into equation (A-19) written as

$$T_r = \frac{\text{TAN} \alpha}{\Omega} \quad (A-20)$$

results in $T_r \sim 24$ milliseconds. This value for T_r is somewhat lower than the value obtained for OMDUM III by the method described in (A-1).

Relationship Between Instrument Output and Driving Motion Spectra -- The measurement in ocean waves using the ducted meters provides a time series record of the angular velocity vector of each impeller. From the time variable magnitude and direction of this vector one can infer, on the basis of steady flow and response time calibrations, an estimate of the Eulerian particle velocity at the position of the meter system. From this velocity data one can estimate averages, auto-covariance, covariance, and their related spectral functions. The accuracy of the statistical description of the actual motions is based on the assumption that the statistics of the impeller motion can be identified with statistics of ambient random motions driving the impellers. A simple analysis can be made of the criteria by which one can justify the correspondence of the statistics of the angular velocity vector with the particle velocity vector.

Write the equation of motion (A-1) in the form:

$$\frac{I}{K_2} \frac{d\omega}{dt} + \frac{K_1}{K_2} \omega = u(t) \quad ; \quad (A-21)$$

where $u(t)$ is considered to be a quasi-random function of time. The functions $\omega(t)$ and $u(t)$ may be written as the complex Fourier integrals:

$$\omega(t) = \int_{-\infty}^{\infty} e^{i\nu t} dW(\nu) \quad (A-22)$$

and

$$u(t) = \int_{-\infty}^{\infty} e^{i\nu t} dZ(\nu). \quad (A-23)$$

The term ν represents angular frequency, and $dW(\nu)$ and $dZ(\nu)$ are increments in the quasi-random complex functions $W(\nu)$ and $Z(\nu)$. These functions have the following properties:

$$\left. \begin{aligned} \text{LIM} \\ d\nu_1 = d\nu_2 = d\nu \rightarrow 0 \quad \frac{dW^*(\nu_1) dW(\nu_2)}{d\nu} = 0, \\ \text{LIM} \\ d\nu_1 = d\nu_2 = d\nu \rightarrow 0 \quad \frac{dZ^*(\nu_1) dZ(\nu_2)}{d\nu} = 0. \end{aligned} \right\} \quad (A-24)$$

and

$$\text{Also:} \quad \frac{\text{LIM}}{d\nu \rightarrow 0} \frac{dW^*(\nu) dW(\nu)}{d\nu} = \Psi(\nu), \quad (A-25)$$

and

$$\frac{\text{LIM}}{d\nu \rightarrow 0} \frac{dZ^*(\nu) dZ(\nu)}{d\nu} = \Phi(\nu). \quad (A-26)$$

The asterisk indicates the complex conjugate, and $\Psi(\nu)$ and $\Phi(\nu)$ represent the energy density of the spectrum functions of $\omega(t)$ and $u(t)$, respectively (see Batchelor, 1953).

Substituting equations (A-22) and (A-23) into (A-21), and remembering that $dW(\nu)$ and $dZ(\nu)$ are independent of t , the result is:

$$\frac{iI\nu}{k_2} \int_{-\infty}^{\infty} e^{i\nu t} dW + \frac{k_1}{k_2} \int_{-\infty}^{\infty} e^{i\nu t} dW = \int_{-\infty}^{\infty} e^{i\nu t} dz, \quad (\text{A-27})$$

or simply

$$\left(\frac{iI\nu}{k_2} + \frac{k_1}{k_2} \right) dW = dz, \quad (\text{A-28})$$

Dividing (A-28) by $d\nu$ and multiplying both sides of the equation by the respective complex conjugates gives:

$$\left(\frac{k_1^2}{k_2^2} + \frac{I^2\nu^2}{k_2^2} \right) \frac{dW^* dW}{d\nu}. \quad (\text{A-29})$$

Taking the limit of (A-29) as $d\nu \rightarrow 0$, we have from equations (A-25) and (A-26):

$$\Phi(\nu) = \left(\frac{k_1^2}{k_2^2} + \frac{I^2\nu^2}{k_2^2} \right) \Psi(\nu). \quad (\text{A-30})$$

Equation (A-30) gives the relation between the spectra of quasi-random function $u(t)$ and the spectrum of impeller rotational response $\omega(t)$.

The next relationship to be examined is between the auto-covariance functions of both the turbulent velocity fluctuations $u(t)$ and the impeller response function $\omega(t)$. In order to compare the response of each function at an instant T and at a later time τ , we must determine the relation between the auto-covariance functions given by:

$$\Phi_u(\tau) = \overline{u(t)u(t+\tau)} \quad (\text{A-31})$$

and

$$\Phi_\omega(\tau) = \overline{\omega(t)\omega(t+\tau)}. \quad (\text{A-32})$$

These functions are defined in chapter III.

It is relation (A-32) that is actually measured. From this, (A-31) is interpreted and the spectrum function $\Phi(\nu)$ inferred. From equations (A-15) and (A-16), and the properties (A-18) and (A-19):

$$\overline{u(t)u(t+\tau)} = \int_{-\infty}^{\infty} \Phi(\nu) e^{i\nu\tau} d\nu, \quad (\text{A-33})$$

and

$$\overline{w(t)w(t+\tau)} = \int_{-\infty}^{\infty} \Psi(\nu) e^{i\nu\tau} d\nu. \quad (\text{A-34})$$

Thus, the auto-covariance, as shown in chapter III, is the Fourier transform of the spectrum function. Substituting equation (A-23) into (A-26):

$$\Phi_w(\tau) = \overline{w(t)w(t+\tau)} = \int_{-\infty}^{\infty} \frac{\Phi(\nu) e^{i\nu\tau}}{\left(\frac{K_1^2}{K_2^2} + \nu^2 \frac{I^2}{K_2^2}\right)} d\nu. \quad (\text{A-35})$$

Letting

$$\nu_c = \frac{K_1}{I}, \quad (\text{A-36})$$

and since

$$\frac{\nu_c^2}{\nu_c^2 + \nu^2} = 1 - \frac{\nu^2}{\nu_c^2 + \nu^2},$$

equation (A-35) may be written in the form:

$$\Phi_w(\tau) = \frac{K_2^2}{I^2 \nu_c^2} \int_{-\infty}^{\infty} \Phi(\nu) e^{i\nu\tau} \left[1 - \frac{\nu^2}{\nu_c^2 + \nu^2}\right] d\nu;$$

or

$$\Phi_w(\tau) = \frac{K_2^2}{I^2 \nu_c^2} \Phi_u(\tau) - \frac{K_2^2}{I^2 \nu_c^2} \int_{-\infty}^{\infty} \frac{\nu^2 \Phi(\nu) e^{i\nu\tau}}{\nu_c^2 + \nu^2} d\nu. \quad (\text{A-37})$$

Now:

$$-\nu^2 e^{i\nu\tau} = \frac{d^2}{d\tau^2} e^{i\nu\tau}.$$

Thus:

$$\Phi_w(\tau) = \frac{K_2^2}{K_1^2} \Phi_u(\tau) + \frac{K_2^2}{I^2 \nu_c^2} \frac{d^2}{d\tau^2} \int_{-\infty}^{\infty} \frac{\Phi(\nu) e^{i\nu\tau}}{\nu_c^2 + \nu^2} d\nu;$$

or

$$\Phi_w(\tau) = \frac{K_2^2}{K_1^2} \Phi_u(\tau) + \frac{1}{\nu_c^2} \frac{d^2}{d\tau^2} \Phi_w(\tau). \quad (\text{A-38})$$

This may be written:

$$\Phi_w(\tau) = \frac{K_1^2}{K_2^2} \left[\Phi_w(\tau) - \frac{1}{v^2} \frac{d^2}{d\tau^2} \Phi_w(\tau) \right]. \quad (A-39)$$

This equation provides a simple relationship of the auto-covariance of the driving motion $u(t)$ with that of the instrument response function $\omega(t)$.

Since $T_r = K_1 (I)^{-1}$ and, from (A-12), equals $(T_r)^{-1}$, the limit may be written:

$$\lim_{T_r \rightarrow 0} \Phi_w(\tau) = \frac{K_1^2}{K_2^2} \Phi_w(\tau). \quad (A-40)$$

Of course, this limiting condition ($T_r \rightarrow 0$) is not very realistic, since, for any instrument, T_r is finite.

Examining the relation (A-39) further -- the formal equation for $\Phi_w(\tau)$ may be written, from (III-24):

$$\Phi_w(\tau) = \lim_{T \rightarrow \infty} \frac{1}{T} \int_{-T/2}^{T/2} \omega(t) \omega(t+\tau) dt. \quad (A-41)$$

Lee (1960) shows that the second derivative of $\Phi_w(\tau)$ is given as:

$$\frac{d^2 \Phi_w(\tau)}{d\tau^2} = \lim_{T \rightarrow \infty} \frac{1}{T} \int_{-T/2}^{T/2} \frac{d\omega(t)}{dt} \cdot \frac{d\omega(t+\tau)}{dt} dt. \quad (A-42)$$

The second derivative of the auto-covariance function is another auto-covariance function of the derivative of $\omega(t)$ except for the negative sign. Thus, in (A-39) the correction term

$$-\frac{1}{v^2} \frac{d^2}{d\tau^2} \Phi_w(\tau)$$

is a positive bias in relation to the estimate of $\Phi_w(\tau)$. The probable magnitudes of the derivative term with respect to the auto-covariance in equation (A-39) can now be examined. Assume that the driving function ω is represented simply as:

$$\omega = \sin \Omega t; \quad (A-43)$$

where Ω is the frequency of the oscillation. The auto-covariance function is $\Phi_w(\tau)$, which is approximated by:

$$\Phi_w(\tau) \cong \frac{1}{T} \int_{-T/2}^{T/2} \sin \Omega t \sin \Omega (t+\tau) dt. \quad (A-44)$$

Integration gives:

$$\phi_w(\tau) = \frac{1}{2} \cos \Omega \tau. \quad (A-45)$$

The second derivative of $\phi_w(\tau)$ is given by:

$$\frac{d^2 \phi_w(\tau)}{d\tau^2} = -\frac{\Omega^2}{2} \cos \Omega \tau. \quad (A-46)$$

The derivative term in (A-39) may be neglected if:

$$\frac{1}{2} \gg \frac{\Omega^2}{2\nu_c^2} \quad \text{OR} \quad 1 \gg \frac{\Omega^2}{\nu_c^2}. \quad (A-47)$$

Since $\Omega = 2\pi (T_w)^{-1}$ (where T_w is the period of the oscillation), and $\nu_c = K_1(I)^{-1} = (T_r)^{-1}$; then from (A-47):

$$1 \gg \frac{4\pi^2 T_r^2}{T_w^2} \sim \frac{40 T_r^2}{T_w^2}.$$

As shown in chapter IV, T_r for the wave meters was roughly 50 milliseconds. If the dominant period of driving oscillations of wind waves is about 4000 milliseconds (4 sec), then:

$$\frac{40 T_r^2}{T_w^2} \sim 0.04.$$

Thus, if the auto-covariance function is of the form given by (A-43), then the error in the estimate of $\phi_u(\tau)$ in equation (A-39) will be about 4 percent too small.

This simple example is given only to demonstrate that the relative magnitudes of the instrument frequency response and the dominant frequencies of the driving motions must be considered in providing an accurate statistical analysis of the motions. Thus, both the spectrum function and auto-covariance of the driving functions can be evaluated to an accuracy which is unavoidably dependent upon the amount by which the instrument response exceeds the ambient driving frequencies.

Amplitude Probability Distribution of Sinusoidal Waves

Consider a wavy ocean surface made up of an ensemble of Fourier components of equal amplitude and frequency, but of random phase. Two of the waves are pictured in figure A-1. The random parameter in the waves is the phase angle with respect to time $t = 0$. Letting α be the random phase angle of the wave with an angular frequency Ω , and having an amplitude A , the random amplitude η of the wave at $t = t_1$ is expressed by:

$$\eta(t) = A \sin(\Omega t + \alpha). \quad (A-48)$$

Given the probability density of α , the probability density of the random variable η can be estimated. In other words, the aim is to estimate the instantaneous amplitude of the wave at $t = t_1$, using the knowledge of the probability density of the phase angle. The method used here is discussed by Lee (1960).

The phase angle α need only be specified between 0 and 2π . Let the probability density of α be $P_\alpha(\gamma)$, and that of η be $P_\eta(x)$. For every value of η in its range $(-A, A)$, there are two possible values of α in its range $(0, 2\pi)$, except when $\eta = \pm A$.

Letting
$$\xi = \Omega t + \alpha, \quad (A-49)$$

equation (A-48) becomes:

$$\eta = A \sin \xi; \quad (A-50)$$

where the range of ξ is $(\Omega t_1, \Omega t_1 + 2\pi)$. The relation between the range of variables of X and Z of the random variables η and ξ is thus:

$$x = A \sin z; \quad (A-51)$$

where

$$z = \Omega t_1 + \gamma. \quad (A-52)$$

Assuming that z_1 and z_2 are two solutions of (A-51) for z in the interval $(\Omega t_1, \Omega t_1 + 2\pi)$, then:

$$P(x < \eta < x + dx) = P(z_1 < \xi < z_1 + d\xi) + P(z_2 < \xi < z_2 + d\xi). \quad (A-53)$$

This equation states that an event of η occurring in $(x, x+dx)$ is dependent upon the event of ξ occurring in $(z_1, z_1+d\xi)$ and $(z_2, z_2+d\xi)$ and nowhere else. If there were only one solution of (A-51), only one term would appear on the right side of (A-53). Equation (A-53) leads to:

$$P_{\eta}(x) dx = P_{\xi}(z_1) dz + P_{\xi}(z_2) dz . \quad (A-54)$$

Here, $P_{\xi}(z)$ is the probability density of S . It can be shown (Lee, 1960, p. 192) that:

$$P_{\xi}(z) = P_{\alpha}(z - \Omega, t) . \quad (A-55)$$

Equation (A-54) may be written:

$$P_{\eta}(x) = \frac{P_{\alpha}(z_1 - \Omega, t) + P_{\alpha}(z_2 - \Omega, t)}{\left| \frac{dx}{dz} \right|} ; \quad (A-56)$$

where, for $-A < x < A$,

$$\left| \frac{dx}{dz} \right| = |A \cos z| = +\sqrt{A^2 - x^2} . \quad (A-57)$$

The absolute value of the slope $\frac{dx}{dz}$ is used, since in (A-56) the probability distributions must be positive.

The complete expression for $P_{\eta}(x)$ is given by:

$$P_{\eta}(x) = \begin{cases} \frac{P_{\alpha}(z_1 - \Omega, t) + P_{\alpha}(z_2 - \Omega, t)}{\sqrt{A^2 - x^2}} & \text{FOR } -A < x < A \\ 0 & \text{ELSEWHERE} \end{cases} \quad (A-58)$$

The term $P_{\eta}(x)$ is, generally, a function of t ; thus, according to the definition in chapter III, it is nonstationary. $P_{\alpha}(z - \Omega, t_1)$ may be taken as a rectangular density function (i.e., constant probability over a specified interval) and defined as:

$$P_{\alpha}(z - \Omega, t_1) = \begin{cases} \frac{1}{2\pi} & \text{FOR } -\Omega, t_1 < z < \Omega, t_1 + 2\pi \\ 0 & \text{ELSEWHERE} \end{cases} . \quad (A-59)$$

This makes $P_{\eta}(x)$ independent of t_1 (i.e., become stationary), and reduces it to:

$$P_{\eta}(x) = \begin{cases} \frac{1}{\pi \sqrt{A^2 - x^2}} & \text{FOR } -A < x < A \\ 0 & \text{ELSEWHERE} \end{cases} . \quad (A-60)$$

Since $z = \Omega t + y$, condition (A-59) is equivalent to

$$P_{\alpha}(y) = \begin{cases} \frac{1}{2\pi} & \text{FOR } 0 < y < 2\pi \\ 0 & \text{ELSEWHERE} \end{cases} \quad (\text{A-61})$$

Therefore, if the probability density of the phase angle given by equation (A-59), depicted by figure V-13 (upper plot), is uniform, the ensemble of sine waves is stationary and the probability density of the amplitude is given by equation (A-60). This density distribution is plotted in figure V-13 (lower plot).

Relationships for Motions Associated with a Turbulent Velocity Field

Reynolds Stresses -- To examine the concept of the Reynolds stress existing in the surface ocean layer, one must consider the time variable motions of the water particles at a point immediately beneath wind-driven ocean waves that are being subjected to a surface shear stress by the wind.

Let:

$$\begin{aligned} u(t) &= u = \bar{u} + u' \\ w(t) &= w = \bar{w} + w' \end{aligned} \quad (\text{A-62})$$

The terms u and w are the time-varying horizontal and vertical velocity components at a point in the water column of uniform density. The \bar{u} and \bar{w} are time mean values given by the following integrals:

$$\bar{u} = \frac{1}{T} \int_{-T/2}^{T/2} u \, dt, \quad (\text{A-63})$$

and

$$\bar{w} = \frac{1}{T} \int_{-T/2}^{T/2} w \, dt.$$

The terms u' and w' are the instantaneous deviations from the time mean velocities. Thus:

$$\bar{u}' \equiv \bar{w}' \equiv 0.$$

Consider a small area dA in a horizontal plane between two layers of water which are being subjected to a horizontal shear. The mass of water dm crossing this area vertically during the time dt is given by:

$$dm = \rho \, dA \, w \, dt = \rho \, dA (\bar{w} + w') \, dt; \quad (\text{A-64})$$

where ρ is the density = constant.

The momentum of the water is $dm (\bar{u} + u')$ in the horizontal, and $dm (\bar{w} + w')$ in the vertical. Thus, the time rate of total horizontal and vertical transport across this area is:

$$\rho(\bar{w} + w')^2 dA dt \quad \text{AND} \quad \rho(\bar{w} + w)(\bar{w} + u') dA dt. \quad (\text{A-65})$$

Dividing through by $dA dt$, one obtains the time rate of vertical transfer of horizontal and vertical momentum per unit area, which is given by:

$$\rho(\bar{w}^2 + 2\bar{w}w' + w'^2) \quad (\text{A-66})$$

and

$$\rho(\bar{w}\bar{u} + \bar{w}u' + w'\bar{u} + u'w'). \quad (\text{A-67})$$

Taking averages over the period T , and utilizing equations similar to (A-63), produces:

$$\overline{\rho\bar{w}^2} + \overline{\rho w'^2} = \rho\bar{w}^2 + \overline{\rho w'^2}, \quad (\text{A-68})$$

and

$$\overline{\rho\bar{w}\bar{u}} + \overline{\rho u'w'} = \rho\bar{u}\bar{w} + \overline{\rho u'w'}. \quad (\text{A-69})$$

The turbulent transfer quantities are defined as $\overline{\rho w'^2}$ and $\overline{\rho u'w'}$.

Consider the turbulent term $\overline{\rho u'w'}$. This term represents a net transport of horizontal momentum in the vertical by means of a correlation of u' with w' . Correlation exists when

$$\overline{\rho u'w'} = \frac{\rho}{T} \int_{-T/2}^{T/2} u'w' dt \neq 0. \quad (\text{A-70})$$

Note that in the case of ocean waves the time varying quantities oscillate and change sign. Thus, there must be an internal systematic relation; e.g., u' is large and negative when w' is large and negative, and u' is large and positive when w' is large and positive.

If u and w are measured at a fixed point beneath the surface of the ocean, and for a given time interval equation (A-75) holds true, one can then conclude that: (1) a much larger or much smaller eddy motion is instrumental in propagating momentum downward which the instruments did not detect; or (2) a mechanism of stress transfer exists which is unrelated to the Reynolds stress concept.

Both $\rho \overline{w'^2}$ and $\rho \overline{u'w'}$ in (A-68) and (A-69) have units of dynes per square centimeter or force per unit area. The former term is identified as a dynamic or turbulent pressure, and the latter as a turbulent (or shear) stress.

Momentum Equations for Turbulent Velocities -- To appreciate how the eddy stresses can be interpreted as real physical quantities, let us consider the Navier-Stokes equations for an incompressible fluid in two dimensions in the vertical XZ plane. These equations are:

$$\frac{du}{dt} = -\frac{1}{\rho} \frac{\partial P}{\partial x} + \nu \nabla^2 u \quad (A-71)$$

and

$$\frac{dw}{dt} = -\frac{1}{\rho} \frac{\partial P}{\partial z} - G + \nu \nabla^2 w \quad ; \quad (A-72)$$

where p = pressure (dyne cm⁻²)

ν = kinematic viscosity (cm² sec⁻¹)

G = gravitational acceleration (980) cm sec⁻²

∇^2 = laplacian operator ($\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial z^2}$) cm⁻²

Z = measured positively upward.

Note that:

$$\frac{d}{dt} = \frac{\partial}{\partial t} + u \frac{\partial}{\partial x} + w \frac{\partial}{\partial z} .$$

The two-dimensional continuity equation for an incompressible fluid can also be used:

$$\frac{\partial u}{\partial x} + \frac{\partial w}{\partial z} = 0 . \quad (A-73)$$

Substituting the Reynolds formulations (A-62) and also the pressure relation

$$P = \overline{P} + P' \quad (A-74)$$

into equations (A-71) and (A-72), and taking time averages in accordance with equation (A-63), gives:

$$\frac{\partial \overline{u}}{\partial t} + \overline{u} \frac{\partial \overline{u}}{\partial x} + \overline{u' \frac{\partial u'}{\partial x}} + \overline{w} \frac{\partial \overline{u}}{\partial z} + \overline{w' \frac{\partial u'}{\partial z}} = -\frac{1}{\rho} \frac{\partial \overline{P}}{\partial x} + \nu \left(\frac{\partial^2 \overline{u}}{\partial x^2} + \frac{\partial^2 \overline{u}}{\partial z^2} \right) \quad (A-75)$$

and
$$\frac{\partial \overline{w}}{\partial t} + \overline{u} \frac{\partial \overline{w}}{\partial x} + \overline{u' \frac{\partial w'}{\partial x}} + \overline{w} \frac{\partial \overline{w}}{\partial z} + \overline{w' \frac{\partial w'}{\partial z}} = \frac{1}{\rho} \frac{\partial \overline{P}}{\partial z} - G + \nu \left(\frac{\partial^2 \overline{w}}{\partial x^2} + \frac{\partial^2 \overline{w}}{\partial z^2} \right) . \quad (A-76)$$

All terms involving time average products of mean values and fluctuations vanish, simplifying the equations considerably. By regrouping terms:

$$\frac{d\bar{u}}{dt} = \frac{1}{\rho} \frac{\partial \bar{P}}{\partial x} + \nu \left[\frac{\partial^2 \bar{u}}{\partial x^2} + \frac{\partial^2 \bar{u}}{\partial z^2} \right] - \overline{u' \frac{du'}{dx}} - \overline{w' \frac{du'}{dz}} ; \quad (A-77)$$

and

$$\frac{d\bar{w}}{dt} = \frac{1}{\rho} \frac{\partial \bar{P}}{\partial z} - G + \nu \left[\frac{\partial^2 \bar{w}}{\partial x^2} + \frac{\partial^2 \bar{w}}{\partial z^2} \right] - \overline{u' \frac{dw'}{dx}} - \overline{w' \frac{dw'}{dz}} , \quad (A-78)$$

Using the equation of continuity for turbulent velocity components obtained with equations (A-62) and (A-73), the result is:

$$\frac{\partial u'}{\partial x} + \frac{\partial w'}{\partial z} = 0 . \quad (A-79)$$

Equations (A-77) and (A-78) may be put in the following form, with the assumption of no mean motion in the vertical ($\bar{w} \equiv 0$):

$$\frac{d\bar{u}}{dt} = -\frac{1}{\rho} \frac{\partial \bar{P}}{\partial x} + \frac{d}{dx} \left[\nu \frac{\partial \bar{u}}{\partial x} - \overline{u'^2} \right] + \frac{d}{dz} \left[\nu \frac{\partial \bar{u}}{\partial z} - \overline{u'w'} \right] ; \quad (A-80)$$

and

$$0 = -\frac{1}{\rho} \frac{\partial \bar{P}}{\partial z} - G + \frac{d}{dx} \left[-\overline{u'w'} \right] + \frac{d}{dz} \left[-\overline{w'^2} \right] . \quad (A-81)$$

Consider the relative magnitudes of the viscous and dynamic pressure terms in equation (A-80). Realistic values for the terms $\frac{\partial \bar{u}}{\partial x}$ and u' could be 5 cm sec⁻¹ per 10 meters and 50 cm sec⁻¹, respectively, for a wind wave regime. For $\nu = 10^{-2}$ gm cm⁻¹ sec⁻¹, the ratio

$$\nu \frac{\partial \bar{u}}{\partial x} / \overline{u'^2} \sim 2 \times 10^{-6} .$$

This small ratio indicates that the molecular viscosity term in equation (A-80) may be neglected. Also, assuming that the term is vanishingly small, we obtain the simplified momentum equations:

$$\rho \frac{d\bar{u}}{dt} = -\frac{d\bar{P}}{dx} + \frac{d}{dx} \left[-\rho \overline{u'^2} \right] + \frac{d}{dz} \left[-\rho \overline{u'w'} \right] ; \quad (A-82)$$

and

$$0 = -\frac{\partial \bar{P}}{\partial z} - \rho G + \frac{d}{dx} \left[-\rho \overline{u'w'} \right] + \frac{d}{dz} \left[-\rho \overline{w'^2} \right] . \quad (A-83)$$

Equation (A-82) is a mathematical statement that the mean horizontal inertial acceleration of a water element is balanced by the mean horizontal pressure gradient, horizontal gradients of the mean horizontal dynamic pressure, and the vertical gradient of the mean eddy stress. Equation (A-83) indicates that the vertical mean pressure gradient is balanced by the gravitational force upon the water element, the horizontal gradient of the eddy stresses, and the vertical gradient of the vertical dynamic pressure.

Comparing equations (A-82) and (A-83) with equations (A-71) and (A-72), it is evident that the Reynolds stresses are interpreted as real stresses on the fluid elements and that they act in addition to the forces imparted by the pressure and pure viscous stresses.

The Reynolds stresses have normal as well as tractive or tangential components. An interpretation of the normal stress can be made in a similar manner. Consider a horizontal element ds normal to the vertical axis. Further assume $\bar{w} = 0$, allowing only a turbulent component normal to the element. Then $-\overline{\rho u'w}$ denotes the average flow of momentum through the surface element, namely $-\overline{(\rho w)w}ds$. This flow of momentum causes a reaction on the surface; and, when integrated over the time T and averaged, it is sensed as a dynamic pressure.

Thus, the products of time variable advective quantities can be envisaged as real forces acting upon the particles of water.

The formulation of Reynolds stresses throws considerable light on the mechanism of turbulence, whereas the mathematical analysis is not readily soluble. In general, no analytical method is known whereby the Reynolds stresses can be expressed in terms of the mean velocities and their derivatives; so, for the most part, equations of the form of (A-82) and (A-83) remain intractable. One can try, however, to solve the equations experimentally; i.e., one can measure certain quantities in the equations experimentally and conjecture magnitudes of the unmeasurable quantities, thus providing an estimate of the validity of the equations themselves and a judgment on the assumptions made to develop them.

Kinetic Energy Relations -- To derive the equation expressing the flux of mean energy in the waves, consider the general momentum equations (A-80) and (A-81), neglecting the term $\frac{\partial}{\partial x} \gamma \frac{\partial \bar{u}}{\partial x}$ in equation (A-80). First multiply equations (A-80) and (A-81) by $\rho \bar{u}$ and $\rho \bar{w}$, respectively. Since \bar{w} is defined as identically zero, the result is a single equation given by:

$$\rho \bar{u} \frac{d\bar{u}}{dt} = -\bar{u} \frac{\partial \bar{P}}{\partial x} + \bar{u} \frac{\partial}{\partial x} [-\rho \bar{u}'^2] + \bar{u} \frac{\partial}{\partial z} \left[\eta_0 \frac{\partial \bar{u}}{\partial z} \right] + \bar{u} \frac{\partial}{\partial z} [-\rho \bar{u}'w] \quad (A-84)$$

By definition the dynamic viscosity $\eta_0 = \rho \nu$. The term

$$\rho \bar{u} \frac{d\bar{u}}{dt} = \frac{d}{dt} \left[\frac{1}{2} \rho \bar{u}^2 \right]$$

is equivalent to the time rate of change of the kinetic energy of the mean

motion in the X direction. Now integrate (A-84) and examine each term for its physical significance.

If equation (A-84) is integrated over a vertical strip in the Z plane of unit width (in the Y direction) and bounded at the sea bottom, the result gives the balance of kinetic energy of the mean flow across this section of the current (see figure A-2). The integration is carried out from the bottom at $Z = -D$ to the surface $Z = \eta(x_0, t)$. The x coordinate of the strip is x_0 ; and the mean value of η , over the averaging period T, is zero. If it is assumed that the time-rate of change of mean kinetic energy is constant, then:

$$0 = - \int_{-D}^0 \underbrace{\bar{u} \frac{\partial \bar{P}}{\partial X}}_A dz - \int_{-D}^0 \underbrace{u \frac{\partial}{\partial X} [p \bar{u}^2]}_B dz - \underbrace{\int_{-D}^0 \bar{u} \frac{\partial}{\partial z} \eta_0 \frac{d\bar{u}}{dz}}_C dz + \underbrace{\int_{-D}^0 \bar{u} \frac{\partial}{\partial z} (-\rho u \bar{u})}_D dz, \quad (A-85)$$

Terms A and B represent contributions to the mean horizontal kinetic energy due to horizontal flow caused by the fluid response to horizontal gradients of hydrostatic and dynamic pressure, respectively. Assuming hydrostatic equilibrium of the mean pressure gradients, term A may be written:

$$- \int_{-D}^0 \bar{u} \frac{\partial \bar{P}}{\partial X} dz = \rho g \int_{-D}^0 \bar{u} \left(\frac{\partial z}{\partial X} \right)_P dz. \quad (A-86)$$

The term $\frac{\partial z}{\partial X}$ is the slope of the isobars and, in general, may be associated with semi-diurnal tidal motions or other types of motions having oscillatory components whose periods are much larger than the period of averaging T. This term could be evaluated from data obtained from appropriately spaced tide gauges.

Evaluation of term B in equation (A-85) requires measurements of the variance of $u(t)$ at two or more positions on the x axis, and also as a function of depth. From a practical point of view, the term would be most difficult to determine experimentally. In the region of a uniform wind field the horizontal gradient of the wind-driven perturbations contributing to the variance σ_u^2 would surely be small.

Term C in (A-85) represents the contribution of pure frictional stresses to the mean kinetic energy. The term must, of course, contribute negatively to the mean kinetic energy, since the viscous forces always act to impede fluid flow; hence, they tend to decrease kinetic energy of mean motion. The frictional stresses occur at the air-sea boundary and at the bottom. They are brought about by viscous interaction of the wind with the waves and the free surface, and by water interaction with the bottom roughness elements.

The integral C may be written as:

$$\begin{aligned} - \int_{-D}^0 \underbrace{\bar{u} \frac{\partial}{\partial z} \eta_0 \frac{d\bar{u}}{dz}}_C dz &= \int_{-D}^0 \frac{\partial}{\partial X} \left[\bar{u} \eta_0 \frac{d\bar{u}}{dz} \right] dz + \int_{-D}^0 \eta_0 \frac{d\bar{u}}{dz} \frac{d\bar{u}}{dz} dz \quad (A-87) \\ &= \underbrace{\bar{u} \eta \frac{d\bar{u}}{dz}}_E \Big|_{-D}^0 + \int_{-D}^0 \underbrace{\eta \left(\frac{d\bar{u}}{dz} \right)^2}_F dz. \end{aligned}$$

Term E implies η_D as a constant and could be evaluated with knowledge of the surface and bottom values of the velocity gradient. The value of η_D is, however, probably not a constant; hence, much difficulty arises in evaluating both E and F.

The integral D in (A-85), which has no dependence upon empirical relations as does C, may be expressed as:

$$\begin{aligned} \int_{-D}^0 \bar{u} \frac{\partial}{\partial z} [-\rho \bar{u} \bar{w}] dz &= \int_{-D}^0 \frac{\partial}{\partial z} [-\bar{u} \rho \bar{u} \bar{w}] dz - \int_{-D}^0 -\rho \bar{u} \bar{w} \frac{\partial \bar{u}}{\partial z} dz \\ \text{D} &= \underbrace{[-\bar{u} \rho \bar{u} \bar{w}]}_G \Big|_{-D}^0 + \int_{-D}^0 \underbrace{[\rho \bar{u} \bar{w} \frac{\partial \bar{u}}{\partial z}]}_H dz. \end{aligned} \quad (\text{A-88})$$

Term G represents the flow of mean kinetic energy from the boundaries produced by perturbations at the boundaries. At the sea surface the perturbations are wind and the associated wind waves. At the bottom, disturbances can be produced by interaction of the mean motions with the gross bottom roughness elements. The sign and magnitude of G is dependent upon the direction and magnitudes of the wind and the mean current \bar{u} .

The integral H is the measure of the rate of transfer of mean kinetic energy into (or out of) the kinetic energy of eddy motions. Evaluation of this term requires knowledge of the variation of the Reynolds stress $-\rho \bar{u} \bar{w}$ and the mean flow \bar{u} with depth.

It should be noted that these equations were generalized in the sense that no assumptions were made of the causes of the stress terms (with the exception of fluid viscosity). We only state that, if they exist, they contribute to the momentum and kinetic energy of the mean flow in the manner shown.

Going back to (A-85), assume that $\frac{\partial \bar{u}}{\partial x} = 0$ but that the horizontal gradients of the mean pressure and Reynolds stresses are not zero. Taking the derivative with respect to X of (A-85):

$$\frac{\partial}{\partial x} \frac{d}{dt} \frac{1}{2} \rho \bar{u}^2 = \bar{u} \frac{\partial}{\partial x} \left[\frac{\partial p}{\partial x} \right] + \bar{u} \frac{\partial}{\partial x} \left[\frac{\partial}{\partial x} \rho \bar{u}^2 \right] + \frac{\partial}{\partial x} \left[\frac{\partial}{\partial z} \rho \bar{u} \bar{w} \right] - \frac{\partial \bar{u}}{\partial z} \frac{\partial}{\partial x} \rho \bar{u} \bar{w}.$$

By again expanding and rearranging of terms:

$$0 = -\frac{\partial}{\partial x} \left[\frac{\partial}{\partial x} \left\{ \bar{p} - \rho \bar{u}^2 \right\} - \frac{\partial}{\partial z} \rho \bar{u} \bar{w} \right], \quad (\text{A-89})$$

the kinetic energy being invariant in the X direction. Integrating (A-89) gives:

$$\frac{\partial}{\partial x} \left[\bar{p} - \rho \bar{u}^2 \right] - \frac{\partial}{\partial z} \rho \bar{u} \bar{w} = \text{CONSTANT.} \quad (\text{A-90})$$

This indicates that the horizontal mean and dynamic pressure gradients are balanced by the vertical gradient of the Reynolds stresses.

In general, the mean horizontal pressure gradients in this simple model can only be a result of wind set-up along a coast or in a bay. The important thing is that the depth variation of the observed Reynolds stress is not necessarily controlled only by the eddy diffusion properties of the waves, but by fundamental dynamic conditions associated with the horizontal static and dynamic pressure gradients. More generally, the coriolis force must also be considered as in the Eulerian theory.

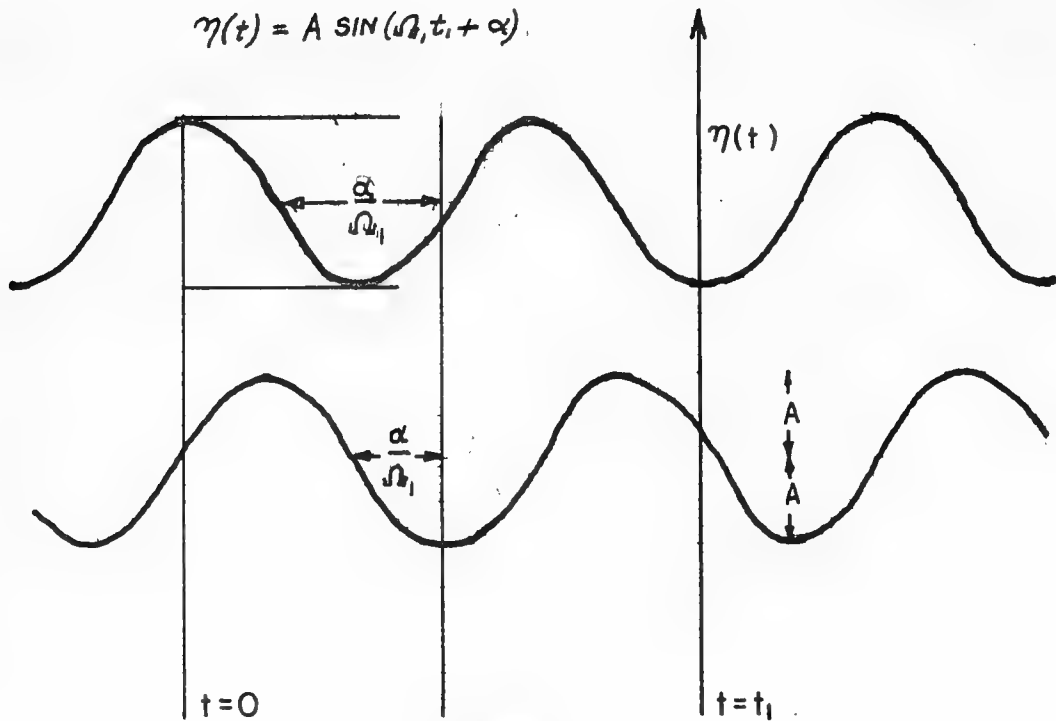


Figure A-1 . An ensemble of sinusoids with random initial phase angles.

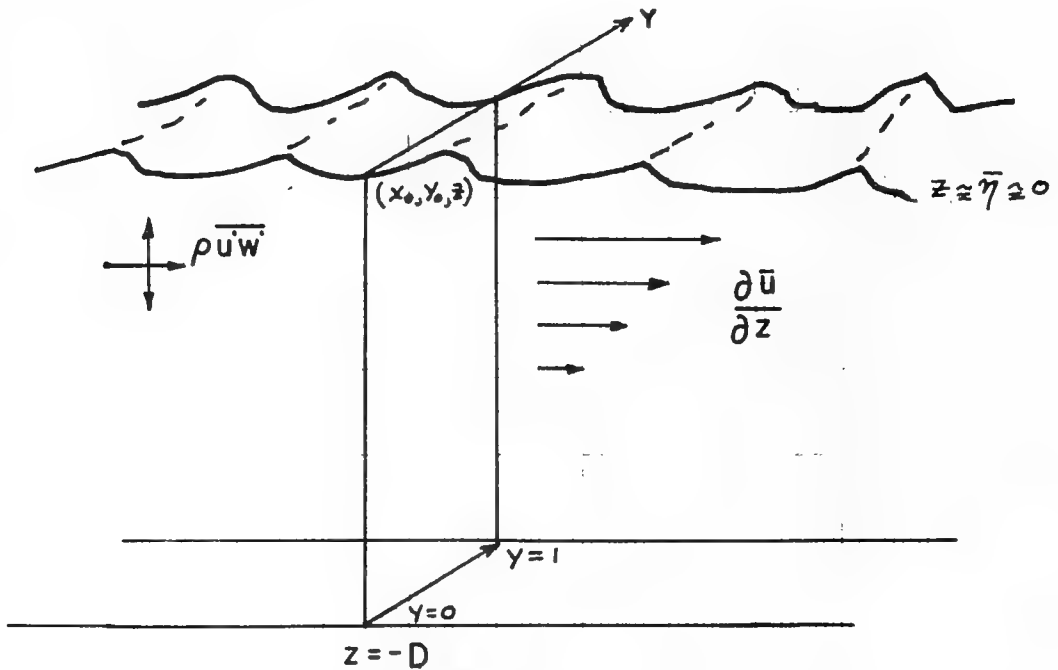


Figure A-2 . Model for vertical integration of Kinetic energy relations.

APPENDIX B

STATISTICAL ANALYSIS AND AUTO-SPECTRA PLOTS OF WAVE DATA

Spectral Data

Listings of spectral data are given for series 020 through 124 (BBELS-8 through BBELS-16, using the OMDUM III and LIMDUM I wave meters).

The first line contains the consecutive serial observation (020, etc.). This is followed by O III = OMDUM III measurement producing u and w ; or by LI-u or LI-w = LIMDUM I measurement of u_1 and u_2 or w_1 and w_2 , respectively. Note that the BBELS-11 series (030-069) was made with LIMDUM I; but only one channel is operative, thus the statistics of a single w are given.

The second line of the format consists of: the BBELS number, the depth (in meters) and the n th measurement at that depth (Roman numerals), the date, and the approximate time interval.

The third line consists of the lag number, the number of data points (N), and the interval of sampling of interpolated data (DT). The fourth line gives the mean values of the variables (u and w , u_1 and w_1 , or u_2 and w_2).

The fifth line lists the following parameters (column headings), which are defined in chapter III. (X = the variable measured.)

K = Frequency and lag index.

ACOV X_1 , } = Auto-covariance functions of X_1 and X_2 . (Note, ACOV X at
ACOV X_2 } $K = 0$ is the variance of X or σ_X^2 .)

COV IN = In-phase covariance function of X_1 and X_2 . (Note, COV IN
at $K = 0$ is the covariance or $\phi_{X_1 X_2}(0) = X_1' X_2'$.)

COV OUT = Out-of-phase covariance function of X_1 and X_2 .

SP X_1 SP X_2 = Auto-spectra functions of X_1 and X_2 .

CO = Co-spectrum function of X_1 and X_2 .

QUA = Quadrature spectrum function of X_1 and X_2 .

PER = Period in seconds.

R = Coherence function of the cross-spectrum with the auto-spectra.

PHL = Phase lag function between X_1 and X_2 .

- Note 1. In some cases, some of the data are left out indicating missing or irretrievable information.
- Note 2. A 'U' following the consecutive serial observation indicates that the OMDUM data are uncorrected (see chapter III).

020 OMI

03 10 377

RRFS R 1.0M-1 0. 07DEC-64 1310-1315

LAGE= 50 N= 1245 DT= 0.2SEC

MEAN U= 21.6 MEAN W= 6.4

K ACOV U ACOV W COV IN COVOUT SP U SP W CO QUA PER R PHI
CORRELATION COEFFICIENT .03

0	183.8	348.3	6.4	0	18.21	19.91	11.42	0	0	0
1	171.6	327.4	9.9	4.5	34.39	42.03	15.34	-4.23	20.00	
2	146.1	281.0	19.3	7.8	31.48	60.83	8.53	.51	10.00	
3	114.8	222.5	32.3	9.3	21.69	62.44	3.70	1.11	6.66	
4	84.1	160.9	45.0	9.7	12.05	38.89	-3.99	-2.84	5.00	
5	58.8	105.6	53.8	9.0	11.11	31.79	-5.55	1.70	4.00	
6	42.5	62.0	56.5	6.7	9.97	26.46	-3.26	7.42	3.33	
7	34.8	30.9	53.3	3.0	9.09	15.56	-2.53	4.19	2.85	
8	33.8	10.7	45.8	-1.2	10.24	12.48	-5.09	.24	2.50	
9	36.3	-2.0	36.7	-6.3	9.87	12.46	-6.18	-0.57	2.22	
10	39.2	-11.0	28.4	-11.5	5.99	9.07	-4.14	-0.87	2.00	
11	39.5	-19.9	22.8	-15.5	2.57	5.14	-1.57	-0.12	1.81	
12	36.0	-30.0	20.4	-17.5	1.30	2.59	-0.26	.37	1.66	
13	28.7	-39.8	21.3	-17.0	.93	1.32	-0.04	.21	1.53	
14	18.5	-47.8	23.5	-13.4	.73	1.03	-0.05	.19	1.42	
15	7.8	-52.9	24.6	-7.6	.59	.85	-0.03	.09	1.33	
16	-1.0	-54.6	23.1	-0.8	.45	.57	0	.01	1.25	
17	-6.4	-51.7	19.0	5.8	.34	.51	0	.03	1.17	
18	-9.2	-46.9	12.4	10.7	.24	.49	0	.05	1.11	
19	-7.1	-42.3	4.6	12.8	.19	.39	.03	.03	1.05	
20	-5.0	-38.8	-2.6	12.3	.17	.31	.04	.01	1.00	
21	-3.0	-37.7	-7.5	9.1	.17	.28	.05	.02	.95	
22	-2.5	-39.3	-9.1	3.9	.15	.25	.03	.04	.90	
23	-4.3	-42.8	-7.5	-2.4	.13	.21	0	.03	.86	
24	-7.8	-46.0	-3.5	-9.3	.12	.16	0	.03	.83	
25	-12.0	-46.5	2.0	-16.3	.10	.12	-0.01	.03	.80	
26	-16.2	-43.4	7.5	-22.7	.09	.13	0	.02	.76	
27	-18.6	-36.7	12.3	-27.6	.10	.19	.02	.02	.74	
28	-18.3	-25.9	15.8	-31.4	.10	.20	.01	0	.71	
29	-15.8	-11.9	17.9	-33.8	.08	.16	0	0	.68	
30	-11.1	4.2	19.2	-34.3	.07	.13	0	0	.66	
31	-8.3	21.9	19.5	-33.0	.08	.10	-0.01	-0.01	.64	
32	1.1	40.0	19.6	-29.4	.07	.09	-0.01	-0.03	.62	
33	6.8	56.8	19.8	-23.5	.05	.09	0	-0.02	.60	
34	11.3	70.0	20.0	-15.8	.04	.10	0	-0.02	.58	
35	14.7	78.8	20.4	-7.9	.05	.10	0	0	.57	
36	17.0	83.3	21.4	-0.9	.05	.07	0	0	.55	
37	19.0	84.5	23.0	4.5	.04	.05	0	0	.54	
38	20.7	83.1	24.7	6.9	.04	.06	-0.01	0	.52	
39	22.9	80.3	26.7	6.1	.04	.07	0	0	.51	
40	25.7	77.1	29.3	3.8	.04	.06	0	0	.50	
41	29.0	73.2	32.2	.3	.03	.04	0	0	.48	
42	32.6	69.1	34.8	-2.6	.03	.03	0	0	.47	
43	36.4	65.5	36.2	-4.4	.03	.02	0	0	.46	
44	40.3	62.0	37.0	-5.2	.02	.02	0	0	.45	
45	44.7	58.7	37.4	-4.8	.02	.03	0	0	.44	
46	48.7	56.0	38.1	-3.9	.03	.04	0	0	.43	
47	51.4	54.6	38.9	-2.8	.03	.04	0	0	.42	
48	52.2	53.8	39.2	-1.5	.04	.03	0	0	.41	
49	50.7	51.7	38.9	.2	.03	.02	0	0	.40	
50	47.3	47.3	37.5	1.8	.01	.01	0	0	.40	

O21 OIII

BBFIS R .5M= 1 0, 07DEC-64 1324-1329

LAGS= 50 N= 1576 DT= 0.2SEC

MEAN U= 16.8 MEAN W= 17.3

CORRELATION COEFFICIENT -.09

0	354.1	701.0	-46.9	0	19.71	12.43	6.07	0	0
1	325.8	605.8	-39.0	15.6	46.52	57.88	11.17	-16.39	20.00
2	264.0	445.7	-16.4	23.7	56.50	113.28	9.16	-24.79	10.00
3	189.4	268.2	16.1	21.3	45.12	99.60	.77	-11.99	6.66
4	116.4	123.5	49.2	9.6	26.42	56.96	-8.77	.49	5.00
5	56.0	39.0	73.4	-7.8	20.23	45.89	-7.11	4.89	4.00
6	16.2	13.4	81.9	-27.1	21.37	37.18	-5.44	8.56	3.33
7	-0.5	27.0	73.0	-44.6	29.46	29.29	-9.79	9.25	2.85
8	3.5	51.2	51.7	-57.7	33.45	30.92	-13.82	5.70	2.50
9	19.4	63.3	27.9	-65.0	23.84	47.34	-15.54	3.78	2.22
10	38.2	50.6	8.8	-68.8	10.37	51.52	-10.97	5.17	2.00
11	51.8	12.5	-3.3	-68.7	4.31	33.68	-4.12	3.32	1.81
12	54.4	-43.8	-4.4	-66.0	3.15	18.69	-1.08	1.21	1.66
13	45.6	-104.4	4.8	-61.4	2.60	12.62	.13	.81	1.53
14	25.9	-152.7	16.6	-57.4	1.70	9.30	.69	.34	1.42
15	-2.2	-178.4	26.2	-53.5	1.12	6.63	.36	.51	1.33
16	-32.4	-177.3	30.1	-49.3	.80	4.50	.14	.67	1.25
17	-59.0	-157.0	26.0	-43.8	.62	3.58	.25	.27	1.17
18	-76.1	-129.9	15.9	-36.5	.70	3.12	.33	-0.13	1.11
19	-80.4	-101.9	2.9	-28.2	.72	2.26	.23	0	1.05
20	-73.4	-86.3	-10.4	-20.4	.69	1.71	.13	.18	1.00
21	-58.9	-90.7	-20.9	-14.2	.58	1.54	.20	.07	.95
22	-41.7	-110.8	-26.8	-12.8	.41	1.22	.13	-0.02	.90
23	-26.6	-139.9	-28.1	-15.0	.37	1.13	-0.04	.03	.86
24	-16.5	-166.4	-26.0	-16.8	.35	1.35	-0.14	.17	.83
25	-13.2	-179.2	-23.3	-14.5	.27	1.20	-0.05	.14	.80
26	-16.2	-173.1	-16.6	-12.6	.25	.93	-0.01	-0.02	.76
27	-22.9	-148.8	-10.3	-9.7	.24	.91	-0.06	-0.04	.74
28	-29.6	-111.3	-7.0	-4.0	.20	.83	0	.02	.71
29	-33.4	-72.9	-6.7	4.9	.18	.78	.10	.03	.68
30	-33.3	-43.1	-6.9	15.7	.16	.85	.13	-0.03	.66
31	-20.2	-22.3	-5.7	26.4	.13	.81	.07	-0.05	.64
32	-21.0	-8.3	-1.7	33.7	.10	.65	0	.01	.62
33	-10.7	-2.3	4.7	35.6	.08	.60	0	.04	.60
34	-0.4	-3.6	13.2	32.5	.10	.63	-0.02	0	.58
35	8.5	-3.4	22.5	26.8	.11	.72	-0.05	0	.57
36	16.4	7.1	29.1	21.3	.12	.71	-0.04	0	.55
37	23.5	29.8	31.9	19.3	.11	.61	.02	.01	.54
38	28.7	57.9	30.4	20.4	.08	.57	.05	0	.52
39	31.5	92.4	24.6	24.8	.05	.54	.01	0	.51
40	32.7	125.1	16.4	31.9	.04	.59	0	0	.50
41	34.3	151.4	8.0	40.1	.04	.62	0	0	.48
42	37.5	170.0	3.0	44.5	.04	.60	.01	-0.02	.47
43	42.9	177.6	-0.9	42.9	.04	.58	-0.01	-0.03	.46
44	50.4	178.7	-5.3	35.2	.05	.54	-0.03	0	.45
45	58.6	177.6	-8.5	24.2	.05	.53	0	.01	.44
46	66.2	167.8	-9.3	12.8	.05	.55	.01	0	.43
47	71.1	160.4	-6.8	1.4	.05	.53	0	0	.42
48	72.6	157.1	-0.6	-8.6	.05	.52	-0.02	.02	.41
49	70.2	156.9	7.0	-15.7	.05	.52	0	.04	.40
50	63.9	155.9	13.2	-20.5	.03	.25	.01	0	.40

O22 OIII

REFS R 2.0M= 1 0, 07DEC-64 1337-1342

LAGS= 50 N= 1359 DT= 0.2SEC

MEAN U= 13.6 MEAN W= 2.9

CORRELATION COEFFICIENT .31

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	239.7	250.6	76.7	0	35.90	25.08	16.08	0	0		
1	233.5	244.1	77.1	2.0	64.57	55.15	28.60	-8.80	20.00		
2	219.9	229.8	78.5	4.2	55.66	68.52	25.70	-0.02	10.00		
3	200.1	210.6	80.2	6.5	37.15	53.50	14.80	6.77	6.66		
4	179.3	188.5	81.0	8.4	15.11	20.72	.55	4.24	5.00		
5	158.6	165.1	80.0	9.7	8.19	9.31	-1.86	1.60	4.00		
6	139.7	141.4	76.8	10.3	5.38	5.25	-1.79	.86	3.33		
7	123.3	118.2	71.5	9.9	3.97	2.85	-1.46	.49	2.85		
8	109.0	95.5	64.5	8.6	3.62	2.15	-1.13	-0.28	2.50		
9	95.8	73.6	56.3	6.3	3.41	2.04	-1.36	-0.41	2.22		
10	82.7	52.4	47.8	3.4	2.45	1.66	-1.03	-0.19	2.00		
11	69.4	32.1	39.4	.2	1.24	.89	-0.35	-0.14	1.81		
12	55.8	12.9	31.5	-3.3	.59	.61	-0.03	-0.02	1.66		
13	42.1	-4.7	24.3	-6.8	.37	.43	-0.06	-0.02	1.53		
14	29.1	-20.3	17.7	-9.9	.32	.32	-0.07	-0.06	1.42		
15	17.4	-33.3	11.6	-12.6	.23	.25	-0.02	-0.03	1.33		
16	7.6	-43.8	5.6	-15.0	.17	.18	-0.01	-0.01	1.25		
17	-0.1	-51.9	-0.2	-17.1	.10	.17	-0.01	0	1.17		
18	-5.4	-57.6	-5.8	-19.0	.09	.16	.01	-0.01	1.11		
19	-9.9	-61.3	-10.7	-20.7	.11	.12	.01	-0.02	1.05		
20	-11.3	-63.1	-14.5	-22.6	.13	.11	0	0	1.00		
21	-13.3	-63.6	-17.1	-24.5	.10	.08	.01	0	.95		
22	-15.1	-63.0	-18.2	-26.3	.07	.07	0	0	.90		
23	-16.4	-61.3	-17.9	-27.8	.07	.07	0	-0.01	.86		
24	-17.0	-58.5	-16.6	-28.8	.07	.07	0	0	.83		
25	-16.8	-54.1	-14.7	-29.4	.07	.06	.01	0	.80		
26	-15.6	-48.4	-12.6	-29.5	.05	.05	0	0	.76		
27	-13.1	-41.2	-10.4	-29.3	.04	.05	0	0	.74		
28	-9.5	-32.5	-8.1	-28.5	.03	.05	0	0	.71		
29	-4.7	-22.7	-5.7	-27.1	.03	.03	0	0	.68		
30	.6	-12.4	-2.6	-25.3	.03	.03	0	0	.66		
31	6.2	-1.7	1.3	-23.3	.02	.03	0	0	.64		
32	11.7	8.9	6.0	-21.3	.01	.03	0	0	.62		
33	17.3	19.3	11.3	-19.3	.01	.03	0	0	.60		
34	22.9	29.1	16.7	-17.6	.01	.02	0	0	.58		
35	29.5	38.1	22.1	-16.5	.01	.02	0	0	.57		
36	33.8	46.7	27.4	-15.9	.01	.02	0	0	.55		
37	34.0	55.2	32.4	-15.5	.01	.01	0	0	.54		
38	44.1	63.6	36.8	-15.1	.01	.01	0	0	.52		
39	49.2	71.8	40.5	-14.3	0	.02	0	0	.51		
40	54.2	78.9	43.4	-13.0	0	.02	0	0	.50		
41	58.9	84.4	45.6	-11.1	0	.01	0	0	.48		
42	63.3	88.1	47.0	-8.8	0	.01	0	0	.47		
43	67.2	89.9	47.8	-6.2	0	.01	0	0	.46		
44	70.0	90.1	48.2	-3.5	0	.01	0	0	.45		
45	71.3	88.7	47.8	-0.9	0	.01	0	0	.44		
46	70.9	85.4	46.8	1.6	0	.01	0	0	.43		
47	68.6	80.4	45.1	4.1	0	.01	0	0	.42		
48	64.8	74.2	42.9	6.6	0	.01	0	0	.41		
49	59.3	66.6	40.0	9.3	0	.01	0	0	.40		
50	52.6	57.9	36.5	11.9	0	0	0	0	.40		

023 U O III

BRFIS 9 .5M= 1 0, 27JAN-65 1145-1150

LAGE= 50 N= 1441 DT= 0.2SEC

MFAN U= -5.5 MFAN W= .3

CORRELATION COEFFICIENT .52

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	555.0	739.1	-333.5	0	14.23	6.28	-4.06	0	0		
1	542.6	714.5	-331.5	60.1118	59117.00	-80.12	62.55	20.00			
2	513.5	659.9	-325.9	116.8217	06258.56	-162.9*	139.99	10.00			
3	474.7	591.1	-315.5	166.6124	76192.83	-92.79	95.14	6.66			
4	429.4	518.8	-299.3	208.4	25.00	67.59	-2.67	27.94	5.00		
5	381.2	446.0	-277.0	242.1	17.81	35.50	4.22	17.90	4.00		
6	329.1	370.1	-249.4	267.7	13.24	17.89	1.70	10.92	3.33		
7	273.1	288.1	-217.1	285.5	5.93	8.07	.73	4.06	2.85		
8	214.7	198.9	-181.7	295.6	2.37	4.43	.25	1.27	2.50		
9	155.7	105.9	-144.0	298.5	1.25	2.66	.12	.58	2.22		
10	99.2	17.1	-104.1	294.8	.91	2.36	.20	.30	2.00		
11	43.8	-61.6	-61.6	285.3	1.24	2.82	.55	.27	1.81		
12	-6.6	-127.7	-17.2	271.4	1.61	4.18	.49	.50	1.66		
13	-52.8	-183.3	28.1	255.0	1.59	4.71	.36	.68	1.53		
14	-95.8	-231.5	72.7	237.9	1.19	3.84	.35	.55	1.42		
15	-137.0	-275.0	115.7	220.2	.77	2.60	.28	.09	1.33		
16	-177.0	-314.4	156.0	201.5	.58	1.75	.07	-0.02	1.25		
17	-214.7	-349.4	192.8	180.9	.42	1.08	-0.01	-0.01	1.17		
18	-252.3	-378.8	225.7	158.0	.32	.64	-0.05	-0.02	1.11		
19	-285.6	-400.1	254.1	133.3	.30	.48	-0.05	.04	1.05		
20	-314.6	-413.4	277.1	107.5	.22	.40	-0.02	.07	1.00		
21	-332.6	-420.2	294.4	80.7	.18	.30	0	.03	.95		
22	-357.3	-421.7	306.4	53.0	.15	.25	0	0	.90		
23	-370.0	-417.9	312.8	24.5	.09	.26	0	-0.01	.86		
24	-376.9	-409.5	314.0	-5.3	.07	.31	0	-0.01	.83		
25	-377.6	-397.4	309.6	-35.7	.08	.27	.02	-0.02	.80		
26	-371.7	-381.0	299.9	-66.6	.07	.16	0	-0.01	.76		
27	-352.8	-358.6	284.9	-96.8	.06	.13	-0.01	-0.01	.74		
28	-339.0	-329.7	264.7	-125.4	.07	.13	-0.01	-0.01	.71		
29	-312.8	-295.0	239.9	-151.1	.07	.13	-0.01	0	.68		
30	-280.8	-256.4	211.4	-173.2	.06	.11	-0.01	0	.66		
31	-243.6	-214.3	180.3	-192.1	.06	.08	0	0	.64		
32	-203.0	-169.8	147.3	-207.8	.05	.07	0	0	.62		
33	-160.2	-123.8	112.6	-220.2	.04	.06	0	-0.01	.60		
34	-115.2	-75.8	76.9	-228.4	.04	.07	0	-0.01	.58		
35	-68.9	-26.1	40.2	-232.2	.05	.08	-0.01	0	.57		
36	-22.6	24.8	3.0	-231.6	.03	.07	0	0	.55		
37	22.6	75.5	-34.2	-227.2	.03	.07	0	0	.54		
38	65.9	124.4	-70.3	-219.6	.03	.06	0	0	.52		
39	104.8	170.8	-104.8	-210.0	.02	.06	0	0	.51		
40	146.1	214.4	-137.3	-198.1	.01	.06	0	0	.50		
41	183.1	253.2	-166.9	-183.0	.01	.07	0	0	.48		
42	217.6	286.5	-193.5	-164.4	.02	.06	0	0	.47		
43	248.9	314.5	-216.5	-142.7	.02	.05	0	0	.46		
44	276.5	336.8	-235.3	-118.4	.01	.04	0	0	.45		
45	290.9	352.7	-249.4	-92.8	.01	.04	0	0	.44		
46	310.0	362.1	-258.2	-66.6	.01	.04	0	0	.43		
47	333.5	366.3	-261.5	-39.6	.02	.04	0	0	.42		
48	342.7	365.7	-259.9	-11.2	.02	.06	0	0	.41		
49	346.4	359.3	-253.7	18.6	.02	.06	-0.01	0	.40		
50	344.5	346.2	-243.7	49.9	0	.03	0	0	.40		

024 U OIII

BRFIS 9 .5M-II 0, 27JAN-65 1224-1228

LAGS= 50 N= 919 DT= 0.2SEC

MEAN U= 3.2 MEAN W= 2.7

CORRELATION COEFFICIENT = .40

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PFR	R	PHT
0	490.0	892.0	-261.7	0	37.60	5.91	1.89	0	0		
1	474.9	854.5	-260.7	59.5	113.73	98.28	-47.79	39.92	20.00		
2	450.8	762.3	-257.5	113.4	160.16	267.77	-124.8*	117.90	10.00		
3	416.1	642.1	-250.4	157.5	195.48	252.89	-89.08	102.00	6.66		
4	377.5	518.7	-235.9	191.0	28.34	96.45	-11.72	32.35	5.00		
5	337.1	409.9	-213.1	215.0	12.32	35.48	1.68	9.72	4.00		
6	296.3	322.3	-182.9	233.0	7.57	24.61	-0.49	5.81	3.33		
7	254.7	250.0	-148.4	248.0	4.16	13.70	-0.09	1.86	2.85		
8	212.0	181.1	-111.6	261.1	3.28	12.25	.35	1.14	2.50		
9	168.3	103.2	-74.5	271.3	3.08	17.36	1.82	1.98	2.22		
10	123.7	10.4	-38.6	276.2	3.47	23.62	2.46	4.48	2.00		
11	78.8	-94.7	-3.8	272.6	2.61	20.61	1.51	4.61	1.81		
12	34.5	-202.4	30.5	259.3	1.52	10.32	1.13	2.12	1.66		
13	-7.2	-300.6	64.6	237.1	1.02	3.95	.97	.66	1.53		
14	-44.9	-377.8	97.9	208.8	.81	1.84	.48	.16	1.42		
15	-78.2	-427.9	130.1	178.0	.67	1.15	.23	-0.08	1.33		
16	-107.8	-453.1	160.4	147.1	.46	.97	.11	-0.01	1.25		
17	-132.5	-461.6	187.9	118.4	.31	.70	.06	-0.05	1.17		
18	-153.3	-463.8	211.5	91.5	.34	.59	-0.03	-0.09	1.11		
19	-170.2	-466.0	230.8	65.7	.32	.39	0	-0.04	1.05		
20	-184.6	-470.4	244.6	39.4	.26	.26	.02	.05	1.00		
21	-195.9	-474.9	252.8	10.8	.21	.23	-0.01	.02	.95		
22	-204.2	-473.2	254.6	-20.5	.14	.24	-0.03	0	.90		
23	-209.2	-459.5	251.0	-52.7	.11	.25	0	-0.01	.86		
24	-207.7	-430.0	242.1	-84.0	.10	.25	-0.03	0	.83		
25	-202.0	-384.9	228.6	-112.2	.09	.20	-0.04	-0.01	.80		
26	-191.4	-327.0	211.1	-135.9	.12	.16	-0.04	0	.76		
27	-177.4	-262.9	191.2	-154.6	.14	.12	-0.05	0	.74		
28	-160.2	-197.8	169.0	-168.4	.10	.10	-0.03	0	.71		
29	-140.9	-135.6	145.2	-177.6	.09	.11	-0.01	0	.68		
30	-119.1	-77.7	119.1	-183.1	.09	.12	0	.02	.66		
31	-96.1	-23.0	90.3	-186.5	.07	.10	0	.01	.64		
32	-71.7	29.7	58.8	-188.6	.07	.09	0	0	.62		
33	-45.5	81.9	26.2	-188.8	.08	.07	0	0	.60		
34	-19.1	133.9	-5.8	-185.5	.06	.07	0	0	.58		
35	7.7	193.4	-36.3	-177.6	.06	.07	0	0	.57		
36	35.4	228.4	-64.8	-164.4	.06	.05	0	0	.55		
37	63.2	265.6	-89.9	-146.6	.05	.04	0	-0.01	.54		
38	89.3	291.3	-110.7	-125.6	.05	.05	-0.01	-0.01	.52		
39	112.5	304.4	-128.1	-103.6	.06	.04	-0.01	-0.01	.51		
40	132.1	306.4	-143.4	-82.6	.05	.04	-0.01	0	.50		
41	147.8	301.4	-157.4	-63.8	.04	.05	0	0	.48		
42	160.1	294.0	-170.7	-47.5	.06	.04	0	0	.47		
43	169.1	287.9	-182.6	-32.6	.06	.02	0	0	.46		
44	175.2	283.1	-193.2	-18.4	.04	.02	0	0	.45		
45	178.3	278.0	-199.7	-2.6	.05	.03	0	-0.01	.44		
46	178.9	270.0	-201.0	15.5	.07	.04	0	-0.01	.43		
47	178.1	255.1	-196.6	35.8	.08	.03	.01	0	.42		
48	175.0	231.7	-187.0	56.4	.06	.03	.02	0	.41		
49	168.3	200.1	-173.9	75.7	.04	.04	0	0	.40		
50	158.4	162.8	-159.0	91.6	.02	.02	0	0	.40		

025 U OIII

BRFIS 9 2.0M- 1 0, 27JAN-65 1235-1240

LAGE= 50 N= 13 65 DT= 0.2SEC

MEAN U= 11.4 MEAN W= 4.6

CORRELATION COEFFICIENT = .43

K	ACOV U	ACOV W	COV	IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	444.4	493.4	-202.4	0	24.23	24.17	-0.40	0	0	0		
1	439.2	483.8	-200.9	35.91	05.59	90.72	-35.82	48.98	20.00			
2	422.8	461.8	-196.2	71.01	75.36	171.70	-91.92	114.12	10.00			
3	400.1	429.4	-187.9	104.01	08.63	140.50	-68.02	76.35	6.66			
4	371.5	389.3	-175.5	134.2	16.29	39.90	-10.42	10.81	5.00			
5	339.3	343.3	-158.7	161.2	1.94	8.69	.73	1.26	4.00			
6	300.9	293.0	-138.0	184.6	2.78	5.13	.14	1.71	3.33			
7	260.3	239.9	-114.0	204.3	1.41	2.14	.47	.24	2.85			
8	217.1	185.1	-87.4	219.9	1.31	2.08	.51	.09	2.50			
9	171.6	129.1	-59.2	231.2	1.10	2.17	1.05	.03	2.22			
10	124.8	73.1	-30.3	238.0	.97	1.80	.78	.28	2.00			
11	77.2	17.5	-1.5	240.1	.56	.97	.33	.19	1.81			
12	29.7	-36.4	26.1	237.6	.35	.52	.03	.14	1.66			
13	-14.8	-87.1	52.3	230.8	.26	.28	.01	.05	1.53			
14	-61.3	-133.1	76.8	219.9	.26	.29	.02	.01	1.42			
15	-103.2	-173.5	99.6	205.3	.17	.25	.04	-0.01	1.33			
16	-141.6	-207.3	120.6	187.6	.13	.20	.05	0	1.25			
17	-175.9	-234.2	139.4	167.2	.11	.14	.04	0	1.17			
18	-205.7	-253.8	155.5	144.3	.09	.14	.01	0	1.11			
19	-231.6	-266.5	168.2	119.2	.07	.14	0	0	1.05			
20	-251.7	-273.0	177.1	92.3	.08	.14	0	-0.01	1.00			
21	-265.7	-274.0	181.9	64.0	.06	.10	0	-0.01	.95			
22	-275.7	-269.5	182.4	34.7	.04	.07	0	0	.90			
23	-281.5	-259.7	179.0	5.1	.04	.05	0	0	.86			
24	-280.0	-244.4	171.9	-24.3	.04	.06	0	0	.83			
25	-274.1	-224.2	161.5	-52.9	.03	.06	0	0	.80			
26	-263.1	-199.3	148.3	-80.0	.03	.06	0	0	.76			
27	-244.9	-170.5	132.9	-105.2	.03	.05	0	0	.74			
28	-224.3	-138.4	115.6	-127.6	.02	.05	0	0	.71			
29	-201.6	-103.6	96.6	-147.2	.01	.04	0	0	.68			
30	-173.6	-67.4	76.3	-163.4	.01	.04	0	0	.66			
31	-142.9	-30.4	54.7	-176.2	.01	.03	0	0	.64			
32	-109.9	6.4	32.4	-185.3	.01	.03	0	0	.62			
33	-75.0	42.0	9.6	-190.6	.01	.02	0	0	.60			
34	-39.9	75.6	-13.2	-192.3	.01	.03	0	0	.58			
35	-2.5	106.6	-35.3	-190.4	.01	.03	0	0	.57			
36	33.6	134.7	-56.7	-185.1	.02	.03	0	0	.55			
37	68.8	159.4	-76.6	-176.3	.02	.04	0	0	.54			
38	102.6	180.6	-94.7	-164.2	.01	.04	0	0	.52			
39	134.4	198.0	-110.5	-149.3	.01	.03	0	0	.51			
40	163.6	211.9	-123.9	-132.1	.01	.02	0	0	.50			
41	189.8	221.6	-134.6	-112.9	.01	.03	0	0	.48			
42	212.3	227.4	-142.6	-92.2	.01	.03	0	0	.47			
43	230.4	229.2	-147.8	-70.4	.01	.02	0	0	.46			
44	243.9	227.0	-150.2	-48.3	.01	.02	0	0	.45			
45	252.4	220.5	-149.8	-26.3	0	.03	0	0	.44			
46	255.9	210.5	-146.7	-4.7	0	.03	0	0	.43			
47	254.4	197.6	-141.1	16.1	0	.02	0	0	.42			
48	249.0	182.2	-133.0	36.2	.01	.02	0	0	.41			
49	237.2	164.3	-122.6	55.3	.01	.03	0	0	.40			
50	222.2	144.4	-109.8	73.1	0	.02	0	0	.40			

026 OIII
 BBELS 10 0.5M-01 0. 25MAY-65 1141-1146
 LAGS= 50 N= 1443 DT= 0.2SEC
 MEAN W= -8.1 MEAN V=-26.9

TM No. 377

K	ACOV W	ACOV V	COV	IN	COVOUT	SP W	SP V	CO	QUA	PER	R	PHI
0	73.0	43.5	5.4	0	9.01	5.86	3.59	0	0	.49	0	0
1	69.9	37.3	5.8	-3.6	15.36	8.51	4.35	-0.62	20.00	.38	-8.08	
2	62.9	32.7	6.8	-7.1	11.12	3.71	.78	-0.63	10.00	.16	-38.99	
3	53.5	27.0	8.0	-9.9	7.57	1.79	.58	-0.33	6.67	.19	-29.57	
4	43.0	20.6	9.2	-11.8	6.57	3.37	.54	-1.80	5.00	.40	-73.32	
5	32.8	14.5	10.3	-12.2	8.25	6.27	-1.31	-4.30	4.00	.62	73.05	
6	23.5	9.5	11.2	-11.2	7.01	5.22	-1.97	-3.88	3.33	.72	63.08	
7	15.8	5.0	11.8	-8.8	3.47	2.16	-0.78	-1.37	2.86	.58	60.39	
8	9.8	1.9	11.9	-5.5	1.37	.97	-0.10	-0.09	2.50	.11	41.25	
9	5.9	.1	11.7	-2.0	.75	.61	.07	.12	2.22	.21	61.95	
10	4.1	.3	11.1	1.5	.55	.32	.05	.08	2.00	.22	57.50	
11	4.2	2.0	9.8	4.5	.37	.22	-0.06	.01	1.82	.21	-7.00	
12	5.8	4.8	8.1	6.8	.24	.24	-0.09	0	1.67	.36	1.56	
13	8.4	8.0	6.3	8.3	.24	.27	-0.06	.06	1.54	.35	-44.55	
14	11.1	11.6	4.5	8.6	.25	.26	-0.04	.12	1.43	.49	-70.84	
15	13.4	14.4	3.0	7.8	.18	.24	-0.03	.08	1.33	.40	-69.03	
16	15.0	16.5	2.1	5.7	.10	.22	-0.03	.04	1.25	.32	-54.97	
17	15.7	17.8	1.9	2.9	.06	.15	-0.01	.02	1.18	.24	-56.68	
18	15.4	18.5	2.2	-0.2	.05	.11	0	.01	1.11	.11	61.11	
19	14.2	17.9	3.1	-3.2	.04	.13	0	0	1.05	.03	71.66	
20	12.1	16.5	4.5	-5.7	.04	.12	-0.01	0	1.00	.14	23.31	
21	9.1	14.7	6.0	-7.3	.04	.08	-0.01	0	.95	.18	12.05	
22	5.7	11.4	7.5	-8.1	.03	.09	-0.01	0	.91	.13	-15.68	
23	2.2	8.3	8.7	-8.1	.02	.10	0	0	.87	.06	-43.86	
24	-0.9	5.3	9.6	-7.4	.02	.09	0	0	.83	.11	-31.47	
25	-3.3	2.1	10.2	-6.2	.02	.08	-0.01	0	.80	.25	-8.84	
26	-4.7	-0.2	10.4	-4.5	.02	.10	-0.01	0	.77	.31	1.09	
27	-5.1	-2.4	10.1	-2.6	.02	.11	-0.01	0	.74	.24	-2.83	
28	-4.8	-3.6	9.5	-0.5	.01	.12	0	0	.71	.10	-57.62	
29	-3.8	-3.6	8.5	1.4	.01	.12	0	0	.69	.10	70.81	
30	-2.3	-2.6	7.1	3.0	.02	.10	0	0	.67	.14	41.88	
31	-0.7	-1.1	5.6	4.1	.01	.08	0	0	.65	.14	19.43	
32	1.2	.7	4.0	4.6	.01	.09	0	0	.63	.02	17.97	
33	3.1	2.4	2.5	4.5	.01	.11	0	0	.61	.12	29.68	
34	5.0	4.4	1.1	4.0	.01	.13	0	0	.59	.11	27.20	
35	6.5	6.4	-0.1	3.3	.01	.10	0	0	.57	.06	-15.58	
36	7.7	7.6	-0.7	2.4	.01	.08	0	0	.56	.03	52.14	
37	8.5	8.4	-1.0	1.5	.01	.10	0	0	.54	.10	63.50	
38	8.9	8.6	-0.7	.4	.01	.11	0	0	.53	.09	88.92	
39	8.8	8.0	0	-0.6	.01	.09	0	0	.51	.10	-74.94	
40	8.6	7.2	.9	-1.4	.01	.07	0	0	.50	.11	16.78	
41	8.2	6.0	1.9	-2.0	.01	.07	0	0	.49	.10	-27.35	
42	7.6	4.7	3.0	-2.2	.01	.09	0	0	.48	.03	-40.34	
43	7.0	3.2	4.1	-1.8	.01	.09	0	0	.47	.07	-47.56	
44	6.2	1.4	5.0	-1.1	.01	.07	0	0	.45	.09	32.03	
45	5.4	.3	5.6	-0.1	.01	.07	0	0	.44	.05	73.97	
46	4.7	-0.9	6.1	1.1	.01	.08	0	0	.43	.04	14.36	
47	4.4	-1.9	6.3	2.4	0	.09	0	0	.43	0	-39.18	
48	4.5	-1.8	6.2	3.5	0	.09	0	0	.42	.05	-70.71	
49	5.0	-1.1	5.7	4.5	0	.10	0	0	.41	.18	-27.18	
50	5.7	-0.5	4.9	5.3	0	.06	0	0	.40	.29	0	

027 OIII
 HRFIS 10 3.0M-01 0, 25MAY-65 1242-1252

LAGS= 50 N= 1649 DT= 0.2SEC

MEAN U=-25.6 MEAN W= -5.8

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	14.8	16.7	.8	0	2.76	4.27	.36	0	0	.11	0
1	8.5	16.5	.8	.3	3.68	6.36	.43	.62	20.00	.15	55.31
2	8.9	16.0	.8	.6	1.35	2.96	-0.02	.44	10.00	.22	-47.91
3	8.7	15.4	.8	.8	.59	1.30	-0.08	.19	6.67	.23	-67.31
4	8.1	14.5	.8	1.1	.44	.74	.05	.23	5.00	.42	77.21
5	7.4	13.8	.8	1.2	.52	.49	.07	.26	4.00	.54	74.57
6	7.1	12.9	.7	1.3	.36	.23	.02	.10	3.33	.35	77.14
7	6.5	12.0	.6	1.3	.18	.09	0	-0.01	2.86	.08	-60.51
8	6.1	11.2	.7	1.3	.13	.05	0	0	2.50	.02	85.30
9	5.7	10.4	.6	1.2	.11	.04	-0.01	0	2.22	.16	-25.42
10	5.3	9.6	.6	1.1	.09	.04	-0.01	.01	2.00	.19	-28.29
11	5.4	8.9	.7	1.0	.09	.02	0	0	1.82	.11	5.16
12	5.1	8.3	.7	.9	.09	.01	0	0	1.67	.14	69.06
13	5.2	7.8	.7	.8	.09	.01	0	0	1.54	.07	9.74
14	5.0	7.3	.8	.7	.09	.01	0	.01	1.43	.19	-59.15
15	5.0	6.9	.8	.7	.09	.01	0	.01	1.33	.21	-70.63
16	5.0	6.5	.9	.7	.09	.01	0	0	1.25	.16	64.28
17	4.9	6.2	.9	.6	.10	0	0	0	1.18	.14	1.32
18	4.9	5.9	1.0	.7	.09	.01	0	0	1.11	.04	-40.92
19	4.6	5.6	1.0	.8	.09	.01	0	0	1.05	.06	82.78
20	4.5	5.4	1.0	.9	.09	0	0	0	1.00	.10	-23.34
21	4.2	5.1	1.0	1.1	.09	0	0	0	.95	.10	-57.76
22	4.0	4.7	.9	1.2	.10	0	0	0	.91	.09	-53.01
23	3.7	4.4	.9	1.3	.10	0	0	0	.87	.09	-78.59
24	3.5	4.0	.9	1.4	.11	0	0	0	.83	.05	63.78
25	3.2	3.7	.8	1.4	.12	0	0	0	.80	.02	55.43
26	2.7	3.4	.8	1.4	.12	0	0	0	.77	.04	13.23
27	2.7	3.1	.7	1.3	.11	0	0	0	.74	.10	36.35
28	2.5	2.8	.6	1.2	.12	0	0	0	.71	.21	31.25
29	2.3	2.5	.5	1.1	.13	0	0	0	.69	.05	1.14
30	2.3	2.3	.4	1.0	.12	0	0	0	.67	.12	65.22
31	2.3	2.1	.3	.8	.12	0	0	0	.65	.14	49.97
32	2.3	2.0	.2	.7	.13	0	0	0	.63	.12	46.03
33	2.3	1.9	.1	.5	.14	0	0	0	.61	.04	-5.70
34	2.6	1.8	.1	.4	.13	0	0	0	.59	.13	-1.64
35	2.8	1.7	.1	.3	.14	0	0	0	.57	.17	-5.50
36	2.8	1.7	.1	.3	.14	0	0	0	.56	.22	-48.67
37	2.9	1.8	0	.3	.15	0	0	0	.54	.21	-43.38
38	3.1	1.3	0	.4	.14	0	0	0	.53	.10	-10.19
39	3.1	1.8	0	.5	.12	0	0	0	.51	.02	52.43
40	3.3	1.4	0	.6	.12	0	0	0	.50	.08	11.81
41	3.2	1.9	0	.7	.11	0	0	0	.49	.14	5.84
42	3.3	1.8	0	.8	.10	0	0	0	.48	.17	30.45
43	3.2	1.9	0	.9	.12	0	0	0	.47	.20	72.39
44	3.1	1.7	0	.9	.14	0	0	0	.45	.07	71.91
45	3.1	1.5	-0.1	1.0	.15	0	0	0	.44	.13	-17.66
46	2.9	1.3	-0.1	1.0	.14	0	0	0	.43	.15	4.49
47	2.7	1.1	-0.1	1.1	.14	0	0	0	.43	.03	3.20
48	2.8	.8	-0.2	1.1	.14	0	0	0	.42	.05	-41.43
49	2.5	.5	-0.2	1.1	.13	0	0	0	.41	.14	-41.52
50	2.6	.2	-0.3	1.0	.07	0	0	0	.40	.19	0

028 OIII
 RBFLS 10 3.0M-II 25MAY-65 1256-1306

LAGS=50 N= 2320 DT= 0.2SEC
 MEAN U=-17.7 MEAN W= 1.5

CORRELATION COEFFICIENT .14

K	ACOV U	ACOV W	COV IN	COVOUT	SU	U	SP	W	CO	QUA	PER	K	PHI
0	9.3	50.3	3.0	0	1.17	10.41	.33			0	0	.09	0
1	8.5	49.3	2.9	1.5	2.03	15.92	.78			1.11	20.00	.24	54.81
2	7.5	47.0	2.6	2.9	1.34	7.78	.21			1.12	10.00	.35	79.57
3	6.5	43.6	2.1	4.1	.73	4.01	-0.28			.59	6.67	.38	64.76
4	5.5	39.5	1.6	4.9	.83	4.22	.46			.99	5.00	.58	65.05
5	4.4	34.9	1.0	5.3	1.19	4.30	.87			1.58	4.00	.80	60.98
6	3.3	30.2	.5	5.2	.82	2.30	.46			1.00	3.33	.80	65.33
7	2.3	25.8	0	4.9	.26	.64	.09			.22	2.86	.58	68.34
8	1.5	21.9	-0.4	4.2	.09	.20	.03			.02	2.50	.26	41.55
9	.9	18.8	-0.6	3.2	.07	.10	.02			.01	2.22	.27	28.80
10	.6	16.5	-0.6	2.2	.06	.08	.01			.01	2.00	.16	51.02
11	.5	15.0	-0.4	1.3	.05	.04	-0.01			0	1.82	.12	26.39
12	.7	14.4	-0.1	.4	.04	.03	-0.01			0	1.67	.14	10.50
13	.9	14.4	.4	-0.2	.04	.03	0			0	1.54	.13	57.97
14	1.4	15.0	.9	-0.6	.04	.02	.01			0	1.43	.33	21.65
15	1.8	15.8	1.4	-0.6	.04	.02	.01			0	1.33	.27	14.69
16	2.2	16.7	1.8	-0.4	.04	.02	0			0	1.25	.10	7.36
17	2.5	17.5	2.2	.1	.03	.01	0			0	1.18	.06	57.23
18	2.6	18.0	2.5	.7	.03	.01	0			0	1.11	.12	79.87
19	2.6	18.0	2.6	1.5	.03	.01	0			0	1.05	.09	63.09
20	2.3	17.6	2.6	2.3	.03	.01	0			0	1.00	.03	32.25
21	2.1	16.7	2.4	3.0	.02	.01	0			0	.95	.04	10.11
22	1.6	15.3	2.1	3.5	.02	.01	0			0	.91	.16	80.48
23	1.0	13.5	1.6	3.8	.02	.01	0			0	.87	.18	68.88
24	.4	11.5	.9	3.9	.02	.01	0			0	.83	.21	36.07
25	-0.2	9.4	.3	3.8	.02	.01	0			0	.80	.26	34.62
26	-0.7	7.3	-0.4	3.4	.02	0	0			0	.77	.13	4.73
27	-1.1	5.4	-1.0	2.8	.02	.01	0			0	.74	.19	58.59
28	-1.3	3.8	-1.6	2.1	.02	.01	0			0	.71	.18	58.98
29	-1.4	2.5	-2.1	1.3	.01	0	0			0	.69	.09	59.00
30	-1.4	1.6	-2.4	.5	.01	0	0			0	.67	.03	29.51
31	-1.2	1.0	-2.7	-0.2	.01	0	0			0	.65	.07	29.74
32	-0.9	.8	-2.8	-0.8	.01	0	0			0	.63	.23	34.79
33	-0.6	.9	-2.8	-1.2	.01	0	0			0	.61	.29	24.41
34	-0.2	1.2	-2.7	-1.5	.01	0	0			0	.59	.18	3.85
35	.2	1.7	-2.6	-1.6	.01	0	0			0	.57	.19	34.92
36	.5	2.4	-2.4	-1.6	.01	0	0			0	.56	.23	35.01
37	.8	3.0	-2.2	-1.4	.01	0	0			0	.54	.19	36.90
38	1.0	3.6	-2.0	-1.1	.01	0	0			0	.53	.14	32.46
39	1.1	4.1	-1.9	-0.8	.01	0	0			0	.51	.19	3.89
40	1.1	4.4	-1.7	-0.4	.01	0	0			0	.50	.25	21.76
41	1.1	4.5	-1.7	0	.01	0	0			0	.49	.20	50.70
42	1.0	4.3	-1.6	.4	.01	0	0			0	.48	.13	58.43
43	.9	3.9	-1.6	.6	.01	0	0			0	.47	.21	12.25
44	.8	3.3	-1.7	.9	.01	0	0			0	.45	.24	5.88
45	.7	2.5	-1.8	1.0	.01	0	0			0	.44	.24	5.37
46	.6	1.6	-1.9	1.0	.01	0	0			0	.43	.26	.58
47	.5	.6	-2.0	1.0	0	0	0			0	.43	.14	14.40
48	.5	-0.3	-2.1	.9	.01	0	0			0	.42	.13	3.47
49	.5	-1.0	-2.2	.7	.01	0	0			0	.41	.28	4.80
50	.5	-1.7	-2.2	.6	0	0	0			0	.40	.34	0

029

OIII

TM No. 377

.BFIS 10 1.0M- 1 0. 25MAY-65 1340-1350

.AGS= 50 N= 1764 DT= 0.2SEC

MEAN U=-18.6 MEAN W= 3.7

	ACOV U	ACOV W	COV	IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	18.8	68.4	8.9	0	.98	3.69	.17	0	0	0	.09	0
1	15.9	65.6	8.4	5.0	1.72	7.80	.44	-0.25	20.00	.14	-29.39	
2	13.4	58.4	7.1	9.4	1.20	9.17	.42	.41	10.00	.18	44.41	
3	9.9	48.0	5.2	12.7	.88	10.01	.44	.84	6.67	.32	62.43	
4	6.0	35.6	2.9	14.6	2.24	11.56	1.65	2.98	5.00	.67	61.01	
5	2.1	22.4	.5	14.8	4.15	12.52	2.95	5.45	4.00	.86	61.59	
6	-1.6	9.7	-1.7	13.3	3.37	8.06	2.01	4.07	3.33	.87	63.76	
7	-4.3	-1.4	-3.6	10.5	1.33	2.80	.43	1.38	2.86	.75	72.61	
8	-6.1	-10.2	-4.9	6.9	.44	.89	.03	.32	2.50	.51	84.57	
9	-6.8	-16.5	-5.6	2.7	.28	.47	.06	.14	2.22	.43	66.10	
10	-6.6	-20.2	-5.8	-1.4	.24	.44	.11	.11	2.00	.44	45.54	
11	-5.5	-21.1	-5.4	-5.1	.15	.32	.09	.04	1.82	.45	22.91	
12	-3.8	-19.6	-4.5	-8.1	.10	.16	.03	-0.01	1.67	.26	-20.43	
13	-1.4	-16.2	-3.1	-10.0	.08	.08	.01	-0.02	1.54	.23	-53.86	
14	1.1	-11.4	-1.4	-10.8	.07	.06	0	-0.01	1.43	.10	53.92	
15	3.4	-6.0	.5	-10.5	.06	.05	-0.01	0	1.33	.23	18.75	
16	5.4	-0.5	2.3	-9.2	.05	.03	0	-0.01	1.25	.15	67.47	
17	6.9	4.3	3.9	-7.0	.05	.02	0	0	1.18	.16	-52.20	
18	7.7	7.4	5.0	-4.2	.05	.02	0	0	1.11	.11	-54.72	
19	7.7	9.4	5.4	-1.2	.05	.02	0	0	1.05	.09	-63.27	
20	6.9	10.3	5.2	1.6	.05	.02	0	0	1.00	.14	-59.87	
21	5.6	9.1	4.5	4.1	.07	.02	.01	0	.95	.22	-29.64	
22	3.8	6.8	3.3	5.9	.06	.02	.01	0	.91	.23	20.96	
23	1.7	3.6	1.8	6.9	.05	.02	0	0	.87	.22	44.17	
24	-0.4	.3	.2	6.9	.04	.02	0	0	.83	.17	39.27	
25	-2.1	-2.9	-1.3	6.1	.05	.01	0	0	.80	.12	35.17	
26	-3.8	-5.5	-2.6	4.7	.04	.01	0	0	.77	.15	-13.26	
27	-4.5	-7.4	-3.6	2.4	.04	.01	0	0	.74	.16	-4.84	
28	-4.7	-8.6	-4.1	.8	.05	.01	0	0	.71	.09	37.36	
29	-4.7	-8.8	-4.2	-1.3	.04	.01	0	0	.69	.11	74.30	
30	-4.2	-8.2	-4.0	-3.2	.03	.01	0	0	.67	.22	79.33	
31	-3.3	-6.4	-3.5	-4.8	.04	.01	0	0	.65	.20	66.34	
32	-2.1	-4.4	-2.8	-6.0	.04	.01	0	0	.63	.18	33.26	
33	-1.0	-2.5	-1.8	-6.8	.04	.01	0	0	.61	.19	11.63	
34	.0	.2	-0.8	-7.1	.03	.01	0	0	.59	.18	-5.14	
35	1.1	2.4	.3	-7.0	.03	0	0	0	.57	.22	-11.18	
36	2.0	5.4	1.2	-6.5	.05	0	0	0	.56	.26	-6.92	
37	2.7	7.5	2.0	-5.6	.05	0	0	0	.54	.21	20.35	
38	3.2	9.1	2.4	-4.4	.04	0	0	0	.53	.08	37.46	
39	3.3	10.0	2.4	-3.2	.04	0	0	0	.51	.07	37.07	
40	3.2	10.1	2.1	-1.8	.04	0	0	0	.50	.12	21.18	
41	2.7	9.4	1.6	-0.5	.04	0	0	0	.49	.08	5.76	
42	2.2	7.4	.9	.7	.04	0	0	0	.48	.11	-13.15	
43	1.4	5.8	.2	1.6	.05	0	0	0	.47	.20	10.98	
44	.6	3.3	-0.6	2.3	.05	0	0	0	.45	.21	32.98	
45	-0.2	.7	-1.3	2.6	.04	0	0	0	.44	.15	53.75	
46	-0.8	-1.9	-1.8	2.7	.04	0	0	0	.43	.03	-21.04	
47	-1.4	-4.2	-2.2	2.4	.04	0	0	0	.43	.09	-64.09	
48	-1.9	-6.0	-2.5	1.8	.04	0	0	0	.42	.13	-16.55	
49	-2.2	-7.0	-2.7	1.1	.03	0	0	0	.41	.02	68.67	
50	-2.5	-7.3	-2.5	.2	.01	0	0	0	.40	.12	0	

030 LI-W
 RRFLS 11 0.5M-02 I C. 29MAR-65 1630-1634
 LAGS= 50 N= 974 DT= 0.2SEC
 MEAN W_1 = -1.1 MEAN W_2 = 0.3
 CORRELATION COEFFICIENT .92

K	ACOV W_1	ACOV W_2	COV IN	COVOUT	SP W_1	SP W_2	CO	QUA	PER	R	PHI
0	1289.2	624.1	829.2	0.	2.67	4.93	-.45	.00		.12	.00
1	1195.4	594.7	784.5	3.6	10.47	11.57	2.47	.31	20.00	.22	7.26
2	973.3	497.6	655.1	7.9	9.88	10.95	3.56	.46	10.00	.34	7.48
3	654.8	367.2	462.1	9.0	52.34	41.81	42.22	.25	6.66	.90	.34
4	283.6	206.3	22.7	50.0277	20162.40	208.20	-2.34	5.00	.98	-.64	
5	-92.7	33.6	-20.6	8.4437	40220.90	307.40	.82	4.00	.98	.15	
6	-437.1	-135.0	-257.5	4.9281	00117.30	178.40	5.33	3.33	.98	1.90	
7	-713.4	-283.3	-459.2	1.8	99.91	28.73	51.90	3.20	2.85	.97	3.52
8	-894.9	-396.3	-604.4	-2.8	44.52	9.35	18.77	.68	2.50	.92	2.09
9	-979.5	-466.9	-683.3	-7.0	25.76	3.69	8.48	.65	2.22	.87	4.41
10	-960.7	-490.5	-694.5	-9.5	14.79	2.07	4.43	.33	2.00	.80	4.32
11	-855.1	-467.0	-640.5	-9.8	6.67	.87	1.45	.03	1.81	.60	1.24
12	-681.5	-401.3	-532.4	-8.7	3.91	.62	.57	-.16	1.66	.38	-15.59
13	-454.4	-303.5	-382.5	-6.7	2.85	.45	.25	-.07	1.53	.23	-16.42
14	-205.1	-182.9	-207.6	-3.8	2.18	.49	.28	-.10	1.42	.28	-19.76
15	47.5	-52.5	-23.7	.0	1.62	.46	.20	-.03	1.33	.24	-9.96
16	283.1	75.0	151.5	4.0	1.28	.42	.21	.02	1.25	.28	6.36
17	477.3	190.7	303.0	7.8	1.12	.31	.20	.03	1.17	.35	10.19
18	619.9	283.0	418.9	10.7	1.36	.29	.29	.04	1.11	.46	9.65
19	701.1	345.4	492.8	13.5	1.38	.28	.34	.05	1.05	.54	9.65
20	718.1	375.3	519.1	14.0	1.04	.28	.27	.00	1.00	.50	1.29
21	669.5	370.3	498.0	13.0	.64	.26	.10	-.02	.95	.27	-14.79
22	563.3	332.7	433.7	11.3	.52	.30	.08	-.04	.90	.24	-25.98
23	411.3	270.9	335.5	7.4	.49	.27	.08	-.05	.86	.27	-30.06
24	230.7	186.8	213.5	1.9	.44	.23	.05	-.05	.83	.23	-41.19
25	47.4	93.3	80.7	-3.2	.45	.23	.03	-.04	.80	.18	-54.01
26	-138.6	-2.5	-50.3	-9.3	.44	.22	.01	-.00	.76	.03	-9.19
27	-294.5	-93.6	-170.1	-13.8	.34	.17	-.04	-.04	.74	.26	-45.60
28	-418.7	-171.0	-268.0	-17.4	.33	.15	-.07	.04	.71	.38	-33.45
29	-497.6	-230.3	-338.0	-19.2	.32	.17	-.04	.02	.68	.21	-22.97
30	-529.7	-266.6	-374.8	-18.0	.30	.18	.01	-.00	.66	.04	-27.21
31	-515.0	-278.5	-379.9	-15.0	.33	.15	.01	.00	.64	.08	6.77
32	-463.0	-267.7	-354.2	-10.1	.29	.15	.01	.00	.62	.05	27.47
33	-379.0	-236.1	-301.8	-3.7	.21	.20	.01	.00	.60	.09	12.36
34	-271.5	-186.4	-228.3	2.8	.25	.28	.04	-.03	.58	.21	-43.36
35	-149.3	-125.2	-140.5	9.0	.35	.31	.04	-.09	.57	.31	-63.86
36	-23.6	-56.4	-46.2	15.0	.40	.20	.05	-.06	.55	.29	-49.31
37	96.7	12.5	46.1	19.6	.35	.11	.03	-.02	.54	.21	-41.99
38	205.3	77.2	131.1	23.0	.33	.18	.00	-.05	.52	.23	-83.74
39	297.5	133.3	202.2	24.6	.34	.25	-.00	-.09	.51	.32	87.52
40	351.8	175.3	254.3	23.3	.30	.20	-.04	-.08	.50	.38	62.95
41	382.8	201.4	284.3	19.1	.27	.15	-.06	-.04	.48	.39	33.16
42	382.7	209.6	289.9	14.1	.26	.15	-.04	-.03	.47	.27	37.42
43	354.1	201.2	272.9	6.1	.23	.17	-.02	-.03	.46	.20	52.94
44	300.0	177.0	235.9	-2.7	.23	.15	-.04	-.01	.45	.23	26.35
45	225.7	139.4	181.1	-11.3	.22	.09	-.04	-.00	.44	.31	11.95
46	138.1	92.5	115.2	-17.7	.18	.11	-.00	-.01	.43	.09	67.51
47	47.9	39.4	42.5	-21.5	.18	.17	.00	-.00	.42	.04	-72.90
48	-49.7	-14.0	-32.3	-23.4	.23	.18	-.04	.02	.41	.24	-23.51
49	-143.4	-64.7	-102.7	-24.8	.24	.15	-.07	.01	.40	.39	-13.97
50	-229.4	-109.4	-164.5	-22.8	.11	.07	-.03	.00	.40	.39	-.00

031

CI-W

TM No. 377

RBEIS 11 U.5M-21II C. 29MAR-65 1630-1634

LAGS= 50 N= 339 DT= 0.2SEC

MEAN W_E = -1.1 MEAN W_I = 0.2

K	ACOV W_E	ACOV W_I	COV IN	COV OUT	SP W_E	SP W_I	CO	QUA	PER	R	PHI
0	731.1	1615.9	1034.8	0	1.67	2.83	-0.34	0	0	.15	0
1	687.4	1496.4	974.2	28.7	6.41	12.48	4.13	3.60	20.00	.61	41.12
2	568.0	1199.1	797.3	53.2	3.77	6.74	1.22	4.82	10.00	.99	75.79
3	388.6	768.9	531.6	71.8	26.25	41.95	31.13	3.87	6.67	.95	7.09
4	173.6	272.9	213.0	83.7	146.29	272.10	196.30	21.28	5.00	.99	6.19
5	-51.8	-225.9	-116.6	87.7	249.42	503.64	348.13	41.41	4.00	.99	6.78
6	-263.2	-663.5	-417.6	85.0	197.51	446.02	291.28	22.44	3.33	.98	4.40
7	-436.9	-999.8	-658.9	75.9	78.09	207.75	124.55	-2.44	2.86	.98	-1.12
8	-557.1	-1211.0	-816.7	61.4	10.08	42.18	19.22	-2.25	2.50	.94	-6.69
9	-613.2	-1279.0	-881.0	40.6	.87	12.78	3.53	1.11	2.22	.11	17.40
10	-602.3	-1211.8	-848.5	16.2	2.41	16.20	5.97	.82	2.00	.97	7.83
11	-527.0	-1016.2	-728.1	-10.0	2.25	17.46	5.66	.35	1.82	.90	3.50
12	-398.4	-727.9	-537.4	-34.3	1.96	11.57	3.76	.38	1.67	.79	5.72
13	-233.5	-367.9	-298.2	-55.4	.96	3.43	.85	.68	1.54	.60	38.85
14	-53.6	12.3	-40.9	-69.8	.65	2.85	.20	.27	1.43	.25	53.67
15	120.0	370.0	206.3	-76.7	.46	2.40	-0.06	.19	1.33	.19	-72.42
16	269.1	663.3	414.8	-74.7	.42	1.64	.21	.23	1.25	.38	47.64
17	378.7	860.3	561.5	-64.1	.16	.68	-0.02	.05	1.18	.15	-67.03
18	438.2	944.4	632.9	-46.1	.08	.54	-0.04	.03	1.11	.25	-35.37
19	445.6	911.5	627.4	-21.3	0	.75	0	-0.01	1.05	0	-72.20
20	405.3	775.6	553.9	5.9	.06	.87	-0.03	-0.03	1.00	.16	44.63
21	327.3	566.2	428.6	34.4	.12	.57	-0.12	-0.01	.95	.46	2.45
22	225.4	322.4	273.6	59.2	.16	.50	-0.07	-0.03	.91	.27	22.73
23	113.3	80.7	111.7	78.5	.16	.30	-0.02	-0.01	.87	.11	37.84
24	5.5	-126.1	-37.0	89.0	.13	.29	.03	.03	.83	.23	46.16
25	-88.0	-282.9	-158.8	89.8	.05	.38	-0.01	.04	.80	.32	-73.67
26	-159.4	-384.6	-246.1	80.3	.02	.40	-0.04	.04	.77	.61	-47.13
27	-205.5	-435.6	-296.0	60.8	.02	.47	-0.04	.05	.74	.78	-53.12
28	-225.4	-439.4	-310.4	35.7	.03	.60	0	.06	.71	.42	-85.90
29	-222.3	-407.7	-294.2	7.6	.03	.47	0	.04	.69	.35	-83.74
30	-201.7	-350.3	-256.4	-19.5	.02	.35	.01	0	.67	.08	11.28
31	-169.9	-274.4	-207.5	-42.8	.02	.38	-0.01	.01	.65	.12	-35.48
32	-133.3	-194.8	-155.6	-59.3	.01	.30	-0.04	.02	.63	.80	-31.83
33	-97.5	-125.1	-109.5	-69.3	0	.17	-0.04	.01	.61	.11	-10.42
34	-66.4	-69.7	-72.4	-72.0	.02	.20	-0.03	-0.01	.59	.47	20.07
35	-41.5	-33.9	-45.7	-68.4	.03	.24	-0.02	0	.57	.29	2.44
36	-22.1	-20.4	-28.0	-58.7	.04	.27	0	0	.56	.03	48.33
37	-5.9	-22.3	-16.5	-42.8	.04	.26	.02	0	.54	.17	5.90
38	10.3	-23.8	-5.3	-21.9	.02	.24	.01	.01	.53	.24	51.78
39	27.9	-7.7	12.4	.2	.02	.12	-0.01	.02	.51	.44	-50.35
40	49.6	32.7	41.5	19.7	.03	.03	-0.03	0	.50	.95	7.25
41	76.6	103.0	85.6	33.2	.05	.06	-0.06	-0.02	.49	.07	19.83
42	107.7	194.6	141.2	40.0	.07	.13	-0.09	-0.01	.48	.02	5.00
43	140.2	292.2	200.2	40.5	.05	.25	-0.09	.04	.47	.88	-22.02
44	168.2	382.6	252.0	37.0	.04	.39	-0.05	.04	.45	.54	-39.30
45	186.3	439.7	285.7	31.6	.05	.50	-0.04	-0.01	.44	.23	18.15
46	189.6	444.9	291.4	25.3	.05	.51	-0.01	-0.06	.43	.37	78.53
47	173.2	387.0	263.6	17.4	.03	.35	-0.01	-0.05	.43	.45	82.64
48	136.4	273.0	201.7	8.0	.01	.19	-0.02	-0.02	.42	.54	40.37
49	80.8	117.6	110.9	-1.8	.02	.09	-0.03	-0.01	.41	.71	18.21
50	12.6	-54.8	3.5	-12.9	.01	.04	-0.01	0	.40	.48	0

032

LI-w

BRETS 11 0.54-III S. 29MAR-65 1713-1716

LAGS= 50 N= 646 DT= 0.25EC

MEAN W= -1.7

K	ACRV	SP	PERIOD	FREQ(MCPS)
0	1062.196	4.025	0	0
1	988.330	9.955	20.0	50.0
2	810.338	16.910	10.0	100.0
3	550.635	65.039	6.7	150.0
4	251.152	224.958	5.0	200.0
5	-53.395	332.718	4.0	250.0
6	-331.722	222.293	3.3	300.0
7	-556.285	92.603	2.9	350.0
8	-709.311	43.947	2.5	400.0
9	-740.299	14.129	2.2	450.0
10	-767.962	7.395	2.0	500.0
11	-680.827	6.042	1.8	550.0
12	-534.903	3.098	1.7	600.0
13	-351.621	2.306	1.5	650.0
14	-152.759	2.597	1.4	700.0
15	37.301	2.454	1.3	750.0
16	203.465	1.543	1.3	800.0
17	338.706	.808	1.2	850.0
18	435.699	.652	1.1	900.0
19	475.770	.639	1.1	950.0
20	475.612	.466	1.0	1000.0
21	435.154	.470	1.0	1050.0
22	362.607	.452	.9	1100.0
23	267.259	.332	.9	1150.0
24	162.708	.254	.8	1200.0
25	55.795	.158	.8	1250.0
26	-46.388	.198	.8	1300.0
27	-142.013	.270	.7	1350.0
28	-224.430	.277	.7	1400.0
29	-289.265	.198	.7	1450.0
30	-329.419	.115	.7	1500.0
31	-340.597	.105	.6	1550.0
32	-319.744	.143	.6	1600.0
33	-269.372	.171	.6	1650.0
34	-192.241	.193	.6	1700.0
35	-95.913	.192	.6	1750.0
36	9.202	.147	.6	1800.0
37	113.104	.156	.5	1850.0
38	200.828	.179	.5	1900.0
39	262.007	.190	.5	1950.0
40	291.904	.245	.5	2000.0
41	285.477	.254	.5	2050.0
42	248.478	.232	.5	2100.0
43	180.437	.202	.5	2150.0
44	92.195	.164	.5	2200.0
45	-4.656	.218	.4	2250.0
46	-94.860	.267	.4	2300.0
47	-168.541	.243	.4	2350.0
48	-218.705	.190	.4	2400.0
49	-237.218	.197	.4	2450.0
50	-222.811	.118	.4	2500.0

033

CI-W

TM No. 377

REFS 11 0.54-IV S. 29MAR-65 1715-1720

LAGS= 50 N= 1130 DT= 0.2SEC

MEAN μ = -2.4

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	1034.285	3.276	0	0
1	965.504	7.748	20.0	50.0
2	786.011	10.446	10.0	100.0
3	525.129	56.973	6.7	150.0
4	222.582	221.882	5.0	200.0
5	-81.035	325.243	4.0	250.0
6	-353.182	216.744	3.3	300.0
7	-560.167	93.872	2.9	350.0
8	-696.531	41.597	2.5	400.0
9	-754.225	18.988	2.2	450.0
10	-736.632	14.362	2.0	500.0
11	-653.186	8.419	1.8	550.0
12	-518.428	4.248	1.7	600.0
13	-344.245	2.409	1.5	650.0
14	-160.103	1.580	1.4	700.0
15	27.811	.849	1.3	750.0
16	199.440	.687	1.3	800.0
17	337.556	.549	1.2	850.0
18	435.477	.402	1.1	900.0
19	486.437	.344	1.1	950.0
20	490.274	.274	1.0	1000.0
21	451.153	.216	1.0	1050.0
22	377.532	.188	.9	1100.0
23	270.980	.137	.9	1150.0
24	169.472	.144	.8	1200.0
25	56.569	.189	.8	1250.0
26	-49.301	.183	.8	1300.0
27	-141.206	.156	.7	1350.0
28	-215.455	.153	.7	1400.0
29	-269.619	.139	.7	1450.0
30	-302.474	.123	.7	1500.0
31	-313.333	.114	.6	1550.0
32	-301.744	.111	.6	1600.0
33	-269.608	.109	.6	1650.0
34	-213.752	.111	.6	1700.0
35	-148.957	.101	.6	1750.0
36	-56.110	.091	.6	1800.0
37	32.719	.093	.5	1850.0
38	117.620	.090	.5	1900.0
39	191.162	.078	.5	1950.0
40	246.489	.077	.5	2000.0
41	278.116	.078	.5	2050.0
42	282.199	.072	.5	2100.0
43	257.589	.082	.5	2150.0
44	205.635	.097	.5	2200.0
45	131.909	.090	.4	2250.0
46	45.162	.085	.4	2300.0
47	-43.194	.085	.4	2350.0
48	-122.329	.079	.4	2400.0
49	-182.376	.082	.4	2450.0
50	-217.843	.044	.4	2500.0

034 LI-W

RRFS 11 2.0M-1 S. 29MAR-65 1734-1739

LARG= 50 N= 1458 DT= 0.2SEC

MEAN= -0.2

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	486.970	3.338	0	0
1	461.633	4.527	20.0	50.0
2	341.760	13.337	10.0	100.0
3	287.265	43.154	6.7	150.0
4	160.718	126.346	5.0	200.0
5	24.420	152.407	4.0	250.0
6	-101.804	83.991	3.3	300.0
7	-211.656	33.132	2.9	350.0
8	-243.475	12.848	2.5	400.0
9	-343.033	2.910	2.2	450.0
10	-356.773	1.609	2.0	500.0
11	-336.778	1.087	1.8	550.0
12	-288.109	.885	1.7	600.0
13	-218.052	.443	1.5	650.0
14	-135.089	.340	1.4	700.0
15	-49.152	.259	1.3	750.0
16	34.450	.217	1.3	800.0
17	196.258	.125	1.2	850.0
18	162.419	.104	1.1	900.0
19	200.029	.076	1.1	950.0
20	218.288	.071	1.0	1000.0
21	218.361	.063	1.0	1050.0
22	202.504	.066	.9	1100.0
23	173.481	.044	.9	1150.0
24	134.461	.040	.8	1200.0
25	88.642	.043	.8	1250.0
26	30.200	.051	.8	1300.0
27	-10.906	.045	.7	1350.0
28	-58.576	.037	.7	1400.0
29	-100.773	.024	.7	1450.0
30	-134.664	.022	.7	1500.0
31	-157.962	.021	.6	1550.0
32	-169.233	.024	.6	1600.0
33	-167.832	.023	.6	1650.0
34	-153.813	.023	.6	1700.0
35	-128.187	.019	.6	1750.0
36	-92.733	.016	.6	1800.0
37	-50.229	.012	.5	1850.0
38	-3.898	.012	.5	1900.0
39	42.562	.010	.5	1950.0
40	85.338	.010	.5	2000.0
41	127.773	.011	.5	2050.0
42	145.907	.011	.5	2100.0
43	158.678	.009	.5	2150.0
44	158.465	.009	.5	2200.0
45	145.711	.010	.4	2250.0
46	122.150	.012	.4	2300.0
47	98.273	.012	.4	2350.0
48	52.982	.011	.4	2400.0
49	13.457	.009	.4	2450.0
50	-24.902	.005	.4	2500.0

035

LI-W

BRFIS 11 3.0M-1 S. 29MAR-65 1748-1753

LAGS= 50 N= 1486 DT= 0.2SEC

MEAN W= -0.9

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	305.883	1.644	0	0
1	291.943	3.759	20.0	50.0
2	254.129	8.239	10.0	100.0
3	197.017	43.663	6.7	150.0
4	126.166	100.103	5.0	200.0
5	44.028	94.471	4.0	250.0
6	-30.535	39.179	3.3	300.0
7	-103.022	0.542	2.9	350.0
8	-163.971	2.964	2.5	400.0
9	-209.914	1.182	2.2	450.0
10	-235.011	.710	2.0	500.0
11	-241.346	.467	1.8	550.0
12	-228.668	.331	1.7	600.0
13	-199.146	.211	1.5	650.0
14	-156.204	.190	1.4	700.0
15	-104.119	.161	1.3	750.0
16	-47.494	.139	1.3	800.0
17	8.918	.106	1.2	850.0
18	60.786	.085	1.1	900.0
19	104.383	.067	1.1	950.0
20	134.962	.062	1.0	1000.0
21	157.005	.047	1.0	1050.0
22	163.898	.044	.9	1100.0
23	158.191	.042	.9	1150.0
24	141.398	.040	.8	1200.0
25	115.662	.033	.8	1250.0
26	83.463	.033	.8	1300.0
27	47.709	.036	.7	1350.0
28	11.469	.035	.7	1400.0
29	-22.593	.026	.7	1450.0
30	-52.115	.022	.7	1500.0
31	-75.253	.021	.6	1550.0
32	-91.787	.019	.6	1600.0
33	-98.248	.015	.6	1650.0
34	-97.835	.012	.6	1700.0
35	-90.314	.012	.6	1750.0
36	-76.967	.014	.6	1800.0
37	-59.352	.014	.5	1850.0
38	-39.067	.013	.5	1900.0
39	-17.768	.012	.5	1950.0
40	2.436	.011	.5	2000.0
41	21.638	.011	.5	2050.0
42	37.355	.012	.5	2100.0
43	49.447	.013	.5	2150.0
44	57.580	.012	.5	2200.0
45	61.750	.010	.4	2250.0
46	62.018	.010	.4	2300.0
47	58.582	.010	.4	2350.0
48	52.088	.009	.4	2400.0
49	43.168	.009	.4	2450.0
50	32.634	.005	.4	2500.0

036

LI-w

BHFS 11 1.54- 1 S. 29MAR-65 1803-1808

LAGS= 50 N= 1400 DT= 0.2SEC

MEAN W= 2.5

K	ACOV	SD	PERIOD	FREQ (MCPS)
0	537.0	32.7		
1	516.7	72.3	20.0	50.0
2	460.1	63.8	10.0	100.0
3	376.2	62.5	6.6	150.0
4	276.2	91.9	5.0	200.0
5	171.3	94.5	4.0	250.0
6	72.4	61.9	3.3	300.0
7	-12.4	25.8	2.8	350.0
8	-77.2	11.4	2.5	400.0
9	-119.1	5.5	2.2	450.0
10	-137.8	2.9	2.0	500.0
11	-145.6	1.5	1.8	550.0
12	-116.3	.8	1.6	600.0
13	-84.4	.4	1.5	650.0
14	-45.1	.3	1.4	700.0
15	-3.3	.2	1.3	750.0
16	36.6	.2	1.2	800.0
17	71.0	.1	1.1	850.0
18	96.9	.1	1.1	900.0
19	112.6	.0	1.0	950.0
20	117.4	.0	1.0	1000.0
21	111.5	.0	.9	1050.0
22	96.7	.0	.9	1100.0
23	74.8	.0	.8	1150.0
24	48.5	.0	.8	1200.0
25	20.1	.0	.8	1250.0
26	-7.8	.0	.7	1300.0
27	-33.2	.0	.7	1350.0
28	-64.6	.0	.7	1400.0
29	-70.7	.0	.6	1450.0
30	-60.6	.0	.6	1500.0
31	-24.2	.0	.6	1550.0
32	-21.9	.0	.6	1600.0
33	-74.4	.0	.6	1650.0
34	-63.0	.0	.5	1700.0
35	-49.2	.0	.5	1750.0
36	-34.1	.0	.5	1800.0
37	-19.3	.0	.5	1850.0
38	-6.0	.0	.5	1900.0
39	4.6	.0	.5	1950.0
40	12.2	.0	.5	2000.0
41	16.6	.0	.4	2050.0
42	17.7	.0	.4	2100.0
43	16.1	.0	.4	2150.0
44	12.2	.0	.4	2200.0
45	6.5	.0	.4	2250.0
46	-2	.0	.4	2300.0
47	-7.1	.0	.4	2350.0
48	-14.1	.0	.4	2400.0
49	-20.6	.0	.4	2450.0
50	-26.2	.0	.4	2500.0

037

EI-w

BBFIS 11 2.54-01 S, 29MAR-65 1820-1825

LAGS= 50 N= 1297 DT= 0.2SEC

MEAN W= -0.6

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	335.364	2.798	0	0
1	314.639	2.584	20.0	50.0
2	275.619	2.933	10.0	100.0
3	204.499	34.282	6.7	150.0
4	125.596	29.285	5.0	200.0
5	35.669	105.607	4.0	250.0
6	-52.359	57.040	3.3	300.0
7	-130.207	17.554	2.9	350.0
8	-191.019	5.523	2.5	400.0
9	-229.967	.937	2.2	450.0
10	-244.883	.503	2.0	500.0
11	-235.163	.270	1.8	550.0
12	-206.493	.163	1.7	600.0
13	-161.379	.107	1.5	650.0
14	-103.446	.134	1.4	700.0
15	-41.866	.095	1.3	750.0
16	12.481	.030	1.3	800.0
17	72.426	.054	1.2	850.0
18	115.990	.043	1.1	900.0
19	146.460	.039	1.1	950.0
20	162.607	.034	1.0	1000.0
21	164.488	.023	1.0	1050.0
22	153.555	.020	.9	1100.0
23	131.984	.014	.9	1150.0
24	102.563	.013	.8	1200.0
25	62.442	.013	.8	1250.0
26	32.539	.015	.8	1300.0
27	-2.310	.013	.7	1350.0
28	-33.612	.014	.7	1400.0
29	-50.363	.012	.7	1450.0
30	-77.944	.013	.7	1500.0
31	-88.408	.013	.6	1550.0
32	-90.283	.012	.6	1600.0
33	-82.244	.009	.6	1650.0
34	-69.803	.009	.6	1700.0
35	-49.698	.011	.6	1750.0
36	-25.585	.009	.6	1800.0
37	.184	.007	.5	1850.0
38	25.155	.006	.5	1900.0
39	47.111	.007	.5	1950.0
40	64.047	.009	.5	2000.0
41	74.490	.007	.5	2050.0
42	77.596	.006	.5	2100.0
43	72.980	.007	.5	2150.0
44	61.259	.008	.5	2200.0
45	43.266	.006	.4	2250.0
46	22.683	.005	.4	2300.0
47	-0.017	.005	.4	2350.0
48	-21.838	.004	.4	2400.0
49	-40.581	.005	.4	2450.0
50	-54.208	.003	.4	2500.0

038

Q-I-w

BREIS 11 4.04- 1 S. 29MAR-65 1832-1837

LAGS= 50 N= 1438 DT= 0.2SEC

MEAN WE = -0.0

K	COV	SP	PERIOD	FREQ (MCPS)
0	222.004	1.618	0	0
1	211.351	4.455	20.0	50.0
2	186.646	11.821	10.0	100.0
3	148.635	39.106	6.7	150.0
4	100.858	69.619	5.0	200.0
5	47.596	59.858	4.0	250.0
6	-6.654	24.945	3.3	300.0
7	-57.268	5.826	2.9	350.0
8	-100.631	1.620	2.5	400.0
9	-133.934	.529	2.2	450.0
10	-154.998	.250	2.0	500.0
11	-162.793	.213	1.8	550.0
12	-158.128	.220	1.7	600.0
13	-141.871	.167	1.5	650.0
14	-116.343	.098	1.4	700.0
15	-84.582	.069	1.3	750.0
16	-49.542	.066	1.3	800.0
17	-14.193	.063	1.2	850.0
18	14.797	.049	1.1	900.0
19	46.904	.046	1.1	950.0
20	68.878	.058	1.0	1000.0
21	83.658	.057	1.0	1050.0
22	97.798	.050	.9	1100.0
23	90.759	.051	.9	1150.0
24	84.061	.056	.8	1200.0
25	72.092	.050	.8	1250.0
26	55.988	.050	.8	1300.0
27	37.811	.062	.7	1350.0
28	18.971	.061	.7	1400.0
29	1.484	.046	.7	1450.0
30	-14.339	.035	.7	1500.0
31	-26.909	.031	.6	1550.0
32	-35.890	.028	.6	1600.0
33	-41.104	.034	.6	1650.0
34	-42.743	.046	.6	1700.0
35	-41.145	.048	.6	1750.0
36	-36.983	.043	.6	1800.0
37	-31.893	.047	.5	1850.0
38	-23.798	.050	.5	1900.0
39	-16.235	.043	.5	1950.0
40	-9.058	.038	.5	2000.0
41	-2.760	.038	.5	2050.0
42	2.221	.034	.5	2100.0
43	5.857	.039	.5	2150.0
44	8.182	.050	.5	2200.0
45	9.332	.049	.4	2250.0
46	9.661	.037	.4	2300.0
47	9.443	.035	.4	2350.0
48	9.108	.045	.4	2400.0
49	9.153	.038	.4	2450.0
50	9.680	.014	.4	2500.0

039

LI-W

BBFIS 11 5.0M- 1 S. 29MAR-65 1845-1849

LAGS= 50 N= 1400 DT= 0.25FC

MEAN W= 0.5

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	101.734	2.698	0	0
1	98.120	5.845	20.0	50.0
2	88.656	10.664	10.0	100.0
3	74.343	22.213	6.7	150.0
4	56.274	29.181	5.0	200.0
5	36.844	20.665	4.0	250.0
6	14.583	7.424	3.3	300.0
7	-6.028	1.546	2.9	350.0
8	-24.583	.398	2.5	400.0
9	-39.965	.197	2.2	450.0
10	-51.334	.161	2.0	500.0
11	-58.215	.116	1.8	550.0
12	-60.484	.083	1.7	600.0
13	-58.386	.055	1.5	650.0
14	-52.505	.044	1.4	700.0
15	-43.555	.042	1.3	750.0
16	-32.486	.042	1.3	800.0
17	-20.361	.034	1.2	850.0
18	-9.160	.028	1.1	900.0
19	3.216	.023	1.1	950.0
20	12.966	.020	1.0	1000.0
21	26.671	.021	1.0	1050.0
22	26.044	.021	.9	1100.0
23	29.991	.017	.9	1150.0
24	29.508	.015	.8	1200.0
25	29.175	.015	.8	1250.0
26	25.087	.014	.8	1300.0
27	20.786	.011	.7	1350.0
28	15.761	.009	.7	1400.0
29	10.446	.009	.7	1450.0
30	5.323	.010	.7	1500.0
31	.739	.011	.6	1550.0
32	-3.118	.010	.6	1600.0
33	-6.056	.008	.6	1650.0
34	-7.998	.006	.6	1700.0
35	-9.933	.006	.6	1750.0
36	-8.913	.007	.6	1800.0
37	-8.126	.007	.5	1850.0
38	-5.749	.007	.5	1900.0
39	-2.978	.006	.5	1950.0
40	-2.998	.004	.5	2000.0
41	-0.978	.004	.5	2050.0
42	.427	.005	.5	2100.0
43	2.566	.004	.5	2150.0
44	3.819	.004	.5	2200.0
45	4.566	.004	.4	2250.0
46	4.829	.005	.4	2300.0
47	4.615	.005	.4	2350.0
48	3.946	.005	.4	2400.0
49	2.053	.004	.4	2450.0
50	1.756	.002	.4	2500.0

BBFIS- 11 2.0M- 8

50LAGS 1132DATA POINTS

DT= .20SEC

040

LI-W

RRCLS 11 3.5-1 S. 29MAR-65 1851-1855

LAGE= 50 N= 492 DT= 0.25FC

MEAN = -0.2

K	GMV	SD	PERIOD	FREQ(HZPS)
0	141.518	2.332	0	0
1	132.707	4.471	20.0	50.0
2	161.105	10.058	10.0	100.0
3	128.232	35.055	6.7	150.0
4	87.058	57.772	5.0	200.0
5	41.436	46.539	4.0	250.0
6	-4.664	23.424	3.3	300.0
7	-47.504	7.084	2.9	350.0
8	-83.711	1.113	2.5	400.0
9	-11.935	.669	2.2	450.0
10	-127.533	.255	2.0	500.0
11	-133.047	.189	1.8	550.0
12	-128.142	.167	1.7	600.0
13	-113.891	.112	1.5	650.0
14	-73.174	.092	1.4	700.0
15	-67.671	.099	1.3	750.0
16	-4.215	.077	1.3	800.0
17	-12.930	.063	1.2	850.0
18	12.024	.043	1.1	900.0
19	32.863	.041	1.1	950.0
20	44.661	.039	1.0	1000.0
21	59.044	.047	1.0	1050.0
22	68.196	.049	.9	1100.0
23	64.623	.041	.9	1150.0
24	61.239	.031	.8	1200.0
25	55.096	.029	.8	1250.0
26	47.433	.036	.8	1300.0
27	30.004	.041	.7	1350.0
28	3.538	.033	.7	1400.0
29	22.579	.031	.7	1450.0
30	15.587	.031	.7	1500.0
31	4.072	.027	.6	1550.0
32	3.081	.026	.6	1600.0
33	-2.700	.031	.6	1650.0
34	-8.500	.031	.6	1700.0
35	-14.752	.028	.6	1750.0
36	-21.050	.027	.6	1800.0
37	-27.370	.029	.5	1850.0
38	-33.421	.030	.5	1900.0
39	-38.541	.028	.5	1950.0
40	-42.132	.026	.5	2000.0
41	-43.644	.023	.5	2050.0
42	-42.656	.019	.5	2100.0
43	-32.986	.018	.5	2150.0
44	-32.304	.020	.5	2200.0
45	-22.720	.024	.4	2250.0
46	-11.119	.027	.4	2300.0
47	1.905	.025	.4	2350.0
48	15.616	.022	.4	2400.0
49	28.780	.021	.4	2450.0
50	40.375	.011	.4	2500.0

041

CI-W

BBEIS 11 4.5M-1 S. 29MAR-65 1900-1905

LAGS= 50 N= 1390 DT= 0.2SEC

MEAN W= -1.7

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	193.478	1.817	0	0
1	184.890	2.915	20.0	50.0
2	164.716	9.133	10.0	100.0
3	134.522	41.451	6.7	150.0
4	93.892	67.347	5.0	200.0
5	49.464	46.862	4.0	250.0
6	3.287	16.525	3.3	300.0
7	-40.969	4.236	2.9	350.0
8	-80.320	.877	2.5	400.0
9	-111.832	.293	2.2	450.0
10	-133.867	.181	2.0	500.0
11	-145.554	.181	1.8	550.0
12	-145.392	.129	1.7	600.0
13	-137.212	.098	1.5	650.0
14	-119.709	.091	1.4	700.0
15	-95.578	.098	1.3	750.0
16	-67.014	.070	1.3	800.0
17	-35.398	.055	1.2	850.0
18	-5.927	.050	1.1	900.0
19	22.355	.047	1.1	950.0
20	46.886	.041	1.0	1000.0
21	66.420	.047	1.0	1050.0
22	81.441	.049	.9	1100.0
23	88.711	.039	.9	1150.0
24	91.155	.028	.8	1200.0
25	88.524	.025	.8	1250.0
26	81.432	.024	.8	1300.0
27	71.602	.025	.7	1350.0
28	55.933	.025	.7	1400.0
29	41.574	.033	.7	1450.0
30	25.479	.046	.7	1500.0
31	9.525	.046	.6	1550.0
32	-5.350	.037	.6	1600.0
33	-18.621	.034	.6	1650.0
34	-30.143	.032	.6	1700.0
35	-39.240	.030	.6	1750.0
36	-45.731	.031	.6	1800.0
37	-49.711	.030	.5	1850.0
38	-51.097	.035	.5	1900.0
39	-50.635	.043	.5	1950.0
40	-46.858	.040	.5	2000.0
41	-41.707	.036	.5	2050.0
42	-35.164	.036	.5	2100.0
43	-27.497	.034	.5	2150.0
44	-18.986	.033	.5	2200.0
45	-10.027	.032	.4	2250.0
46	-0.951	.028	.4	2300.0
47	7.851	.024	.4	2350.0
48	16.282	.027	.4	2400.0
49	24.013	.025	.4	2450.0
50	31.730	.010	.4	2500.0

042

LI-w

HRPIS 11 5.04- 1 S, 29MAR-65 1901-1911

LAGS= 50 N= 1600 DT= 0.2SEC

MEAN W= .5

K	COV	SP	PERIOD	FREQ (MCPS)
0	115.313	2.098	0	0
1	111.247	4.183	20.0	50.0
2	101.338	9.974	10.0	100.0
3	85.957	31.329	5.7	150.0
4	56.247	40.662	5.0	200.0
5	43.531	20.179	4.0	250.0
6	19.309	4.150	3.3	300.0
7	-4.919	1.308	2.9	350.0
8	-27.630	.283	2.5	400.0
9	-47.584	.194	2.2	450.0
10	-53.650	.111	2.0	500.0
11	-75.130	.098	1.8	550.0
12	-81.665	.057	1.7	600.0
13	-83.008	.053	1.5	650.0
14	-79.402	.041	1.4	700.0
15	-71.483	.041	1.3	750.0
16	-59.813	.031	1.3	800.0
17	-45.491	.028	1.2	850.0
18	-29.257	.028	1.1	900.0
19	-12.286	.028	1.1	950.0
20	4.357	.025	1.0	1000.0
21	19.922	.025	1.0	1050.0
22	33.573	.018	.9	1100.0
23	44.619	.015	.9	1150.0
24	52.782	.014	.8	1200.0
25	57.670	.014	.8	1250.0
26	59.298	.016	.8	1300.0
27	57.646	.020	.7	1350.0
28	53.044	.017	.7	1400.0
29	45.797	.013	.7	1450.0
30	36.443	.013	.7	1500.0
31	25.475	.014	.6	1550.0
32	13.694	.014	.6	1600.0
33	1.625	.012	.6	1650.0
34	-10.112	.010	.6	1700.0
35	-21.838	.010	.6	1750.0
36	-30.021	.015	.6	1800.0
37	-37.145	.020	.5	1850.0
38	-41.955	.016	.5	1900.0
39	-44.328	.011	.5	1950.0
40	-44.049	.008	.5	2000.0
41	-41.269	.009	.5	2050.0
42	-36.175	.012	.5	2100.0
43	-29.039	.014	.5	2150.0
44	-21.412	.013	.5	2200.0
45	-11.882	.012	.4	2250.0
46	-0.771	.012	.4	2300.0
47	9.089	.011	.4	2350.0
48	19.220	.010	.4	2400.0
49	26.191	.014	.4	2450.0
50	32.443	.009	.4	2500.0

043

CI-W

BRFIS 11 7.0M-1 S. 29MAR-65 1928-1933

I AGS= 50 N= 1600 DT= 0.2SEC

MEAN W= 0.9

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	78.884	4.686		
1	75.389	6.482	20.0	50.0
2	59.662	9.308	10.0	100.0
3	61.160	22.883	6.6	150.0
4	50.644	22.545	5.0	200.0
5	38.354	8.256	4.0	250.0
6	25.066	1.743	3.3	300.0
7	11.254	.768	2.8	350.0
8	-2.188	.266	2.5	400.0
9	-14.497	.166	2.2	450.0
10	-24.599	.086	2.0	500.0
11	-32.451	.075	1.8	550.0
12	-34.129	.036	1.6	600.0
13	-41.713	.062	1.5	650.0
14	-42.508	.075	1.4	700.0
15	-40.730	.100	1.3	750.0
16	-36.868	.113	1.2	800.0
17	-31.130	.115	1.1	850.0
18	-23.858	.103	1.1	900.0
19	-15.491	.079	1.0	950.0
20	-6.561	.045	1.0	1000.0
21	2.526	.025	.9	1050.0
22	11.396	.017	.9	1100.0
23	19.650	.019	.8	1150.0
24	25.757	.026	.8	1200.0
25	32.724	.046	.8	1250.0
26	37.197	.058	.7	1300.0
27	40.144	.051	.7	1350.0
28	41.231	.036	.7	1400.0
29	40.662	.027	.6	1450.0
30	38.610	.024	.6	1500.0
31	35.028	.023	.6	1550.0
32	30.236	.025	.6	1600.0
33	24.450	.029	.6	1650.0
34	18.036	.031	.5	1700.0
35	11.302	.029	.5	1750.0
36	4.484	.027	.5	1800.0
37	-2.118	.024	.5	1850.0
38	-8.289	.022	.5	1900.0
39	-13.847	.026	.5	1950.0
40	-18.646	.030	.5	2000.0
41	-22.407	.029	.4	2050.0
42	-24.908	.025	.4	2100.0
43	-24.063	.027	.4	2150.0
44	-25.906	.026	.4	2200.0
45	-24.625	.022	.4	2250.0
46	-22.091	.023	.4	2300.0
47	-18.467	.030	.4	2350.0
48	-13.980	.036	.4	2400.0
49	-8.808	.036	.4	2450.0
50	-3.270	.017	.4	2500.0

044

LI-w

RRHS 11 5.5M-1 S, 24MAR-65 1934-1939

LAGE= 50 N= 1417 DT= 0.25EC

MEAN W= -0.3

K	ACOV	SR	PERIOD	FREQ(MCPS)
0	91.114	2.574		
1	89.184	6.378	20.0	50.0
2	84.498	11.528	10.0	100.0
3	64.793	22.380	6.6	150.0
4	52.988	25.673	5.0	200.0
5	37.121	14.906	4.0	250.0
6	14.300	7.055	3.3	300.0
7	1.715	1.423	2.8	350.0
8	-14.517	.286	2.5	400.0
9	-24.409	.142	2.2	450.0
10	-34.273	.094	2.0	500.0
11	-46.687	.081	1.8	550.0
12	-50.541	.045	1.6	600.0
13	-50.403	.042	1.5	650.0
14	-49.183	.040	1.4	700.0
15	-42.832	.041	1.3	750.0
16	-35.465	.042	1.2	800.0
17	-25.804	.036	1.1	850.0
18	-17.534	.022	1.1	900.0
19	-4.322	.021	1.0	950.0
20	.263	.022	1.0	1000.0
21	7.763	.017	.9	1050.0
22	13.270	.013	.9	1100.0
23	18.700	.011	.8	1150.0
24	21.905	.010	.8	1200.0
25	23.548	.009	.8	1250.0
26	23.753	.008	.7	1300.0
27	22.703	.006	.7	1350.0
28	21.572	.006	.7	1400.0
29	17.585	.008	.6	1450.0
30	13.943	.007	.6	1500.0
31	9.821	.006	.6	1550.0
32	5.433	.005	.6	1600.0
33	1.065	.004	.6	1650.0
34	-3.061	.004	.5	1700.0
35	-6.539	.004	.5	1750.0
36	-10.154	.005	.5	1800.0
37	-12.895	.005	.5	1850.0
38	-14.940	.005	.5	1900.0
39	-16.238	.004	.5	1950.0
40	-16.688	.004	.5	2000.0
41	-16.292	.004	.4	2050.0
42	-15.122	.003	.4	2100.0
43	-13.229	.003	.4	2150.0
44	-10.712	.004	.4	2200.0
45	-7.700	.005	.4	2250.0
46	-4.410	.004	.4	2300.0
47	-1.062	.003	.4	2350.0
48	2.212	.003	.4	2400.0
49	5.242	.003	.4	2450.0
50	7.916	.001	.4	2500.0

045

E-I-w

BBFIS 11 6.5M-1 S. 29MAR-65 1942-1947

LAGS= 50 N= 1459 DI= 0.2SEC

MEAN W= .5

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	79.560	3.623		
1	76.340	8.202	20.0	50.0
2	70.483	11.974	10.0	100.0
3	61.596	18.179	6.6	150.0
4	50.314	20.190	5.0	200.0
5	37.333	12.143	4.0	250.0
6	23.475	7.877	3.3	300.0
7	9.597	.366	2.8	350.0
8	-3.509	.290	2.5	400.0
9	-17.134	.128	2.2	450.0
10	-24.660	.088	2.0	500.0
11	-31.688	.069	1.8	550.0
12	-35.961	.055	1.6	600.0
13	-37.497	.033	1.5	650.0
14	-36.438	.041	1.4	700.0
15	-33.092	.042	1.3	750.0
16	-27.863	.032	1.2	800.0
17	-21.243	.020	1.1	850.0
18	-13.827	.018	1.1	900.0
19	-6.247	.016	1.0	950.0
20	.946	.013	1.0	1000.0
21	7.291	.013	.9	1050.0
22	12.392	.015	.9	1100.0
23	15.981	.012	.8	1150.0
24	17.989	.010	.8	1200.0
25	18.404	.008	.8	1250.0
26	17.285	.007	.7	1300.0
27	14.899	.008	.7	1350.0
28	11.482	.007	.7	1400.0
29	7.485	.005	.6	1450.0
30	3.324	.004	.6	1500.0
31	-.605	.003	.6	1550.0
32	-3.483	.004	.6	1600.0
33	-6.573	.004	.6	1650.0
34	-8.256	.003	.5	1700.0
35	-9.946	.002	.5	1750.0
36	-8.654	.003	.5	1800.0
37	-7.499	.003	.5	1850.0
38	-5.677	.002	.5	1900.0
39	-3.337	.002	.5	1950.0
40	-.682	.003	.5	2000.0
41	2.001	.003	.4	2050.0
42	4.472	.002	.4	2100.0
43	6.564	.002	.4	2150.0
44	8.168	.002	.4	2200.0
45	9.139	.002	.4	2250.0
46	9.376	.001	.4	2300.0
47	8.846	.002	.4	2350.0
48	7.657	.003	.4	2400.0
49	5.913	.003	.4	2450.0

046

LI-w

HRFIS 11 K.0M- 1 S. 29MAR-65 1950-1955

IAGS= 50 N= 1500 DT= 0.25EC

MEAN W= -0.1

K	COV	SP	PERIOD	FREQ(MCPS)
0	60.469	4.458		
1	62.156	6.954	20.0	50.0
2	63.389	9.270	10.0	100.0
3	56.109	19.368	6.6	150.0
4	46.744	19.438	5.0	200.0
5	35.892	7.996	4.0	250.0
6	24.111	1.474	3.3	300.0
7	12.044	.329	2.8	350.0
8	.329	.094	2.5	400.0
9	-10.465	.094	2.2	450.0
10	-19.762	.098	2.0	500.0
11	-27.173	.089	1.8	550.0
12	-32.410	.081	1.6	600.0
13	-35.261	.074	1.5	650.0
14	-35.722	.067	1.4	700.0
15	-33.474	.063	1.3	750.0
16	-31.344	.059	1.2	800.0
17	-28.384	.054	1.1	850.0
18	-19.704	.048	1.1	900.0
19	-11.319	.047	1.0	950.0
20	-3.666	.044	1.0	1000.0
21	3.424	.040	.9	1050.0
22	11.031	.037	.9	1100.0
23	17.300	.036	.9	1150.0
24	22.470	.034	.9	1200.0
25	26.415	.034	.8	1250.0
26	29.026	.035	.7	1300.0
27	30.230	.038	.7	1350.0
28	30.146	.036	.7	1400.0
29	29.844	.034	.6	1450.0
30	28.863	.033	.6	1500.0
31	28.183	.033	.6	1550.0
32	19.218	.033	.6	1600.0
33	14.793	.033	.6	1650.0
34	11.132	.034	.5	1700.0
35	8.255	.034	.5	1750.0
36	5.483	.033	.5	1800.0
37	-3.122	.033	.5	1850.0
38	-6.755	.033	.5	1900.0
39	-9.807	.034	.5	1950.0
40	-12.166	.033	.5	2000.0
41	-13.757	.032	.4	2050.0
42	-14.577	.032	.4	2100.0
43	-14.519	.031	.4	2150.0
44	-13.431	.031	.4	2200.0
45	-12.578	.031	.4	2250.0
46	-11.656	.032	.4	2300.0
47	-9.280	.032	.4	2350.0
48	-6.500	.032	.4	2400.0
49	-2.752	.031	.4	2450.0
50	.157	.030	.4	2500.0

REI S= 44

047

CI-w

RRFS 11 2.04-II S. 29MAR-65 2000-2005

LAGS= 50 N= 1340 DT= 0.2SEC

MEAN W= 0.1

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	414.830	4.351	0	0
1	396.407	9.598	20.0	50.0
2	347.514	21.216	10.0	100.0
3	272.872	77.550	6.7	150.0
4	181.098	126.099	5.0	200.0
5	81.292	97.027	4.0	250.0
6	-17.334	46.813	3.3	300.0
7	-106.819	18.546	2.9	350.0
8	-180.800	6.274	2.5	400.0
9	-235.019	3.020	2.2	450.0
10	-267.298	1.487	2.0	500.0
11	-277.483	.727	1.8	550.0
12	-267.228	.468	1.7	600.0
13	-239.566	.360	1.5	650.0
14	-198.522	.230	1.4	700.0
15	-148.634	.150	1.3	750.0
16	-94.479	.099	1.3	800.0
17	-40.253	.081	1.2	850.0
18	10.576	.070	1.1	900.0
19	55.221	.069	1.1	950.0
20	91.591	.053	1.0	1000.0
21	118.594	.048	1.0	1050.0
22	135.837	.043	.9	1100.0
23	143.622	.038	.9	1150.0
24	142.872	.030	.8	1200.0
25	134.997	.033	.8	1250.0
26	121.543	.033	.8	1300.0
27	103.973	.028	.7	1350.0
28	83.647	.023	.7	1400.0
29	61.718	.020	.7	1450.0
30	39.080	.019	.7	1500.0
31	16.381	.021	.6	1550.0
32	-5.847	.018	.6	1600.0
33	-27.200	.015	.6	1650.0
34	-46.884	.014	.6	1700.0
35	-64.342	.014	.6	1750.0
36	-78.984	.012	.6	1800.0
37	-90.166	.013	.5	1850.0
38	-97.416	.012	.5	1900.0
39	-100.433	.009	.5	1950.0
40	-99.169	.009	.5	2000.0
41	-93.734	.009	.5	2050.0
42	-84.487	.009	.5	2100.0
43	-72.221	.010	.5	2150.0
44	-57.791	.010	.5	2200.0
45	-42.018	.009	.4	2250.0
46	-25.652	.010	.4	2300.0
47	-9.374	.011	.4	2350.0
48	6.447	.010	.4	2400.0
49	21.411	.010	.4	2450.0
50	35.327	.005	.4	2500.0

048

LI-w

REFS 11 D.5M-Y S, 29MAR-65 2009-2013

LARG= 50 ME= 847 DT= 0.2SEC

MEAN WE= -2.5

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	777.121	6.480	0	0
1	723.614	11.218	20.0	50.0
2	586.755	24.278	10.0	100.0
3	380.675	39.060	6.7	150.0
4	154.637	140.513	5.0	200.0
5	-48.851	161.653	4.0	250.0
6	-220.441	144.464	3.3	300.0
7	-341.932	81.941	2.9	350.0
8	-409.531	41.046	2.5	400.0
9	-426.573	29.801	2.2	450.0
10	-401.323	16.891	2.0	500.0
11	-344.635	8.254	1.8	550.0
12	-269.917	5.671	1.7	600.0
13	-185.710	3.149	1.5	650.0
14	-103.380	1.549	1.4	700.0
15	-27.490	1.554	1.3	750.0
16	37.503	1.281	1.3	800.0
17	88.130	.809	1.2	850.0
18	121.560	.449	1.1	900.0
19	136.312	.244	1.1	950.0
20	133.605	.150	1.0	1000.0
21	117.267	.163	1.0	1050.0
22	91.834	.177	.9	1100.0
23	51.535	.157	.9	1150.0
24	31.070	.103	.8	1200.0
25	4.854	.117	.8	1250.0
26	-13.238	.103	.8	1300.0
27	-19.414	.087	.7	1350.0
28	-11.858	.071	.7	1400.0
29	8.868	.056	.7	1450.0
30	32.148	.044	.7	1500.0
31	72.304	.050	.6	1550.0
32	94.476	.067	.6	1600.0
33	113.196	.054	.6	1650.0
34	110.052	.043	.6	1700.0
35	49.923	.042	.6	1750.0
36	56.594	.034	.6	1800.0
37	15.616	.027	.5	1850.0
38	-23.870	.026	.5	1900.0
39	-60.143	.025	.5	1950.0
40	-89.561	.026	.5	2000.0
41	-111.142	.024	.5	2050.0
42	-124.391	.018	.5	2100.0
43	-129.889	.020	.5	2150.0
44	-127.730	.022	.5	2200.0
45	-114.915	.020	.4	2250.0
46	-103.430	.016	.4	2300.0
47	-81.331	.020	.4	2350.0
48	-53.500	.020	.4	2400.0
49	-21.310	.015	.4	2450.0
50	12.530	.006	.4	2500.0

049

C-D-W

RBFIS 11 0.5M-VI S. 29MAR-65 2158-2203

LAGS= 50 N= 1007 DT= 0.2SEC

MEAN W= -3.0

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	741.748	2.479	0	0
1	677.319	6.012	20.0	50.0
2	514.356	18.287	10.0	100.0
3	299.323	69.187	6.7	150.0
4	78.575	135.646	5.0	200.0
5	-113.362	140.961	4.0	250.0
6	-256.758	108.637	3.3	300.0
7	-345.417	91.561	2.9	350.0
8	-380.931	64.882	2.5	400.0
9	-372.470	35.005	2.2	450.0
10	-332.207	21.309	2.0	500.0
11	-272.291	13.628	1.8	550.0
12	-202.854	9.523	1.7	600.0
13	-134.371	7.406	1.5	650.0
14	-73.589	4.429	1.4	700.0
15	-24.358	2.540	1.3	750.0
16	11.958	2.118	1.3	800.0
17	36.664	1.735	1.2	850.0
18	52.050	1.218	1.1	900.0
19	62.505	.840	1.1	950.0
20	74.580	.597	1.0	1000.0
21	88.316	.537	1.0	1050.0
22	103.727	.506	.9	1100.0
23	116.772	.369	.9	1150.0
24	123.466	.251	.8	1200.0
25	122.000	.205	.8	1250.0
26	112.406	.180	.8	1300.0
27	95.925	.122	.7	1350.0
28	71.762	.090	.7	1400.0
29	41.554	.114	.7	1450.0
30	7.132	.130	.7	1500.0
31	-30.303	.112	.6	1550.0
32	-66.669	.113	.6	1600.0
33	-96.120	.115	.6	1650.0
34	-113.207	.084	.6	1700.0
35	-114.799	.072	.6	1750.0
36	-100.438	.081	.6	1800.0
37	-74.838	.064	.5	1850.0
38	-43.714	.041	.5	1900.0
39	-12.693	.041	.5	1950.0
40	13.944	.060	.5	2000.0
41	33.328	.068	.5	2050.0
42	44.609	.054	.5	2100.0
43	47.642	.039	.5	2150.0
44	44.770	.034	.5	2200.0
45	38.750	.029	.4	2250.0
46	31.435	.037	.4	2300.0
47	23.520	.060	.4	2350.0
48	14.823	.065	.4	2400.0
49	4.451	.054	.4	2450.0
50	-8.960	.025	.4	2500.0

050

LI-w

BRFIS 11 2.0M-III S. 29MAR-65 2204-2211

LAGS= 50 N= 193R DT= 0.2SEC

MEAN W= -0.1

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	346.576	2.051	0	0
1	330.744	3.715	20.0	50.0
2	287.268	21.871	10.0	100.0
3	222.609	73.077	6.7	150.0
4	144.386	99.335	5.0	200.0
5	60.980	71.485	4.0	250.0
6	-19.657	37.509	3.3	300.0
7	-96.774	18.654	2.9	350.0
8	-147.662	9.702	2.5	400.0
9	-187.581	4.880	2.2	450.0
10	-210.023	1.644	2.0	500.0
11	-216.317	.523	1.8	550.0
12	-208.788	.409	1.7	600.0
13	-190.396	.368	1.5	650.0
14	-164.165	.262	1.4	700.0
15	-132.938	.168	1.3	750.0
16	-99.200	.104	1.3	800.0
17	-64.682	.113	1.2	850.0
18	-30.802	.110	1.1	900.0
19	1.363	.090	1.1	950.0
20	37.596	.064	1.0	1000.0
21	55.770	.058	1.0	1050.0
22	75.876	.045	.9	1100.0
23	96.100	.035	.9	1150.0
24	98.145	.028	.8	1200.0
25	100.449	.032	.8	1250.0
26	97.423	.032	.8	1300.0
27	91.466	.029	.7	1350.0
28	82.138	.022	.7	1400.0
29	70.969	.020	.7	1450.0
30	58.809	.021	.7	1500.0
31	46.300	.019	.6	1550.0
32	33.766	.014	.6	1600.0
33	21.340	.013	.6	1650.0
34	8.951	.012	.6	1700.0
35	-3.216	.011	.6	1750.0
36	-14.894	.009	.6	1800.0
37	-25.792	.008	.5	1850.0
38	-35.434	.008	.5	1900.0
39	-43.336	.009	.5	1950.0
40	-49.274	.010	.5	2000.0
41	-53.210	.010	.5	2050.0
42	-55.040	.009	.5	2100.0
43	-54.949	.007	.5	2150.0
44	-53.212	.004	.5	2200.0
45	-49.816	.005	.4	2250.0
46	-44.720	.006	.4	2300.0
47	-37.907	.006	.4	2350.0
48	-29.378	.005	.4	2400.0
49	-19.255	.004	.4	2450.0
50	-7.839	.002	.4	2500.0

051

CI-W

BRFIS 11 2.0M-II S, 30MAR-65 0010-0015

PAGES= 50 N= 1425 DT= 0.2SEC

MEAN W= -0.8

K	COV	SP	PERIOD	FREQ (MCPS)
0	286.302	2.431	0	0
1	274.152	6.650	20.0	50.0
2	241.679	27.105	10.0	100.0
3	194.059	70.887	6.7	150.0
4	136.745	82.425	5.0	200.0
5	75.427	49.300	4.0	250.0
6	15.261	20.780	3.3	300.0
7	-39.518	10.506	2.9	350.0
8	-85.999	6.825	2.5	400.0
9	-122.463	3.752	2.2	450.0
10	-148.272	1.729	2.0	500.0
11	-163.622	.914	1.8	550.0
12	-169.339	.586	1.7	600.0
13	-166.479	.387	1.5	650.0
14	-156.174	.251	1.4	700.0
15	-139.498	.207	1.3	750.0
16	-117.763	.153	1.3	800.0
17	-92.297	.139	1.2	850.0
18	-64.485	.120	1.1	900.0
19	-35.649	.093	1.1	950.0
20	-7.082	.066	1.0	1000.0
21	12.679	.057	1.0	1050.0
22	43.270	.050	.9	1100.0
23	62.574	.048	.9	1150.0
24	76.899	.051	.8	1200.0
25	85.756	.043	.8	1250.0
26	89.300	.030	.8	1300.0
27	87.920	.030	.7	1350.0
28	82.488	.028	.7	1400.0
29	73.932	.023	.7	1450.0
30	63.189	.021	.7	1500.0
31	51.386	.020	.6	1550.0
32	39.391	.016	.6	1600.0
33	27.549	.017	.6	1650.0
34	16.234	.016	.6	1700.0
35	5.734	.014	.6	1750.0
36	-3.626	.011	.6	1800.0
37	-11.918	.011	.5	1850.0
38	-19.177	.013	.5	1900.0
39	-25.338	.011	.5	1950.0
40	-30.716	.010	.5	2000.0
41	-35.398	.011	.5	2050.0
42	-39.468	.009	.5	2100.0
43	-42.946	.007	.5	2150.0
44	-45.317	.008	.5	2200.0
45	-46.262	.009	.4	2250.0
46	-45.517	.009	.4	2300.0
47	-42.904	.007	.4	2350.0
48	-38.431	.005	.4	2400.0
49	-32.205	.006	.4	2450.0
50	-24.598	.004	.4	2500.0

052

CT-W

BRFLS 11 0.54-VII S, 30MAR-65 0022-0027

IAGS= 50 N= 1168 DT= 0.2SEC

MEAN W= -3.7

K	COV	SD	PERIOD	FREQ(MCPS)
0	766.948	3.578	0	0
1	701.446	7.771	20.0	50.0
2	551.142	45.754	10.0	100.0
3	354.905	131.150	6.7	150.0
4	156.193	162.117	5.0	200.0
5	-16.536	112.036	4.0	250.0
6	-141.059	69.918	3.3	300.0
7	-220.816	59.363	2.9	350.0
8	-261.377	51.500	2.5	400.0
9	-275.454	41.168	2.2	450.0
10	-275.911	29.476	2.0	500.0
11	-271.467	15.113	1.8	550.0
12	-265.433	8.350	1.7	600.0
13	-257.916	7.310	1.5	650.0
14	-247.697	4.754	1.4	700.0
15	-231.500	2.429	1.3	750.0
16	-207.189	1.721	1.3	800.0
17	-171.722	1.317	1.2	850.0
18	-124.196	.918	1.1	900.0
19	-67.804	.838	1.1	950.0
20	-8.348	.810	1.0	1000.0
21	47.375	.616	1.0	1050.0
22	92.950	.414	.9	1100.0
23	125.440	.347	.9	1150.0
24	145.061	.284	.8	1200.0
25	154.103	.224	.8	1250.0
26	156.693	.180	.8	1300.0
27	157.078	.153	.7	1350.0
28	156.318	.136	.7	1400.0
29	151.373	.116	.7	1450.0
30	137.981	.087	.7	1500.0
31	113.696	.091	.6	1550.0
32	80.170	.102	.6	1600.0
33	42.566	.087	.6	1650.0
34	16.557	.057	.6	1700.0
35	-13.969	.040	.6	1750.0
36	-28.448	.038	.6	1800.0
37	-33.606	.046	.5	1850.0
38	-33.049	.054	.5	1900.0
39	-31.318	.057	.5	1950.0
40	-31.840	.050	.5	2000.0
41	-36.233	.040	.5	2050.0
42	-44.302	.037	.5	2100.0
43	-55.004	.036	.5	2150.0
44	-66.817	.036	.5	2200.0
45	-78.094	.043	.4	2250.0
46	-86.762	.048	.4	2300.0
47	-89.962	.047	.4	2350.0
48	-84.400	.043	.4	2400.0
49	-69.203	.036	.4	2450.0
50	-47.068	.015	.4	2500.0

053

LI-w

HRFIS 11 0.5M-VIII S. ROMAR-65 0440-0445

LAGS= 50 N= 1401 DT= 0.2SEC

MEAN W= 1.5

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	337.292	5.826	0	0
1	315.151	11.418	20.0	50.0
2	259.196	27.536	10.0	100.0
3	182.996	64.523	6.7	150.0
4	99.582	71.978	5.0	200.0
5	22.042	41.436	4.0	250.0
6	-39.052	21.112	3.3	300.0
7	-78.637	24.628	2.9	350.0
8	-97.039	30.660	2.5	400.0
9	-99.182	21.671	2.2	450.0
10	-92.808	8.402	2.0	500.0
11	-85.761	2.371	1.8	550.0
12	-83.440	1.103	1.7	600.0
13	-88.056	.811	1.5	650.0
14	-98.157	.462	1.4	700.0
15	-109.652	.377	1.3	750.0
16	-115.808	.317	1.3	800.0
17	-114.708	.291	1.2	850.0
18	-100.812	.266	1.1	900.0
19	-74.384	.236	1.1	950.0
20	-38.216	.194	1.0	1000.0
21	2.575	.163	1.0	1050.0
22	41.883	.155	.9	1100.0
23	74.117	.154	.9	1150.0
24	95.403	.126	.8	1200.0
25	104.440	.104	.8	1250.0
26	102.095	.090	.8	1300.0
27	91.120	.083	.7	1350.0
28	75.494	.086	.7	1400.0
29	54.982	.084	.7	1450.0
30	44.391	.078	.7	1500.0
31	33.113	.067	.6	1550.0
32	25.140	.050	.6	1600.0
33	19.768	.043	.6	1650.0
34	15.796	.042	.6	1700.0
35	11.947	.044	.6	1750.0
36	7.299	.038	.6	1800.0
37	1.188	.027	.5	1850.0
38	-4.199	.021	.5	1900.0
39	-14.903	.021	.5	1950.0
40	-24.844	.022	.5	2000.0
41	-35.135	.024	.5	2050.0
42	-44.427	.024	.5	2100.0
43	-51.660	.019	.5	2150.0
44	-55.821	.015	.5	2200.0
45	-55.739	.014	.4	2250.0
46	-51.210	.016	.4	2300.0
47	-43.277	.019	.4	2350.0
48	-32.948	.019	.4	2400.0
49	-21.706	.017	.4	2450.0
50	-11.511	.008	.4	2500.0

054

LI-W

BRFLS 11 .54-II S. 30MAR-65 0810-0815

LAGS= 50 N= 1490 DT= 0.2SEC

MEAN W= -4.6

K	VOL	SP	PERIOD	FREQ(MCPS)
0	507.732	2.331	0	0
1	455.877	2.327	20.0	50.0
2	327.560	23.752	10.0	100.0
3	157.065	31.497	6.7	150.0
4	-15.819	33.396	5.0	200.0
5	-157.277	61.868	4.0	250.0
6	-245.476	94.334	3.3	300.0
7	-277.776	99.283	2.9	350.0
8	-255.667	65.214	2.5	400.0
9	-195.148	41.071	2.2	450.0
10	-115.376	22.426	2.0	500.0
11	-32.492	11.140	1.8	550.0
12	36.247	6.212	1.7	600.0
13	82.383	3.885	1.5	650.0
14	102.605	2.598	1.4	700.0
15	94.503	1.979	1.3	750.0
16	74.441	1.251	1.3	800.0
17	45.512	.861	1.2	850.0
18	11.301	.797	1.1	900.0
19	-21.242	.585	1.1	950.0
20	-47.742	.347	1.0	1000.0
21	-66.935	.290	1.0	1050.0
22	-78.314	.218	.9	1100.0
23	-82.554	.166	.9	1150.0
24	-74.806	.172	.8	1200.0
25	-71.585	.152	.8	1250.0
26	-55.908	.133	.8	1300.0
27	-37.735	.129	.7	1350.0
28	-12.013	.113	.7	1400.0
29	2.118	.100	.7	1450.0
30	21.043	.123	.7	1500.0
31	38.155	.129	.6	1550.0
32	51.714	.105	.6	1600.0
33	59.058	.093	.6	1650.0
34	54.982	.078	.6	1700.0
35	53.405	.061	.6	1750.0
36	45.178	.049	.6	1800.0
37	35.901	.043	.5	1850.0
38	26.624	.038	.5	1900.0
39	17.707	.034	.5	1950.0
40	8.833	.037	.5	2000.0
41	.273	.042	.5	2050.0
42	-7.366	.038	.5	2100.0
43	-13.905	.032	.5	2150.0
44	-18.924	.036	.5	2200.0
45	-21.015	.040	.4	2250.0
46	-19.524	.033	.4	2300.0
47	-13.418	.025	.4	2350.0
48	-3.250	.024	.4	2400.0
49	9.558	.024	.4	2450.0
50	23.203	.012	.4	2500.0

055 LI-W
 RBFS 11 2.0M-Y S. 30MAR-65 0826-0831
 LAGS= 50 N= 1295 DT= 0.2SEC
 MEAN W= 1.4

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	304.193	4.146	0	0
1	289.521	10.613	20.0	50.0
2	236.557	26.617	10.0	100.0
3	160.064	36.966	6.7	150.0
4	72.463	29.240	5.0	200.0
5	-13.165	43.620	4.0	250.0
6	-85.165	69.797	3.3	300.0
7	-135.036	52.559	2.9	350.0
8	-158.433	20.469	2.5	400.0
9	-155.494	6.223	2.2	450.0
10	-130.273	2.524	2.0	500.0
11	-89.655	1.408	1.8	550.0
12	-41.977	.837	1.7	600.0
13	3.860	.400	1.5	650.0
14	43.366	.286	1.4	700.0
15	62.580	.237	1.3	750.0
16	68.196	.204	1.3	800.0
17	57.684	.157	1.2	850.0
18	33.599	.098	1.1	900.0
19	.724	.064	1.1	950.0
20	-34.802	.060	1.0	1000.0
21	-67.032	.060	1.0	1050.0
22	-91.025	.063	.9	1100.0
23	-109.260	.070	.9	1150.0
24	-102.258	.056	.8	1200.0
25	-88.778	.032	.8	1250.0
26	-65.137	.022	.8	1300.0
27	-34.787	.023	.7	1350.0
28	-1.659	.026	.7	1400.0
29	30.358	.027	.7	1450.0
30	57.858	.024	.7	1500.0
31	78.232	.019	.6	1550.0
32	90.190	.019	.6	1600.0
33	94.631	.023	.6	1650.0
34	88.977	.020	.6	1700.0
35	77.660	.014	.6	1750.0
36	61.813	.013	.6	1800.0
37	43.735	.011	.5	1850.0
38	24.047	.012	.5	1900.0
39	10.627	.015	.5	1950.0
40	-1.002	.015	.5	2000.0
41	-8.275	.013	.5	2050.0
42	-11.251	.013	.5	2100.0
43	-10.898	.010	.5	2150.0
44	-8.358	.008	.5	2200.0
45	-4.893	.010	.4	2250.0
46	-1.489	.010	.4	2300.0
47	1.227	.011	.4	2350.0
48	2.893	.011	.4	2400.0
49	3.099	.010	.4	2450.0
50	1.831	.006	.4	2500.0

056

CI-w

REFS 11 2.0M-VI S, 30MAR-65 1023-1030

LAGS= 50 N= 1537 DT= 0.25EC

MFAN W= -0.8

K	ACOV	SP	PERIOD	FREQ (MCPS)
0	473.999	2.736	0	0
1	450.620	28.491	20.0	50.0
2	388.098	72.579	10.0	100.0
3	297.198	74.913	6.7	150.0
4	190.044	41.201	5.0	200.0
5	74.757	77.992	4.0	250.0
6	-21.059	87.315	3.3	300.0
7	-102.587	48.605	2.9	350.0
8	-152.236	14.568	2.5	400.0
9	-185.166	3.953	2.2	450.0
10	-184.244	2.147	2.0	500.0
11	-160.390	1.084	1.8	550.0
12	-121.374	.760	1.7	600.0
13	-75.640	.652	1.5	650.0
14	-31.939	.535	1.4	700.0
15	2.014	.394	1.3	750.0
16	20.621	.230	1.3	800.0
17	21.791	.198	1.2	850.0
18	6.105	.200	1.1	900.0
19	-23.342	.180	1.1	950.0
20	-61.933	.135	1.0	1000.0
21	-104.079	.086	1.0	1050.0
22	-144.157	.074	.9	1100.0
23	-176.652	.067	.9	1150.0
24	-197.053	.066	.8	1200.0
25	-202.573	.068	.8	1250.0
26	-192.685	.075	.8	1300.0
27	-168.983	.073	.7	1350.0
28	-134.387	.065	.7	1400.0
29	-93.049	.051	.7	1450.0
30	-48.888	.037	.7	1500.0
31	-5.765	.030	.6	1550.0
32	33.310	.030	.6	1600.0
33	66.399	.028	.6	1650.0
34	92.499	.026	.6	1700.0
35	111.270	.026	.6	1750.0
36	123.306	.025	.6	1800.0
37	129.757	.020	.5	1850.0
38	132.116	.020	.5	1900.0
39	131.993	.019	.5	1950.0
40	130.424	.015	.5	2000.0
41	127.804	.012	.5	2050.0
42	123.793	.012	.5	2100.0
43	117.878	.012	.5	2150.0
44	109.775	.011	.5	2200.0
45	99.326	.012	.4	2250.0
46	86.572	.017	.4	2300.0
47	72.131	.018	.4	2350.0
48	56.586	.014	.4	2400.0
49	40.212	.012	.4	2450.0
50	23.890	.006	.4	2500.0

057A CI-W

RRFIS 11 0.5M-D S. 30MAR-65 1036-1040

LAGS= 50 N= 1001 DT= 0.2SEC

MEAN W= -5.1

K	1COV	SP	PERIOD	FREQ(MCPS)
0	1264.869	3.675	0	0
1	1162.878	23.508	20.0	50.0
2	894.477	70.054	10.0	100.0
3	526.241	74.720	6.7	150.0
4	130.937	81.648	5.0	200.0
5	-231.703	255.666	4.0	250.0
6	-518.107	360.171	3.3	300.0
7	-703.123	203.721	2.9	350.0
8	-777.674	66.604	2.5	400.0
9	-746.592	38.948	2.2	450.0
10	-625.742	26.585	2.0	500.0
11	-438.751	20.275	1.8	550.0
12	-214.240	12.531	1.7	600.0
13	17.707	7.155	1.5	650.0
14	228.741	4.372	1.4	700.0
15	394.564	3.167	1.3	750.0
16	495.963	2.914	1.3	800.0
17	520.243	2.318	1.2	850.0
18	463.033	1.395	1.1	900.0
19	333.507	.831	1.1	950.0
20	152.144	.723	1.0	1000.0
21	-53.914	.639	1.0	1050.0
22	-253.959	.446	.9	1100.0
23	-421.266	.378	.9	1150.0
24	-536.908	.375	.8	1200.0
25	-589.292	.255	.8	1250.0
26	-574.612	.164	.8	1300.0
27	-495.604	.154	.7	1350.0
28	-362.500	.145	.7	1400.0
29	-193.774	.129	.7	1450.0
30	-11.925	.119	.7	1500.0
31	162.813	.098	.6	1550.0
32	312.375	.065	.6	1600.0
33	422.093	.058	.6	1650.0
34	480.335	.074	.6	1700.0
35	482.791	.079	.6	1750.0
36	431.636	.061	.6	1800.0
37	335.389	.076	.5	1850.0
38	208.035	.038	.5	1900.0
39	68.282	.051	.5	1950.0
40	-62.993	.052	.5	2000.0
41	-166.182	.049	.5	2050.0
42	-227.857	.046	.5	2100.0
43	-242.150	.043	.5	2150.0
44	-210.079	.045	.5	2200.0
45	-140.969	.054	.4	2250.0
46	-49.815	.054	.4	2300.0
47	45.188	.051	.4	2350.0
48	126.441	.057	.4	2400.0
49	179.015	.053	.4	2450.0
50	195.336	.023	.4	2500.0

057 B

LI-W

TM 10-377

REFS 11 0.54-DB S, 30MAR-65 1040-1047

LARS= 50 N= 1070 DT= 0.2SEC

MEAN = -2.9

K	ACOV	SP	PERIOD	FREQ (MCPS)
0	1133.094	6.308	0	0
1	1044.294	35.400	20.0	50.0
2	823.930	87.064	10.0	100.0
3	516.744	75.790	6.7	150.0
4	179.237	76.325	5.0	200.0
5	-135.392	224.779	4.0	250.0
6	-391.725	244.115	3.3	300.0
7	-564.516	177.039	2.9	350.0
8	-641.591	69.946	2.5	400.0
9	-622.769	28.440	2.2	450.0
10	-532.278	13.571	2.0	500.0
11	-371.536	10.176	1.8	550.0
12	-173.123	8.729	1.7	600.0
13	31.224	7.551	1.5	650.0
14	210.575	4.770	1.4	700.0
15	334.340	2.871	1.3	750.0
16	402.108	1.945	1.3	800.0
17	395.392	1.219	1.2	850.0
18	325.846	.787	1.1	900.0
19	202.394	.608	1.1	950.0
20	62.909	.484	1.0	1000.0
21	-90.488	.461	1.0	1050.0
22	-233.900	.341	.9	1100.0
23	-351.605	.362	.9	1150.0
24	-433.595	.356	.8	1200.0
25	-473.737	.340	.8	1250.0
26	-469.450	.264	.8	1300.0
27	-423.163	.256	.7	1350.0
28	-339.577	.262	.7	1400.0
29	-230.157	.202	.7	1450.0
30	-107.285	.171	.7	1500.0
31	16.436	.162	.6	1550.0
32	129.507	.135	.6	1600.0
33	222.037	.140	.6	1650.0
34	288.646	.156	.6	1700.0
35	324.740	.146	.6	1750.0
36	340.769	.123	.6	1800.0
37	325.450	.122	.5	1850.0
38	285.552	.128	.5	1900.0
39	226.084	.128	.5	1950.0
40	153.404	.103	.5	2000.0
41	74.474	.080	.5	2050.0
42	10.582	.084	.5	2100.0
43	-41.737	.079	.5	2150.0
44	-75.665	.052	.5	2200.0
45	-88.659	.048	.4	2250.0
46	-80.575	.066	.4	2300.0
47	-54.397	.069	.4	2350.0
48	-15.843	.069	.4	2400.0
49	29.751	.080	.4	2450.0
50	76.887	.041	.4	2500.0

058 LI-w
 HBFS 11 0.54-XI S. 30MAR-65 1129-1131
 LAGS= 50 N= 768 DT= 0.2SEC

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	952.3	67.8		
1	903.7	156.7		
2	779.2	154.7		
3	611.4	104.2		
4	433.5	85.5		
5	273.1	102.3		
6	146.1	90.8		
7	58.4	65.0		
8	9.6	49.2		
9	-4.9	29.8		
10	3.7	14.9		
11	24.4	8.7		
12	47.8	6.3		
13	67.3	4.3		
14	79.2	3.0		
15	80.9	1.7		
16	71.5	1.0		
17	52.8	1.0		
18	29.9	1.0		
19	7.3	.7		
20	-13.2	.5		
21	-31.6	.3		
22	-48.5	.1		
23	-66.9	.0		
24	-86.9	.1		
25	-108.1	.1		
26	-128.2	.1		
27	-145.1	.1		
28	-157.1	.0		
29	-162.6	.0		
30	-160.3	.1		
31	-149.0	.1		
32	-127.2	.0		
33	-97.9	.0		
34	-66.6	.0		
35	-37.6	.0		
36	-12.9	.0		
37	5.7	.0		
38	17.9	.0		
39	22.9	.0		
40	20.1	.0		
41	9.8	.0		
42	-6.6	.0		
43	-29.1	.0		
44	-55.6	.0		
45	-83.7	.0		
46	-109.7	.0		
47	-128.8	.0		
48	-137.0	.0		
49	-131.8	.0		
50	-114.4	.0		

059

LI-W

BRFIS 11 2.04-III S. 30MAR-65 1134-1137

LAGE= 50 N= 701 DT= 0.2500

MEAN = 2.9

K	COV	SD	PERIOD	FREQ(MCPS)
0	485.6	41.0		
1	466.2	73.9	20.0	50.0
2	415.5	73.6	19.0	100.0
3	342.9	65.6	6.6	150.0
4	258.1	51.4	5.0	200.0
5	171.9	62.3	4.0	250.0
6	93.1	57.8	3.3	300.0
7	28.7	31.1	2.8	350.0
8	-16.4	13.0	2.5	400.0
9	-41.6	6.4	2.2	450.0
10	-48.7	3.2	2.0	500.0
11	-41.1	1.3	1.8	550.0
12	-23.4	.7	1.6	600.0
13	-.9	.6	1.5	650.0
14	21.3	.5	1.4	700.0
15	39.4	.3	1.3	750.0
16	50.7	.2	1.2	800.0
17	54.7	.2	1.1	850.0
18	51.3	.1	1.1	900.0
19	41.1	.1	1.0	950.0
20	25.4	.1	1.0	1000.0
21	5.9	.1	.9	1050.0
22	-14.3	.1	.9	1100.0
23	-32.8	.0	.8	1150.0
24	-47.7	.0	.8	1200.0
25	-57.2	.0	.8	1250.0
26	-59.9	.0	.7	1300.0
27	-54.8	.0	.7	1350.0
28	-42.7	.0	.7	1400.0
29	-25.2	.0	.6	1450.0
30	-4.5	.0	.6	1500.0
31	17.6	.0	.6	1550.0
32	39.7	.0	.6	1600.0
33	60.1	.0	.6	1650.0
34	76.3	.0	.5	1700.0
35	88.4	.0	.5	1750.0
36	96.4	.0	.5	1800.0
37	100.4	.0	.5	1850.0
38	101.5	.0	.5	1900.0
39	99.9	.0	.5	1950.0
40	95.8	.0	.5	2000.0
41	99.6	.0	.4	2050.0
42	81.9	.0	.4	2100.0
43	72.8	.0	.4	2150.0
44	62.4	.0	.4	2200.0
45	50.7	.0	.4	2250.0
46	38.1	.0	.4	2300.0
47	25.4	.0	.4	2350.0
48	13.6	.0	.4	2400.0
49	3.5	.0	.4	2450.0
50	-3.5	.0	.4	2500.0

060 LI-w
 HRFIS 11 2.5M-II S. 30MAR-65 1140-1144
 LAGR= 50 N= 1445 DT= 0.2SEC
 MEAN w= --

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	475.5	4.2		
1	450.8	22.5		
2	389.9	57.9		
3	299.4	60.9		
4	189.7	71.5		
5	73.5	117.3		
6	-37.3	92.0		
7	-142.0	30.5		
8	-202.3	7.7		
9	-243.5	3.5		
10	-254.5	1.7		
11	-237.6	.8		
12	-198.0	.6		
13	-142.9	.4		
14	-80.1	.3		
15	-17.7	.2		
16	36.6	.2		
17	76.0	.2		
18	97.5	.2		
18	97.5	.2		
19	99.8	.1		
20	83.2	.1		
21	50.8	.1		
22	6.9	.0		
23	-42.7	.0		
24	-92.0	.1		
25	-135.4	.1		
26	-167.8	.1		
27	-135.4	.0		
28	-186.5	.0		
29	-170.8	.0		
30	-140.1	.0		
31	-97.5	.0		
32	-47.3	.0		
33	6.1	.0		
34	58.4	.0		
35	105.6	.0		
36	144.3	.0		
37	172.7	.0		
38	149.3	.0		
39	194.5	.0		
40	188.9	.0		
41	173.7	.0		
42	150.3	.0		
43	120.9	.0		
44	87.1	.0		
45	51.5	.0		
46	16.6	.0		
47	-15.3	.0		
48	-42.5	.0		
49	-63.4	.0		
50	-77.0	.0		

061

LI-W

BHFS 11 1.0M-01 S. 30MAR-65 1155-1158

LAGS= 50 N= 733 DT= 0.2SEC

MEAN w= —

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	970.4	35.9		
1	924.2	114.2	20.0	
2	819.8	178.5	10.0	
3	660.7	125.1	6.6	
4	474.3	91.6	5.0	
5	292.7	154.7	4.0	
6	105.9	147.9	3.3	
7	-39.8	64.4	2.8	
8	-144.9	18.6	2.5	
9	-205.4	8.5	2.2	
10	-223.2	7.7	2.0	
11	-213.6	4.4	1.8	
12	-156.0	1.8	1.6	
13	-92.3	1.1	1.5	
14	-23.9	.8	1.4	
15	38.7	.6	1.3	
16	85.1	.5	1.2	
17	107.7	.4	1.1	
18	101.9	.3	1.1	
19	66.5	.2	1.0	
20	5.4	.1	1.0	
21	-73.8	.1	.9	
22	-151.9	.1	.9	
23	-248.1	.2	.8	
24	-321.6	.1	.8	
25	-373.3	.1	.8	
26	-399.2	.1	.7	
27	-397.5	.0	.7	
28	-370.9	.0	.7	
29	-322.9	.0	.6	
30	-254.6	.0	.6	
31	-188.0	.0	.6	
32	-112.6	.0	.6	
33	-37.7	.0	.6	
34	32.5	.0	.5	
35	95.3	.0	.5	
36	148.4	.0	.5	
37	190.5	.0	.5	
38	220.2	.0	.5	
39	236.4	.0	.5	
40	238.4	.0	.5	
41	227.1	.0	.4	
42	204.6	.0	.4	
43	173.6	.0	.4	
44	136.9	.0	.4	
45	98.6	.0	.4	
46	61.8	.0	.4	
47	29.4	.0	.4	
48	3.5	.0	.4	
49	-13.0	.0	.4	
50	-19.2	.0	.4	

062

LI-w

RRFS 11 1.5M-II S. 30MAR-65 1159-1203

LAGS= 50 N= 1232 DT= 0.2SEC

MFAN W= -3.4

K	COV	SP	PERIOD	FREQ(MCPS)
0	859.276	1.052	0	0
1	811.507	25.746	20.0	50.0
2	681.903	78.187	10.0	100.0
3	495.341	74.944	6.7	150.0
4	262.468	112.759	5.0	200.0
5	24.521	239.301	4.0	250.0
6	-191.192	209.263	3.3	300.0
7	-359.236	76.532	2.9	350.0
8	-488.492	20.197	2.5	400.0
9	-543.303	8.198	2.2	450.0
10	-531.655	4.416	2.0	500.0
11	-461.781	3.036	1.8	550.0
12	-347.650	1.404	1.7	600.0
13	-215.928	.824	1.5	650.0
14	-55.469	.666	1.4	700.0
15	55.629	.605	1.3	750.0
16	200.746	.457	1.3	800.0
17	277.124	.449	1.2	850.0
18	307.686	.372	1.1	900.0
19	291.989	.256	1.1	950.0
20	231.081	.174	1.0	1000.0
21	137.132	.112	1.0	1050.0
22	21.448	.062	.9	1100.0
23	-101.578	.073	.9	1150.0
24	-217.573	.092	.8	1200.0
25	-313.667	.086	.8	1250.0
26	-381.748	.081	.8	1300.0
27	-412.732	.098	.7	1350.0
28	-407.616	.081	.7	1400.0
29	-367.188	.058	.7	1450.0
30	-296.311	.060	.7	1500.0
31	-212.198	.055	.6	1550.0
32	-92.618	.041	.6	1600.0
33	22.302	.038	.6	1650.0
34	131.921	.031	.6	1700.0
35	227.262	.032	.6	1750.0
36	301.372	.047	.6	1800.0
37	348.838	.052	.5	1850.0
38	367.985	.048	.5	1900.0
39	359.299	.048	.5	1950.0
40	325.663	.040	.5	2000.0
41	272.185	.029	.5	2050.0
42	205.632	.024	.5	2100.0
43	133.839	.027	.5	2150.0
44	64.390	.029	.5	2200.0
45	3.476	.025	.4	2250.0
46	-44.370	.026	.4	2300.0
47	-76.738	.032	.4	2350.0
48	-92.246	.029	.4	2400.0
49	-91.614	.024	.4	2450.0
50	-77.439	.012	.4	2500.0

063

LI-W

BRFIS 11 3.0M-II S. 30MAR-65 1205-1208

LAGS= 30 N= 1080 DT= 0.2SEC

MEAN W= —

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	246.3	29.5		
1	287.9	59.3	20.0	
2	265.4	60.4	10.0	
3	233.0	46.9	6.6	
4	194.4	29.3	5.0	
5	153.9	27.6	4.0	
6	115.1	23.0	3.3	
7	90.4	10.1	2.8	
8	51.9	4.0	2.5	
9	30.4	2.6	2.2	
10	16.0	1.5	2.0	
11	7.6	.5	1.8	
12	3.8	.3	1.6	
13	3.2	.3	1.5	
14	4.4	.2	1.4	
15	6.0	.1	1.3	
16	7.0	.1	1.2	
17	6.4	.1	1.1	
18	4.0	.0	1.1	
19	-1.4	.0	1.0	
20	-7.0	.0	1.0	
21	-15.3	.0	.9	
22	-24.3	.0	.9	
23	-33.2	.0	.8	
24	-40.7	.0	.8	
25	-45.9	.0	.8	
26	-47.7	.0	.7	
27	-45.6	.0	.7	
28	-39.5	.0	.7	
29	-29.9	.0	.6	
30	-17.7	.0	.6	
31	-4.1	.0	.6	
32	9.3	.0	.6	
33	21.7	.0	.6	
34	32.2	.0	.5	
35	40.2	.0	.5	
36	45.6	.0	.5	
37	48.6	.0	.5	
38	49.5	.0	.5	
39	48.4	.0	.5	
40	45.0	.0	.5	
41	39.6	.0	.4	
42	32.5	.0	.4	
43	23.7	.0	.4	
44	13.8	.0	.4	
45	3.5	.0	.4	
46	-6.1	.0	.4	
47	-14.6	.0	.4	
48	-21.3	.0	.4	
49	-25.8	.0	.4	
50	-28.3	.0	.4	

064 LI-W
 HRFIS 11 3.5--11 S. 30MAR-65 1212-1216
 LAGE= 30 N= 768 DT= 0.2SEC
 MFAN W=

K	COV	SP	PERIOD	FREQ(MCPS)
0	297.4	25.6		
1	274.3	47.9	20.0	
2	253.5	46.9	10.0	
3	216.6	34.3	6.6	
4	171.4	32.4	5.0	
5	123.3	43.8	4.0	
6	75.9	35.1	3.3	
7	33.7	11.4	2.8	
8	-.1	2.0	2.5	
9	-13.6	.9	2.2	
10	-36.1	.6	2.0	
11	-37.8	.5	1.8	
12	-30.6	.2	1.6	
13	-16.6	.1	1.5	
14	1.0	.1	1.4	
15	19.3	.1	1.3	
16	35.2	.0	1.2	
17	46.3	.0	1.1	
18	51.1	.0	1.1	
19	48.8	.0	1.0	
20	39.7	.0	1.0	
21	25.2	.0	.9	
22	7.2	.0	.9	
23	-12.0	.0	.8	
24	-30.1	.0	.8	
25	-44.8	.0	.8	
26	-54.3	.0	.7	
27	-57.9	.0	.7	
28	-55.1	.0	.7	
29	-46.5	.0	.6	
30	-32.9	.0	.6	
31	-15.5	.0	.6	
32	3.8	.0	.6	
33	23.4	.0	.6	
34	41.4	.0	.5	
35	56.3	.0	.5	
36	67.0	.0	.5	
37	72.9	.0	.5	
38	73.9	.0	.5	
39	70.5	.0	.5	
40	53.7	.0	.5	
41	54.4	.0	.4	
42	43.8	.0	.4	
43	33.1	.0	.4	
44	23.2	.0	.4	
45	15.0	.0	.4	
46	9.0	.0	.4	
47	5.3	.0	.4	
48	4.1	.0	.4	
49	5.0	.0	.4	
50	7.5	.0	.4	

065

LI-W

BRFIS 11 2.0M-VIII S. 30MAR-65 1218-1221

LAGS= 50 N= 1132 DT= 0.2SEC

MEAN W= -3.8

K	ACDV	SP	PERIOD	FREQ(MCPS)
0	419.072	2.856	0	0
1	396.993	21.191	20.0	50.0
2	338.836	53.751	10.0	100.0
3	254.696	54.301	6.7	150.0
4	155.635	55.287	5.0	200.0
5	53.432	90.929	4.0	250.0
6	-40.491	91.461	3.3	300.0
7	-114.281	34.473	2.9	350.0
8	-172.287	11.391	2.5	400.0
9	-200.019	5.289	2.2	450.0
10	-201.582	2.164	2.0	500.0
11	-188.441	1.265	1.8	550.0
12	-142.493	.842	1.7	600.0
13	-98.007	.537	1.5	650.0
14	-45.741	.479	1.4	700.0
15	-1.149	.482	1.3	750.0
16	34.093	.415	1.3	800.0
17	56.110	.287	1.2	850.0
18	63.077	.176	1.1	900.0
19	54.795	.126	1.1	950.0
20	32.962	.116	1.0	1000.0
21	1.354	.123	1.0	1050.0
22	-35.515	.132	.9	1100.0
23	-73.349	.121	.9	1150.0
24	-107.667	.086	.8	1200.0
25	-134.397	.065	.8	1250.0
26	-153.913	.070	.8	1300.0
27	-155.521	.067	.7	1350.0
28	-147.493	.050	.7	1400.0
29	-127.322	.044	.7	1450.0
30	-96.781	.047	.7	1500.0
31	-58.982	.045	.6	1550.0
32	-17.579	.036	.6	1600.0
33	23.900	.024	.6	1650.0
34	61.570	.017	.6	1700.0
35	92.348	.025	.6	1750.0
36	114.301	.035	.6	1800.0
37	126.463	.032	.5	1850.0
38	120.242	.028	.5	1900.0
39	123.864	.026	.5	1950.0
40	112.206	.021	.5	2000.0
41	96.746	.019	.5	2050.0
42	79.513	.020	.5	2100.0
43	62.405	.021	.5	2150.0
44	46.894	.020	.5	2200.0
45	33.709	.018	.4	2250.0
46	23.259	.014	.4	2300.0
47	15.693	.013	.4	2350.0
48	10.616	.014	.4	2400.0
49	7.861	.015	.4	2450.0
50	6.787	.008	.4	2500.0

066

LI-w

RRFIS 11 2.5v-III S. 30MAR-65 1226-1229

LAGS= 50 N=1055 DT= 0.2SEC

MEAN =

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	471.1	8.5		
1	445.2	28.1	20.0	
2	332.8	42.7	10.0	
3	291.6	42.7	6.6	
4	181.6	69.4	5.0	
5	65.0	131.3	4.0	
6	-45.3	96.3	3.3	
7	-139.3	24.7	2.8	
8	-208.3	7.3	2.5	
9	-247.8	6.4	2.2	
10	-255.7	1.8	2.0	
11	-235.5	1.3	1.8	
12	-190.8	.7	1.6	
13	-128.5	.4	1.5	
14	-56.9	.3	1.4	
15	15.4	.3	1.3	
16	80.8	.2	1.2	
17	131.5	.2	1.1	
18	162.5	.2	1.1	
19	171.3	.2	1.0	
20	157.2	.2	1.0	
21	122.0	.1	.9	
22	70.0	.1	.9	
23	7.2	.1	.8	
24	-59.0	.1	.8	
25	-122.2	.1	.8	
26	-175.5	.1	.7	
27	-213.7	.1	.7	
28	-232.6	.1	.7	
29	-230.2	.1	.6	
30	-205.9	.1	.6	
31	-152.8	.1	.6	
32	-105.5	.0	.6	
33	-38.7	.0	.6	
34	30.4	.0	.5	
35	95.3	.0	.5	
36	150.0	.0	.5	
37	188.8	.0	.5	
38	209.5	.0	.5	
39	211.0	.0	.5	
40	194.8	.0	.5	
41	164.1	.0	.4	
42	123.0	.0	.4	
43	76.7	.0	.4	
44	29.9	.0	.4	
45	-12.9	.0	.4	
46	-47.5	.0	.4	
47	-71.0	.0	.4	
48	-81.7	.0	.4	
49	-79.7	.0	.4	
50	-67.2	.0	.4	

067

LI-W

RREFS 11 4.04-II S. ROMAR-65 1234-1238

LAGE= 50 N= 1000 DT= 0.2SEC

MEAN W= -1.4

K	ACOV	SD	PERIOD	FREQ(MCPS)
0	475.663	2.787	0	0
1	453.510	22.748	20.0	50.0
2	392.767	66.350	10.0	100.0
3	301.885	68.800	6.7	150.0
4	192.329	64.133	5.0	200.0
5	76.645	104.491	4.0	250.0
6	-32.529	92.329	3.3	300.0
7	-124.344	36.108	2.9	350.0
8	-190.992	2.235	2.5	400.0
9	-224.416	3.392	2.2	450.0
10	-236.341	1.607	2.0	500.0
11	-217.914	.816	1.8	550.0
12	-178.822	.540	1.7	600.0
13	-126.735	.275	1.5	650.0
14	-74.219	.208	1.4	700.0
15	-17.258	.170	1.3	750.0
16	25.310	.163	1.3	800.0
17	52.949	.109	1.2	850.0
18	62.687	.074	1.1	900.0
19	54.105	.064	1.1	950.0
20	29.313	.071	1.0	1000.0
21	-7.511	.076	1.0	1050.0
22	-51.238	.079	.9	1100.0
23	-96.127	.056	.9	1150.0
24	-136.416	.041	.8	1200.0
25	-167.367	.027	.8	1250.0
26	-185.241	.026	.8	1300.0
27	-187.761	.032	.7	1350.0
28	-174.482	.033	.7	1400.0
29	-146.457	.026	.7	1450.0
30	-106.339	.020	.7	1500.0
31	-57.978	.015	.6	1550.0
32	-5.793	.019	.6	1600.0
33	45.562	.021	.6	1650.0
34	91.985	.016	.6	1700.0
35	130.219	.012	.6	1750.0
36	158.237	.011	.6	1800.0
37	175.106	.013	.5	1850.0
38	181.071	.014	.5	1900.0
39	177.955	.013	.5	1950.0
40	167.903	.016	.5	2000.0
41	153.080	.016	.5	2050.0
42	135.604	.013	.5	2100.0
43	117.138	.010	.5	2150.0
44	98.739	.010	.5	2200.0
45	81.140	.012	.4	2250.0
46	64.196	.016	.4	2300.0
47	47.421	.017	.4	2350.0
48	30.603	.015	.4	2400.0
49	13.460	.013	.4	2450.0
50	-4.147	.006	.4	2500.0

068

LI-W

RRFS 11 4.5M-0E S. 30MAR-65 1241-1244

LAGS= 40 N= 885 DT= 0.2SEC

MEAN W= —

K	ACOV	SP	PERIOD	FREQ (MCPS)
0	311.7	4.7	∞	
1	297.8	17.2	20.0	
2	250.6	37.6	10.0	
3	205.0	40.9	6.6	
4	137.1	54.2	5.0	
5	43.8	81.4	4.0	
6	-7.7	53.6	3.3	
7	-71.0	13.2	2.8	
8	-120.7	3.6	2.5	
9	-153.4	1.5	2.2	
10	-167.6	.8	2.0	
11	-163.8	.5	1.8	
12	-144.0	.2	1.6	
13	-112.0	.2	1.5	
14	-72.4	.2	1.4	
15	-30.3	.1	1.3	
16	9.1	.0	1.2	
17	42.0	.0	1.1	
18	65.0	.0	1.1	
19	76.2	.0	1.0	
20	74.8	.0	1.0	
21	61.2	.0	.9	
22	37.7	.0	.9	
23	7.3	.0	.8	
24	-26.1	.0	.8	
25	-58.8	.0	.8	
26	-87.3	.0	.7	
27	-108.2	.0	.7	
28	-119.5	.0	.7	
29	-120.8	.0	.6	
30	-110.8	.0	.6	
31	-90.5	.0	.6	
32	-61.5	.0	.6	
33	-26.1	.0	.6	
34	12.2	.0	.5	
35	50.4	.0	.5	
36	85.0	.0	.5	
37	113.4	.0	.5	
38	133.6	.0	.5	
39	144.1	.0	.5	
40	144.4	.0	.5	
41	134.7	.0	.4	
42	116.4	.0	.4	
43	91.2	.0	.4	
44	61.4	.0	.4	
45	29.2	.0	.4	
46	-2.5	.0	.4	
47	-41.4	.0	.4	
48	-55.2	.0	.4	
49	-72.3	.0	.4	
50	-81.7	.0	.4	

069 LI-w
 HRFELS 11 3.0M-III S, 30MAR-65 1245-1251
 LAGS=100 N=1059 DT= 0.25EC
 MEAN W= 0.5

K	ACUV	SP	PERIOD	FREQ(MCPS)
0	228.4	1.4	0	0
1	220.4	2.5	40.0	25.0
2	198.3	.6	20.0	50.0
3	165.1	10.2	13.3	75.0
4	124.0	38.6	10.0	100.0
5	79.1	43.3	8.0	125.0
6	34.4	18.6	6.7	150.0
7	-6.1	7.2	5.7	175.0
8	-39.7	9.2	5.0	200.0
9	-64.3	15.0	4.4	225.0
10	-79.1	25.9	4.0	250.0
11	-84.3	28.4	3.6	275.0
12	-81.3	15.3	3.3	300.0
13	-72.0	4.8	3.1	325.0
14	-59.0	2.9	2.9	350.0
15	-45.1	1.6	2.7	375.0
16	-32.9	.7	2.5	400.0
17	-24.4	.4	2.4	425.0
18	-21.0	.3	2.2	450.0
19	-23.2	.2	2.1	475.0
20	-31.1	.2	2.0	500.0
21	-43.4	.2	1.9	525.0
22	-58.6	.2	1.8	550.0
23	-74.5	.1	1.7	575.0
24	-89.1	.1	1.7	600.0
25	-100.1	.1	1.6	625.0
26	-106.1	.0	1.5	650.0
27	-106.2	.0	1.5	675.0
28	-99.7	.1	1.4	700.0
29	-86.7	.0	1.4	725.0
30	-67.9	.0	1.3	750.0
31	-44.7	.0	1.3	775.0
32	-18.6	.0	1.3	800.0
33	8.5	.0	1.2	825.0
34	34.8	.0	1.2	850.0
35	58.4	.0	1.1	875.0
36	77.9	.0	1.1	900.0
37	92.2	.0	1.1	925.0
38	100.9	.0	1.1	950.0
39	103.8	.0	1.0	975.0
40	101.6	.0	1.0	1000.0
41	95.2	.0	1.0	1025.0
42	85.7	.0	1.0	1050.0
43	74.6	.0	.9	1075.0
44	63.2	.0	.9	1100.0
45	52.8	.0	.9	1125.0
46	44.4	.0	.9	1150.0
47	38.4	.0	.9	1175.0
48	35.0	.0	.8	1200.0
49	33.9	.0	.8	1225.0
50	34.2	.0	.8	1250.0
51	35.2	.0	.8	1275.0
52	35.8	.0	.8	1300.0
53	34.9	.0	.8	1325.0

069

.LI-W

BELS- 11

3 M- III

50LAGS 1059DATA POINTS

DT# .20SEC

MEAN U # = 0.46275

K ACOV SP PERIOD F%MC

K	ACOV	SP	PERIOD	F%MC
	228.405	1.275		
1	220.391	18.609	20.0	50.0
2	198.336	50.206	10.0	100.0
3	165.050	45.304	6.6	150.0
4	123.975	28.740	5.0	200.0
5	79.066	39.606	4.0	250.0
6	34.432	31.340	3.3	300.0
7	-6.146	9.205	2.8	350.0
8	-39.707	1.753	2.5	400.0
9	-64.300	.748	2.2	450.0
10	-79.101	.384	2.0	500.0
11	-84.325	.317	1.8	550.0
12	-81.276	.160	1.6	600.0
13	-71.973	.107	1.5	650.0
14	-58.993	.089	1.4	700.0
15	-45.088	.083	1.3	750.0
16	-32.874	.052	1.2	800.0
17	-24.387	.032	1.1	850.0
18	-20.957	.029	1.1	900.0
19	-23.241	.042	1.0	950.0
20	-31.053	.039	1.0	1000.0
21	-43.400	.028	.9	1050.0
22	-58.582	.023	.9	1100.0
23	-74.535	.023	.8	1150.0
24	-89.057	.019	.8	1200.0
25	-100.092	.015	.8	1250.0
26	-106.109	.018	.7	1300.0
27	-106.175	.017	.7	1350.0
28	-99.678	.010	.7	1400.0
29	-86.664	.007	.6	1450.0
30	-67.897	.008	.6	1500.0
31	-44.680	.009	.6	1550.0
32	-18.603	.007	.6	1600.0
33	8.524	.006	.6	1650.0
34	34.795	.007	.5	1700.0
35	58.427	.006	.5	1750.0
36	77.907	.005	.5	1800.0
37	92.249	.005	.5	1850.0
38	100.899	.005	.5	1900.0
39	103.821	.005	.5	1950.0
40	101.587	.004	.5	2000.0
41	95.156	.003	.4	2050.0
42	85.695	.003	.4	2100.0
43	74.558	.004	.4	2150.0
44	63.211	.004	.4	2200.0
45	52.846	.004	.4	2250.0
46	44.361	.004	.4	2300.0
47	38.379	.003	.4	2350.0
48	35.002	.003	.4	2400.0
49	33.851	.003	.4	2450.0
SD	34.221	.001	.4	2500.

071 OIII
 BBEIS 12 0.2M-II 0, 07APR-65 1235-1238

LAGS= 50 N= 585 DT= 0.2SEC
 MEAN U= 4.5 MEAN W= 0.1

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	32.9	74.5	-7.0	0	5.02	5.18	-1.39	0	0	.27	0
1	32.3	71.0	-6.6	2.4	9.49	9.42	-1.23	3.04	20.00	.35	-67.97
2	31.0	62.0	-6.0	4.6	8.95	6.74	-0.20	4.03	10.00	.52	-87.21
3	29.3	49.3	-5.2	6.4	5.73	6.49	-0.78	2.26	6.67	.39	-70.99
4	27.3	34.5	-4.3	7.8	1.57	12.43	-1.13	.99	5.00	.34	-41.02
5	25.1	19.4	-3.3	8.6	.74	15.94	-1.38	1.07	4.00	.51	-37.91
6	22.8	5.2	-2.4	9.1	.51	10.07	-0.63	.91	3.33	.49	-55.45
7	20.3	-6.8	-1.5	9.2	.18	3.80	.06	.49	2.86	.61	82.54
8	17.7	-15.8	-0.7	9.0	.11	1.78	.03	.16	2.50	.35	80.87
9	15.2	-21.2	0	8.6	.07	.82	-0.01	.02	2.22	.10	-61.51
10	12.6	-23.0	.6	8.0	.07	.40	-0.03	0	2.00	.20	1.20
11	10.2	-21.4	.8	7.4	.10	.25	-0.06	.01	1.82	.41	-13.14
12	7.8	-16.9	.8	6.9	.08	.24	-0.05	.05	1.67	.52	-40.76
13	5.7	-10.4	.4	6.6	.03	.21	-0.02	.03	1.54	.47	-52.07
14	3.7	-2.8	-0.2	6.4	.02	.14	-0.01	0	1.43	.21	-2.46
15	2.0	5.0	-1.0	6.4	.03	.08	-0.02	0	1.33	.32	-9.41
16	.5	12.2	-1.9	6.5	.03	.07	-0.01	.01	1.25	.28	-52.06
17	-0.8	18.1	-2.9	6.6	.02	.06	0	.01	1.18	.19	-63.90
18	-2.1	22.1	-3.6	6.6	.01	.06	-0.01	0	1.11	.23	8.88
19	-3.2	24.3	-4.2	6.6	.02	.05	-0.01	-0.01	1.05	.39	43.76
20	-4.1	24.8	-4.6	6.2	.01	.03	0	-0.01	1.00	.31	61.27
21	-4.9	23.4	-4.7	5.7	.01	.02	0	0	.95	.09	-11.78
22	-5.5	20.4	-4.6	5.0	.01	.02	0	0	.91	.18	-6.80
23	-5.8	15.9	-4.3	4.3	0	.03	0	0	.87	.27	14.83
24	-5.8	10.5	-3.9	3.6	.01	.02	0	0	.83	.40	2.17
25	-5.5	4.6	-3.4	2.8	.01	.02	0	0	.80	.46	10.39
26	-5.1	-1.2	-2.9	2.0	0	.01	0	0	.77	.41	18.16
27	-4.5	-6.4	-2.4	1.1	0	.01	0	0	.74	.45	-17.30
28	-3.8	-10.7	-2.0	.3	0	.01	0	0	.71	.60	-22.04
29	-2.8	-13.7	-1.7	-0.5	0	.01	0	0	.69	.54	-4.11
30	-1.7	-15.2	-1.7	-1.2	0	.01	0	0	.67	.49	14.84
31	-0.3	-15.3	-2.0	-1.7	0	.01	0	0	.65	.55	-0.79
32	1.1	-14.1	-2.6	-2.1	0	0	0	0	.63	.80	-7.73
33	2.7	-11.8	-3.3	-2.4	0	.01	0	0	.61	.80	.07
34	4.2	-8.7	-4.1	-2.7	0	.01	0	0	.59	.79	-14.84
35	5.7	-5.1	-4.8	-2.9	0	.01	0	0	.57	.87	-20.32
36	7.1	-1.3	-5.6	-3.1	0	0	0	0	.56	.76	-5.87
37	8.2	2.2	-6.1	-3.3	0	.01	0	0	.54	.61	.89
38	9.1	4.9	-6.5	-3.3	0	.01	0	0	.53	.68	-3.72
39	9.9	6.6	-6.6	-3.2	0	0	0	0	.51	.79	1.76
40	10.4	7.4	-6.5	-3.0	0	.01	0	0	.50	.77	.08
41	10.8	7.0	-6.1	-2.7	0	.01	0	0	.49	.91	-1.84
42	10.9	5.6	-5.5	-2.3	0	0	0	0	.48	1.03	2.61
43	10.8	3.1	-4.7	-1.9	0	0	0	0	.47	.95	2.34
44	10.4	-0.2	-3.8	-1.4	0	0	0	0	.45	.88	-12.26
45	9.9	-4.1	-2.9	-1.0	0	0	0	0	.44	1.00	-14.85
46	9.2	-8.3	-2.2	-0.6	0	0	0	0	.43	1.08	-10.17
47	8.3	-12.3	-1.6	-0.3	0	0	0	0	.43	1.02	-7.98
48	7.4	-15.7	-1.3	0	0	0	0	0	.42	.92	-2.00
49	6.5	-18.1	-1.3	.4	0	0	0	0	.41	.96	3.89
50	5.5	-19.2	-1.4	.7	0	0	0	0	.40	1.07	0

072

O III

TM No. 377

BBEIS 12 .2M-III 0. 07APR-65 1243-1249

LAGS= 50 N= 1551 DT= 0.2SEC

MEAN U= 9.4 MEAN W= .1

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	H	PHI
0	19.9	87.5	-3.3	0	4.40	5.34	.15	0	0	.03	0
1	18.9	83.6	-3.0	.9	6.27	13.59	-0.14	1.23	20.00	.13	-83.61
2	16.9	73.9	-2.2	1.8	2.85	15.66	-0.67	1.22	10.00	.21	-61.36
3	15.0	60.8	-1.2	2.8	1.50	13.01	-0.56	.27	6.67	.14	-26.18
4	13.4	46.7	-0.3	3.5	.80	11.64	-0.25	.32	5.00	.13	-52.47
5	12.4	33.2	.3	3.7	.64	10.37	-0.24	.64	4.00	.27	-69.35
6	11.7	21.5	.4	3.5	.67	6.61	-0.33	.58	3.33	.32	-60.61
7	11.2	11.8	.2	2.9	.48	3.61	-0.22	.42	2.86	.36	-62.20
8	10.7	4.0	.1	2.1	.32	2.27	-0.15	.27	2.50	.36	-61.22
9	10.0	-2.3	.1	1.5	.27	1.45	-0.18	.17	2.22	.39	-42.56
10	9.3	-6.8	.3	1.1	.27	.88	-0.20	.03	2.00	.42	-9.00
11	8.8	-9.5	.6	1.1	.25	.72	-0.21	-0.06	1.82	.51	15.08
12	8.3	-10.4	.9	1.3	.23	.74	-0.18	-0.09	1.67	.49	26.36
13	8.0	-9.9	1.0	1.6	.22	.57	-0.11	-0.09	1.54	.40	38.90
14	7.8	-8.3	1.0	1.8	.16	.29	-0.04	-0.07	1.43	.38	61.36
15	7.6	-6.4	.9	2.1	.11	.16	-0.01	-0.04	1.33	.34	81.73
16	7.2	-4.7	.8	2.3	.07	.11	.01	-0.02	1.25	.28	-75.73
17	6.7	-3.5	.8	2.4	.05	.06	0	-0.01	1.18	.21	-74.93
18	6.2	-2.8	.9	2.6	.05	.04	0	0	1.11	.12	-61.13
19	5.8	-2.6	1.1	2.7	.04	.04	0	0	1.05	.13	5.49
20	5.3	-2.6	1.3	2.9	.03	.03	.01	0	1.00	.29	-8.71
21	4.9	-2.7	1.5	3.0	.02	.03	.01	0	.95	.26	-12.28
22	4.5	-3.1	1.6	3.0	.02	.03	0	0	.91	.12	-3.57
23	4.2	-3.8	1.6	3.0	.02	.02	0	0	.87	.02	-63.06
24	3.9	-5.0	1.7	2.9	.02	.03	0	0	.83	.01	24.11
25	3.7	-6.8	1.6	2.7	.02	.02	0	0	.80	.09	17.60
26	3.6	-8.8	1.5	2.4	.02	.02	0	0	.77	.12	31.62
27	3.6	-10.8	1.4	2.1	.01	.02	0	0	.74	.04	-18.02
28	3.7	-12.4	1.2	1.7	.01	.01	0	0	.71	.26	70.41
29	3.9	-13.2	1.0	1.2	.01	.01	0	0	.69	.31	48.27
30	4.0	-13.3	.7	.8	.01	.01	0	0	.67	.08	-32.32
31	4.1	-12.7	.5	.4	.01	0	0	0	.65	.46	71.16
32	4.2	-11.8	.2	.1	0	.01	0	0	.63	.29	49.24
33	4.2	-10.6	0	-0.2	0	.01	0	0	.61	.28	31.24
34	4.1	-9.3	-0.1	-0.5	0	0	0	0	.59	.15	7.31
35	3.9	-8.0	-0.1	-0.9	0	.01	0	0	.57	.03	63.03
36	3.8	-6.6	0	-1.2	0	0	0	0	.56	.15	-9.11
37	3.7	-4.2	.1	-1.6	0	0	0	0	.54	.19	-9.19
38	3.6	-3.1	.3	-1.9	0	.01	0	0	.53	.02	-39.54
39	3.5	-1.4	.3	-2.3	0	0	0	0	.51	0	-23.43
40	3.2	.0	.4	-2.7	0	0	0	0	.50	.31	-42.80
41	2.8	1.2	.4	-3.1	0	.01	0	0	.49	.26	-49.22
42	2.5	2.1	.4	-3.5	0	0	0	0	.48	0	-27.24
43	2.3	2.9	.5	-3.8	0	.01	0	0	.47	.09	58.14
44	2.4	3.7	.5	-4.1	0	0	0	0	.45	.19	87.33
45	2.6	4.8	.3	-4.4	0	0	0	0	.44	.13	-75.16
46	2.8	6.2	0	-4.5	0	.01	0	0	.43	.04	41.22
47	3.0	7.7	-0.4	-4.5	0	0	0	0	.43	.19	72.92
48	3.1	9.4	-0.9	-4.1	0	0	0	0	.42	.12	-37.10
49	3.2	11.0	-1.2	-3.5	0	.01	0	0	.41	.16	-24.63
50	3.1	12.1	-1.3	-2.6	0	0	0	0	.40	0	0

O73 OIII
 BRFLS- 12 10.*M- 1 7APRIL-65 1316-1320
 LAGS= 50 N= 1327 DT= .20SFC
 MEAN U = 16.00972

K	ACOV	SP	PERIOD	F (MC)
0	3.5	.3	0	0
1	2.5	.5	20.0	50.0
2	1.8	.4	10.0	100.0
3	1.6	.3	6.7	150.0
4	1.3	.3	5.0	200.0
5	1.0	.2	4.0	250.0
6	.9	.1	3.3	300.0
7	.7	.1	2.9	350.0
8	.6	.1	2.5	400.0
9	.5	.1	2.2	450.0
10	.3	.1	2.0	500.0
11	.2	.1	1.8	550.0
12	.3	.1	1.7	600.0
13	.2	.1	1.5	650.0
14	.1	.0	1.4	700.0
15	.2	.1	1.3	750.0
16	.2	.0	1.3	800.0
17	.3	.0	1.2	850.0
18	.3	.0	1.1	900.0
19	.4	.0	1.1	950.0
20	.4	.0	1.0	1000.0
21	.4	.0	1.0	1050.0
22	.4	.0	.9	1100.0
23	.3	.0	.9	1150.0
24	.4	.0	.8	1200.0
25	.3	.0	.8	1250.0
26	.2	.0	.8	1300.0
27	.3	.0	.7	1350.0
28	.2	.0	.7	1400.0
29	.2	.0	.7	1450.0
30	.1	.0	.7	1500.0
31	.1	.0	.6	1550.0
32	.1	.0	.6	1600.0
33	.1	.0	.6	1650.0
34	.1	.0	.6	1700.0
35	.1	.0	.6	1750.0
36	.2	.0	.6	1800.0
37	.3	.0	.5	1850.0
38	.3	.0	.5	1900.0
39	.4	.0	.5	1950.0
40	.5	.0	.5	2000.0
41	.5	.0	.5	2050.0
42	.5	.0	.5	2100.0
43	.5	.0	.5	2150.0
44	.5	.0	.5	2200.0
45	.5	.0	.4	2250.0
46	.4	.0	.4	2300.0
47	.4	.0	.4	2350.0
48	.3	.0	.4	2400.0
49	.2	.0	.4	2450.0
50	.2	.0	.4	2500.0

074
RRFIS- 12

OIII
.6M- 1

OFF BOTTOM
7 APRIL - 65

1354-1359

TM No. 377

LAGS= 50 N= 1202
MEAN U = 16.74663

DT= .20SEC

K	ACOV	SP	PERIOD	F (MC)
0	3.9	.5	0 0	
1	3.3	1.0	20.0 50.0	
2	2.8	.8	10.0 100.0	
3	2.6	.4	6.7 150.0	
4	2.4	.2	5.0 200.0	
5	2.2	.1	4.0 250.0	
6	2.0	.1	3.3 300.0	
7	1.8	.1	2.9 350.0	
8	1.6	.1	2.5 400.0	
9	1.5	.1	2.2 450.0	
10	1.3	.0	2.0 500.0	
11	1.2	.0	1.8 550.0	
12	1.1	.0	1.7 600.0	
13	.9	.0	1.5 650.0	
14	.7	.0	1.4 700.0	
15	.5	.0	1.3 750.0	
16	.4	.0	1.3 800.0	
17	.3	.0	1.2 850.0	
18	.2	.0	1.1 900.0	
19	.1	.0	1.1 950.0	
20	-.1	.0	1.01000.0	
21	-.2	.0	1.01050.0	
22	-.2	.0	.91100.0	
23	-.2	.0	.91150.0	
24	-.2	.0	.81200.0	
25	-.2	.0	.81250.0	
26	-.2	.0	.81300.0	
27	-.2	.0	.71350.0	
28	-.2	.0	.71400.0	
29	-.3	.0	.71450.0	
30	-.3	.0	.71500.0	
31	-.2	.0	.61550.0	
32	-.1	.0	.61600.0	
33	-.1	.0	.61650.0	
34	-.1	.0	.61700.0	
35	-.1	.0	.61750.0	
36	-.1	.0	.61800.0	
37	.0	.0	.51850.0	
38	.0	.0	.51900.0	
39	.1	.0	.51950.0	
40	.1	.0	.52000.0	
41	.2	.0	.52050.0	
42	.3	.0	.52100.0	
43	.3	.0	.52150.0	
44	.3	.0	.52200.0	
45	.3	.0	.42250.0	
46	.2	.0	.42300.0	
47	.2	.0	.42350.0	
48	.2	.0	.42400.0	
49	.1	.0	.42450.0	
50	.1	.0	.42500.0	

075 OIII OFF BOTTOM
 BREIS 12 1.0M- 2 0. 07APR-66 1415-1417
 LAGS= 50 N= 629 DT= 0.2SEC
 MEAN U=-12.5

TM No. 377

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	4.386	1.862	0	0
1	7.899	2.821	20.0	50.0
2	7.487	1.664	10.0	100.0
3	7.180	.922	6.7	150.0
4	6.774	.261	5.0	200.0
5	6.367	.088	4.0	250.0
6	6.076	.077	3.3	300.0
7	5.684	.068	2.9	350.0
8	5.371	.057	2.5	400.0
9	5.036	.043	2.2	450.0
10	4.566	.053	2.0	500.0
11	4.077	.059	1.8	550.0
12	3.627	.046	1.7	600.0
13	3.220	.033	1.5	650.0
14	2.865	.021	1.4	700.0
15	2.535	.012	1.3	750.0
16	2.199	.011	1.3	800.0
17	1.917	.010	1.2	850.0
18	1.664	.009	1.1	900.0
19	1.410	.011	1.1	950.0
20	1.169	.015	1.0	1000.0
21	1.001	.018	1.0	1050.0
22	.871	.016	.9	1100.0
23	.818	.013	.9	1150.0
24	.820	.011	.8	1200.0
25	.831	.008	.8	1250.0
26	.876	.009	.8	1300.0
27	.967	.009	.7	1350.0
28	1.048	.009	.7	1400.0
29	1.135	.011	.7	1450.0
30	1.244	.011	.7	1500.0
31	1.325	.011	.6	1550.0
32	1.410	.013	.6	1600.0
33	1.541	.015	.6	1650.0
34	1.681	.013	.6	1700.0
35	1.806	.010	.6	1750.0
36	1.962	.008	.6	1800.0
37	2.108	.007	.5	1850.0
38	2.187	.005	.5	1900.0
39	2.220	.004	.5	1950.0
40	2.236	.003	.5	2000.0
41	2.272	.003	.5	2050.0
42	2.302	.003	.5	2100.0
43	2.259	.003	.5	2150.0
44	2.201	.003	.5	2200.0
45	2.225	.004	.4	2250.0
46	2.197	.005	.4	2300.0
47	2.104	.006	.4	2350.0
48	2.047	.006	.4	2400.0
49	1.979	.005	.4	2450.0
50	1.801	.003	.4	2500.0

076 ~~011~~ OFF BOTTOM

BRELS 12 5.0M- B 0. 07APR-65 1440-1443

TM No. 377

LAGS= 50 N= RR3 DT= 0.25EC

MEAN U= 17.5

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	3.125	.511	0	0
1	1.636	.617	20.0	50.0
2	1.372	.173	10.0	100.0
3	1.303	.117	6.7	150.0
4	1.285	.099	5.0	200.0
5	1.281	.090	4.0	250.0
6	1.147	.065	3.3	300.0
7	1.039	.056	2.9	350.0
8	.949	.050	2.5	400.0
9	.965	.045	2.2	450.0
10	.993	.030	2.0	500.0
11	.991	.035	1.8	550.0
12	.908	.043	1.7	600.0
13	.828	.035	1.5	650.0
14	.935	.032	1.4	700.0
15	.880	.037	1.3	750.0
16	1.019	.037	1.3	800.0
17	.800	.036	1.2	850.0
18	.783	.042	1.1	900.0
19	.809	.059	1.1	950.0
20	.933	.060	1.0	1000.0
21	.805	.041	1.0	1050.0
22	.803	.027	.9	1100.0
23	.812	.028	.9	1150.0
24	.818	.033	.8	1200.0
25	.965	.038	.8	1250.0
26	.822	.035	.8	1300.0
27	.781	.028	.7	1350.0
28	.688	.029	.7	1400.0
29	.630	.028	.7	1450.0
30	.706	.031	.7	1500.0
31	.636	.034	.6	1550.0
32	.746	.027	.6	1600.0
33	.671	.023	.6	1650.0
34	.700	.024	.6	1700.0
35	.806	.028	.6	1750.0
36	.802	.035	.6	1800.0
37	.712	.032	.5	1850.0
38	.716	.025	.5	1900.0
39	.832	.024	.5	1950.0
40	.785	.029	.5	2000.0
41	.769	.025	.5	2050.0
42	.889	.022	.5	2100.0
43	.737	.034	.5	2150.0
44	.632	.039	.5	2200.0
45	.588	.028	.4	2250.0
46	.808	.018	.4	2300.0
47	.811	.016	.4	2350.0
48	.758	.020	.4	2400.0
49	.823	.028	.4	2450.0

077

011

RBFI 5 13 1.0M- 1 0, 25MAY-65 1705-1710

LAGS= 50 N= 1294 DT= 0.25FC

MEAN U=-20.1 * MEAN W= 0.4

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	K	PHI
0	128.8	964.0	68.8	0	4.81	1.61	-0.63	0	0	.23	0
1	114.7	903.9	64.7	74.8	8.06	6.11	-0.10	.05	20.00	.02	-26.20
2	87.6	754.8	52.0	139.8	6.73	6.58	.66	1.89	10.00	.30	70.80
3	54.6	533.4	30.8	184.7	7.89	72.71	-1.70	13.53	6.67	.57	-82.83
4	22.0	269.2	5.6	205.2	15.20	260.08	6.25	49.55	5.00	.79	82.81
5	-6.0	-5.9	-20.0	200.7	22.61	317.95	22.66	67.33	4.00	.84	71.40
6	-27.4	-262.7	-42.9	173.1	19.84	166.33	22.67	43.81	3.33	.86	62.64
7	-40.4	-475.6	-59.1	130.0	13.47	60.68	12.84	22.17	2.86	.90	59.92
8	-45.0	-630.6	-66.5	78.8	9.01	32.82	6.97	12.96	2.50	.86	61.71
9	-43.6	-714.9	-63.6	27.4	5.72	15.93	2.00	6.98	2.22	.76	74.02
10	-36.6	-730.5	-52.0	-18.4	3.57	8.60	-0.64	4.01	2.00	.73	-80.93
11	-25.5	-685.5	-34.4	-58.4	2.33	4.11	-0.60	1.96	1.82	.66	-72.88
12	-13.4	-588.6	-14.0	-88.9	1.55	1.68	-0.36	.56	1.67	.41	-56.85
13	-2.0	-452.4	5.8	-108.9	1.14	.62	-0.32	-0.04	1.54	.39	7.05
14	7.8	-290.6	22.5	-118.1	.95	.59	-0.24	-0.06	1.43	.33	13.72
15	15.7	-117.5	34.5	-117.5	.80	.59	-0.12	-0.11	1.33	.24	43.56
16	21.8	53.8	41.6	-108.8	.65	.66	-0.02	-0.18	1.25	.27	54.09
17	25.0	211.2	43.0	-92.9	.51	.52	.04	-0.20	1.18	.40	-79.41
18	26.4	343.8	39.7	-70.9	.42	.39	.03	-0.12	1.11	.32	-74.65
19	25.7	442.1	33.0	-45.1	.32	.34	-0.03	-0.05	1.05	.16	60.36
20	23.7	499.3	24.1	-17.2	.25	.39	-0.05	.06	1.00	.26	-50.02
21	19.9	515.2	14.7	9.7	.22	.33	-0.04	.12	.95	.47	-69.79
22	15.0	490.0	5.1	33.1	.20	.22	-0.04	.08	.91	.41	-61.01
23	9.9	429.6	-3.7	51.9	.20	.11	-0.05	.01	.87	.32	-13.89
24	4.7	340.2	-12.5	65.8	.23	.11	-0.05	0	.83	.34	4.07
25	-0.2	229.1	-20.7	73.5	.22	.12	-0.05	-0.02	.80	.34	23.69
26	-4.7	106.3	-27.7	75.3	.16	.15	-0.05	-0.03	.77	.38	36.18
27	-8.2	-18.5	-33.5	71.9	.11	.19	-0.06	-0.05	.74	.49	39.42
28	-10.5	-135.3	-37.2	63.7	.11	.23	-0.05	-0.04	.71	.39	34.90
29	-12.1	-236.9	-38.4	51.1	.09	.24	-0.03	0	.69	.22	5.89
30	-12.8	-315.2	-36.2	34.8	.07	.22	-0.01	.01	.67	.14	-25.46
31	-11.8	-365.6	-30.6	15.9	.07	.19	-0.01	-0.02	.65	.23	57.74
32	-9.3	-385.2	-22.0	-4.1	.06	.19	-0.02	-0.04	.63	.40	55.68
33	-6.1	-372.8	-11.2	-23.2	.07	.17	-0.03	-0.03	.61	.34	44.71
34	-2.8	-331.8	.3	-39.6	.09	.11	-0.02	-0.02	.59	.27	42.88
35	1.7	-266.2	11.3	-52.7	.09	.08	-0.02	-0.03	.57	.41	63.20
36	5.8	-183.2	20.4	-61.4	.09	.09	-0.01	-0.04	.56	.48	74.91
37	9.5	-90.2	26.9	-64.9	.10	.11	-0.01	-0.05	.54	.49	79.52
38	12.8	3.5	30.2	-63.2	.10	.14	0	-0.04	.53	.34	-85.01
39	15.1	91.5	30.5	-56.9	.09	.15	.01	-0.02	.51	.19	-68.22
40	16.4	167.0	27.5	-47.2	.07	.16	0	-0.01	.50	.13	-87.58
41	17.3	224.3	22.6	-34.7	.04	.18	.01	0	.49	.06	-18.48
42	17.7	260.9	16.6	-20.1	.05	.21	.02	.01	.48	.22	20.37
43	18.1	274.4	10.2	-4.7	.07	.21	.03	.01	.47	.25	11.53
44	18.1	266.3	4.1	10.7	.07	.16	.01	.01	.45	.16	29.67
45	17.2	238.8	-1.4	24.9	.06	.13	0	.01	.44	.13	-77.77
46	15.9	194.9	-6.4	37.1	.05	.14	0	.01	.43	.12	-73.65
47	14.1	139.4	-10.6	46.0	.04	.14	0	0	.43	.06	73.59
48	11.7	75.8	-14.6	51.8	.05	.12	.01	0	.42	.10	-10.32
49	8.5	9.4	-17.8	54.0	.06	.10	.01	-0.01	.41	.14	-35.50
50	4.8	-53.9	-20.0	51.9	.03	.05	0	0	.40	.07	0

* U SIGN REVERSED ON RAW DATA

078

0III

BHLS 14 1.5M-01 25JUL-65 1714-1719

LAGS= 50 N= 1540 DT= 0.2SEC

MEAN U= 19.8 MEAN W= .13

CORRELATION COEFFICIENT .07

K	ACOV U	ACOV W	COV IN	COV OUT	SP U	SP W	CO	QUA	PER	R	PHI
0	102.6	956.5	23.2	0	3.48	3.34	-1.17	0	0	.34	0
1	93.1	905.3	22.2	60.9	6.54	9.51	-1.42	.97	20.00	.22	-34.34
2	74.3	778.2	19.0	114.4	6.59	10.23	-1.55	2.66	10.00	.37	-59.81
3	50.5	586.7	12.5	154.3	9.21	114.92	-4.64	18.95	6.67	.60	-76.22
4	25.5	350.4	3.4	176.1	15.69	320.59	3.96	54.35	5.00	.77	85.83
5	2.5	97.0	-7.9	178.8	13.73	300.78	17.23	58.40	4.00	.81	73.56
6	-16.0	-150.4	-19.5	163.5	13.50	110.49	12.06	29.50	3.33	.83	67.76
7	-28.3	-370.1	-29.6	133.6	8.37	36.41	2.56	13.88	2.86	.81	79.56
8	-34.6	-546.6	-37.0	94.9	7.11	24.71	-0.07	10.19	2.50	.77	-89.59
9	-35.3	-668.4	-39.8	52.3	5.07	11.55	-1.06	5.54	2.22	.74	-79.17
10	-31.8	-730.4	-37.9	10.6	1.87	4.08	-0.88	1.34	2.00	.58	-56.73
11	-25.6	-734.3	-31.6	-26.2	.90	1.32	-0.53	.01	1.82	.49	-1.59
12	-14.2	-684.0	-21.5	-56.4	.91	1.21	-0.44	.04	1.67	.42	-5.78
13	-10.7	-589.6	-9.0	-78.8	.65	.72	-0.28	-0.01	1.54	.41	1.36
14	-4.1	-459.1	4.3	-93.4	.55	.62	-0.13	-0.07	1.43	.26	27.50
15	.8	-304.4	16.6	-100.9	.42	.41	-0.11	-0.07	1.33	.32	34.82
16	4.4	-136.6	27.1	-102.2	.32	.38	-0.08	.02	1.25	.24	-11.50
17	7.4	32.6	34.6	-97.9	.23	.28	-0.06	-0.02	1.18	.24	20.63
18	10.6	194.1	38.4	-88.0	.15	.26	-0.03	-0.03	1.11	.22	44.93
19	13.9	337.2	38.3	-73.1	.17	.19	-0.03	-0.03	1.05	.25	45.10
20	16.7	453.2	34.6	-53.8	.20	.21	-0.03	.01	1.00	.17	-25.44
21	18.7	534.3	27.7	-30.8	.18	.15	-0.02	.03	.95	.19	-58.28
22	19.4	575.6	18.4	-5.9	.15	.10	-0.01	.01	.91	.13	-54.31
23	18.5	574.2	7.5	20.0	.10	.11	-0.02	-0.01	.87	.23	21.50
24	15.2	531.2	-3.7	44.1	.09	.17	-0.02	-0.01	.83	.20	27.29
25	10.0	449.5	-14.6	64.4	.11	.19	-0.02	0	.80	.12	12.57
26	3.0	336.5	-24.1	78.1	.10	.19	-0.02	0	.77	.12	-3.89
27	-4.1	202.6	-31.6	84.2	.09	.17	-0.01	-0.01	.74	.08	42.42
28	-10.1	58.9	-36.8	82.6	.08	.18	0	0	.71	.04	57.02
29	-14.1	-42.9	-39.5	74.0	.06	.16	0	.01	.69	.07	48.64
30	-15.5	-212.2	-39.5	59.7	.06	.16	0	-0.01	.67	.16	-71.63
31	-14.1	-319.7	-36.4	42.2	.06	.18	0	-0.02	.65	.21	-86.87
32	-10.6	-397.7	-30.5	22.9	.06	.19	0	-0.01	.63	.14	84.50
33	-6.1	-443.2	-22.2	3.9	.05	.19	-0.01	-0.02	.61	.20	67.94
34	-1.6	-455.3	-12.0	-13.9	.05	.19	-0.01	0	.59	.16	19.83
35	2.2	-434.2	-1.0	-28.7	.05	.14	-0.01	.01	.57	.14	-26.33
36	4.4	-384.9	10.2	-40.5	.05	.14	-0.01	.01	.56	.13	-31.67
37	4.5	-311.2	20.1	-49.2	.05	.15	-0.01	.01	.54	.11	-33.54
38	3.6	-218.8	27.6	-54.1	.04	.14	0	.01	.53	.08	-78.05
39	2.8	-115.4	32.8	-56.0	.04	.14	-0.01	.02	.51	.25	-74.07
40	3.3	-8.5	35.0	-55.4	.04	.16	0	.02	.50	.27	-87.08
41	4.9	96.1	34.3	-52.2	.04	.17	.01	0	.49	.14	10.12
42	7.2	190.6	31.6	-46.7	.05	.17	.02	-0.01	.48	.21	-27.89
43	9.9	269.8	26.6	-38.2	.05	.15	.01	-0.01	.47	.20	-30.03
44	12.5	328.4	20.3	-26.2	.05	.12	.01	-0.01	.45	.17	-26.27
45	14.3	362.5	12.8	-11.5	.04	.10	.01	0	.44	.19	7.67
46	14.5	369.6	4.7	4.6	.03	.08	.01	0	.43	.22	-1.14
47	12.7	349.2	-3.5	20.9	.04	.06	.01	-0.01	.43	.23	-48.74
48	9.3	303.2	-11.5	36.0	.04	.08	0	.01	.42	.10	69.66
49	5.0	234.4	-18.5	47.9	.04	.12	.01	.02	.41	.28	65.54
50	.5	148.9	-23.8	55.0	.02	.06	.01	0	.40	.23	0

~~* U CHANNEL SIGN REVERSED~~

079

OMI

HBELS 13 2.5M-1 0, 25MAY-65 1740-1745

LAGS= 50 N= 1461 DT= 0.2SEC

MEAN U= 15.5 MEAN W= -0.7

CORRELATION COEFFICIENT .11

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CU	QUA	PER	R	PHI
0	51.3	668.6	20.2	0	4.15	7.02	-0.80	0	0	.15	0
1	47.4	634.9	19.1	22.9	6.55	16.35	-1.19	.11	20.00	.12	-5.46
2	40.2	558.6	15.3	43.6	5.01	23.86	-2.60	1.30	10.00	.27	-26.60
3	31.2	440.9	9.2	59.6	5.19	104.85	-2.91	10.04	6.67	.41	-73.83
4	21.9	294.5	1.7	70.0	7.62	226.84	6.54	24.58	5.00	.61	75.11
5	13.3	131.9	-6.9	73.4	5.87	186.00	12.78	22.99	4.00	.74	60.93
6	6.0	-31.2	-15.1	69.9	4.68	60.34	7.01	10.67	3.33	.76	56.69
7	.2	-182.4	-22.1	60.5	3.19	19.96	1.99	5.29	2.86	.71	69.43
8	-3.8	-309.8	-27.3	46.2	2.01	11.14	.27	2.51	2.50	.53	83.84
9	-6.3	-406.7	-29.8	29.6	1.08	3.46	-6.29	.55	2.22	.32	-61.92
10	-7.2	-466.1	-29.3	12.4	.75	1.53	-0.22	.18	2.00	.27	-40.10
11	-6.8	-487.7	-25.9	-4.1	.54	.47	-0.17	.06	1.82	.35	-18.74
12	-5.4	-473.2	-19.8	-18.7	.37	.47	-0.02	-0.02	1.67	.06	48.12
13	-3.4	-426.4	-11.7	-30.5	.35	.40	.01	-0.11	1.54	.30	-86.91
14	-1.2	-352.4	-2.7	-39.1	.32	.35	.03	-0.10	1.43	.32	-75.68
15	.9	-259.3	6.4	-44.0	.22	.25	0	-0.07	1.33	.28	88.00
16	2.7	-154.4	14.2	-45.5	.14	.26	-0.03	-0.03	1.25	.22	41.25
17	3.9	-44.6	20.6	-43.9	.10	.16	-0.04	-0.01	1.18	.34	16.90
18	5.1	62.5	25.2	-39.6	.10	.17	-0.03	0	1.11	.20	-9.75
19	6.1	161.2	27.5	-33.5	.10	.19	-0.01	.03	1.05	.23	-69.39
20	6.9	244.2	27.7	-26.1	.08	.19	0	.02	1.00	.17	76.88
21	7.4	307.8	25.7	-17.6	.06	.15	.01	0	.95	.08	-4.78
22	7.6	348.3	21.8	-8.7	.05	.16	0	.01	.91	.12	-82.68
23	7.5	363.5	16.7	0	.04	.13	-0.01	.01	.87	.23	-50.07
24	7.3	353.4	10.3	8.4	.06	.13	-0.01	.01	.83	.19	-53.30
25	7.0	319.0	3.5	16.3	.05	.17	0	0	.80	.07	40.74
26	6.6	264.0	-3.2	23.3	.04	.20	.01	-0.02	.77	.21	-56.15
27	6.2	191.8	-9.7	28.5	.04	.19	.01	-0.01	.74	.16	-29.36
28	5.5	109.1	-15.3	31.8	.03	.18	0	0	.71	.04	50.92
29	4.5	21.2	-19.9	32.6	.02	.15	0	0	.69	.05	11.48
30	3.3	-64.9	-23.0	31.2	.03	.13	0	0	.67	.02	55.78
31	2.1	-143.3	-24.8	27.4	.03	.12	0	0	.65	.09	-11.94
32	1.0	-208.7	-24.9	21.7	.03	.12	0	.01	.63	.16	-60.88
33	.3	-257.4	-23.6	14.2	.03	.10	0	.01	.61	.19	-78.39
34	.0	-284.8	-20.9	5.7	.02	.12	0	.01	.59	.12	83.47
35	.1	-289.9	-17.2	-3.2	.02	.15	-0.01	0	.57	.13	-3.55
36	.9	-273.0	-12.5	-11.5	.03	.16	-0.02	-0.01	.56	.37	19.07
37	1.8	-236.4	-6.8	-18.6	.03	.15	-0.02	-0.01	.54	.40	30.74
38	2.6	-143.6	-0.6	-24.1	.03	.14	-0.01	-0.01	.53	.28	59.70
39	3.2	-119.4	5.5	-27.9	.02	.12	0	-0.01	.51	.25	-82.35
40	3.8	-49.3	11.5	-29.2	.02	.12	0	-0.01	.50	.22	-89.66
41	4.3	21.1	16.9	-27.7	.02	.14	-0.01	-0.01	.49	.28	57.39
42	4.6	87.0	20.9	-24.3	.02	.14	-0.01	-0.01	.48	.28	57.49
43	4.6	144.2	23.1	-19.1	.02	.12	0	-0.01	.47	.16	-83.52
44	4.7	188.2	23.4	-13.0	.02	.10	0	0	.45	.03	62.85
45	4.9	217.3	21.8	-6.4	.02	.11	0	0	.44	.08	5.30
46	5.2	230.0	18.1	.3	.02	.15	0	0	.43	.09	-68.92
47	5.2	226.0	12.7	7.0	.02	.17	.01	.01	.43	.18	53.86
48	5.0	206.9	6.1	12.9	.02	.17	0	.01	.42	.22	-84.04
49	4.3	175.3	-1.2	18.0	.02	.19	-0.01	0	.41	.12	-8.79
50	3.3	133.5	-8.3	21.6	.01	.11	0	0	.40	.12	0

080 OIII
 RBELS 13 2.5M-II 0, 25MAY-65 1747-1752

LAGS= 50 N= 1532 DT= 0.2SEC

MEAN U=-13.9 MFAN W= -2.6

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	42.1	573.1	27.5	0	2.03	2.97	-0.07	0	0	.03	0
1	38.3	545.5	25.9	21.3	3.66	5.42	.13	.80	20.00	.18	80.83
2	30.5	475.8	21.1	40.6	3.25	13.02	-0.43	1.84	10.00	.29	-76.72
3	20.8	369.9	13.6	55.9	3.32	100.64	-1.95	7.82	6.67	.44	-75.98
4	11.2	238.1	4.2	65.0	4.61	193.44	3.77	16.26	5.00	.56	76.95
5	2.6	93.8	-5.9	66.9	6.77	148.57	12.24	18.82	4.00	.71	56.96
6	-4.3	-50.6	-15.2	61.4	6.90	67.18	10.21	15.22	3.33	.85	56.15
7	-9.1	-183.0	-22.7	49.9	4.50	26.48	3.61	7.97	2.86	.80	65.62
8	-11.7	-243.5	-27.4	34.1	2.05	6.46	.46	2.57	2.50	.72	79.81
9	-12.4	-375.0	-28.8	16.5	.89	2.47	-0.08	.64	2.22	.44	-82.76
10	-11.4	-422.5	-26.8	-0.7	.63	1.04	-0.06	-0.12	2.00	.17	64.08
11	-8.8	-435.4	-21.5	-15.6	.69	.83	-0.09	-0.27	1.82	.37	70.63
12	-5.1	-415.5	-13.8	-26.5	.66	.61	-0.06	-0.29	1.67	.46	79.06
13	-0.6	-367.9	-4.6	-33.0	.45	.47	-0.03	-0.17	1.54	.38	79.44
14	3.8	-298.7	5.0	-35.1	.28	.34	-0.01	-0.11	1.43	.35	85.76
15	7.5	-215.2	13.7	-33.6	.21	.28	-0.02	-0.07	1.33	.30	75.80
16	9.8	-125.3	20.8	-29.2	.15	.24	-0.02	-0.06	1.25	.32	74.73
17	16.5	-35.8	25.5	-22.9	.12	.19	-0.02	-0.04	1.18	.30	70.04
18	9.7	47.6	27.4	-15.7	.10	.12	-0.02	-0.03	1.11	.36	54.89
19	7.7	119.8	26.5	-8.6	.09	.11	-0.02	-0.03	1.05	.39	57.09
20	5.1	178.2	23.1	-2.2	.09	.10	-0.01	-0.04	1.00	.47	75.73
21	2.4	221.0	17.5	2.9	.07	.10	-0.01	-0.03	.95	.35	69.24
22	.0	248.1	10.5	6.6	.06	.09	-0.01	-0.01	.91	.19	22.92
23	-1.7	260.1	2.8	8.8	.06	.09	-0.01	0	.87	.10	20.49
24	-2.8	258.3	-4.6	9.6	.04	.09	.01	-0.01	.83	.13	-43.94
25	-3.2	244.2	-11.2	9.2	.03	.10	0	0	.80	.07	13.53
26	-3.2	219.7	-16.4	8.1	.04	.10	0	0	.77	.07	-19.29
27	-3.1	187.1	-19.9	6.9	.03	.09	0	-0.01	.74	.10	71.87
28	-2.6	148.0	-21.4	5.8	.03	.07	0	-0.01	.71	.16	-56.53
29	-1.9	104.7	-21.1	5.0	.03	.06	0	0	.69	.10	-3.85
30	-1.0	58.6	-19.4	4.6	.02	.06	0	0	.67	.05	-61.45
31	-0.0	11.0	-16.5	4.7	.02	.06	0	0	.65	.13	-9.88
32	.9	-46.3	-12.7	5.3	.02	.07	0	0	.63	.03	-79.85
33	1.7	-81.7	-8.5	6.2	.02	.09	.01	0	.61	.16	8.83
34	2.2	-123.6	-4.1	6.9	.02	.08	.01	0	.59	.17	34.22
35	2.4	-160.2	.1	7.5	.02	.06	0	0	.57	.09	24.41
36	2.2	-189.8	3.9	7.7	.01	.06	0	0	.56	.09	-55.37
37	1.9	-210.6	7.3	7.2	.01	.07	0	0	.54	.07	41.19
38	1.9	-221.8	10.0	6.0	.02	.08	0	0	.53	.16	61.61
39	1.9	-220.8	12.3	3.7	.01	.08	0	-0.01	.51	.26	87.03
40	1.9	-207.5	14.0	.4	.01	.08	0	-0.01	.50	.21	-85.42
41	1.9	-181.9	15.0	-3.6	.01	.07	0	0	.49	.10	-72.78
42	1.8	-144.5	15.4	-8.2	.01	.06	0	0	.48	.06	42.59
43	1.6	-97.6	14.9	-12.8	.01	.05	0	0	.47	.03	-24.07
44	1.2	-43.9	13.6	-17.2	.01	.05	0	0	.45	.12	16.06
45	.8	14.0	11.5	-20.3	.01	.06	0	0	.44	.14	-49.17
46	.7	71.7	8.8	-21.9	.01	.05	0	0	.43	.08	67.50
47	1.0	125.4	5.5	-21.5	.01	.04	0	0	.43	.15	2.77
48	1.6	172.1	1.7	-19.2	.01	.05	.01	0	.42	.21	-0.56
49	2.4	207.4	-2.0	-15.1	.01	.06	0	0	.41	.18	-11.55
50	2.9	228.4	-5.7	-9.7	.01	.03	0	0	.40	.13	0

OBI OIII
 BBFIS 13 1.0M-II 0. 25MAY-65 1828-1833

LAGS= 50 N= 1636 OI= 0.2SEC

MEAN U=-11.3 MEAN W= 1.2

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	200.8	878.0	-48.2	0	5.28	5.70	-1.13	0	0	.14	0
1	188.7	829.3	-44.8	67.2	12.34	13.88	-1.32	1.75	20.00	.17	-53.07
2	159.4	705.8	-35.7	128.1	11.66	18.36	-1.21	2.26	10.00	.18	-61.74
3	118.8	593.2	-22.5	177.2	21.07	113.20	-5.08	28.76	6.67	.60	-79.98
4	72.0	305.5	-6.9	209.3	41.85	265.43	-5.06	76.77	5.00	.73	-86.23
5	24.4	76.1	8.2	221.8	45.96	239.45	-4.85	70.91	4.00	.68	-86.04
6	-19.4	-141.8	20.5	214.0	30.29	109.81	-11.50	33.27	3.33	.61	-70.93
7	-55.3	-330.0	27.9	187.5	15.26	54.35	-11.14	15.20	2.66	.65	-53.77
8	-81.1	-475.2	29.8	146.3	6.27	29.48	-5.11	4.52	2.50	.50	-41.48
9	-94.1	-568.5	26.6	95.4	2.63	10.71	-1.58	.25	2.22	.30	-8.99
10	-99.7	-607.8	19.4	40.5	1.50	4.28	-0.02	0	2.00	.01	-1.85
11	-92.5	-596.1	10.0	-13.0	1.08	2.61	-0.14	-0.17	1.82	.13	50.02
12	-76.7	-541.3	.1	-60.9	.81	1.86	-0.06	-0.11	1.67	.10	61.35
13	-55.2	-453.0	-8.5	-99.9	.67	1.46	0	-0.23	1.54	.23	89.53
14	-31.3	-342.5	-14.4	-128.0	.54	1.14	.02	-0.19	1.43	.25	-84.08
15	-7.3	-220.3	-16.5	-143.5	.37	.76	.08	-0.16	1.33	.34	-84.29
16	14.5	-94.8	-14.9	-147.0	.27	.60	.05	-0.06	1.25	.20	-51.51
17	32.4	25.2	-10.4	-139.8	.20	.60	.02	0	1.18	.05	4.70
18	45.0	133.9	-3.7	-123.9	.16	.47	.02	.02	1.11	.10	40.79
19	52.5	227.0	3.4	-101.4	.14	.26	.01	-0.01	1.05	.08	-52.47
20	55.5	301.6	9.7	-75.0	.12	.19	0	-0.01	1.00	.04	74.38
21	54.2	355.9	13.7	-47.0	.08	.18	-0.01	0	.95	.12	6.44
22	49.1	387.8	14.7	-18.6	.09	.22	-0.03	.01	.91	.22	-11.64
23	41.3	395.5	12.9	9.5	.14	.21	-0.03	-0.03	.87	.24	46.25
24	32.4	378.2	8.9	35.4	.15	.15	-0.01	-0.04	.83	.24	79.13
25	23.0	338.2	2.8	58.1	.09	.14	0	-0.01	.80	.08	63.36
26	13.3	277.9	-4.2	77.1	.05	.16	-0.01	.03	.77	.33	-61.41
27	3.9	201.7	-11.1	92.0	.06	.14	-0.02	.02	.74	.29	-48.25
28	-4.4	113.1	-17.1	101.9	.07	.13	-0.02	-0.01	.71	.21	31.41
29	-11.4	19.1	-21.8	106.1	.05	.13	-0.01	-0.02	.69	.25	63.28
30	-17.6	-73.5	-24.6	104.3	.04	.14	-0.01	-0.01	.67	.15	27.08
31	-22.9	-159.1	-25.3	96.6	.03	.13	-0.01	0	.65	.18	-3.85
32	-26.6	-229.9	-24.1	82.6	.03	.09	0	.01	.63	.14	-88.74
33	-28.6	-281.8	-20.9	63.3	.03	.08	0	0	.61	.08	40.26
34	-29.1	-310.8	-16.1	39.5	.03	.08	-0.01	0	.59	.15	-27.97
35	-28.2	-317.3	-10.0	12.9	.03	.08	-0.01	.01	.57	.22	-38.52
36	-25.8	-302.2	-2.1	-15.4	.04	.10	-0.01	.01	.56	.14	-47.46
37	-22.3	-268.9	6.8	-42.9	.04	.10	0	0	.54	.07	-20.16
38	-17.7	-219.4	16.0	-67.8	.03	.08	0	0	.53	.08	-29.85
39	-12.4	-159.5	24.2	-88.3	.03	.07	0	.01	.51	.20	-57.56
40	-6.4	-94.0	30.4	-102.3	.03	.09	-0.01	.02	.50	.35	-62.93
41	.5	-28.1	33.0	-108.4	.02	.09	-0.01	.01	.49	.27	-51.68
42	7.8	35.2	31.7	-106.5	.02	.08	0	.01	.48	.18	-49.79
43	15.1	92.4	26.2	-97.3	.02	.10	0	.01	.47	.24	-69.54
44	22.3	141.9	17.3	-81.1	.02	.12	0	.01	.45	.19	89.85
45	28.7	192.0	5.8	-59.1	.02	.10	.01	0	.44	.18	37.81
46	33.5	211.0	-7.1	-33.5	.02	.09	.01	0	.43	.14	30.29
47	36.0	228.5	-19.9	-6.0	.02	.11	0	0	.43	.06	-64.75
48	35.8	234.1	-30.7	21.4	.02	.10	0	0	.42	.02	14.38
49	33.3	226.7	-37.5	46.0	.02	.09	0	.01	.41	.15	74.28

CORRELATION COEFFICIENT -0.115

082 O III
 HREIS- 13 1.0M- III 25 MAY-65 1835-1840
 LAGS= 50 N= 1304 DT= .20SEC
 MFAN U = 12.4 MEAN W = -3.2

TM No. 377

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	272.5	1106.4	-87.3	0	6.29	3.35	-2.22	0	0	.48	0
1	256.2	1039.3	-82.7	121.2	15.76	9.47	-5.13	1.38	20.00	.44	-15.08
2	218.3	885.9	-68.6	231.7	19.58	12.05	-6.18	5.32	10.00	.53	-40.74
3	164.0	654.1	-48.4	319.2	28.42	114.64	-10.08	41.19	6.67	.74	-76.25
4	100.3	371.7	-23.9	376.5	55.69	330.75	-12.64	123.26	5.00	.91	-84.14
5	34.2	70.4	.5	397.3	66.09	353.36	-11.14	141.69	4.00	.93	-85.50
6	-26.9	-221.0	20.9	381.0	41.60	169.66	-14.42	73.78	3.33	.89	-78.94
7	-77.4	-475.7	34.6	331.3	19.23	55.60	-14.85	22.43	2.86	.82	-56.48
8	-114.1	-675.2	40.4	254.1	8.36	24.58	-7.91	5.27	2.50	.66	-33.71
9	-134.8	-803.8	38.1	157.6	3.15	10.99	-2.69	-0.20	2.22	.46	4.19
10	-140.3	-856.9	29.7	53.2	1.99	4.57	-0.56	-0.37	2.00	.22	33.08
11	-131.1	-835.2	18.6	-49.8	1.39	1.99	.08	-0.06	1.82	.06	-39.10
12	-110.3	-748.1	6.9	-142.2	.78	1.75	.23	.11	1.67	.22	26.94
13	-81.4	-607.0	-3.3	-215.3	.49	1.44	.19	-0.02	1.54	.23	-4.55
14	-48.7	-428.3	-9.6	-264.0	.41	1.15	.17	-0.08	1.43	.28	-25.06
15	-15.2	-231.9	-11.7	-286.0	.33	.75	.11	-0.15	1.33	.37	-53.18
16	15.9	-30.7	-19.2	-281.7	.26	.62	.03	-0.14	1.25	.36	-77.53
17	41.6	158.4	-5.6	-254.0	.19	.53	.04	-0.11	1.18	.38	-69.47
18	60.5	322.3	.0	-208.4	.14	.46	.05	-0.03	1.11	.22	-34.12
19	71.5	451.7	5.7	-150.6	.11	.36	.01	-0.02	1.05	.11	-73.09
20	74.8	540.3	10.1	-86.5	.13	.30	-0.01	-0.04	1.00	.20	72.64
21	70.7	584.3	12.5	-21.9	.14	.29	-0.02	-0.04	.95	.21	61.00
22	61.4	582.2	11.7	38.6	.14	.31	-0.02	-0.01	.91	.10	30.78
23	48.2	538.1	8.3	90.5	.14	.28	.01	-0.02	.87	.12	-68.67
24	32.3	456.3	3.2	131.1	.13	.27	.03	-0.03	.83	.22	-48.24
25	15.4	346.7	-3.0	158.8	.12	.25	.02	-0.02	.80	.14	-47.22
26	-1.3	218.9	-9.5	172.4	.10	.23	-0.00	-0.02	.77	.10	74.71
27	-17.4	84.9	-14.6	173.4	.08	.27	-0.02	-0.02	.74	.21	39.61
28	-31.7	-46.6	-18.0	161.5	.06	.33	-0.02	.01	.71	.16	-22.86
29	-43.9	-162.9	-19.7	139.1	.06	.32	-0.02	.03	.69	.25	-54.68
30	-53.1	-260.9	-18.9	108.2	.08	.32	-0.06	.03	.67	.44	-29.02
31	-59.0	-331.9	-15.0	71.2	.08	.30	-0.07	.03	.65	.44	-21.10
32	-60.8	-374.1	-10.0	32.7	.07	.22	-0.02	.01	.63	.16	-26.59
33	-57.9	-388.0	-2.9	-6.6	.06	.22	-0.01	-0.01	.61	.14	65.96
34	-51.4	-375.3	4.8	-42.7	.06	.29	-0.01	-0.03	.59	.23	67.24
35	-40.8	-337.2	11.8	-73.7	.05	.28	.00	-0.03	.57	.29	-88.62
36	-27.3	-280.7	17.4	-97.8	.05	.27	-0.00	-0.04	.56	.38	85.27
37	-12.7	-219.7	22.0	-113.5	.04	.29	-0.02	-0.03	.54	.34	54.98
38	2.7	-132.2	24.7	-120.7	.04	.28	-0.02	-0.01	.53	.27	27.54
39	17.3	-50.9	25.2	-119.3	.05	.24	-0.02	-0.03	.51	.37	58.63
40	29.7	28.1	23.7	-109.5	.04	.25	-0.02	-0.03	.50	.37	51.07
41	39.6	100.5	20.0	-93.7	.04	.28	-0.02	.00	.49	.17	-15.37
42	46.5	161.7	14.1	-72.9	.05	.29	-0.01	-0.00	.48	.06	18.49
43	50.6	208.4	6.8	-48.8	.05	.30	-0.02	-0.03	.47	.30	62.83
44	51.5	239.6	-1.3	-23.6	.06	.32	-0.02	-0.03	.45	.26	52.81
45	49.8	253.5	-9.4	.4	.07	.31	-0.01	-0.02	.44	.13	57.57
46	45.7	253.1	-17.1	22.0	.06	.24	-0.01	-0.02	.43	.19	74.62
47	39.4	237.5	-24.0	39.5	.04	.23	-0.00	-0.02	.43	.19	86.89
48	31.7	209.0	-29.3	54.1	.03	.28	.01	-0.00	.42	.07	-18.71
49	23.1	170.9	-32.6	65.3	.03	.23	-0.01	-0.00	.41	.11	1.28
50	14.3	125.9	-34.3	73.8	.02	.09	-0.01	-0.00	.40	.35	.00

CORRELATION COEFFICIENT -0.159

083 OIII 25 MAY-65 2016-2020

BRFIS-13 4.0M-III LAGS=50 N=1694 DT=.20SEC

MEAN U = -13.6 MEAN W = -8.5

K	ACOV U	ACOV W	COV IN	COV OUT	SP U	SP W	CO	QUA	PER	R	PHI
0	89.7	424.0	-20.9	0	13.09	8.93	-1.87	0	0	.17	0
1	84.8	408.1	-20.7	22.0	14.32	14.74	-3.62	-2.18	20.00	.25	30.99
2	79.8	366.2	-19.9	42.3	11.09	27.46	-3.88	1.37	10.00	.24	-19.43
3	74.3	301.3	-18.3	59.4	12.67	92.06	-5.39	18.96	6.67	.58	-74.13
4	59.6	219.3	-15.9	71.9	14.19	139.64	-3.99	32.94	5.00	.75	-83.10
5	49.4	127.1	-12.8	79.1	9.24	94.65	-0.86	22.45	4.00	.76	-87.79
6	37.6	31.5	-9.3	80.3	4.03	32.14	-1.11	7.07	3.33	.63	-81.09
7	27.6	-60.4	-6.0	75.9	1.73	8.39	-1.04	1.40	2.86	.46	-53.50
8	19.8	-142.7	-2.9	66.4	1.08	2.15	.01	.07	2.50	.04	79.06
9	11.5	-209.8	-0.4	52.6	.90	.76	.22	-0.01	2.22	.26	-3.52
10	5.9	-258.2	1.4	35.4	.59	.52	.18	-0.04	2.00	.34	-11.37
11	2.2	-295.4	2.7	16.3	.33	.36	.07	.04	1.82	.22	31.25
12	.0	-291.2	3.6	-3.2	.24	.33	.08	.06	1.67	.36	39.68
13	-1.6	-276.6	4.1	-21.6	.21	.31	.09	.05	1.54	.41	25.65
14	.1	-244.4	4.3	-37.8	.15	.21	.07	.01	1.43	.39	7.84
15	0.1	-198.3	4.3	-50.7	.13	.13	.04	-0.01	1.33	.34	-19.08
16	0.0	-142.9	4.4	-59.5	.13	.08	.03	-0.03	1.25	.38	-47.36
17	0.7	-82.7	4.6	-64.2	.10	.07	.01	-0.02	1.18	.29	-59.79
18	12.7	-22.0	4.6	-64.9	.06	.06	.00	-0.01	1.11	.20	-68.26
19	16.6	35.6	4.8	-61.7	.05	.05	.01	-0.01	1.05	.17	-38.49
20	20.1	86.4	4.7	-55.3	.04	.06	.00	-0.01	1.00	.26	-72.11
21	23.0	127.9	4.3	-46.3	.03	.05	-0.00	-0.01	.95	.13	73.11
22	25.0	158.6	3.5	-35.5	.03	.03	-0.00	.00	.91	.04	-1.22
23	26.2	177.7	2.1	-23.7	.02	.02	.00	.00	.87	.03	41.35
24	26.4	185.1	.2	-11.6	.02	.03	.00	.00	.83	.10	62.39
25	25.6	191.5	-2.0	-0.2	.02	.04	-0.00	.01	.80	.33	-77.98
26	24.2	168.4	-4.3	10.1	.02	.04	-0.00	.01	.77	.36	-73.75
27	22.3	147.8	-6.5	18.9	.01	.03	-0.00	.00	.74	.16	-47.91
28	20.2	121.2	-8.3	25.8	.01	.02	-0.00	-0.00	.71	.20	32.32
29	18.1	90.9	-9.4	30.6	.01	.03	-0.00	.00	.69	.04	-76.89
30	15.9	58.7	-9.9	33.1	.01	.03	.00	.00	.67	.17	5.27
31	13.6	26.4	-9.6	33.7	.01	.03	.00	-0.00	.65	.18	-2.76
32	11.2	-4.2	-8.6	32.5	.01	.03	.00	-0.00	.63	.15	-18.18
33	8.8	-31.5	-7.0	29.8	.01	.03	.00	-0.00	.61	.18	-10.28
34	6.5	-54.4	-4.7	25.7	.01	.03	.00	-0.00	.59	.26	-18.02
35	4.5	-72.1	-1.9	20.5	.01	.03	.00	-0.00	.57	.32	-17.72
36	2.7	-84.0	1.3	14.6	.00	.03	.00	-0.00	.56	.38	-13.96
37	1.1	-90.1	4.5	8.3	.01	.03	.00	-0.00	.54	.33	-6.33
38	-0.1	-90.6	7.4	1.8	.01	.03	.00	-0.00	.53	.21	-6.99
39	-1.0	-86.1	9.9	-4.6	.01	.03	.00	-0.00	.51	.14	-20.71
40	-1.6	-77.5	11.7	-10.7	.01	.02	.00	.00	.50	.14	.90
41	-1.8	-66.0	12.5	-16.2	.01	.03	.00	.00	.49	.20	50.87
42	-1.8	-52.2	12.3	-20.7	.01	.03	.00	.00	.48	.11	62.59
43	-1.6	-37.3	11.0	-24.0	.01	.03	.00	.00	.47	.06	59.55
44	-1.2	-22.0	8.9	-26.1	.00	.03	.00	.00	.45	.25	21.86
45	-0.5	-7.0	6.2	-27.0	.00	.03	.00	.00	.44	.34	11.67
46	.6	7.3	3.2	-26.8	.00	.03	.00	-0.00	.43	.15	-13.46
47	1.8	20.4	.3	-25.3	.00	.03	-0.00	-0.00	.43	.09	26.36
48	3.2	31.8	-2.2	-23.0	.01	.02	-0.00	.00	.42	.12	-4.66
49	4.6	41.6	-4.3	-19.8	.00	.02	-0.00	.00	.41	.10	-27.56
50	5.8	49.7	-5.9	-16.1	.00	.01	-0.00	.00	.40	.08	-0.00

CORRELATION COEFFICIENT -0.107

084

011

BBELS 13 4.0M-IV 0.05MAY-65 2034-2037

LAGS= 50 N= 723 DT= .20SEC

MEAN U = -10.8 MEAN W = -7.2

CORRELATION COEFFICIENT -0.120

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	K	PHI
0	133.2	468.9	-29.9	0	3.57	6.33	.32	0	0	.07	0
1	126.9	448.0	-27.6	40.7	10.67	9.57	.64	.68	20.00	.09	46.82
2	112.5	403.5	-23.3	78.8	16.70	25.58	.77	5.99	10.00	.29	82.66
3	92.1	335.5	-16.9	111.1	26.77	117.53	-3.46	38.61	6.67	.69	-84.87
4	68.8	249.2	-9.3	135.5	33.53	175.54	-10.14	64.69	5.00	.85	-81.05
5	44.5	150.5	-0.6	150.4	22.49	97.03	-9.88	39.90	4.00	.88	-76.09
6	21.1	44.9	7.9	154.9	8.14	21.77	-5.01	9.56	3.33	.81	-62.32
7	-0.5	-59.9	15.8	149.7	2.88	6.33	-1.54	1.45	2.86	.50	-42.49
8	-19.8	-155.6	21.6	134.6	1.61	1.86	-0.30	-0.01	2.50	.17	1.46
9	-36.2	-237.0	25.1	111.1	1.52	.81	-0.26	.23	2.22	.32	-41.70
10	-49.1	-299.3	26.6	81.3	1.37	.45	-0.21	.22	2.00	.38	-46.02
11	-58.2	-340.8	26.1	47.4	.95	.33	-0.12	.09	1.82	.26	-36.11
12	-62.9	-360.6	24.0	12.4	.71	.30	.02	-0.07	1.67	.16	-75.11
13	-62.8	-355.8	19.7	-22.2	.60	.29	.13	-0.05	1.54	.34	-22.12
14	-58.3	-329.6	14.6	-54.2	.30	.19	.05	-0.02	1.43	.20	-18.81
15	-50.4	-284.9	8.7	-81.5	.13	.15	-0.04	-0.01	1.33	.27	8.53
16	-40.0	-225.5	2.5	-102.5	.15	.20	-0.04	.03	1.25	.31	-34.74
17	-27.8	-156.1	-3.8	-115.5	.13	.28	-0.03	.07	1.18	.41	-63.90
18	-15.3	-80.4	-9.6	-120.0	.08	.30	-0.02	.04	1.11	.32	-62.36
19	-3.4	-3.9	-13.8	-117.2	.05	.33	-0.04	-0.02	1.05	.39	28.95
20	7.1	69.1	-16.6	-107.3	.07	.34	-0.07	-0.08	1.00	.68	49.56
21	15.8	135.4	-17.6	-91.4	.08	.29	-0.08	-0.06	.95	.63	37.74
22	22.4	190.6	-17.2	-70.9	.06	.19	-0.06	-0.02	.91	.63	15.77
23	26.4	233.3	-16.0	-47.2	.03	.12	-0.03	-0.00	.87	.48	2.45
24	27.6	260.3	-14.1	-22.7	.02	.09	-0.01	-0.01	.83	.20	48.05
25	26.0	272.6	-11.6	1.3	.02	.08	-0.01	-0.01	.80	.22	57.57
26	22.5	268.5	-8.7	23.7	.03	.09	-0.00	-0.01	.77	.11	68.74
27	18.0	250.5	-5.9	43.5	.03	.12	-0.00	.00	.74	.05	-20.96
28	12.8	220.6	-2.9	60.0	.04	.14	-0.02	.00	.71	.30	-5.37
29	7.3	179.9	-0.0	72.3	.04	.13	-0.03	.01	.69	.48	-13.25
30	1.2	131.4	2.6	80.0	.03	.09	-0.02	.01	.67	.41	-13.44
31	-5.1	78.4	4.5	83.0	.02	.10	-0.01	.00	.65	.33	-1.99
32	-11.5	23.3	6.1	81.4	.02	.11	-0.02	-0.00	.63	.42	13.76
33	-17.4	-30.3	7.5	75.7	.02	.08	-0.02	-0.01	.61	.49	21.26
34	-22.2	-79.1	8.4	66.0	.02	.07	-0.02	.00	.59	.37	-8.29
35	-25.4	-121.7	9.3	53.6	.02	.12	-0.01	.01	.57	.26	-44.91
36	-26.9	-155.6	10.1	38.9	.02	.14	-0.01	-0.00	.56	.15	30.84
37	-26.6	-179.0	10.9	22.9	.02	.14	-0.01	-0.02	.54	.55	63.66
38	-25.0	-191.7	11.2	6.5	.02	.15	-0.02	-0.04	.53	.79	59.27
39	-22.5	-193.6	10.7	-10.1	.02	.15	-0.02	-0.02	.51	.52	53.11
40	-19.4	-184.5	9.4	-25.7	.02	.11	-0.00	.00	.50	.07	-36.37
41	-15.7	-166.5	7.5	-39.4	.02	.07	.01	.00	.49	.20	33.20
42	-11.4	-140.8	5.3	-50.5	.02	.07	.01	-0.00	.48	.35	-9.57
43	-6.5	-109.4	3.1	-58.6	.02	.11	.00	.01	.47	.14	62.65
44	-1.0	-73.9	.9	-63.2	.02	.11	-0.02	.01	.45	.43	-31.79
45	4.7	-37.0	-1.2	-64.4	.03	.10	-0.03	.01	.44	.56	-25.12
46	9.8	-0.4	-3.0	-62.6	.03	.09	-0.02	.01	.43	.53	-25.58
47	13.8	34.2	-4.7	-57.9	.02	.12	-0.02	.01	.43	.46	-13.02
48	16.5	65.3	-6.3	-50.7	.02	.12	-0.02	.00	.42	.46	-4.77
49	17.9	91.2	-7.5	-41.3	.02	.09	-0.02	.00	.41	.54	-5.95
50	18.3	111.6	-7.8	-30.8	.01	.04	-0.01	.00	.40	.63	-0.00

085 OIII
 RRFIS- 13 4.0M- VI 26 MAY- 65 0008-0011

TM No. 377

LAGS= 50 N= 719 DT= .20SEC
 MEAN U = -5.2 MEAN W = .9

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	228.3	341.9	-41.9	0	1.28	1.26	-0.14	0	0	.11	0
1	219.0	348.9	-40.7	60.4	.96	.71	.09	-0.83	20.00	1.01	-83.71
2	196.3	316.1	-37.1	116.9	14.33	24.61	-3.62	12.79	10.00	.71	-74.21
3	163.5	265.3	-31.4	165.8	67.49	110.06	-15.08	74.88	6.67	.84	-78.61
4	122.6	199.9	-24.2	204.0	88.27	140.71	-16.21	102.67	5.00	.93	-81.03
5	76.5	124.7	-16.1	229.3	60.39	63.63	-4.93	48.05	4.00	.96	-84.14
6	27.5	44.2	-7.7	240.3	7.38	11.88	-0.60	8.23	3.33	.88	-85.45
7	-21.7	-36.6	1.2	237.0	2.52	4.53	-0.82	2.67	2.86	.83	-72.98
8	-68.9	-112.7	10.0	219.6	.57	1.16	-0.34	.29	2.50	.55	-40.99
9	-111.3	-179.7	18.1	190.0	.52	.69	-0.12	.17	2.22	.35	-55.87
10	-146.1	-234.4	24.9	150.0	.35	.23	.07	-0.09	2.00	.40	-49.86
11	-171.2	-273.7	30.0	102.5	.64	.22	.06	-0.03	1.82	.18	-30.11
12	-185.3	-296.8	33.0	50.6	.66	.16	-0.01	-0.01	1.67	.04	58.61
13	-188.6	-302.0	34.7	-1.7	.47	.23	-0.08	.10	1.54	.40	-52.51
14	-181.3	-290.9	35.1	-51.7	.32	.21	-0.11	.04	1.43	.46	-21.24
15	-163.8	-265.1	34.0	-97.3	.34	.16	-0.12	.04	1.33	.54	-19.28
16	-138.3	-226.0	31.6	-135.8	.27	.08	-0.07	-0.01	1.25	.48	7.11
17	-106.8	-178.1	27.6	-165.4	.17	.06	-0.02	-0.02	1.18	.23	43.99
18	-71.1	-122.0	22.6	-184.9	.13	.06	.01	-0.03	1.11	.40	-69.69
19	-33.1	-62.0	16.0	-194.0	.11	.08	.03	-0.02	1.05	.36	-35.99
20	4.6	-1.4	8.9	-192.6	.07	.10	.03	-0.03	1.00	.52	-39.57
21	45.4	56.7	1.4	-180.8	.06	.10	.03	-0.01	.95	.42	-19.61
22	73.1	109.3	-6.2	-160.0	.06	.06	.02	.01	.91	.38	19.51
23	100.9	153.9	-13.3	-131.7	.06	.04	.01	.03	.87	.54	65.17
24	122.6	189.0	-19.7	-97.8	.07	.03	.01	.01	.83	.21	53.20
25	137.2	212.8	-25.0	-60.1	.10	.02	-0.01	-0.01	.80	.19	50.24
26	143.9	225.1	-29.0	-21.0	.09	.03	-0.00	-0.02	.77	.41	87.71
27	142.9	225.5	-31.4	17.7	.05	.05	.01	-0.02	.74	.50	-64.28
28	134.3	214.6	-32.3	54.1	.03	.05	.01	-0.01	.71	.38	-36.93
29	112.4	193.4	-31.3	86.2	.03	.05	.01	.01	.69	.42	56.39
30	99.7	163.2	-29.0	112.8	.03	.04	.00	.01	.67	.35	88.03
31	76.3	125.9	-25.3	133.1	.04	.03	-0.01	.01	.65	.41	-30.42
32	49.9	83.8	-20.4	145.8	.04	.03	-0.02	.01	.63	.44	-19.45
33	21.9	39.1	-14.4	150.5	.04	.03	-0.01	.00	.61	.31	-20.81
34	-6.5	-5.6	-7.8	147.3	.02	.04	-0.01	-0.01	.59	.43	60.94
35	-37.8	-48.5	-1.0	136.4	.02	.04	-0.00	-0.01	.57	.54	73.97
36	-58.5	-87.2	5.8	118.8	.03	.04	-0.00	-0.01	.56	.35	79.41
37	-79.4	-120.0	12.2	95.6	.03	.05	.00	-0.01	.54	.23	-69.41
38	-95.6	-145.2	17.7	68.2	.02	.04	.01	-0.00	.53	.26	-9.72
39	-106.2	-162.2	22.1	38.5	.03	.03	.01	.00	.51	.26	22.36
40	-111.0	-169.8	25.5	7.7	.03	.02	.00	-0.00	.50	.18	-75.18
41	-109.6	-168.1	27.5	-22.4	.04	.03	-0.00	-0.01	.49	.31	66.90
42	-102.2	-157.9	28.1	-50.4	.03	.03	-0.00	-0.01	.48	.28	67.63
43	-89.5	-139.5	27.2	-75.0	.02	.02	.00	-0.00	.47	.15	-6.08
44	-72.6	-114.9	25.0	-94.9	.01	.03	.01	.00	.45	.57	23.64
45	-52.5	-85.6	21.9	-108.8	.01	.04	.01	.01	.44	.50	36.65
46	-30.7	-53.2	17.9	-116.4	.01	.04	.00	.01	.43	.32	67.49
47	-8.5	-19.6	13.5	-117.1	.01	.04	.00	.01	.43	.31	68.70
48	13.1	13.3	8.8	-111.4	.01	.02	.00	.00	.42	.31	54.74
49	32.9	43.7	3.8	-99.8	.01	.01	.00	.00	.41	.32	41.98
50	50.0	69.8	-1.0	-83.3	.01	.01	.00	.00	.40	.35	.00

CORRELATION COEFFICIENT -0.146

066 OIII
 RRFS- 13 4.04- VII 26 MAY-65 0552-0557

TM No. 377

LAGE= 50 N= 1470 DT= .20SEC
 MEAN U = -5.4 MEAN W = -6.4

K	ACOV U	ACOV W	COV	IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	83.4	155.5	3.2	0	7.36	4.81	.58	0	0	.10	0	0
1	81.1	151.5	3.1	17.3	12.20	9.71	.24	.79	20.00	.08	73.27	
2	75.4	149.7	2.7	33.6	10.72	17.44	-0.43	5.90	10.00	.43	-85.87	
3	66.9	119.7	2.6	47.8	18.15	41.61	1.27	21.98	6.57	.86	86.68	
4	55.3	95.7	2.2	59.2	20.80	50.07	1.70	28.56	5.00	.89	86.60	
5	44.0	60.5	1.9	66.9	10.02	24.71	.07	13.83	4.00	.88	89.70	
6	31.1	46.0	1.4	70.5	2.04	4.84	-0.26	2.22	3.33	.71	-83.23	
7	18.1	5.3	.9	69.8	.70	1.43	-0.02	.51	2.86	.51	-88.29	
8	5.7	-23.6	.2	65.2	.31	.50	-0.02	.12	2.50	.31	-82.88	
9	-5.4	-49.4	-0.4	57.1	.20	.25	-0.02	.04	2.22	.20	-68.35	
10	-14.8	-70.6	-1.1	46.2	.12	.11	-0.01	-0.01	2.00	.13	45.01	
11	-22.0	-86.3	-1.7	33.1	.12	.11	.02	-0.01	1.82	.21	-30.74	
12	-26.7	-95.9	-2.2	18.8	.10	.12	.02	-0.04	1.67	.43	-57.68	
13	-28.8	-99.0	-2.4	4.0	.08	.12	.02	-0.04	1.54	.45	-60.94	
14	-28.5	-95.7	-2.5	-10.3	.05	.08	.02	-0.03	1.43	.64	-60.38	
15	-26.1	-87.7	-2.4	-23.4	.04	.05	.02	-0.02	1.33	.51	-42.88	
16	-21.5	-74.8	-2.2	-34.5	.04	.03	.01	-0.01	1.25	.27	-57.96	
17	-15.5	-58.5	-1.7	-43.1	.03	.03	-0.00	-0.00	1.18	.10	20.38	
18	-9.7	-49.7	-1.0	-48.8	.03	.03	-0.00	-0.00	1.11	.13	35.88	
19	-1.2	-19.7	-0.2	-51.6	.02	.04	-0.00	.00	1.05	.12	-0.97	
20	6.3	.4	.7	-51.2	.02	.04	-0.00	.00	1.00	.07	-32.16	
21	13.5	19.3	1.8	-48.1	.02	.04	.00	.00	.95	.07	30.19	
22	19.9	36.1	2.9	-42.5	.02	.03	.00	-0.00	.91	.17	-62.14	
23	25.2	49.8	4.0	-34.9	.02	.03	.00	-0.00	.87	.09	-63.07	
24	29.0	50.0	5.0	-25.8	.01	.02	-0.00	.00	.83	.18	-4.98	
25	31.3	66.1	5.9	-15.7	.01	.02	-0.00	.00	.80	.24	-6.92	
26	32.0	68.2	5.6	-5.3	.01	.02	-0.00	-0.00	.77	.14	87.41	
27	31.0	66.3	7.1	4.8	.01	.02	.00	-0.00	.74	.23	-80.72	
28	28.5	50.9	7.2	14.0	.01	.02	-0.00	-0.00	.71	.24	85.96	
29	24.8	52.4	6.9	22.0	.01	.01	-0.00	-0.00	.69	.04	54.28	
30	20.1	41.5	5.5	28.2	.01	.01	-0.00	.00	.67	.09	-8.79	
31	14.7	29.1	5.7	32.6	.01	.01	-0.00	-0.00	.65	.10	53.89	
32	9.1	15.8	4.8	34.8	.01	.01	.00	-0.00	.63	.17	-62.11	
33	3.1	2.4	3.5	35.0	.01	.01	.00	-0.00	.61	.17	-47.98	
34	-2.4	-10.2	2.4	33.3	.00	.01	.00	-0.00	.59	.24	-75.58	
35	-7.5	-21.5	1.1	29.9	.01	.02	.00	-0.00	.57	.12	-78.69	
36	-11.9	-30.9	-0.3	25.0	.01	.02	.00	-0.00	.56	.11	-10.77	
37	-15.4	-37.8	-1.6	19.1	.01	.02	.00	-0.00	.54	.24	-9.68	
38	-17.8	-42.1	-2.8	12.5	.01	.01	.00	-0.00	.53	.23	-24.54	
39	-14.1	-43.5	-3.9	5.7	.00	.01	.00	-0.00	.51	.22	-25.42	
40	-19.3	-42.5	-4.7	-1.1	.00	.01	.00	-0.00	.50	.27	-24.50	
41	-18.4	-38.9	-5.4	-7.4	.00	.01	.00	-0.00	.49	.08	-4.42	
42	-16.6	-43.2	-5.8	-12.8	.00	.01	-0.00	.00	.48	.07	-75.23	
43	-14.8	-25.7	-5.8	-17.2	.00	.01	.00	.00	.47	.18	22.54	
44	-10.2	-16.9	-5.5	-20.4	.00	.01	.00	.00	.45	.34	19.47	
45	-5.0	-7.1	-5.2	-22.2	.00	.01	.00	.00	.44	.31	16.13	
46	-1.5	2.9	-4.7	-22.5	.00	.01	.00	-0.00	.43	.23	-15.93	
47	3.0	12.3	-3.9	-21.5	.00	.01	.00	-0.00	.43	.22	-26.40	
48	7.3	20.7	-3.1	-19.1	.00	.01	.00	-0.00	.42	.18	-28.23	
49	11.1	27.8	-2.1	-15.5	.00	.01	.00	-0.00	.41	.21	-7.97	
50	14.2	32.9	-1.1	-10.9	.00	.01	.00	-0.00	.40	.27	-0.00	

CORRELATION COEFFICIENT .028

I/O ERR P4, L10 61

087 LI-w
 RRFIS- 14 0-2.0M- II 7 JUNE-65 1403-1408

TM No. 377

LAGS= 50 N= 1408 DT= .20SFC
 MEAN $W_2 = -3.2$ MEAN $W_1 = 1.6$

K	ACOV W_2	ACOV W_1	COV IN	COV OUT	SP W_2	SP W_1	CO	QUA	PER	R	PHI
0	397.4	870.8	434.4	0	13.92	11.49	7.47	0	0	.59	0
1	344.4	724.8	403.0	7.0	21.94	17.42	9.86	-0.99	20.00	.51	-5.71
2	303.8	573.0	339.7	23.5	23.28	19.72	11.58	1.52	10.00	.55	7.44
3	231.5	352.2	241.1	26.8	50.63	53.85	39.01	9.98	6.67	.77	14.35
4	147.0	113.5	121.7	27.6	83.88	133.31	91.64	13.00	5.00	.88	8.07
5	63.1	-99.0	5.0	37.8	83.84	186.16	116.99	5.49	4.00	.94	2.69
6	-15.5	-259.8	-110.1	32.7	49.92	149.76	81.51	2.00	3.33	.94	1.41
7	-81.2	-375.4	-189.6	28.5	22.02	93.43	39.84	3.06	2.86	.88	4.39
8	-139.2	-451.3	-257.8	23.5	10.39	55.03	18.40	2.39	2.50	.78	7.40
9	-166.4	-438.0	-275.9	16.9	4.27	29.64	7.06	.96	2.22	.63	7.73
10	-183.9	-409.5	-274.0	10.9	2.25	18.62	3.02	-0.20	2.00	.47	-3.78
11	-183.0	-327.8	-243.3	9.3	1.95	13.40	1.30	-0.05	1.82	.25	-2.30
12	-159.2	-228.9	-190.6	2.7	1.94	9.67	.44	.32	1.67	.13	35.80
13	-129.1	-132.6	-129.1	-2.3	1.84	6.11	.08	-0.28	1.54	.09	-73.69
14	-86.5	-25.5	-58.4	-3.0	1.44	4.60	.34	-0.55	1.43	.25	-58.75
15	-42.4	58.8	-2.1	-9.1	.88	4.57	.64	-0.08	1.33	.32	-7.16
16	-5.0	131.5	56.0	-13.7	.69	4.22	.43	.07	1.25	.25	9.78
17	32.1	182.5	96.3	-16.1	.58	3.17	-0.02	.04	1.18	.03	-63.54
18	60.0	216.3	132.1	-18.1	.64	2.43	-0.13	.14	1.11	.15	-47.19
19	79.9	215.2	147.7	-23.5	.82	2.04	-0.05	.13	1.05	.11	-68.91
20	95.5	206.0	151.5	-22.5	.79	1.70	.14	.03	1.00	.13	11.88
21	102.3	181.8	142.3	-27.8	.76	1.44	.35	.21	.95	.39	30.26
22	100.0	140.0	121.2	-28.5	.67	1.23	.25	.31	.91	.43	50.93
23	95.2	111.4	100.0	-26.6	.53	1.05	-0.00	.12	.87	.16	-87.79
24	82.6	72.7	72.4	-21.1	.49	1.07	-0.09	-0.04	.83	.13	26.80
25	67.4	40.1	43.3	-15.5	.36	1.02	-0.10	-0.08	.80	.21	36.13
26	49.8	3.2	16.3	-8.4	.27	.93	-0.02	-0.04	.77	.09	64.05
27	32.2	-27.4	-7.7	-0.0	.30	1.29	.03	-0.18	.74	.29	-79.76
28	15.3	-60.5	-29.8	8.3	.34	1.64	.08	-0.30	.71	.42	-75.32
29	-0.3	-79.9	-48.0	10.8	.43	1.81	.33	-0.06	.69	.38	-11.11
30	-9.2	-83.4	-55.8	11.4	.53	2.03	.39	-0.03	.67	.38	-4.32
31	-19.7	-97.5	-60.5	14.7	.51	1.92	.18	-0.35	.65	.40	-62.39
32	-21.5	-89.2	-56.8	17.6	.60	2.11	.13	-0.55	.63	.50	-76.21
33	-21.6	-73.6	-46.0	19.1	.92	2.84	.23	-0.80	.61	.51	-73.78
34	-17.3	-54.9	-32.3	21.6	.96	2.98	.13	-0.84	.59	.50	-80.95
35	-11.9	-32.8	-17.5	22.1	.74	2.31	-0.07	-0.55	.57	.42	83.13
36	1.2	4.4	3.5	15.3	.53	1.52	-0.07	-0.34	.56	.38	78.75
37	9.6	31.9	24.5	11.4	.36	.94	-0.05	-0.24	.54	.42	77.33
38	16.0	60.0	42.2	7.8	.47	.91	.03	-0.27	.53	.41	-84.60
39	22.3	89.5	58.6	1.4	.81	1.05	.14	-0.23	.51	.29	-59.12
40	22.0	107.3	64.7	-7.2	1.07	1.09	.14	-0.11	.50	.17	-39.29
41	25.9	120.8	74.6	-6.8	1.20	1.46	.38	-0.03	.49	.29	-3.94
42	23.5	119.4	69.2	-12.8	1.17	2.09	.78	-0.01	.48	.50	-0.38
43	17.5	114.5	62.3	-14.5	1.18	2.86	1.16	-0.04	.47	.63	-2.05
44	7.1	93.6	50.6	-15.6	1.09	3.25	1.10	.07	.45	.58	3.59
45	-2.5	65.5	30.9	-22.3	.76	2.56	.48	.21	.44	.38	23.86
46	-13.5	27.9	13.2	-21.1	.69	1.75	-0.01	.36	.43	.33	-88.53
47	-26.7	-5.3	-12.3	-21.2	.69	1.61	-0.33	.30	.43	.42	-42.48
48	-36.4	-47.4	-32.0	-14.1	.50	1.63	-0.39	.02	.42	.43	-3.29
49	-42.5	-83.1	-52.2	-10.2	.41	1.43	-0.23	-0.07	.41	.31	16.43
50	-46.8	-100.5	-62.1	-4.6	.21	.62	-0.08	-0.00	.40	.22	.00

CORRELATION COEFFICIENT .738

088 LI-w
 BREIS 14 00-02M-III C. 06JUL-65 1412-1417

TM No. 377

LAGS= 50 N= 1618 DT= 0.2SEC
 MEAN W_1 = -3.4 MEAN W_2 = -6.0

K	ACOV W_1	ACOV W_2	COV IN	COV OUT	SP W_1	SP W_2	CO	QUA	PER	R	PHI
0	540.6	166.2	208.2	0	8.73	8.44	1.47	0	0	.17	0
1	497.8	158.1	197.6	4.7	16.24	14.72	4.25	-1.14	20.00	.28	-15.01
2	389.9	137.7	167.0	8.5	17.72	12.68	7.23	.71	10.00	.48	5.61
3	243.5	108.6	120.4	11.4	37.24	18.95	18.78	1.01	6.67	.71	3.97
4	87.2	74.2	63.4	12.8	86.70	33.82	46.51	3.84	5.00	.86	4.72
5	-55.1	38.1	4.7	13.2	118.73	38.29	60.82	6.41	4.00	.91	6.92
6	-166.7	3.6	-50.5	12.7	98.78	23.25	41.56	2.90	3.33	.87	4.00
7	-240.3	-26.6	-96.0	11.5	60.88	7.96	17.26	-0.01	2.86	.78	-0.93
8	-274.4	-50.1	-127.7	9.5	32.67	2.46	5.88	-0.31	2.50	.66	-3.01
9	-274.9	-65.3	-143.7	6.7	21.40	1.40	2.81	-0.33	2.22	.52	-6.78
10	-248.9	-72.0	-143.8	2.9	14.50	1.16	1.58	.13	2.00	.39	4.86
11	-203.7	-70.6	-130.5	-1.4	8.41	.73	.33	.43	1.82	.22	52.41
12	-146.6	-61.9	-106.5	-5.8	6.23	.39	-0.10	.29	1.67	.20	-71.92
13	-83.9	-47.4	-75.6	-9.9	3.48	.26	-0.08	.11	1.54	.14	-53.00
14	-21.4	-29.2	-41.3	-12.9	1.74	.20	-0.01	.08	1.43	.13	-81.75
15	34.0	-9.1	-6.9	-14.4	1.27	.18	0	.05	1.33	.11	-89.35
16	83.7	10.9	24.6	-14.2	.97	.18	.05	.01	1.25	.12	12.13
17	118.2	28.9	50.7	-12.4	.79	.16	.01	.01	1.18	.05	37.48
18	137.7	42.9	69.6	-9.4	.58	.11	-0.01	.01	1.11	.05	-63.48
19	142.0	51.9	80.2	-5.6	.37	.09	.02	0	1.05	.11	1.01
20	132.6	55.5	82.2	-1.9	.36	.07	.01	0	1.00	.04	-19.36
21	113.8	53.9	76.0	1.6	.37	.07	-0.02	0	.95	.15	-8.02
22	88.8	48.0	63.1	4.2	.28	.07	-0.02	0	.91	.17	11.49
23	60.8	38.8	45.8	6.0	.21	.06	-0.02	-0.01	.87	.18	24.20
24	31.9	27.6	26.3	7.0	.20	.04	-0.01	0	.83	.16	7.89
25	4.3	15.9	7.0	7.2	.17	.03	-0.01	0	.80	.13	-16.95
26	-19.3	4.7	-10.3	6.6	.14	.02	-0.01	.01	.77	.20	-38.21
27	-36.6	-4.9	-24.3	5.5	.12	.02	-0.01	0	.74	.20	-17.61
28	-46.5	-12.3	-34.1	3.7	.09	.03	0	0	.71	.09	-4.47
29	-49.4	-17.3	-39.6	1.0	.08	.03	0	.01	.69	.11	-56.51
30	-47.0	-19.9	-41.2	-2.4	.08	.03	0	.01	.67	.15	-67.93
31	-41.3	-20.3	-39.9	-6.4	.08	.03	0	0	.65	.03	58.26
32	-34.7	-18.8	-36.5	-10.5	.09	.03	0	0	.63	.06	-87.95
33	-30.2	-15.8	-31.6	-14.2	.08	.03	0	.01	.61	.11	89.97
34	-28.3	-11.7	-25.4	-16.8	.07	.02	0	.01	.59	.20	-82.50
35	-29.9	-6.8	-18.0	-18.4	.07	.02	-0.01	.01	.57	.23	-51.78
36	-29.8	-1.7	-10.1	-18.9	.07	.01	-0.01	.01	.56	.25	-46.11
37	-24.6	3.3	-2.2	-18.1	.07	.01	0	.01	.54	.24	-68.20
38	-12.5	7.5	5.2	-16.3	.07	.01	0	.01	.53	.24	69.80
39	6.8	10.5	12.1	-13.6	.05	.01	0	.01	.51	.28	51.26
40	30.3	12.5	18.2	-10.4	.04	.01	0	0	.50	.17	55.45
41	53.8	13.4	23.3	-6.8	.04	.01	0	0	.49	.05	-86.92
42	72.2	13.1	26.9	-3.3	.04	.01	0	0	.48	.07	16.36
43	82.3	11.7	28.6	0	.04	.01	0	.01	.47	.26	-64.66
44	82.3	9.6	27.8	2.5	.04	.01	0	.01	.45	.38	-67.87
45	73.0	7.1	24.5	3.9	.04	.01	0	0	.44	.17	-41.46
46	55.7	4.6	19.0	4.2	.04	.01	0	0	.43	.11	31.71
47	33.2	2.3	12.1	3.5	.05	.01	0	0	.43	.16	-41.41
48	8.4	.2	4.9	2.0	.06	.01	0	0	.42	.20	-61.55
49	-15.5	-1.6	-1.6	-0.7	.05	.01	0	0	.41	.09	70.83
50	-35.2	-3.2	-6.7	-4.2	.02	0	0	0	.40	.13	0

CORRELATION COEFFICIENT 0.695

089 LI-W
 BBEIS- 14 1-3.0M- 1 7 JUNE-65 1433-1438
 LAGS= 50 N= 1482 DT= .20SEC
 MEAN W_2 = -2.9 MEAN W_1 = .3

TM No. 377

K	ACOV W_2	ACOV W_1	COV IN	COVOUT	SP W_2	SP W_1	CO	QUA	PER	R	PHI
0	203.5	395.1	218.5	0	19.39	22.10	11.43	0	0	.55	0
1	196.4	374.4	209.3	3.8	30.63	32.64	16.30	2.92	20.00	.52	10.14
2	177.5	321.0	183.0	7.0	20.08	19.00	10.13	2.35	10.00	.53	13.04
3	149.3	242.9	143.2	9.5	22.78	31.87	21.49	2.45	6.67	.80	6.51
4	114.9	151.1	94.6	11.0	38.66	77.56	50.64	3.22	5.00	.93	3.64
5	77.9	57.4	42.4	11.5	39.72	97.71	58.33	1.31	4.00	.94	1.29
6	41.4	-28.3	-8.0	10.9	19.85	61.27	32.27	.77	3.33	.93	1.38
7	8.6	-98.1	-51.9	9.6	6.65	25.56	11.28	1.26	2.86	.87	6.37
8	-18.2	-147.2	-85.8	8.2	2.44	11.61	3.65	.86	2.50	.71	13.19
9	-37.3	-173.4	-107.4	6.8	1.10	6.03	1.24	.54	2.22	.53	23.61
10	-48.0	-177.3	-115.7	5.8	.65	3.39	.71	.25	2.00	.51	19.39
11	-50.4	-161.4	-111.3	5.3	.33	1.95	.40	.04	1.82	.51	5.98
12	-45.2	-129.3	-95.7	5.1	.21	1.23	.25	-0.06	1.67	.51	-13.05
13	-33.8	-85.8	-71.4	5.0	.13	.61	.09	-0.04	1.54	.33	-22.70
14	-18.1	-35.6	-41.4	4.7	.12	.35	.05	-0.03	1.43	.29	-35.09
15	.1	16.0	-8.9	4.2	.11	.30	.05	-0.02	1.33	.31	-23.81
16	19.0	64.5	22.9	3.4	.08	.23	.05	.00	1.25	.38	.71
17	36.6	105.8	51.3	2.6	.05	.15	.03	.00	1.18	.38	7.38
18	51.7	136.7	74.0	1.7	.05	.14	.02	.01	1.11	.27	19.18
19	62.9	155.8	89.6	.9	.04	.13	.01	.01	1.05	.27	48.05
20	69.6	162.3	97.4	.2	.03	.10	.01	.00	1.00	.22	12.24
21	71.5	157.1	97.7	-0.1	.02	.07	.01	-0.00	.95	.29	-16.07
22	68.7	141.4	91.3	-0.0	.02	.07	.01	.00	.91	.32	15.77
23	62.0	117.8	79.5	.4	.02	.06	.01	.01	.87	.33	55.48
24	52.1	88.9	63.8	1.0	.02	.06	.01	.01	.83	.35	55.63
25	40.1	57.2	45.7	2.0	.02	.05	.00	.01	.80	.25	54.72
26	27.1	25.6	26.8	3.2	.02	.05	.00	.00	.77	.20	46.57
27	13.9	-4.0	8.5	4.6	.01	.05	.00	.01	.74	.24	66.24
28	1.6	-29.2	-8.0	6.0	.01	.05	.00	.00	.71	.20	89.97
29	-9.1	-48.3	-21.6	7.5	.01	.05	.00	.00	.69	.12	75.49
30	-17.4	-60.1	-31.5	8.9	.01	.05	.00	.00	.67	.14	47.13
31	-23.0	-64.5	-37.5	10.0	.01	.04	.00	.00	.65	.17	61.30
32	-25.8	-61.9	-39.5	10.8	.01	.04	.00	.00	.63	.15	29.75
33	-25.8	-53.8	-37.7	10.9	.01	.04	.00	-0.00	.61	.08	-39.56
34	-23.2	-41.3	-32.5	10.2	.01	.04	.00	.00	.59	.04	16.51
35	-18.2	-25.5	-24.4	9.0	.01	.04	.00	.00	.57	.18	67.73
36	-11.2	-7.8	-14.1	7.2	.01	.04	.00	.00	.56	.23	77.49
37	-2.6	10.6	-2.2	5.1	.01	.04	-0.00	.00	.54	.24	-77.80
38	7.0	28.6	10.4	2.8	.01	.03	-0.00	.00	.53	.23	-71.44
39	17.2	45.1	22.9	.1	.01	.03	.00	.00	.51	.19	81.90
40	27.3	59.3	34.9	-2.8	.01	.03	.00	.00	.50	.26	31.93
41	36.8	70.2	45.5	-5.7	.01	.03	.00	.00	.49	.27	25.57
42	45.0	77.3	53.8	-8.4	.01	.04	.00	.00	.48	.11	82.75
43	51.7	80.5	59.5	-10.7	.01	.04	-0.00	.00	.47	.19	-25.84
44	56.6	79.7	62.4	-12.5	.01	.03	-0.00	.00	.45	.12	-17.92
45	59.4	75.6	62.6	-13.6	.01	.02	-0.00	-0.00	.44	.09	63.79
46	60.2	68.8	60.3	-13.8	.01	.03	-0.00	-0.00	.43	.29	72.13
47	59.1	60.3	55.9	-13.0	.01	.02	-0.00	-0.00	.43	.30	70.23
48	56.2	50.4	49.9	-11.2	.01	.02	-0.00	-0.00	.42	.02	3.29
49	51.7	39.4	42.6	-8.5	.01	.03	.00	.00	.41	.17	39.11
50	45.9	27.5	34.7	-5.2	.00	.02	.00	.00	.40	.26	.00

CORRELATION COEFFICIENT .771

090 LI-W
 BBELS- 14 2-4.0M- 1 7 JUNE-65 1454-1459
 LAGS= 50 N= 1395 DT= .20SEC
 MEAN w_2 = -3.1 MEAN w_1 = -1.8

K	ACOV w_2	ACOV w_1	COV IN	COVOUT	SP w_2	SP w_1	CO	QUA	PER	R	PHI
0	145.2	253.0	150.4	0	14.25	8.10	4.59	0	0	.43	0
1	141.0	242.1	145.1	2.9	21.03	15.76	7.59	1.97	20.00	.43	14.57
2	129.7	213.5	129.6	5.5	14.90	20.02	11.08	1.24	10.00	.65	6.41
3	112.6	170.1	105.9	7.7	25.47	40.06	28.89	.05	6.67	.90	.10
4	91.3	117.3	76.1	9.3	32.93	60.11	42.19	2.40	5.00	.95	3.25
5	67.5	60.3	42.9	10.1	22.77	56.57	33.73	3.97	4.00	.95	6.71
6	42.8	4.4	9.0	10.1	9.28	33.44	16.19	2.07	3.33	.93	7.28
7	19.2	-45.5	-22.6	9.1	2.42	11.11	4.29	.36	2.86	.83	4.83
8	-1.8	-85.9	-49.7	7.4	.64	2.98	.82	-0.05	2.50	.60	-3.39
9	-19.2	-114.4	-70.6	5.1	.42	1.66	.46	-0.10	2.22	.56	-12.60
10	-31.9	-130.0	-84.2	2.5	.20	.88	.18	-0.06	2.00	.45	-16.91
11	-39.6	-132.5	-90.1	-0.0	.16	.60	.12	-0.03	1.82	.40	-15.45
12	-42.2	-123.3	-88.4	-2.2	.15	.40	.08	-0.04	1.67	.37	-24.37
13	-40.0	-104.3	-80.1	-3.7	.11	.24	.07	-0.03	1.54	.46	-24.53
14	-33.7	-78.5	-66.4	-4.6	.06	.14	.02	-0.01	1.43	.27	-19.27
15	-24.2	-48.9	-49.1	-4.7	.05	.11	.01	.01	1.33	.23	48.93
16	-12.7	-18.7	-29.9	-4.1	.03	.07	.00	.01	1.25	.23	68.30
17	-0.3	9.2	-10.6	-2.7	.03	.06	.01	.00	1.18	.25	19.46
18	12.0	32.6	7.2	-0.8	.03	.04	.01	.00	1.11	.24	3.88
19	23.4	49.9	22.5	1.5	.03	.05	.01	.00	1.05	.36	3.89
20	33.1	60.6	34.4	3.9	.03	.05	.01	.00	1.00	.32	5.42
21	40.7	64.5	42.4	6.3	.02	.04	.01	.00	.95	.32	18.66
22	45.8	62.4	46.6	8.2	.02	.03	.01	.01	.91	.37	37.17
23	48.5	55.7	47.3	9.7	.01	.03	.01	.01	.87	.40	38.87
24	48.8	45.8	45.0	10.5	.01	.03	.01	.00	.83	.39	33.31
25	47.1	34.3	40.4	10.8	.01	.02	.01	.00	.80	.41	34.33
26	43.7	22.7	34.5	10.6	.01	.02	.00	.00	.77	.29	41.32
27	39.2	12.2	27.9	9.8	.01	.02	.00	.00	.74	.21	66.04
28	34.0	3.9	21.5	8.5	.01	.02	-0.00	.00	.71	.26	-76.98
29	28.5	-1.7	15.7	6.9	.01	.02	.00	.00	.69	.19	35.85
30	23.2	-4.7	10.9	4.9	.01	.02	.00	-0.00	.67	.28	-32.27
31	18.1	-5.3	7.0	2.9	.01	.01	.00	-0.00	.65	.10	-56.62
32	13.5	-4.3	3.9	.9	.01	.01	-0.00	.00	.63	.17	-11.98
33	9.3	-2.5	1.4	-1.1	.00	.01	-0.00	-0.00	.61	.18	18.66
34	5.4	-0.9	-0.6	-2.7	.00	.01	-0.00	.00	.59	.21	-23.53
35	1.9	-0.2	-2.6	-4.0	.00	.02	-0.00	.00	.57	.38	-83.74
36	-1.2	-0.9	-4.6	-5.0	.00	.02	.00	.00	.56	.32	87.02
37	-4.1	-3.2	-6.8	-5.6	.00	.02	-0.00	.00	.54	.18	-38.21
38	-6.5	-7.0	-9.2	-5.8	.00	.02	-0.00	.00	.53	.23	-25.25
39	-8.3	-11.8	-11.8	-5.7	.00	.02	-0.00	.00	.51	.17	-55.14
40	-9.6	-17.1	-14.3	-5.3	.00	.01	-0.00	.00	.50	.17	-8.73
41	-10.4	-22.6	-16.4	-4.7	.00	.01	-0.00	-0.00	.49	.24	2.94
42	-10.5	-27.5	-18.2	-4.1	.00	.02	-0.00	.00	.48	.26	-1.95
43	-10.1	-31.4	-19.1	-3.5	.00	.02	-0.00	-0.00	.47	.15	16.10
44	-9.0	-33.8	-19.0	-3.1	.00	.02	-0.00	.00	.45	.09	-68.69
45	-7.3	-34.2	-17.6	-2.9	.00	.02	.00	.00	.44	.18	68.88
46	-4.8	-32.3	-15.0	-2.9	.00	.02	.00	-0.00	.43	.10	-24.36
47	-1.8	-27.8	-11.1	-3.1	.00	.02	-0.00	-0.00	.43	.11	38.76
48	1.7	-20.9	-6.0	-3.5	.00	.02	-0.00	.00	.42	.23	-22.68
49	5.6	-12.2	-0.1	-4.1	.00	.02	-0.00	.00	.41	.30	-16.91
50	9.6	-1.9	6.2	-4.7	.00	.01	-0.00	.00	.40	.38	-0.00

CORRELATION COEFFICIENT .785

091

LI-w

TM No. 377

RRFIS 14 03-05M-01 C, 06JUL-65 1502-1508

LAGS= 50 N= 1413 DT= 0.2SEC

MEAN w_1 = -1.4 MEAN w_2 = -2.6

K	ACOV w_1	ACOV w_2	COV	IN	COVOUT	SP w_1	SP w_2	CO	QUA	PER	R	PHI
0	196.2	128.4	112.7	0	2.51	12.20	1.64	0	0	0	.30	0
1	188.6	125.1	109.0	-2.3	5.80	19.82	2.99	-0.17	20.00	.28	-3.19	
2	168.3	116.2	98.5	-4.5	15.12	17.28	8.79	-1.71	10.00	.55	-11.00	
3	137.6	103.1	82.0	-6.4	44.96	27.14	29.12	-2.86	6.67	.84	-5.61	
4	99.2	86.7	61.1	-7.8	61.56	29.28	38.35	-2.87	5.00	.91	-4.29	
5	56.3	68.1	37.3	-8.8	40.26	14.75	21.69	-1.82	4.00	.89	-4.80	
6	12.3	48.7	12.4	-9.3	16.74	4.18	6.94	-0.66	3.33	.83	-5.42	
7	-29.5	29.4	-11.9	-9.2	5.57	1.52	2.12	-0.08	2.86	.73	-2.13	
8	-66.4	11.3	-34.1	-8.6	1.13	.58	.40	.03	2.50	.50	4.87	
9	-96.1	-4.7	-52.9	-7.6	.66	.38	.21	-0.03	2.22	.42	-9.62	
10	-117.0	-18.0	-67.2	-6.2	.41	.24	.07	-0.04	2.00	.27	-31.63	
11	-128.8	-28.1	-76.4	-4.6	.30	.21	.11	-0.01	1.82	.44	-4.21	
12	-131.2	-34.5	-80.4	-3.0	.20	.16	.09	.02	1.67	.53	15.00	
13	-124.8	-37.4	-79.2	-1.5	.15	.12	.05	.04	1.54	.49	39.79	
14	-111.1	-36.8	-73.4	0	.08	.08	0	.04	1.43	.43	-85.98	
15	-91.8	-33.3	-63.8	1.3	.07	.07	-0.01	-0.02	1.33	.35	55.33	
16	-68.8	-27.2	-51.3	2.4	.06	.05	0	-0.06	1.25	1.14	89.30	
17	-44.1	-19.3	-35.3	4.7	.06	.04	.04	-0.04	1.18	1.18	-46.31	
18	-19.7	-10.1	-21.4	3.7	.05	.03	.04	.01	1.11	1.27	17.59	
19	3.2	-0.4	-6.0	3.8	.05	.03	.03	.01	1.05	1.29	77.59	
20	23.3	9.2	8.5	3.8	.04	.02	-0.03	.03	1.00	1.39	-37.13	
21	39.7	18.3	21.4	3.6	.04	.02	-0.03	-0.02	.95	1.30	27.64	
22	52.1	26.3	32.2	3.2	.03	.02	0	-0.04	.91	1.74	-49.86	
23	60.5	32.9	40.5	2.8	.03	.02	.04	-0.03	.87	1.87	-31.15	
24	65.1	37.9	46.2	2.3	.03	.02	.04	.02	.83	2.13	28.54	
25	66.2	41.0	49.3	1.9	.02	.02	0	.05	.80	2.61	86.65	
26	64.2	42.1	49.8	1.5	.02	.01	-0.04	.03	.77	3.54	-32.79	
27	59.8	41.5	48.0	1.4	.02	.01	-0.04	-0.02	.74	3.89	30.15	
28	53.3	39.1	44.0	1.3	.02	.01	0	-0.04	.71	3.89	-84.86	
29	45.3	35.2	38.3	1.3	.02	.01	.04	-0.02	.69	3.82	-24.57	
30	36.0	30.1	31.2	1.2	.02	.01	.04	.03	.67	3.90	35.34	
31	25.7	24.2	23.2	1.2	.02	.01	0	.04	.65	3.96	-86.80	
32	14.8	17.7	14.6	1.1	.01	.01	-0.04	.02	.63	4.79	-24.00	
33	3.5	10.9	5.8	1.1	.01	0	-0.03	-0.03	.61	5.80	40.72	
34	-7.9	4.2	-3.0	1.2	.01	0	.01	-0.04	.59	6.17	-77.28	
35	-18.9	-2.2	-11.4	1.3	.01	.01	.04	-0.01	.57	5.44	-16.79	
36	-29.0	-7.9	-19.0	1.5	.01	0	.03	.03	.56	6.18	43.52	
37	-37.7	-12.8	-25.4	1.7	.01	0	-0.01	.04	.54	7.32	-76.39	
38	-44.6	-16.6	-30.5	2.0	.01	0	-0.04	.01	.53	6.73	-11.97	
39	-49.2	-19.1	-33.8	2.2	.01	0	-0.03	-0.03	.51	6.52	49.94	
40	-51.5	-20.4	-35.5	2.4	.01	0	.01	-0.04	.50	7.03	-72.22	
41	-51.0	-20.2	-35.1	2.6	.02	0	.04	-0.01	.49	6.42	-10.97	
42	-47.8	-18.8	-32.8	2.8	.01	0	.03	.03	.48	7.44	48.18	
43	-41.9	-16.2	-28.7	3.2	.01	0	-0.01	.04	.47	1.14	-69.40	
44	-33.8	-12.6	-23.2	3.6	.01	0	-0.04	.01	.45	3.78	-7.17	
45	-23.7	-8.3	-16.5	3.9	.01	0	-0.02	-0.04	.44	2.38	55.03	
46	-12.2	-3.4	-8.4	4.2	.01	0	.02	-0.04	.43	3.58	-63.36	
47	.3	2.0	-1.0	4.3	.02	0	.05	0	.43	7.13	-4.98	
48	13.1	7.4	7.0	4.4	.01	0	.03	.04	.42	6.15	54.39	
49	25.4	12.5	14.6	4.3	.01	0	-0.02	.04	.41	6.79	-64.71	
50	36.6	17.1	21.3	4.2	0	0	-0.02	0	.40	8.36	0	

092 LI-W

BRFLS 14 4-6.0M-01 C, 06JUL-65 1511-1517

LAGS= 50 N= 1299 UT= 0.2SEC

MEAN W₁ = -3.03 MEAN W₂ = -3.57

CORRELATION COEFFICIENT W₂ = .70

K	ACOV W ₁	ACOV W ₂	COV IN	COV OUT	SP W ₁	SP W ₂	CO	QUA	PER	R	PHI
0	125.6	79.1	69.7	.0	5.95	9.96	3.43	0	0	.45	0
1	121.1	77.1	67.5	.3	4.48	15.21	4.52	-0.05	20.00	.38	-0.57
2	108.8	71.8	61.1	.7	4.63	10.17	4.87	-0.02	10.00	.49	-0.24
3	90.2	63.9	51.2	1.0	22.48	12.99	14.36	1.20	6.67	.84	4.79
4	67.0	54.2	38.6	1.3	34.60	15.21	21.02	1.23	5.00	.92	3.35
5	41.2	43.5	24.5	1.6	27.53	9.93	14.81	-0.11	4.00	.90	-0.41
6	14.9	32.4	9.8	1.8	11.33	3.27	5.05	-0.46	3.33	.83	-5.16
7	-10.0	21.6	-4.3	2.0	2.44	.75	.84	-0.07	2.86	.63	-4.68
8	-31.7	11.7	-16.9	2.2	.68	.50	.29	.05	2.50	.50	8.86
9	-48.9	3.2	-27.3	2.3	.43	.34	.20	.03	2.22	.54	9.70
10	-60.6	-3.4	-34.9	2.3	.30	.18	.13	.03	2.00	.60	12.28
11	-66.4	-8.1	-39.4	2.2	.17	.11	.08	.01	1.82	.56	10.52
12	-66.3	-10.7	-40.5	1.9	.11	.09	.04	.01	1.67	.44	15.29
13	-60.8	-11.2	-38.6	1.4	.09	.08	.02	-0.01	1.54	.30	-12.26
14	-50.7	-9.9	-33.9	.8	.07	.07	.02	-0.01	1.43	.29	-25.91
15	-37.3	-7.1	-26.9	-0.0	.06	.05	.02	-0.00	1.33	.34	-11.05
16	-21.9	-3.2	-18.3	-0.9	.04	.03	.01	-0.00	1.25	.19	-9.95
17	-5.7	1.5	-8.9	-1.8	.03	.02	.00	-0.00	1.18	.15	-73.67
18	9.7	6.7	.6	-2.6	.03	.02	.00	-0.00	1.11	.20	-48.14
19	23.3	11.8	9.6	-3.2	.02	.01	.00	-0.00	1.05	.19	-35.20
20	34.3	16.4	17.4	-3.7	.02	.01	.00	-0.00	1.00	.12	-41.13
21	42.0	20.3	23.6	-4.0	.02	.01	.00	-0.00	.95	.05	-23.74
22	46.2	23.1	27.9	-4.0	.02	.01	-0.00	.00	.91	.13	-49.84
23	47.0	24.6	30.3	-3.8	.01	.01	-0.00	.00	.87	.13	-10.69
24	44.7	25.0	30.7	-3.3	.01	.01	-0.00	-0.00	.83	.07	9.38
25	40.0	24.2	29.4	-2.5	.00	.00	-0.00	-0.00	.80	.08	35.12
26	33.6	22.3	26.8	-1.6	.01	.01	-0.00	.00	.77	.12	-12.78
27	26.2	19.7	23.2	-0.6	.01	.01	.00	.00	.74	.13	84.52
28	18.5	16.7	18.9	.5	.01	.01	.00	.00	.71	.12	67.12
29	11.1	13.4	14.4	1.5	.01	.00	.00	-0.00	.69	.14	-19.34
30	4.5	10.2	10.0	2.4	.01	.00	.00	-0.00	.67	.31	-25.44
31	-0.8	7.3	6.0	3.1	.01	.01	.00	-0.00	.65	.31	-40.34
32	-5.0	4.8	2.6	3.7	.00	.01	.00	-0.00	.63	.17	-39.60
33	-7.9	2.9	-0.0	4.1	.01	.00	.00	-0.00	.61	.07	-31.84
34	-9.6	1.4	-2.0	4.3	.01	.00	.00	-0.00	.59	.04	-39.89
35	-10.2	.5	-3.3	4.3	.00	.00	.00	-0.00	.57	.09	-3.55
36	-10.0	-0.0	-3.9	4.1	.00	.00	.00	.00	.56	.05	26.78
37	-9.2	-0.1	-4.1	3.7	.00	.00	-0.00	-0.00	.54	.04	62.54
38	-8.2	-0.1	-3.9	3.3	.00	.00	-0.00	-0.00	.53	.03	76.51
39	-7.1	.1	-3.4	2.8	.00	.00	-0.00	.00	.51	.07	-6.45
40	-6.3	.3	-3.0	2.4	.00	.00	-0.00	-0.00	.50	.08	17.29
41	-5.9	.4	-2.6	2.2	.00	.00	.00	-0.00	.49	.06	-50.91
42	-6.0	.5	-2.5	2.1	.00	.00	.00	.00	.48	.07	66.82
43	-6.5	.5	-2.4	2.1	.00	.00	-0.00	.00	.47	.14	-66.97
44	-7.3	.4	-2.5	2.3	.00	.00	-0.00	.00	.45	.30	-48.08
45	-8.3	.3	-2.7	2.5	.00	.00	-0.00	.00	.44	.30	-29.26
46	-9.1	.2	-2.8	2.8	.00	.00	-0.00	.00	.43	.11	-29.08
47	-9.5	.1	-2.8	3.2	.00	.00	-0.00	.00	.43	.26	-77.59
48	-9.3	.0	-2.5	3.5	.00	.00	-0.00	.00	.42	.45	-44.40
49	-8.2	.1	-1.9	3.8	.00	.00	-0.00	.00	.41	.32	-26.28
50	-6.2	.4	-0.8	3.8	.00	.00	-0.00	.00	.40	.22	-0.00

093 LI-W
 BBEIS 14 05-07M-01 C. 06JUL-65 1520-1525

TM No. 377

LAGS= 50 N= 1330 DT= 0.2SEC
 MEAN W_1 = -2.0 MEAN W_2 = -2.1

K	ACOV W_1	ACOV W_2	COV	IN	COVOUT	SP W_1	SP W_2	CO	QUA	PER	R	PHI
0	78.5	65.8	37.5	0	4.23	14.63	1.32	0	2.00	.17	0	
1	76.2	64.9	36.5	-0.4	7.86	20.12	2.57	.52	0	.21	11.52	
2	70.1	62.4	33.6	-0.7	10.33	8.31	4.23	.73	0	.46	9.83	
3	60.8	58.5	29.0	-0.9	18.51	7.58	9.46	-0.18	0	.80	-1.10	
4	49.1	53.7	23.0	-1.0	20.69	8.78	11.79	-0.87	0	.88	-4.23	
5	35.9	48.2	16.1	-1.1	11.45	4.80	6.44	-0.61	0	.87	-5.45	
6	21.9	42.2	8.7	-1.0	3.27	.92	1.31	-0.12	0	.76	-5.26	
7	8.1	36.1	1.3	-0.8	.90	.21	.22	.06	0	.53	14.25	
8	-4.7	30.3	-5.7	-0.6	.36	.12	.06	.01	0	.30	11.60	
9	-15.9	25.0	-11.9	-0.1	.25	.09	.05	0	0	.34	-4.85	
10	-25.0	20.5	-16.8	.4	.16	.05	.03	0	0	.38	-5.19	
11	-31.5	17.0	-20.4	.9	.09	.03	.01	0	0	.26	-10.30	
12	-35.4	14.5	-22.5	1.5	.05	.02	0	-0.01	0	.18	78.88	
13	-36.6	13.0	-23.1	2.0	.04	.02	0	0	0	.15	48.22	
14	-35.4	12.6	-22.2	2.5	.04	.02	0	0	0	.17	-62.91	
15	-32.0	13.2	-19.4	2.9	.04	.02	.01	-0.01	0	.28	-42.43	
16	-26.7	14.5	-16.5	3.2	.03	.02	0	-0.01	0	.32	-52.82	
17	-20.2	16.5	-12.3	3.3	.03	.01	0	0	0	.37	-31.53	
18	-12.8	18.8	-7.6	3.2	.02	.01	.01	0	0	.50	1.88	
19	-5.2	21.4	-2.7	3.0	.01	.01	0	0	0	.51	14.50	
20	2.1	23.8	2.1	2.7	.01	.01	0	0	0	.36	8.17	
21	8.7	26.0	6.3	2.3	.01	.01	0	0	0	.14	31.19	
22	14.3	27.6	9.9	1.7	.01	.01	0	0	0	.06	-14.71	
23	18.6	28.6	12.6	1.2	.01	.01	0	0	0	.10	-72.81	
24	21.6	29.0	14.4	.6	.01	.01	0	0	0	.15	-80.50	
25	23.1	28.6	15.2	.1	.01	0	0	0	0	.16	66.23	
26	23.3	27.4	15.0	-0.4	.01	0	0	0	0	.11	-74.47	
27	22.3	25.6	14.0	-0.8	0	0	0	0	0	.19	-18.87	
28	20.3	23.3	12.3	-1.1	0	0	0	0	0	.08	54.79	
29	17.4	20.6	9.9	-1.3	0	0	0	0	0	.27	-7.69	
30	14.0	17.7	7.2	-1.4	0	0	0	0	0	.35	-27.66	
31	10.3	14.6	4.3	-1.5	0	0	0	0	0	.40	-88.11	
32	6.5	11.6	1.4	-1.5	0	0	0	0	0	.43	49.55	
33	2.8	8.9	-1.3	-1.5	0	0	0	0	0	.24	18.64	
34	-0.7	6.5	-3.7	-1.5	0	0	0	0	0	.18	28.36	
35	-3.7	4.5	-5.7	-1.5	0	0	0	0	0	.25	5.01	
36	-6.1	3.1	-7.1	-1.5	0	0	0	0	0	.09	4.20	
37	-8.0	2.2	-7.9	-1.5	0	0	0	0	0	.11	15.76	
38	-9.1	1.9	-8.0	-1.5	0	0	0	0	0	.05	18.93	
39	-9.4	2.1	-7.5	-1.6	0	0	0	0	0	.10	60.25	
40	-9.1	2.8	-6.5	-1.6	0	0	0	0	0	.39	-57.02	
41	-8.1	3.9	-5.0	-1.7	0	0	0	0	0	.65	-66.53	
42	-6.7	5.4	-3.1	-1.8	0	0	0	0	0	.53	-70.60	
43	-4.8	7.1	-1.0	-2.0	0	0	0	0	0	.18	-88.65	
44	-2.5	8.8	1.3	-2.0	0	0	0	0	0	.22	-73.43	
45	-0.1	10.5	3.5	-2.1	0	0	0	0	0	.39	77.19	
46	2.5	12.1	5.6	-2.1	0	0	0	0	0	.04	-86.28	
47	4.9	13.3	7.5	-2.1	0	0	0	0	0	.45	56.20	
48	7.2	14.3	9.0	-1.9	0	0	0	0	0	.27	73.21	
49	9.2	14.8	10.1	-1.7	0	0	0	0	0	.14	-45.11	
50	10.8	15.1	10.9	-1.5	0	0	0	0	0	.14	0	

094

LI-W

BBFLS 14 6-H.0M-01 C. 06JUL-65 1539-1545

LAGS=50 N=1402 DT= 0.2SEC

MEAN W₁= .08 MEAN W₂= 2.95

CORRELATION COEFFICIENT .58

K	ACOV W ₁	ACOV W ₂	COV IN	COV OUT	SP W ₁	SP W ₂	CO	QUA	PER	R	PHI
0	84.7	56.6	40.2	.0	8.83	12.35	2.44	0	0	.23	0
1	82.6	55.8	39.2	.5	12.82	16.40	3.97	2.52	20.00	.32	32.38
2	77.1	53.7	36.5	.9	10.13	7.43	5.18	1.20	10.00	.61	13.01
3	68.7	50.6	32.2	1.4	18.17	8.31	10.68	.40	6.67	.87	2.16
4	58.0	46.5	26.6	1.8	20.48	7.78	11.44	.41	5.00	.91	2.04
5	48.7	41.7	20.1	2.2	10.39	3.26	5.08	.09	4.00	.87	.98
6	32.6	36.6	13.2	2.6	2.43	.55	.87	-0.03	3.33	.75	-2.15
7	19.4	31.3	6.1	3.0	.59	.19	.23	-0.05	2.86	.72	-13.14
8	6.9	26.1	-0.8	3.3	.22	.10	.08	-0.03	2.50	.62	-21.38
9	-4.1	21.3	-7.0	3.5	.15	.06	.06	-0.01	2.22	.62	-13.21
10	-13.3	17.0	-12.2	3.7	.08	.03	.02	.00	2.00	.38	.60
11	-20.3	13.4	-16.3	3.8	.07	.03	.02	.00	1.82	.49	7.94
12	-24.7	10.6	-19.1	3.8	.05	.02	.01	.00	1.67	.47	4.43
13	-26.4	8.8	-20.5	3.8	.04	.01	.01	-0.00	1.54	.54	-2.79
14	-25.8	7.8	-20.6	3.8	.03	.01	.01	.00	1.43	.52	18.64
15	-22.9	7.6	-19.3	3.7	.03	.01	.01	.00	1.33	.55	3.10
16	-18.1	8.2	-16.9	3.7	.03	.01	.01	-0.00	1.25	.41	-16.14
17	-11.8	9.5	-13.7	3.6	.02	.01	.01	-0.00	1.18	.33	-53.15
18	-4.6	11.3	-9.7	3.6	.01	.01	.01	-0.00	1.11	.19	-64.98
19	2.9	13.4	-5.3	3.6	.01	.00	.00	.00	1.05	.29	17.80
20	10.4	15.7	-0.8	3.7	.01	.00	.00	.00	1.00	.38	40.84
21	17.3	18.0	3.6	3.9	.01	.00	.00	.00	.95	.33	8.31
22	23.4	20.2	7.7	4.0	.01	.00	.00	.00	.91	.16	12.71
23	28.3	22.0	11.1	4.1	.01	.00	.00	.00	.87	.11	50.33
24	31.8	23.5	13.9	4.3	.01	.00	.00	.00	.83	.19	87.95
25	33.8	24.4	15.8	4.5	.01	.00	.00	.00	.80	.18	78.66
26	34.3	24.8	16.9	4.7	.01	.00	.00	.00	.77	.17	34.14
27	33.4	24.7	17.0	4.8	.01	.00	.00	-0.00	.74	.33	-27.23
28	31.2	24.0	16.3	5.0	.01	.00	.00	-0.00	.71	.24	-10.59
29	28.1	22.9	15.0	5.2	.01	.00	.00	.00	.69	.32	10.07
30	24.2	21.3	13.0	5.3	.01	.00	.00	.00	.67	.46	11.64
31	19.7	19.5	10.6	5.4	.01	.00	.00	.00	.65	.58	6.40
32	15.1	17.5	7.9	5.5	.00	.00	.00	.00	.63	.52	13.76
33	10.3	15.3	5.1	5.6	.00	.00	.00	.00	.61	.23	20.24
34	5.9	13.2	2.3	5.6	.00	.00	.00	-0.00	.59	.05	-38.74
35	1.8	11.2	-0.3	5.6	.00	.00	.00	-0.00	.57	.27	-42.91
36	-1.5	9.4	-2.7	5.6	.00	.00	.00	-0.00	.56	.46	-22.26
37	-4.3	7.9	-4.5	5.6	.00	.00	.00	-0.00	.54	.72	-11.70
38	-6.4	6.7	-6.0	5.5	.00	.00	.00	-0.00	.53	.78	-5.76
39	-7.6	5.9	-6.9	5.3	.00	.00	.00	.00	.51	.67	2.36
40	-8.1	5.4	-7.2	5.2	.00	.00	.00	.00	.50	.56	26.23
41	-7.7	5.2	-7.0	5.0	.00	.00	.00	.00	.49	.53	33.29
42	-6.7	5.4	-6.2	4.8	.00	.00	.00	.00	.48	.34	36.42
43	-4.9	5.9	-4.9	4.6	.00	.00	.00	.00	.47	.31	18.28
44	-2.7	6.5	-3.3	4.4	.00	.00	.00	-0.00	.45	.59	-0.99
45	-0.0	7.4	-1.3	4.3	.00	.00	.00	-0.00	.44	.79	-8.85
46	2.8	8.4	.9	4.1	.00	.00	.00	-0.00	.43	.70	-5.93
47	6.0	9.4	3.1	4.0	.00	.00	.00	.00	.43	.64	9.77
48	9.1	10.4	5.4	3.9	.00	.00	.00	.00	.42	.66	23.31
49	12.1	11.3	7.5	3.9	.00	.00	.00	.00	.41	.68	12.26
50	14.8	12.1	9.4	3.9	.00	.00	.00	.00	.40	.71	.00

095

LJ-W

TM No. 377

BBFIS 14 07-09M-01 C. 06JUL-65 1553-1558

LAGS= 50 N= 1387 DT= 0.2SEC

MEAN W_2 = -0.1 MEAN W_1 = -1.1

K	ACOV W_2	ACOV W_1	COV IN	COVOUT	SP W_2	SP W_1	CO	QUA	PER	R	PHI
0	49.7	69.4	24.7	0	11.86	9.09	.15	0	0	.01	0
1	49.1	68.0	24.0	-0.6	15.28	12.32	.04	-1.19	20.00	.09	-88.03
2	47.5	64.1	22.0	-1.1	6.40	8.76	2.89	-0.77	10.00	.40	-14.97
3	45.0	58.3	18.9	-1.6	7.03	15.55	8.82	-0.37	6.67	.84	-2.43
4	41.8	50.7	15.0	-2.1	5.96	15.38	8.74	-0.68	5.00	.92	-4.43
5	38.0	42.0	10.3	-2.4	2.23	6.22	3.24	-0.47	4.00	.88	-8.31
6	34.0	32.5	5.3	-2.6	.45	1.19	.46	-0.08	3.33	.64	-9.44
7	29.8	22.7	.1	-2.7	.17	.34	.13	-0.02	2.86	.53	-11.09
8	25.8	13.3	-4.9	-2.7	.09	.10	.04	-0.01	2.50	.47	-11.09
9	21.9	4.6	-9.6	-2.5	.07	.10	.05	.01	2.22	.63	15.13
10	18.4	-2.9	-13.6	-2.3	.03	.05	.02	.01	2.00	.56	20.69
11	15.5	-8.9	-16.8	-2.1	.02	.05	.02	0	1.82	.69	5.40
12	13.1	-13.3	-19.1	-1.8	.02	.03	.02	0	1.67	.71	1.00
13	11.4	-15.8	-20.4	-1.5	.01	.02	.01	0	1.54	.44	15.83
14	10.3	-16.6	-20.6	-1.3	.01	.02	0	0	1.43	.25	37.55
15	9.9	-15.6	-19.8	-1.1	.01	.02	.01	0	1.33	.54	11.13
16	10.0	-13.1	-18.1	-1.0	.01	.01	.01	0	1.25	.62	26.10
17	10.7	-9.3	-15.6	-1.0	.01	.01	0	0	1.18	.56	43.56
18	11.8	-4.6	-12.5	-1.0	0	.01	0	0	1.11	.40	32.11
19	13.3	.9	-8.9	-1.1	.01	.01	0	0	1.05	.43	12.84
20	14.9	6.6	-5.1	-1.2	0	.01	0	0	1.00	.33	21.55
21	16.6	12.2	-1.3	-1.4	0	.01	0	0	.95	.31	12.09
22	18.3	17.5	2.4	-1.7	0	.01	0	0	.91	.40	-5.35
23	19.8	22.3	5.8	-2.0	0	0	0	0	.87	.49	4.92
24	21.1	26.2	8.8	-2.2	0	0	0	0	.83	.56	32.97
25	22.1	29.2	11.2	-2.5	0	.01	0	0	.80	.66	32.07
26	22.7	31.1	12.9	-2.7	0	.01	0	0	.77	.58	26.24
27	23.0	32.0	14.0	-3.0	0	.01	0	0	.74	.48	16.53
28	22.8	31.8	14.3	-3.1	0	.01	0	0	.71	.36	-7.10
29	22.4	30.6	14.1	-3.1	0	.01	0	0	.59	.41	-35.44
30	21.6	28.6	13.3	-3.1	0	0	0	0	.67	.48	-38.29
31	20.6	25.8	12.0	-2.9	0	0	0	0	.65	.58	-20.28
32	19.3	22.5	10.4	-2.6	0	0	0	0	.63	.70	-1.97
33	17.9	18.7	8.4	-2.3	0	0	0	0	.61	.86	6.04
34	16.3	14.7	6.3	-1.9	0	0	0	0	.59	.88	2.55
35	14.7	10.7	4.1	-1.5	0	0	0	0	.57	.76	-1.25
36	13.0	6.8	1.9	-1.0	0	0	0	0	.56	.61	.30
37	11.5	3.1	-0.2	-0.6	0	0	0	0	.54	.68	-5.38
38	10.1	-0.1	-2.0	-0.2	0	0	0	0	.53	.74	-12.68
39	8.8	-2.8	-3.5	.2	0	0	0	0	.51	.79	-11.94
40	7.8	-4.9	-4.6	.4	0	0	0	0	.50	.89	-8.61
41	7.0	-6.2	-5.4	.6	0	0	0	0	.49	.95	-6.01
42	6.4	-6.7	-5.7	.7	0	0	0	0	.48	.98	-1.22
43	6.0	-6.5	-5.6	.8	0	0	0	0	.47	.99	8.45
44	5.9	-5.6	-5.2	.8	0	0	0	0	.45	.95	17.60
45	5.9	-4.1	-4.4	.7	0	0	0	0	.44	.91	16.61
46	6.0	-2.0	-3.3	.6	0	0	0	0	.43	.86	4.50
47	6.3	.5	-2.0	.5	0	0	0	0	.43	.95	-12.17
48	6.6	3.3	-0.6	.3	0	0	0	0	.42	1.04	-13.02
49	7.0	6.1	.8	.2	0	0	0	0	.41	1.10	-7.12
50	7.4	8.8	2.2	.1	0	0	0	0	.40	1.16	0

096

LI-w

TM No. 377

HRFIS 14 0R-10M-01 C, 06JUL-65 1604-1609

LAGS= 50 N= 1278 DT= 0.2SEC

MEAN W_F 0.0 MEAN W_E -1.6

K	ACOV W_1	ACOV W_2	COV IN	COV OUT	SP W_1	SP W_2	CO	QUA	PER	R	PHI
0	49.3	36.4	10.4	0	19.71	6.96	1.35	0	2.00	.12	0
1	49.2	36.0	10.2	-0.4	22.97	11.58	2.47	-0.65	0	.19	-12.35
2	48.8	34.9	9.9	-0.7	4.11	7.69	2.70	-0.82	0	.50	-16.43
3	48.3	33.3	9.4	-1.1	1.36	5.22	1.79	-0.67	0	.72	-20.59
4	47.7	31.2	8.7	-1.4	.67	3.11	.99	-0.30	0	.72	-16.85
5	46.9	28.7	7.8	-1.6	.25	1.21	.37	-0.06	0	.69	-9.84
6	46.1	25.9	6.9	-1.9	.11	.35	.10	-0.02	0	.53	-11.39
7	45.2	23.0	5.9	-2.0	.05	.11	.03	-0.01	0	.47	-20.13
8	44.2	20.1	5.0	-2.1	.03	.04	.02	0	0	.54	-13.84
9	43.3	17.2	4.0	-2.2	.01	.01	0	0	0	.37	30.30
10	42.3	14.5	3.1	-2.2	.01	.01	0	0	0	.26	36.35
11	41.4	12.0	2.2	-2.1	.01	.01	0	0	0	.40	40.07
12	40.5	9.9	1.5	-2.0	.01	.01	0	0	0	.48	12.87
13	39.6	8.0	.8	-1.9	0	.01	0	0	0	.46	13.03
14	38.8	6.6	.3	-1.8	0	.01	0	0	0	.48	-20.20
15	38.1	5.4	-0.2	-1.6	0	0	0	0	0	.44	-5.54
16	37.3	4.6	-0.5	-1.4	0	0	0	0	0	.42	-14.22
17	36.7	4.0	-0.8	-1.2	0	0	0	0	0	.50	-10.66
18	36.0	3.6	-0.9	-1.0	0	0	0	0	0	.89	-16.90
19	35.4	3.5	-1.0	-0.9	0	0	0	0	0	.84	6.39
20	34.9	3.4	-1.1	-0.7	0	0	0	0	0	.76	.20
21	34.3	3.5	-1.1	-0.5	0	0	0	0	0	.79	4.28
22	33.8	3.7	-1.0	-0.4	0	0	0	0	0	.85	4.07
23	33.3	3.8	-1.0	-0.2	0	0	0	0	0	.80	19.71
24	32.8	4.0	-0.9	-0.1	0	0	0	0	0	.65	11.21
25	32.4	4.1	-0.9	-0.1	0	0	0	0	0	.64	17.91
26	31.9	4.2	-0.9	0	0	0	0	0	0	.73	6.11
27	31.5	4.2	-0.8	0	0	0	0	0	0	01.09	11.10
28	31.0	4.1	-0.9	0	0	0	0	0	0	01.44	-3.79
29	30.5	4.0	-0.9	0	0	0	0	0	0	01.46	2.99
30	30.1	3.8	-0.9	-0.1	0	0	0	0	0	01.35	7.65
31	29.6	3.5	-1.0	-0.1	0	0	0	0	0	01.22	8.45
32	29.2	3.2	-1.1	-0.2	0	0	0	0	0	01.11	3.11
33	28.8	2.8	-1.2	-0.2	0	0	0	0	0	01.11	14.20
34	28.3	2.4	-1.3	-0.3	0	0	0	0	0	01.35	4.50
35	27.9	2.0	-1.3	-0.4	0	0	0	0	0	02.78	2.87
36	27.4	1.6	-1.4	-0.4	0	0	0	0	0	0	.79
37	27.0	1.3	-1.5	-0.5	0	0	0	0	0	0	1.63
38	26.6	.9	-1.6	-0.6	0	0	0	0	0	03.50	-7.68
39	26.2	.6	-1.7	-0.6	0	0	0	0	0	02.20	-8.58
40	25.7	.4	-1.8	-0.7	0	0	0	0	0	02.00	-5.26
41	25.3	.2	-1.9	-0.8	0	0	0	0	0	03.36	-3.85
42	24.9	-0.0	-2.0	-0.9	0	0	0	0	0	00.9*	-11.13
43	24.5	-0.2	-2.1	-0.9	0	0	0	0	0	0	-3.03
44	24.1	-0.3	-2.2	-1.0	0	0	0	0	0	0	-1.51
45	23.7	-0.4	-2.3	-1.1	0	0	0	0	0	0	-5.30
46	23.3	-0.5	-2.5	-1.2	0	0	0	0	0	0	-3.01
47	22.9	-0.6	-2.6	-1.3	0	0	0	0	0	0	4.84
48	22.5	-0.9	-2.8	-1.4	0	0	0	0	0	0	5.40
49	22.1	-0.9	-3.0	-1.5	0	0	0	0	0	0	.60
50	21.8	-1.1	-3.2	-1.5	0	0	0	0	0	0	0

097 LI-W
 BRFLS 14 09-114- 1 C. 06JUL-65 1613-1618

TM No. 377

LAGS= 50 N= 1422 DT= 0.2SEC

MEAN W_1 3.6 MEAN W_2 4.9

K	ACOV W_1	ACOV W_2	COV	IN	COVOUT	SP W_1	SP W_2	CO	QUA	PER	R	PHI
0	27.2	47.2	5.7	0	11.44	15.17	1.64	0	0	0	.12	
1	27.1	46.9	5.7	-0.2	12.10	20.34	1.78	-0.41	20.00	.12	-13.02	
2	26.8	46.2	5.5	-0.3	1.09	6.26	.25	-0.04	10.00	.10	-8.67	
3	26.3	45.2	5.1	-0.4	.95	2.21	.63	-0.07	6.67	.43	-6.21	
4	25.8	43.8	4.7	-0.5	.82	1.82	.88	-0.21	5.00	.74	-13.29	
5	25.1	42.2	4.2	-0.6	.45	.88	.45	-0.11	4.00	.73	-13.78	
6	24.5	40.5	3.7	-0.6	.19	.25	.09	-0.07	3.33	.52	-34.97	
7	23.8	38.7	3.2	-0.6	.06	.11	.01	-0.02	2.86	.35	-60.45	
8	23.2	36.9	2.7	-0.6	.02	.05	0	0	2.50	.16	-21.02	
9	22.6	35.2	2.3	-0.5	.01	.02	0	0	2.22	.34	-52.32	
10	22.1	33.6	1.9	-0.5	.01	.02	0	0	2.00	.34	-59.28	
11	21.8	32.0	1.7	-0.4	.01	.01	0	0	1.82	.09	-8.82	
12	21.5	30.7	1.5	-0.3	0	.01	0	0	1.67	.45	-53.32	
13	21.3	29.5	1.5	-0.2	0	0	0	0	1.54	.61	-24.02	
14	21.2	28.5	1.6	-0.2	0	0	0	0	1.434	.84	-1.04	
15	21.2	27.6	1.8	-0.2	0	0	0	0	1.33	0	-6.56	
16	21.3	26.8	2.0	-0.2	0	0	0	0	1.25	0	-69.43	
17	21.4	26.2	2.3	-0.2	0	0	0	0	1.18	0	-88.80	
18	21.5	25.6	2.7	-0.3	0	0	0	0	1.11	0	85.43	
19	21.6	25.0	3.0	-0.3	0	0	0	0	1.05	0	-74.26	
20	21.7	24.5	3.4	-0.4	0	0	0	0	1.001	.61	-75.64	
21	21.8	23.9	3.7	-0.5	0	0	0	0	.951	.21	-59.04	
22	21.9	23.3	4.0	-0.6	0	0	0	0	.911	.25	-27.69	
23	22.0	22.6	4.2	-0.6	0	0	0	0	.871	.90	2.34	
24	22.0	21.9	4.3	-0.7	0	0	0	0	.83	0	17.56	
25	22.0	21.0	4.4	-0.9	0	0	0	0	.80	0	73.80	
26	22.0	20.1	4.3	-1.0	0	0	0	0	.77	0	-20.01	
27	21.9	19.1	4.3	-1.1	0	0	0	0	.74	.17	54.77	
28	21.8	18.0	4.1	-1.2	0	0	0	0	.711	.48	-6.23	
29	21.8	16.9	3.9	-1.3	0	0	0	0	.69	0	-20.02	
30	21.7	15.7	3.6	-1.4	0	0	0	0	.671	.66	-42.67	
31	21.5	14.5	3.3	-1.5	0	0	0	0	.65	.91	-5.93	
32	21.4	13.2	3.1	-1.6	0	0	0	0	.631	.13	32.63	
33	21.3	12.0	2.8	-1.7	0	0	0	0	.611	.47	49.02	
34	21.2	10.9	2.5	-1.7	0	0	0	0	.595	.15	22.74	
35	21.0	9.8	2.3	-1.8	0	0	0	0	.57	0	-40.77	
36	20.9	8.8	2.1	-1.8	0	0	0	0	.56	0	-42.08	
37	20.8	7.9	1.9	-1.9	0	0	0	0	.54	0	-26.71	
38	20.6	7.2	1.7	-1.8	0	0	0	0	.536	.54	-9.65	
39	20.5	6.6	1.6	-1.8	0	0	0	0	.511	.69	16.85	
40	20.3	6.1	1.5	-1.7	0	0	0	0	.503	.22	24.53	
41	20.2	5.7	1.4	-1.7	0	0	0	0	.49	0	20.20	
42	20.0	5.4	1.3	-1.6	0	0	0	0	.48	0	8.72	
43	19.9	5.2	1.3	-1.4	0	0	0	0	.47	0	-7.12	
44	19.7	5.0	1.2	-1.3	0	0	0	0	.457	.45	-19.86	
45	19.6	4.9	1.2	-1.2	0	0	0	0	.443	.33	-20.44	
46	19.4	4.8	1.2	-1.1	0	0	0	0	.431	.78	-10.80	
47	19.3	4.7	1.2	-0.9	0	0	0	0	.431	.33	10.49	
48	19.2	4.6	1.1	-0.8	0	0	0	0	.421	.94	32.36	
49	19.0	4.4	1.1	-0.7	0	0	0	0	.41	0	39.24	
50	18.9	4.2	1.1	-0.5	0	0	0	0	.40	0	0	

098

LI-W

TM No. 377

RBEIS- 14 2-4.0M-VI 7 JUNE-65 2228-2234

LAGS= 50 N= 1706 DT= .20SEC

MEAN W₂= 4.2 MEAN W₁= 3.1

K	ACOV W ₂	ACOV W ₁	COV IN	COVOUT	SP W ₂	SP W ₁	CO	QUA	PER	R	PHI
0	118.5	211.0	115.5	0	11.31	9.86	4.09	0	0	.39	0
1	115.0	202.6	111.4	2.6	16.68	17.69	5.47	.43	20.00	.32	4.53
2	105.7	180.4	99.6	5.0	11.11	16.73	5.58	-0.13	10.00	.41	-1.35
3	91.8	146.9	81.4	6.8	19.21	31.35	20.09	.82	6.67	.82	2.34
4	74.2	105.9	58.4	8.1	29.60	53.56	37.23	2.81	5.00	.94	4.32
5	54.3	61.2	32.6	8.5	21.58	46.98	29.83	2.98	4.00	.94	5.71
6	33.7	16.9	6.1	8.2	6.08	21.11	9.89	1.56	3.33	.88	8.98
7	13.7	-23.4	-19.1	7.1	1.10	7.29	1.98	.44	2.86	.72	12.58
8	-4.4	-56.8	-41.2	5.5	.55	2.70	.61	.12	2.50	.51	11.30
9	-19.5	-81.5	-58.7	3.4	.24	1.25	.18	.04	2.22	.34	12.30
10	-30.8	-96.3	-70.6	1.2	.23	.81	.22	.00	2.00	.51	.29
11	-37.7	-101.3	-76.4	-1.0	.15	.40	.12	.00	1.82	.50	.08
12	-40.3	-97.0	-75.8	-2.9	.10	.23	.08	-0.01	1.67	.52	-5.50
13	-38.4	-84.7	-69.5	-4.4	.05	.13	.03	-0.01	1.54	.42	-17.98
14	-32.7	-66.4	-58.0	-5.5	.04	.12	.03	-0.01	1.43	.37	-17.86
15	-23.7	-43.8	-42.7	-6.0	.04	.09	.01	.00	1.33	.25	.81
16	-12.3	-19.3	-24.9	-6.0	.04	.07	.02	.00	1.25	.36	4.90
17	.3	5.1	-6.2	-5.5	.03	.07	.01	.00	1.18	.32	4.19
18	13.2	27.5	12.1	-4.5	.03	.06	.01	.00	1.11	.34	1.65
19	25.4	46.3	28.5	-3.3	.02	.05	.01	-0.00	1.05	.32	-4.68
20	35.9	60.4	42.1	-1.8	.02	.04	.01	-0.00	1.00	.30	-10.16
21	44.1	69.2	52.1	-0.3	.02	.03	.00	-0.00	.95	.22	-37.59
22	40.5	72.6	58.1	1.2	.01	.03	.00	-0.00	.91	.29	-35.81
23	52.0	71.0	60.0	2.5	.01	.03	.00	.00	.87	.16	9.85
24	51.5	64.8	58.0	3.6	.02	.03	.00	.00	.83	.17	54.17
25	49.2	55.2	52.6	4.4	.02	.02	.00	.00	.80	.21	66.89
26	42.6	43.2	44.5	4.9	.02	.02	.00	.00	.77	.29	57.73
27	35.0	29.6	34.3	5.1	.01	.02	.00	.00	.74	.17	48.16
28	26.2	15.5	23.0	5.1	.01	.02	.00	-0.00	.71	.17	-24.03
29	16.9	1.8	11.3	4.8	.01	.01	.00	.00	.69	.20	6.85
30	7.7	-10.9	.2	4.3	.01	.01	.00	.00	.67	.35	31.17
31	-0.7	-21.7	-9.7	3.8	.01	.01	.00	.00	.65	.38	40.86
32	-7.8	-30.2	-17.8	3.2	.01	.01	.00	.00	.63	.28	50.35
33	-13.1	-36.1	-23.5	2.6	.01	.01	.00	.00	.61	.11	38.07
34	-16.3	-39.1	-26.7	2.2	.01	.01	.00	-0.00	.59	.13	-20.94
35	-17.3	-39.2	-27.1	1.8	.01	.01	.00	-0.00	.57	.22	-48.43
36	-16.2	-36.4	-25.0	1.5	.01	.01	.00	-0.00	.56	.21	-52.73
37	-13.1	-31.1	-20.6	1.3	.01	.01	.00	-0.00	.54	.09	-30.50
38	-9.4	-23.5	-14.4	1.2	.01	.01	.00	-0.00	.53	.05	-66.63
39	-2.7	-14.4	-7.0	1.2	.00	.01	-0.00	-0.00	.51	.13	9.21
40	3.7	-4.1	1.1	1.1	.00	.01	-0.00	.00	.50	.12	-39.94
41	10.2	6.3	9.1	1.0	.00	.01	.00	.00	.49	.14	78.83
42	16.3	16.3	16.5	.8	.00	.01	-0.00	.00	.48	.25	-86.56
43	21.6	25.1	22.7	.5	.00	.01	-0.00	.00	.47	.39	-52.83
44	25.8	32.0	27.2	.2	.00	.01	-0.00	.00	.45	.37	-31.69
45	28.5	36.6	29.9	-0.1	.00	.01	-0.00	.00	.44	.20	-11.37
46	29.7	38.5	30.6	-0.4	.00	.01	.00	-0.00	.43	.19	-63.48
47	29.2	37.4	29.2	-0.6	.00	.01	.00	-0.00	.43	.37	-70.41
48	27.1	33.7	26.1	-0.7	.00	.01	.00	-0.00	.42	.39	-84.69
49	23.7	27.6	21.6	-0.7	.00	.01	.00	-0.00	.41	.22	-72.82
50	19.4	19.8	16.0	-0.5	.00	.01	.00	-0.00	.40	.15	-0.00

CORRELATION COEFFICIENT .731

099

L III

TM No. 377

BBEIS 14 1.04-IV 0. 9 JUNE 65 2357-0008

LAGS= 50 N= 2296 DT= 0.25FC

MEAN U=-18.6 MEAN W= 1.4

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	89.0	528.2	-21.8	0	2.60	5.71	-0.53	0	0	.14	0
1	76.9	492.5	-21.5	43.6	4.64	10.47	-0.26	.17	20.00	.04	-32.81
2	60.1	406.6	-20.4	81.6	4.47	9.66	.77	.75	10.00	.16	44.02
3	39.8	283.6	-18.0	108.7	8.87	46.56	-2.64	12.47	6.67	.65	-78.27
4	20.5	140.7	-14.2	122.0	15.72	128.24	-11.36	34.71	5.00	.81	-71.88
5	2.7	-2.9	-8.7	121.2	15.48	145.92	-11.30	37.82	4.00	.83	-73.24
6	-10.4	-131.1	-2.0	108.0	10.08	84.73	-1.74	23.46	3.33	.80	-85.64
7	-20.7	-231.9	5.7	86.2	6.56	39.92	2.55	12.19	2.86	.77	78.13
8	-27.3	-298.9	13.1	58.8	4.60	22.70	1.57	6.55	2.50	.66	76.52
9	-30.3	-331.6	19.8	29.2	3.06	13.82	.54	3.63	2.22	.56	81.52
10	-29.9	-331.3	25.1	.7	2.07	8.02	.22	1.74	2.00	.43	82.71
11	-27.7	-304.4	28.2	-23.9	1.74	3.46	.20	.86	1.82	.36	77.04
12	-23.6	-257.3	29.2	-43.9	1.19	1.49	.07	.37	1.67	.29	78.83
13	-17.5	-195.7	27.2	-58.0	.79	.90	.05	.05	1.54	.09	44.83
14	-12.5	-125.9	22.0	-66.3	.80	.85	.09	.09	1.43	.15	44.84
15	-6.4	-53.2	14.5	-69.4	.73	.61	.10	.09	1.33	.20	43.61
16	-0.8	17.8	5.8	-67.6	.56	.39	.06	.04	1.25	.17	35.12
17	4.7	83.6	-3.3	-61.5	.38	.32	.03	0	1.18	.07	-9.43
18	9.1	138.5	-12.5	-52.0	.33	.33	0	-0.03	1.11	.09	-83.17
19	13.5	181.6	-20.5	-39.5	.31	.33	-0.03	-0.06	1.05	.20	60.09
20	15.8	208.9	-26.6	-25.7	.26	.27	-0.04	-0.04	1.00	.23	46.84
21	17.3	218.9	-30.2	-11.8	.23	.18	0	-0.02	.95	.12	89.53
22	17.2	210.7	-31.3	1.7	.20	.17	.02	-0.02	.91	.14	-50.88
23	16.6	187.4	-29.4	13.4	.19	.19	.02	-0.03	.87	.19	-60.11
24	15.3	152.6	-25.0	23.7	.18	.21	.02	-0.03	.83	.19	-52.31
25	14.3	110.3	-19.2	31.1	.16	.18	0	-0.02	.80	.11	-75.16
26	12.0	64.4	-11.7	36.4	.13	.14	-0.02	-0.01	.77	.12	21.04
27	8.4	18.4	-3.9	38.9	.13	.15	-0.02	.01	.74	.18	-22.91
28	5.0	-24.4	3.3	38.8	.15	.17	-0.01	.02	.71	.14	-58.10
29	.6	-61.7	9.3	36.4	.16	.17	.01	.02	.69	.11	53.84
30	-3.4	-92.0	13.9	31.9	.18	.16	.01	.02	.67	.12	47.94
31	-6.4	-114.0	16.8	25.6	.20	.11	0	.01	.65	.08	89.08
32	-7.9	-126.7	18.4	18.8	.16	.08	0	0	.63	.03	-16.75
33	-8.8	-130.3	18.3	12.0	.10	.08	0	-0.01	.61	.10	-64.09
34	-8.7	-124.9	16.7	5.6	.07	.09	0	-0.01	.59	.16	82.76
35	-9.0	-111.9	13.7	-0.3	.07	.12	-0.02	-0.02	.57	.26	45.30
36	-7.2	-91.6	10.1	-5.7	.09	.13	-0.02	-0.02	.56	.26	42.93
37	-6.6	-66.7	5.9	-10.6	.10	.11	-0.01	0	.54	.08	28.99
38	-6.4	-38.6	1.4	-15.5	.10	.11	0	.01	.53	.14	72.22
39	-5.6	-8.0	-3.5	-19.7	.10	.10	.01	0	.51	.09	25.11
40	-4.6	21.9	-8.0	-23.1	.09	.10	.01	-0.01	.50	.17	-52.04
41	-2.5	48.8	-11.5	-25.1	.07	.11	.01	-0.01	.49	.19	-31.47
42	.9	70.6	-14.0	-25.5	.06	.09	.01	0	.48	.17	10.37
43	4.7	85.5	-15.4	-23.5	.07	.06	0	0	.47	.05	-75.27
44	8.3	93.5	-15.7	-19.5	.07	.05	-0.01	0	.45	.19	24.22
45	10.8	93.8	-15.0	-13.3	.09	.05	-0.01	-0.01	.44	.17	60.46
46	12.8	86.6	-13.5	-6.0	.14	.08	.01	0	.43	.06	34.83
47	12.4	73.5	-11.7	1.5	.18	.11	0	.02	.43	.16	79.04
48	11.0	54.9	-9.8	8.7	.16	.09	-0.01	.01	.42	.14	-38.60
49	8.6	33.1	-7.7	14.6	.11	.07	-0.02	-0.01	.41	.20	16.31
50	6.2	10.4	-5.1	19.0	.04	.03	-0.01	0	.40	.14	0

100

LI-w

TM No. 377

BRFIS- 14 2-4.0M- VII 8 JUNE- 65

LAGS= 50 N= 1346

DT= .20SEC

MEAN U = -3.4

MEAN W = -1.1

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	115.4	163.0	74.5	0	16.94	15.19	7.63	0	0	.48	0
1	112.8	157.3	72.4	2.8	29.95	25.51	12.09	-0.66	20.00	.44	-3.13
2	104.2	142.7	66.2	5.2	20.27	18.00	6.59	1.04	10.00	.35	8.97
3	94.6	120.9	56.6	7.0	13.47	17.96	7.19	1.57	6.67	.47	12.34
4	84.7	94.2	44.4	8.2	13.73	29.28	15.38	1.98	5.00	.77	7.32
5	71.6	65.0	30.7	8.7	11.68	32.13	16.32	2.83	4.00	.85	9.83
6	58.3	36.1	16.8	8.4	5.40	16.65	7.35	1.66	3.33	.79	12.71
7	45.7	9.7	3.8	7.4	1.80	4.59	1.74	.49	2.86	.63	15.56
8	34.5	-12.2	-7.1	5.8	.71	1.36	.30	.22	2.50	.38	36.46
9	25.2	-28.0	-15.2	3.9	.38	.60	-0.06	.02	2.22	.14	-20.28
10	18.1	-37.0	-19.9	1.8	.29	.41	-0.00	-0.01	2.00	.03	75.64
11	13.3	-39.3	-21.1	-0.2	.12	.21	-0.01	.00	1.82	.07	-0.79
12	10.8	-35.3	-19.0	-2.0	.07	.15	.00	.00	1.67	.04	23.70
13	10.1	-26.2	-14.0	-3.3	.07	.12	-0.00	.02	1.54	.17	-74.82
14	10.9	-13.3	-6.9	-4.2	.07	.10	.00	.02	1.43	.26	86.84
15	12.8	1.7	1.5	-4.6	.04	.06	-0.00	.01	1.33	.10	-87.15
16	15.4	17.1	10.2	-4.5	.03	.06	-0.01	.00	1.25	.14	-12.45
17	18.0	31.3	18.3	-4.0	.03	.07	-0.01	.00	1.18	.28	-14.08
18	20.3	42.9	25.2	-3.4	.03	.07	-0.00	.01	1.11	.28	-82.92
19	21.9	50.9	30.4	-2.6	.02	.04	.00	.01	1.05	.38	77.00
20	22.6	54.9	33.4	-1.8	.02	.03	.00	.01	1.00	.24	89.29
21	22.3	54.8	34.2	-1.0	.02	.03	-0.00	.00	.95	.20	-54.60
22	20.8	50.6	32.8	-0.2	.02	.03	-0.00	.00	.91	.14	-58.73
23	12.2	43.1	29.5	.3	.02	.02	-0.00	.00	.87	.12	-74.82
24	14.8	33.1	24.6	.4	.02	.02	.00	.00	.83	.22	67.19
25	10.8	21.7	18.8	.3	.01	.02	.00	.00	.80	.13	85.47
26	6.7	9.9	12.3	-0.2	.01	.02	-0.00	.00	.77	.12	-14.89
27	2.7	-1.1	5.7	-0.9	.01	.02	.00	.00	.74	.10	72.45
28	-1.1	-10.5	-0.7	-1.9	.01	.02	.00	.00	.71	.26	28.21
29	-4.5	-17.9	-6.3	-3.0	.01	.02	.00	-0.00	.69	.27	-17.53
30	-7.4	-22.9	-10.8	-4.2	.01	.01	.00	-0.00	.67	.33	-45.90
31	-9.7	-25.3	-14.1	-5.5	.01	.01	.00	-0.00	.65	.17	-74.52
32	-11.3	-25.1	-16.0	-6.7	.01	.01	-0.00	.00	.63	.10	-39.02
33	-12.1	-22.4	-16.5	-7.7	.01	.01	-0.00	.00	.61	.08	-46.68
34	-12.1	-17.8	-15.6	-8.4	.01	.01	-0.00	-0.00	.59	.03	74.40
35	-11.3	-11.5	-13.5	-8.6	.01	.01	-0.00	-0.00	.57	.08	49.91
36	-9.9	-4.3	-10.3	-8.4	.01	.01	-0.00	-0.00	.56	.07	61.19
37	-7.8	3.3	-6.2	-7.7	.00	.01	-0.00	-0.00	.54	.03	26.39
38	-5.2	11.0	-1.6	-6.5	.00	.01	.00	-0.00	.53	.04	-86.46
39	-2.5	17.9	3.0	-5.1	.00	.01	.00	-0.00	.51	.20	-63.83
40	.3	23.7	7.5	-3.4	.00	.01	.00	-0.00	.50	.18	-68.73
41	2.7	28.1	11.4	-1.7	.00	.01	-0.00	-0.00	.49	.14	30.93
42	4.6	30.8	14.5	-0.1	.00	.01	-0.00	.00	.48	.12	-12.25
43	5.7	31.9	16.6	1.5	.00	.01	-0.00	.00	.47	.11	-68.77
44	5.2	31.2	17.6	3.0	.00	.01	-0.00	-0.00	.45	.06	29.17
45	5.9	28.9	17.3	4.2	.00	.01	-0.00	-0.00	.44	.13	41.12
46	5.0	25.2	16.0	5.1	.00	.01	-0.00	.00	.43	.11	-45.86
47	3.7	20.5	13.7	5.6	.00	.01	-0.00	.00	.43	.13	-71.19
48	2.1	14.8	10.7	5.7	.00	.01	-0.00	.00	.42	.11	-6.88
49	.5	8.7	7.2	5.5	.00	.01	-0.00	-0.00	.41	.17	2.22
50	-1.1	2.4	3.5	5.1	.00	.00	-0.00	.00	.40	.12	-0.00

CORRELATION COEFFICIENT .543

101 **III**
 BBES 14 0.0M-**II** 0. 06JUL-65 1411-1415
 LAGS= 50 N= 1262 DF= 0.2SEC
 MEAN U= 30.0 MEAN W= 1.5
 CORRELATION COEFFICIENT -1.3

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	257.4	953.2	-162.3	0	4.50	6.52	-1.74	0	0	.32	0
1	226.2	865.5	-152.2	110.4	7.04	13.27	-1.26	-0.12	20.00	.13	5.26
2	174.1	662.2	-123.7	204.6	6.35	21.38	.09	2.89	10.00	.25	88.16
3	106.9	393.9	-80.9	267.0	22.32	87.96	-17.98	30.75	6.67	.80	-59.69
4	34.1	120.3	-32.9	290.1	45.68	181.20	-41.20	72.12	5.00	.91	-60.26
5	-23.2	-116.8	13.6	274.6	47.40	185.68	-34.16	75.52	4.00	.88	-65.66
6	-71.0	-295.4	53.2	230.4	36.05	143.81	-21.54	54.97	3.33	.82	-68.60
7	-101.7	-411.2	80.1	168.2	26.68	109.87	-20.20	38.20	2.86	.80	-62.13
8	-115.2	-467.9	95.2	101.3	17.89	65.21	-13.62	22.27	2.50	.76	-58.55
9	-112.2	-476.1	97.6	36.6	12.61	39.12	-6.71	14.38	2.22	.71	-64.98
10	-99.5	-441.9	90.3	-20.6	8.37	28.78	-2.56	8.69	2.00	.58	-73.57
11	-82.5	-379.4	76.7	-66.2	4.14	18.46	-0.49	2.63	1.82	.31	-79.53
12	-63.3	-297.9	59.8	-98.2	2.54	13.14	-0.35	1.08	1.67	.20	-72.12
13	-44.5	-206.6	43.0	-116.6	2.04	10.15	-0.42	1.36	1.54	.31	-72.74
14	-25.1	-116.8	28.1	-122.9	1.36	7.06	-0.35	1.11	1.43	.38	-72.33
15	-8.4	-36.1	16.3	-120.3	.88	4.16	-0.03	.38	1.33	.20	-84.73
16	6.8	30.8	7.8	-113.1	.75	2.91	-0.04	-0.14	1.25	.10	72.97
17	19.5	82.2	-0.1	-103.7	.85	2.39	-0.05	-0.54	1.18	.38	84.67
18	30.6	117.2	-8.4	-91.2	.88	1.67	.07	-0.44	1.11	.36	-80.67
19	39.6	139.3	-17.6	-76.1	.76	1.06	.05	-0.13	1.05	.16	-70.17
20	46.6	151.4	-27.6	-54.9	.67	.84	0	-0.06	1.00	.08	-89.84
21	52.0	157.4	-38.7	-31.2	.56	.76	-0.02	-0.12	.95	.18	82.56
22	52.9	157.4	-49.8	-7.7	.42	.61	-0.04	-0.12	.91	.26	72.20
23	49.9	153.5	-58.5	11.9	.35	.48	.03	-0.06	.87	.16	-62.92
24	44.9	144.1	-63.9	27.3	.32	.41	.07	-0.01	.83	.21	-6.97
25	37.9	133.9	-65.0	37.2	.26	.36	.03	-0.01	.80	.12	-18.71
26	29.9	122.2	-62.8	44.3	.23	.33	0	-0.02	.77	.06	80.83
27	24.0	111.2	-56.3	48.3	.26	.34	-0.02	-0.01	.74	.07	42.80
28	19.0	97.6	-47.4	51.0	.32	.38	-0.01	-0.03	.71	.08	74.22
29	14.5	76.6	-35.1	53.8	.31	.34	.02	-0.03	.69	.13	-54.86
30	8.0	44.0	-20.3	58.5	.23	.28	.05	-0.02	.67	.20	-20.10
31	1.3	2.5	-4.0	61.9	.24	.27	.03	-0.02	.65	.16	-37.05
32	-7.4	-45.7	13.6	62.9	.28	.21	.02	-0.07	.63	.29	-77.21
33	-16.4	-94.1	30.6	58.9	.27	.16	.04	-0.05	.61	.29	-52.58
34	-25.2	-136.7	44.1	47.4	.23	.19	.04	.02	.59	.20	32.71
35	-32.9	-166.8	53.6	30.3	.21	.23	.03	.03	.57	.18	49.01
36	-37.1	-182.1	59.1	9.2	.22	.24	.04	.01	.56	.19	15.14
37	-37.4	-179.2	60.1	-13.1	.21	.24	.04	.01	.54	.18	10.04
38	-32.7	-158.2	56.9	-33.9	.20	.26	0	0	.53	.01	8.38
39	-25.6	-122.7	47.6	-50.8	.19	.27	-0.02	0	.51	.07	-3.20
40	-17.3	-76.0	33.3	-62.8	.19	.25	-0.02	.02	.50	.14	-40.33
41	-7.7	-25.7	15.3	-68.2	.25	.19	-0.05	.02	.49	.23	-20.20
42	.0	22.6	-2.7	-65.0	.28	.18	-0.06	-0.01	.48	.26	13.50
43	6.7	60.9	-18.9	-54.7	.26	.17	-0.04	-0.03	.47	.21	34.43
44	11.6	84.4	-31.6	-38.3	.26	.16	-0.01	-0.04	.45	.19	75.48
45	15.3	92.5	-38.6	-19.3	.22	.16	-0.02	-0.04	.44	.21	67.11
46	17.4	87.1	-40.1	-2.9	.17	.17	-0.03	0	.43	.20	.21
47	17.3	71.7	-37.4	8.3	.18	.24	-0.01	0	.43	.05	-14.73
48	15.9	54.1	-30.8	10.8	.22	.30	.02	-0.05	.42	.20	-68.10
49	14.5	39.5	-23.9	8.6	.23	.25	.02	-0.06	.41	.27	-74.38
50	12.4	31.0	-16.1	4.0	.11	.10	.01	0	.40	.06	-0.02

102

OIII

TM No. 377

BBFIS- 14 .54- 1 8 JUNE-65 1420-1424

LAGS= 50 N= 1136 DT= .20SEC

MEAN U = 31.4 MEAN W = 1.3

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	158.3	688.9	-117.2	0	1.67	3.96	.92	0	0	.36	0
1	138.1	639.1	-111.5	75.7	2.98	9.68	1.46	.81	20.00	.31	29.17
2	111.6	520.4	-94.6	141.0	4.71	14.28	.22	2.92	10.00	.36	85.62
3	74.9	351.6	-68.5	187.2	14.28	47.42	-9.44	17.84	6.67	.78	-62.13
4	34.9	188.0	-36.2	210.9	31.30	145.10	-33.04	51.93	5.00	.91	-57.53
5	-3.0	-33.8	-0.5	209.5	39.08	205.20	-44.27	71.65	4.00	.94	-58.29
6	-35.3	-202.4	33.7	186.1	26.07	135.10	-25.96	48.09	3.33	.92	-61.64
7	-60.3	-332.1	64.5	146.5	10.50	51.20	-5.92	18.10	2.86	.82	-71.88
8	-77.1	-418.2	88.8	96.5	5.78	25.32	-0.61	8.84	2.50	.73	-86.05
9	-85.8	-456.9	103.9	44.3	4.53	18.23	-0.50	6.31	2.22	.70	-85.48
10	-86.8	-451.9	109.6	-5.2	3.03	12.24	-0.13	3.75	2.00	.62	-88.01
11	-80.4	-408.5	103.5	-49.7	2.05	6.11	.15	1.69	1.82	.48	84.98
12	-69.0	-334.2	88.7	-86.2	1.65	2.98	.12	.61	1.67	.28	78.80
13	-52.2	-237.7	67.9	-113.2	1.23	1.99	-0.02	.21	1.54	.13	-83.59
14	-32.7	-129.0	41.4	-128.0	.72	1.70	-0.17	-0.07	1.43	.17	22.68
15	-11.6	-18.0	13.6	-131.6	.54	1.32	-0.13	-0.19	1.33	.27	55.93
16	9.0	86.9	-13.4	-124.3	.47	.67	-0.03	-0.13	1.25	.24	75.05
17	25.5	178.9	-37.2	-106.1	.37	.37	-0.00	-0.06	1.18	.16	88.74
18	39.3	251.7	-56.3	-80.4	.34	.34	.02	-0.02	1.11	.09	-51.63
19	48.4	297.0	-69.3	-49.2	.36	.32	.01	.07	1.05	.20	85.66
20	52.1	311.9	-74.7	-15.9	.32	.30	.04	.07	1.00	.26	59.63
21	51.5	296.4	-72.8	16.2	.22	.34	.06	.06	.95	.32	44.81
22	45.9	252.6	-63.9	44.4	.20	.35	.04	.08	.91	.35	66.75
23	36.9	187.3	-49.8	66.2	.22	.27	.02	.07	.87	.28	72.27
24	25.1	109.3	-31.8	78.9	.20	.18	.00	.00	.83	.02	15.56
25	12.6	28.9	-13.1	82.9	.24	.18	-0.02	-0.03	.80	.19	57.41
26	-0.5	-45.7	4.5	78.1	.25	.24	-0.06	-0.02	.77	.25	22.65
27	-11.7	-108.2	19.7	66.0	.22	.27	-0.04	-0.01	.74	.19	14.32
28	-20.1	-155.0	31.5	49.0	.22	.25	.02	.01	.71	.08	28.56
29	-24.3	-183.5	39.0	28.8	.20	.22	.03	.04	.69	.23	51.27
30	-24.7	-192.7	41.0	9.0	.19	.17	.01	.04	.67	.25	70.76
31	-21.1	-183.4	40.1	-8.6	.23	.16	.02	.04	.65	.22	63.16
32	-16.9	-159.5	35.1	-22.8	.24	.18	.00	.02	.63	.11	82.84
33	-11.2	-124.5	27.6	-33.3	.22	.17	-0.03	.00	.61	.19	-8.11
34	-4.6	-82.6	19.1	-39.0	.17	.15	-0.04	-0.00	.59	.27	6.04
35	1.2	-38.3	9.9	-39.6	.18	.12	-0.02	.01	.57	.18	-24.46
36	6.7	5.4	1.9	-35.2	.22	.11	-0.01	.03	.56	.19	-62.23
37	9.4	45.0	-5.0	-27.4	.23	.12	.01	.01	.54	.09	28.15
38	12.6	78.5	-9.6	-16.8	.25	.14	.06	-0.04	.53	.39	-35.51
39	13.5	102.1	-12.7	-5.8	.23	.15	.06	-0.06	.51	.47	-44.42
40	11.9	114.2	-15.2	5.1	.17	.13	.04	-0.04	.50	.38	-46.53
41	8.2	115.1	-16.0	14.5	.16	.14	.04	-0.03	.49	.32	-41.40
42	4.4	102.1	-15.6	22.1	.19	.15	.00	-0.02	.48	.12	-86.40
43	-0.2	79.1	-13.0	26.7	.21	.16	-0.04	.00	.47	.24	-1.60
44	-4.6	49.0	-10.4	27.1	.24	.17	-0.02	.01	.45	.12	-29.14
45	-7.5	15.5	-7.1	23.6	.24	.14	.00	.00	.44	.02	61.15
46	-9.9	-16.2	-4.9	17.2	.19	.11	-0.00	-0.02	.43	.12	78.25
47	-10.1	-42.4	-3.3	7.7	.21	.10	-0.01	-0.01	.43	.11	62.37
48	-8.8	-61.4	-1.8	-2.1	.22	.09	-0.00	.00	.42	.02	-51.21
49	-6.2	-71.6	-0.5	-11.9	.20	.08	.00	-0.00	.41	.03	-48.13
50	-2.5	-71.8	.3	-19.3	.10	.04	-0.00	-0.00	.40	.02	.01

CORRELATION COEFFICIENT -0.455

103 OIII 8 JUNE -65 1428-1432

TM No. 377

BBFIS- 14 1.04- 1 DT= .20SEC
 LAGS= 50 N= 1039 MEAN W = -1.2
 MEAN U = 36.2

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	117.7	472.6	-78.0	0	1.28	2.69	.19	0	0	.10	0
1	97.7	372.7	-72.5	53.1	1.95	5.88	.20	.66	20.00	.20	73.02
2	78.4	300.4	-58.6	98.7	2.10	9.87	.22	2.83	10.00	.62	85.51
3	49.3	195.0	-38.2	130.6	7.38	25.33	-3.40	10.77	6.67	.83	-72.50
4	18.9	74.5	-15.2	145.2	20.45	67.97	-16.96	29.70	5.00	.92	-60.27
5	-8.9	-44.2	8.4	141.5	28.32	105.96	-26.61	43.97	4.00	.94	-58.81
6	-32.7	-145.5	29.6	121.5	20.09	85.57	-17.50	34.03	3.33	.92	-62.78
7	-50.3	-219.1	46.4	89.8	11.53	45.71	-6.25	18.73	2.86	.90	-71.54
8	-61.6	-258.7	57.4	52.0	6.76	27.15	-3.74	11.35	2.50	.88	-71.76
9	-65.9	-264.2	62.1	13.3	3.24	13.59	-1.94	4.63	2.22	.76	-67.25
10	-64.1	-240.3	60.7	-21.4	1.31	4.52	-0.28	.94	2.00	.41	-73.33
11	-54.9	-193.4	53.8	-49.4	1.15	1.91	-0.24	.52	1.82	.38	-65.57
12	-41.9	-133.9	41.9	-68.3	1.19	1.00	-0.39	.38	1.67	.50	-44.33
13	-25.0	-70.1	27.2	-77.2	1.27	.76	-0.42	.27	1.54	.51	-32.30
14	-8.6	-10.5	11.4	-77.5	1.06	.60	-0.24	.09	1.43	.32	-21.42
15	6.0	40.9	-4.1	-69.8	.70	.44	-0.06	-0.08	1.33	.18	50.06
16	17.1	80.8	-17.2	-57.4	.50	.35	-0.05	-0.12	1.25	.31	65.09
17	24.6	107.8	-27.9	-42.1	.32	.29	-0.04	-0.05	1.18	.22	53.69
18	30.6	122.4	-34.9	-27.0	.21	.22	-0.04	-0.01	1.11	.18	14.82
19	33.6	126.5	-39.7	-12.3	.27	.16	-0.05	-0.01	1.05	.26	6.93
20	34.8	120.5	-41.1	.6	.31	.12	-0.05	-0.00	1.00	.24	4.50
21	33.6	106.0	-39.1	11.9	.28	.09	-0.05	.00	.95	.29	-6.04
22	30.6	85.5	-35.1	22.0	.24	.11	-0.06	.01	.91	.36	-11.88
23	25.8	58.5	-27.7	30.0	.21	.13	-0.03	.01	.87	.20	-23.41
24	18.6	28.2	-17.8	36.2	.20	.11	-0.01	.00	.83	.09	-18.02
25	12.0	-3.1	-6.1	38.9	.22	.10	-0.05	.01	.80	.36	-13.62
26	1.7	-33.1	5.7	38.9	.21	.10	-0.04	.02	.77	.32	-24.02
27	-6.5	-58.9	16.7	34.9	.22	.09	.00	.00	.74	.03	81.74
28	-13.4	-78.3	25.6	28.0	.23	.06	.02	-0.01	.71	.18	-23.94
29	-19.9	-88.4	31.3	17.9	.19	.05	.02	-0.01	.69	.19	-29.70
30	-22.7	-88.6	33.4	5.9	.16	.09	-0.01	-0.01	.67	.08	43.31
31	-23.2	-79.2	31.2	-6.6	.19	.11	-0.02	.00	.65	.16	-6.55
32	-22.2	-60.9	26.5	-18.2	.25	.09	-0.01	.02	.63	.13	-55.29
33	-17.2	-36.1	19.3	-27.3	.24	.07	.01	.01	.61	.10	50.54
34	-11.4	-8.1	10.5	-32.6	.19	.06	.01	.00	.59	.09	6.05
35	-2.8	19.4	1.2	-32.9	.23	.07	-0.01	-0.00	.57	.11	12.42
36	5.5	42.8	-7.4	-29.0	.31	.11	-0.01	-0.01	.56	.09	49.73
37	11.5	59.0	-13.1	-21.4	.26	.11	.02	-0.01	.54	.14	-37.36
38	15.4	66.8	-16.1	-11.5	.22	.07	.02	-0.01	.53	.14	-26.03
39	17.1	65.5	-16.8	-0.7	.30	.05	.00	-0.00	.51	.01	-36.40
40	16.4	56.2	-14.5	9.0	.30	.06	-0.01	-0.00	.50	.10	2.58
41	14.1	41.0	-11.0	16.9	.21	.07	-0.04	.00	.49	.32	-6.59
42	10.6	22.4	-6.8	21.5	.23	.06	-0.03	.02	.48	.30	-39.11
43	7.1	3.9	-3.6	23.1	.30	.06	.01	.03	.47	.23	64.80
44	2.5	-13.0	-0.3	22.4	.35	.08	.01	-0.00	.45	.08	-17.22
45	-1.1	-25.9	1.9	19.0	.33	.11	-0.01	-0.04	.44	.23	77.80
46	-3.8	-36.0	4.1	14.7	.29	.11	-0.03	-0.02	.43	.19	40.57
47	-6.0	-41.4	4.5	10.0	.28	.10	-0.03	.01	.43	.18	-24.91
48	-7.4	-43.6	4.6	5.5	.29	.08	-0.02	.01	.42	.16	-23.26
49	-6.4	-42.7	3.8	1.1	.25	.08	-0.02	-0.00	.41	.12	3.22
50	-6.1	-39.8	2.2	-2.4	.10	.04	-0.00	-0.00	.40	.03	.00

CORRELATION COEFFICIENT -0.359

104

OIII

TM No. 377

BRELS- 14 1.5M- 1 8 JUNE - 65 1435-1439

LAGS= 50 N= 1022 DT= .20SEC

MEAN U = 37.2 MEAN W = -2.4

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	72.0	243.6	-49.7	0	.60	6.18	-0.19	0	0	.10	0
1	54.8	230.6	-46.9	23.5	1.34	12.57	.04	1.00	20.00	.24	87.87
2	45.5	197.7	-39.6	44.4	2.18	12.52	.56	2.75	10.00	.54	78.53
3	31.4	149.1	-29.1	61.0	6.59	24.76	-3.86	9.21	6.67	.78	-67.23
4	17.5	91.1	-16.1	71.4	15.59	55.95	-15.56	21.57	5.00	.90	-54.19
5	4.0	30.3	-2.4	74.6	17.48	65.73	-18.96	25.02	4.00	.93	-52.84
6	-9.0	-26.8	10.9	71.1	8.70	37.66	-8.67	13.65	3.33	.89	-57.58
7	-18.4	-75.4	23.5	61.0	2.51	13.46	-1.36	4.22	2.86	.76	-72.09
8	-28.1	-111.5	33.3	46.4	1.19	6.62	-0.39	1.76	2.50	.64	-77.40
9	-34.4	-133.1	40.5	29.2	.76	3.38	-0.07	.74	2.22	.46	-84.86
10	-39.5	-140.0	44.1	11.3	1.05	1.43	-0.02	.50	2.00	.41	-87.39
11	-40.3	-133.2	43.7	-5.6	1.22	.75	-0.24	.25	1.82	.36	-45.33
12	-37.4	-114.8	39.5	-20.6	1.09	.43	-0.28	-0.18	1.67	.49	32.20
13	-31.0	-87.8	31.8	-32.2	.98	.30	-0.21	-0.23	1.54	.58	47.63
14	-22.5	-55.8	21.2	-40.8	.74	.25	-0.12	-0.09	1.43	.35	36.25
15	-11.2	-21.7	9.2	-45.2	.42	.20	-0.01	-0.01	1.33	.06	33.43
16	-0.9	11.5	-2.9	-45.8	.33	.15	-0.00	.01	1.25	.05	-84.30
17	8.7	41.4	-14.0	-42.1	.35	.11	-0.03	-0.01	1.18	.17	14.85
18	15.9	65.9	-23.2	-35.2	.29	.09	-0.05	-0.01	1.11	.33	13.35
19	21.4	83.1	-29.8	-25.5	.29	.07	-0.03	.01	1.05	.25	-20.14
20	25.5	92.7	-34.0	-14.2	.31	.05	-0.01	.02	1.00	.18	-57.11
21	26.2	94.0	-35.4	-2.7	.26	.05	-0.01	.00	.95	.11	-17.47
22	25.2	87.8	-34.2	7.6	.24	.07	-0.01	-0.00	.91	.11	19.98
23	22.1	74.7	-30.2	15.9	.27	.06	-0.00	.00	.87	.03	-5.04
24	18.1	56.3	-24.1	22.0	.31	.04	-0.01	.01	.83	.11	-61.04
25	12.0	34.8	-16.2	25.6	.36	.03	-0.00	.01	.80	.11	-67.81
26	5.6	12.0	-7.8	27.4	.30	.03	-0.00	-0.01	.77	.10	73.50
27	-0.2	-10.1	.9	26.4	.21	.03	-0.01	-0.02	.74	.24	66.37
28	-5.3	-29.7	8.7	23.7	.24	.03	-0.00	-0.00	.71	.05	69.22
29	-9.9	-45.1	15.5	19.4	.27	.03	-0.00	-0.00	.69	.00	41.86
30	-14.6	-55.2	20.3	13.4	.23	.04	-0.00	-0.00	.67	.02	24.83
31	-15.7	-59.5	23.0	6.6	.23	.04	-0.00	.01	.65	.10	-70.56
32	-18.5	-58.2	23.2	-0.4	.26	.04	-0.01	.01	.63	.19	-48.62
33	-17.6	-52.0	21.2	-7.0	.25	.04	-0.02	.01	.61	.25	-13.99
34	-14.6	-42.1	17.4	-12.6	.23	.04	-0.03	.00	.59	.35	-0.19
35	-10.0	-29.6	12.4	-16.1	.23	.03	-0.03	.01	.57	.39	-18.67
36	-5.0	-16.2	6.7	-17.5	.22	.02	-0.02	.01	.56	.35	-24.82
37	-1.1	-3.5	1.1	-16.5	.18	.02	-0.02	-0.00	.54	.25	2.80
38	3.6	7.2	-3.7	-14.0	.23	.02	-0.01	.00	.53	.19	-13.66
39	7.8	15.2	-7.5	-10.2	.29	.03	-0.01	.01	.51	.21	-50.97
40	9.8	20.5	-10.3	-5.8	.29	.03	-0.00	.01	.50	.15	-78.13
41	11.7	22.7	-12.3	-1.5	.33	.02	.01	.01	.49	.11	53.93
42	11.7	22.5	-13.0	2.3	.34	.02	.01	.01	.48	.17	35.20
43	10.6	20.1	-12.9	5.5	.28	.02	.01	.00	.47	.14	20.71
44	9.4	16.2	-12.1	7.5	.31	.03	.00	-0.02	.45	.17	-75.64
45	7.0	11.2	-10.5	8.5	.39	.03	-0.00	-0.03	.44	.24	86.75
46	4.1	5.8	-7.6	8.2	.35	.03	-0.00	-0.01	.43	.10	63.38
47	2.2	.4	-4.7	7.1	.28	.02	.00	.01	.43	.12	84.00
48	-0.6	-4.4	-1.5	5.1	.26	.02	.00	.01	.42	.16	83.01
49	-2.9	-8.7	1.7	2.3	.23	.03	-0.01	.01	.41	.20	-39.38
50	-4.8	-12.1	4.5	-0.4	.09	.02	-0.01	.00	.40	.25	-0.00

CORRELATION COEFFICIENT -0.376

BBFIS- 14 2.5M- 1 8 JUNE- 65

LAGS= 50 N= 1088 DT= .20SEC

MEAN U = 35.2 MFAN W = -3.3

K ACOV U ACOV W COV IN COVOUT SP U SP W CO QUA PER R PHI

0	57.7	159.4	-34.6	0	.50	7.80	.37	0	0	.19	0
1	40.8	152.5	-34.6	13.1	1.01	13.97	.29	.80	20.00	.23	70.18
2	34.3	136.3	-29.7	25.0	2.58	13.42	-1.00	3.63	10.00	.64	-73.29
3	24.4	111.5	-22.3	35.4	8.10	25.63	-6.13	11.12	6.67	.88	-61.13
4	14.3	81.5	-13.7	42.8	12.49	39.17	-11.86	16.52	5.00	.92	-54.33
5	5.7	48.5	-4.0	47.2	9.46	31.81	-10.04	12.12	4.00	.91	-50.36
6	-1.6	15.7	5.2	47.9	4.21	16.13	-4.69	5.26	3.33	.86	-48.29
7	-8.2	-14.2	13.7	44.9	1.70	6.67	-1.90	1.82	2.86	.78	-43.80
8	-14.2	-39.0	20.6	39.0	.77	2.00	-0.62	.27	2.50	.54	-23.97
9	-18.9	-57.3	25.7	30.5	.74	.68	-0.13	-0.03	2.22	.19	14.15
10	-24.0	-68.1	28.4	20.8	1.14	.36	-0.10	-0.05	2.00	.18	24.36
11	-26.8	-71.9	29.0	10.9	1.25	.22	-0.14	-0.10	1.82	.33	34.07
12	-27.5	-68.6	27.4	.8	1.00	.19	-0.12	-0.12	1.67	.39	45.52
13	-26.3	-59.7	24.0	-7.9	.75	.15	-0.07	-0.09	1.54	.32	51.63
14	-22.3	-46.7	19.0	-15.3	.55	.12	-0.04	-0.02	1.43	.16	25.42
15	-16.4	-31.3	13.5	-20.6	.38	.08	-0.03	-0.02	1.33	.22	28.74
16	-11.0	-15.1	7.6	-24.2	.24	.05	-0.03	-0.02	1.25	.32	35.94
17	-4.8	.6	1.8	-25.7	.20	.04	-0.03	-0.00	1.18	.32	8.35
18	.5	14.5	-3.1	-25.5	.22	.05	-0.02	.00	1.11	.20	-2.67
19	4.8	26.2	-7.5	-23.8	.25	.04	-0.02	.01	1.05	.16	-21.26
20	8.5	34.9	-10.4	-20.6	.23	.05	-0.02	.02	1.00	.28	-45.14
21	11.4	40.7	-12.7	-16.6	.17	.05	-0.02	.02	.95	.29	-41.83
22	12.6	43.6	-13.9	-12.5	.15	.05	-0.01	.00	.91	.14	-4.50
23	12.8	43.9	-14.3	-8.1	.19	.04	-0.01	-0.01	.87	.15	61.62
24	12.9	42.0	-13.9	-3.8	.19	.03	.00	-0.01	.83	.17	-88.59
25	13.3	38.3	-12.6	-0.0	.17	.02	.00	-0.01	.80	.09	-56.69
26	12.0	33.3	-10.8	3.3	.15	.02	-0.01	-0.00	.77	.15	14.08
27	10.7	27.5	-8.4	6.1	.18	.02	-0.01	-0.01	.74	.22	46.02
28	8.9	20.8	-5.6	8.7	.20	.02	-0.01	-0.00	.71	.11	32.07
29	6.5	14.0	-2.7	10.5	.17	.03	-0.02	.01	.69	.27	-34.95
30	4.1	7.0	.4	11.9	.14	.03	-0.01	.01	.67	.32	-44.89
31	1.1	.3	3.1	12.3	.17	.02	-0.01	.00	.65	.10	-34.12
32	-1.6	-6.1	5.8	12.1	.22	.02	-0.01	-0.01	.63	.19	66.02
33	-3.5	-12.1	7.7	11.1	.26	.02	-0.00	-0.01	.61	.20	82.21
34	-5.4	-17.2	9.0	9.6	.26	.02	.00	-0.01	.59	.14	-83.58
35	-5.7	-21.4	10.0	7.7	.23	.02	-0.00	-0.00	.57	.09	48.58
36	-4.9	-24.3	10.3	5.5	.21	.02	-0.01	-0.00	.56	.11	6.58
37	-6.8	-25.7	9.9	2.8	.18	.02	-0.01	.00	.54	.09	-16.32
38	-6.1	-25.6	8.9	.0	.16	.02	-0.00	.01	.53	.16	-67.08
39	-5.5	-23.9	7.5	-2.8	.19	.02	.01	.02	.51	.29	70.00
40	-3.9	-20.8	5.8	-5.1	.23	.03	.01	.03	.50	.37	65.35
41	-4.0	-16.5	3.7	-7.2	.21	.03	-0.01	.03	.49	.32	-78.92
42	-2.6	-11.4	1.7	-8.2	.22	.03	-0.02	.01	.48	.30	-32.14
43	-1.7	-5.6	-0.4	-8.5	.25	.02	-0.01	.00	.47	.11	-23.28
44	.1	.2	-2.4	-8.1	.23	.02	.01	-0.00	.45	.09	-4.04
45	1.2	5.5	-4.4	-6.8	.23	.02	.01	-0.00	.44	.10	-42.03
46	3.8	9.9	-6.6	-5.1	.23	.02	-0.01	-0.00	.43	.11	38.23
47	6.1	13.2	-8.4	-3.2	.23	.03	-0.02	.01	.43	.23	-27.79
48	7.4	14.7	-9.5	-1.0	.23	.03	-0.02	.01	.42	.33	-30.76
49	8.3	14.4	-10.0	1.1	.19	.03	-0.02	.00	.41	.33	-3.70
50	8.1	12.3	-9.4	3.2	.08	.01	-0.01	-0.00	.40	.32	.00

CORRELATION COEFFICIENT -0.396

106

OMI

BBELS 14 3.0M-1 0, 06JUL-65 1457-1501

LAGS= 50 N= 1143 DT= 0.2SEC

MEAN U= 18.9 MEAN W= -2.2

CORRELATION COEFFICIENT -.12

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	K	PHI
0	15.8	186.2	-6.9	0	.20	9.86	-0.24	0	0	.21	0
1	8.7	178.0	-6.7	.4	1.43	16.25	-0.72	-0.36	20.00	.17	26.19
2	8.9	156.8	-6.1	.6	3.00	13.99	-0.91	-0.60	10.00	.17	33.22
3	6.8	125.2	-5.1	.7	2.38	22.37	-0.93	-0.25	6.67	.13	15.21
4	6.2	86.6	-3.9	.8	.84	39.29	-1.43	.11	5.00	.25	-4.57
5	4.2	45.2	-2.5	.8	.64	42.76	-1.72	.56	4.00	.34	-18.04
6	3.2	4.9	-1.1	.8	.78	25.76	-0.86	.85	3.33	.27	-44.64
7	2.1	-30.5	.4	.4	.56	9.92	-0.10	.23	2.86	.10	-65.76
8	1.1	-58.0	1.6	-0.1	.34	2.89	0	-0.20	2.50	.20	88.59
9	.6	-76.0	2.6	-0.8	.26	.89	-0.01	-0.06	2.22	.13	83.75
10	-0.1	-83.8	3.0	-1.6	.21	.58	.03	-0.04	2.00	.14	-58.14
11	-0.6	-81.6	3.1	-2.4	.17	.31	.01	-0.06	1.82	.27	-76.84
12	-1.1	-70.9	3.0	-2.8	.16	.16	.01	-0.02	1.67	.14	-62.94
13	-1.3	-53.8	2.6	-3.1	.14	.12	.01	.02	1.54	.16	65.50
14	-2.1	-32.7	1.9	-3.1	.10	.13	0	.02	1.43	.17	84.22
15	-2.5	-9.9	.9	-2.7	.09	.09	0	.01	1.33	.16	73.79
16	-2.8	11.9	.1	-2.1	.12	.07	.01	.02	1.25	.23	71.48
17	-3.0	30.9	-0.7	-1.5	.14	.06	0	.02	1.18	.21	85.40
18	-3.7	45.5	-1.3	-0.7	.14	.06	-0.01	.01	1.11	.19	-43.08
19	-4.3	55.0	-1.7	0	.11	.05	-0.01	.01	1.05	.22	-25.85
20	-5.0	59.3	-2.0	.6	.08	.04	0	.01	1.00	.14	84.86
21	-5.1	58.3	-2.1	1.1	.10	.03	.01	.01	.95	.21	44.04
22	-5.5	53.2	-1.8	1.2	.14	.04	.01	.01	.91	.20	37.01
23	-4.8	44.8	-1.3	1.3	.13	.03	0	0	.87	.09	39.85
24	-5.6	34.5	-0.6	1.0	.12	.03	0	0	.83	.07	81.85
25	-4.9	23.5	.1	.5	.11	.04	0	.01	.80	.21	71.91
26	-4.8	12.9	.8	-0.2	.10	.03	0	.01	.77	.19	84.77
27	-3.9	3.5	1.5	-0.8	.11	.02	0	.01	.74	.12	-73.19
28	-3.6	-4.5	2.0	-1.4	.10	.02	0	0	.71	.06	-48.47
29	-2.6	-10.8	2.4	-1.5	.11	.01	0	-0.01	.69	.18	82.20
30	-1.9	-15.1	2.6	-1.5	.15	.01	0	-0.01	.67	.25	-66.25
31	-1.2	-17.5	2.4	-1.1	.14	.01	.01	0	.65	.20	-24.09
32	-0.2	-18.0	2.0	-0.3	.11	.01	0	0	.63	.13	-56.49
33	.2	-16.8	1.6	.6	.10	.02	0	0	.61	.09	46.99
34	1.0	-14.1	.8	1.4	.10	.02	-0.01	.01	.59	.21	-49.47
35	.7	-10.1	.4	2.0	.11	.02	0	.01	.57	.19	-60.00
36	2.0	-5.1	-0.3	2.7	.10	.02	0	0	.56	.10	-16.30
37	1.8	.4	-0.8	2.8	.09	.02	0	-0.01	.54	.14	-51.89
38	2.1	6.4	-1.3	2.8	.11	.02	0	0	.53	.13	49.65
39	2.4	12.3	-1.4	2.4	.12	.02	0	0	.51	.08	32.83
40	2.5	17.8	-1.5	1.8	.12	.02	0	0	.50	.06	-32.94
41	2.5	22.6	-1.6	1.1	.12	.02	0	0	.49	.07	-26.93
42	2.5	26.3	-1.7	.2	.12	.01	.01	0	.48	.15	12.62
43	2.5	28.7	-1.9	-0.6	.16	.01	.01	0	.47	.29	-15.69
44	2.7	29.5	-1.8	-1.2	.21	.01	.01	0	.45	.17	-28.34
45	2.2	28.8	-1.8	-1.4	.17	.02	0	0	.44	.09	37.66
46	2.3	26.6	-1.9	-1.4	.16	.02	0	0	.43	.04	59.57
47	2.6	23.5	-1.8	-1.1	.22	.02	-0.01	-0.01	.43	.20	46.30
48	2.3	19.9	-1.6	-0.5	.23	.01	0	-0.01	.42	.15	54.03
49	2.1	16.2	-1.4	.3	.18	.01	0	0	.41	.06	50.98
50	1.7	12.8	-1.3	1.0	.08	.01	0	0	.40	.11	0

107 OIII
 BRFLS 14 3.5M-1 C. 06JUL-65 1508-1512
 LAGS= 50 N= 1267 DT= 0.2SEC
 MEAN U= 30.45 MEAN W= -3.73
 CORRELATION COEFFICIENT = .49

K	ACOV	ACOV W	COV	IN	COVOUT	SP	U	SP	W	CO	QUA	PER	R	PHI
0	42.7	132.1	-36.1	0	.44	4.83	-0.27	0	.18	0	0	.18	0	0
1	31.5	127.0	-34.7	6.4	.76	11.65	-0.51	.73	20.00	.30	55.00	.30	55.00	
2	25.3	114.6	-31.1	12.3	1.46	13.98	-1.36	1.82	10.00	.50	53.12	.50	53.12	
3	17.6	96.8	-25.6	17.6	7.04	24.70	-8.03	7.48	6.67	.83	42.99	.83	42.99	
4	11.1	72.8	-18.3	22.0	11.36	35.48	-14.15	11.54	5.00	.91	39.20	.91	39.20	
5	5.8	46.9	-10.2	25.4	6.33	25.06	-9.04	5.97	4.00	.86	33.43	.86	33.43	
6	1.8	20.8	-1.7	27.1	0.14	9.71	-2.15	.78	3.33	.69	19.88	.69	19.88	
7	-.5	-4.4	6.8	27.2	.54	3.32	-0.35	-0.10	2.86	.27	15.13	.27	15.13	
8	-7.8	-26.3	14.5	25.6	.64	1.29	.02	-0.40	2.50	.45	86.88	.45	86.88	
9	-12.9	-43.7	21.3	22.3	.73	.64	.04	-0.19	2.22	.29	79.04	.29	79.04	
10	-17.3	-55.9	26.2	17.8	.65	.19	-0.02	-0.01	2.00	.08	29.51	.08	29.51	
11	-21.7	-62.6	29.3	12.2	.78	.14	-0.05	-0.01	1.82	.14	10.54	.14	10.54	
12	-23.4	-64.0	30.2	6.2	1.11	.09	-0.06	-0.05	1.67	.25	41.97	.25	41.97	
13	-23.3	-60.6	29.0	-0.1	1.03	.08	-0.06	-0.04	1.54	.23	33.43	.23	33.43	
14	-21.3	-53.2	26.0	-6.1	.58	.06	-0.01	0	1.43	.06	16.21	.06	16.21	
15	-17.6	-42.8	21.2	-11.4	.30	.05	0	.02	1.33	.15	88.18	.15	88.18	
16	-13.3	-30.4	15.4	-15.7	.31	.06	-0.02	.02	1.25	.19	48.19	.19	48.19	
17	-9.1	-17.0	8.8	-18.8	.32	.05	-0.02	.01	1.18	.17	30.70	.17	30.70	
18	-4.9	-3.6	2.1	-20.2	.23	.04	-0.01	0	1.11	.09	19.64	.09	19.64	
19	-0.5	8.8	-4.3	-20.3	.19	.04	0	.01	1.05	.11	62.97	.11	62.97	
20	4.2	19.5	-9.9	-19.1	.19	.03	.01	.01	1.00	.18	42.02	.18	42.02	
21	9.2	28.1	-14.9	-16.8	.16	.03	.01	.01	.95	.12	50.65	.12	50.65	
22	14.0	34.0	-18.7	-13.6	.12	.03	0	.01	.91	.11	83.38	.11	83.38	
23	17.8	37.2	-21.2	-10.0	.12	.03	0	.01	.87	.17	81.55	.17	81.55	
24	19.8	37.7	-22.2	-6.0	.12	.03	0	0	.83	.10	60.99	.10	60.99	
25	20.0	35.5	-21.8	-1.9	.12	.02	0	0	.80	.01	13.53	.01	13.53	
26	17.9	31.1	-20.1	2.4	.12	.02	0	0	.77	.05	16.01	.05	16.01	
27	15.4	24.9	-17.5	6.4	.12	.02	0	.01	.74	.21	79.61	.21	79.61	
28	12.9	17.5	-13.9	10.0	.14	.02	0	.01	.71	.24	85.76	.24	85.76	
29	9.8	9.4	-9.8	13.2	.17	.02	0	.01	.69	.09	67.24	.09	67.24	
30	6.9	1.1	-5.3	15.6	.16	.02	0	-0.01	.67	.11	89.94	.11	89.94	
31	3.1	-6.8	-0.7	17.1	.17	.01	0	-0.01	.65	.22	73.41	.22	73.41	
32	-0.3	-14.2	3.8	17.6	.19	.02	-0.01	-0.01	.63	.20	39.62	.20	39.62	
33	-5.3	-20.7	8.0	16.9	.15	.02	-0.01	0	.61	.17	19.43	.17	19.43	
34	-7.8	-25.9	11.5	15.3	.12	.01	-0.01	0	.59	.22	12.56	.22	12.56	
35	-11.4	-30.1	14.2	12.7	.12	.01	-0.01	0	.57	.19	12.03	.19	12.03	
36	-13.5	-33.0	15.9	9.4	.12	.01	-0.01	-0.01	.56	.29	54.57	.29	54.57	
37	-14.6	-34.7	16.5	5.6	.14	.01	-0.01	-0.01	.54	.39	45.34	.39	45.34	
38	-14.8	-35.3	16.1	1.3	.16	.01	-0.01	-0.01	.53	.27	25.28	.27	25.28	
39	-14.4	-34.8	15.1	-3.0	.16	.01	-0.01	0	.51	.16	19.60	.16	19.60	
40	-12.3	-32.8	13.1	-7.1	.18	.01	-0.01	0	.50	.19	26.82	.19	26.82	
41	-10.1	-29.5	10.6	-10.7	.19	.01	-0.01	0	.49	.19	26.05	.19	26.05	
42	-7.3	-24.9	7.6	-13.8	.16	.01	-0.01	0	.48	.14	25.76	.14	25.76	
43	-3.9	-18.8	4.4	-16.1	.18	.01	0	0	.47	.01	29.01	.01	29.01	
44	-0.9	-11.5	1.0	-17.4	.19	.01	.01	0	.45	.14	11.80	.14	11.80	
45	1.6	-3.4	-2.5	-18.1	.15	.01	.01	0	.44	.20	22.62	.20	22.62	
46	4.6	5.1	-5.7	-17.7	.15	.01	0	.01	.43	.16	66.70	.16	66.70	
47	6.7	13.4	-8.6	-16.6	.20	.01	-0.01	0	.43	.16	12.01	.16	12.01	
48	9.7	21.1	-11.0	-14.4	.18	.01	-0.01	-0.01	.42	.23	36.70	.23	36.70	
49	12.0	27.4	-12.6	-11.6	.19	.01	0	0	.41	.10	77.56	.10	77.56	
50	13.0	31.9	-13.7	-7.9	.11	.01	0	0	.40	.08	0	.08	0	0

108 OIII
 HREIS= 14 4.5M- I 8 JUNE -65 1524-1528

TM No. 377

LAGS= 50 N= 1038 DT= .20SEC
 MEAN U = 23.3 MEAN W = -4.4

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	20.4	112.8	-19.1	0	.48	5.82	.69	0	0	.41	0
1	16.7	108.8	-18.3	2.6	.76	11.70	.81	.38	20.00	.30	25.14
2	12.5	98.7	-16.1	5.1	1.07	11.35	-0.31	1.33	10.00	.39	-76.99
3	8.0	83.4	-12.8	7.4	3.40	18.17	-4.16	3.54	6.67	.70	-40.37
4	4.4	64.4	-8.5	9.2	4.71	29.81	-8.47	4.63	5.00	.81	-28.69
5	2.3	42.8	-3.4	10.5	2.52	24.40	-6.10	2.18	4.00	.83	-19.71
6	1.0	20.5	1.9	11.3	.73	8.36	-1.44	.06	3.33	.58	-2.53
7	-0.2	-1.0	7.0	11.5	.58	1.43	-0.08	-0.15	2.86	.19	61.57
8	-1.9	-20.0	11.7	11.1	.57	.46	.02	-0.09	2.50	.18	-78.05
9	-4.3	-35.5	15.6	10.1	.56	.20	.03	.00	2.22	.08	9.37
10	-6.5	-46.5	18.4	8.6	.55	.14	.00	.06	2.00	.22	86.17
11	-8.2	-52.6	20.0	6.6	.57	.11	-0.02	.04	1.82	.19	-69.56
12	-9.0	-53.4	20.4	4.3	.59	.10	-0.04	-0.03	1.67	.22	37.46
13	-8.7	-49.5	19.3	1.9	.65	.08	-0.03	-0.04	1.54	.21	50.89
14	-7.7	-41.4	16.9	-0.5	.55	.08	.02	-0.00	1.43	.10	-4.35
15	-6.7	-30.4	13.6	-3.0	.32	.06	.02	.02	1.33	.20	37.59
16	-5.5	-17.4	9.6	-5.2	.18	.04	.01	.02	1.25	.21	70.74
17	-4.5	-3.7	5.1	-6.9	.12	.03	.01	.01	1.18	.15	36.37
18	-3.0	9.7	.8	-7.9	.10	.03	-0.01	-0.00	1.11	.13	11.18
19	-1.0	21.6	-3.2	-8.2	.08	.03	-0.01	-0.01	1.05	.27	37.80
20	1.1	31.2	-6.8	-8.0	.09	.04	-0.00	-0.01	1.00	.22	66.10
21	3.2	37.8	-9.7	-7.3	.07	.04	-0.01	-0.00	.95	.17	13.99
22	5.0	41.2	-11.8	-6.3	.05	.03	-0.01	.01	.91	.30	-30.22
23	6.1	41.3	-12.9	-4.9	.05	.02	-0.00	.00	.87	.18	-58.37
24	7.0	38.2	-13.0	-3.4	.05	.01	-0.00	-0.00	.83	.10	76.76
25	7.3	32.5	-12.1	-1.8	.05	.02	-0.00	-0.01	.80	.21	78.23
26	7.0	24.8	-10.4	-0.2	.05	.02	-0.00	-0.00	.77	.18	64.88
27	6.9	15.9	-8.0	1.5	.05	.01	-0.00	-0.00	.74	.23	39.88
28	6.4	6.3	-5.1	3.0	.06	.01	-0.01	-0.00	.71	.33	13.95
29	5.6	-3.1	-2.1	4.3	.05	.01	-0.01	-0.00	.69	.37	4.18
30	4.3	-11.8	.8	5.1	.04	.01	-0.01	-0.00	.67	.24	4.51
31	2.7	-19.0	3.5	5.6	.04	.01	.00	.00	.65	.10	31.50
32	.9	-24.4	5.9	5.6	.04	.01	.01	.00	.63	.27	2.46
33	-0.6	-27.7	8.0	5.2	.04	.01	.00	.00	.61	.19	9.03
34	-1.9	-28.9	9.6	4.5	.03	.01	-0.00	.00	.59	.10	-76.25
35	-2.8	-28.1	10.5	3.5	.03	.01	-0.00	-0.00	.57	.06	4.61
36	-3.7	-25.7	10.6	2.3	.05	.01	.00	-0.00	.56	.06	-77.01
37	-4.4	-21.7	9.9	1.1	.06	.01	-0.00	-0.00	.54	.05	63.42
38	-4.7	-16.8	8.8	-0.3	.04	.01	-0.00	.00	.53	.19	-36.46
39	-4.9	-11.2	7.3	-1.5	.04	.01	-0.00	.01	.51	.36	-55.53
40	-5.0	-5.3	5.6	-2.9	.04	.01	-0.00	.00	.50	.20	-42.03
41	-4.8	.4	3.8	-4.2	.04	.01	-0.00	.00	.49	.07	-2.07
42	-3.9	5.6	1.7	-5.3	.04	.01	.00	-0.00	.48	.07	-29.77
43	-2.8	10.1	-0.3	-6.1	.04	.01	.00	.00	.47	.09	15.62
44	-1.5	13.5	-2.4	-6.5	.04	.01	.00	.00	.45	.16	84.34
45	-0.2	15.7	-4.3	-6.5	.04	.01	-0.00	.00	.44	.11	-71.58
46	1.1	16.8	-5.8	-6.1	.03	.01	-0.00	-0.00	.43	.09	19.75
47	2.3	16.7	-6.8	-5.3	.03	.01	-0.00	-0.00	.43	.21	49.05
48	3.0	15.5	-7.5	-4.4	.03	.01	-0.00	-0.00	.42	.13	50.20
49	3.7	13.4	-7.5	-3.3	.03	.01	.00	.00	.41	.11	45.97
50	3.9	10.5	-7.2	-1.9	.02	.01	.00	.00	.40	.14	.00

CORRELATION COEFFICIENT -0.398

109

OIII

TM No. 377

RBELS= 14 5.5M- 1 8 JUNE 1539-1542

LAGS= 50 N= 918 DT= .20SFC

MEAN U = 18.3 MEAN W = -4.8

K	ACOV U	ACOV W	COV IN	COV OUT	SP U	SP W	CO	QUA	PER	R	PHI
0	14.4	68.3	-3.0	0	1.04	3.58	.39	0	0	.20	0
1	12.4	65.5	-3.0	-0.3	1.58	7.01	.68	.49	20.00	.25	35.73
2	7.6	58.5	-2.9	-0.7	1.09	6.71	-0.02	1.00	10.00	.37	-88.71
3	4.6	48.4	-2.3	-1.1	1.42	8.36	-1.25	1.15	6.67	.49	-42.70
4	2.4	35.8	-1.3	-1.1	1.62	14.86	-1.70	-0.14	5.00	.35	4.54
5	2.9	21.9	-0.1	-0.9	1.40	17.19	-1.03	-1.47	4.00	.37	54.85
6	1.7	7.9	1.0	-0.5	.93	8.21	-0.35	-0.88	3.33	.34	68.50
7	.5	-5.1	2.0	.2	.55	.89	-0.09	-0.11	2.86	.20	48.92
8	-0.0	-16.2	3.1	1.3	.53	.19	.00	-0.02	2.50	.06	-85.11
9	.2	-24.6	4.0	2.3	.67	.21	.04	.01	2.22	.10	11.54
10	.5	-29.8	4.6	3.3	.66	.20	.03	.01	2.00	.09	26.33
11	.1	-31.4	4.9	4.0	.50	.15	.04	.05	1.82	.22	53.85
12	-0.7	-29.7	4.8	4.7	.41	.11	.05	.05	1.67	.35	41.50
13	-1.2	-25.0	4.6	5.1	.32	.06	.03	.01	1.54	.21	23.85
14	-1.2	-17.8	4.2	5.0	.25	.05	.00	.00	1.43	.05	30.85
15	-0.5	-9.0	3.8	4.6	.26	.05	.00	.02	1.33	.17	76.72
16	.4	.5	3.1	3.9	.25	.04	.01	.02	1.25	.17	60.77
17	.8	9.5	2.4	3.0	.23	.03	.01	.01	1.18	.18	42.87
18	1.1	17.3	1.5	2.0	.35	.03	.02	.01	1.11	.23	15.00
19	1.4	23.1	.7	.8	.44	.03	.04	-0.01	1.05	.31	-9.53
20	2.3	26.3	.0	-0.5	.29	.03	.03	-0.01	1.00	.34	-14.82
21	3.1	26.8	-0.5	-1.7	.15	.02	.02	-0.01	.95	.30	-18.09
22	2.7	24.7	-1.1	-2.8	.13	.02	.01	-0.00	.91	.30	-10.14
23	1.8	20.4	-1.4	-3.6	.15	.02	.02	.01	.87	.36	20.57
24	1.5	14.3	-1.7	-4.1	.13	.02	.01	.01	.83	.39	45.58
25	1.8	7.2	-1.8	-4.1	.06	.02	.01	.01	.80	.35	63.93
26	2.0	-0.2	-1.9	-3.8	.05	.02	.00	.01	.77	.28	59.16
27	1.3	-7.2	-2.0	-3.2	.06	.02	.00	.01	.74	.23	76.29
28	.8	-13.0	-2.0	-2.4	.07	.02	-0.00	.00	.71	.08	-59.46
29	.8	-17.2	-1.8	-1.5	.06	.01	-0.00	-0.00	.69	.13	44.72
30	1.2	-19.4	-1.4	-0.4	.04	.01	-0.00	.00	.67	.10	-23.00
31	1.9	-19.5	-1.1	.5	.05	.01	-0.00	-0.00	.65	.05	89.77
32	2.0	-17.7	-0.7	1.3	.05	.01	.00	-0.00	.63	.19	-89.82
33	1.7	-14.1	-0.4	2.2	.04	.01	-0.00	.00	.61	.05	-34.41
34	1.2	-9.4	-0.2	2.9	.04	.01	.00	.00	.59	.14	86.15
35	.9	-4.0	.0	3.3	.03	.01	.00	-0.00	.57	.16	-34.69
36	.9	1.6	.1	3.3	.03	.01	.00	-0.00	.56	.26	-16.79
37	1.2	6.6	.2	3.0	.04	.01	.00	-0.00	.54	.20	-6.19
38	1.2	10.7	.3	2.4	.06	.01	.00	-0.00	.53	.21	-42.90
39	1.0	13.3	.3	1.7	.05	.01	.00	-0.00	.51	.25	-43.30
40	.7	14.3	.4	.8	.03	.01	.00	-0.00	.50	.10	-34.02
41	.9	13.5	.5	-0.1	.03	.01	-0.00	.00	.49	.11	-8.35
42	1.2	11.1	.5	-1.1	.03	.01	-0.00	-0.00	.48	.17	35.62
43	.9	7.2	.3	-2.0	.03	.01	-0.00	-0.00	.47	.10	43.46
44	.4	2.4	.0	-2.7	.03	.01	-0.00	.00	.45	.08	-86.63
45	-0.2	-2.9	-0.3	-3.2	.02	.01	-0.00	.00	.44	.05	-62.50
46	-0.1	-8.0	-0.5	-3.5	.02	.01	-0.00	-0.00	.43	.09	75.85
47	.4	-12.4	-0.7	-3.6	.02	.00	.00	-0.00	.43	.12	-88.93
48	.4	-15.7	-0.9	-3.6	.02	.00	-0.00	.00	.42	.12	-57.02
49	.5	-17.4	-0.9	-3.3	.02	.00	-0.00	.00	.41	.27	-48.99
50	.5	-17.4	-0.8	-2.9	.01	.00	-0.00	.00	.40	.26	-0.00

CORRELATION COEFFICIENT -0.000

IIO
 REF S- 14 6.5M- I 8 JUNE - 65 1553- 1557
 LAGS= 50 N= 1083 DT= .20SEC
 MEAN U = 15.6 MEAN W = -2.5

TM No. 377

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	17.8	77.9	-11.5	0	.48	5.41	-0.10	0	0	.06	0
1	15.0	75.5	-11.2	-0.3	1.04	9.03	-0.03	.24	20.00	.08	-82.41
2	10.7	69.2	-10.3	-0.7	1.28	7.53	-0.35	.95	10.00	.33	-69.70
3	6.2	59.7	-8.9	-0.8	1.98	14.02	-3.12	1.39	6.67	.65	-24.02
4	2.3	47.6	-6.8	-0.9	2.42	21.63	-5.23	.14	5.00	.72	-1.58
5	-1.2	33.9	-4.2	-0.8	1.99	15.00	-2.87	-1.46	4.00	.59	26.97
6	-1.4	19.4	-1.3	-0.4	1.54	3.75	-0.24	-1.18	3.33	.50	78.43
7	-1.8	5.2	1.6	.3	1.09	.47	.15	-0.24	2.86	.40	-57.67
8	-2.1	-7.8	4.4	1.2	.83	.28	.08	.12	2.50	.30	54.04
9	-2.4	-18.8	6.9	2.3	.91	.16	.07	.17	2.22	.49	67.26
10	-2.7	-27.3	9.0	3.5	.84	.13	.04	.09	2.00	.30	63.55
11	-3.1	-32.6	10.4	4.6	.69	.06	.03	.03	1.82	.22	38.03
12	-3.3	-34.9	11.2	5.3	.56	.04	.03	.01	1.67	.20	28.05
13	-3.1	-34.0	11.1	5.6	.41	.03	.00	.01	1.54	.11	79.48
14	-2.9	-30.2	10.3	5.4	.28	.04	.01	-0.01	1.43	.09	-58.25
15	-2.3	-24.1	8.9	4.7	.21	.04	.02	-0.02	1.33	.30	-52.34
16	-1.5	-16.1	6.9	3.5	.15	.03	.02	-0.00	1.25	.43	-6.01
17	-0.6	-6.9	4.7	2.1	.12	.03	.02	.01	1.18	.43	17.99
18	.0	2.7	2.1	.5	.09	.03	.01	-0.01	1.11	.20	-31.64
19	.6	11.9	-0.5	-1.0	.06	.02	-0.00	-0.01	1.05	.24	43.79
20	.9	20.1	-3.0	-2.4	.04	.01	.00	-0.00	1.00	.07	-17.69
21	1.1	26.7	-5.3	-3.6	.05	.02	-0.00	.00	.95	.08	-77.48
22	1.2	31.4	-7.2	-4.5	.05	.02	-0.00	-0.00	.91	.15	59.50
23	1.1	33.7	-8.4	-4.8	.05	.01	-0.00	-0.00	.87	.18	66.12
24	1.1	33.8	-9.2	-4.7	.05	.02	-0.00	-0.00	.83	.17	2.47
25	.9	31.8	-9.3	-4.3	.05	.01	-0.00	.00	.80	.17	-54.86
26	.7	28.0	-8.9	-3.8	.04	.01	.00	.00	.77	.12	85.07
27	.8	22.7	-8.0	-3.1	.03	.01	-0.00	-0.00	.74	.22	25.14
28	.8	16.4	-6.7	-2.3	.04	.01	-0.00	-0.00	.71	.21	35.39
29	.9	9.5	-5.1	-1.3	.04	.01	.00	.00	.69	.09	36.11
30	1.0	2.6	-3.2	-0.3	.04	.01	.00	.00	.67	.21	36.17
31	1.1	-3.9	-1.2	.6	.03	.01	.00	.00	.65	.11	64.41
32	1.0	-9.3	.6	1.4	.03	.01	-0.00	.00	.63	.15	-81.39
33	.8	-13.6	2.3	2.0	.03	.00	.00	.00	.61	.18	68.15
34	.3	-16.5	3.9	2.3	.02	.00	.00	.00	.59	.11	9.02
35	-0.4	-18.0	4.9	2.5	.01	.01	.00	.00	.57	.04	6.34
36	-1.2	-17.9	5.5	2.4	.02	.01	-0.00	.00	.56	.20	-63.40
37	-1.8	-16.5	5.7	2.1	.02	.00	-0.00	.00	.54	.29	-47.82
38	-2.2	-13.8	5.6	1.7	.02	.00	-0.00	.00	.53	.16	-46.24
39	-2.4	-10.3	5.3	1.1	.02	.00	.00	.00	.51	.23	31.98
40	-2.4	-6.1	4.8	.4	.02	.00	.00	.00	.50	.39	29.81
41	-2.1	-1.7	4.0	-0.4	.02	.00	.00	.00	.49	.31	40.47
42	-1.9	2.7	3.2	-1.1	.02	.00	-0.00	.00	.48	.23	-86.66
43	-1.5	6.6	2.2	-1.6	.01	.00	-0.00	.00	.47	.18	-37.47
44	-1.0	10.0	1.1	-1.9	.01	.00	.00	-0.00	.45	.07	-62.75
45	-0.5	12.5	.1	-2.1	.01	.00	.00	.00	.44	.17	29.88
46	-0.0	14.0	-0.8	-2.1	.02	.00	.00	.00	.43	.33	58.57
47	.5	14.5	-1.6	-2.0	.02	.00	.00	.00	.43	.29	64.10
48	.9	14.0	-2.5	-1.7	.01	.00	-0.00	-0.00	.42	.14	48.37
49	1.0	12.6	-3.2	-1.2	.01	.00	-0.00	-0.00	.41	.20	73.76
50	1.2	10.5	-3.7	-0.6	.00	.00	.00	-0.00	.40	.07	-0.01

CORRELATION COEFFICIENT -0.308

III LI-U
 BBELS 15 0-2.5M-1 C. 20JUL-65 1922-1924

TM No. 377

LAGE= 50 N= 2068 DT= 0.2SEC

MEAN u_1 = 6.2 MEAN u_2 = 3.1

K	ACOV u_1	ACOV u_2	COV IN	COVOUT	SP u_1	SP u_2	CO	QUA	PER	R	PHI
0	547.0	186.0	221.5	0	4.19	6.38	-1.13	0	0	.22	0
1	512.8	181.0	215.6	-14.3	27.94	22.82	14.93	-2.10	20.00	.60	-7.99
2	424.5	168.6	199.2	-27.0	27.81	51.47	59.04	-9.19	10.00	.89	-8.85
3	315.2	150.4	173.6	-36.81	13.67	54.66	70.57	-14.35	6.67	.91	-11.49
4	194.4	128.3	140.9	-42.7	70.48	25.21	36.12	-10.63	5.00	.89	-16.40
5	81.8	103.9	104.0	-44.6	45.23	9.02	15.24	-5.18	4.00	.79	-18.79
6	-10.1	78.6	65.6	-42.8	62.56	6.34	14.29	-4.77	3.33	.76	-18.46
7	-75.2	53.6	28.6	-38.5	53.94	4.54	10.09	-4.98	2.86	.69	-26.26
8	-115.9	30.0	-4.8	-32.8	29.90	2.15	2.24	-2.89	2.50	.46	-52.12
9	-133.1	8.3	-33.4	-26.8	14.18	.98	-0.15	-1.03	2.22	.28	81.52
10	-133.1	-11.1	-56.6	-21.4	4.57	.59	.02	-0.25	2.00	.11	-84.67
11	-122.6	-28.0	-74.1	-16.8	5.07	.33	-0.02	-0.14	1.82	.10	79.90
12	-108.2	-42.8	-86.8	-13.1	4.24	.25	.04	-0.18	1.67	.18	-77.47
13	-95.9	-55.4	-95.6	-10.4	2.78	.17	.01	-0.04	1.54	.06	-74.81
14	-89.8	-66.1	-101.9	-8.4	1.63	.16	.02	.04	1.43	.09	59.82
15	-92.1	-74.9	-107.0	-6.8	1.18	.14	0	.03	1.33	.08	-84.27
16	-103.4	-81.9	-111.5	-5.0	.97	.10	-0.02	.05	1.25	.17	-72.71
17	-122.4	-86.9	-115.9	-2.6	.69	.07	-0.02	.04	1.19	.19	-61.94
18	-145.9	-89.9	-119.7	.6	.51	.07	-0.01	0	1.11	.07	-4.42
19	-169.6	-90.6	-122.4	4.8	.38	.06	0	0	1.05	.03	82.18
20	-188.3	-89.0	-123.1	9.4	.30	.05	.01	0	1.00	.11	-8.53
21	-197.4	-85.1	-120.9	14.0	.23	.04	.01	0	.95	.13	4.78
22	-193.5	-79.0	-114.9	18.0	.21	.04	.02	0	.91	.25	11.29
23	-176.0	-70.8	-104.7	20.9	.19	.03	.02	0	.87	.26	8.78
24	-145.2	-60.7	-90.3	22.4	.17	.03	.01	0	.83	.22	-11.79
25	-104.2	-49.0	-72.2	22.3	.15	.02	.01	0	.80	.20	3.48
26	-57.1	-36.3	-51.4	20.7	.13	.02	.01	0	.77	.26	18.98
27	-9.3	-23.2	-29.3	18.0	.12	.02	.01	0	.74	.23	8.00
28	37.9	-10.3	-7.5	14.7	.11	.02	.01	0	.71	.15	-12.22
29	77.3	2.0	12.6	11.1	.08	.02	0	0	.69	.13	14.00
30	105.5	13.5	29.9	7.6	.08	.02	.01	0	.67	.16	17.22
31	123.4	23.7	43.4	4.4	.09	.01	0	0	.65	.13	7.10
32	127.4	32.5	52.7	1.3	.09	.01	.01	0	.63	.22	26.10
33	119.8	39.7	58.0	-1.4	.08	.01	.01	0	.61	.27	40.66
34	104.2	45.5	60.1	-3.5	.08	.01	.01	0	.59	.25	17.95
35	85.0	50.0	59.7	-4.6	.08	.01	.01	0	.57	.28	5.60
36	66.5	53.5	57.9	-4.8	.08	.01	.01	0	.56	.31	7.72
37	52.4	56.1	55.7	-4.1	.08	.01	.01	0	.54	.40	8.93
38	44.5	58.3	54.2	-3.0	.07	.01	.01	0	.53	.39	11.13
39	43.5	60.0	54.0	-1.7	.07	.01	.01	0	.51	.30	5.17
40	47.9	61.6	55.3	-0.7	.07	.01	.01	0	.50	.23	-16.12
41	56.2	62.9	57.7	-0.2	.06	.01	0	0	.49	.16	-15.35
42	66.5	63.7	60.6	-0.1	.05	.01	0	0	.48	.16	4.09
43	77.1	63.7	63.2	-0.4	.05	.01	.01	0	.47	.26	-3.80
44	86.2	62.7	64.8	-1.0	.05	.01	.01	0	.45	.36	-17.03
45	92.1	60.4	64.9	-1.9	.06	.01	.01	0	.44	.34	-28.89
46	93.2	56.6	62.9	-3.2	.06	.01	0	0	.43	.19	-19.96
47	88.3	51.5	58.6	-4.6	.05	.01	0	0	.43	.12	12.43
48	76.9	44.9	51.9	-6.0	.05	.01	0	0	.42	.13	-5.07
49	59.3	37.1	42.8	-7.1	.06	.01	0	0	.41	.16	-10.95
50	37.9	28.2	31.5	-8.0	.03	0	0	0	.40	.17	0

112 LI-u
 BBELS 15 0-2.5M-II C, 20JUL-65 1940-1947

TM No. 377

LAGS= 50 N= 2013 DT= 0.2SEC

MEAN U_1 = 1.7 * MEAN U_2 = 3.2

K	ACOV U_1	ACOV U_2	COV IN	COV OUT	SP U_1	SP U_2	CO	QUA	PER	R	PHI
0	209.7	488.4	-123.0	0	6.32	5.78	-0.20	0	0	.03	0
1	204.3	456.8	-120.4	2.7	24.36	42.78	-9.04	4.54	20.00	.31	-26.67
2	192.2	405.9	-111.9	6.0	63.72	116.37	-32.64	15.63	10.00	.42	-25.59
3	174.2	337.8	-98.5	9.5	68.49	123.24	-39.54	9.08	6.67	.44	-12.94
4	152.1	260.5	-81.3	13.4	27.09	62.36	-21.98	-0.90	5.00	.54	2.35
5	126.8	184.8	-61.8	17.6	7.42	35.29	-9.50	.31	4.00	.59	-1.89
6	99.9	114.7	-41.0	21.5	4.51	30.78	-5.50	.69	3.33	.47	-7.12
7	71.9	55.8	-20.9	24.8	2.54	22.92	-3.12	-0.40	2.86	.41	7.29
8	44.2	6.4	-1.9	27.2	1.57	13.34	-1.11	-0.90	2.50	.31	39.08
9	17.2	-38.8	14.7	28.7	.82	8.25	-0.44	-0.73	2.22	.33	59.05
10	-8.3	-68.8	29.1	29.5	.56	5.99	-0.24	-0.16	2.00	.16	34.65
11	-31.9	-93.3	40.9	29.6	.36	3.50	-0.03	-0.01	1.82	.03	10.00
12	-53.2	-115.1	50.3	28.9	.27	2.21	.04	-0.04	1.67	.07	-49.77
13	-72.0	-135.1	57.8	27.6	.16	1.60	.07	-0.08	1.54	.21	-51.41
14	-88.1	-152.5	63.1	26.0	.18	1.27	.05	-0.07	1.43	.18	-52.77
15	-101.5	-166.9	66.5	24.6	.18	1.11	.03	-0.07	1.33	.17	-64.23
16	-111.7	-180.2	68.3	23.3	.14	1.10	0	-0.02	1.25	.05	79.78
17	-118.6	-190.0	68.5	22.2	.07	.95	-0.01	.01	1.18	.07	-44.52
18	-122.2	-196.3	57.3	20.8	.06	.60	0	.03	1.11	.14	86.93
19	-122.6	-201.0	55.1	19.0	.06	.33	.01	.01	1.05	.11	57.15
20	-119.8	-202.7	61.8	16.4	.07	.28	0	.02	1.00	.12	80.14
21	-114.4	-200.4	57.4	12.8	.05	.27	.01	.01	.95	.14	59.94
22	-106.1	-192.7	51.9	8.2	.05	.24	.01	0	.91	.10	-23.10
23	-95.3	-178.7	45.5	2.9	.04	.24	.01	-0.02	.87	.23	-52.22
24	-82.1	-162.3	38.0	-2.9	.04	.31	.01	-0.01	.83	.12	-57.48
25	-67.2	-140.1	30.2	-9.1	.04	.46	0	-0.01	.80	.11	-85.28
26	-51.0	-114.6	21.7	-15.3	.03	.59	0	-0.01	.77	.08	-62.46
27	-34.2	-86.0	13.1	-20.9	.02	.57	0	0	.74	.04	79.39
28	-17.0	-54.8	4.7	-26.1	.02	.46	.01	-0.01	.71	.10	-56.42
29	.1	-25.2	-3.5	-30.4	.02	.33	.02	-0.01	.69	.22	-21.95
30	16.9	3.6	-10.7	-33.9	.02	.23	.01	0	.67	.21	5.64
31	33.1	28.3	-16.9	-37.0	.02	.17	.01	0	.65	.26	-12.39
32	48.1	49.0	-22.2	-39.5	.02	.14	.01	0	.63	.14	-24.05
33	61.9	67.2	-26.2	-41.2	.02	.15	0	-0.01	.61	.10	68.35
34	74.0	91.9	-29.3	-42.1	.02	.19	0	0	.59	.05	72.06
35	84.4	94.9	-31.5	-42.1	.02	.26	.01	0	.57	.16	-10.23
36	92.9	106.1	-33.3	-41.4	.02	.30	.02	-0.01	.56	.26	-21.83
37	99.5	115.7	-34.5	-39.5	.02	.31	.01	0	.54	.17	-17.52
38	104.1	125.8	-35.4	-36.4	.01	.37	0	0	.53	.06	-7.54
39	105.9	134.5	-36.5	-32.7	.01	.47	.01	0	.51	.15	-21.48
40	107.7	142.0	-37.8	-28.1	.02	.40	.01	-0.01	.50	.14	-34.89
41	106.7	147.1	-39.0	-22.6	.02	.25	-0.01	0	.49	.12	23.50
42	103.8	149.1	-39.9	-16.9	.01	.20	-0.01	0	.48	.17	-32.79
43	99.1	148.1	-40.9	-10.3	.01	.18	0	.01	.47	.14	80.30
44	92.7	142.1	-41.6	-3.2	.02	.15	0	0	.45	.09	87.50
45	84.5	133.5	-41.2	3.7	.02	.12	0	0	.44	.07	5.40
46	74.7	122.3	-40.1	10.8	.02	.15	0	0	.43	.02	-4.24
47	63.3	106.8	-38.5	17.6	.02	.22	.01	0	.43	.19	19.63
48	50.8	89.5	-35.5	24.2	.03	.26	.02	.01	.42	.28	26.12
49	37.4	68.8	-31.4	31.0	.03	.26	.02	.01	.41	.25	28.86
50	23.2	46.1	-25.7	36.8	.02	.13	.01	0	.40	.19	0

* SIGN REVERSED ON COV AND CO

113

LI-U

TM No. 377

BBFIS- 15 Q-2.5M- III 19 JULY-65 2003-2009

LAGS= 50 N= 1705 DT= .20SEC

MEAN u_1 = -3.5 * MEAN u_2 = 6.9

K	ACOV u_1	ACOV u_2	COV IN	COV OUT	SP u_1	SP u_2	CO	QUA	PER	R	PHI
0	475.6	215.6	-242.9	0	5.96	12.97	-1.75	0	0	.20	0
1	455.0	210.9	-237.4	2.3	35.00	32.23	-21.70	-1.37	20.00	.65	3.62
2	402.3	198.4	-221.6	4.0	98.87	58.52	-68.83	-5.33	10.00	.91	4.43
3	326.3	180.3	-196.8	4.8	115.93	61.03	-77.53	-1.30	6.67	.92	.96
4	238.4	157.6	-164.8	4.5	64.72	27.65	-36.86	2.19	5.00	.87	-3.40
5	149.9	132.0	-128.5	3.1	41.31	9.88	-15.27	1.80	4.00	.76	-6.74
6	69.2	105.0	-90.2	.9	44.72	5.86	-11.86	1.88	3.33	.74	-9.01
7	1.9	77.6	-52.3	-2.1	33.50	2.96	-6.45	1.56	2.86	.67	-13.62
8	-49.1	50.9	-16.6	-5.3	16.17	1.54	-1.87	1.07	2.50	.43	-29.74
9	-84.2	25.6	15.5	-8.5	7.58	.81	-0.52	.38	2.22	.26	-35.93
10	-103.1	2.4	43.2	-10.9	4.08	.55	-0.20	.12	2.00	.15	-30.31
11	-115.6	-18.5	66.0	-12.3	2.12	.36	.06	.06	1.82	.09	44.76
12	-119.7	-36.8	84.3	-12.8	1.50	.25	.01	-0.05	1.67	.08	-83.83
13	-121.6	-52.3	98.8	-12.7	.99	.15	-0.02	-0.07	1.54	.19	70.50
14	-123.9	-65.0	110.1	-12.1	.56	.14	-0.07	-0.03	1.43	.27	21.16
15	-128.5	-75.0	118.9	-11.3	.33	.10	-0.03	.03	1.33	.23	-36.90
16	-136.2	-82.3	125.6	-10.4	.33	.08	-0.01	.04	1.25	.29	-79.46
17	-146.7	-86.9	130.3	-9.3	.29	.05	.02	.04	1.18	.35	64.67
18	-158.8	-89.1	132.9	-8.2	.21	.06	.02	.03	1.11	.32	52.78
19	-170.2	-88.8	133.3	-7.1	.12	.05	.02	.02	1.05	.36	52.13
20	-178.3	-86.3	131.3	-6.0	.09	.04	.01	.01	1.00	.25	43.90
21	-180.8	-81.6	126.8	-4.9	.07	.03	.01	.00	.95	.28	16.86
22	-176.1	-75.0	119.6	-3.8	.07	.03	.01	.00	.91	.17	14.37
23	-164.1	-66.7	109.6	-2.5	.06	.03	.00	-0.00	.87	.05	-21.87
24	-144.9	-56.7	96.6	-1.0	.06	.02	-0.00	-0.00	.83	.15	37.40
25	-119.5	-45.3	80.9	.8	.05	.02	-0.01	-0.00	.80	.17	13.71
26	-88.8	-32.8	63.1	3.0	.05	.02	-0.00	-0.00	.77	.16	.94
27	-54.8	-19.7	43.5	5.4	.04	.02	-0.00	.00	.74	.08	-38.78
28	-19.2	-6.5	23.2	7.7	.04	.01	-0.00	.00	.71	.13	-25.49
29	15.5	6.7	2.9	10.0	.03	.01	.00	.00	.69	.07	71.17
30	46.8	19.5	-16.3	12.0	.04	.01	.00	.00	.67	.22	28.09
31	72.9	31.7	-33.8	13.7	.04	.01	.00	.00	.65	.23	81.52
32	92.8	42.9	-48.8	15.2	.03	.01	-0.00	.00	.63	.22	-45.46
33	105.9	52.9	-60.9	16.5	.04	.01	-0.00	-0.00	.61	.12	50.02
34	112.5	61.5	-70.1	17.6	.04	.01	-0.00	-0.00	.59	.15	65.67
35	114.3	68.7	-76.5	18.7	.04	.01	-0.00	-0.00	.57	.15	40.67
36	112.3	74.2	-80.4	19.9	.04	.01	-0.00	-0.00	.56	.27	39.97
37	107.9	78.0	-82.2	21.0	.04	.01	-0.00	-0.00	.54	.29	22.44
38	102.6	80.2	-82.4	22.1	.04	.01	-0.01	.00	.53	.32	-17.01
39	97.4	81.0	-81.6	22.7	.04	.01	-0.00	.00	.51	.28	-46.34
40	92.9	80.3	-80.0	23.0	.04	.01	-0.00	.00	.50	.19	-47.40
41	89.0	78.3	-77.8	22.6	.04	.01	-0.00	.00	.49	.08	-13.56
42	85.3	75.2	-75.0	21.6	.04	.01	.00	.00	.48	.05	57.44
43	81.2	70.8	-71.3	19.7	.03	.00	.00	.00	.47	.18	77.39
44	75.7	65.3	-66.5	16.9	.03	.01	.00	.00	.45	.08	85.74
45	69.6	58.8	-60.2	13.3	.03	.01	.00	-0.00	.44	.11	-43.43
46	50.0	51.6	-52.4	8.9	.03	.01	.00	-0.00	.43	.18	-64.67
47	47.3	43.8	-43.3	4.2	.03	.01	.00	-0.00	.43	.19	-72.95
48	34.0	35.4	-33.2	-0.8	.03	.01	-0.00	-0.00	.42	.13	82.43
49	20.0	26.8	-22.4	-5.5	.03	.01	-0.00	-0.00	.41	.12	36.01
50	6.1	18.1	-11.6	-9.5	.02	.00	-0.00	-0.00	.40	.16	.00

CORRELATION COEFFICIENT = -0.758

I/O ERR PA. LUN 60

SIGN REVERSED ON 74.0 CHANNEL , COV, AND CO

114 LI-U

BBELS 15 0-2.5M-IX C, 19JUL-65 2201-2209

LAGS= 50 N= 1555 DT= 0.2SEC

MEAN u_1 = 26.4 MEAN u_2 = 24.1

CORRELATION COEFFICIENT = .71

K	ACOV u_1	ACOV u_2	COV	IN	COVOUT	SP u_1	SP u_2	CO	QUA	PER	R	PHI
0	135.0	82.9	75.4	0	2.47	2.99	.69	0	0	.25	0	0
1	126.1	77.8	73.8	-1.8	10.47	9.81	6.87	-0.07	20.00	.68	-0.59	
2	112.0	71.0	69.1	-3.3	28.77	21.97	22.64	.26	10.00	.90	.65	
3	92.5	61.8	61.7	-4.7	34.18	22.64	25.14	-0.79	6.67	.90	-1.81	
4	69.7	51.0	52.1	-5.3	18.32	9.26	10.63	-1.84	5.00	.83	-9.81	
5	46.7	40.6	41.1	-5.4	9.16	3.07	3.23	-1.46	4.00	.67	-24.35	
6	25.6	30.5	29.6	-5.0	9.52	2.53	2.37	-0.81	3.33	.51	-18.82	
7	7.3	21.1	18.6	-4.0	9.26	2.89	2.33	-0.51	2.86	.46	-12.24	
8	-6.8	12.7	8.4	-2.6	5.13	2.51	1.46	-0.44	2.50	.42	-16.88	
9	-16.6	5.9	-0.9	-1.3	1.74	1.27	.19	-0.23	2.22	.20	-50.33	
10	-23.3	-0.3	-9.1	0	1.00	.62	-0.03	-0.01	2.00	.04	16.70	
11	-27.5	-6.0	-16.4	.9	.66	.37	.04	.05	1.82	.13	51.34	
12	-30.3	-11.8	-23.0	1.7	.42	.30	.06	.06	1.67	.23	44.96	
13	-32.9	-17.6	-28.6	2.2	.27	.19	.01	.01	1.54	.07	64.02	
14	-35.9	-23.4	-33.6	2.5	.24	.13	-0.05	.01	1.43	.30	-9.62	
15	-39.6	-28.4	-38.2	2.7	.24	.14	-0.07	.03	1.33	.41	-23.68	
16	-44.3	-33.6	-42.1	2.8	.20	.17	-0.04	.01	1.25	.23	-14.07	
17	-49.0	-37.5	-45.3	2.9	.15	.16	-0.02	-0.01	1.18	.15	33.66	
18	-53.1	-40.1	-47.6	3.0	.14	.12	-0.01	0	1.11	.09	-4.67	
19	-56.3	-41.5	-48.9	2.9	.14	.11	-0.01	0	1.05	.10	-21.93	
20	-57.5	-41.1	-48.5	2.7	.13	.09	-0.01	-0.01	1.00	.10	34.08	
21	-56.4	-39.0	-46.4	2.3	.12	.06	0	-0.01	.95	.12	70.56	
22	-52.5	-35.7	-42.5	1.6	.10	.05	.01	0	.91	.10	-12.67	
23	-45.9	-31.0	-37.2	.8	.09	.05	.01	.01	.87	.17	55.16	
24	-36.8	-25.7	-31.1	-0.2	.09	.05	0	.01	.83	.10	-89.94	
25	-26.0	-20.2	-24.3	-1.2	.08	.04	-0.01	0	.80	.09	-6.79	
26	-15.0	-14.8	-17.4	-1.8	.07	.04	0	0	.77	.09	-71.35	
27	-4.2	-9.7	-10.9	-2.2	.08	.04	.01	.01	.74	.25	36.68	
28	5.2	-5.0	-4.8	-2.6	.09	.05	.01	0	.71	.18	20.40	
29	13.0	-0.3	.8	-2.9	.09	.06	0	0	.69	.05	10.29	
30	18.7	4.1	5.6	-3.1	.08	.06	0	0	.67	.04	52.20	
31	22.7	8.2	10.2	-3.2	.09	.06	0	0	.65	.03	87.03	
32	25.4	12.3	14.3	-3.1	.10	.06	-0.01	0	.63	.12	25.05	
33	26.9	16.2	18.0	-2.8	.10	.07	-0.02	-0.01	.61	.25	21.17	
34	27.9	20.0	21.9	-2.7	.10	.07	-0.01	0	.59	.07	6.54	
35	29.2	23.6	25.5	-2.5	.10	.06	.01	0	.57	.17	1.13	
36	30.6	27.2	29.1	-2.7	.09	.05	0	-0.01	.56	.12	-57.69	
37	32.6	30.2	32.3	-2.9	.08	.05	0	-0.01	.54	.17	84.71	
38	35.0	32.8	34.8	-2.9	.07	.06	.01	-0.01	.53	.25	-51.20	
39	37.0	34.8	36.6	-2.9	.07	.06	.01	-0.01	.51	.19	-35.13	
40	39.2	36.0	37.5	-2.6	.08	.06	0	0	.50	.02	19.87	
41	40.2	36.4	37.3	-2.1	.07	.05	0	0	.49	.04	75.45	
42	39.9	35.6	35.7	-1.5	.06	.05	0	-0.01	.48	.16	54.64	
43	38.4	33.7	33.5	-0.7	.06	.05	-0.01	0	.47	.12	34.59	
44	35.4	30.8	30.3	.2	.07	.06	0	0	.45	.07	-37.01	
45	31.0	27.4	26.5	1.1	.07	.05	0	0	.44	.04	-29.53	
46	26.0	23.5	22.4	1.7	.07	.04	0	0	.43	.09	-8.89	
47	20.5	19.3	18.2	2.1	.07	.05	-0.01	0	.43	.12	19.81	
48	14.9	15.1	14.2	2.2	.07	.04	0	0	.42	.08	58.77	
49	9.5	11.0	10.4	1.7	.06	.04	0	0	.41	.04	-18.44	
50	3.9	7.2	7.0	1.4	.03	.02	0	0	.40	.04	0	

115 A

LI-u

TM No. 377

BRFIS- 15 0-2.5M- V 20 JULY- 65 2400-0008

LAGS= 50 N= 2422 DT= .20SEC

MEAN U₂ = -9.1 MEAN M₁ = -12.7

K	ACOV U ₂	ACOV M ₁	COV IN	COVOUT	SP U ₂	SP M ₁	CO	QUA	PER	R	PHI
0	41.2	121.1	-8.3	0	6.34	16.90	-0.21	0	0	.02	0
1	40.2	118.3	-8.2	-0.4	11.38	35.37	-0.99	-2.04	20.00	.11	64.16
2	38.1	112.1	-7.9	-0.8	9.47	30.66	-3.35	-1.26	10.00	.21	20.55
3	35.5	103.7	-7.4	-1.3	7.00	16.99	-3.27	-0.14	6.67	.30	2.51
4	32.5	94.3	-6.8	-1.6	3.29	7.19	-0.35	-0.07	5.00	.07	10.66
5	29.4	84.5	-5.9	-2.0	1.08	4.33	.20	-0.13	4.00	.11	-32.09
6	26.1	74.8	-5.0	-2.3	.61	2.96	-0.23	-0.23	3.33	.24	45.09
7	22.9	65.8	-4.0	-2.5	.49	1.96	-0.12	-0.10	2.86	.16	39.94
8	19.7	57.4	-2.9	-2.6	.36	1.45	-0.02	.07	2.50	.10	-72.05
9	16.7	49.7	-1.8	-2.6	.23	.84	.01	.05	2.22	.13	75.53
10	13.7	42.6	-0.8	-2.7	.19	.57	.02	.01	2.00	.06	24.28
11	10.9	35.8	.3	-2.7	.14	.45	.03	-0.00	1.82	.13	-5.12
12	8.3	29.4	1.3	-2.8	.09	.29	.00	.01	1.67	.03	71.93
13	6.0	23.4	2.2	-2.8	.08	.16	-0.01	.00	1.54	.09	-2.65
14	3.8	17.7	3.2	-3.0	.07	.12	.00	.00	1.43	.04	53.52
15	1.9	12.4	4.1	-3.2	.05	.11	.01	.00	1.33	.09	37.31
16	.4	7.5	5.0	-3.4	.05	.10	-0.00	-0.00	1.25	.01	62.71
17	-0.8	3.1	5.9	-3.7	.04	.08	.00	-0.00	1.18	.07	-61.49
18	-1.7	-1.0	6.7	-4.0	.03	.07	.00	-0.00	1.11	.11	-33.61
19	-2.2	-4.7	7.3	-4.3	.02	.05	.00	-0.00	1.05	.09	-74.60
20	-2.5	-8.1	7.7	-4.4	.02	.04	-0.00	.00	1.00	.07	-29.17
21	-2.5	-11.0	7.8	-4.5	.02	.05	-0.00	.00	.95	.01	-81.88
22	-2.3	-13.2	7.7	-4.4	.02	.04	.00	-0.00	.91	.05	-0.58
23	-1.8	-14.9	7.4	-4.3	.02	.03	.00	.00	.87	.06	66.81
24	-1.2	-16.1	6.8	-4.0	.01	.02	-0.00	.00	.83	.14	-50.90
25	-0.5	-16.9	5.9	-3.7	.01	.02	-0.00	.00	.80	.09	-88.51
26	.3	-17.3	4.9	-3.5	.01	.02	.00	.00	.77	.15	26.26
27	1.2	-17.5	3.7	-3.2	.01	.02	.00	-0.00	.74	.14	-12.47
28	2.0	-17.5	2.3	-3.1	.01	.02	.00	-0.00	.71	.09	-86.97
29	2.7	-17.4	.7	-3.0	.01	.01	-0.00	-0.00	.69	.11	38.29
30	3.2	-16.9	-0.9	-3.0	.01	.01	-0.00	.00	.67	.15	-6.27
31	3.6	-16.0	-2.5	-3.0	.01	.02	-0.00	-0.00	.65	.20	12.85
32	3.9	-14.7	-3.9	-3.1	.01	.01	-0.00	-0.00	.63	.17	44.49
33	4.1	-13.0	-5.2	-3.1	.00	.01	.00	-0.00	.61	.17	-77.09
34	4.2	-11.0	-6.2	-3.0	.00	.01	-0.00	-0.00	.59	.15	89.33
35	4.3	-9.0	-7.1	-2.8	.00	.01	-0.00	-0.00	.57	.19	86.35
36	4.3	-7.0	-7.9	-2.6	.00	.01	.00	-0.00	.56	.19	-62.56
37	4.2	-5.2	-8.4	-2.4	.00	.01	.00	-0.00	.54	.14	-30.58
38	4.1	-3.7	-8.8	-2.1	.00	.01	.00	-0.00	.53	.06	-18.46
39	3.8	-2.5	-9.0	-1.7	.00	.01	.00	-0.00	.51	.08	-50.44
40	3.4	-1.9	-8.9	-1.2	.00	.01	.00	-0.00	.50	.13	-36.40
41	2.9	-1.8	-8.7	-0.6	.00	.01	.00	-0.00	.49	.24	-49.10
42	2.3	-2.3	-8.2	-0.1	.00	.01	.00	-0.00	.48	.15	-88.62
43	1.7	-3.2	-7.5	.5	.00	.01	-0.00	.00	.47	.19	-8.93
44	1.1	-4.6	-6.5	1.1	.00	.01	-0.00	.00	.45	.18	-31.03
45	.6	-6.4	-5.5	1.8	.00	.01	.00	.00	.44	.04	18.28
46	-0.0	-8.4	-4.4	2.4	.00	.01	.00	-0.00	.43	.07	-47.49
47	-0.6	-10.5	-3.2	3.1	.00	.01	-0.00	-0.00	.43	.09	22.82
48	-1.2	-12.6	-2.1	3.9	.00	.01	-0.00	.00	.42	.17	-18.56
49	-1.8	-14.5	-1.0	4.7	.00	.01	-0.00	.00	.41	.10	-48.54
50	-2.3	-16.3	.1	5.3	.00	.00	.00	.00	.40	.05	.01

CORRELATION COEFFICIENT -0.117

1158 * LI-U TM No. 377
 BRFLS- 15 0-2.5M- VI 20 JULY-56 0930-0934
 LAGS= 50 N= 806 DT= .205FC

MEAN U = -21.00274
 K ACQV SP PERIOD F(MC)

K	ACQV	SP	PERIOD	F(MC)
0	98.3	5.2	0	0
1	88.9	14.3	20.0	50.0
2	73.2	16.4	10.0	100.0
3	53.5	11.6	6.7	150.0
4	34.1	7.0	5.0	200.0
5	18.0	4.1	4.0	250.0
6	7.1	5.9	3.3	300.0
7	1.4	11.0	2.9	350.0
8	.9	9.4	2.5	400.0
9	4.3	3.9	2.2	450.0
10	9.7	1.9	2.0	500.0
11	15.3	1.6	1.8	550.0
12	18.1	1.0	1.7	600.0
13	17.4	.6	1.5	650.0
14	13.5	.4	1.4	700.0
15	7.1	.3	1.3	750.0
16	-0.8	.4	1.3	800.0
17	-9.6	.4	1.2	850.0
18	-18.8	.3	1.1	900.0
19	-25.5	.2	1.1	950.0
20	-29.2	.1	1.0	1000.0
21	-29.1	.1	1.0	1050.0
22	-25.2	.1	.9	1100.0
23	-18.2	.1	.9	1150.0
24	-10.3	.1	.8	1200.0
25	-3.1	.1	.8	1250.0
26	1.7	.1	.8	1300.0
27	3.7	.1	.7	1350.0
28	3.1	.1	.7	1400.0
29	-0.4	.1	.7	1450.0
30	-6.2	.1	.7	1500.0
31	-12.9	.1	.6	1550.0
32	-19.0	.1	.6	1600.0
33	-22.7	.1	.6	1650.0
34	-23.7	.1	.6	1700.0
35	-21.2	.1	.6	1750.0
36	-16.7	.1	.6	1800.0
37	-11.2	.1	.5	1850.0
38	-6.0	.1	.5	1900.0
39	-1.7	.1	.5	1950.0
40	.8	.1	.5	2000.0
41	1.4	.1	.5	2050.0
42	.2	.1	.5	2100.0
43	-2.5	.1	.5	2150.0
44	-5.6	.1	.5	2200.0
45	-9.2	.1	.4	2250.0
46	-10.4	.1	.4	2300.0
47	-11.3	.1	.4	2350.0
48	-10.9	.1	.4	2400.0
49	-9.1	.1	.4	2450.0
50	-5.4	.0	.4	2500.0

* 2.5 M CHANNEL OUT

* 2.5 M CHANNEL OUT

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LI-U

TM No. 377

BBELS 15 1-3.5M-1 C, 20JUL-65 1234-1237

LAGS= 50 N= 620 DT= 0.2SEC

MEAN U_1 = -28.3 MEAN U_2 = -28.5

K	ACOV U_1	ACOV U_2	COV	IN	COVOUT	SP U_1	SP U_2	U_1	CO	QUA	PER	R	PHI
0	72.4	49.3	6.0	0	12.33	7.70	-4.27	0	0	.44	0	.44	0
1	69.7	47.3	5.9	-2.6	13.94	12.00	-4.46	-1.49	20.00	.31	18.51	.31	18.51
2	65.7	45.4	5.2	-5.1	13.19	10.41	3.67	-4.35	10.00	.49	-49.83	.49	-49.83
3	60.1	42.5	4.0	-7.5	11.35	10.42	7.16	-5.34	6.67	.82	-36.73	.82	-36.73
4	53.4	38.9	2.4	-9.7	5.36	5.02	3.94	-2.69	5.00	.84	-34.26	.84	-34.26
5	46.8	35.2	.4	-11.3	2.33	.99	.78	-0.58	4.00	.64	-36.90	.64	-36.90
6	40.1	30.9	-2.0	-12.4	1.61	.50	-0.04	-0.29	3.33	.33	81.71	.33	81.71
7	34.1	26.4	-4.9	-13.1	2.19	.41	-0.38	-0.21	2.86	.46	29.59	.46	29.59
8	29.3	22.0	-8.0	-13.3	1.88	.27	-0.28	-0.05	2.50	.40	10.37	.40	10.37
9	25.2	17.7	-11.2	-13.0	.63	.16	-0.07	.04	2.22	.26	-26.85	.26	-26.85
10	22.0	13.4	-14.3	-12.4	.13	.13	.01	.02	2.00	.18	72.49	.18	72.49
11	19.5	9.6	-17.1	-11.5	.10	.09	.02	.02	1.82	.27	36.94	.27	36.94
12	16.9	5.9	-19.5	-10.4	.09	.08	.01	.01	1.67	.25	45.32	.25	45.32
13	14.4	2.7	-21.5	-9.1	.09	.07	-0.01	.03	1.54	.42	-80.48	.42	-80.48
14	11.7	.0	-22.7	-7.6	.09	.06	0	.03	1.43	.37	88.88	.37	88.88
15	8.8	-2.2	-23.3	-6.0	.07	.05	.01	.01	1.33	.33	48.60	.33	48.60
16	5.9	-3.7	-23.2	-4.3	.06	.05	.02	.01	1.25	.42	20.94	.42	20.94
17	3.2	-4.9	-22.5	-2.7	.06	.04	.02	0	1.18	.31	-0.63	.31	-0.63
18	1.2	-5.6	-21.3	-1.1	.05	.04	0	0	1.11	.05	-49.92	.05	-49.92
19	.1	-5.5	-19.8	.4	.05	.05	-0.01	.01	1.05	.19	-53.94	.19	-53.94
20	.2	-4.8	-18.2	2.0	.05	.04	0	0	1.00	.07	61.15	.07	61.15
21	1.3	-3.8	-16.4	3.4	.04	.02	0	0	.95	.04	79.79	.04	79.79
22	3.3	-2.1	-14.5	4.7	.03	.02	-0.01	0	.91	.23	-26.78	.23	-26.78
23	5.9	-0.4	-12.5	5.8	.03	.03	-0.01	0	.87	.39	1.24	.39	1.24
24	8.7	1.7	-10.5	6.6	.03	.03	-0.01	0	.83	.36	17.37	.36	17.37
25	11.4	4.0	-8.4	7.0	.03	.03	-0.01	-0.01	.80	.31	38.26	.31	38.26
26	13.5	6.3	-6.5	7.1	.03	.02	0	-0.01	.77	.31	57.02	.31	57.02
27	14.9	8.5	-4.5	7.1	.03	.01	0	-0.01	.74	.33	-88.38	.33	-88.38
28	15.6	10.6	-2.6	6.6	.03	.01	0	-0.01	.71	.46	-80.95	.46	-80.95
29	15.8	12.5	-0.8	6.0	.02	.01	0	-0.01	.69	.38	73.18	.38	73.18
30	15.3	14.1	.8	5.2	.02	.02	0	0	.67	.13	80.82	.13	80.82
31	14.6	15.3	2.2	4.3	.02	.03	0	0	.65	.25	-50.22	.25	-50.22
32	13.9	16.2	3.4	3.5	.02	.02	0	-0.01	.63	.32	-53.40	.32	-53.40
33	13.6	16.6	4.3	2.5	.02	.02	0	0	.61	.14	-54.41	.14	-54.41
34	13.6	16.5	4.9	1.5	.02	.03	0	0	.59	.04	-81.31	.04	-81.31
35	13.7	16.5	5.0	.5	.04	.03	0	0	.57	.06	24.60	.06	24.60
36	14.4	15.9	4.9	-0.4	.05	.04	0	0	.56	.09	-16.48	.09	-16.48
37	14.7	15.1	4.3	-1.0	.04	.04	0	0	.54	.01	-48.36	.01	-48.36
38	14.8	14.2	3.5	-1.6	.04	.02	0	0	.53	.14	-72.55	.14	-72.55
39	14.4	12.9	2.7	-2.2	.04	.02	0	0	.51	.10	-11.39	.10	-11.39
40	13.4	11.6	1.6	-2.7	.03	.03	-0.01	0	.50	.18	-3.63	.18	-3.63
41	12.0	10.1	.6	-3.3	.03	.03	0	.01	.49	.26	-72.74	.26	-72.74
42	10.1	8.7	-0.6	-3.9	.02	.03	0	.01	.48	.25	-67.94	.25	-67.94
43	7.9	6.8	-1.7	-4.2	.02	.03	0	0	.47	.20	-14.05	.20	-14.05
44	5.7	5.1	-2.9	-4.5	.02	.04	-0.01	0	.45	.23	-9.33	.23	-9.33
45	3.4	3.2	-4.1	-4.6	.02	.04	-0.01	0	.44	.38	-8.70	.38	-8.70
46	1.1	1.1	-5.5	-4.3	.02	.03	-0.01	0	.43	.41	3.01	.41	3.01
47	-0.8	-0.6	-6.8	-3.9	.02	.02	-0.01	0	.43	.34	35.42	.34	35.42
48	-2.8	-2.6	-7.9	-3.2	.02	.02	0	0	.42	.24	61.35	.24	61.35
49	-4.4	-4.2	-9.1	-2.4	.02	.02	0	0	.41	.08	-88.88	.08	-88.88
50	-5.7	-5.5	-10.1	-1.6	.01	.01	0	0	.40	.01	-0.01	.01	-0.01

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LI-U

BBFLS- 15 3-5.5M- 1

20 JULY-65

1252-1255

TM No. 377

LAGS= 50 N= 649

DT= .20SEC

MEAN $U_2 = -26.5$ MEAN $U_1 = -27.0$

K	ACOV U_2	ACOV U_1	COV	IN	COVOUT	SP U_2	SP U_1	CO	QUA	PER	R	PHI
0	41.7	59.7	19.0	0	6.65	13.79	2.09	0	0	.22	0	0
1	39.3	57.4	19.1	1.9	11.89	19.85	4.81	4.46	20.00	.43	42.41	
2	39.3	56.0	18.4	3.9	9.91	10.20	5.87	3.79	10.00	.70	32.86	
3	36.6	53.8	17.7	5.7	7.29	7.90	4.83	3.47	6.67	.78	35.68	
4	33.9	50.7	16.6	7.3	2.92	4.53	1.62	2.03	5.00	.71	51.51	
5	31.5	47.5	15.2	8.7	.59	.95	-0.00	.19	4.00	.26	-89.86	
6	28.4	43.9	13.6	9.9	.41	.37	.05	-0.05	3.33	.17	-45.68	
7	25.2	40.0	11.7	10.8	.20	.28	-0.04	-0.04	2.86	.27	44.34	
8	21.9	36.1	9.7	11.4	.13	.15	-0.05	.01	2.50	.33	-10.83	
9	18.6	32.3	7.5	11.8	.09	.09	-0.02	.03	2.22	.41	-48.62	
10	15.3	28.4	5.6	12.0	.06	.08	-0.00	.01	2.00	.11	-59.21	
11	12.3	24.9	3.3	11.7	.05	.07	-0.01	.00	1.82	.22	-22.54	
12	9.3	21.9	1.3	11.2	.05	.07	-0.00	.01	1.67	.24	-86.30	
13	6.6	19.0	-0.4	10.7	.06	.06	.01	-0.00	1.54	.11	-6.20	
14	4.4	16.4	-2.1	9.7	.06	.04	-0.00	-0.01	1.43	.20	89.47	
15	2.2	14.8	-3.5	8.7	.04	.04	-0.00	-0.00	1.33	.17	48.76	
16	.4	13.2	-4.7	7.6	.03	.04	-0.00	.00	1.25	.09	-66.36	
17	-1.0	12.0	-5.7	6.5	.03	.04	-0.01	-0.00	1.18	.16	11.04	
18	-2.2	11.6	-6.3	5.5	.04	.04	-0.01	-0.00	1.11	.16	31.98	
19	-2.9	11.2	-6.7	4.5	.04	.03	.00	-0.00	1.05	.13	-75.29	
20	-3.3	11.4	-6.9	3.7	.03	.03	.00	-0.01	1.00	.22	-52.71	
21	-3.4	11.9	-6.8	3.0	.03	.03	.01	-0.00	.95	.23	-26.01	
22	-3.1	12.7	-6.5	2.6	.03	.03	.01	.00	.91	.21	8.10	
23	-2.8	13.6	-5.9	2.4	.02	.03	-0.00	.00	.87	.18	-67.42	
24	-2.1	14.7	-5.4	2.2	.02	.03	-0.01	.00	.83	.34	-16.51	
25	-1.3	15.7	-4.5	2.6	.03	.04	-0.01	-0.01	.80	.38	27.72	
26	-0.4	16.7	-3.5	2.8	.03	.04	-0.00	-0.01	.77	.33	75.36	
27	.7	17.7	-2.5	3.5	.03	.03	.00	-0.01	.74	.33	-63.11	
28	1.9	18.2	-1.4	3.9	.04	.02	.00	-0.00	.71	.22	-41.94	
29	2.9	18.6	-0.3	4.7	.03	.02	.00	-0.01	.69	.21	-76.38	
30	3.9	18.8	.8	5.5	.03	.03	.00	-0.01	.67	.24	-68.48	
31	4.9	18.4	1.9	6.3	.03	.03	.01	.00	.65	.25	10.88	
32	5.6	17.8	2.6	7.3	.04	.06	.01	.00	.63	.18	21.42	
33	6.3	16.9	3.2	8.2	.04	.07	-0.00	-0.01	.61	.10	85.92	
34	6.5	15.7	3.6	9.2	.04	.05	-0.01	-0.00	.59	.16	38.83	
35	6.7	14.0	3.8	9.9	.05	.04	-0.01	-0.00	.57	.19	14.59	
36	6.4	12.3	3.8	10.7	.06	.03	-0.01	-0.00	.56	.21	16.12	
37	6.0	10.5	3.5	11.2	.06	.04	-0.01	-0.00	.54	.23	18.86	
38	5.3	8.5	3.2	11.6	.04	.05	-0.00	-0.01	.53	.18	85.34	
39	4.3	6.4	2.4	11.8	.05	.04	.01	-0.01	.51	.31	-35.18	
40	3.2	4.2	1.6	11.7	.05	.04	.00	.00	.50	.05	11.75	
41	1.9	2.2	.6	11.6	.05	.04	-0.01	.01	.49	.34	-43.64	
42	.5	.2	-0.6	11.1	.05	.03	-0.01	.01	.48	.30	-34.44	
43	-0.8	-1.5	-1.9	10.8	.05	.03	-0.01	-0.01	.47	.46	44.47	
44	-2.3	-3.2	-3.3	10.2	.04	.04	-0.01	-0.01	.45	.47	38.42	
45	-3.9	-4.5	-4.6	9.6	.05	.04	-0.02	.00	.44	.37	-7.40	
46	-5.0	-5.7	-6.0	8.8	.04	.04	-0.02	-0.00	.43	.42	3.05	
47	-6.3	-6.9	-7.3	8.2	.02	.03	-0.01	-0.01	.43	.44	33.83	
48	-7.5	-7.7	-8.6	7.5	.02	.03	-0.00	-0.00	.42	.10	16.12	
49	-8.3	-8.5	-9.8	7.1	.02	.03	-0.00	.01	.41	.23	-77.76	
50	-8.9	-8.9	-10.9	6.5	.01	.01	-0.00	.00	.40	.12	-0.01	

CORRELATION COEFFICIENT

.381

118

LI-U

TM No. 377

RRFS- 15 J-4.9M- 1 20 JULY-65 1241-1244

LAGS= 50 NE= 552 DT= .20SEC

MEAN $U_2 = -24.2$ MEAN $U_1 = -28.1$

K	ACOV U_2	ACOV U_1	COV	IN	COVOUT	SP U_2	SP U_1	CO	QUA	PER	R	PHI
0	45.7	76.2	30.7	0	6.83	8.79	3.24	0	0	0	.42	0
1	40.9	67.9	30.4	1.9	12.12	18.40	6.18	3.48	20.00	.48	29.35	
2	40.0	64.8	29.0	3.6	9.04	16.53	6.57	3.48	10.00	.61	27.87	
3	37.6	61.4	27.0	5.1	6.98	12.27	7.28	2.79	6.67	.84	20.95	
4	34.3	54.9	23.8	6.4	4.40	7.83	5.10	1.79	5.00	.92	19.31	
5	31.0	47.9	20.3	7.6	1.57	2.97	1.67	.45	4.00	.80	14.99	
6	27.4	41.3	16.4	8.6	.68	1.13	.41	-0.08	3.33	.48	-11.34	
7	23.5	34.7	12.6	9.3	.42	1.18	.27	.02	2.86	.39	4.72	
8	20.0	27.8	8.8	9.8	.22	.88	.12	.04	2.50	.29	17.39	
9	15.9	22.1	5.4	10.0	.12	.42	.04	-0.01	2.22	.18	-15.99	
10	12.0	16.5	2.2	10.1	.10	.14	-0.01	.03	2.00	.25	-62.22	
11	10.2	12.0	-0.8	9.7	.11	.12	-0.01	.03	1.82	.26	-72.16	
12	7.1	7.9	-3.1	9.4	.09	.12	.00	.01	1.67	.14	73.82	
13	5.7	4.3	-4.9	8.6	.07	.14	-0.01	.02	1.54	.17	-70.44	
14	3.5	.7	-6.2	7.9	.07	.14	-0.02	.02	1.43	.27	-50.11	
15	2.4	-1.8	-7.1	6.9	.08	.12	-0.01	.00	1.33	.16	-16.16	
16	1.2	-4.2	-7.2	6.1	.07	.11	-0.02	-0.00	1.25	.19	13.18	
17	.9	-5.9	-7.3	5.1	.07	.12	-0.02	.01	1.18	.25	-27.26	
18	.4	-6.5	-6.9	4.5	.06	.13	-0.02	.02	1.11	.31	-52.62	
19	.4	-7.9	-5.7	3.7	.05	.13	-0.00	.01	1.05	.18	-70.83	
20	.5	-7.0	-4.5	2.9	.06	.09	.00	-0.00	1.00	.04	-30.98	
21	1.1	-5.8	-3.3	2.3	.06	.07	.00	-0.01	.95	.10	-77.80	
22	1.1	-4.3	-1.7	2.4	.05	.12	-0.01	.01	.91	.16	-24.23	
23	2.0	-3.5	.2	2.0	.05	.18	-0.02	.02	.87	.28	-39.22	
24	2.9	-1.8	1.7	2.0	.06	.18	-0.02	.01	.83	.21	-42.10	
25	3.3	-0.5	2.9	2.1	.06	.13	-0.00	.00	.80	.05	-29.51	
26	4.1	.4	4.2	2.4	.06	.15	.00	-0.01	.77	.08	-57.55	
27	4.4	1.1	5.2	2.8	.07	.19	-0.02	.00	.74	.20	-12.04	
28	4.8	.1	5.5	3.3	.09	.20	-0.04	.02	.71	.32	-26.09	
29	4.7	.1	5.9	3.9	.11	.20	.00	.01	.69	.05	63.23	
30	4.6	-0.7	5.9	4.3	.10	.19	.04	-0.01	.67	.27	-8.90	
31	4.1	-2.4	5.8	4.5	.07	.17	.03	-0.00	.65	.27	-7.04	
32	3.7	-3.8	5.0	4.6	.05	.20	.02	.01	.63	.21	26.99	
33	3.0	-5.0	4.4	4.7	.07	.23	.02	.01	.61	.18	31.87	
34	2.2	-6.5	3.7	4.3	.08	.22	.02	.01	.59	.15	18.14	
35	1.3	-7.3	2.4	4.3	.08	.15	.02	.00	.57	.17	2.13	
36	.1	-9.4	1.4	3.9	.09	.12	.01	-0.01	.56	.15	-19.36	
37	-0.8	-9.6	.4	3.8	.12	.16	.01	.01	.54	.07	42.50	
38	-2.3	-10.3	-0.4	3.6	.15	.14	.01	.01	.53	.06	52.42	
39	-3.2	-11.8	-1.3	3.3	.14	.14	-0.01	-0.01	.51	.07	48.79	
40	-4.5	-11.4	-1.9	3.3	.10	.17	-0.02	-0.01	.50	.14	23.12	
41	-5.4	-11.1	-2.2	3.5	.07	.14	-0.01	-0.00	.49	.06	5.65	
42	-6.1	-11.1	-2.5	3.3	.06	.10	-0.00	.00	.48	.07	-31.68	
43	-7.1	-9.9	-2.7	3.7	.07	.11	-0.02	.01	.47	.21	-23.03	
44	-7.3	-9.2	-2.5	4.1	.06	.15	-0.01	.00	.45	.13	-22.68	
45	-7.9	-7.6	-2.0	4.0	.07	.18	-0.01	.00	.44	.09	-28.58	
46	-8.2	-5.1	-1.8	4.3	.12	.14	-0.02	.01	.43	.19	-35.63	
47	-8.1	-3.7	-0.9	5.0	.13	.09	-0.01	.00	.43	.11	-4.55	
48	-7.9	-2.2	-0.1	5.5	.11	.09	.00	-0.03	.42	.25	-88.42	
49	-7.5	-1.1	.4	6.2	.08	.10	-0.01	-0.02	.41	.25	75.51	
50	-6.3	.1	1.2	7.4	.03	.05	-0.01	-0.00	.40	.17	.00	

CORRELATION COEFFICIENT .521

119

CI-W

TM No. 377

BBFIS- 16 10-3.5M-VII

8 SEP-65

0200 - 0207

LAGS= 50 N= 1849

DT= .20SEC

MEAN W_2 = -0.9 *

MEAN W_1 = .4

K	ACOV	W_2 ACOV	W_1 COV	IN	COVOUT	SP	U_2 SP	W_1	CO	QUA	PER	R	PHI
0	87.6	158.0	-52.8	0	9.72	12.02	1.27	0	0	.12	0	.12	0
1	82.6	155.0	-52.1	2.0	25.78	40.08	-10.43	3.98	20.00	.35	-20.90	.35	-20.90
2	80.2	148.2	-50.1	4.0	28.31	53.08	-23.86	7.41	10.00	.64	-17.25	.64	-17.25
3	76.8	138.4	-46.9	5.9	14.09	31.73	-14.18	4.05	6.67	.61	-15.93	.61	-15.93
4	72.4	126.6	-42.7	7.7	2.78	9.49	-3.14	.35	5.00	.61	-6.44	.61	-6.44
5	67.2	113.4	-37.7	9.4	1.31	4.20	-1.51	-0.02	4.00	.64	.79	.64	.79
6	61.4	99.5	-32.0	10.9	.50	2.14	-0.50	-0.02	3.33	.48	2.18	.48	2.18
7	55.1	85.3	-25.9	12.2	.23	1.28	-0.15	.01	2.86	.27	-2.20	.27	-2.20
8	48.4	71.1	-19.6	13.3	.19	1.06	-0.10	-0.01	2.50	.22	6.97	.22	6.97
9	41.5	56.9	-13.0	14.2	.14	.87	-0.07	-0.01	2.22	.21	4.10	.21	4.10
10	34.5	42.8	-6.5	14.9	.08	.56	-0.05	.01	2.00	.25	-12.40	.25	-12.40
11	27.4	29.0	.0	15.3	.07	.30	-0.05	.01	1.82	.38	-10.81	.38	-10.81
12	20.5	15.5	6.3	15.4	.06	.20	-0.03	-0.00	1.67	.28	4.00	.28	4.00
13	13.8	2.6	12.2	15.3	.05	.15	-0.00	-0.02	1.54	.20	76.76	.20	76.76
14	7.4	-9.6	17.8	14.9	.03	.10	.00	-0.01	1.43	.23	-82.03	.23	-82.03
15	1.3	-20.7	22.8	14.3	.02	.07	.00	-0.00	1.33	.11	-13.26	.11	-13.26
16	-4.4	-30.7	27.3	13.4	.02	.07	.00	.00	1.25	.12	1.73	.12	1.73
17	-9.6	-39.3	31.3	12.3	.01	.05	.00	-0.00	1.18	.07	-69.13	.07	-69.13
18	-14.4	-46.7	34.8	11.1	.01	.04	-0.00	-0.00	1.11	.19	47.54	.19	47.54
19	-19.5	-52.7	37.8	9.8	.01	.04	-0.00	-0.00	1.05	.14	62.59	.14	62.59
20	-22.2	-57.4	40.2	8.3	.02	.04	-0.00	-0.00	1.00	.05	86.65	.05	86.65
21	-25.3	-61.1	42.2	6.7	.01	.03	-0.00	.00	.95	.09	-87.62	.09	-87.62
22	-27.9	-63.7	43.7	5.0	.01	.03	-0.00	.00	.91	.12	-89.25	.12	-89.25
23	-29.9	-65.4	44.6	3.3	.01	.02	.00	.00	.87	.16	86.55	.16	86.55
24	-31.4	-66.2	45.0	1.5	.01	.02	.00	.00	.83	.23	85.86	.23	85.86
25	-32.3	-66.2	44.9	-0.2	.01	.02	-0.00	.00	.80	.15	-69.44	.15	-69.44
26	-32.7	-65.2	44.2	-1.9	.01	.02	-0.00	.00	.77	.09	-13.53	.09	-13.53
27	-32.6	-63.2	43.1	-3.4	.01	.02	-0.00	.00	.74	.04	-50.16	.04	-50.16
28	-32.0	-60.3	41.4	-4.9	.01	.02	-0.00	.00	.71	.09	-64.14	.09	-64.14
29	-30.7	-56.5	39.3	-6.2	.00	.02	-0.00	.00	.69	.20	-42.41	.20	-42.41
30	-28.9	-51.9	36.7	-7.5	.00	.02	-0.00	.00	.67	.25	-57.01	.25	-57.01
31	-26.7	-46.6	33.6	-8.6	.01	.02	-0.00	.00	.65	.16	-68.26	.16	-68.26
32	-23.9	-40.8	30.0	-9.5	.00	.01	.00	.00	.63	.12	67.33	.12	67.33
33	-20.7	-34.8	25.9	-10.3	.01	.01	.00	.00	.61	.20	38.16	.20	38.16
34	-17.2	-28.4	21.6	-10.9	.00	.01	.00	-0.00	.59	.11	-9.95	.11	-9.95
35	-13.3	-21.7	17.0	-11.4	.00	.02	-0.00	.00	.57	.06	-15.81	.06	-15.81
36	-9.3	-15.0	12.3	-11.7	.00	.01	-0.00	.00	.56	.17	-56.74	.17	-56.74
37	-5.2	-8.4	7.5	-11.9	.00	.01	.00	-0.00	.54	.07	-39.71	.07	-39.71
38	-1.0	-1.9	2.6	-11.9	.00	.01	.00	-0.00	.53	.18	-73.21	.18	-73.21
39	3.1	4.5	-2.1	-11.7	.00	.01	.00	.00	.51	.12	83.19	.12	83.19
40	7.2	10.5	-6.8	-11.4	.00	.01	.00	.00	.50	.32	72.06	.32	72.06
41	11.1	16.1	-11.2	-10.8	.00	.01	.00	.00	.49	.17	55.38	.17	55.38
42	14.9	21.2	-15.5	-10.1	.00	.01	.00	-0.00	.48	.15	-87.37	.15	-87.37
43	18.5	25.9	-19.5	-9.3	.00	.01	-0.00	-0.00	.47	.19	85.57	.19	85.57
44	21.8	30.1	-23.1	-8.3	.00	.01	-0.00	.00	.45	.04	-4.96	.04	-4.96
45	24.6	33.6	-26.2	-7.4	.00	.01	-0.00	.00	.44	.04	-65.40	.04	-65.40
46	27.1	36.4	-28.8	-6.4	.00	.01	.00	-0.00	.43	.07	-50.62	.07	-50.62
47	29.1	38.5	-30.8	-5.3	.00	.01	-0.00	-0.00	.43	.10	36.67	.10	36.67
48	30.6	39.8	-32.2	-4.2	.00	.01	-0.00	.00	.42	.15	-19.83	.15	-19.83
49	31.6	40.3	-33.0	-3.0	.00	.01	.00	.00	.41	.20	70.14	.20	70.14
50	32.1	40.1	-33.2	-1.8	.00	.00	.00	.00	.40	.28	.00	.28	.00

CORRELATION COEFFICIENT -0.459

* SIGN REVERSED ON ONE CHANNEL, COV IN, CO

120 θ_{III} ($\theta = 5^\circ$)
 RBFS 16 \downarrow 5M-01 0. 08SEP-65 1340-1346

TM No. 377

LAGS= 50 N= 702 DT= 0.2SEC

MEAN U=-19.7 MEAN W= .4

K	ACOV U	ACOV W	COV	IN	COVOUT	SP U	SP W	CO	QUA	PER	K	PHI
0	56.9	256.2	-7.6	0	1.37	5.88	.78	0	0	.27	0	0
1	49.2	241.5	-7.5	16.8	3.30	26.00	-0.40	1.51	20.00	.17	-75.06	
2	33.7	206.1	-6.7	29.1	4.18	52.11	-1.94	2.11	10.00	.19	-47.35	
3	14.6	158.2	-5.4	33.6	3.35	45.75	-0.82	1.55	6.67	.14	-62.25	
4	-2.2	106.9	-3.8	29.5	3.17	24.95	-0.98	1.43	5.00	.19	-55.46	
5	-13.9	60.7	-2.1	19.2	5.06	24.95	-2.28	2.50	4.00	.30	-47.61	
6	-18.4	24.7	0	6.8	4.83	19.42	-2.38	2.10	3.33	.33	-41.47	
7	-16.9	.3	2.1	-4.8	5.93	14.82	-1.31	5.17	2.86	.57	-75.75	
8	-11.6	-13.0	4.3	-12.6	3.81	18.09	.65	9.94	2.50	.79	86.25	
9	-4.6	-18.2	6.4	-15.5	6.49	11.71	1.31	6.85	2.22	.80	79.21	
10	2.2	-18.7	7.6	-13.3	2.79	4.00	.14	2.28	2.00	.68	86.47	
11	7.5	-18.2	7.7	-7.4	1.77	2.02	-0.21	1.22	1.82	.65	-80.39	
12	10.6	-18.8	6.4	.5	1.43	1.55	.01	.98	1.67	.66	89.34	
13	10.7	-22.7	4.1	8.3	1.16	1.39	-0.18	.69	1.54	.56	-75.60	
14	8.1	-30.5	1.1	14.5	.74	.99	-0.14	.31	1.43	.43	-58.01	
15	3.2	-41.5	-1.8	17.6	.47	.44	.03	.15	1.33	.33	79.64	
16	-2.0	-54.0	-3.6	16.7	.35	.21	.04	.05	1.25	.24	48.66	
17	-6.6	-65.3	-4.2	12.1	.21	.20	0	.05	1.18	.23	84.56	
18	-9.1	-72.9	-3.4	5.4	.10	.17	.01	.03	1.11	.23	69.10	
19	-8.9	-74.9	-1.5	-2.4	.08	.17	0	-0.01	1.05	.10	-87.64	
20	-6.4	-71.3	1.1	-8.8	.09	.13	0	-0.03	1.00	.24	-80.88	
21	-2.4	-64.4	3.8	-12.5	.08	.09	.02	0	.95	.20	-1.51	
22	2.1	-56.7	6.5	-11.9	.07	.09	.02	.01	.91	.26	25.11	
23	5.6	-51.4	8.8	-7.5	.07	.09	0	-0.03	.87	.39	-83.04	
24	6.6	-49.6	9.9	-0.5	.07	.07	0	-0.04	.83	.60	-89.66	
25	5.2	-51.9	9.7	7.1	.06	.05	0	-0.03	.80	.49	-86.16	
26	.9	-57.0	8.3	13.0	.05	.05	0	-0.03	.77	.49	-87.60	
27	-4.7	-62.8	6.2	16.1	.06	.04	0	-0.01	.74	.30	71.10	
28	-10.1	-67.3	4.0	15.6	.05	.04	-0.01	0	.71	.13	25.48	
29	-13.6	-67.9	2.7	11.4	.04	.06	.01	0	.69	.16	10.83	
30	-15.2	-62.3	3.0	4.3	.05	.07	.02	-0.01	.67	.40	-25.55	
31	-14.1	-50.7	4.6	-4.0	.07	.05	.02	-0.02	.65	.43	-46.17	
32	-10.4	-32.6	6.9	-11.2	.04	.05	0	-0.01	.63	.24	-67.92	
33	-5.0	-8.8	8.8	-16.2	.02	.06	0	0	.61	.09	-3.28	
34	1.4	17.7	9.1	-18.0	.03	.04	.01	0	.59	.24	26.06	
35	8.0	43.7	7.9	-16.4	.04	.03	.01	0	.57	.26	14.04	
36	13.0	65.7	5.6	-11.6	.03	.04	.01	.01	.56	.37	22.98	
37	15.8	81.0	3.0	-4.6	.02	.04	.01	.01	.54	.41	34.34	
38	15.6	87.9	.7	3.3	.02	.02	0	0	.53	.20	22.91	
39	12.8	87.1	-0.9	10.5	.02	.03	0	0	.51	.12	66.26	
40	7.7	80.0	-1.7	16.1	.02	.04	0	.01	.50	.29	-64.19	
41	1.9	68.5	-1.8	18.9	.03	.03	-0.01	.01	.49	.42	-40.68	
42	-3.4	54.9	-1.5	17.8	.03	.02	-0.01	0	.48	.26	4.66	
43	-6.5	41.6	-0.7	12.6	.04	.02	0	-0.01	.47	.44	-69.41	
44	-7.1	29.9	.8	4.5	.05	.01	.01	-0.01	.45	.48	-50.91	
45	-4.5	21.9	3.0	-4.4	.03	.02	0	0	.44	.18	10.05	
46	.3	18.1	5.4	-12.6	.03	.03	.01	0	.43	.25	31.06	
47	5.8	17.7	7.0	-18.1	.03	.02	.01	0	.43	.31	-8.38	
48	10.5	19.3	7.8	-20.4	.05	.02	.01	-0.01	.42	.43	-48.47	
49	13.0	21.0	7.3	-19.6	.05	.03	.01	-0.01	.41	.44	-50.72	
50	13.1	21.4	5.8	-16.8	.02	.02	.01	0	.40	.32	0	

121

OH

 $(\theta = 20^\circ)$

TM No. 377

BRFS- 16

.5M- 2

LAGS= 50 N= 1227

DT= .20SEC

MEAN U = -19.8

MEAN W = .6

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	66.1	266.1	-10.3	0	1.33	3.70	.09	0	0	.04	0
1	57.8	246.6	-8.8	17.1	2.77	24.17	.72	-0.48	20.00	.15	-53.73
2	35.9	201.6	-3.5	30.0	2.77	49.71	1.97	-2.22	10.00	.25	-48.54
3	13.2	141.8	4.5	35.9	2.32	43.07	2.14	-0.99	6.67	.24	-24.85
4	-8.2	80.1	12.4	32.3	2.80	23.27	1.70	.14	5.00	.21	4.81
5	-24.8	27.3	18.6	20.3	3.07	15.17	1.53	-0.87	4.00	.26	-29.71
6	-33.4	-8.6	20.9	2.9	4.69	14.20	-1.32	1.32	3.33	.23	-44.95
7	-32.5	-24.9	18.8	-15.9	11.95	27.09	-6.61	11.57	2.86	.74	-60.25
8	-23.8	-24.1	13.0	-31.4	14.87	31.58	-7.40	16.11	2.50	.82	-65.32
9	-9.7	-12.6	4.2	-40.2	8.43	16.90	-2.93	8.07	2.22	.72	-70.07
10	5.9	2.7	-5.2	-39.9	2.92	5.81	-0.25	1.60	2.00	.39	-81.10
11	19.4	14.9	-13.1	-30.7	1.26	3.11	-0.27	.01	1.82	.13	-1.74
12	27.8	18.7	-18.6	-15.0	.70	2.35	-0.28	-0.47	1.67	.43	59.21
13	28.7	11.4	-20.5	2.9	.43	1.49	-0.09	-0.30	1.54	.39	73.81
14	22.5	-6.6	-19.0	19.1	.39	.66	.04	-0.00	1.43	.07	-1.68
15	11.5	-32.2	-14.2	28.9	.50	.42	.14	.12	1.33	.40	40.21
16	-0.9	-61.2	-7.2	30.6	.44	.30	.13	.02	1.25	.36	10.08
17	-12.3	-88.5	1.0	23.9	.30	.30	.04	-0.05	1.18	.22	-48.71
18	-19.5	-108.6	8.4	11.5	.21	.30	.01	-0.07	1.11	.27	-80.51
19	-22.0	-118.3	12.9	-3.2	.19	.20	.01	-0.04	1.05	.21	-75.15
20	-19.6	-115.3	14.0	-16.6	.18	.11	.01	-0.02	1.00	.13	-66.29
21	-12.8	-100.5	11.3	-26.3	.18	.14	.02	-0.00	.95	.11	-13.53
22	-3.7	-78.1	6.0	-30.4	.18	.17	.04	-0.03	.91	.27	-34.59
23	5.9	-53.8	-1.1	-28.6	.19	.16	.05	-0.04	.87	.34	-39.28
24	14.0	-32.9	-7.6	-21.0	.18	.13	.02	-0.02	.83	.18	-46.43
25	12.6	-18.9	-12.5	-9.5	.17	.12	-0.00	-0.01	.80	.06	88.09
26	18.3	-13.9	-14.4	3.5	.14	.12	.02	-0.01	.77	.16	-15.41
27	14.2	-17.4	-13.7	15.4	.12	.12	.03	.00	.74	.26	4.24
28	6.4	-27.6	-10.6	24.0	.12	.09	.02	.01	.71	.18	26.02
29	-2.2	-40.1	-5.4	27.5	.11	.07	.01	.01	.69	.15	57.55
30	-0.9	-50.8	.3	25.6	.11	.06	.01	.00	.67	.11	7.20
31	-15.5	-56.4	5.1	19.1	.11	.06	-0.00	-0.01	.65	.07	81.13
32	-17.6	-55.0	7.8	9.5	.11	.06	-0.00	-0.00	.63	.06	63.47
33	-15.6	-46.3	8.6	-0.1	.12	.07	.01	.01	.61	.14	29.83
34	-12.9	-31.6	7.4	-8.5	.10	.06	.02	.01	.59	.24	31.95
35	-7.0	-12.5	4.7	-13.2	.07	.05	.02	.00	.57	.32	8.57
36	-0.5	8.8	2.0	-14.1	.09	.05	.02	.01	.56	.35	20.93
37	5.8	30.0	-0.2	-10.8	.11	.06	.02	.02	.54	.38	39.75
38	10.6	47.9	-1.5	-4.5	.10	.06	.03	.02	.53	.37	31.69
39	13.7	60.3	-1.6	3.5	.09	.06	.01	.01	.51	.24	38.89
40	13.8	66.2	-0.9	11.0	.10	.05	.00	.01	.50	.14	66.09
41	11.7	65.4	.4	16.9	.10	.04	.01	.00	.49	.09	17.37
42	7.7	59.4	2.4	20.0	.10	.04	.00	.00	.48	.04	64.16
43	3.3	50.3	4.3	19.4	.11	.05	-0.01	.01	.47	.20	-49.78
44	-1.3	40.9	6.0	15.0	.12	.05	-0.00	.01	.45	.09	-50.70
45	-4.8	33.3	7.4	8.3	.11	.05	.01	.00	.44	.17	6.74
46	-6.4	29.7	8.2	.2	.09	.04	.01	.01	.43	.24	38.83
47	-6.3	31.3	8.4	-7.8	.10	.05	-0.00	-0.01	.43	.10	53.50
48	-4.5	36.7	7.8	-14.0	.12	.05	-0.01	-0.03	.42	.35	64.86
49	-2.9	44.8	6.5	-17.0	.11	.05	-0.01	-0.01	.41	.18	57.29
50	-0.5	53.4	4.5	-16.3	.05	.03	-0.00	-0.00	.40	.04	.00

CORRELATION COEFFICIENT -0.078

122 OIII ($\theta=50^\circ$)
 BBELS 16 .5M= .4 0, 08SEP-65 1420-1425
 LAGS= 50 N= 1374 DT= 0.2SEC
 MEAN U=-18.4 MEAN W= -0.9
 CORRELATION COEFFICIENT -0.1

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	37.7	278.0	-11.2	0	.68	6.78	-0.67	0	0	.31	0
1	32.0	240.2	-10.0	6.5	2.31	31.35	-0.92	-3.64	20.00	.44	75.77
2	22.1	205.7	-6.7	10.9	3.18	54.23	-0.59	-5.64	10.00	.44	84.07
3	10.3	159.8	-2.5	11.9	2.58	43.90	-1.17	-3.99	6.67	.39	73.57
4	-0.0	110.7	1.4	8.6	2.52	25.85	-0.83	-1.02	5.00	.16	50.97
5	-7.0	66.9	3.6	1.8	2.72	21.10	.25	.55	4.00	.08	65.49
6	-10.3	32.8	3.6	-6.9	2.89	16.28	.27	1.71	3.33	.25	80.92
7	-10.5	11.3	1.7	-15.7	4.62	16.74	-0.79	4.56	2.86	.53	-80.13
8	-8.2	-0.4	-0.9	-23.3	5.41	18.01	-2.24	6.11	2.50	.66	-69.88
9	-4.1	-4.3	-3.7	-27.9	3.69	11.49	-2.11	3.83	2.22	.67	-61.17
10	.5	-4.6	-5.2	-28.4	1.86	4.90	-1.07	1.13	2.00	.52	-46.54
11	4.8	-4.5	-5.6	-24.7	.94	2.92	-0.69	-0.02	1.82	.42	1.25
12	7.2	-8.3	-4.7	-18.5	.63	2.47	-0.41	-0.19	1.67	.37	24.43
13	7.2	-15.1	-2.7	-11.1	.53	1.59	-0.13	.03	1.54	.14	-11.97
14	5.0	-26.0	-0.1	-4.5	.47	1.01	-0.09	.12	1.43	.22	-54.06
15	1.3	-38.4	2.5	0	.45	.80	-0.07	.03	1.33	.13	-23.98
16	-2.6	-52.0	4.4	1.5	.39	.72	-0.02	-0.01	1.25	.04	29.40
17	-5.7	-64.4	5.2	.3	.27	.73	.03	.04	1.18	.10	53.33
18	-7.3	-73.3	5.1	-3.0	.17	.74	.03	.06	1.11	.18	64.66
19	-7.4	-77.7	4.1	-7.1	.12	.68	.01	.05	1.05	.16	82.98
20	-6.4	-76.9	2.0	-10.2	.09	.56	.02	0	1.00	.08	7.96
21	-4.4	-71.0	0	-11.7	.08	.54	.03	-0.04	.95	.20	-53.89
22	-2.0	-62.4	-1.9	-10.3	.08	.57	0	-0.03	.91	.13	-83.61
23	.3	-54.3	-3.9	-7.2	.06	.54	0	-0.02	.87	.10	82.85
24	1.7	-48.4	-4.8	-3.8	.04	.52	0	-0.01	.83	.10	84.10
25	2.2	-46.4	-5.4	.3	.05	.54	-0.01	-0.03	.80	.21	72.86
26	1.5	-47.2	-5.1	3.8	.05	.59	0	-0.03	.77	.16	-82.10
27	.0	-51.2	-4.0	6.5	.05	.59	.02	.01	.74	.11	27.97
28	-2.1	-56.5	-2.4	7.8	.04	.54	.01	.02	.71	.11	64.42
29	-4.1	-60.4	-0.8	7.9	.04	.54	-0.01	0	.69	.04	21.38
30	-5.7	-60.2	-0.1	7.3	.03	.52	-0.01	.01	.67	.10	-27.57
31	-6.6	-55.4	-0.2	5.2	.04	.50	-0.01	.02	.65	.17	-72.36
32	-6.9	-46.9	-1.0	2.8	.04	.51	0	.01	.63	.09	76.44
33	-6.6	-34.3	-1.8	.6	.03	.51	0	0	.61	.01	-14.91
34	-5.7	-20.6	-3.1	-1.3	.04	.50	-0.01	-0.01	.59	.08	28.17
35	-4.1	-6.6	-3.4	-1.9	.04	.48	-0.01	0	.57	.09	-4.93
36	-2.0	6.6	-3.6	-1.9	.04	.50	0	.01	.56	.07	78.34
37	-0.0	17.8	-2.0	-0.3	.04	.52	.03	.02	.54	.20	30.84
38	1.8	27.0	-0.1	1.2	.04	.52	.02	0	.53	.12	14.03
39	2.9	32.7	1.9	2.8	.04	.52	0	-0.01	.51	.10	-86.79
40	3.5	37.3	3.7	4.4	.03	.50	0	.01	.50	.06	-80.41
41	3.6	40.7	5.0	5.5	.03	.49	0	.02	.49	.18	87.48
42	3.1	40.9	5.4	6.3	.03	.50	.01	0	.48	.06	-25.79
43	2.4	38.6	5.5	6.4	.03	.49	-0.01	-0.01	.47	.11	66.86
44	1.4	34.9	4.9	5.1	.04	.49	-0.02	0	.45	.16	.73
45	.2	30.0	4.4	4.2	.04	.52	-0.01	0	.44	.04	-30.96
46	-0.9	25.0	4.3	3.7	.03	.52	.01	.01	.43	.09	49.40
47	-1.8	21.1	4.0	3.3	.03	.49	0	.01	.43	.09	-75.29
48	-2.1	18.5	3.5	2.5	.04	.46	.01	0	.42	.08	18.78
49	-1.6	16.8	3.3	1.9	.03	.44	.01	.01	.41	.13	20.45
50	-0.4	16.3	2.7	1.8	.01	.22	0	0	.40	.01	.04

123 OIII ($\theta=80^\circ$)
 BBFIS- 16 .5M- VI 8 SEP-63 1431-1436
 LAGS= 50 N= 1152 DT= .20SEC
 MEAN U = -12.9 MEAN W = -1.2

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	39.4	250.8	-15.1	0	1.72	4.80	-0.01	0	0	.00	0
1	35.4	235.6	-13.3	-6.4	4.05	26.71	.11	-3.66	20.00	.35	-88.21
2	28.3	200.5	-8.3	-12.1	4.76	53.28	.15	-9.04	10.00	.57	-89.07
3	19.2	153.0	-1.6	-16.8	4.07	47.98	.26	-9.03	6.67	.65	-88.32
4	10.4	103.5	5.2	-20.7	3.55	26.39	-0.35	-6.40	5.00	.66	86.92
5	2.8	60.3	10.4	-23.7	3.75	16.13	-1.70	-4.71	4.00	.64	70.16
6	-2.5	28.5	12.9	-26.7	3.72	12.83	-2.05	-1.39	3.33	.36	34.21
7	-5.3	9.4	12.4	-28.4	4.14	16.59	-3.11	1.61	2.86	.42	-27.42
8	-5.6	1.2	9.3	-29.8	3.61	17.86	-3.93	1.36	2.50	.52	-19.08
9	-4.2	-0.5	4.6	-30.2	1.94	11.52	-2.51	.08	2.22	.53	-1.73
10	-2.0	-0.8	-0.4	-28.9	1.01	6.55	-1.21	-0.47	2.00	.51	21.26
11	.4	-3.7	-4.3	-25.5	.65	4.16	-0.55	-0.59	1.82	.49	47.02
12	2.3	-11.6	-6.5	-20.5	.39	1.72	-0.11	-0.36	1.67	.46	72.30
13	3.4	-24.3	-6.8	-14.6	.28	.66	-0.06	-0.17	1.54	.40	70.47
14	3.4	-40.7	-5.8	-8.5	.22	.55	-0.01	-0.08	1.43	.25	80.46
15	2.3	-57.7	-3.6	-3.0	.17	.40	.03	-0.03	1.33	.18	-47.92
16	.6	-72.9	-1.3	.9	.12	.31	.00	-0.00	1.25	.01	-71.65
17	-1.2	-84.0	.6	3.1	.10	.26	-0.02	.01	1.18	.14	-15.55
18	-2.9	-90.5	1.8	3.5	.08	.20	-0.02	.00	1.11	.13	-5.57
19	-4.1	-92.3	2.0	2.7	.09	.17	-0.01	.00	1.05	.08	-17.84
20	-4.6	-89.7	1.5	1.2	.08	.13	-0.01	.01	1.00	.13	-49.20
21	-4.4	-83.1	.3	-0.5	.06	.11	-0.01	-0.00	.95	.14	1.73
22	-3.8	-74.5	-1.1	-1.9	.06	.11	-0.01	-0.01	.91	.19	66.63
23	-2.7	-64.4	-2.2	-2.4	.05	.10	.00	-0.01	.87	.22	-72.38
24	-1.6	-53.8	-2.7	-2.0	.04	.08	.01	-0.01	.83	.28	-52.06
25	-0.7	-44.5	-2.5	-0.8	.04	.06	.01	-0.01	.80	.25	-51.43
26	-0.2	-37.3	-1.7	1.2	.03	.04	.00	-0.00	.77	.05	-39.25
27	-0.3	-33.1	-0.4	3.5	.03	.05	-0.01	.01	.74	.21	-46.15
28	-0.9	-32.0	1.1	6.0	.04	.06	-0.01	.00	.71	.17	-26.50
29	-1.9	-33.1	2.6	8.5	.03	.06	-0.01	-0.00	.69	.16	38.25
30	-3.1	-34.6	4.1	10.8	.03	.04	-0.00	-0.00	.67	.15	62.15
31	-4.0	-35.0	5.0	12.6	.02	.04	-0.00	-0.00	.65	.15	78.20
32	-4.6	-31.8	5.2	13.7	.02	.04	.00	-0.01	.63	.21	-72.43
33	-4.6	-24.8	4.3	13.8	.02	.05	.00	-0.00	.61	.14	-26.81
34	-3.8	-13.8	2.3	13.3	.03	.05	.00	-0.00	.59	.08	-1.76
35	-2.1	-0.1	-0.5	11.9	.03	.04	.00	.00	.57	.02	62.39
36	-0.1	13.7	-3.6	10.0	.02	.04	-0.00	-0.00	.56	.02	81.73
37	1.7	25.5	-6.2	8.0	.02	.05	.00	-0.00	.54	.06	-29.55
38	3.1	34.0	-7.8	6.1	.02	.05	.00	.00	.53	.17	60.90
39	4.4	38.8	-8.0	4.8	.02	.04	.00	.01	.51	.23	56.17
40	5.2	41.3	-7.0	4.2	.02	.04	.00	.00	.50	.18	22.09
41	5.1	41.4	-5.0	4.2	.02	.03	-0.00	.00	.49	.11	-85.49
42	4.3	41.0	-2.4	4.7	.02	.04	-0.01	.00	.48	.25	-29.51
43	3.2	40.5	.1	5.6	.03	.04	-0.00	.00	.47	.08	-72.44
44	2.0	40.6	2.3	6.2	.03	.04	.01	.00	.45	.24	11.91
45	1.4	41.4	3.7	6.6	.03	.04	.01	-0.00	.44	.31	-10.94
46	1.0	42.4	4.6	6.4	.03	.05	.01	-0.00	.43	.36	-18.47
47	1.0	43.4	4.7	5.3	.03	.06	.01	-0.00	.43	.26	-2.43
48	1.3	43.9	4.5	3.0	.03	.05	.01	-0.00	.42	.15	-7.07
49	1.8	43.6	3.9	-0.6	.03	.03	.00	-0.00	.41	.17	-43.83
50	2.2	41.3	2.9	-4.8	.02	.01	.00	-0.00	.40	.13	-0.00

CORRELATION COEFFICIENT -0.151

124

OH

(θ=95°)

TM No. 377

RRFS-16

.5M-VI

8 SEP-65 1441-1446

LAGS= 50 N= 1205

DT= .20SEC

MEAN U = -13.3

MEAN W = -2.3

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	30.3	239.2	-5.2	0	3.17	5.16	.02	0	0	.00	0
1	24.1	228.5	-4.6	-4.7	5.63	33.26	.68	-2.96	20.00	.22	-77.05
2	27.9	204.5	-2.8	-9.0	4.48	67.10	1.00	-8.99	10.00	.52	-83.63
3	18.8	172.2	-0.5	-12.9	3.30	54.94	-0.50	-8.06	6.67	.60	86.44
4	14.0	138.1	1.8	-16.2	2.29	23.72	-1.43	-3.67	5.00	.53	68.79
5	9.8	106.1	3.7	-18.8	1.94	12.18	-0.81	-1.87	4.00	.42	66.63
6	6.8	78.8	5.1	-20.7	2.18	7.02	-0.52	-0.52	3.33	.19	45.07
7	4.8	56.3	5.5	-22.1	2.31	8.85	-1.00	.20	2.86	.23	-11.24
8	3.8	37.8	5.1	-22.9	1.64	10.69	-1.39	-0.08	2.50	.33	3.25
9	3.6	21.9	4.0	-22.9	.87	5.93	-0.86	-0.07	2.22	.38	4.80
10	3.9	7.6	2.6	-22.2	.46	2.45	-0.20	.05	2.00	.19	-14.43
11	4.5	-6.3	1.3	-20.9	.38	1.70	-0.08	-0.11	1.82	.17	54.81
12	5.1	-20.8	.5	-18.9	.34	1.46	-0.05	-0.12	1.67	.19	67.18
13	5.4	-36.4	.2	-16.4	.20	1.25	.02	-0.05	1.54	.10	-70.97
14	5.3	-52.7	.5	-13.8	.16	.76	-0.02	-0.02	1.43	.08	55.60
15	4.6	-69.6	.8	-11.3	.15	.42	-0.01	.01	1.33	.05	-43.31
16	3.6	-85.5	1.4	-8.8	.12	.33	.00	.02	1.25	.11	83.97
17	2.4	-99.3	1.6	-6.5	.09	.27	-0.04	.01	1.18	.24	-13.22
18	1.1	-109.3	1.6	-4.4	.07	.20	-0.04	.01	1.11	.35	-13.95
19	-0.1	-114.2	1.0	-2.3	.04	.13	-0.02	.00	1.05	.22	-5.36
20	-1.1	-113.6	-0.1	-0.3	.04	.10	-0.01	-0.01	1.00	.23	32.01
21	-1.6	-108.0	-1.6	1.3	.04	.09	-0.01	-0.00	.95	.09	6.88
22	-1.5	-99.1	-3.3	2.8	.04	.07	-0.00	.00	.91	.11	-49.69
23	-1.0	-88.9	-4.7	4.1	.03	.08	-0.00	.00	.87	.09	-5.08
24	-0.3	-79.5	-5.8	5.1	.02	.08	-0.00	-0.00	.83	.05	20.17
25	.4	-72.2	-6.2	6.0	.02	.06	-0.00	-0.00	.80	.06	.84
26	1.1	-67.2	-6.1	7.0	.03	.06	-0.00	-0.00	.77	.13	82.98
27	1.5	-64.1	-5.5	8.0	.02	.06	.00	-0.01	.74	.26	-74.40
28	1.5	-61.8	-4.5	9.4	.02	.05	.00	-0.01	.71	.34	-64.65
29	1.3	-59.3	-3.3	10.9	.02	.05	.01	-0.01	.69	.35	-59.01
30	1.1	-55.5	-2.1	12.5	.02	.05	.01	-0.01	.67	.28	-45.54
31	.9	-49.8	-1.3	14.0	.02	.03	.00	.00	.65	.20	12.10
32	.8	-41.2	-1.0	15.3	.01	.03	.00	.00	.63	.25	41.75
33	.8	-29.4	-1.2	16.1	.01	.03	.00	.00	.61	.17	35.32
34	.7	-14.8	-1.5	16.1	.01	.03	.00	-0.00	.59	.07	-55.90
35	.5	1.5	-1.7	15.3	.01	.03	.00	-0.00	.57	.17	-57.10
36	.4	18.5	-1.3	13.9	.01	.03	.00	-0.00	.56	.15	-22.08
37	.2	34.7	-0.5	12.3	.01	.03	.00	.00	.54	.05	62.06
38	.4	48.2	.5	10.8	.01	.03	-0.00	.00	.53	.17	-48.20
39	.8	57.7	1.2	9.5	.01	.02	-0.00	.00	.51	.27	-11.49
40	1.5	63.2	1.9	8.4	.01	.02	-0.00	-0.00	.50	.29	11.64
41	2.5	65.2	2.4	7.6	.01	.03	-0.00	.00	.49	.16	-6.63
42	3.5	64.6	2.9	7.0	.01	.03	.00	.00	.48	.15	22.43
43	4.3	62.3	3.1	6.4	.01	.03	.01	.00	.47	.33	3.10
44	4.7	59.2	3.4	5.8	.01	.03	.00	.00	.45	.23	7.78
45	4.7	56.7	3.6	5.2	.01	.03	-0.00	.00	.44	.11	-39.21
46	4.3	54.8	3.9	4.5	.01	.03	-0.00	.00	.43	.30	-13.62
47	3.6	53.4	4.1	3.4	.01	.04	-0.00	.00	.43	.10	-11.88
48	3.0	52.7	4.4	2.1	.01	.04	.00	-0.00	.42	.17	-7.25
49	2.4	52.0	4.6	.3	.01	.04	.01	-0.00	.41	.32	-4.46
50	2.1	50.9	4.8	-1.6	.01	.02	.01	-0.00	.40	.38	-0.00

CORRELATION COEFFICIENT -0.061

1/0 ERR PG. LON 60

Auto-Spectra of Wave Meter Data

Following are plots of the auto-covariance spectra of the wave velocity components measured with the wave meter systems. Curves are presented for series 001-124 - BBELS-5 through BBELS-16. (Series 017 and 070 are not listed.) On each plot the pertinent information is given for the particular measurement. The statistical nomenclature is defined as follows:

N = The number of interpolated data points.

ΔT = The time interval spacing (sec) of the interpolated data;
 $N\Delta T$ = the length of the record.

m = Number of time lags for computation of auto-covariance (and covariance function) and hence the divisions on the frequency scale. The frequency resolution is $100 (2 m\Delta T)^{-1}$ in millicycles per second.

DF = The degrees of freedom calculated by the equation approximately equal to $\frac{2N}{m}$. By use of curves in figure III-3, the given value can be determined for an 80% confidence limit band (assuming the spectral data are approximately Gaussian distributed).

σ_X^2 = The variance of the velocity component X ($\text{cm}^2 \text{sec}^{-2}$).

\bar{X} = The mean value of the quantity X (cm sec^{-1}) over the sampling period N .

$\overline{u'w'}$ = The covariance of u' and w' at zero lag in $\text{cm}^2 \text{sec}^{-2}$ (given for measurements of u and w only).

r = The correlation coefficient in the case of OMDUM measurements of u and w .

$$r(u,w) = \frac{\overline{u'w'}}{\sqrt{\sigma_u^2 \sigma_w^2}}$$

In the case of LIMDUM measurements giving pairs of u_1 and u_2 (or w_1 and w_2):

$$r(u_1 u_2) = \frac{\overline{u_1' u_2'}}{\sqrt{\sigma_{u_1}^2 \sigma_{u_2}^2}} \quad \text{and similarly for } w_1 \text{ and } w_2.$$

- V = The estimated wind speed (m sec^{-1}) at the time of measurement.
- [R = The vertical extension of the 80% confidence range when the middle cross bar is centered on the spectrum point.

Note: In series 120 through 124 the angle θ appears, indicating the azimuth of the u meter with respect to the direction of propagation of the wind waves.

TM No. 377

P 001 BBELS -5 (A)

0.0 m I (1135-)

27 APRIL 1964

$\Phi_u(f)$ - - - - -

$\Phi_w(f)$ - - - - -

N = 888

$\Delta T = 0.2$

m = 32

DF = 56

$\sigma_u^2 = 1165$ $\bar{u} = -39.5$

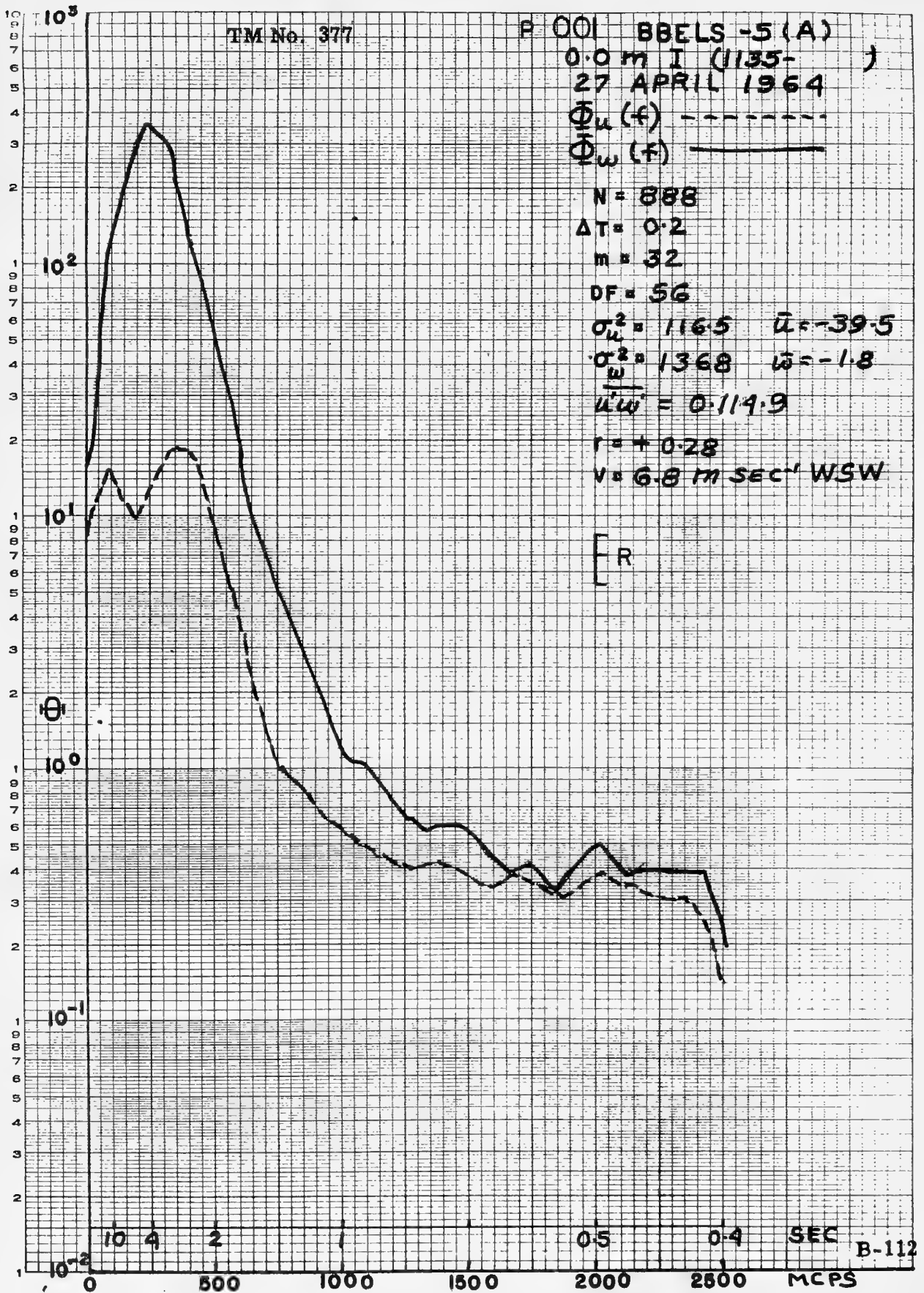
$\sigma_w^2 = 1368$ $\bar{w} = -1.8$

$\overline{uw} = 0.1149$

r = +0.28

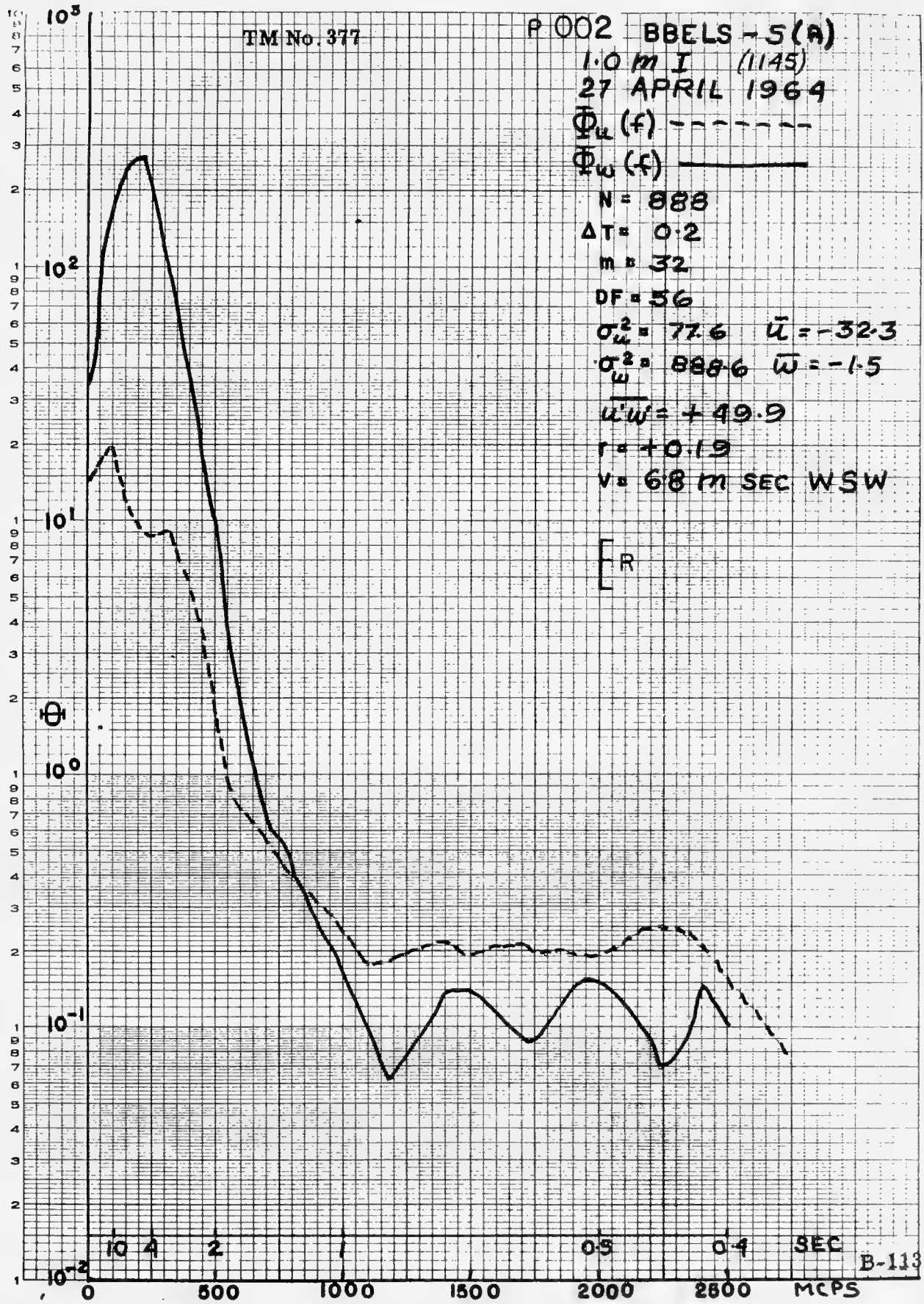
V = 6.8 m SEC⁻¹ WSW

[R



MADE IN U. S. A.

5 CYCLES X 10 DIVISIONS PER INCH



TM No. 377

P 003 BBELS-5 (A)
2.0 m I (1155-)
27 APRIL 1964

$\Phi_u(f)$ - - - - -

$\Phi_w(f)$ - - - - -

$N = 888$

$\Delta T = 0.2$

$m = 32$

$DF = 56$

$\sigma_u^2 = 69.5 \quad \bar{u} = -33.1$

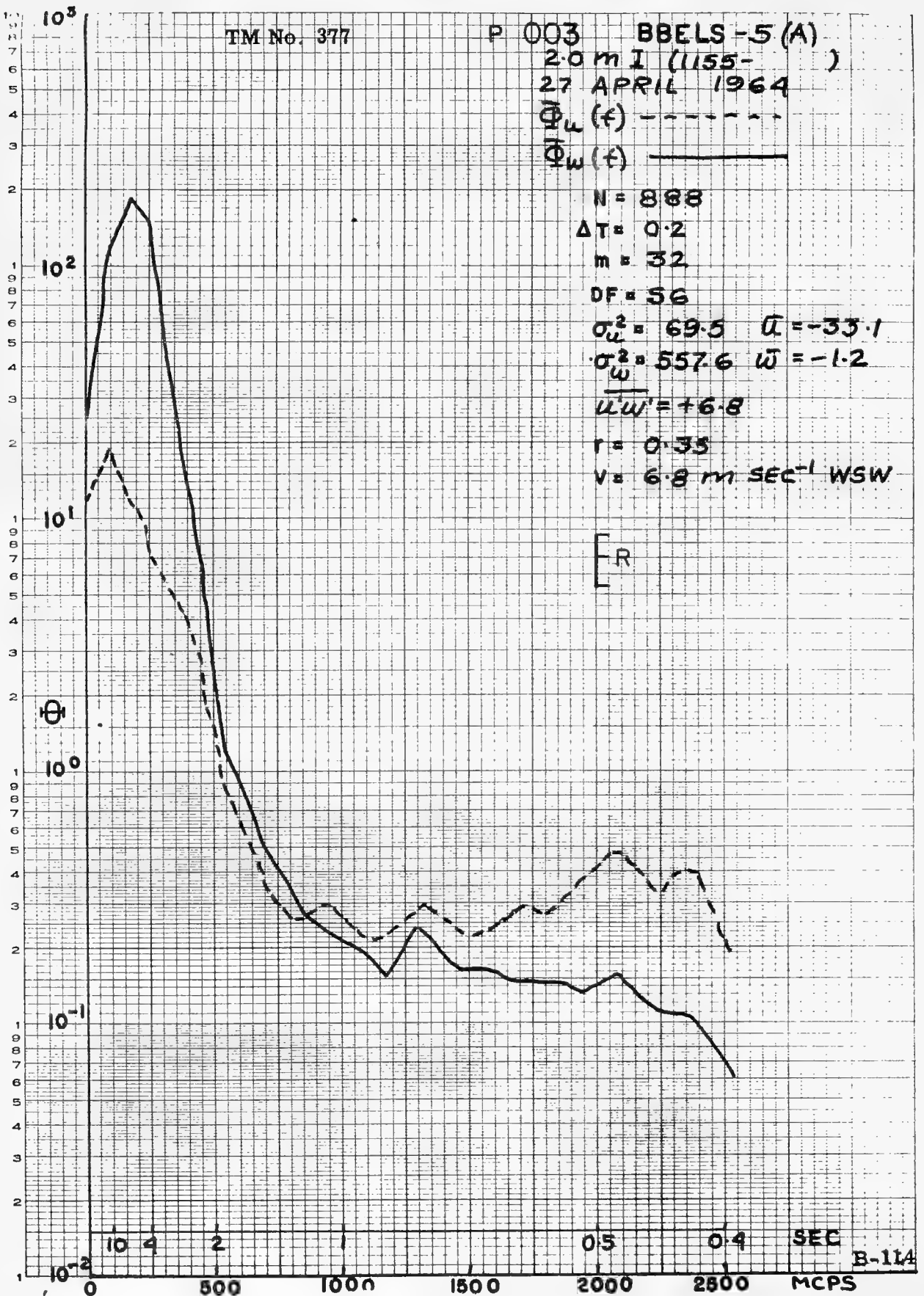
$\sigma_w^2 = 557.6 \quad \bar{w} = -1.2$

$\overline{u'w'} = +6.8$

$r = 0.35$

$V = 6.8 \text{ m SEC}^{-1} \text{ WSW}$

[R



MADE IN U.S.A.

5 CYCLES X 10 DIVISIONS PER INCH

TM No. 377

P 004 BBELS -5 (A)
4.0 m I (1255-)

27 APRIL 1964

$\Phi_u(f)$ - - - - -

$\Phi_w(f)$ - - - - -

N = 288

$\Delta T = 0.2$

m = 32

DF = 10

$\sigma_u^2 = 11.8$ $\bar{u} = -30.2$

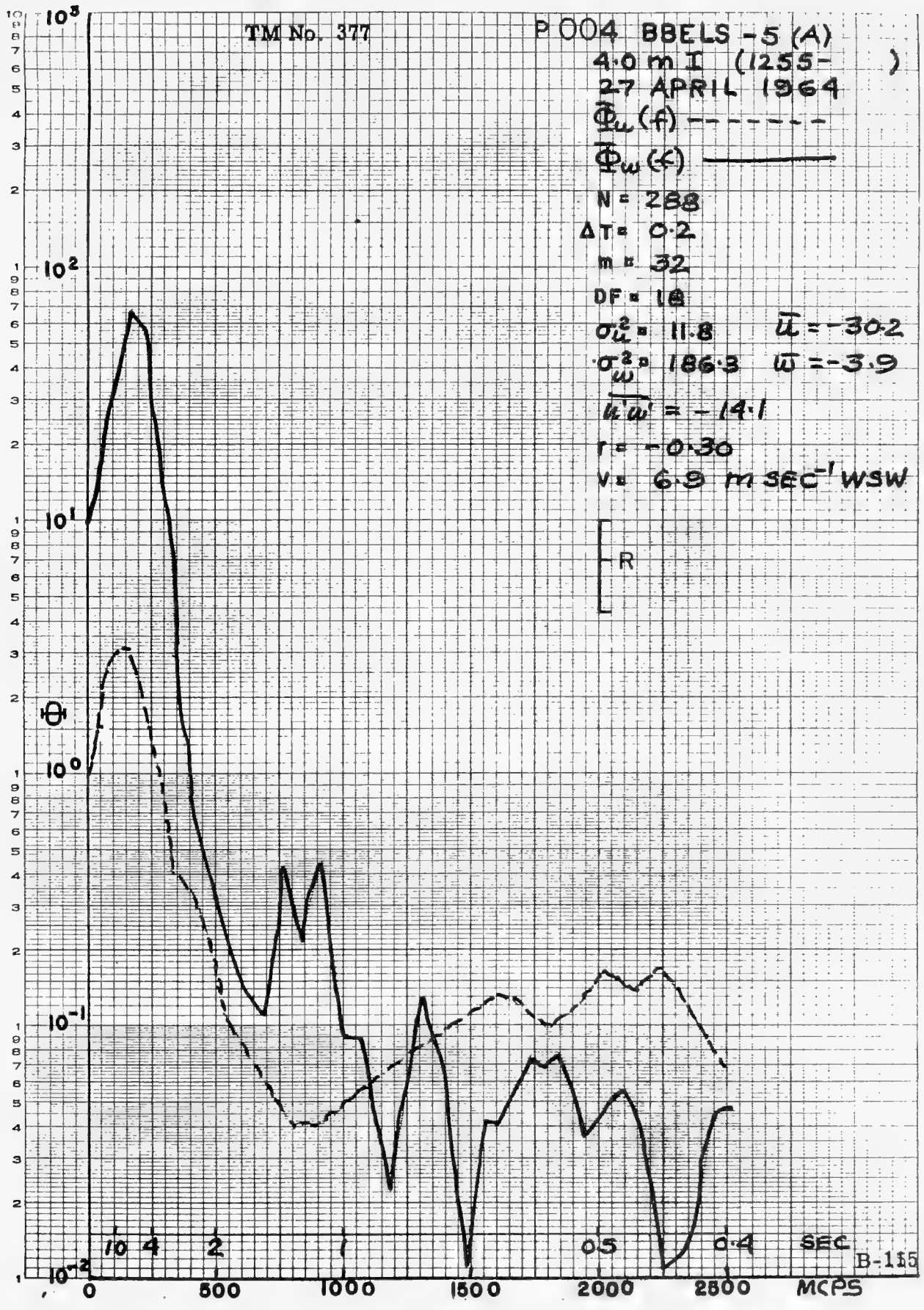
$\sigma_w^2 = 186.3$ $\bar{w} = -3.9$

$\overline{uw} = -14.1$

r = -0.30

V = 6.9 m SEC⁻¹ WSW

R



B-115

TM No. 377

P 005 BBELS - 5 (B)

3 m II (1305-)

27 APRIL 1964

$\Phi_u(t)$ - - - - -

$\Phi_w(t)$ - - - - -

N = 876

$\Delta T = 0.2$

m = 32

DF = 55

$\sigma_u^2 = 30.3$ $\bar{u} = -30.8$

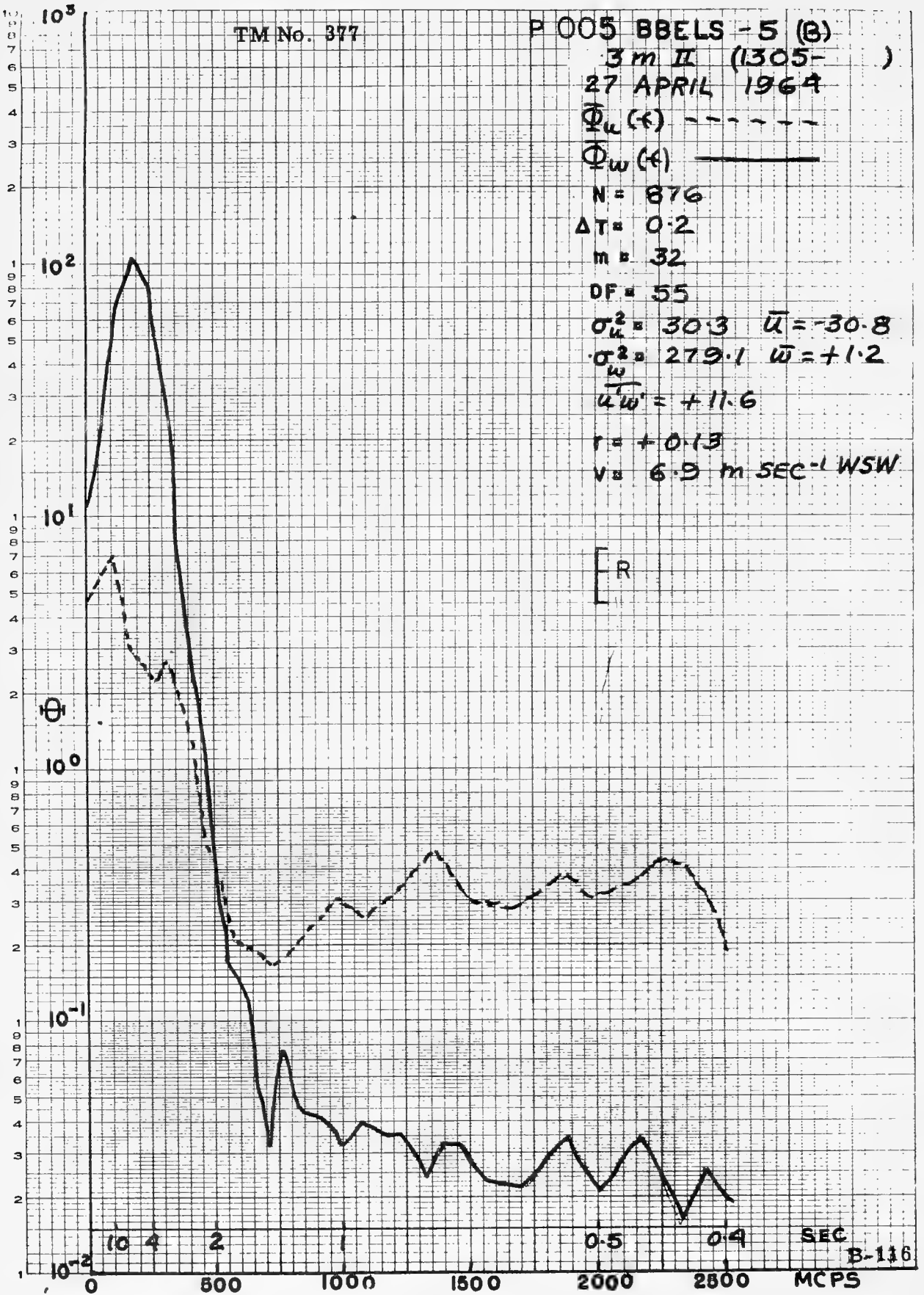
$\sigma_w^2 = 279.1$ $\bar{w} = +1.2$

$\overline{uw} = +11.6$

r = +0.13

V = 6.9 m SEC⁻¹ WSW

[R]



TM No. 377

P 006 BBELS -5 (B)

2.0 m II (1312 -)

27 APRIL 1964

$\Phi_u(f)$ - - - - -

$\Phi_w(f)$ - - - - -

N = 888

$\Delta T = 0.2$

m = 32

DF = 56

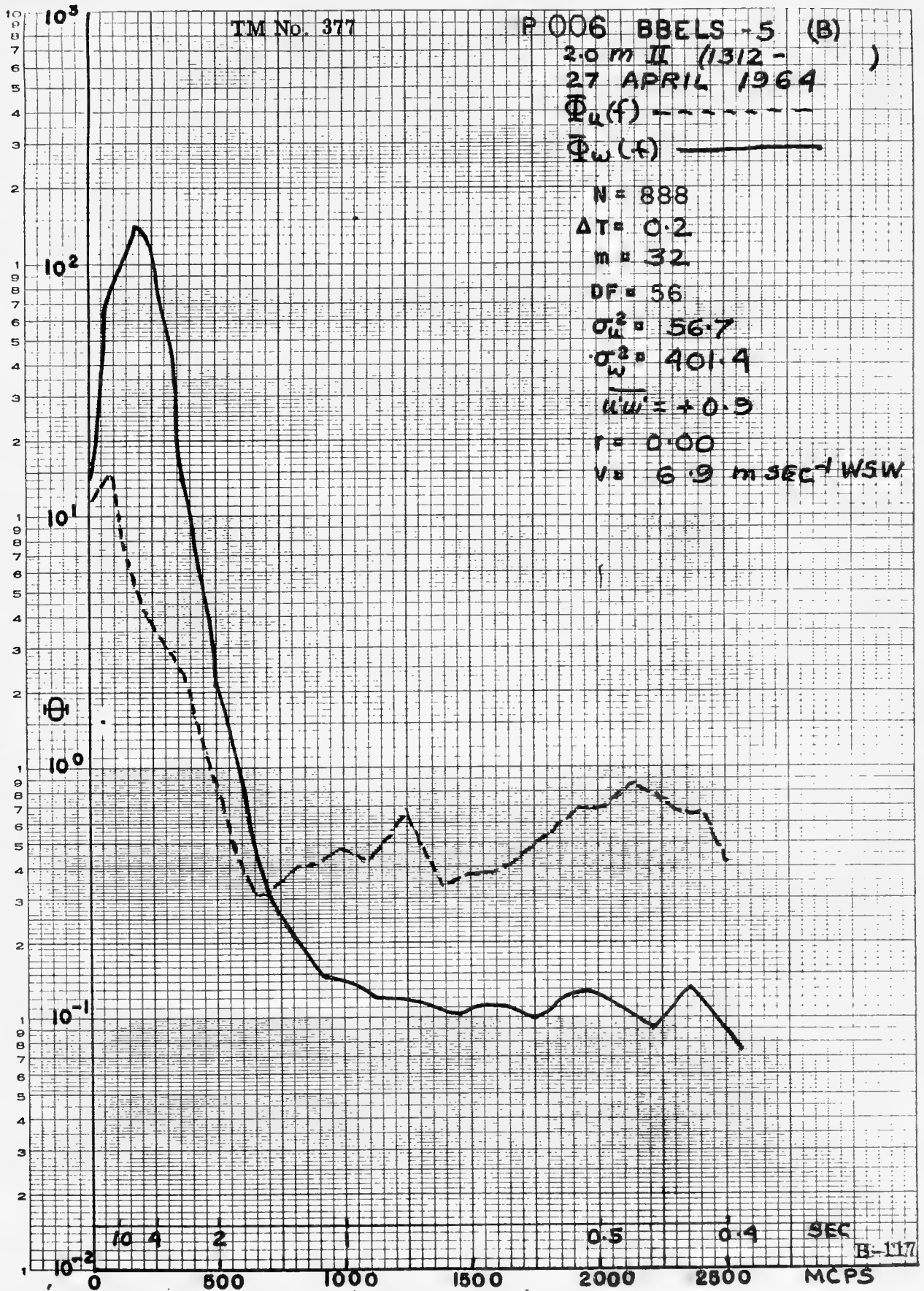
$\sigma_u^2 = 56.7$

$\sigma_w^2 = 401.4$

$\overline{u'w'} = +0.9$

r = 0.00

V = 6.9 m SEC⁻¹ WSW



TM No. 377

P 007 BBELS-5(B)
1.0M II (1320-)
27 APRIL 1964

$\bar{\Phi}_w(f)$ —————

$\bar{\Phi}_u(f)$ - - - - -

N = 888

$\Delta T = 0.2$

m = 32

DF = 56

$\sigma_w^2 = 621.8$ $\bar{w} = -1.0$

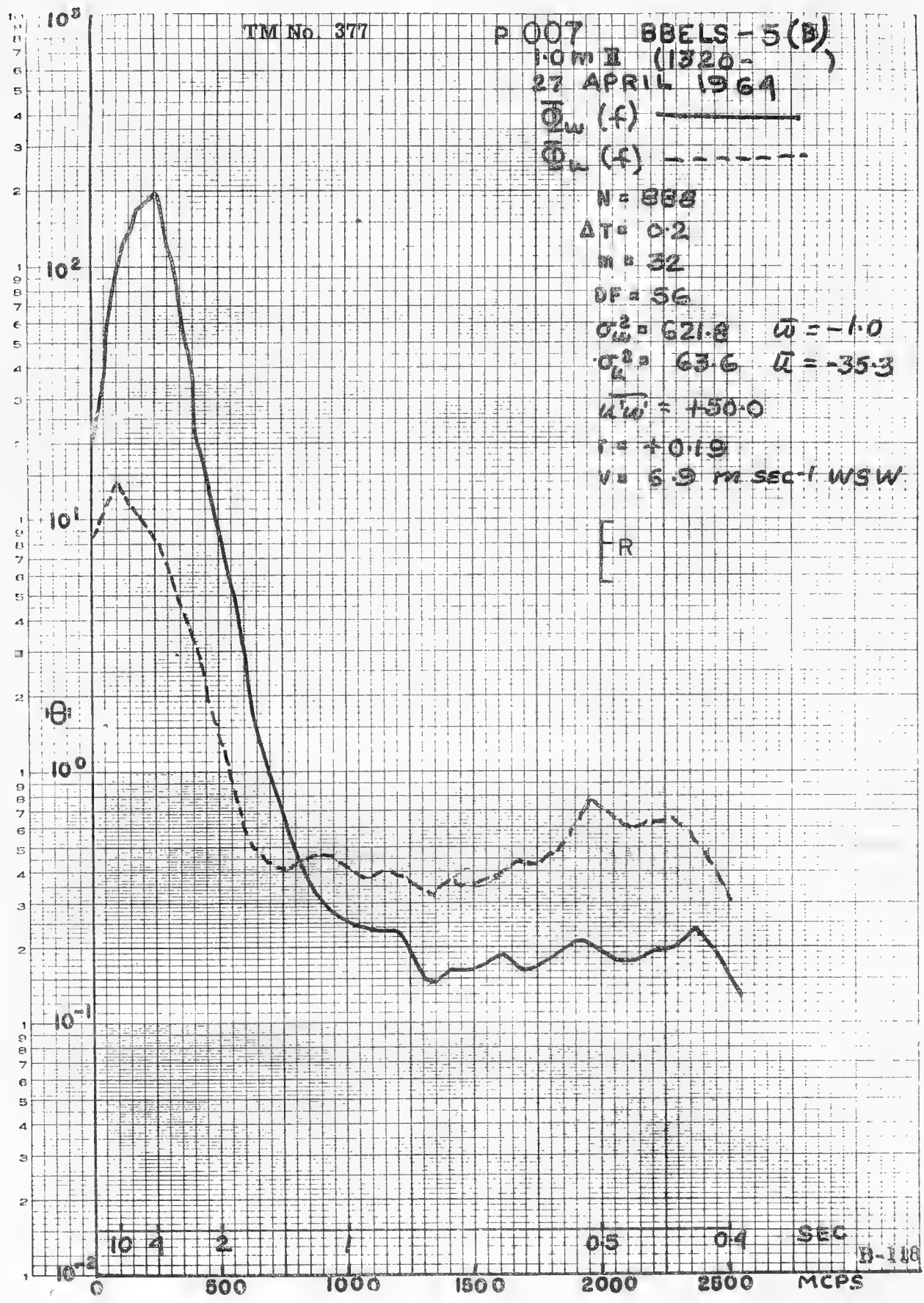
$\sigma_u^2 = 63.6$ $\bar{u} = -35.3$

$\overline{u'w'} = +50.0$

r = +0.19

V = 6.9 m sec⁻¹ WSW

[R]



B-118

TM No. 377

P 008 BBELS -5 (B)

0.0m II (1230-)

27 APRIL 1964

$\Phi_u (k)$ - - - - -

$\Phi_w (k)$ - - - - -

N = 876

$\Delta T = 0.2$

m = 32

DF = 55

$\sigma_u^2 = 79.6$ $\bar{u} = 33.4$

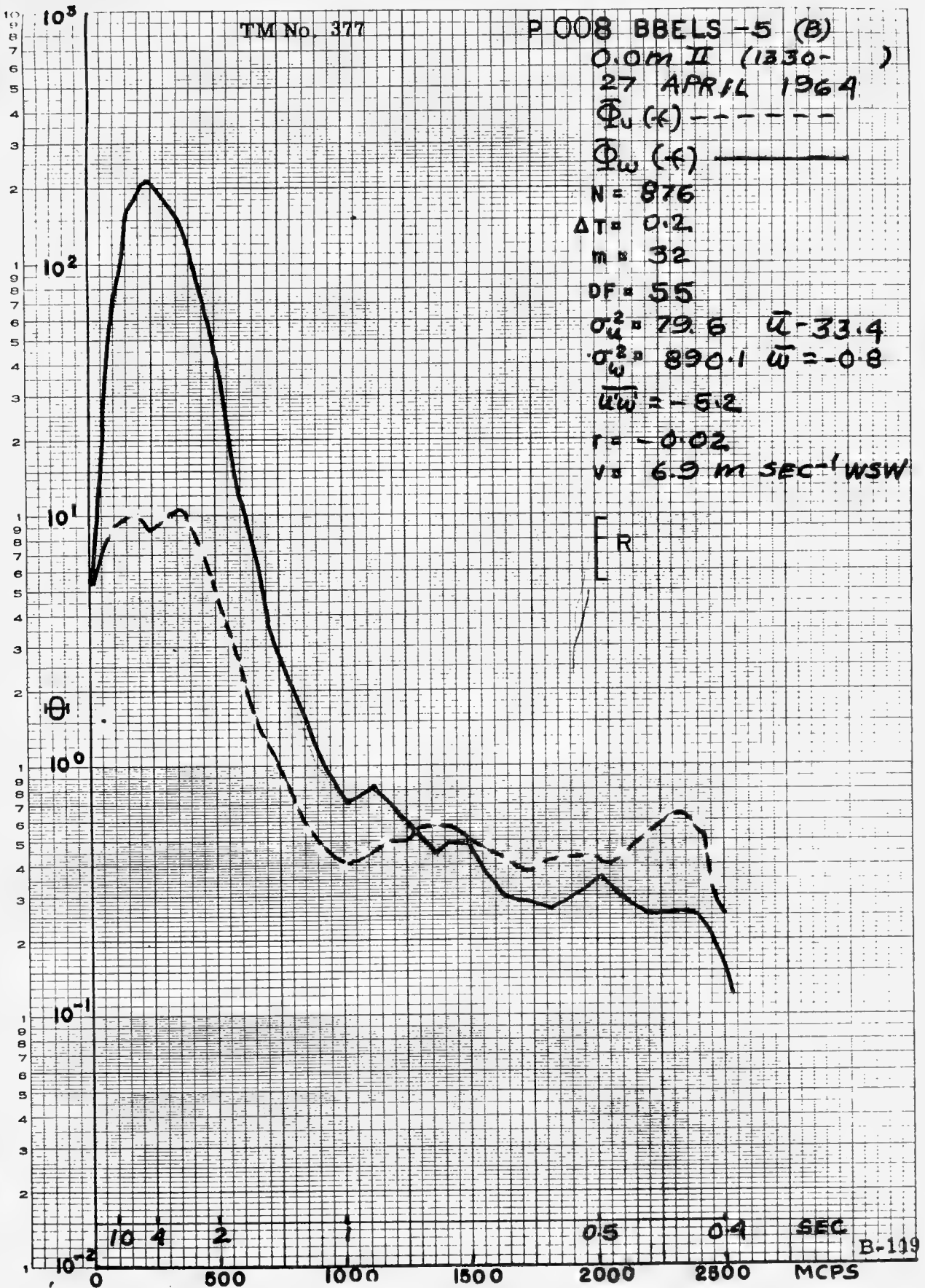
$\sigma_w^2 = 890.1$ $\bar{w} = -0.8$

$\overline{uw} = -5.2$

r = -0.02

$v = 6.9$ m SEC⁻¹ WSW

[R]



TM No. 377

P 009 BBELS-7

0.5 m I (1021-1026)

5 AUGUST 1964

$\Phi_w(t)$

N = 1328

$\Delta T = 0.2$

m = 50

DF = 55

$\sigma_w^2 = 1179$ $\bar{w} = -8.5$

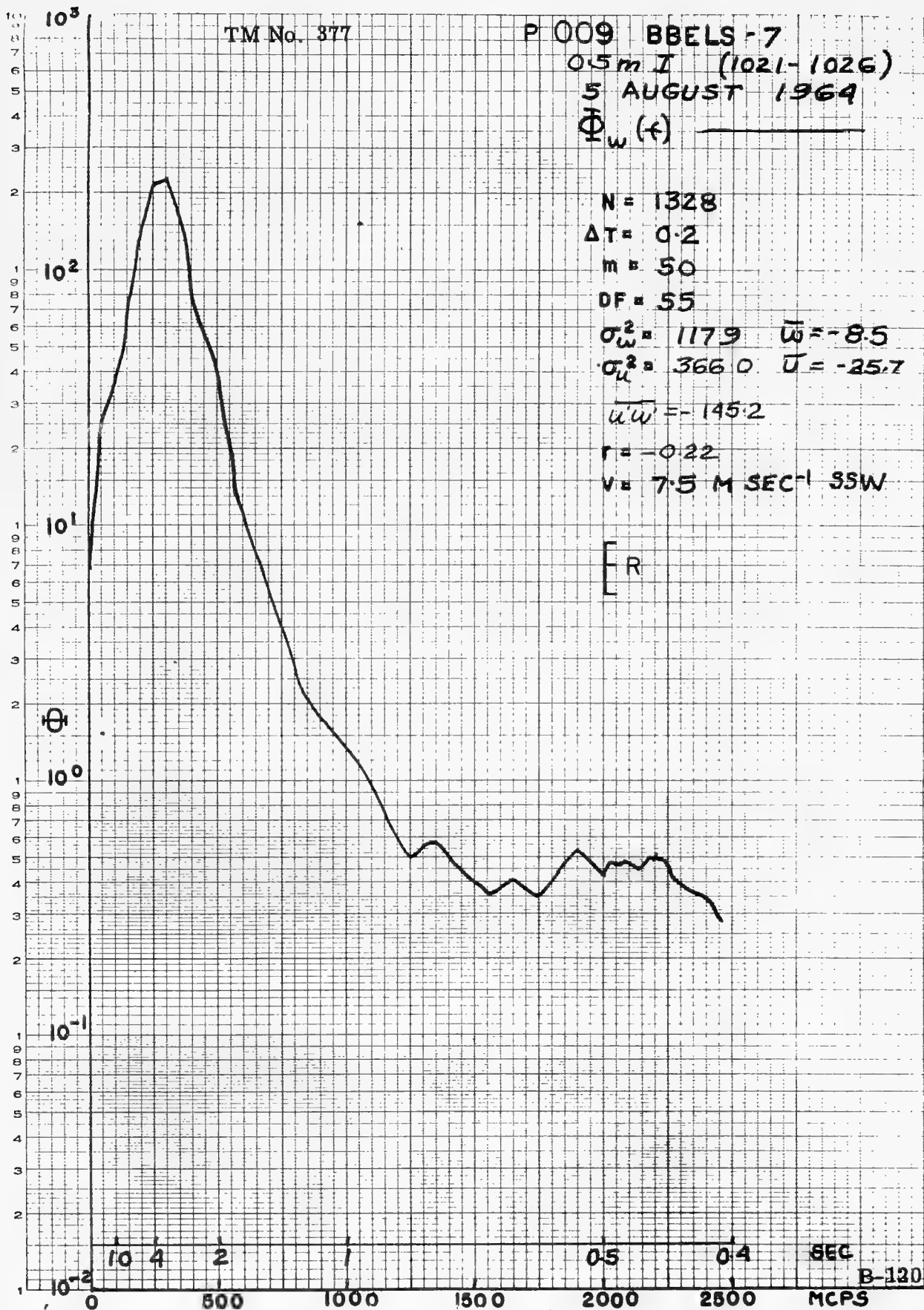
$\sigma_u^2 = 3660$ $\bar{u} = -25.7$

$\overline{uw} = -145.2$

r = -0.22

V = 7.5 M SEC⁻¹ SSW

[R



TM No. 377

P 010 BBELS -7

7.0 m I (1112-1116)

$\bar{\Phi}_u(t)$ - - - - -

$\bar{\Phi}_w(t)$ - - - - -

N = 1340

$\Delta T = 0.2$

m = 50

DF = 54

$\sigma_u^2 = 19.5$ $\bar{u} = -16.2$

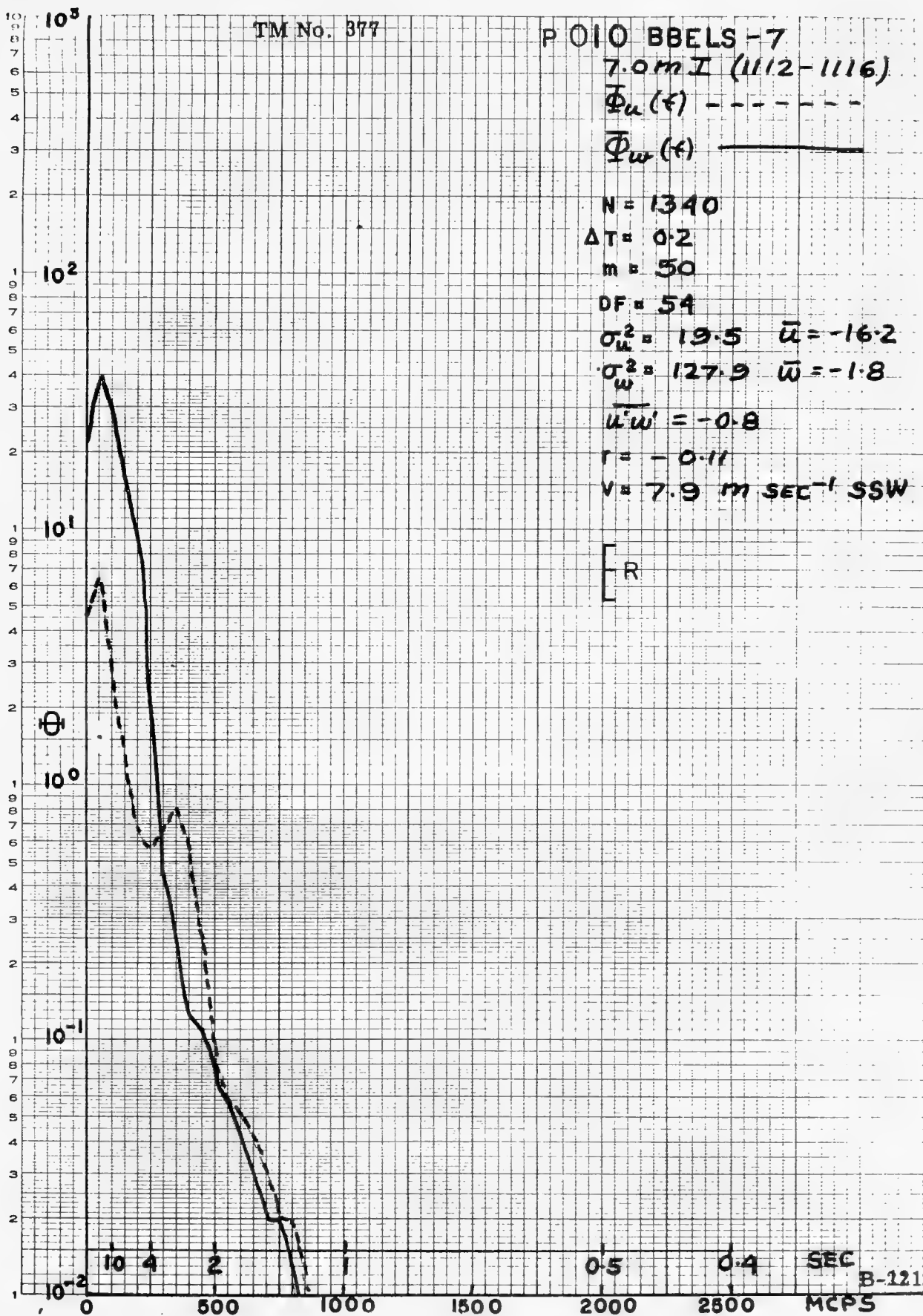
$\sigma_w^2 = 127.9$ $\bar{w} = -1.8$

$\overline{u'w'} = -0.8$

$r = -0.11$

V = 7.9 m SEC⁻¹ SSW

[R



MADE IN U.S.A.

5 CYCLES X 10 DIVISIONS PER INCH

TM No. 377

P O I I BBELS - 7
10.0 MI (1127-1132)
5 AUGUST 1969
 $\Phi_u(f)$ - - - - -
 $\Phi_w(f)$ - - - - -

$N = 1356$

$\Delta T = 0.2$

$m = 50$

$DF = 54$

$\sigma_u^2 = 20.8$ $\bar{u} = -20.5$

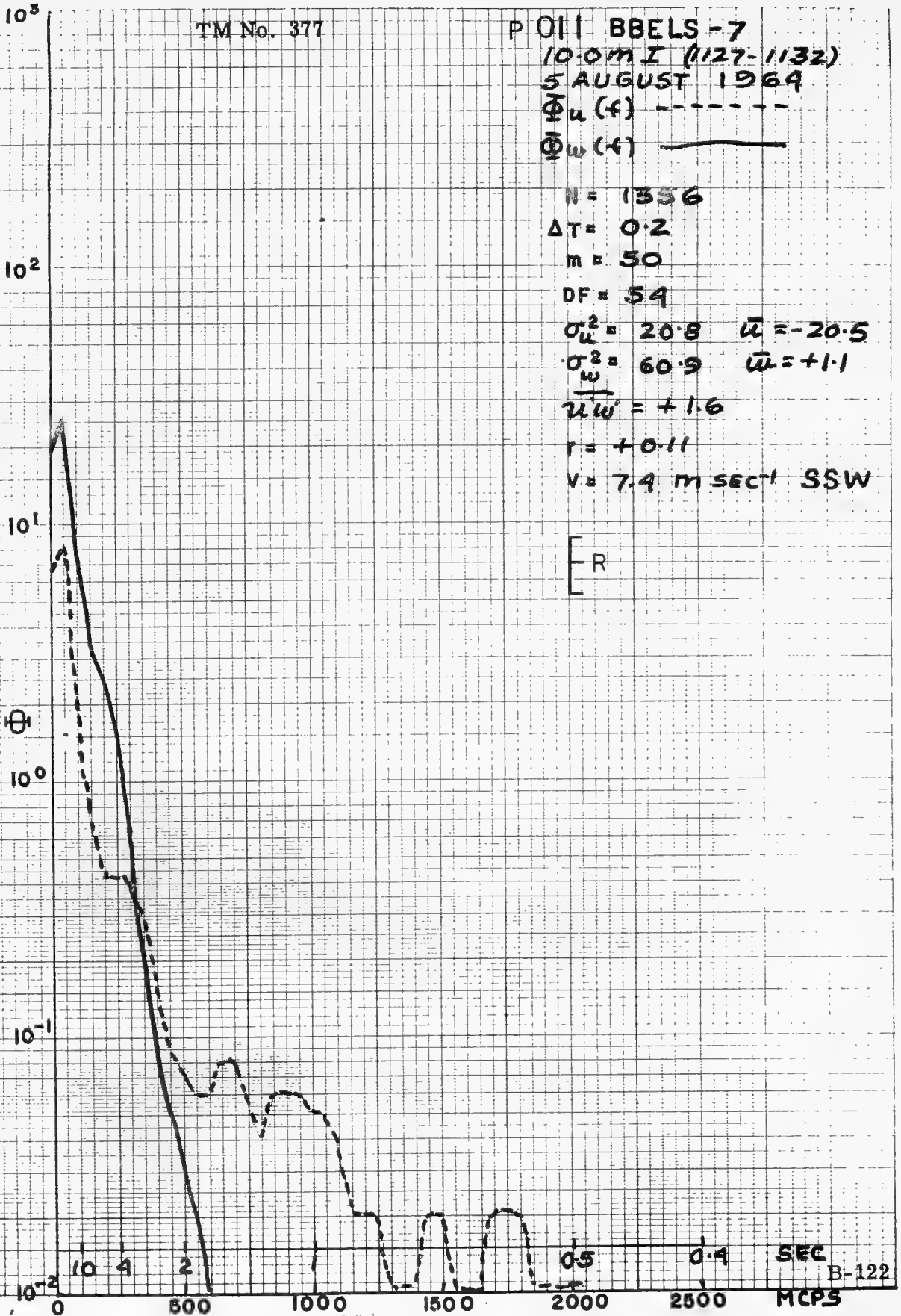
$\sigma_w^2 = 60.9$ $\bar{w} = +1.1$

$\overline{uw} = +1.6$

$r = +0.11$

$V = 7.4$ M SECT SSW

[R]



TM No. 377

P 012 BBELS - 7

15m I (1144-1200)
5 AUGUST 1964

$\Phi_u(f)$ - - - - -

$\Phi_w(f)$ - - - - -

N = 1386

$\Delta T = 0.2$

m = 50

DF = 55

$\sigma_u^2 = 89.9$ $\bar{u} = -16.2$

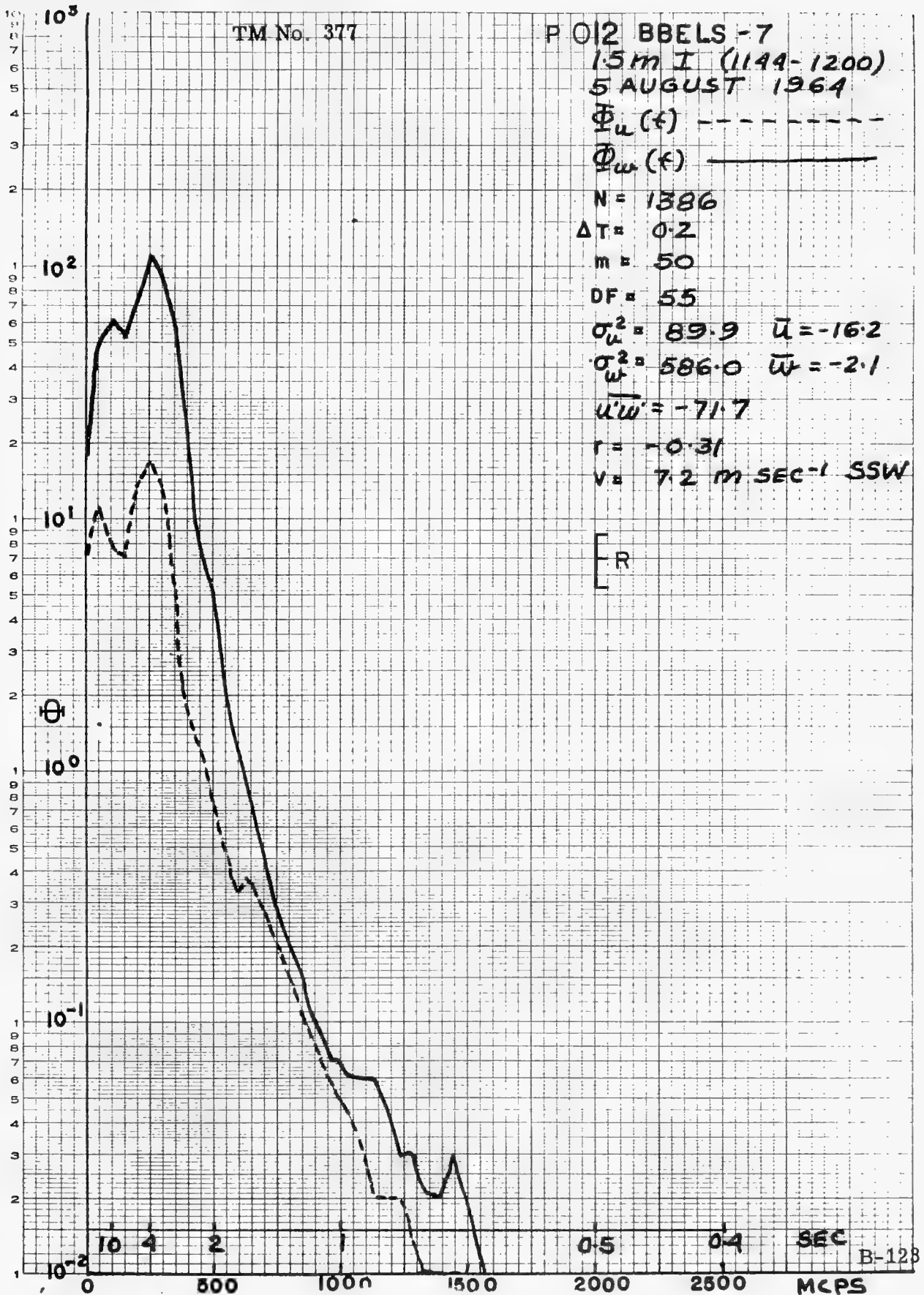
$\sigma_w^2 = 586.0$ $\bar{w} = -2.1$

$\overline{u'w'} = -71.7$

$r = -0.31$

$V = 7.2 \text{ m SEC}^{-1} \text{ SSW}$

[R



TM No. 377

P 013 BBELS -7
10.0 m III (1309-1314)
5 AUGUST 1964

$\Phi_U (f)$ - - - - -

$\Phi_W (f)$ ———

$N = 1528$

$\Delta T = 0.2$

$m = 50$

$DF = 53$

$\sigma_U^2 = 7.1$ $\bar{U} = -10.9$

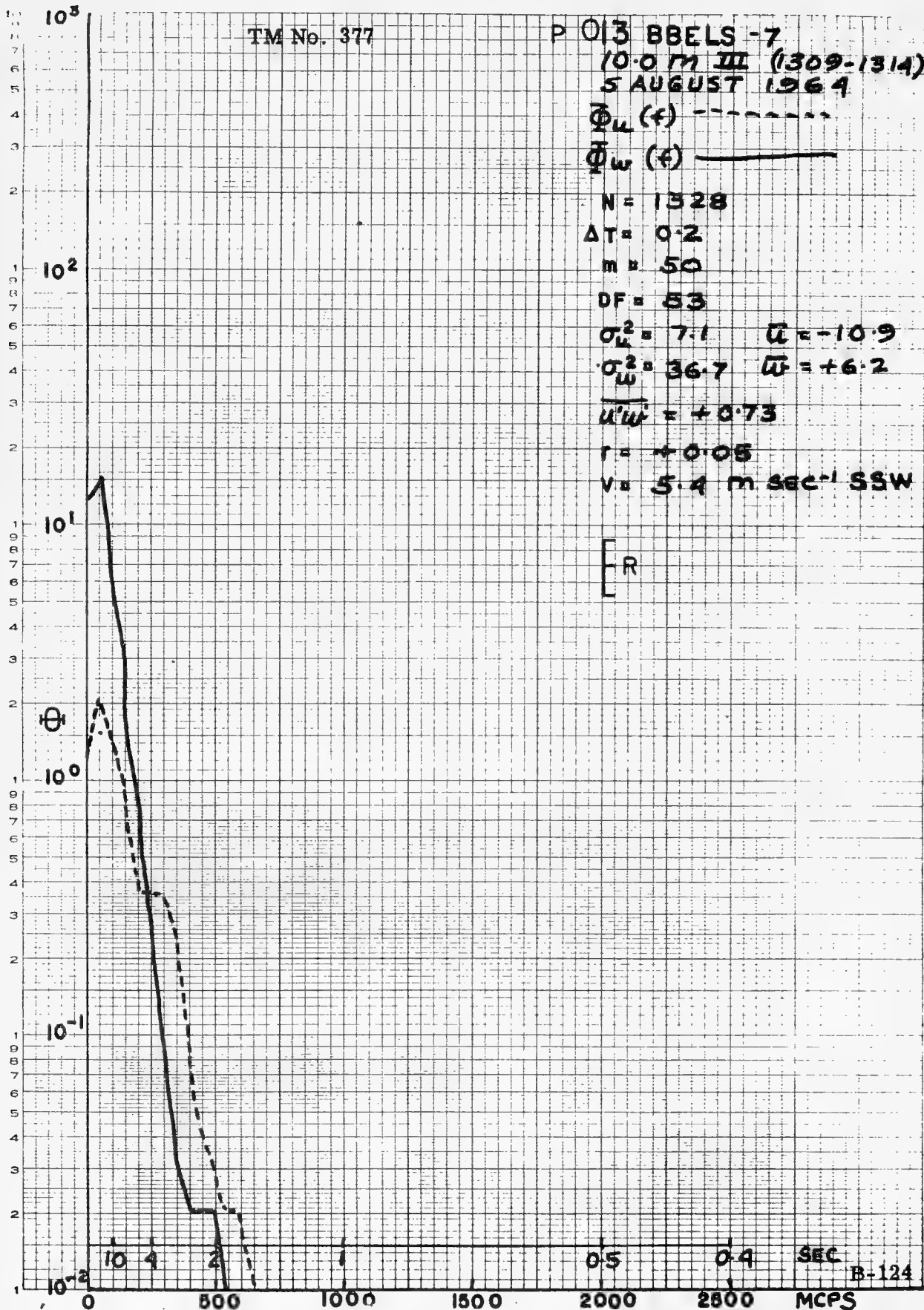
$\sigma_W^2 = 36.7$ $\bar{W} = +6.2$

$\overline{u'w'} = +0.73$

$r = +0.05$

$V = 5.4 \text{ m sec}^{-1} \text{ SSW}$

[R



TM No. 377

P 014 BBELS-7
9.0 m I (1319-1324)
5 AUGUST 1964

$\Phi_u(t)$ - - - - -
 $\Phi_w(t)$ - - - - -

$N = 1218$

$\Delta T = 0.2$

$m = 50$

$DF = 49$

$\sigma_u^2 = 4.5 \quad \bar{u} = -9.8$

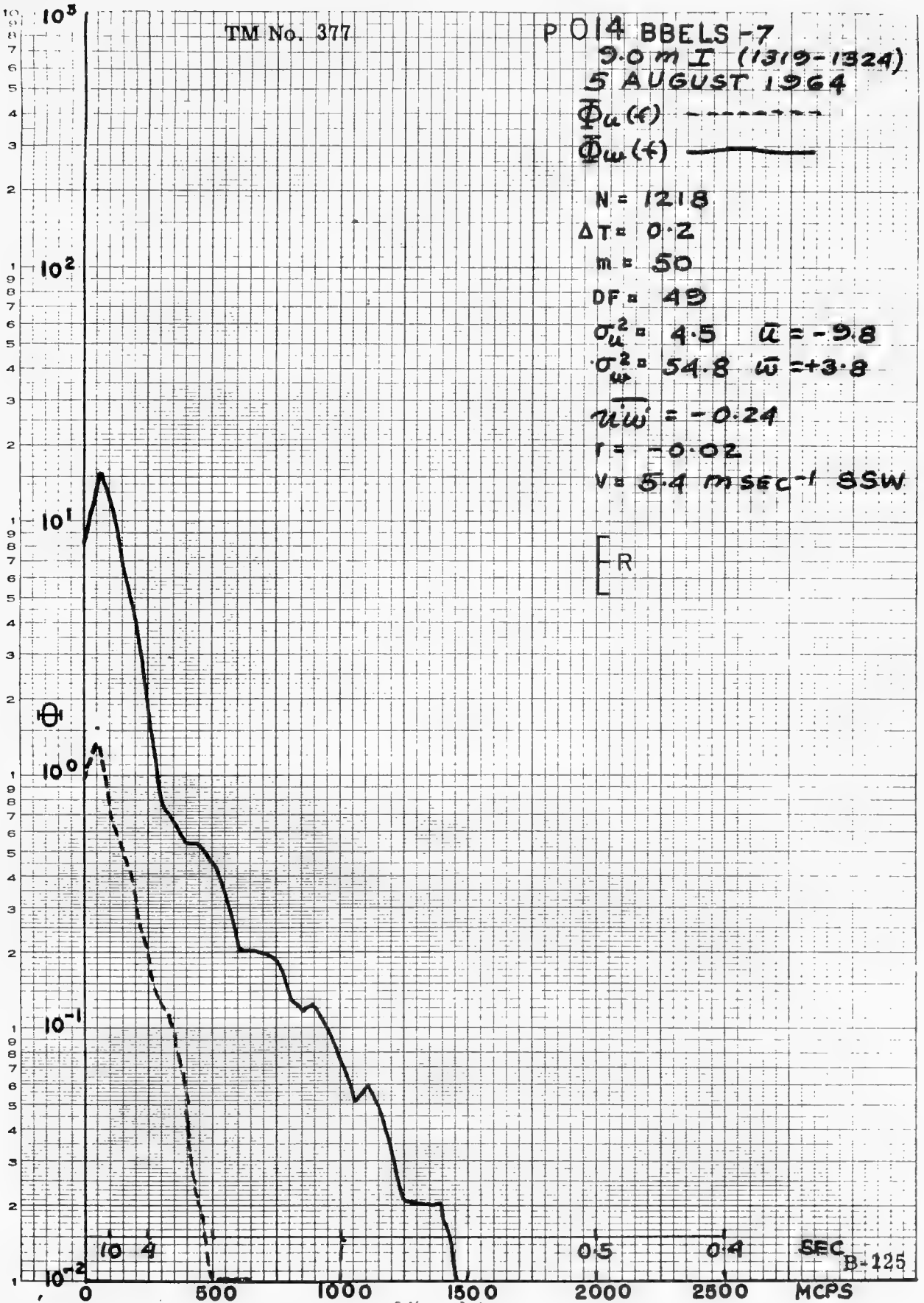
$\sigma_w^2 = 54.8 \quad \bar{w} = +3.8$

$\overline{uw} = -0.24$

$r = -0.02$

$V = 5.4 \text{ m SEC}^{-1} \text{ SSW}$

[R]



... 5 CYCLES X 10 DIVISIONS PER INCH

B-125

TM No. 377

P 015 BBELS-7
8.0 MI (1328-1333)
5 AUGUST 1964

$\Phi_u(f)$ - - - - -

$\Phi_w(f)$ - - - - -

N = 1129

$\Delta T = 0.2$

m = 50

DF = 45

$\sigma_u^2 = 18.0$ $\bar{u} = -9.3$

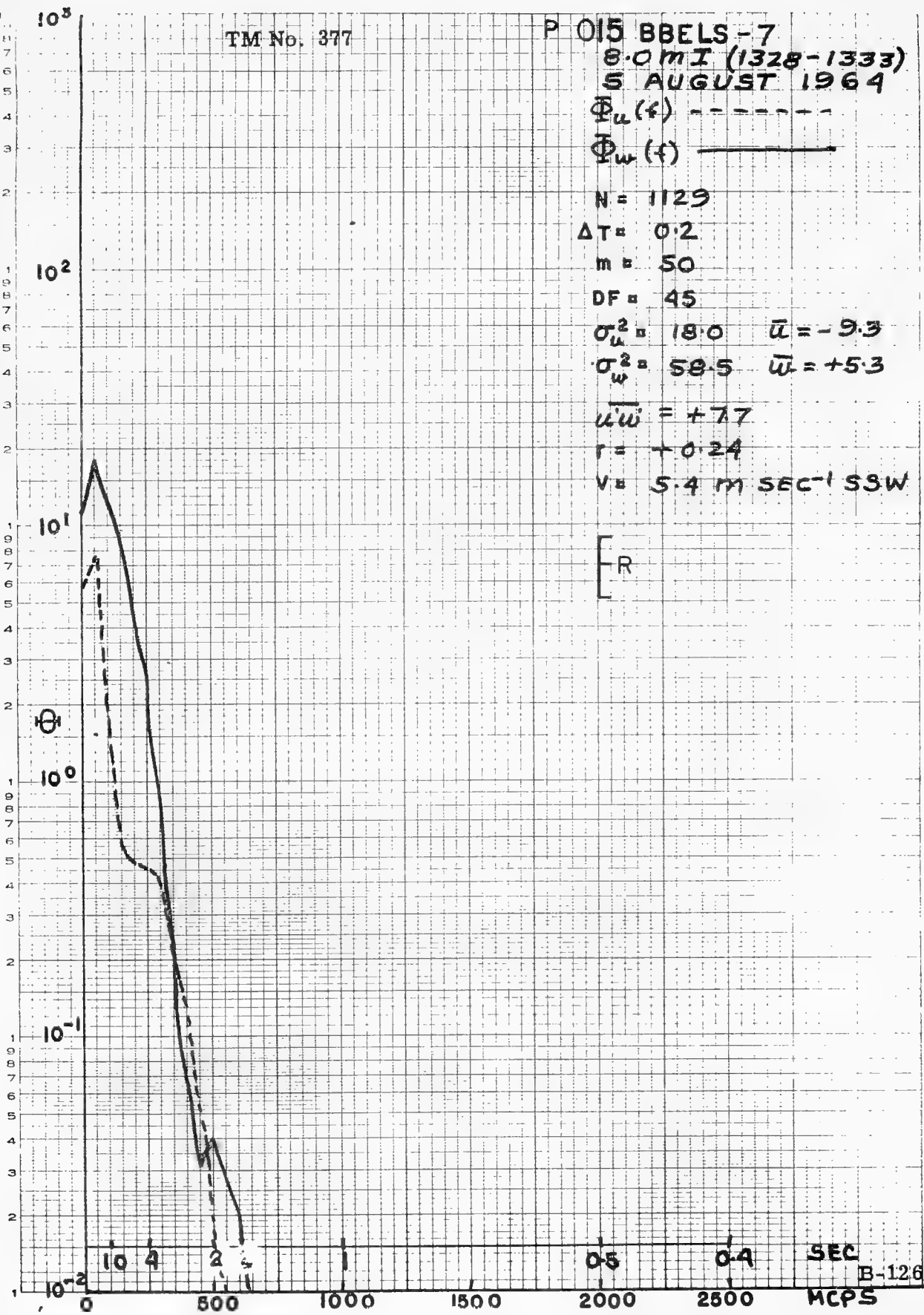
$\sigma_w^2 = 58.5$ $\bar{w} = +5.3$

$\overline{uw} = +7.7$

r = +0.24

V = 5.4 M SEC⁻¹ SSW

[R



TM No. 377

P 016 BBELS-7

6.0 m I (1348-1353)

5 AUGUST 1969

$\Phi_u(f)$ - - - - -

$\Phi_w(f)$ - - - - -

N = 1266

$\Delta T = 0.2$

m = 50

DF = 51

$\sigma_u^2 = 10.0$ $\bar{u} = -12.7$

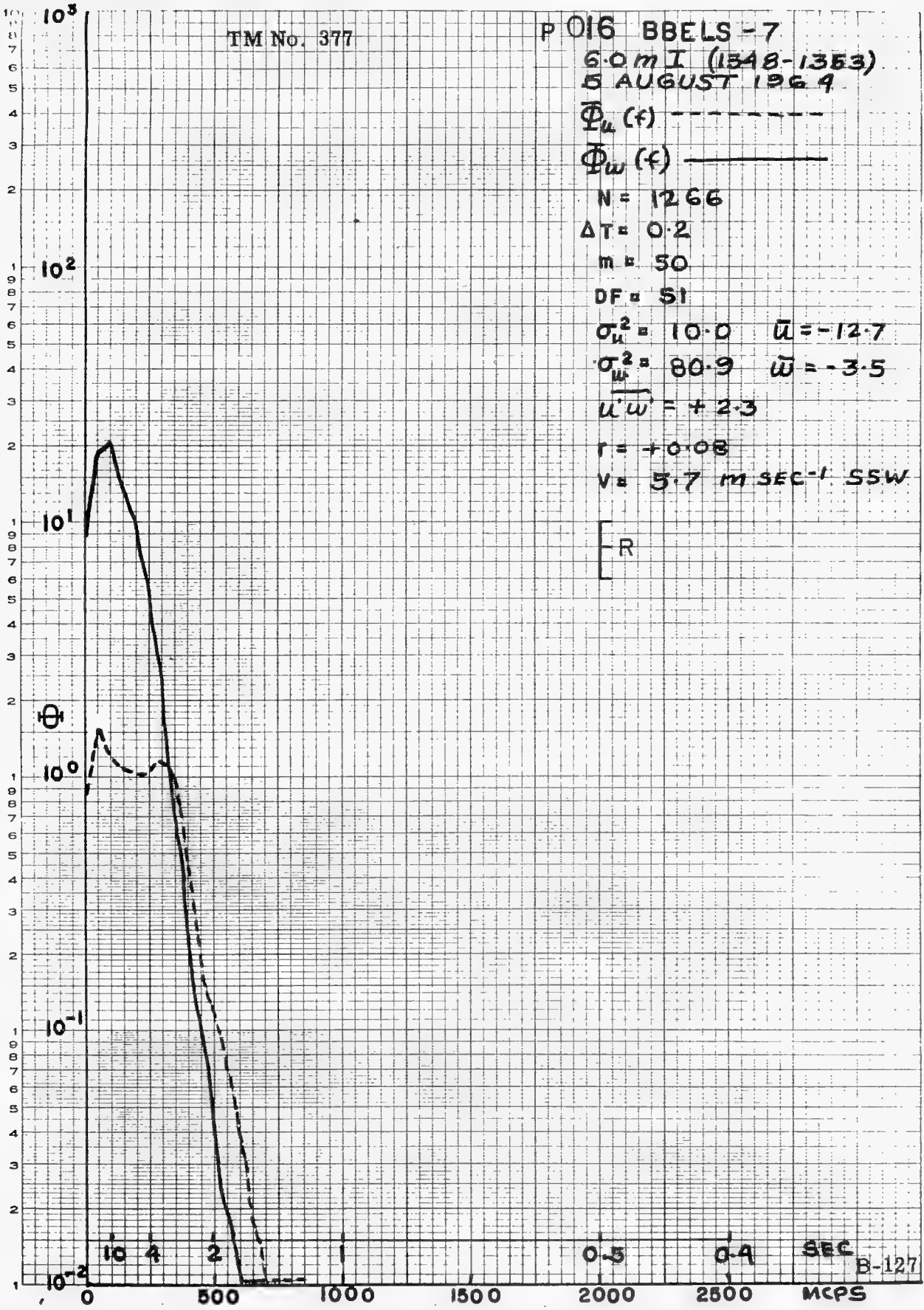
$\sigma_w^2 = 80.9$ $\bar{w} = -3.5$

$\overline{u'w'} = +2.3$

r = +0.08

V = 5.7 m sec⁻¹ SSW

[R]



5 CYCLES X 10 DIVISIONS PER INCH

B-127

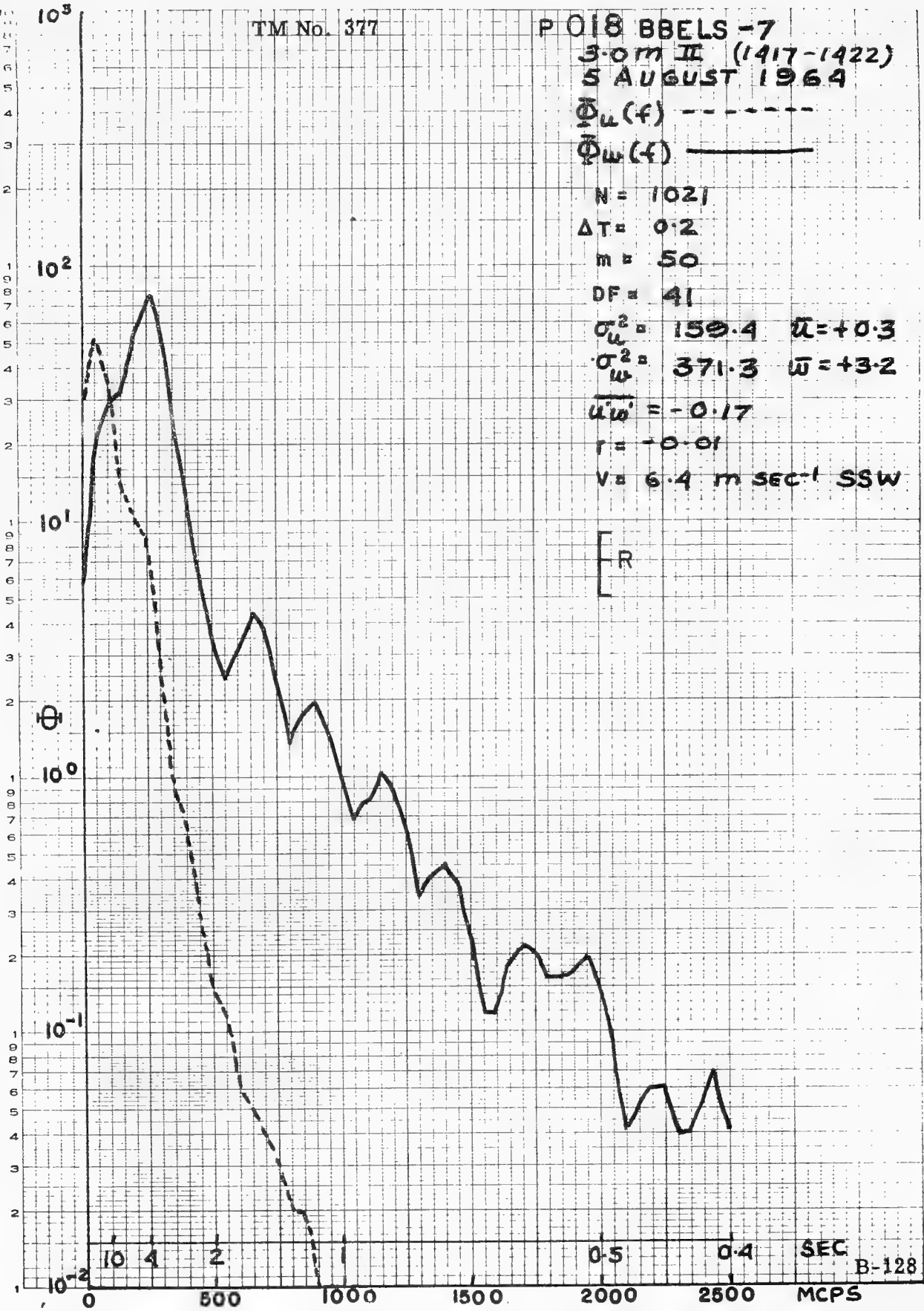
TM No. 377

P 018 BBELS -7
30m II (1417-1422)
5 AUGUST 1964

$\Phi_u(f)$ - - - - -
 $\Phi_w(f)$ - - - - -

N = 1021
 $\Delta T = 0.2$
m = 50
DF = 41
 $\sigma_u^2 = 159.4$ $\bar{u} = +0.3$
 $\sigma_w^2 = 371.3$ $\bar{w} = +3.2$
 $\overline{uw} = -0.17$
 $r = -0.01$
V = 6.4 m SEC⁻¹ SSW

[R



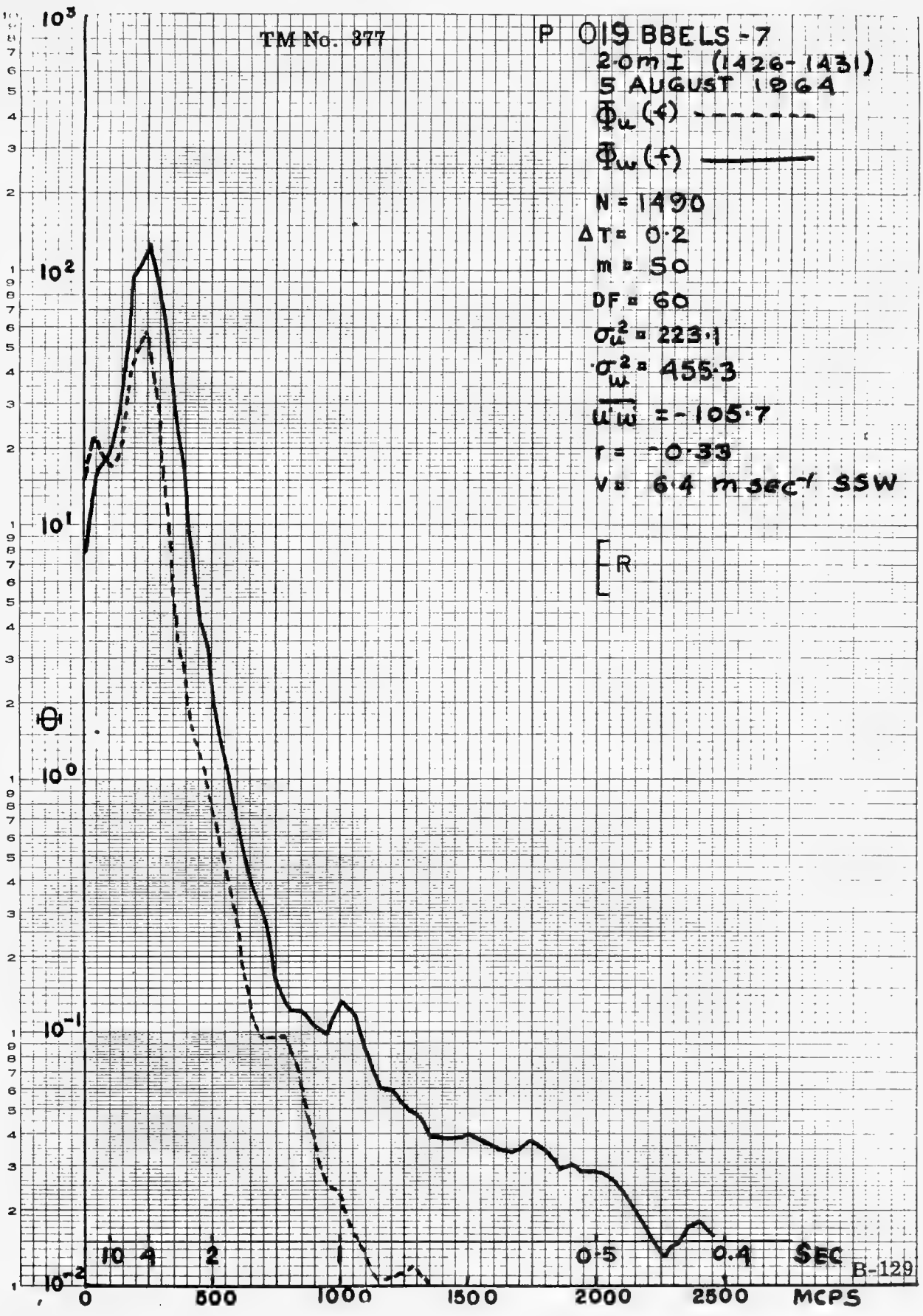
TM No. 377

P 019 BBELS-7
20m I (1426-1431)
5 AUGUST 1964

$\Phi_u(f)$ - - - - -
 $\Phi_w(f)$ - - - - -

$N = 1490$
 $\Delta T = 0.2$
 $m = 50$
 $DF = 60$
 $\sigma_u^2 = 223.1$
 $\sigma_w^2 = 455.3$
 $\overline{u'w'} = -105.7$
 $r = -0.33$
 $V = 6.4 \text{ m sec}^{-1} \text{ SSW}$

[R



MADE IN U. S. A.
5 CYCLES X 10 DIVISIONS PER INCH

TM No. 377

P 020 BBELS-8

1.0 m I (1310-1315)

7 DEC. 1969

$\Phi_u(f)$ - - - - -

$\Phi_w(f)$ - - - - -

$N = 1245$

$\Delta T = 0.2$

$m = 50$

$DF = 50$

$\sigma_u^2 = 183.8$ $\bar{u} = 21.6$

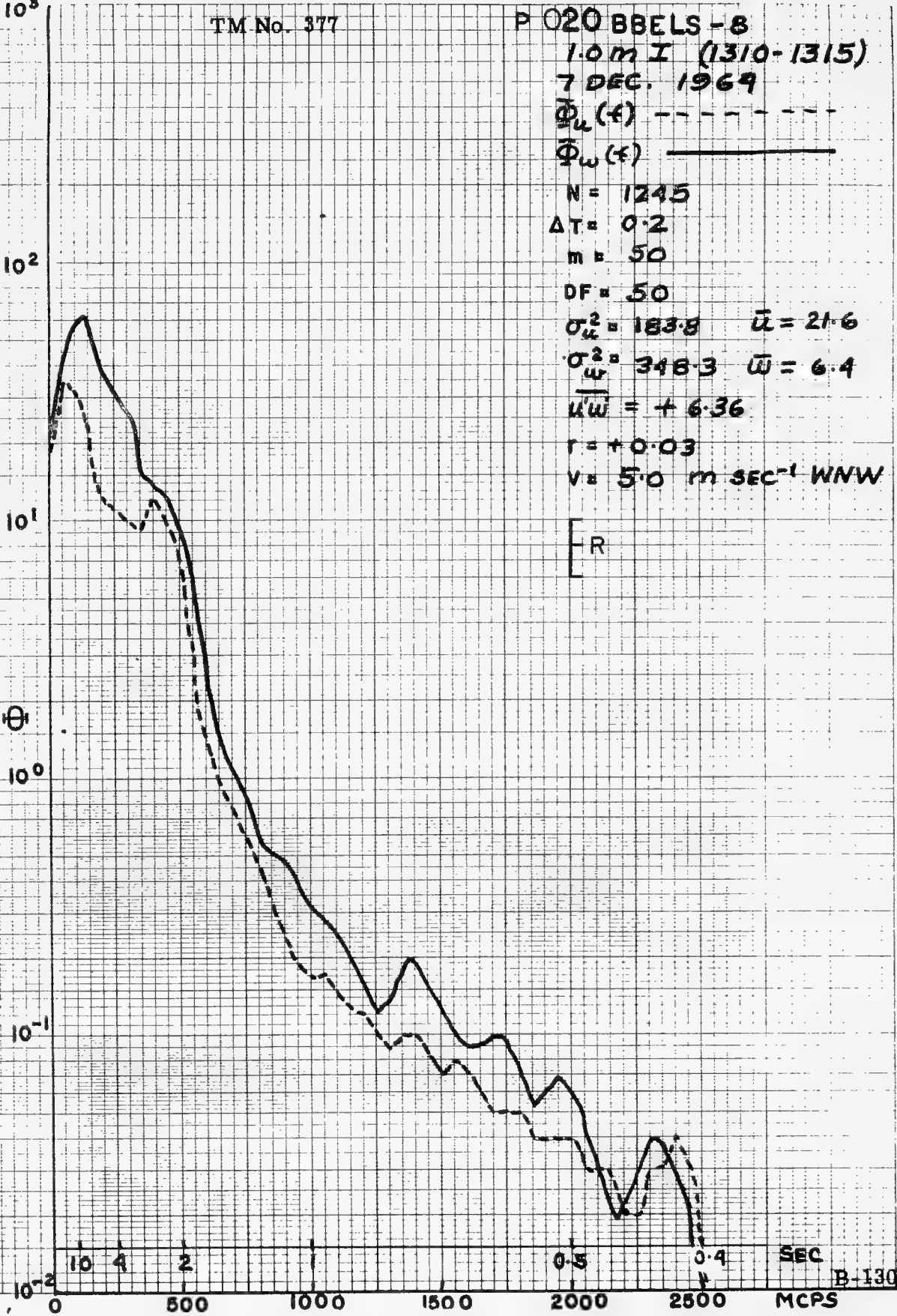
$\sigma_w^2 = 348.3$ $\bar{w} = 6.4$

$\overline{uw} = +6.36$

$r = +0.03$

$V = 5.0 \text{ m SEC}^{-1} \text{ WNW}$

[R



TM No. 377

P 021 BBELS - 8

0.5 m I (1324-1329)

7 DEC. 1964

$\Phi_u(t)$ - - - - -

$\Phi_w(t)$ - - - - -

N = 1576

$\Delta T = 0.2$

m = 50

DF = 63

$\sigma_u^2 = 354.1$ $\bar{u} = +16.8$

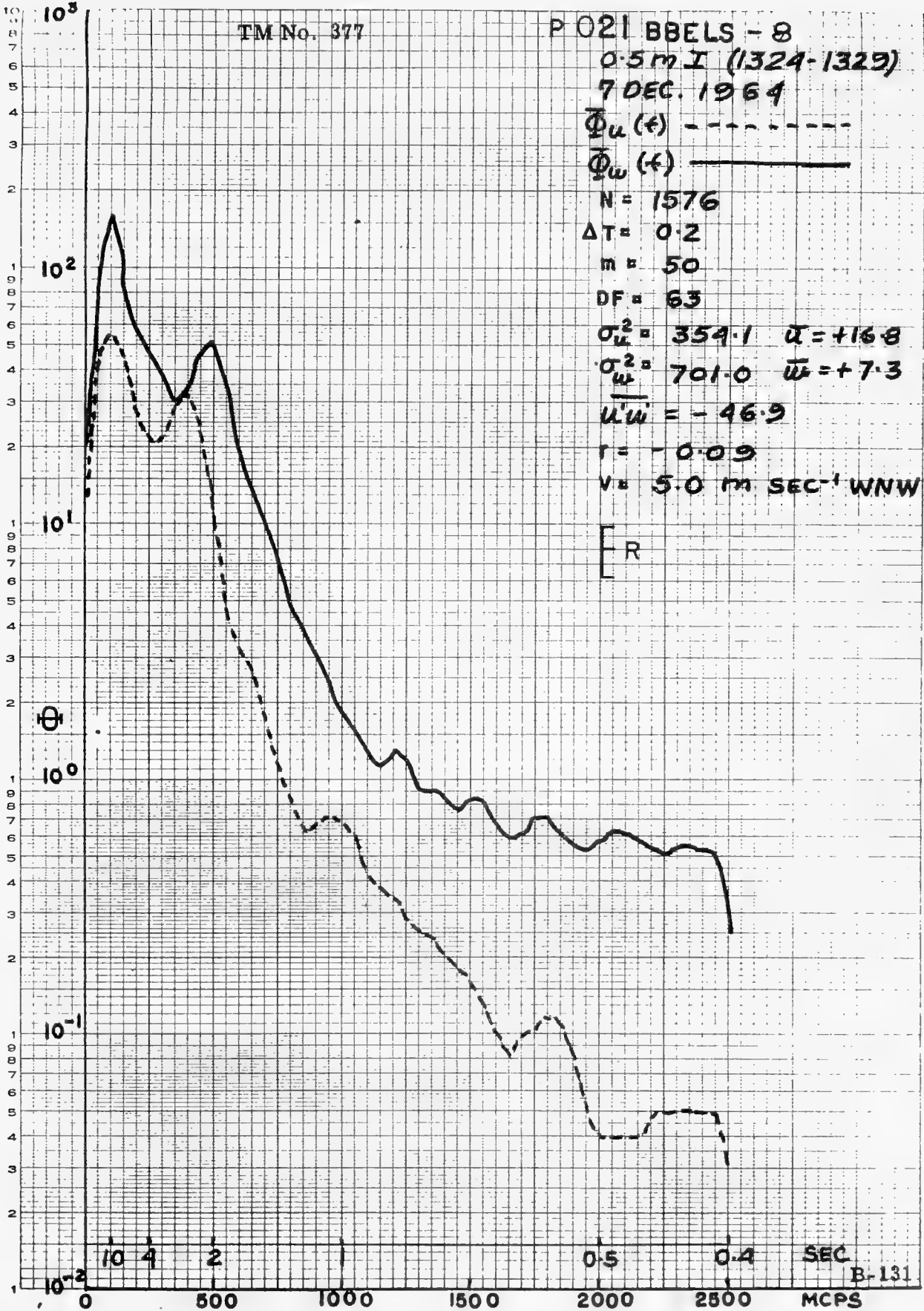
$\sigma_w^2 = 701.0$ $\bar{w} = +7.3$

$\overline{u'w'} = -46.9$

$r = -0.09$

V = 5.0 m SEC⁻¹ WNW

[R



5 CYCLES X 10 DIVISIONS PER INCH

TM No. 377

P 022 BBELS - 8

2.0 m I 1337-1342

7 DEC. 1964

$\Phi_u(\epsilon)$ - - - - -

$\Phi_w(\epsilon)$ - - - - -

N = 1359

$\Delta T = 0.2$

m = 50

DF = 54

$\sigma_u^2 = 239.7$ $\bar{u} = +3.7$

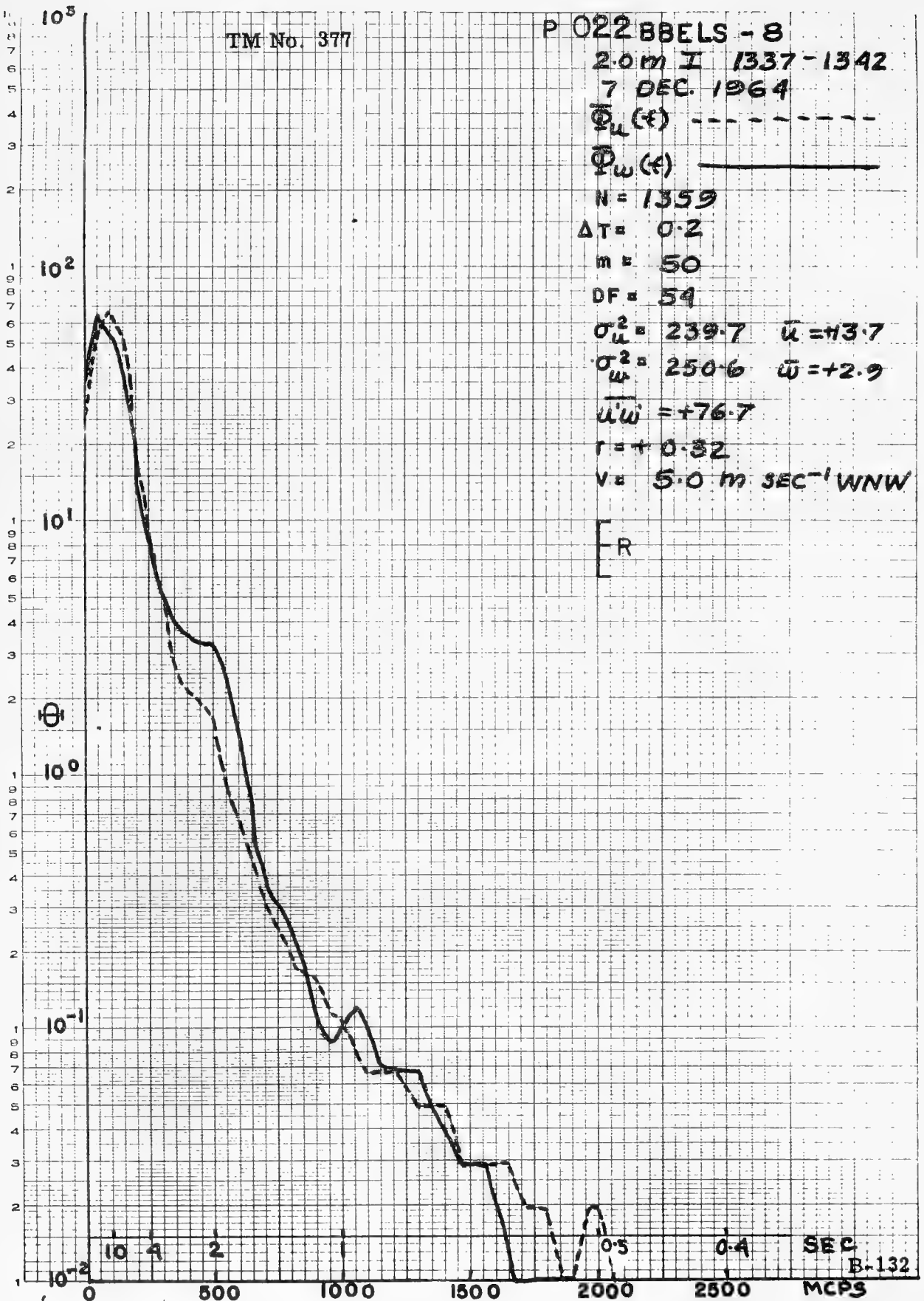
$\sigma_w^2 = 250.6$ $\bar{w} = +2.9$

$\bar{uw} = +76.7$

$r = +0.32$

$V = 5.0$ m SEC⁻¹ WNW

[R]



SEC
B-132

TM No. 377

P 023(U) BBELS 9
0.5 MI (145-1150)
26 JANUARY 1965

$\Phi_u(t)$ - - - - -
 $\Phi_w(t)$ - - - - -

$N = 1341$

$\Delta T = 0.2$

$m = 50$

$DF = 54$

$\sigma_u^2 = 570.0 \quad \bar{u} = -5.5$

$\sigma_w^2 = 708.5 \quad \bar{w} = 0.3$

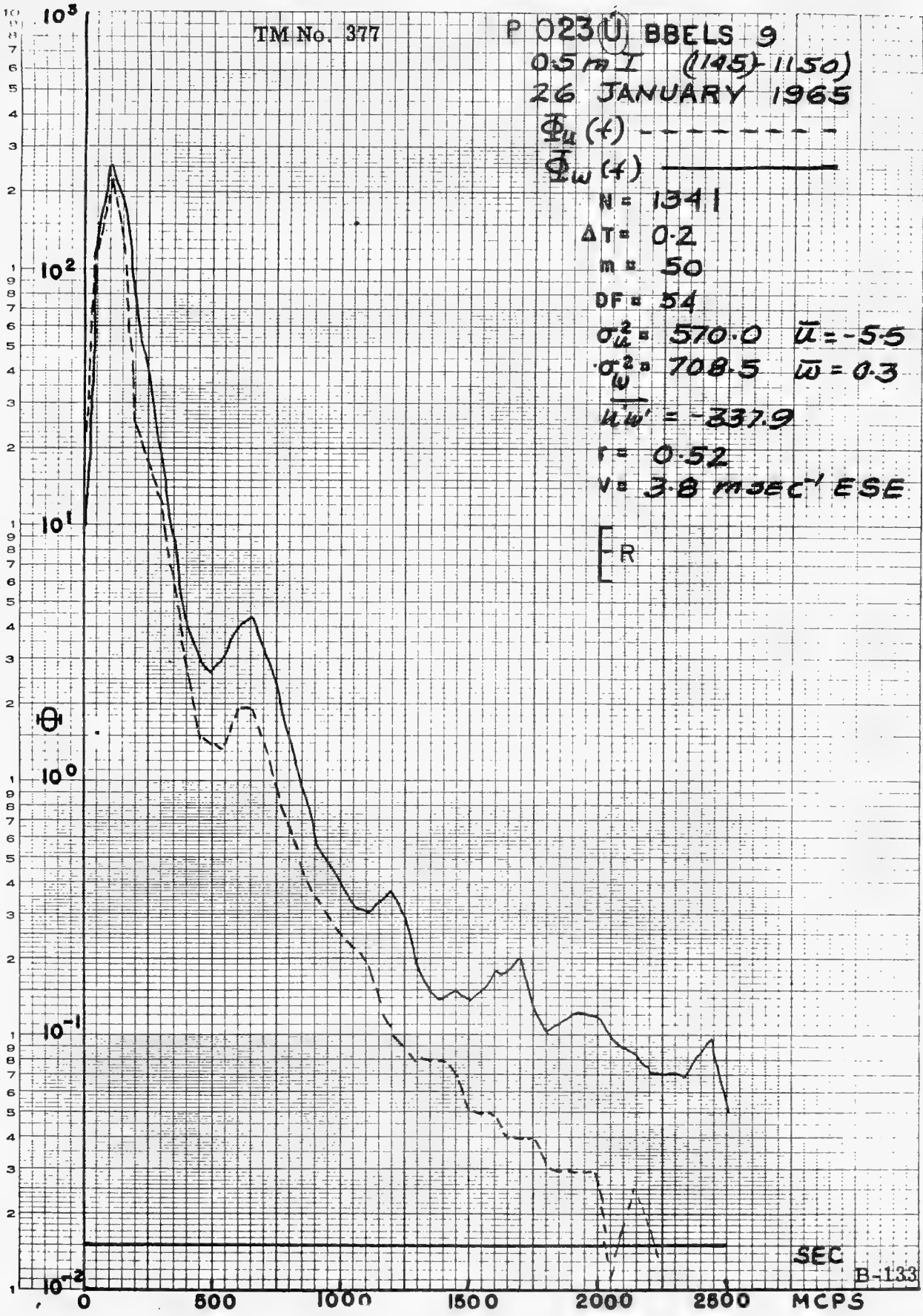
$\bar{u}w' = -337.9$

$r = 0.52$

$V = 3.8 \text{ MSEC}^{-1} \text{ ESE}$

[R]

5 CYCLES X 10 DIVISIONS PER INCH



SEC B-133

TM No. 377

P 024 BBELS-9
0.5m II (1224-1229)
26 JANUARY 1965

$N = 322$

$\Delta T = 0.2$

$m = 50$

$DF = 37$

$\sigma_w^2 = 415.3 \quad \bar{w} = 3.1$

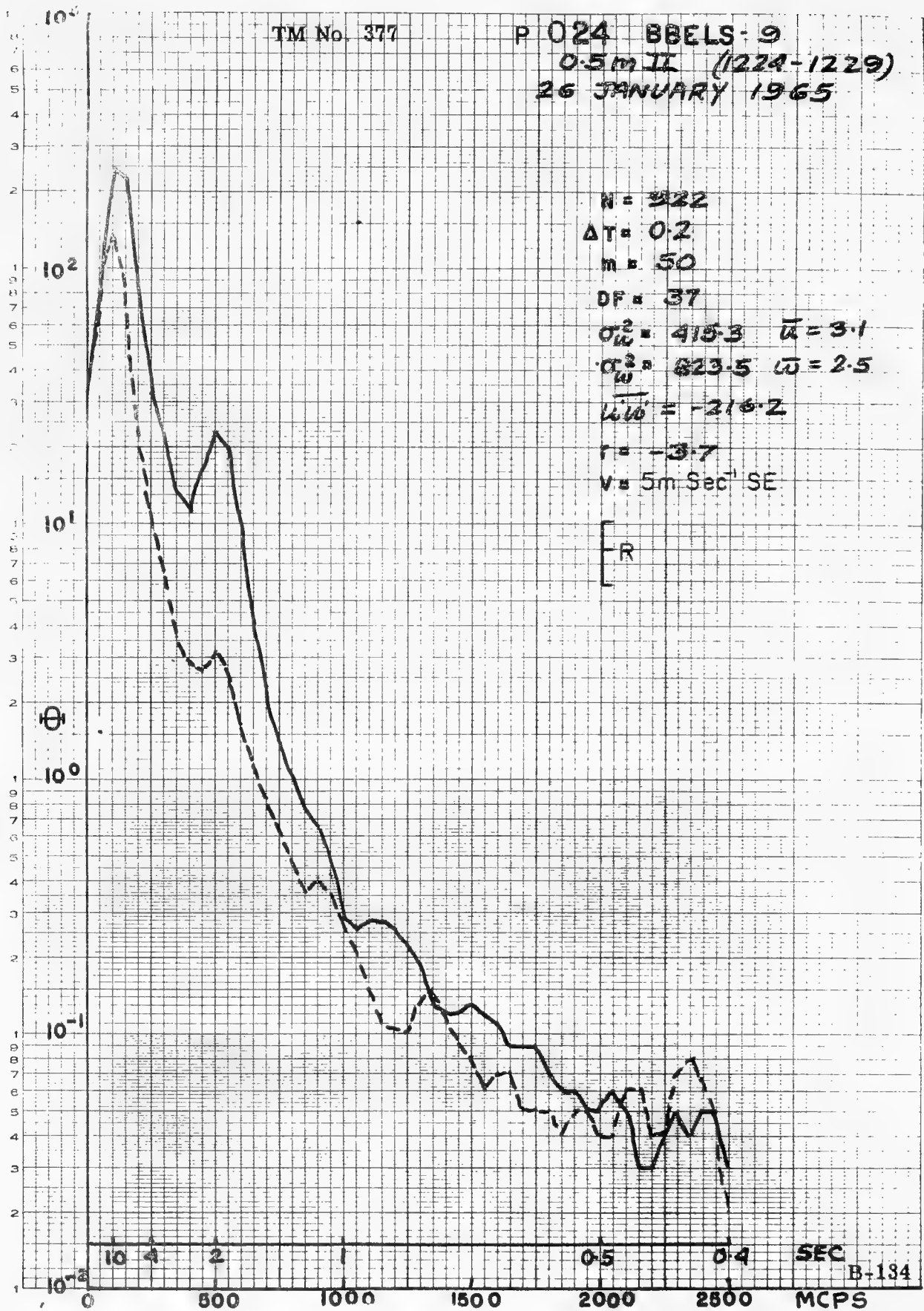
$\alpha_w^2 = 823.5 \quad \bar{w} = 2.5$

$\bar{w/w} = -216.2$

$r = -3.7$

$V = 5m \text{ Sec}^{-1} \text{ SE}$

[R



TM No. 377

P 025 BBELS 9

26 JANUARY 1965

2.0 M I (1235-1240)

$\Phi_u(f)$ - - - - -

$\Phi_w(f)$ - - - - -

N = 1562

$\Delta T = 0.2$

m = 50

DF = 62

$\sigma_u^2 = 391.1$ $\bar{u} = 10.9$

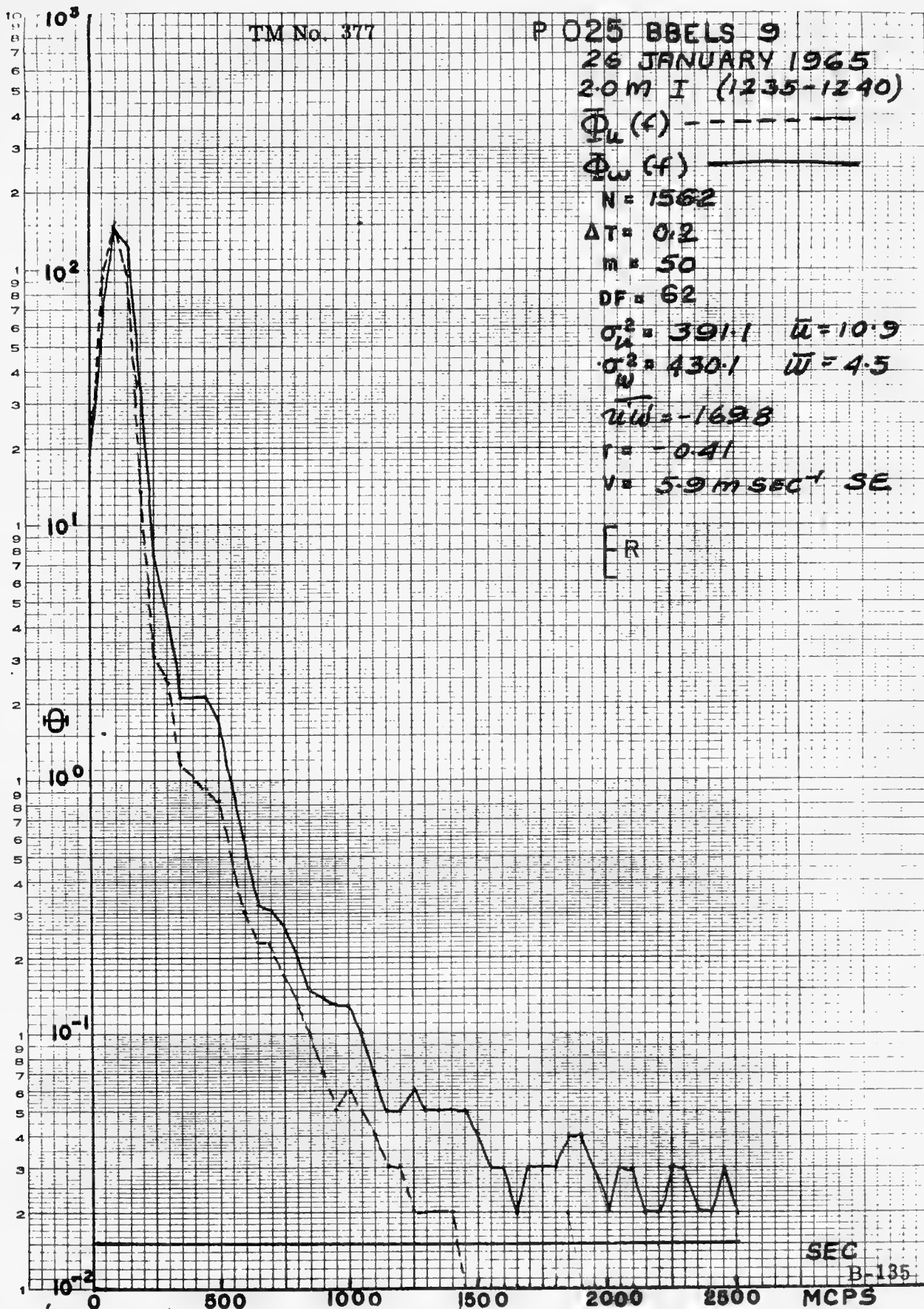
$\sigma_w^2 = 430.1$ $\bar{w} = 4.5$

$\bar{uw} = -169.8$

$r = -0.41$

V = 5.9 M SEC⁻¹ SE

[R



TM No. 377

P 026 BBELS -10

0.5 m I (1141-1146)

3 MARCH 1965

$\Phi_u(f)$ - - - - -

$\Phi_w(f)$ - - - - -

$N = 1443$

$\Delta T = 0.2$

$m = 50$

$DF = 58$

$\sigma_u^2 = 43.5$ $\bar{u} = -26.9$

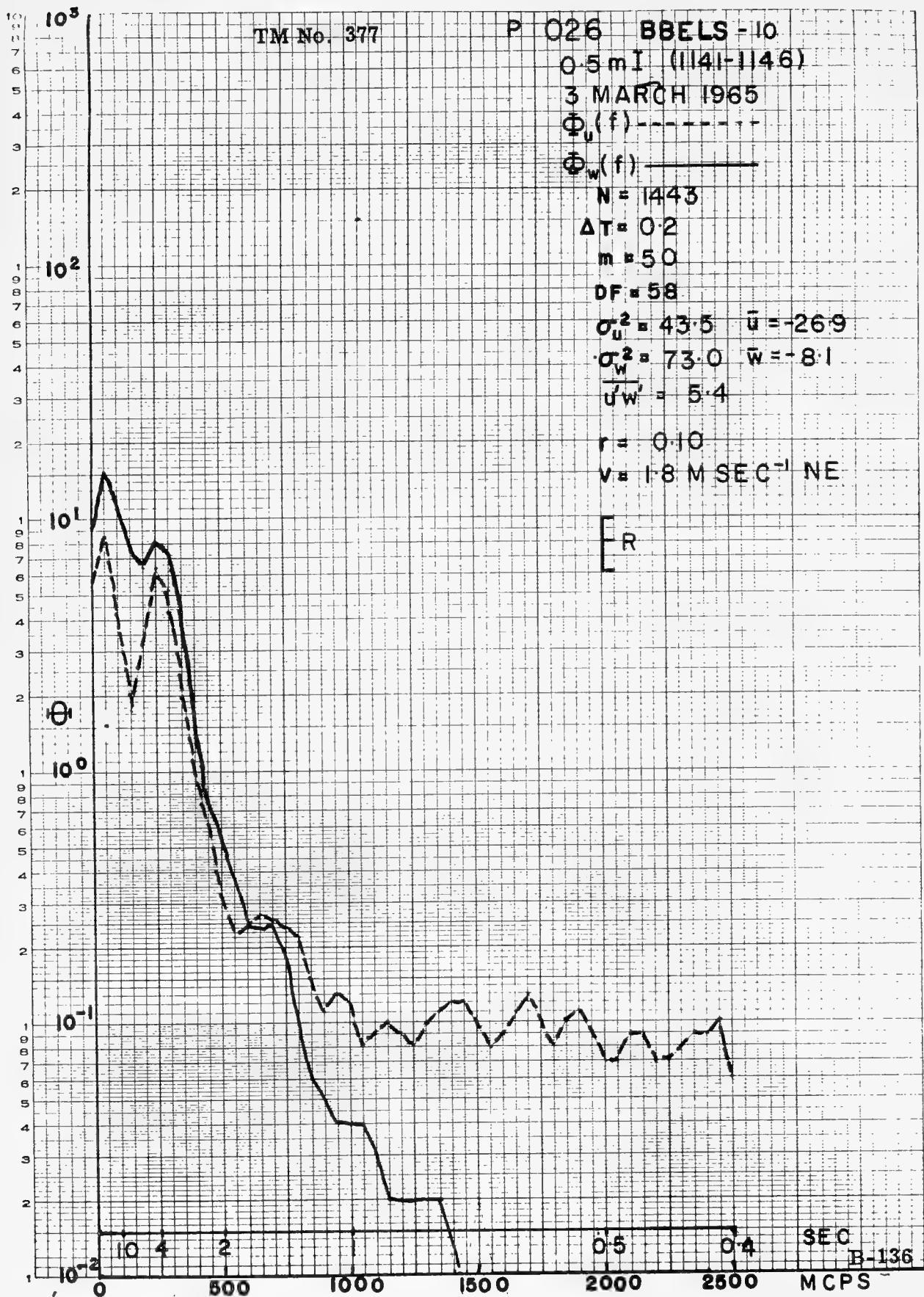
$\sigma_w^2 = 73.0$ $\bar{w} = -8.1$

$\overline{u'w'} = 5.4$

$r = 0.10$

$V = 1.8 \text{ M SEC}^{-1} \text{ NE}$

[R]



SEC

B-136

MCPS

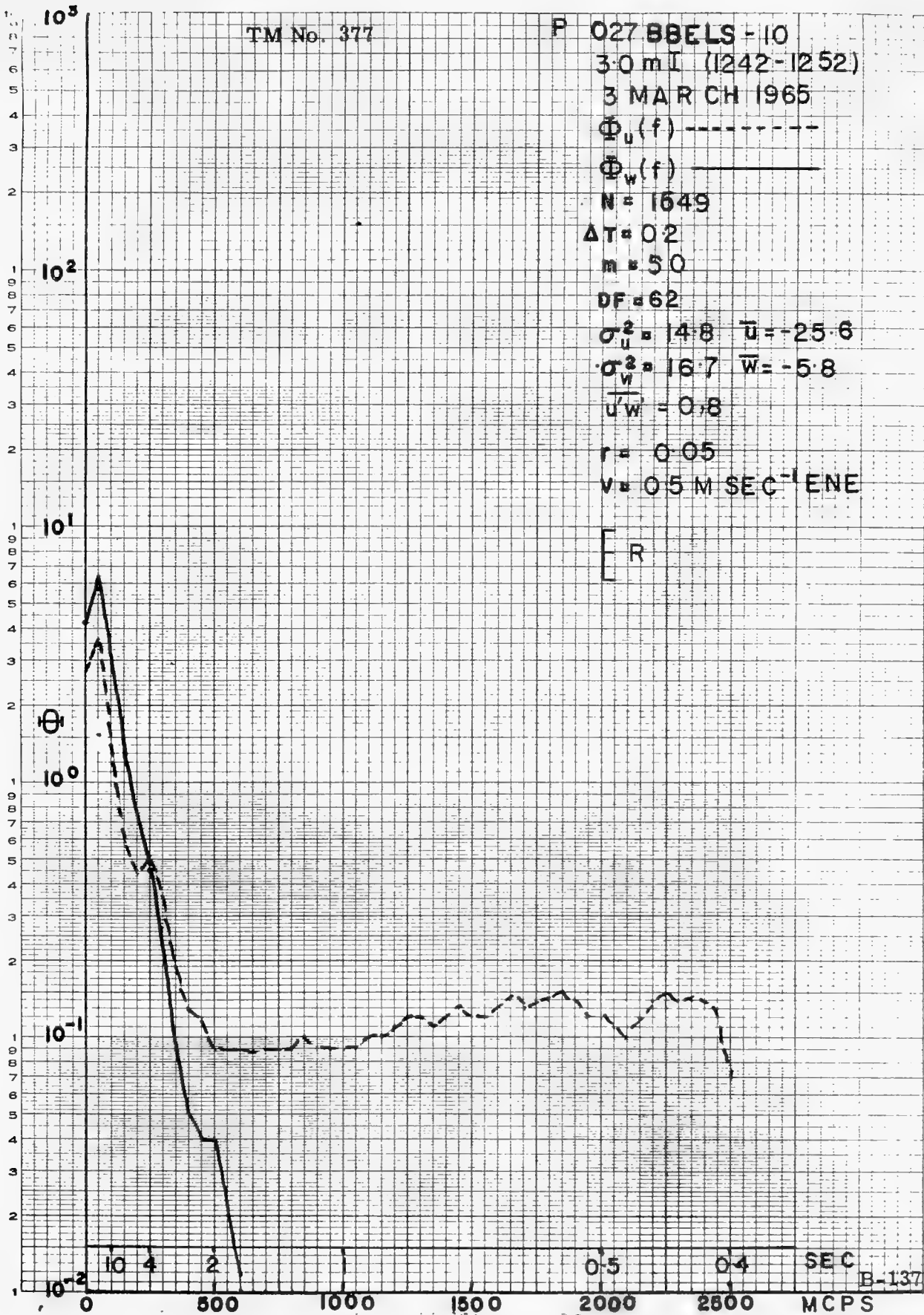
MADE IN U.S.A.

5 CYCLES X 10 DIVISIONS PER INCH

TM No. 377

F 02788ELS-10
 3.0 mI (1242-1252)
 3 MARCH 1965
 $\Phi_u(f)$ -----
 $\Phi_w(f)$ _____
 N = 1649
 $\Delta T = 0.2$
 m = 50
 DF = 62
 $\sigma_u^2 = 14.8$ $\bar{u} = -25.6$
 $\sigma_w^2 = 16.7$ $\bar{w} = -5.8$
 $\overline{u'w'} = 0.8$
 r = 0.05
 V = 0.5 M SEC⁻¹ ENE

[R



TM No. 377

P 028 BBELS 10

30mII (1256-1306)

3 MARCH 1965

$\Phi_U(f)$ - - - -

$\Phi_W(f)$ - - - -

$N = 2320$

$\Delta T = 0.2$

$m = 50$

$DF = 93$

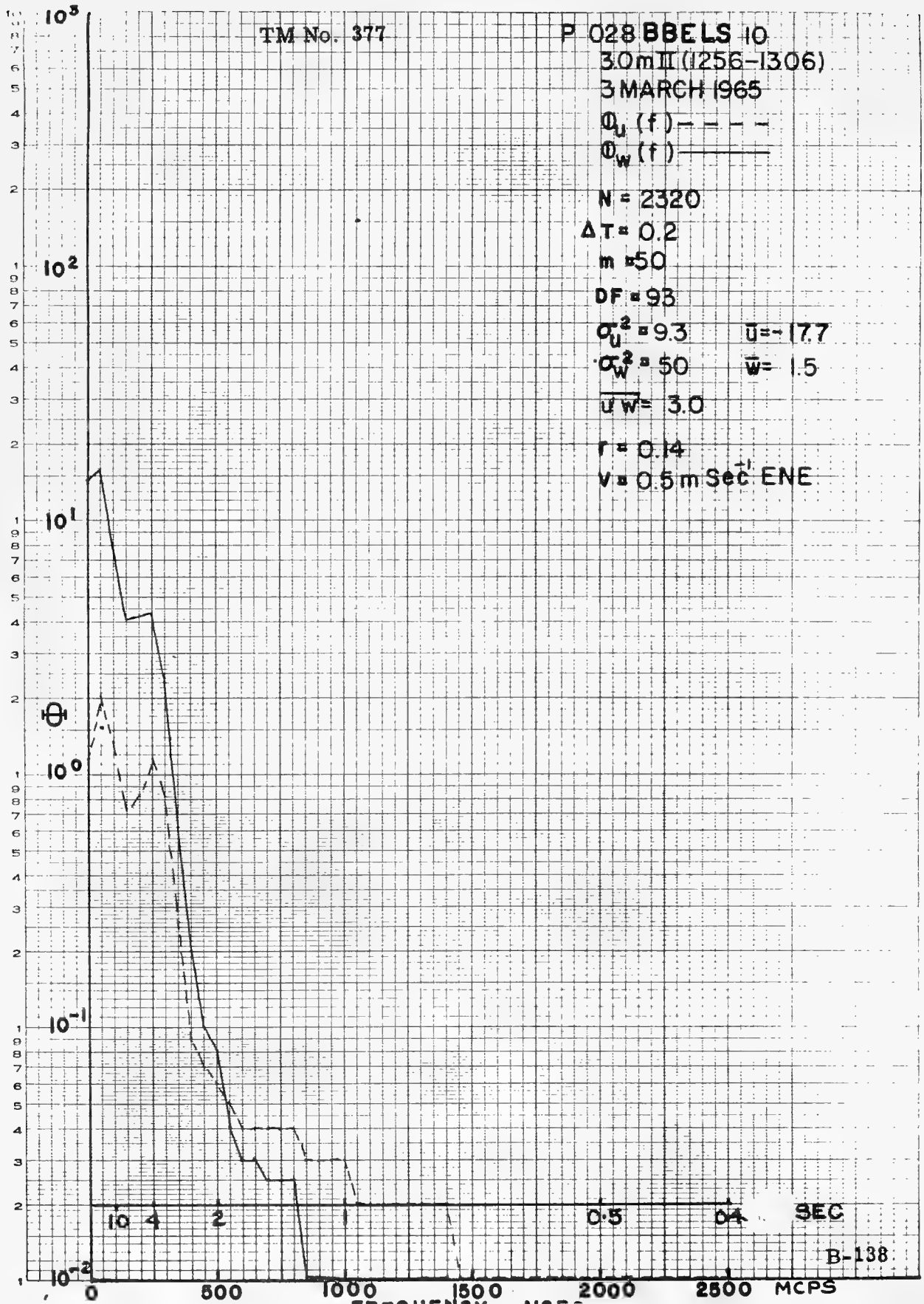
$\sigma_U^2 = 9.3$ $\bar{U} = -17.7$

$\sigma_W^2 = 50$ $\bar{W} = 1.5$

$\overline{UW} = 3.0$

$r = 0.14$

$v = 0.5 \text{ m Sec}^{-1}$ ENE



TM No. 377

P 029 BBELS 10-2

10m I (1340-1350)

3 MARCH 1965

$\Phi_u(f)$ - - - - -

$\Phi_w(f)$ - - - - -

N = 1764

$\Delta T = 0.2$

m = 50

DF = 71

$\sigma_u^2 = 18.8$ $\bar{u} = -18.6$

$\sigma_w^2 = 68.4$ $\bar{w} = 3.7$

$\frac{\bar{u}}{\bar{w}} = 8.3$

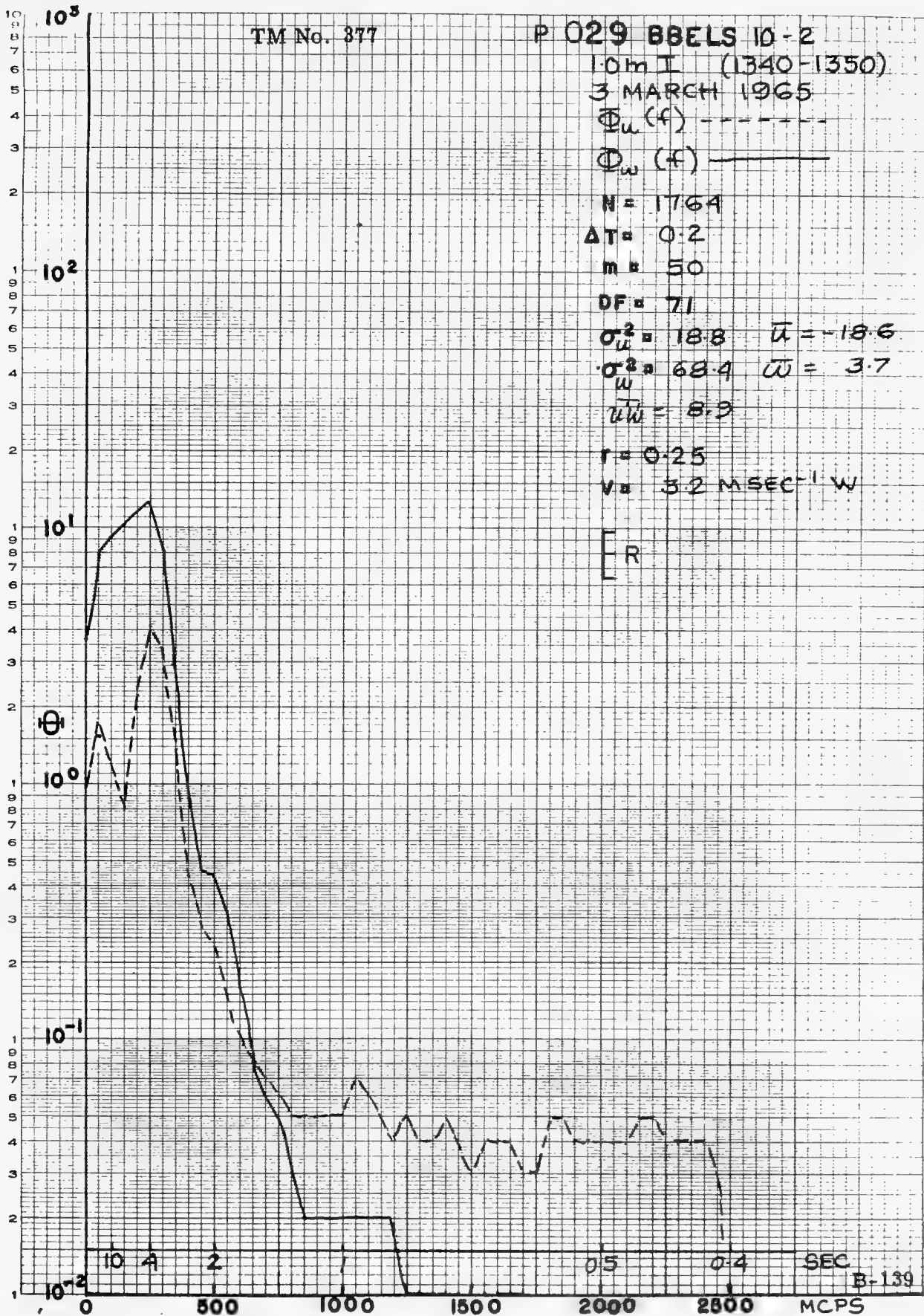
r = 0.25

V = 3.2 MSEC⁻¹ W

[R]

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1 / 5 CYCLES X 10 DIVISIONS PER INCH



TM No. 377

P 030 BDELS -11-55

0.5-2.0 m (1622-)

29 MARCH 1965

UP $\Phi_w(f)$ - - - - -

LO $\Phi_w(f)$ - - - - -

N = 974

$\Delta T = 0.2$

m = 50

DF = 38

UP $\sigma_w^2 = 1289.2$ $\bar{w} = -1.1$

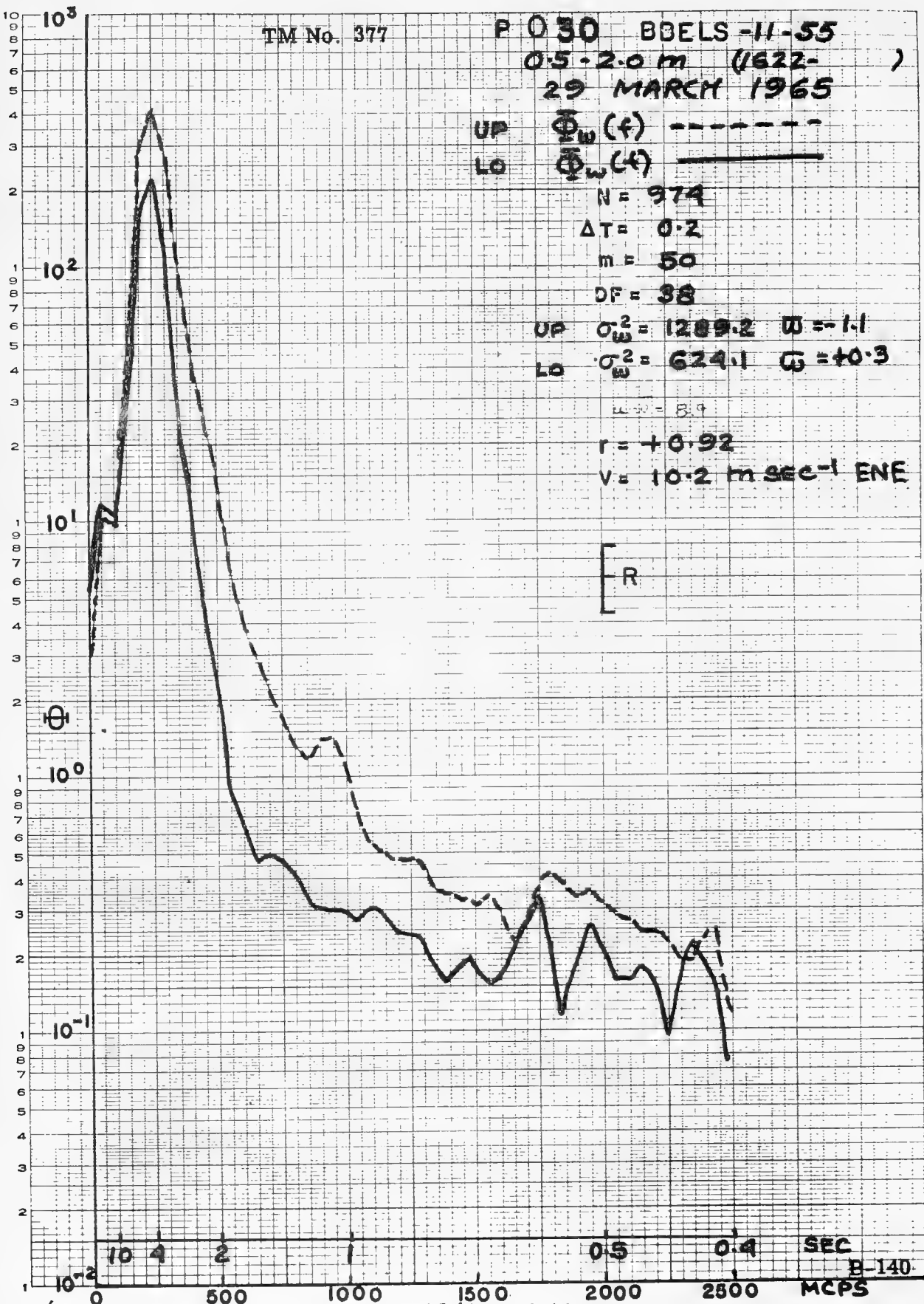
LO $\sigma_w^2 = 624.1$ $\bar{w} = +0.3$

$\mu_w = 3.9$

r = +0.92

V = 10.2 m sec⁻¹ ENE

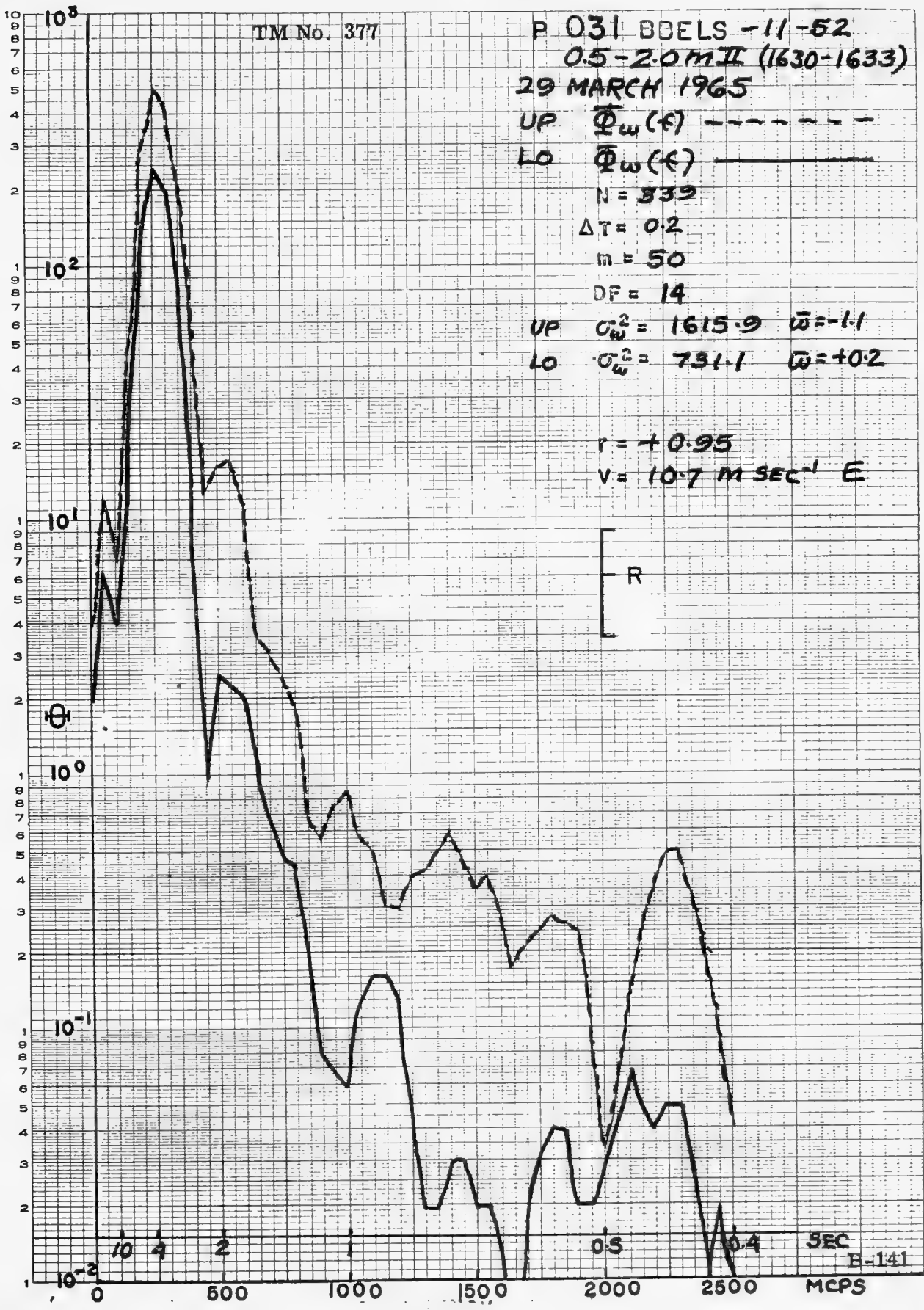
[R]



B-140

EUGENE DIETZGEN CO.
MADE IN U. S. A.

SEMI-LOGARITHMIC
5 CYCLES X 10 DIVISIONS PER INCH

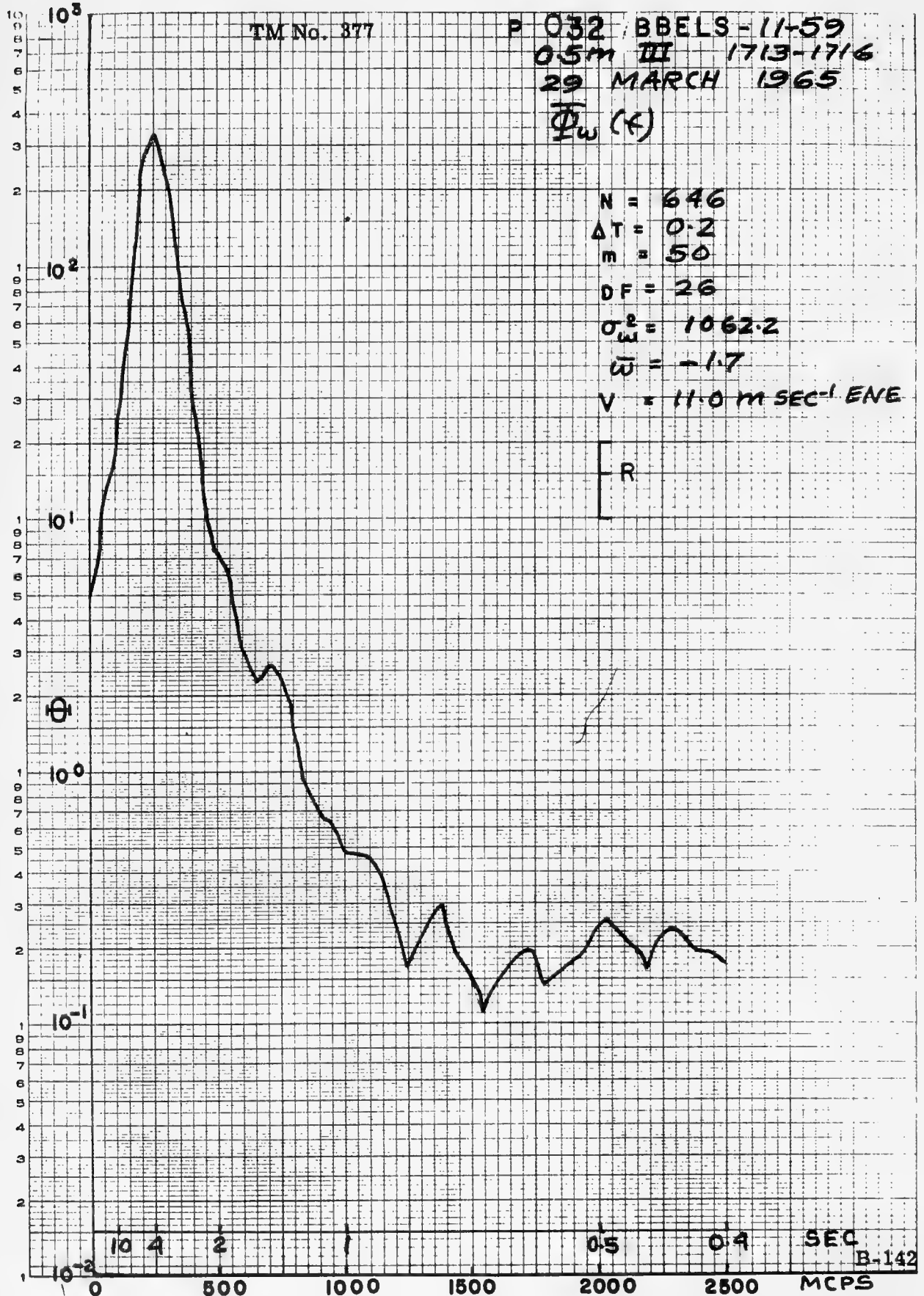


TM No. 877

P 032 BBELS-11-59
05M III 1713-1716
29 MARCH 1965
 $\bar{\Phi}_w (K)$

N = 646
 $\Delta T = 0.2$
m = 50
DF = 26
 $\sigma_w^2 = 1062.2$
 $\bar{w} = -1.7$
V = 11.0 m SEC⁻¹ ENE

R



TM No. 377

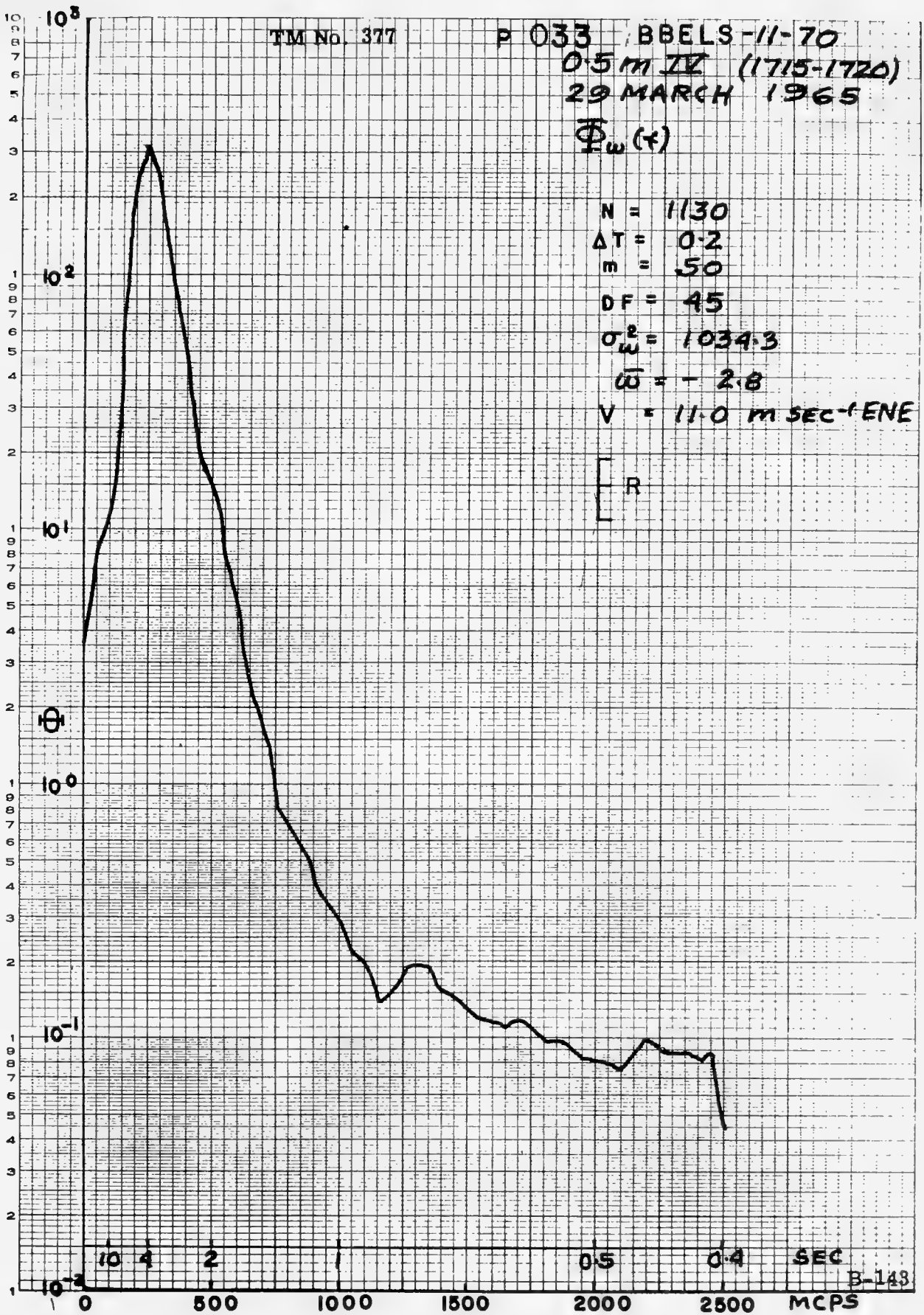
P 033 BBELS-11-70
0.5 m IV (1715-1720)
29 MARCH 1965

$\Phi_w(\omega)$

$N = 1130$
 $\Delta T = 0.2$
 $m = 50$
 $DF = 45$
 $\sigma_w^2 = 1034.3$
 $\bar{\omega} = -2.8$
 $V = 11.0 \text{ m SEC}^{-1} \text{ ENE}$

[R]

MADE IN U. S. A.
15 CYCLES X 10 DIVISIONS PER INCH



TM No. 37

P 034 BBELS-11-69
2.0 MI (1734-1739)
30 MARCH 1965
 $\bar{\Phi}_w$ (K)

N = 1458

$\Delta T = 0.2$

m = 50

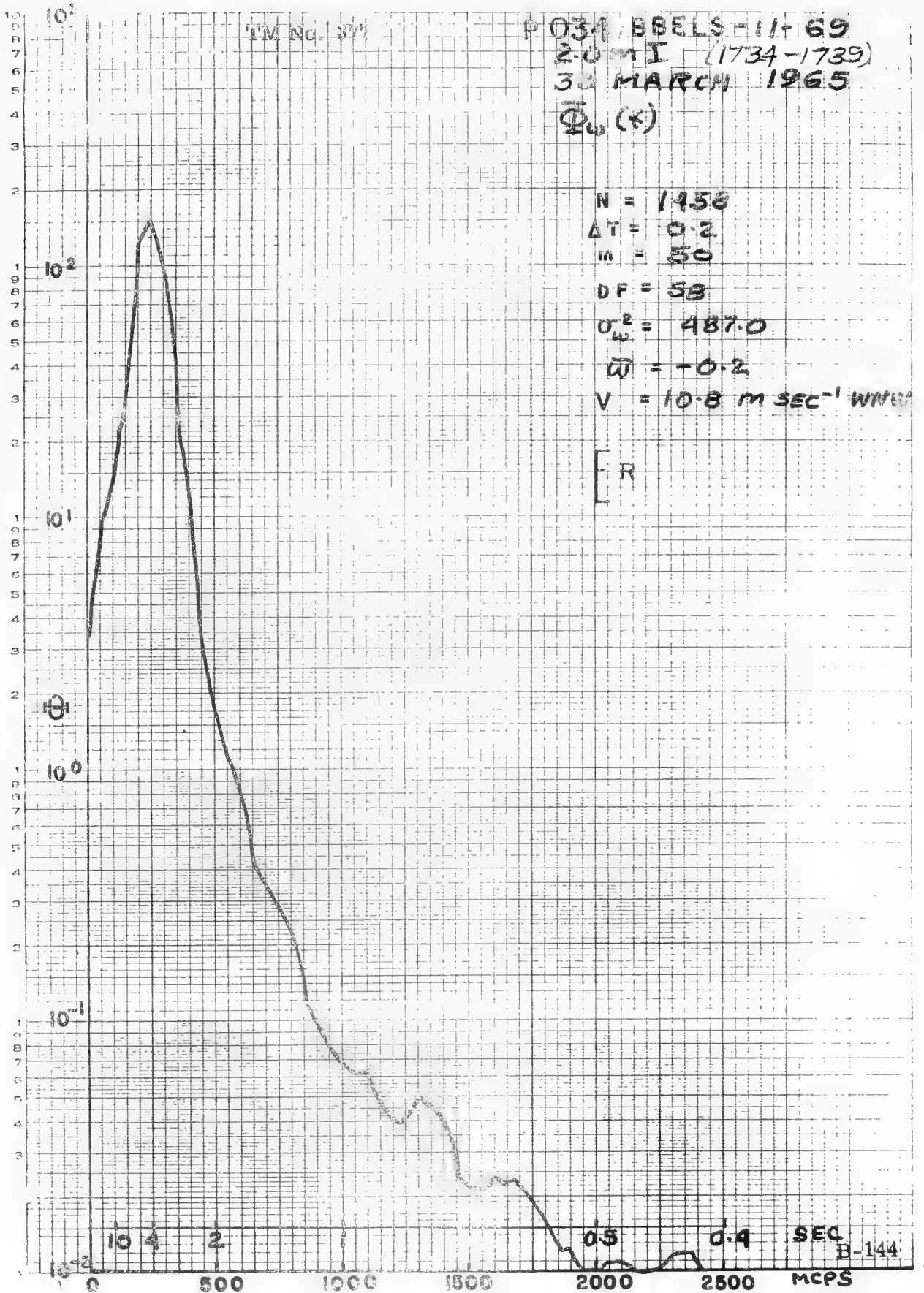
DF = 58

$\sigma_w^2 = 487.0$

$\bar{w} = -0.2$

V = 10.8 m sec⁻¹ WIND

[R]

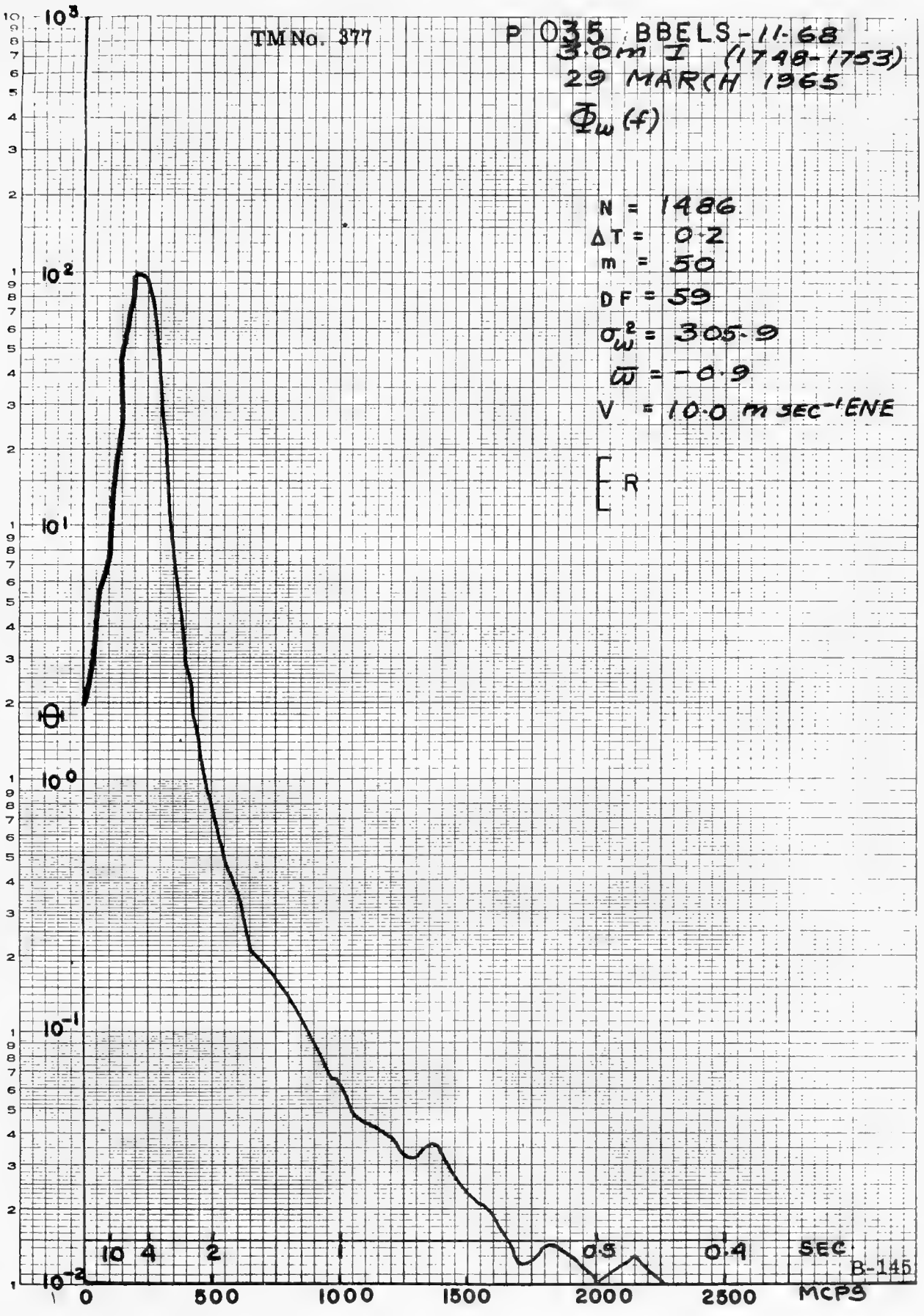


TM No. 377

P 035 BBELS-11-68
3.0m I (1748-1753)
29 MARCH 1965
 $\Phi_w(f)$

N = 1486
 $\Delta T = 0.2$
m = 50
DF = 59
 $\sigma_w^2 = 305.9$
 $\bar{w} = -0.9$
V = 10.0 m SEC⁻¹ ENE

[R]



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5 CYCLES X 10 DIVISIONS PER INCH

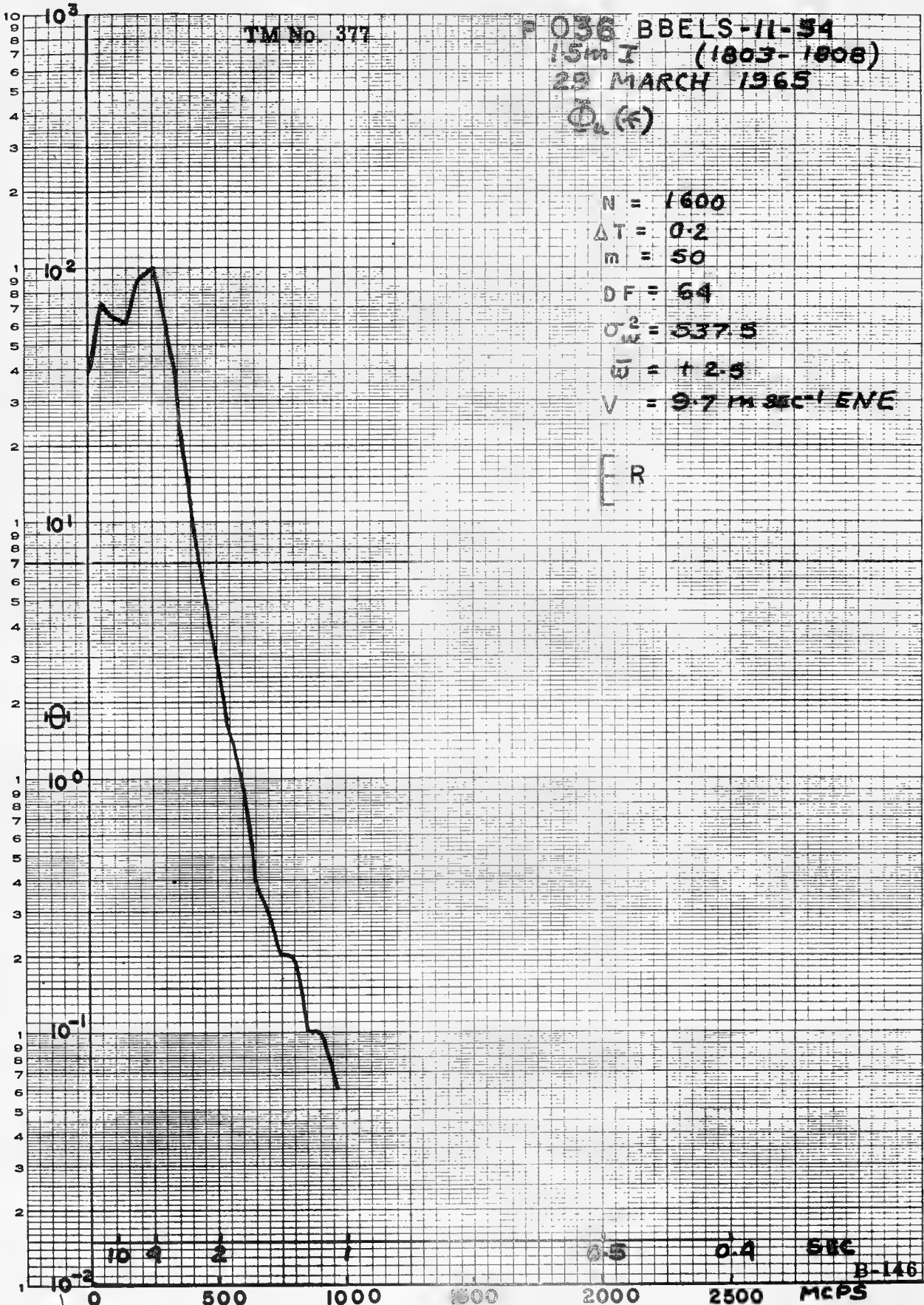
TM No. 377

P 036 BBELS-II-54
15m I (1803-1808)
29 MARCH 1965

$\Phi_u (K)$

N = 1600
 $\Delta T = 0.2$
m = 50
DF = 64
 $\sigma_w^2 = 537.5$
 $\bar{w} = +2.5$
V = 9.7 m sec⁻¹ ENE

[R



TM No. 377

P 037 BBELS-11-61
2.5 m I (1820-1825)
29 MARCH 1965
 $\Phi_w (f)$

N = 1297

$\Delta T = 0.2$

m = 50

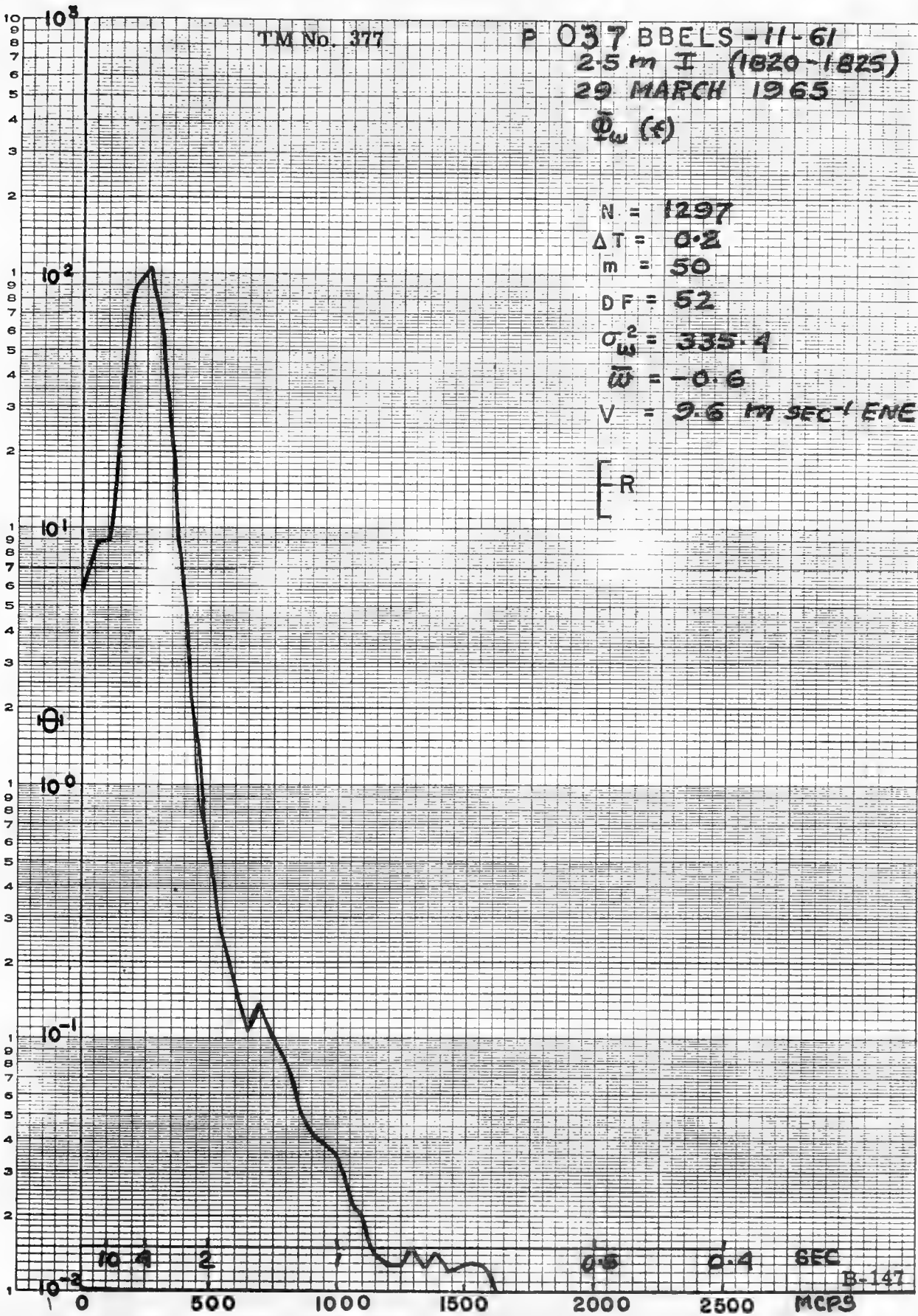
DF = 52

$\sigma_w^2 = 335.4$

$\bar{w} = -0.6$

V = 9.6 km sec⁻¹ ENE

[R



MADE IN U. S. A.

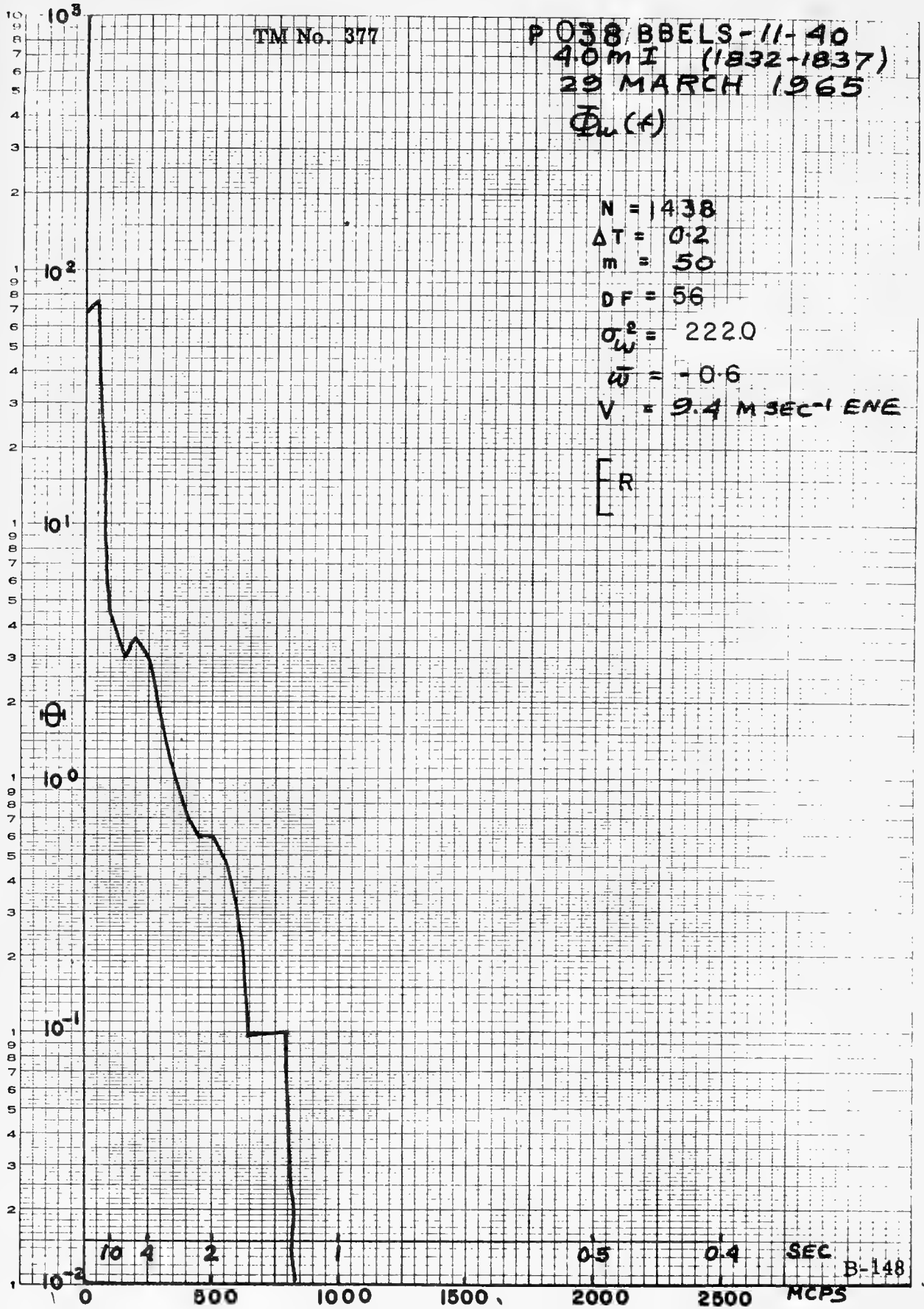
5 CYCLES X 10 DIVISIONS PER INCH

TM No. 377

P 038 BBELS-11-40
4.0 MI (1832-1837)
29 MARCH 1965
 $\Phi_u(f)$

$N = 1438$
 $\Delta T = 0.2$
 $m = 50$
 $DF = 56$
 $\sigma_w^2 = 222.0$
 $\bar{w} = -0.6$
 $V = 9.4 \text{ MSEC}^{-1} \text{ ENE}$

[R

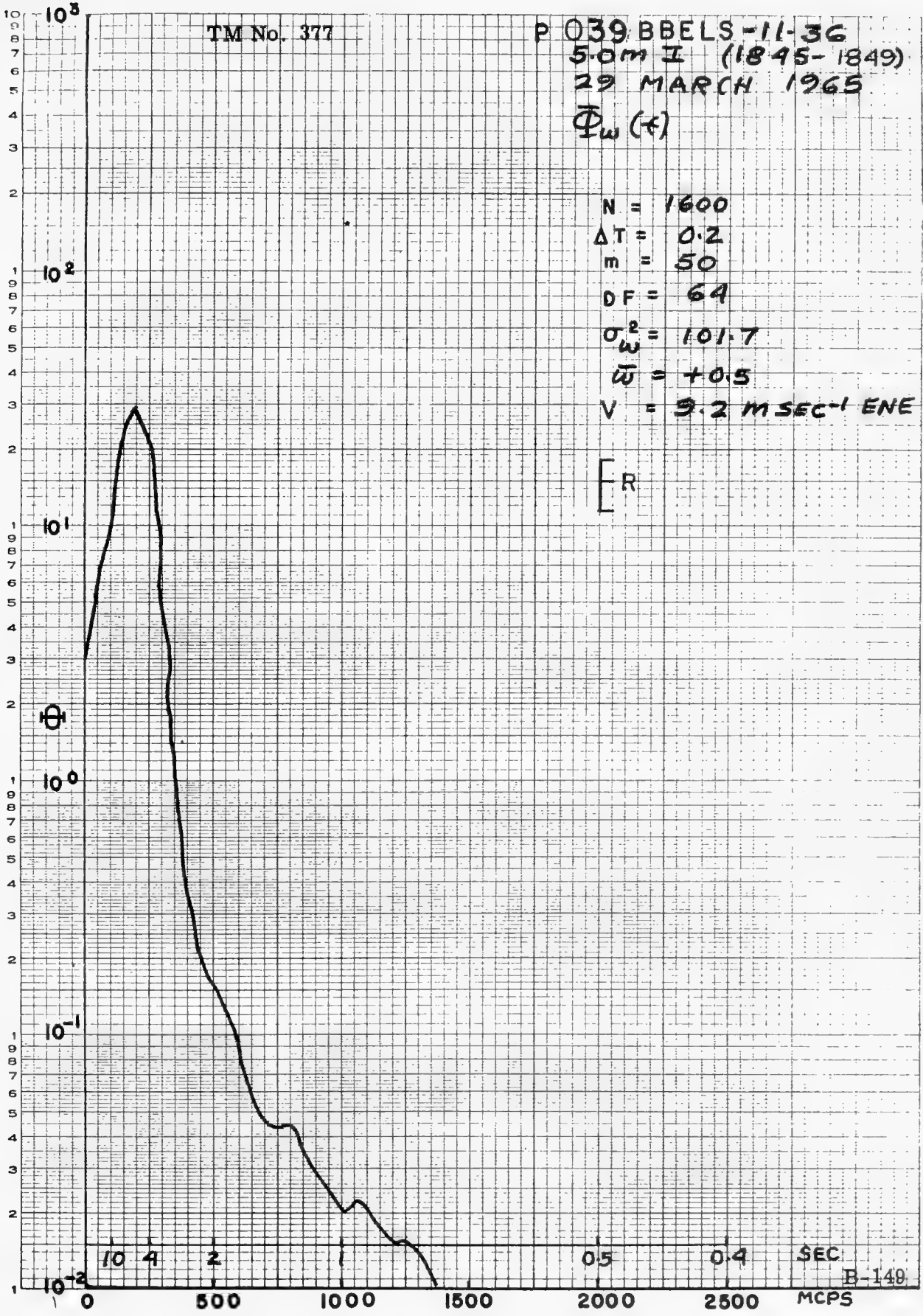


TM No. 377

P 039 BBELS-11-36
5.0m I (1845-1849)
29 MARCH 1965
 $\bar{\Phi}_w(\tau)$

$N = 1600$
 $\Delta T = 0.2$
 $m = 50$
 $DF = 64$
 $\sigma_w^2 = 101.7$
 $\bar{w} = +0.5$
 $V = 9.2 \text{ MSEC}^{-1} \text{ ENE}$

[R



MADE IN U. S. A.

5 CYCLES X 10 DIVISIONS PER INCH

TM No. 377

P 040 / BBELS -11-35
3.5 MI (1851-1855)
29 MARCH 1965
 $\bar{\Phi}_w(f)$

$N = 992$

$\Delta T = 0.2$

$m = 50$

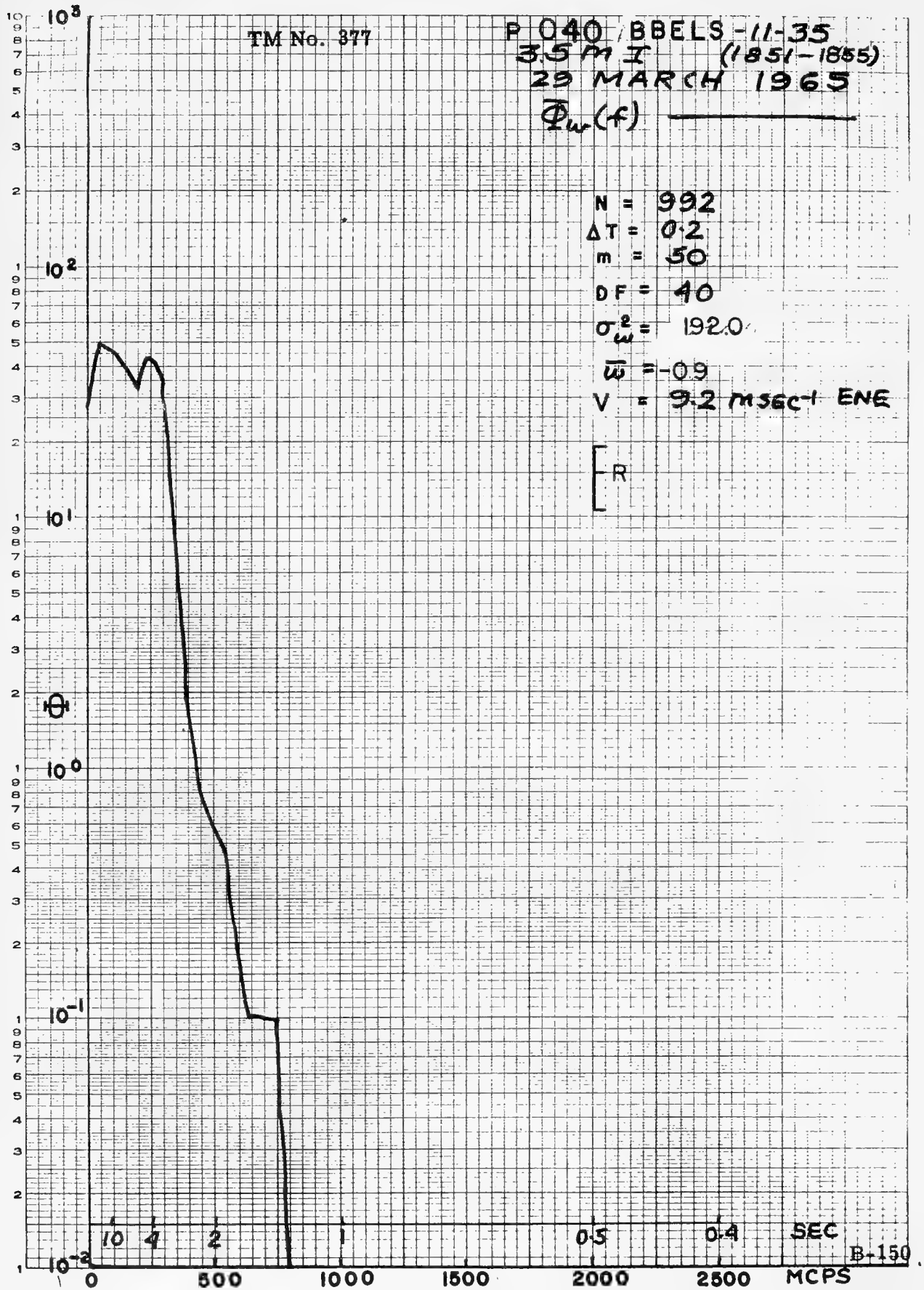
$DF = 40$

$\sigma_w^2 = 192.0$

$\bar{w} = -0.9$

$V = 9.2 \text{ mSEC}^{-1} \text{ ENE}$

[R]



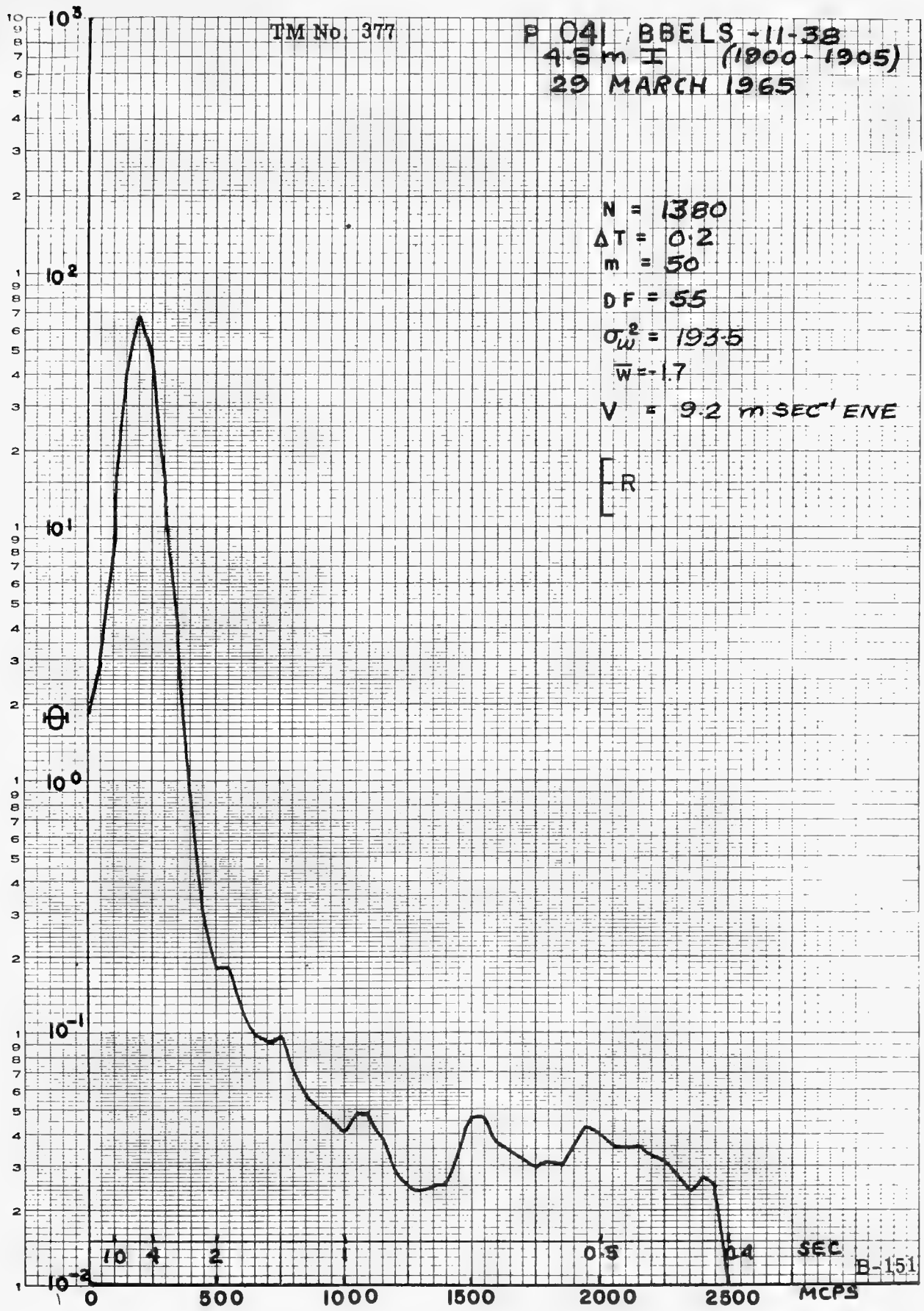
B-150

TM No. 377

P 041 BBELS-11-38
4.5 m I (1900-1905)
29 MARCH 1965

$N = 1380$
 $\Delta T = 0.2$
 $m = 50$
 $DF = 55$
 $\sigma_w^2 = 1935$
 $\bar{w} = -1.7$
 $V = 9.2 \text{ m SEC}^{-1} \text{ ENE}$

[R]



TM No. 377

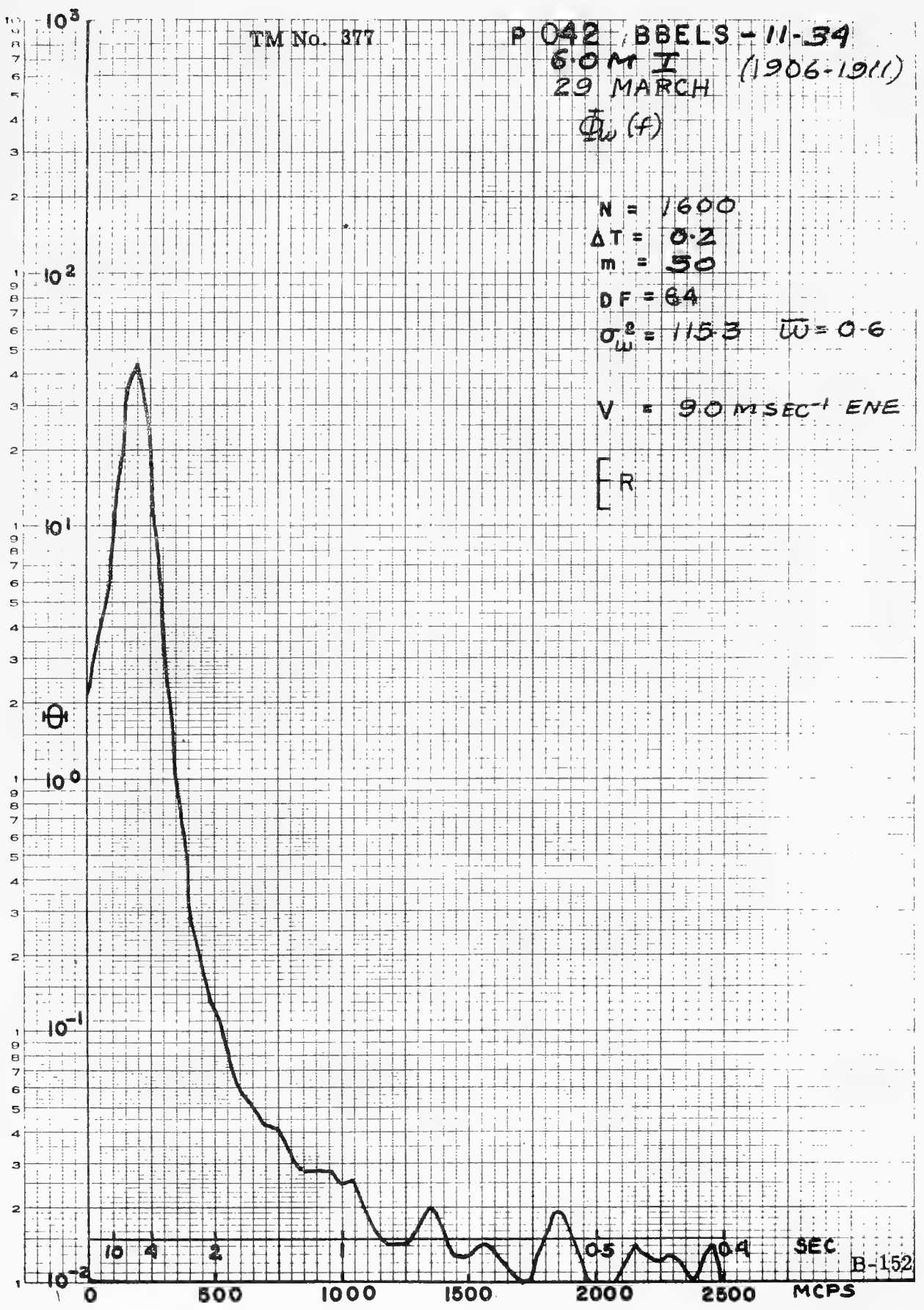
P 042 BBELS - 11-34
6.0 MI (1906-1911)
29 MARCH

$\Phi_w(f)$

$N = 1600$
 $\Delta T = 0.2$
 $m = 50$
 $DF = 64$
 $\sigma_w^2 = 115.3$ $\bar{w} = 0.6$

$V = 9.0 \text{ MSEC}^{-1} \text{ ENE}$

[R



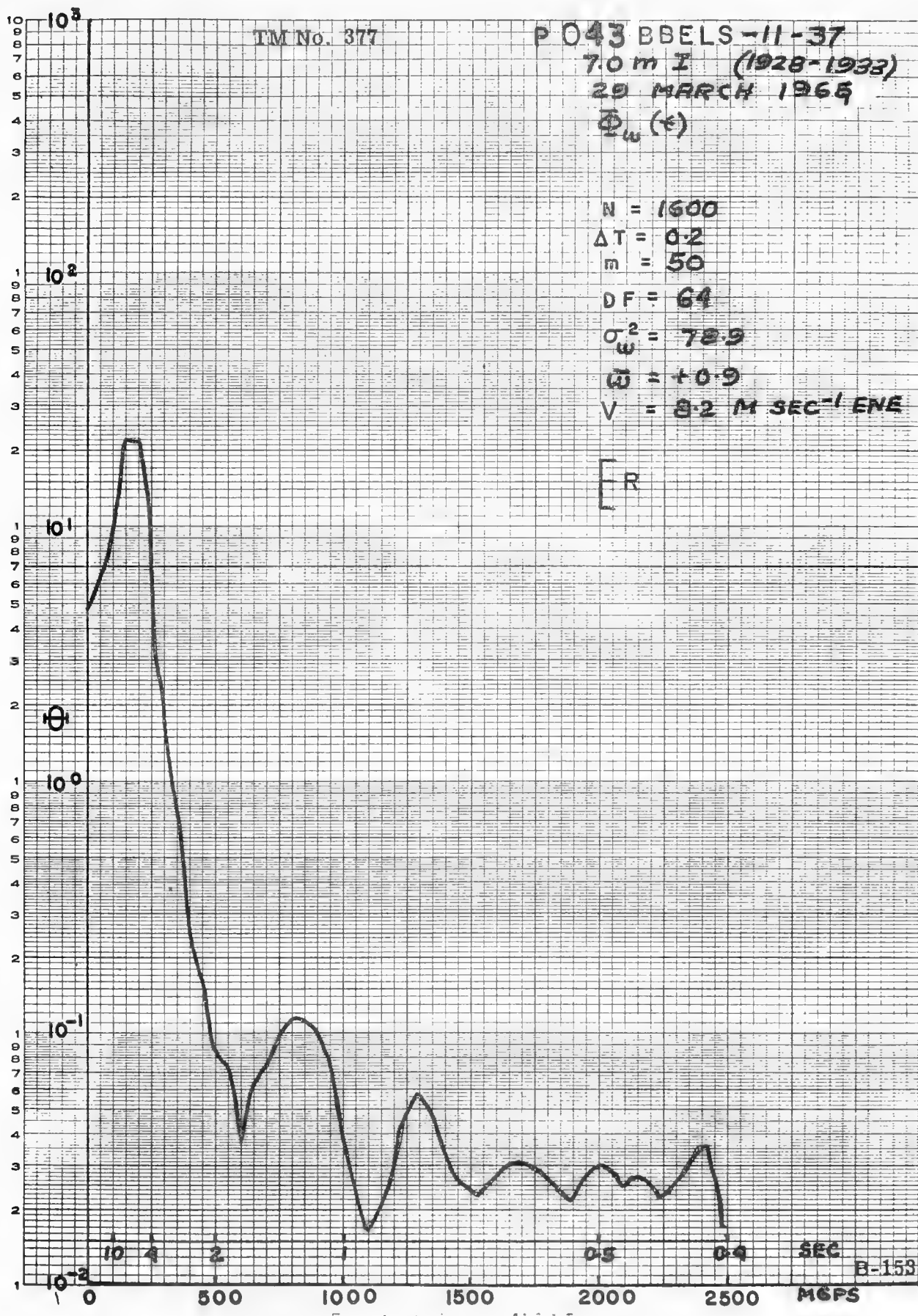
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TM No. 377

P 043 BBELS-11-37
7.0 m I (1928-1933)
29 MARCH 1965
 $\Phi_w (\epsilon)$

N = 1600
 $\Delta T = 0.2$
m = 50
DF = 64
 $\sigma_w^2 = 789$
 $\bar{w} = +0.9$
V = 8.2 M SEC⁻¹ ENE

[R



5 CYCLES X 10 DIVISIONS PER INCH

TM No. 377

P 044 BBELS-11-32
55 m I (1934-1939)
29 MARCH 1965

$\bar{\Phi}_w (k)$

$N = 1417$

$\Delta T = 0.5$

$m = 50$

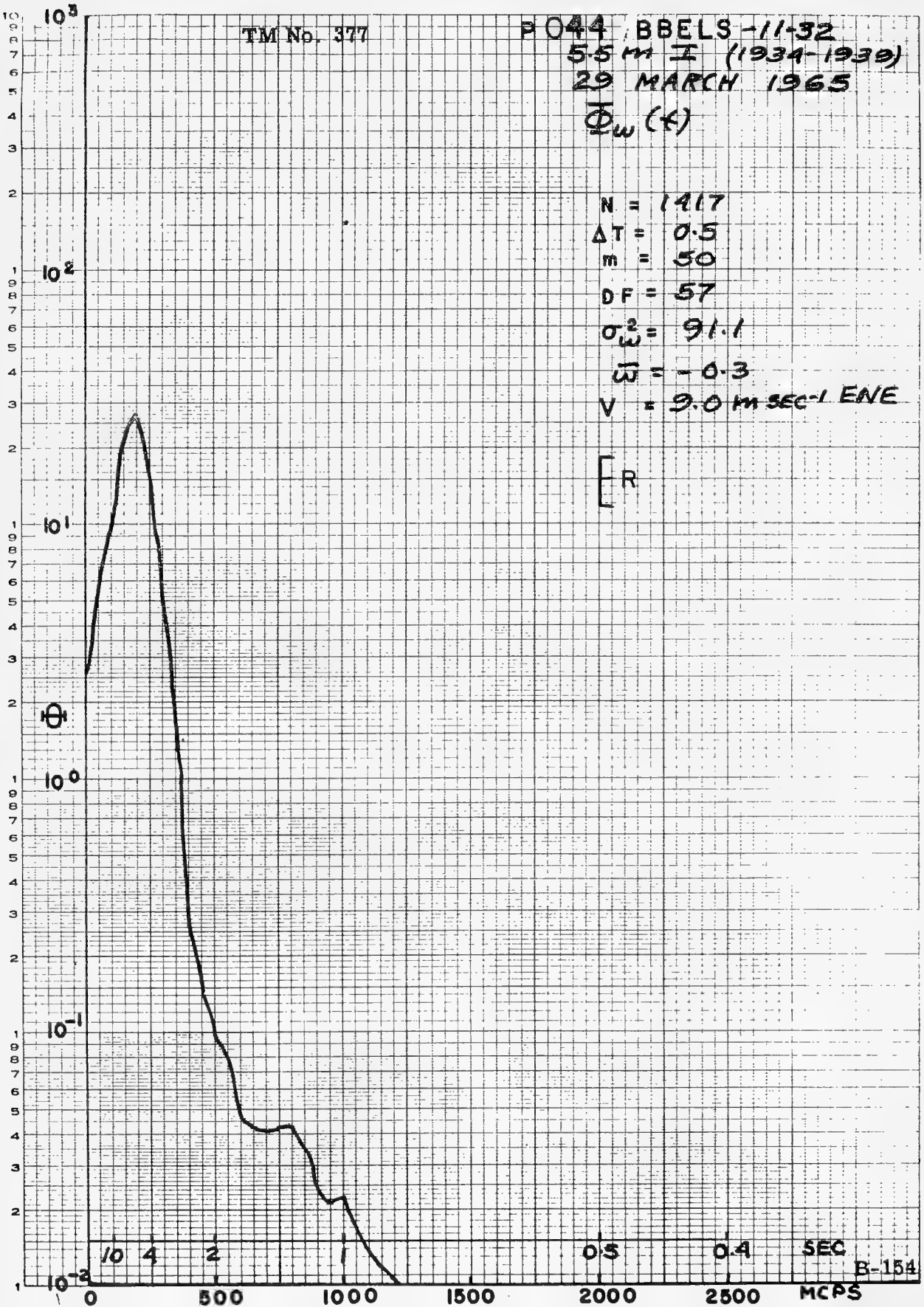
$DF = 57$

$\sigma_w^2 = 91.1$

$\bar{w} = -0.3$

$V = 9.0 \text{ m sec}^{-1} \text{ ENE}$

[R

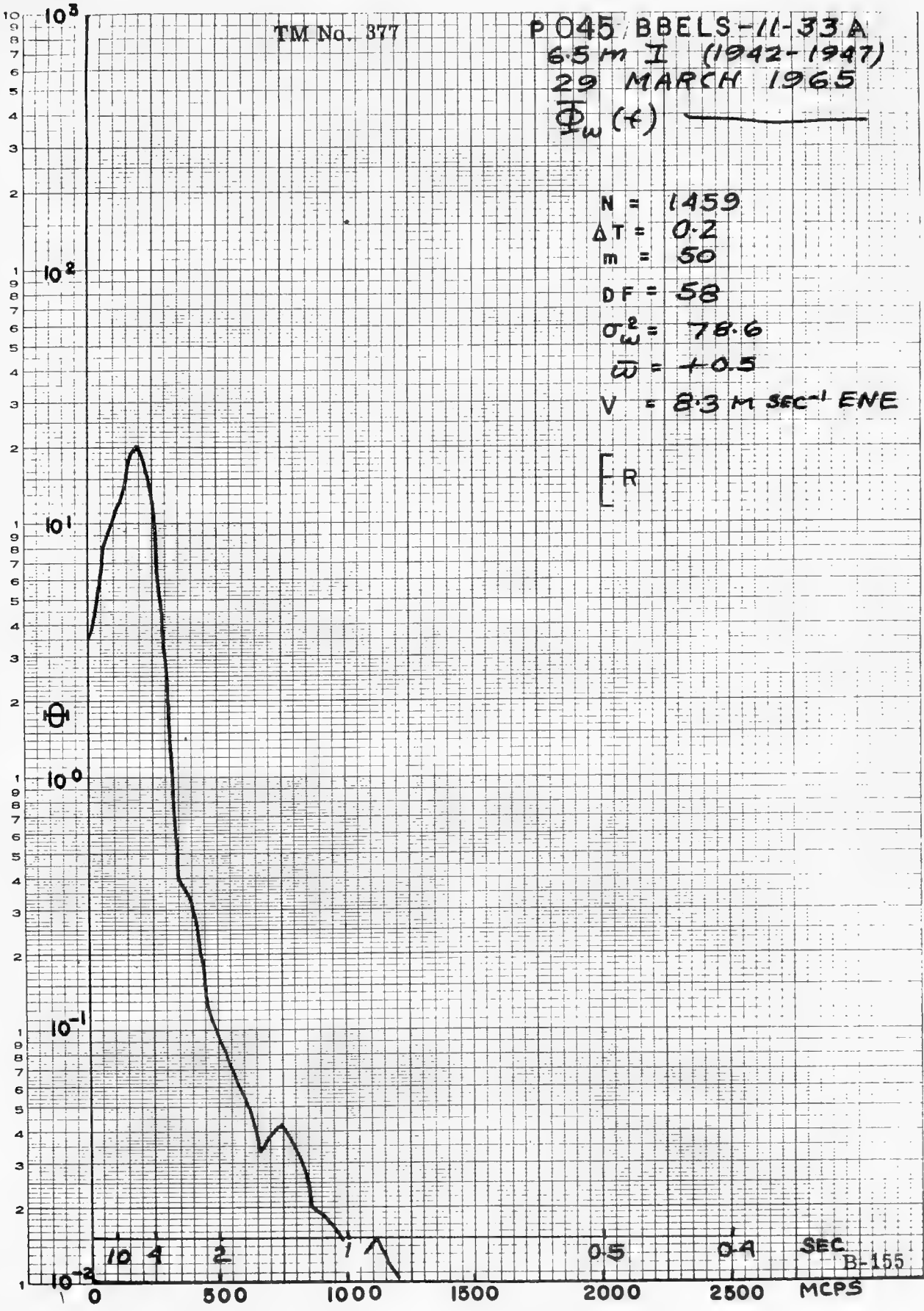


TM No. 377

P 045 / BBELS-11-33A
65 M I (1942-1947)
29 MARCH 1965
 $\bar{\Phi}_{Iw}(f)$

N = 1459
 $\Delta T = 0.2$
m = 50
DF = 58
 $\sigma_w^2 = 78.6$
 $\bar{\omega} = +0.5$
V = 8.3 M SEC⁻¹ ENE

[R



MADE IN U. S. A.

5 CYCLES X 10 DIVISIONS PER INCH

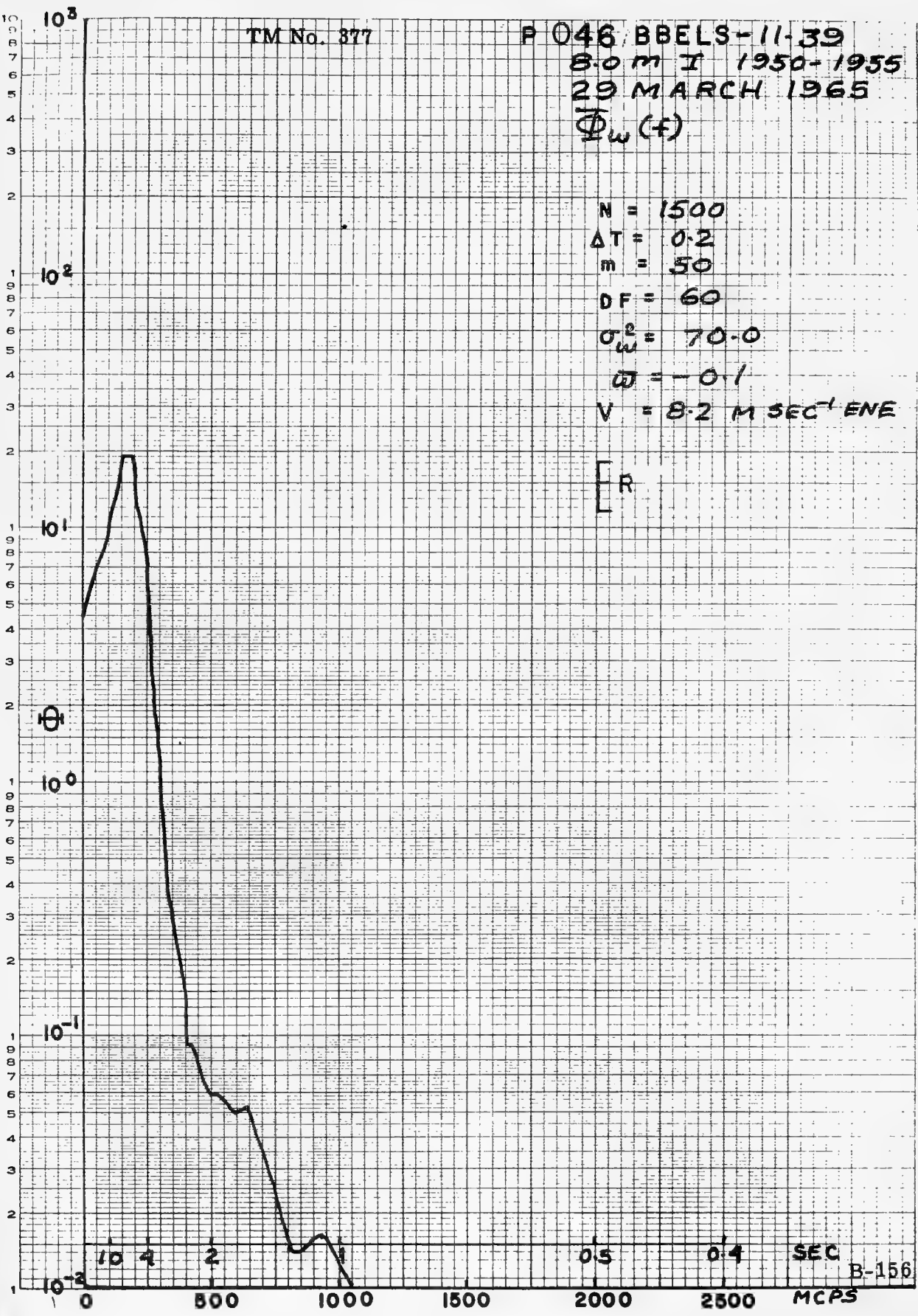
SEC B-155

TM No. 377

P 046 BBELS-11-39
8.0 m I 1950-1955
29 MARCH 1965
 $\bar{\Phi}_w(f)$

$N = 1500$
 $\Delta T = 0.2$
 $m = 50$
 $DF = 60$
 $\sigma_w^2 = 70.0$
 $\bar{\omega} = -0.1$
 $V = 8.2 \text{ M SEC}^{-1} \text{ ENE}$

[R



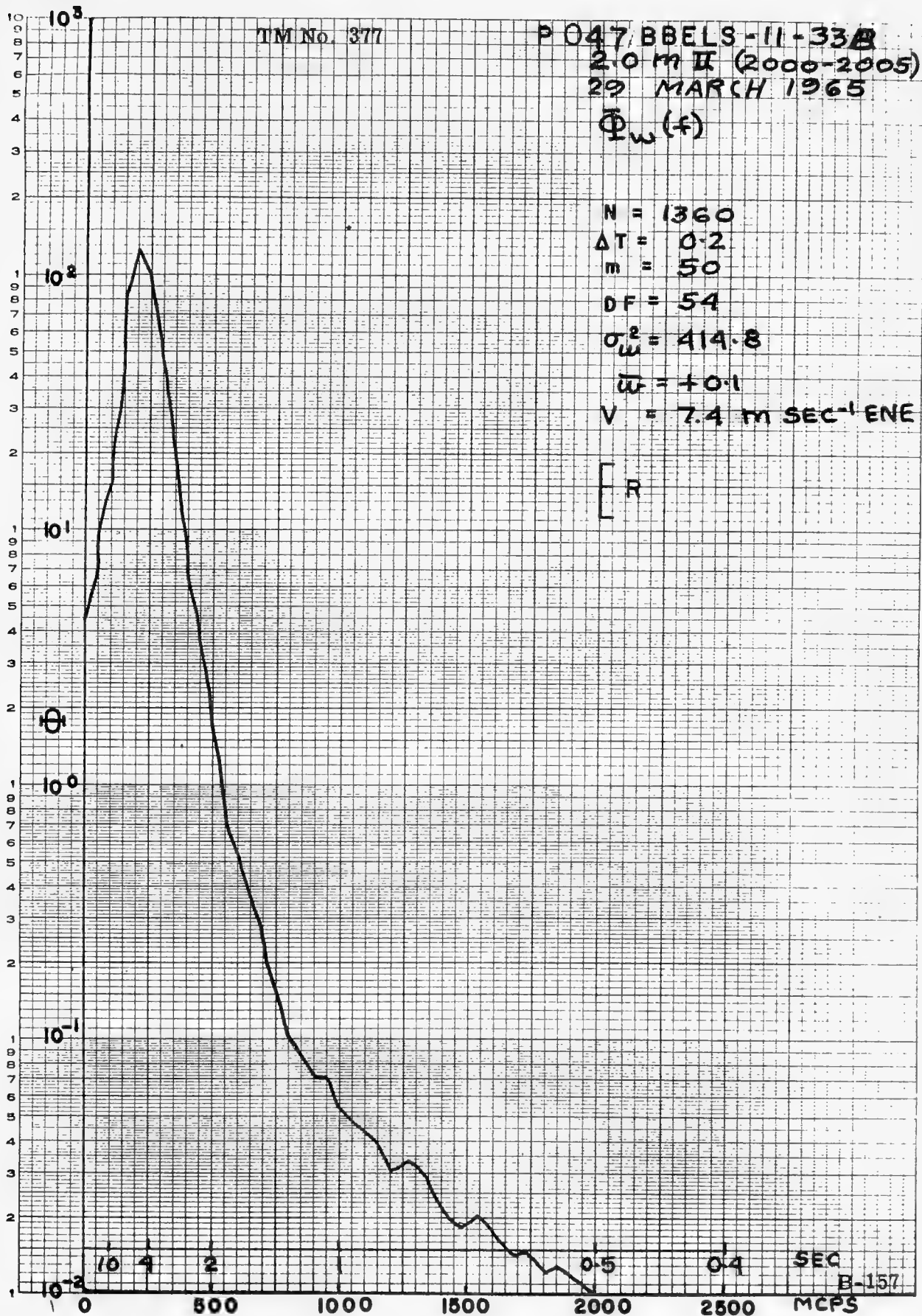
TM No. 377

P 047, BBELS-11-33B
210 M II (2000-2005)
29 MARCH 1965

$\Phi_w(f)$

N = 1360
 $\Delta T = 0.2$
m = 50
DF = 54
 $\sigma_w^2 = 414.8$
 $\bar{w} = +0.1$
V = 7.4 M SEC⁻¹ ENE

[R



MADE IN U. S. A.

5 CYCLES X 10 DIVISIONS PER INCH

TM No. 377

P 048 BBELS-11-56

0.5m V (2009-2013)

29 MARCH 1965

$\Phi_w(f)$

N = 847

$\Delta T = 0.2$

m = 30

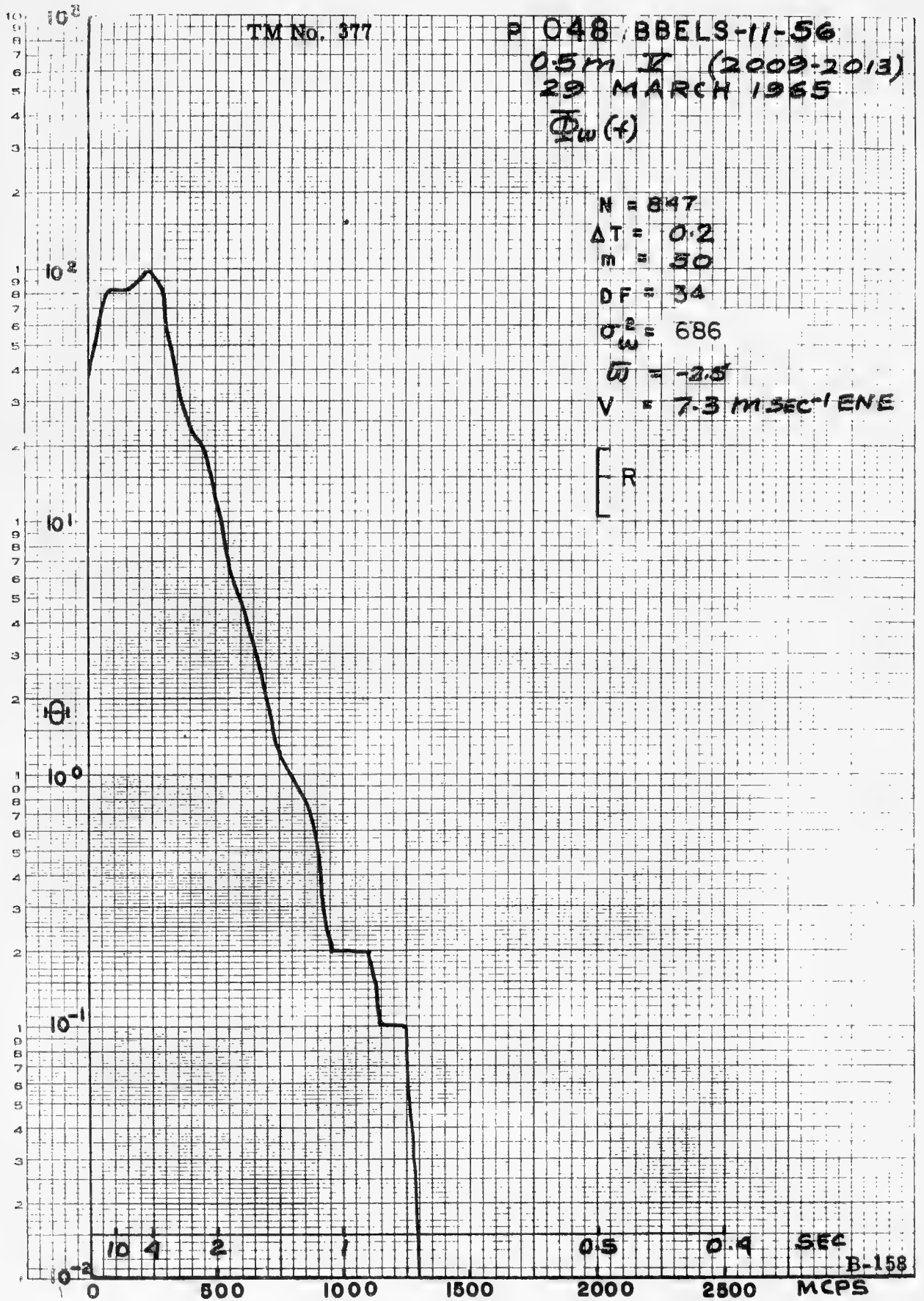
DF = 34

$\sigma_w^2 = 686$

$\bar{w} = -2.5$

V = 7.3 MSEC/ENE

[R



TM No. 377

P 049 BBELS -11-66

0.5 m VI (2158-2203)

29 MARCH 1965

Φ_w (f)

N = 1007

$\Delta T = 0.2$

m = 50

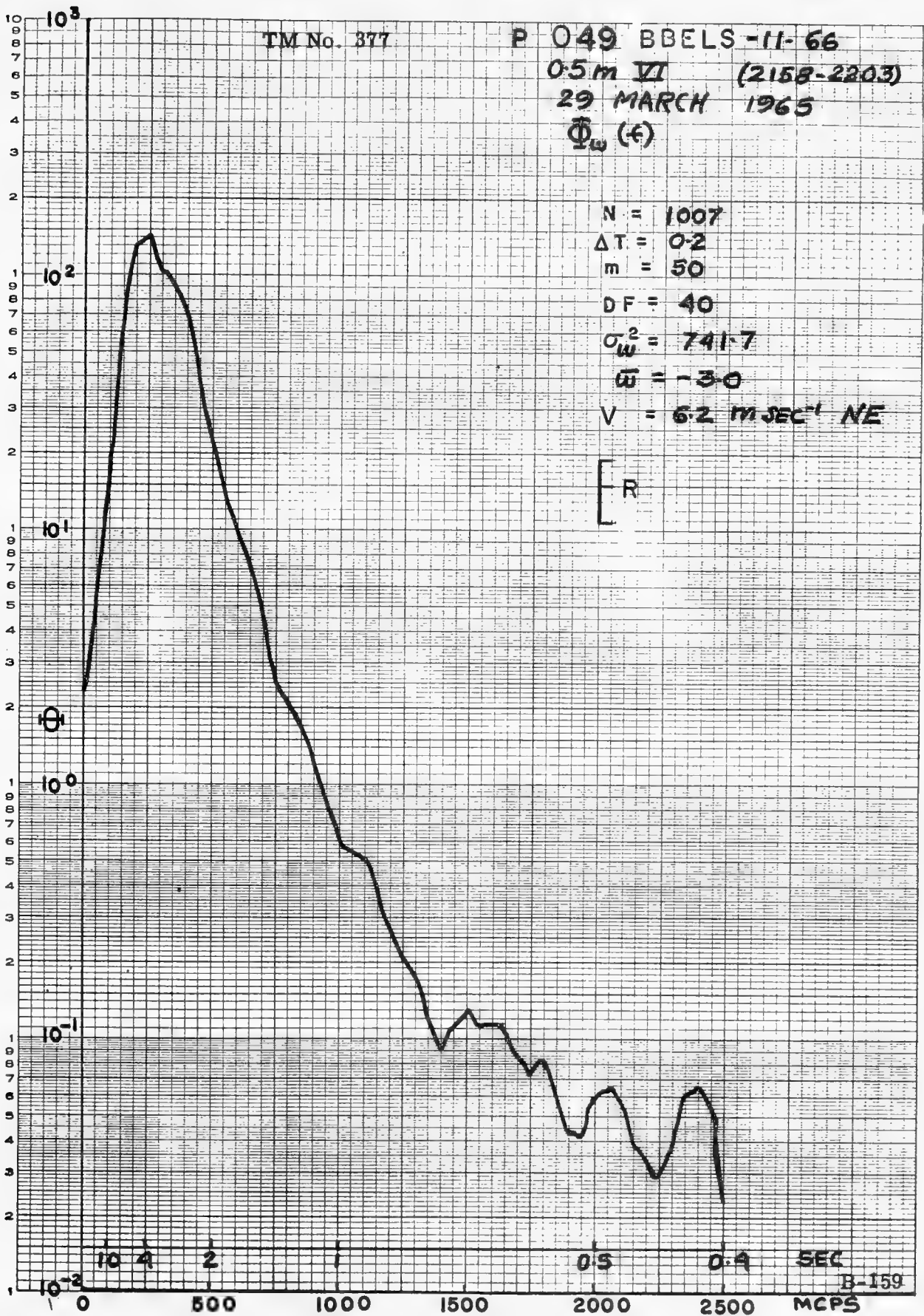
DF = 40

$\sigma_w^2 = 741.7$

$\bar{w} = -3.0$

V = 6.2 m/sec NE

[R]



TM No. 377

P 050, BBELS - 11-65
2.0M III (2204-2211)
20 MARCH 1965

$\Phi_w(\omega)$

N = 1938

$\Delta T = 0.2$

m = 50

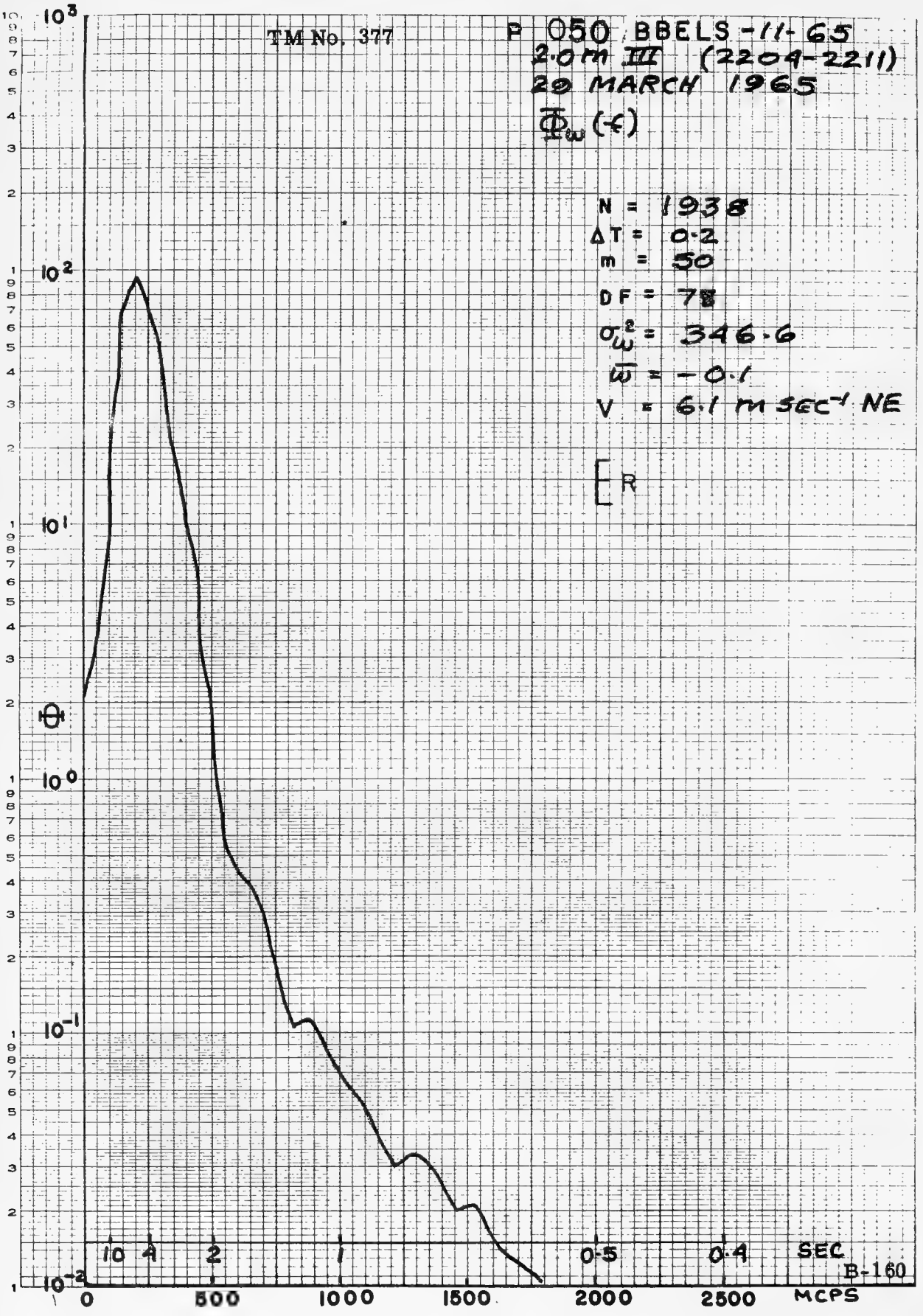
DF = 78

$\sigma_w^2 = 346.6$

$\bar{w} = -0.1$

V = 6.1 m SEC⁻¹ NE

[R



B-160

TM No. 377

P 051 BBELS-11-60
2.0m IV (0010-0015)
30 MARCH 1965

$\Phi_w(f)$

$N = 1425$

$\Delta T = 0.2$

$m = 50$

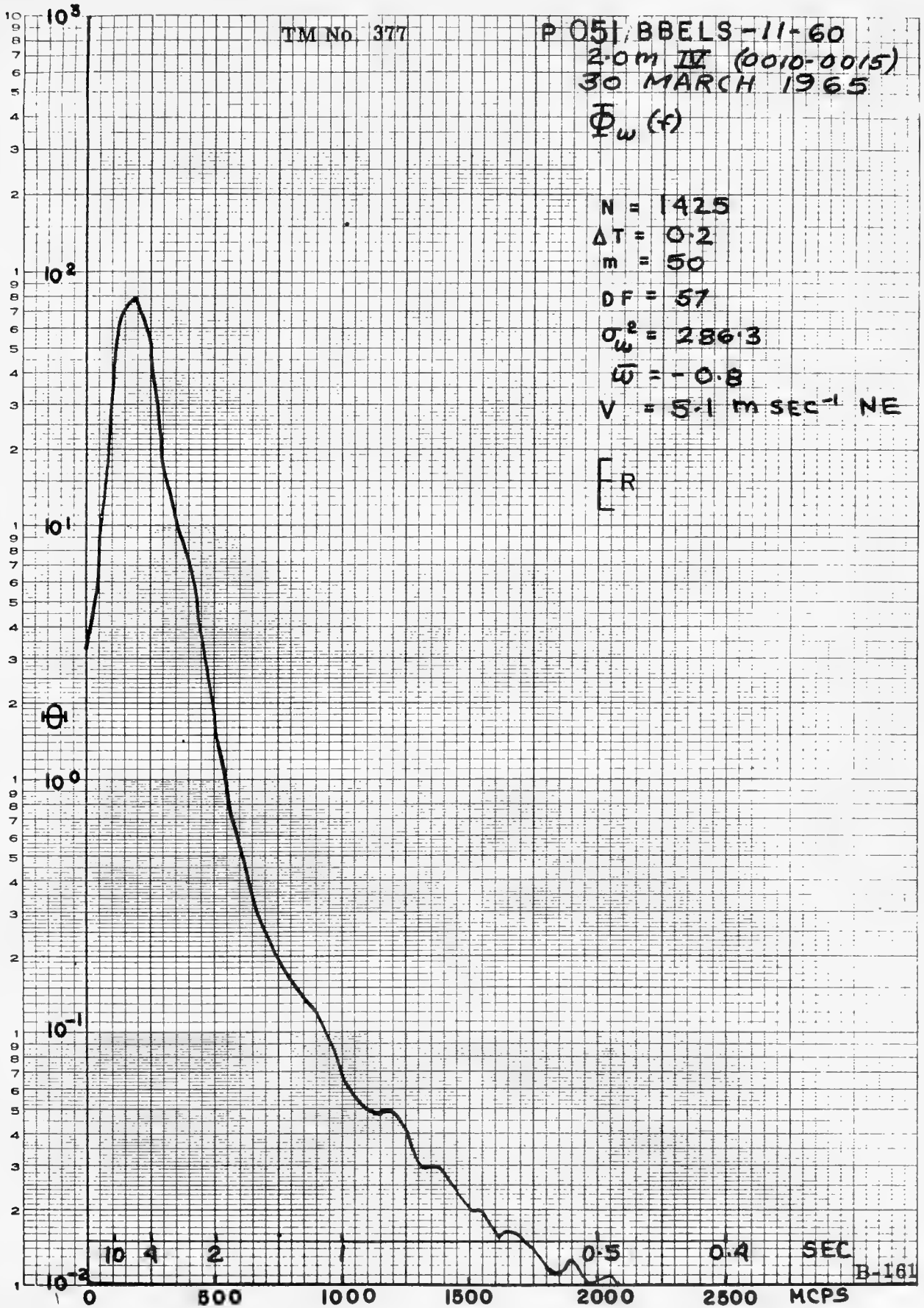
$DF = 57$

$\sigma_w^2 = 286.3$

$\bar{w} = -0.8$

$V = 5.1 \text{ m sec}^{-1} \text{ NE}$

[R]



TM No. 377

P 052 BBELS -11-64
0.5 m VII (0022-0027)
30 MARCH 1965

$\Phi_w(\omega)$

N = 1165

$\Delta T = 0.2$

m = 50

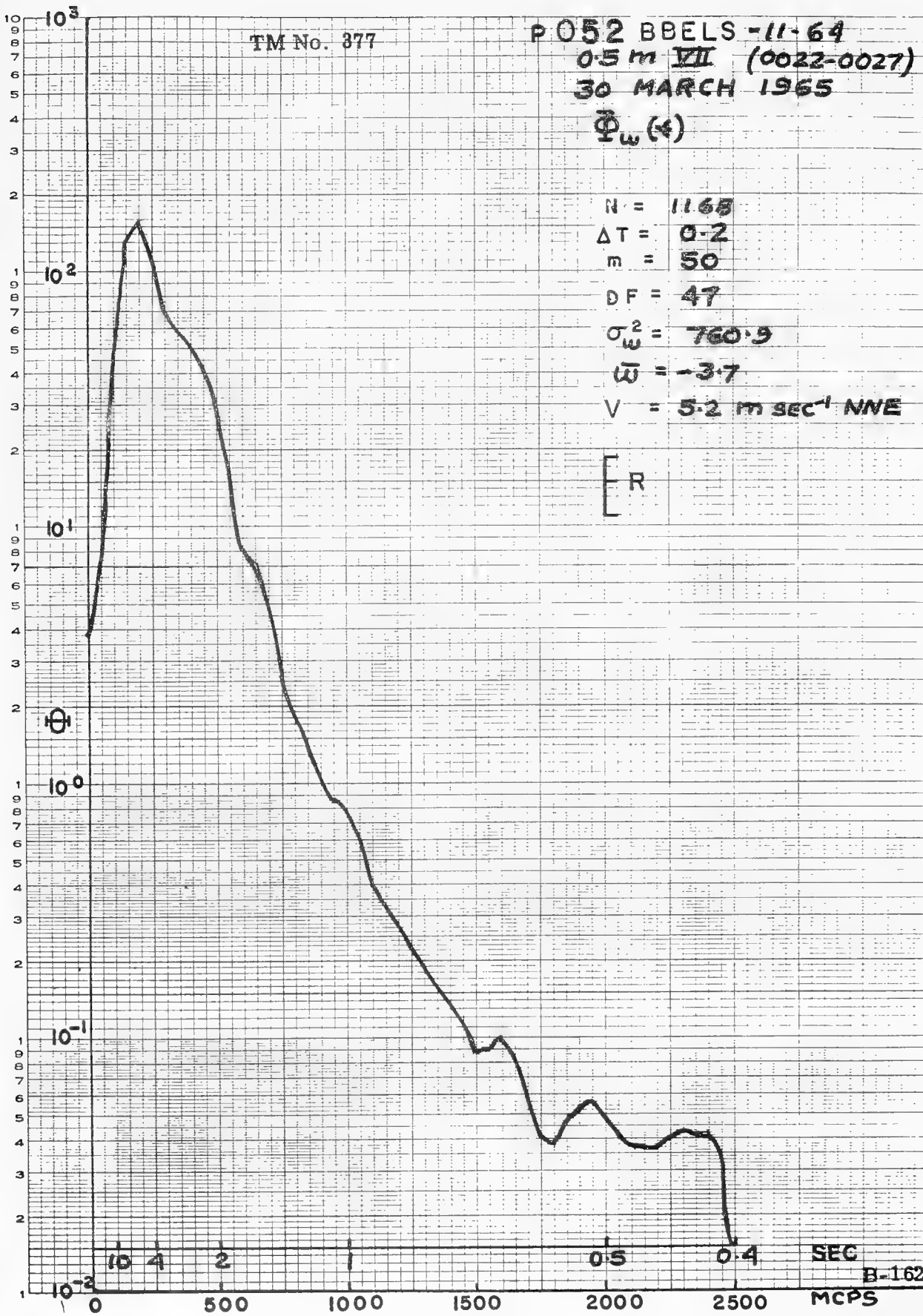
DF = 47

$\sigma_w^2 = 760.9$

$\bar{\omega} = -3.7$

V = 5.2 m sec⁻¹ NNE

[R

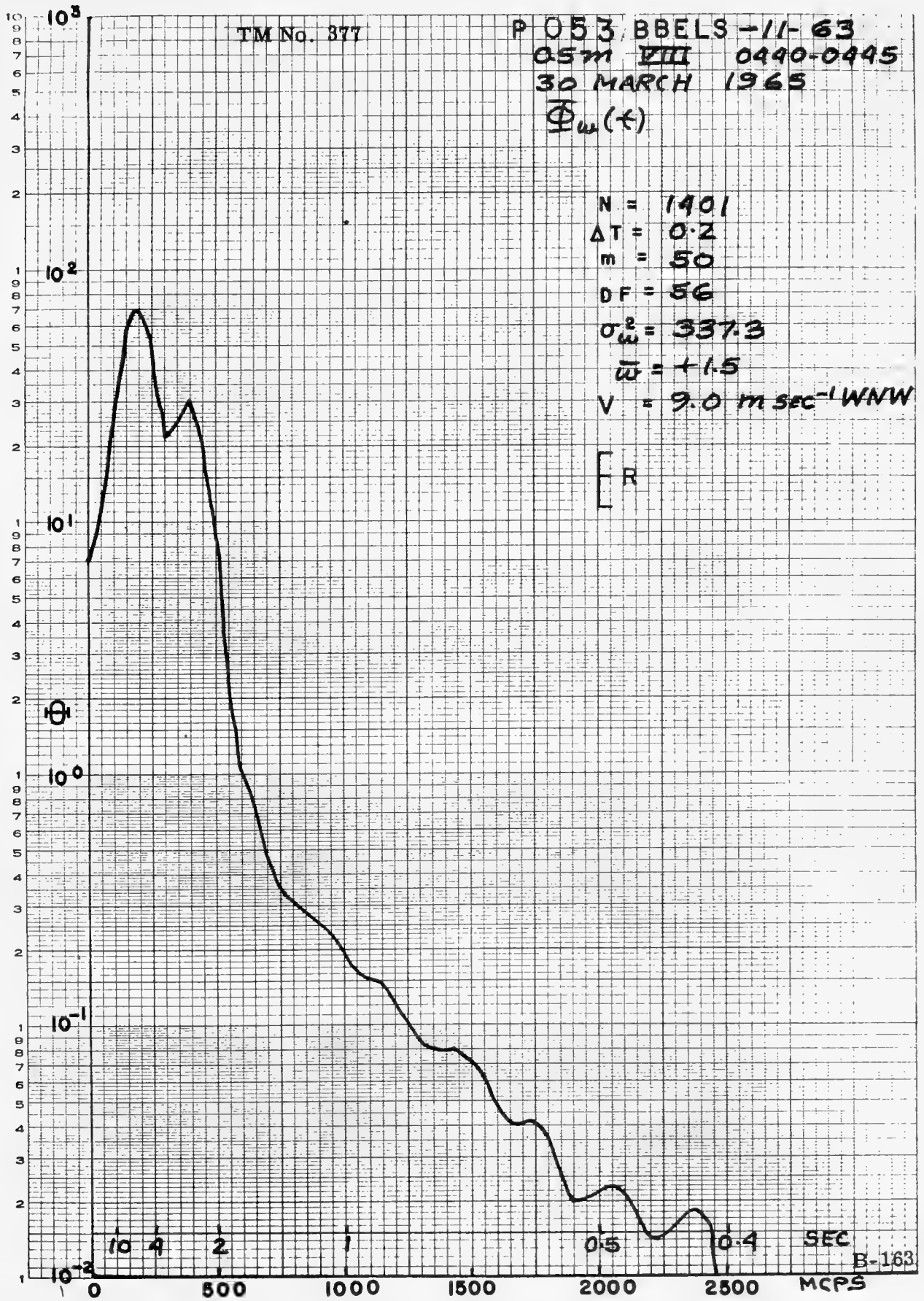


TM No. 377

P 053, BBELS - 11-63
Q5M VIII 0440-0445
30 MARCH 1965
 $\Phi_w(\tau)$

N = 1401
 $\Delta T = 0.2$
m = 50
DF = 56
 $\sigma_w^2 = 337.3$
 $\bar{w} = +1.5$
V = 9.0 m sec⁻¹ WNW

[R]



TM No. 377

P 054 BBELS-11-58

0.5 m/s (0810-0815)

30 MARCH 1965

$\Phi_w(\omega)$

N = 1480

$\Delta T = 0.2$

m = 50

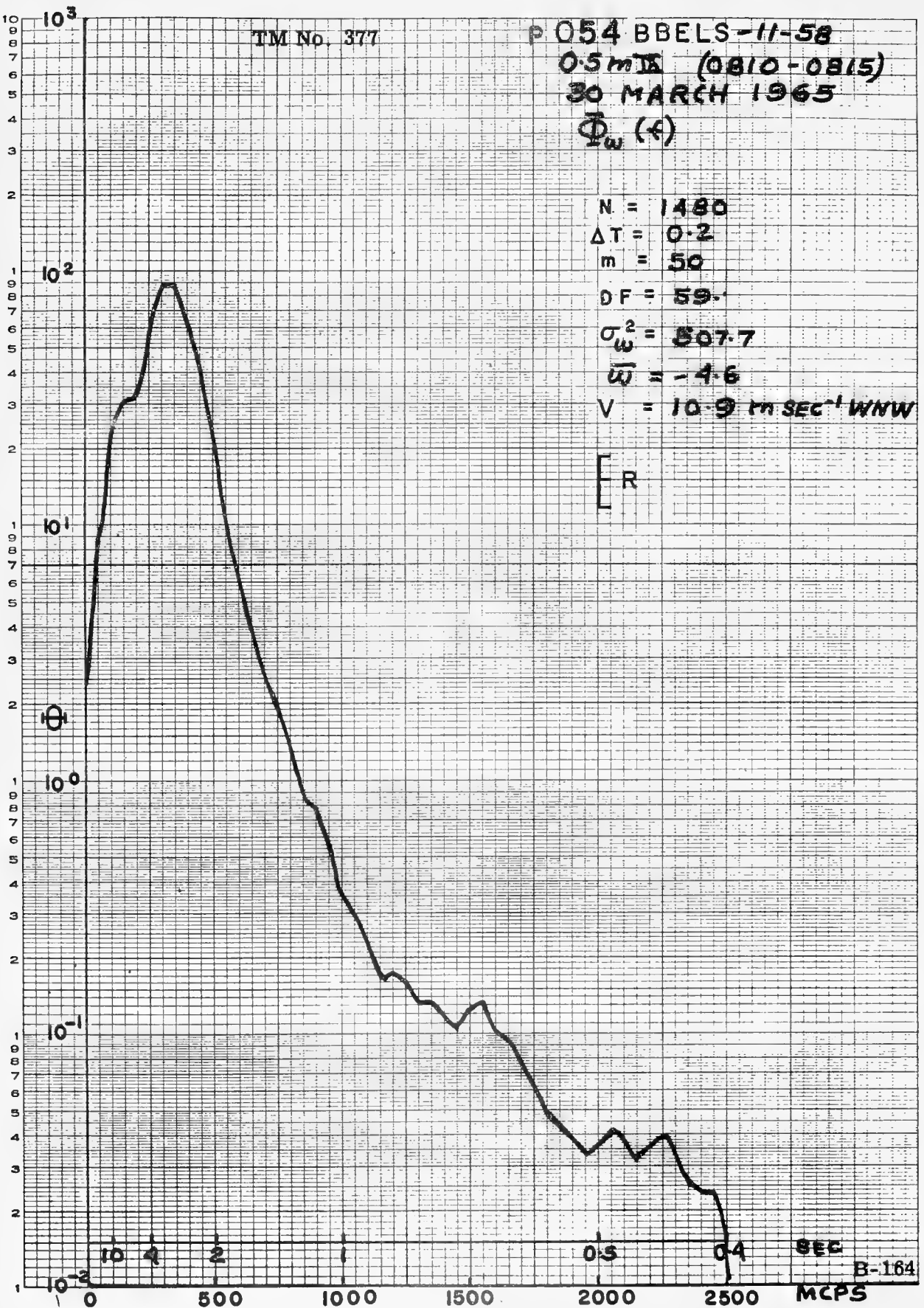
DF = 59.

$\sigma_w^2 = 807.7$

$\bar{\omega} = -4.6$

V = 10.9 m SEC⁻¹ WNW

[R



TM No. 377

P 055/BBELS-11-72

20m II 0826-0831

30 MARCH 1965

$\Phi_w(f)$

N = 1295

$\Delta T = 0.2$

m = 50

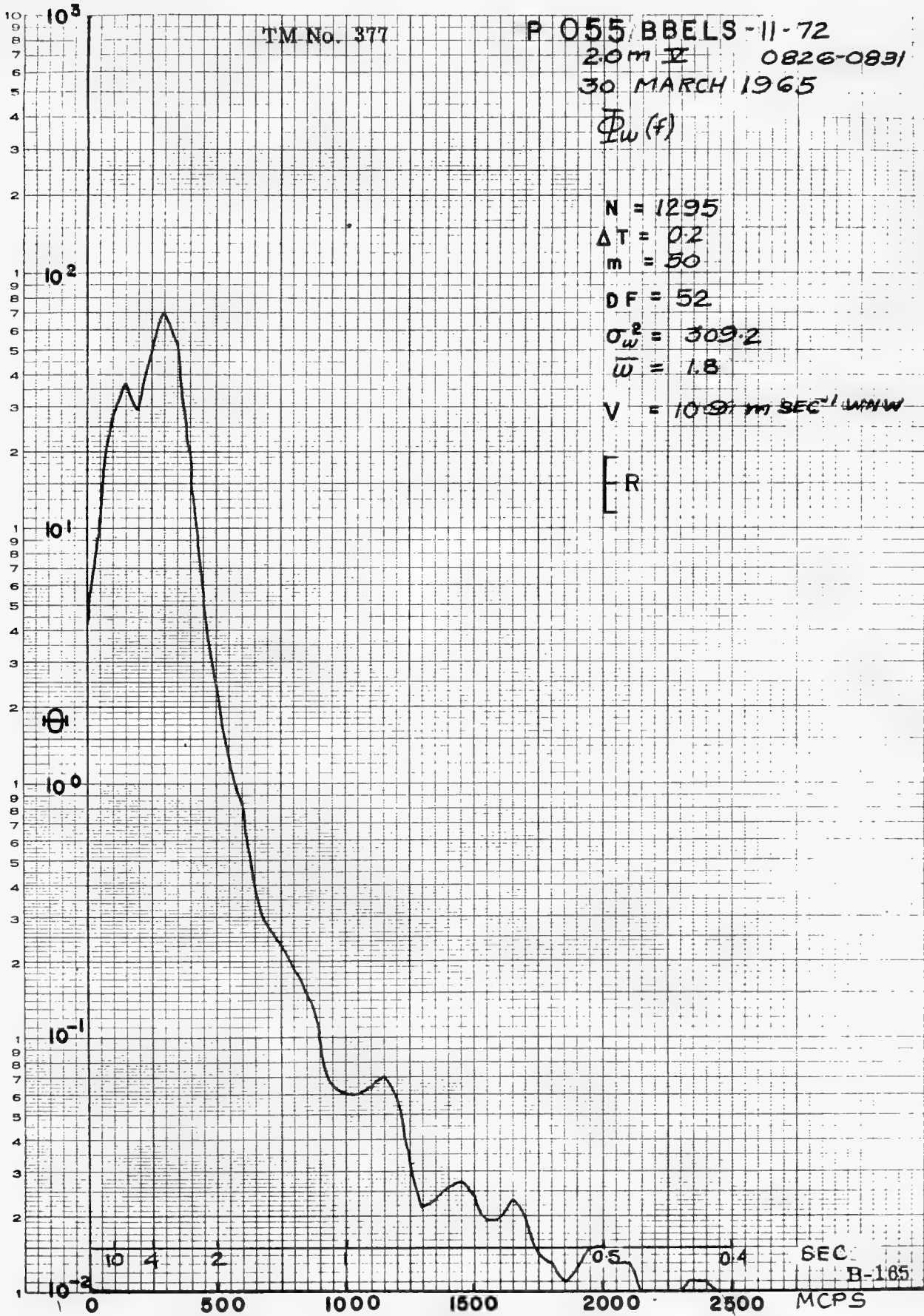
DF = 52

$\sigma_w^2 = 309.2$

$\bar{w} = 1.8$

V = 10.91 m SEC⁻¹ WPMW

[R



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5 CYCLES X 10 DIVISIONS PER INCH

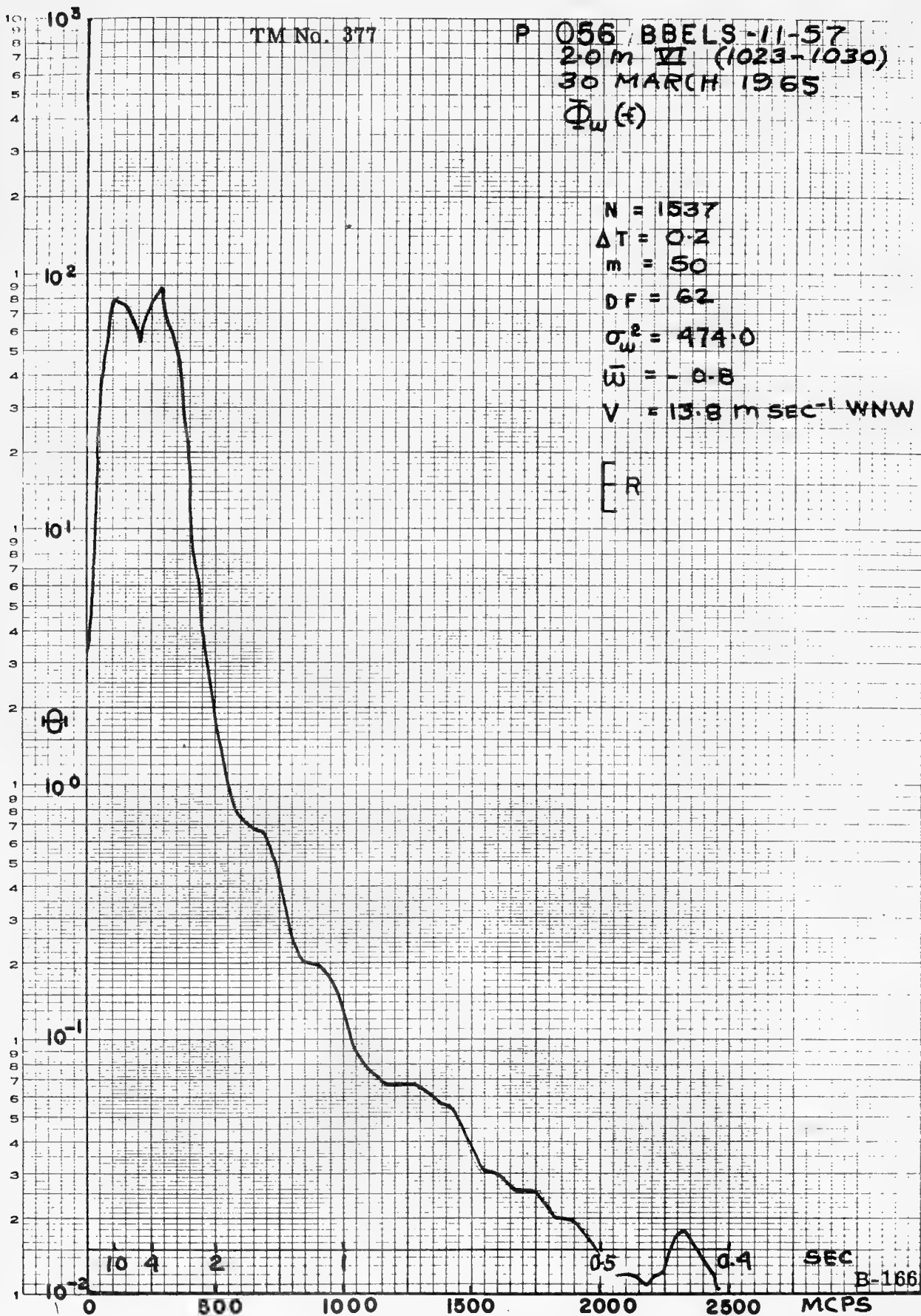
B-185

TM No. 377

P 056 BBELS-11-57
20 m VI (1023-1030)
30 MARCH 1965
 $\bar{\Phi}_w(\epsilon)$

$N = 1537$
 $\Delta T = 0.2$
 $m = 50$
 $DF = 62$
 $\sigma_w^2 = 474.0$
 $\bar{w} = -0.8$
 $V = 13.8 \text{ m SEC}^{-1} \text{ WNW}$

[R



SEC

B-166

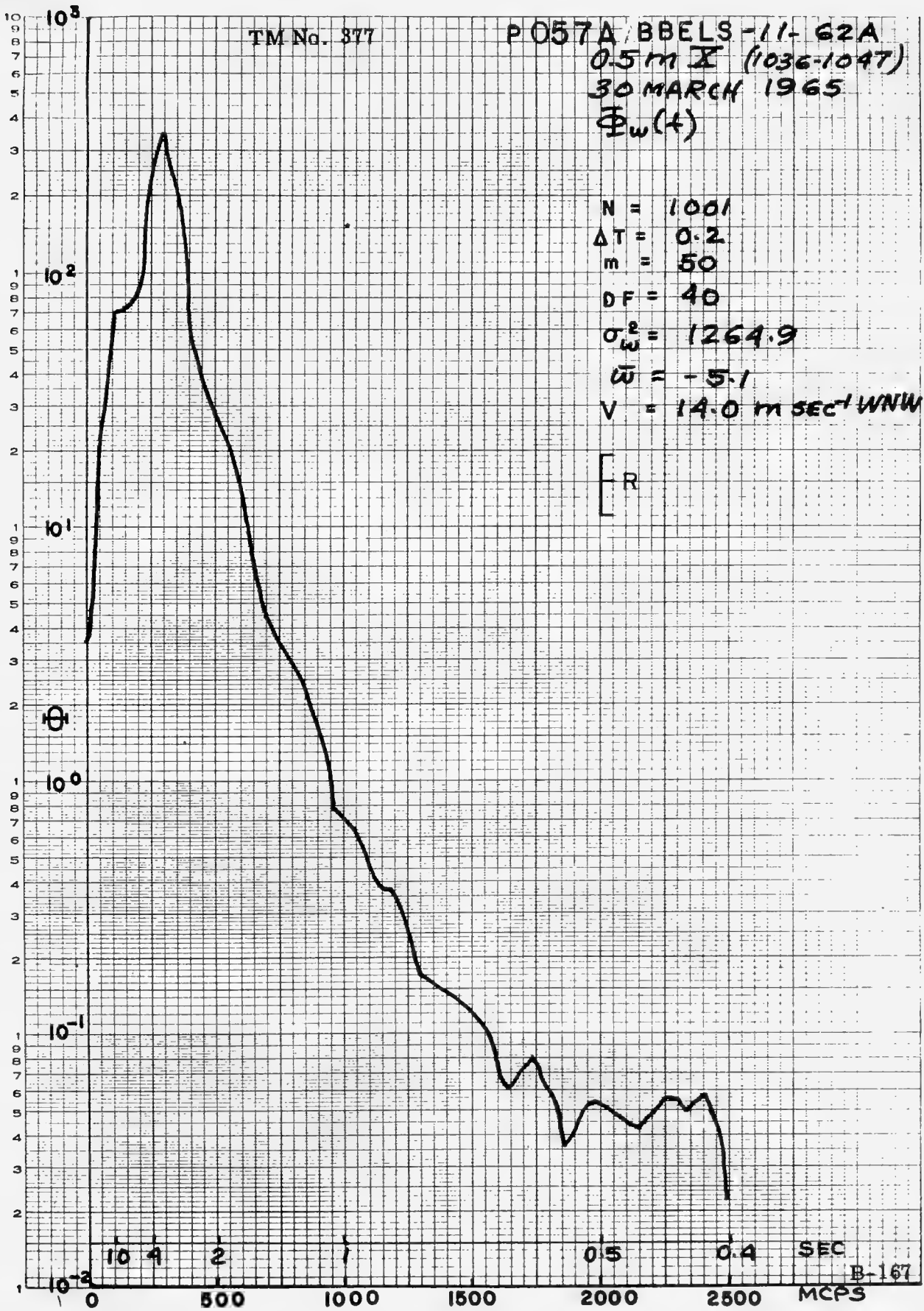
MCPS

TM No. 377

P 057A / BBELS - 11 - 62A
0.5 m X (1036-1047)
30 MARCH 1965
 $\Phi_w(t)$

$N = 1001$
 $\Delta T = 0.2$
 $m = 50$
 $DF = 40$
 $\sigma_w^2 = 1264.9$
 $\bar{\omega} = -5.1$
 $V = 14.0 \text{ m SEC}^{-1} \text{ WNW}$

[R



TM No. 377

P 057B / BBELS-11-62B
0.5 m X (1040-1047)
30 MARCH 1965

$\Phi_w(f)$

$N = 1070$

$\Delta T = 0.2$

$m = 50$

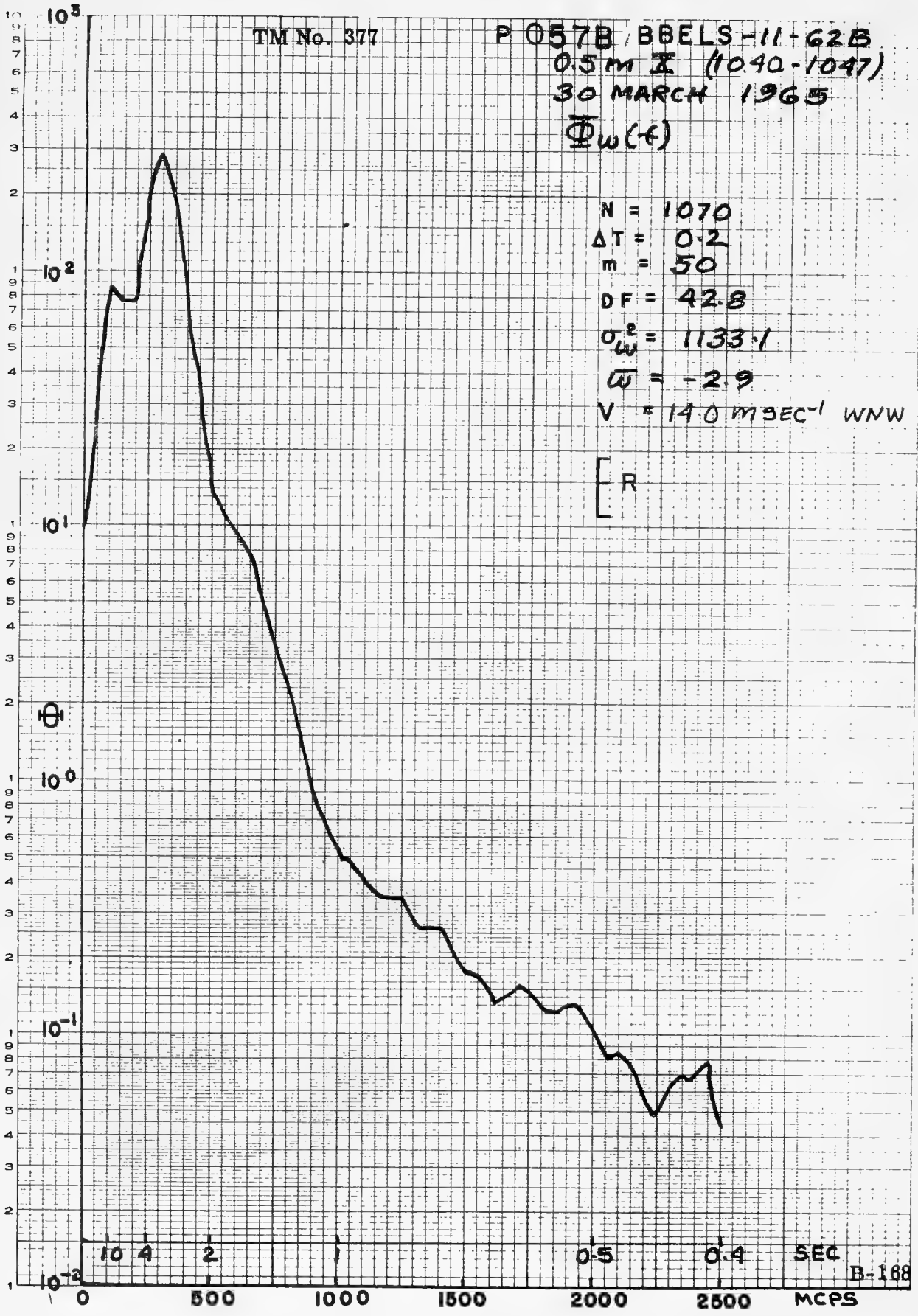
$DF = 42.8$

$\sigma_w^2 = 1133.1$

$\bar{w} = -2.9$

$V = 140 \text{ m SEC}^{-1} \text{ WNW}$

[R

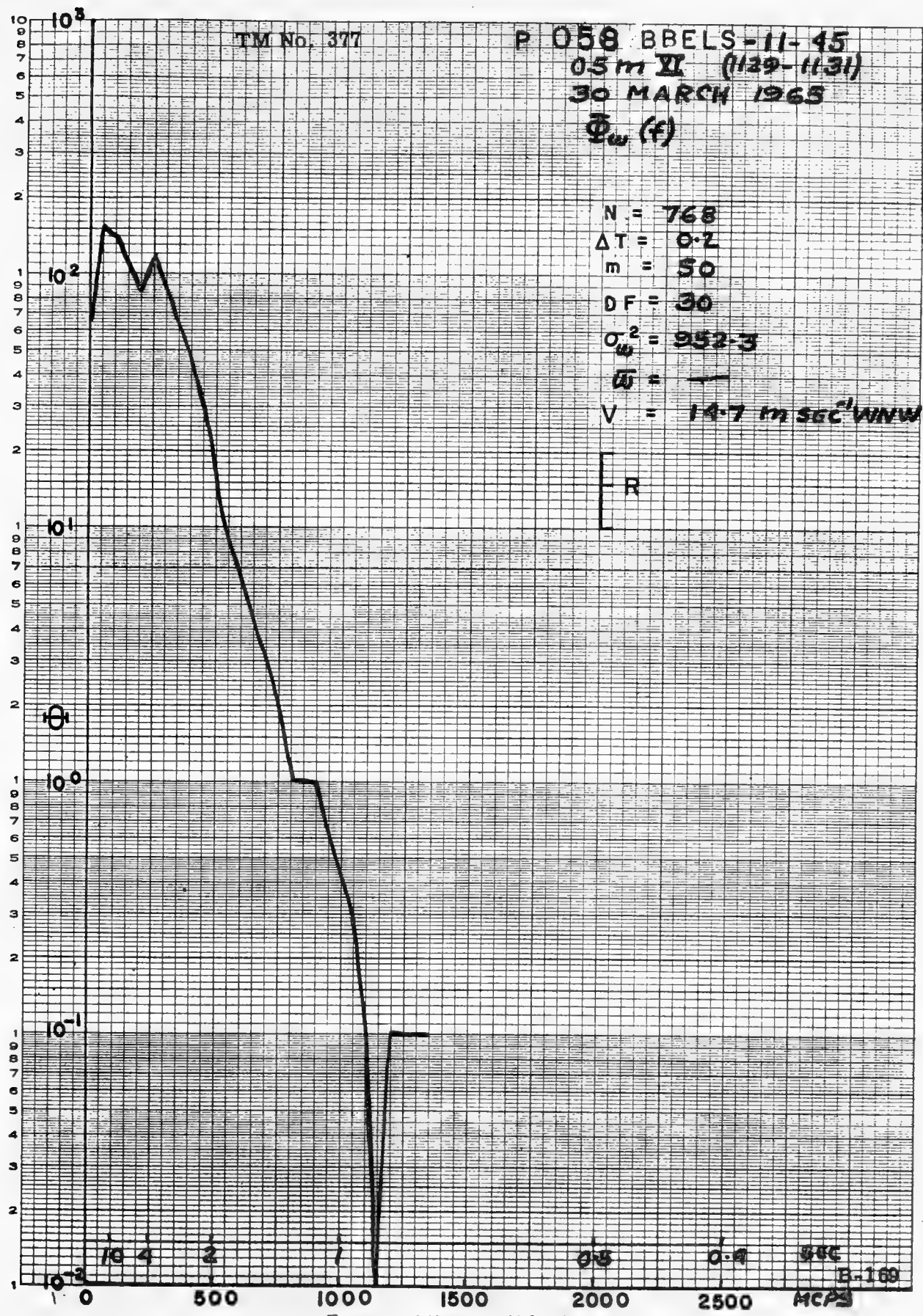


TM No. 377

P 058 BBELS-11-45
05 m VI (1129-1131)
30 MARCH 1965
 $\Phi_w(f)$

N = 768
 $\Delta T = 0.2$
m = 50
DF = 30
 $\sigma_w^2 = 952.3$
 $\bar{w} = \text{---}$
V = 14.7 m SEC¹WINW

R



TM No. 377

P 059 BBELS-11-42
20 m VII (1134-1137)

$\bar{\Phi}_w$ (°) 30 MARCH 1965

N = 751

$\Delta T = 0.2$

m = 50

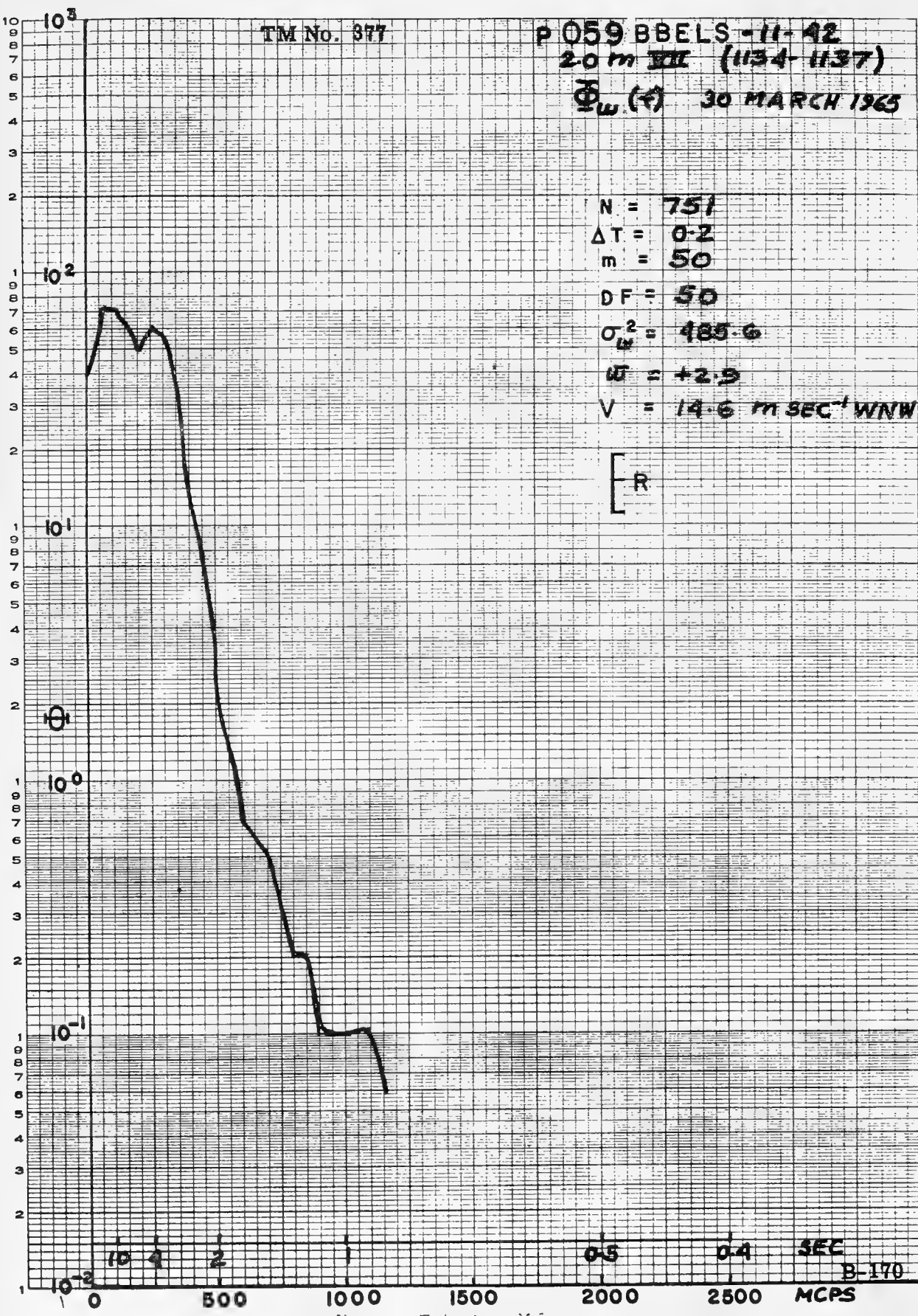
DF = 50

$\sigma_w^2 = 485.6$

$U = +2.9$

V = 14.6 m SEC⁻¹ WNW

[R]



TM No. 377

P 060 BBELS-11-50
25m II (1140-1144)

30 MARCH 1965

$\Phi_w (f)$

N = 1445

$\Delta T = 0.2$

m = 50

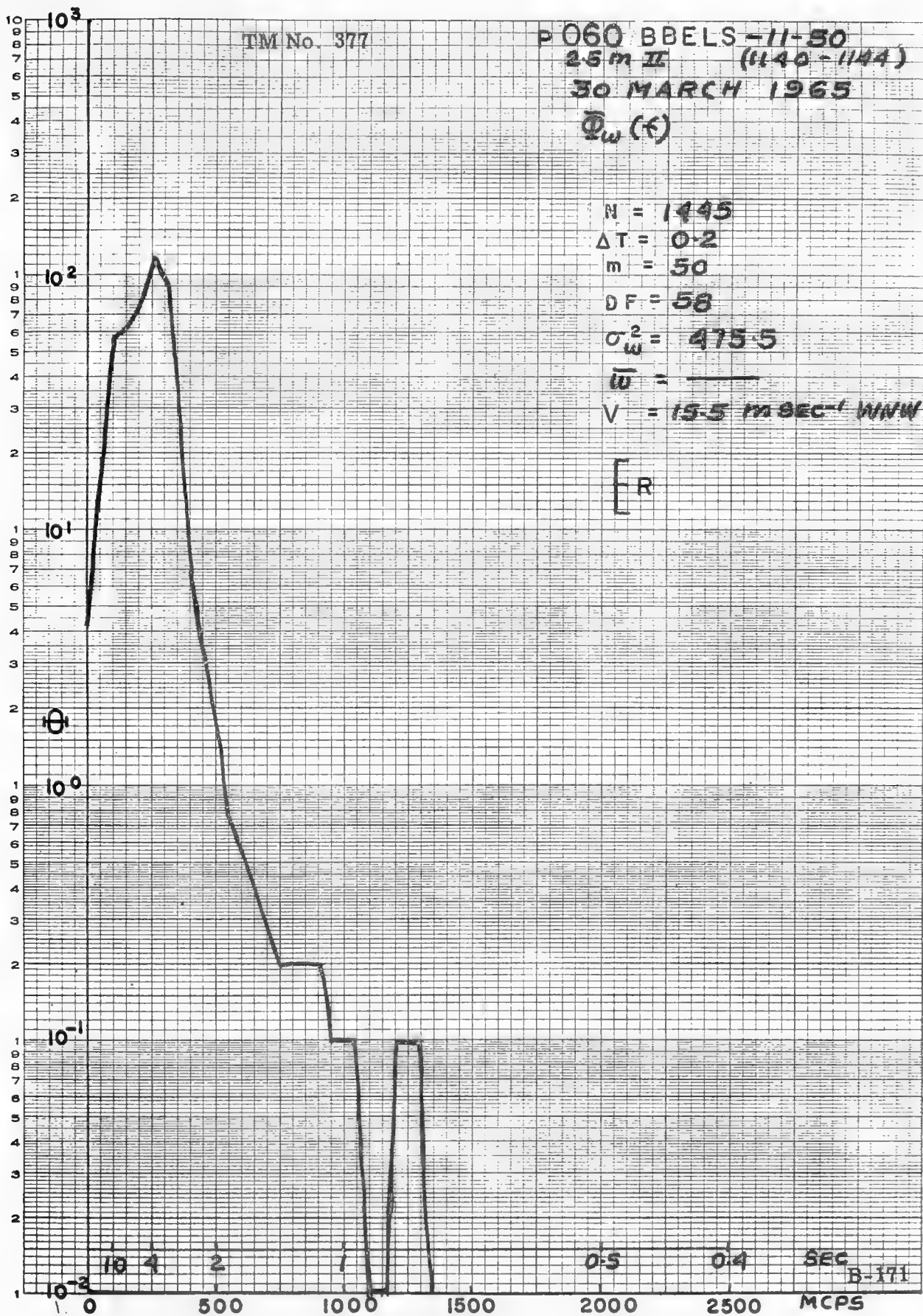
DF = 58

$\sigma_w^2 = 475.5$

$\bar{w} = \text{---}$

V = 15.5 m SEC⁻¹ WNW

[R]



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5 CYCLES X 10 DIVISIONS PER INCH

B-171

TM No. 377

P 06 BBELS-II-49
1.0 m I (1153-1158)
30 MARCH 1965

$\Phi_{10}(\omega)$

N = 733

$\Delta T = 0.2$

m = 50

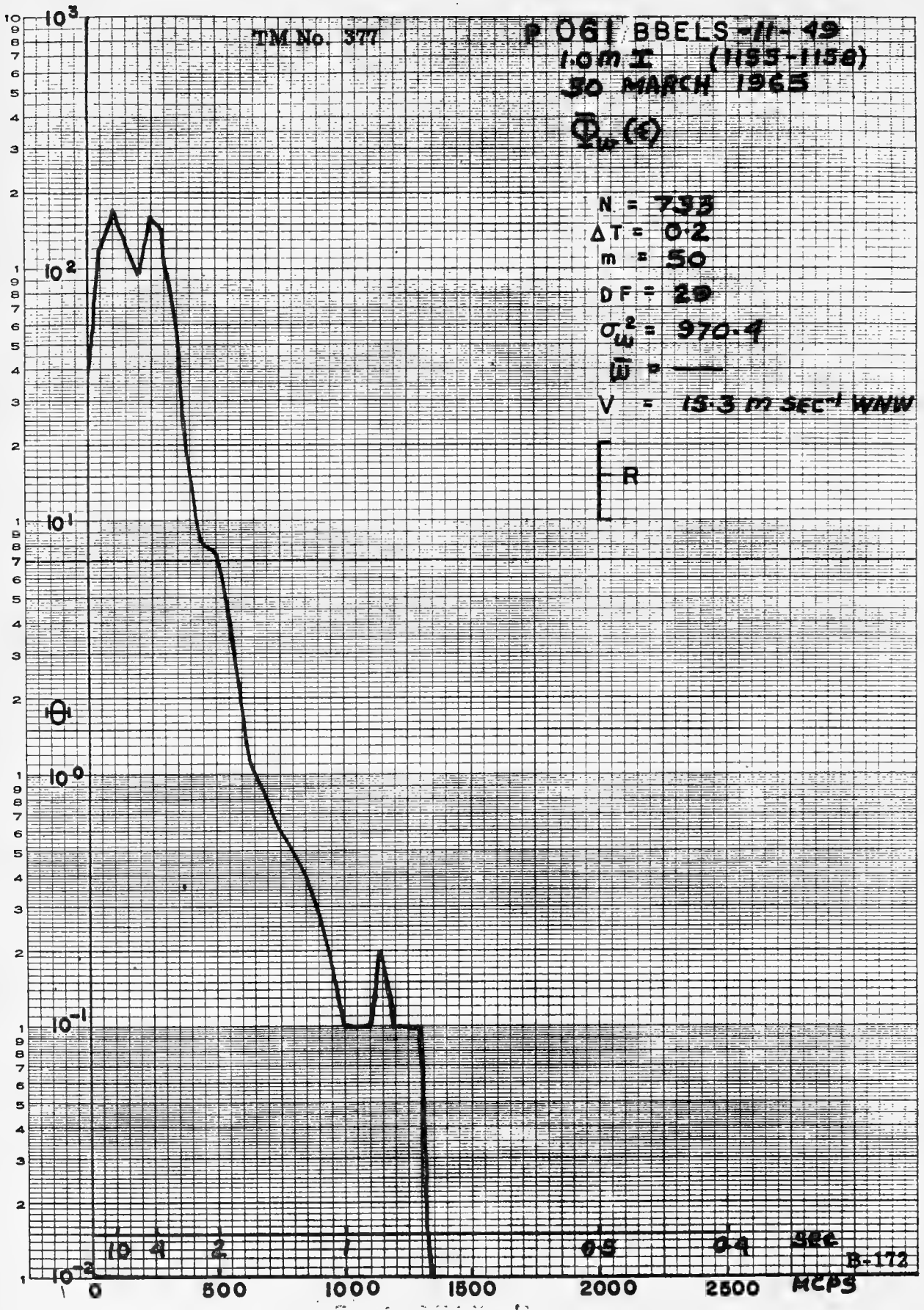
DF = 20

$\sigma_w^2 = 970.4$

$\bar{w} =$ —

V = 15.3 m SEC⁻¹ WNW

R

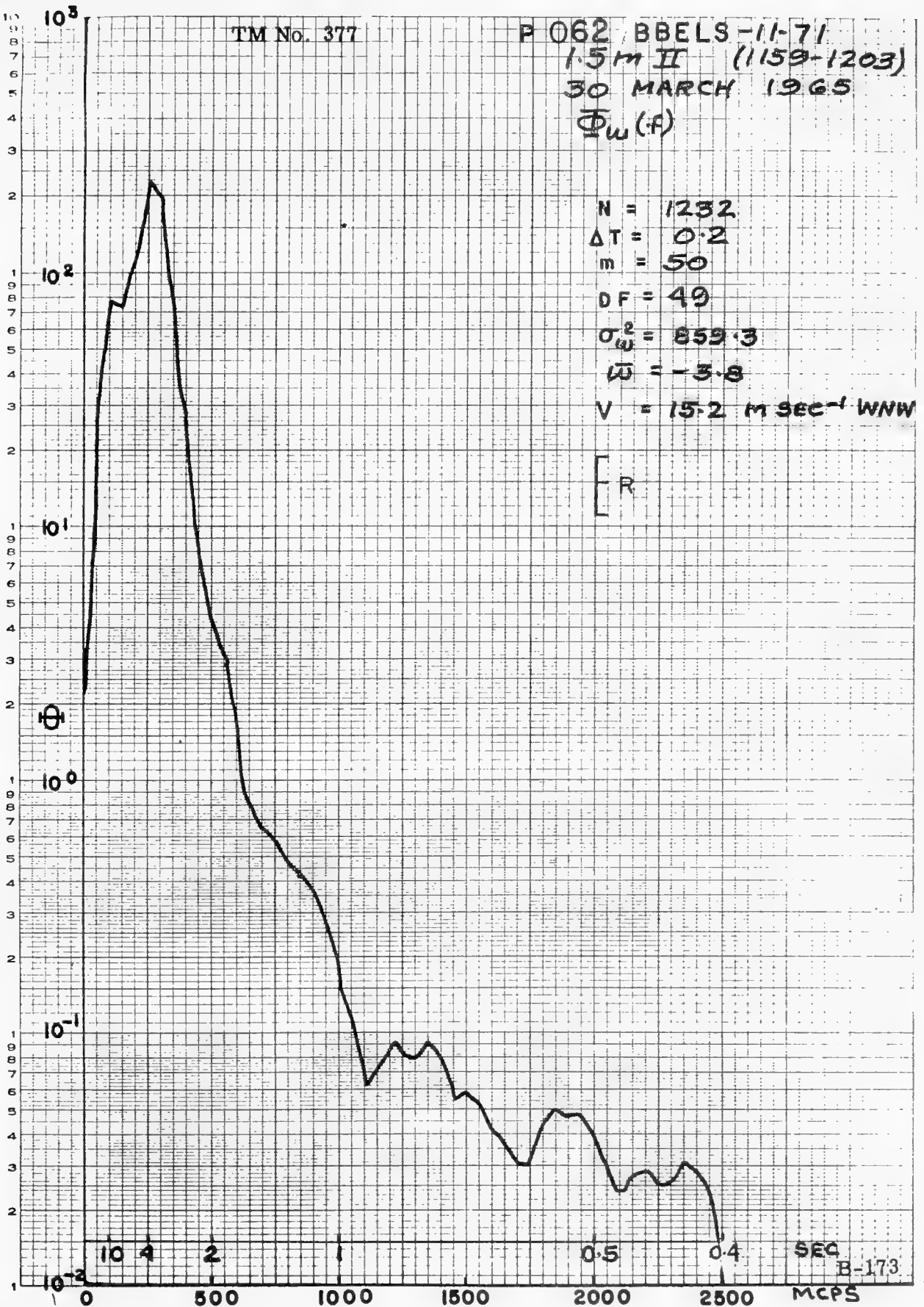


TM No. 377

P 062 BBELS-11-71
1.5 m II (1159-1203)
30 MARCH 1965
 $\Phi_w(f)$

$N = 1232$
 $\Delta T = 0.2$
 $m = 50$
 $DF = 49$
 $\sigma_w^2 = 859.3$
 $\bar{w} = -3.8$
 $V = 15.2 \text{ m sec}^{-1} \text{ WNW}$

[R]

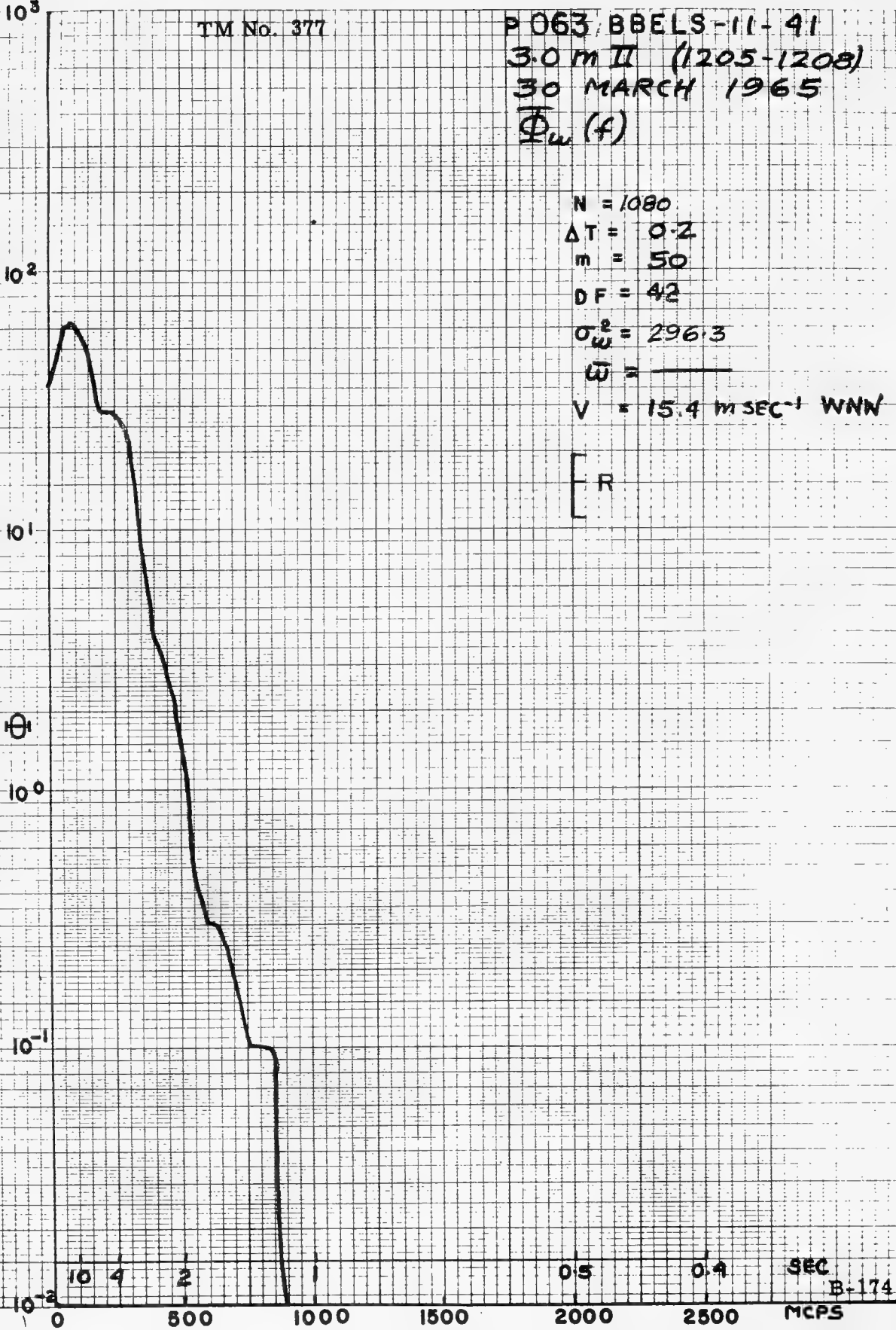


TM No. 377

P 063 BBELS-11-41
3.0 m II (1205-1208)
30 MARCH 1965
 $\bar{\Phi}_w(f)$

$N = 1080$
 $\Delta T = 0.2$
 $m = 50$
 $DF = 42$
 $\sigma_w^2 = 296.3$
 $\bar{w} = \text{---}$
 $V = 15.4 \text{ m SEC}^{-1} \text{ WNW}$

[R



TM No. 377

PO64/BBELS II
35m II (1212-1216)
30 MAR 1965

$\bar{\Phi}_w(f)$

$N = 768$

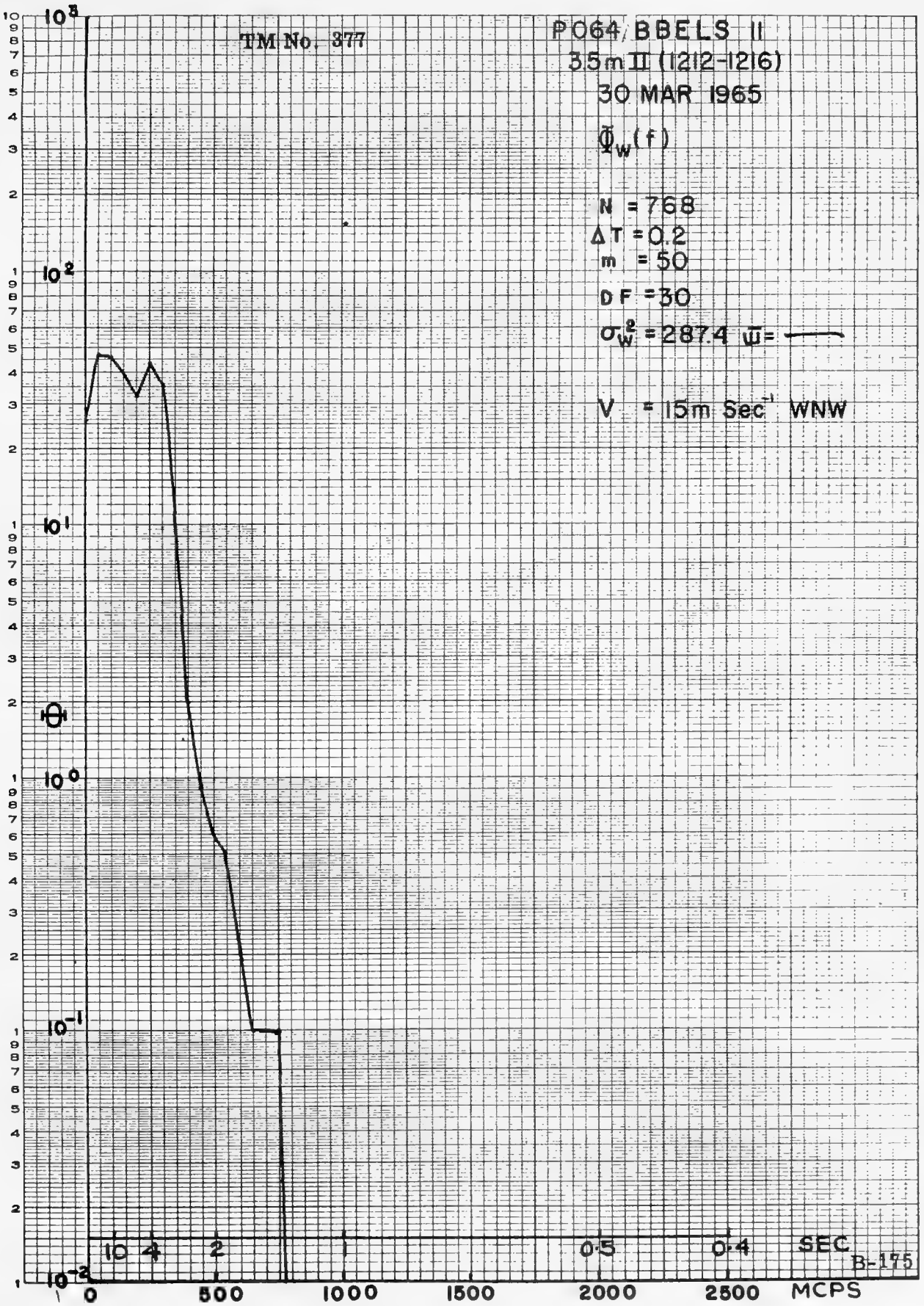
$\Delta T = 0.2$

$m = 50$

$DF = 30$

$\sigma_w^2 = 287.4 \bar{w} = \text{---}$

$V = 15 \text{ m Sec}^{-1} \text{ WNW}$



TM No. 377

P 065 BBELS-11-67
2.0 m III (1218-1221)
30 MARCH 1965
 $\Phi_w(\kappa)$

N = 1132

$\Delta T = 0.2$

m = 50

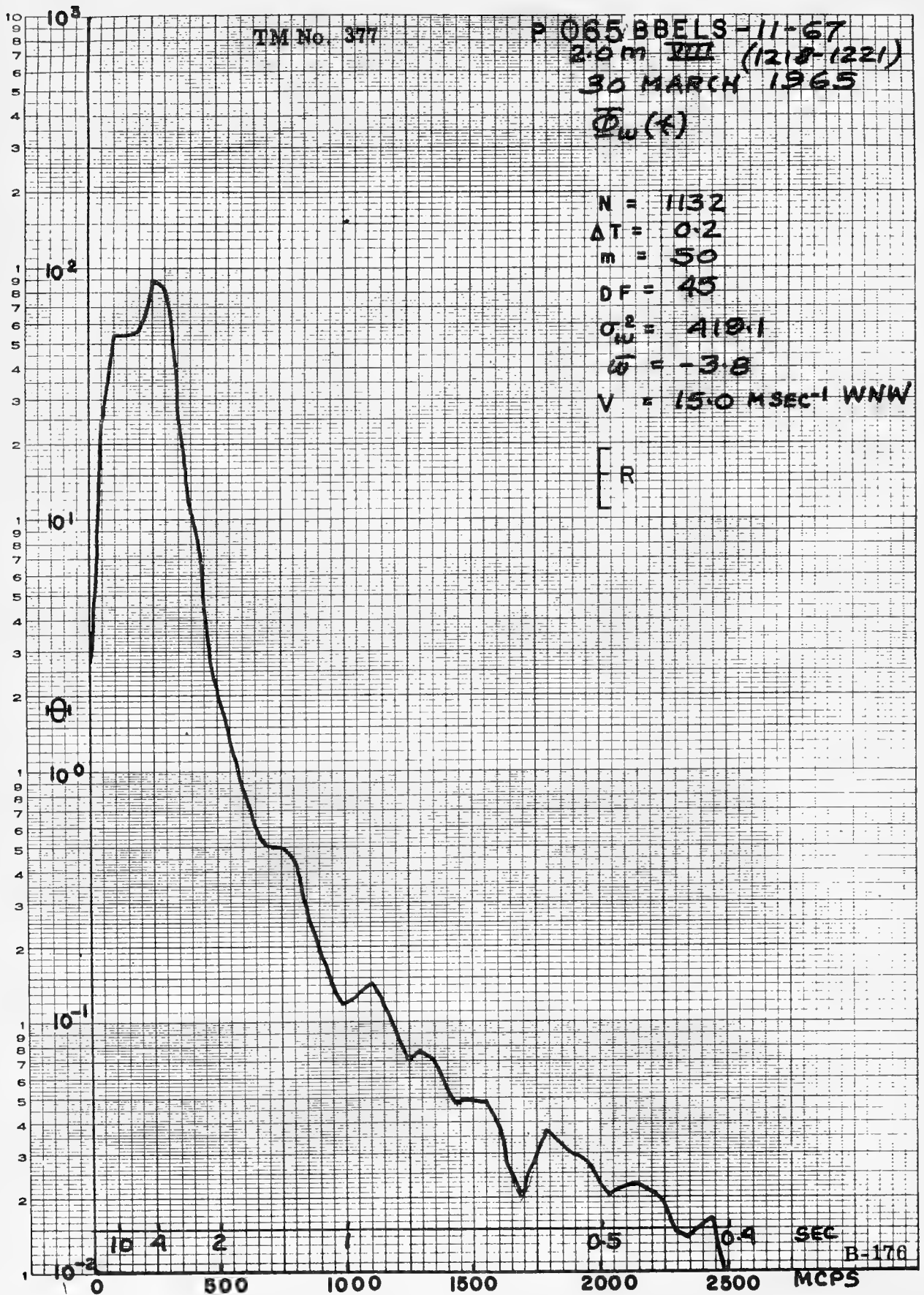
DF = 45

$\sigma_w^2 = 410.1$

$\bar{w} = -3.8$

V = 15.0 MSEC⁻¹ WNW

[R



B-176

TM No. 377

P 066/BBELS-11-51
25 m III (1226-1229)
30 MARCH 1965
 $\Phi_w (\epsilon)$

N = 1055

$\Delta T = 0.2$

m = 50

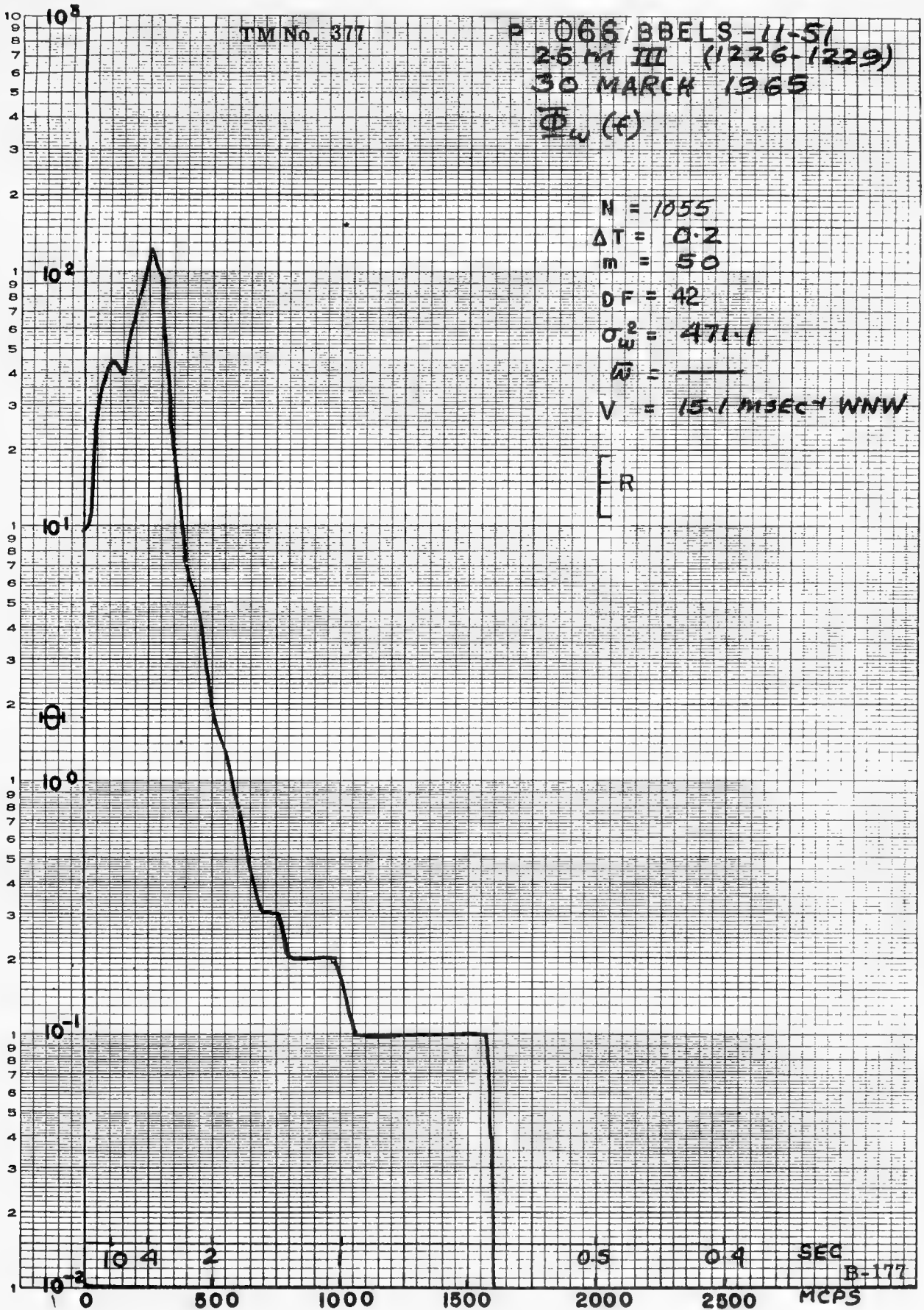
DF = 42

$\sigma_w^2 = 471.1$

$\bar{w} = \text{---}$

V = 15.1 msec⁻¹ WNW

[R]



TM No. 377

P 067 BBELS - 11-53
4.0 m II (1234-1238)
30 MARCH 1965

$\Phi_w(f)$

$N = 1008$

$\Delta T = 0.2$

$m = 50$

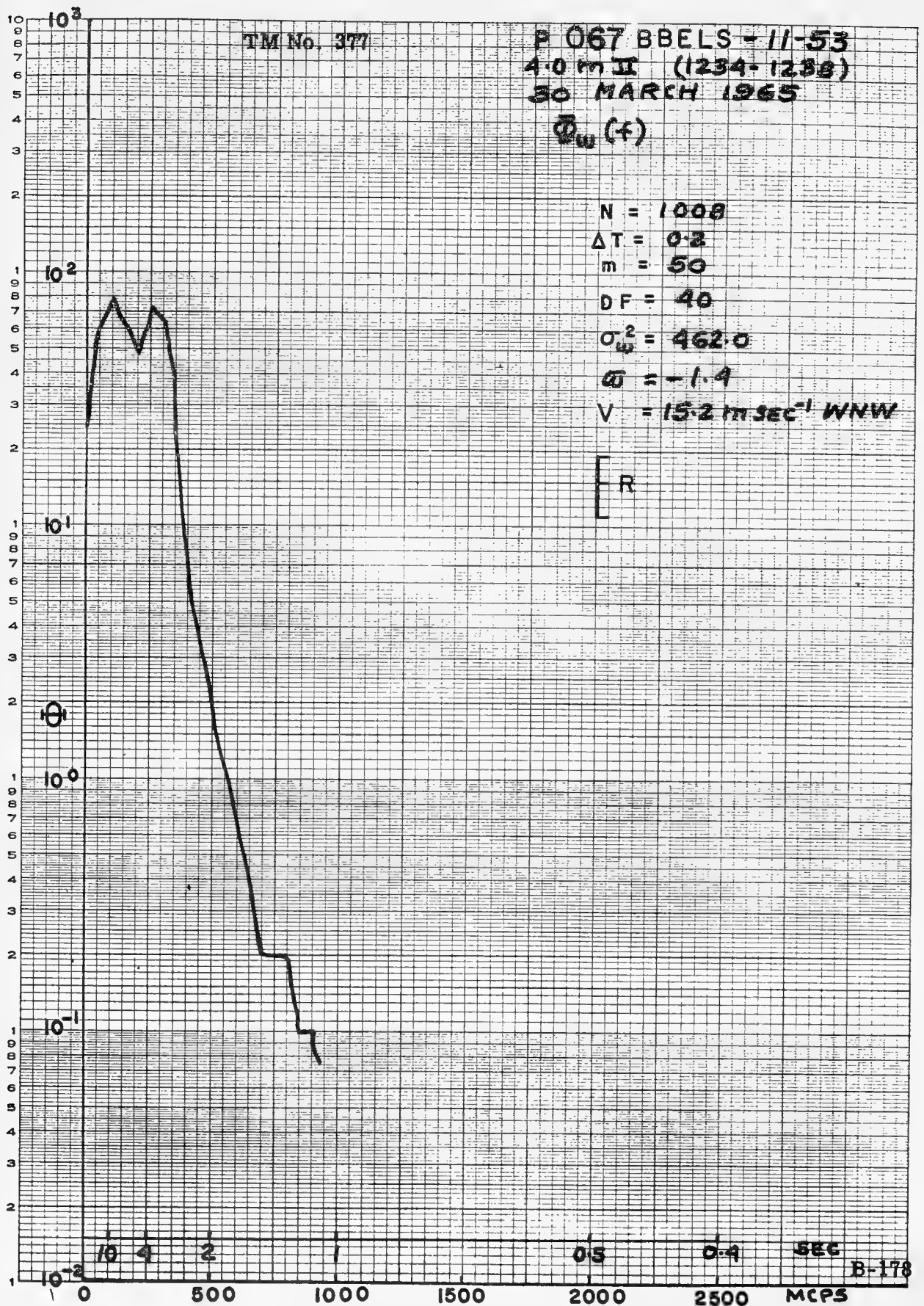
$DF = 40$

$\sigma_w^2 = 462.0$

$\bar{\omega} = -1.4$

$V = 15.2 \text{ m SEC}^{-1} \text{ WNW}$

[R



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5 CYCLES X 10 DIVISIONS PER INCH

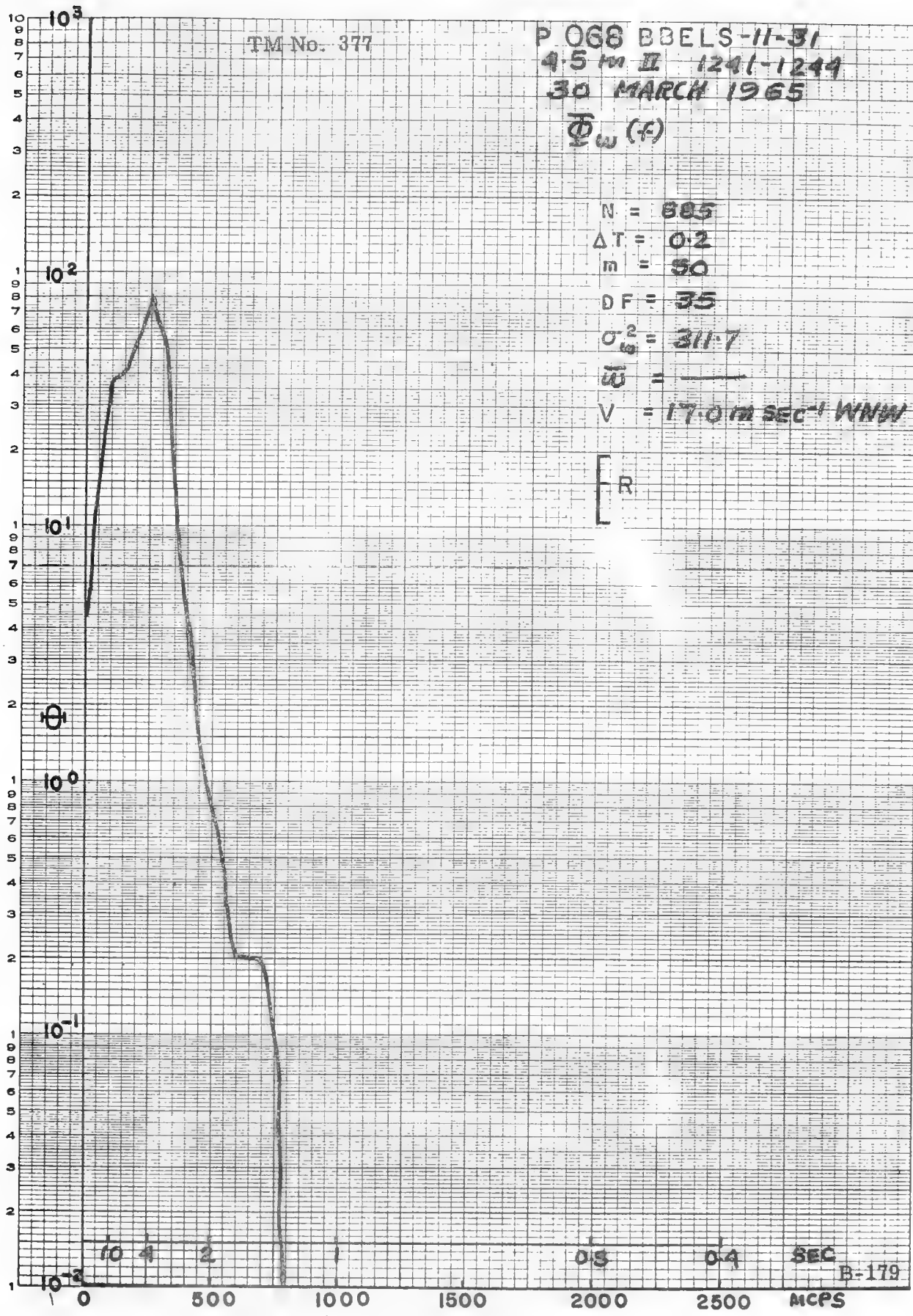
TM No. 377

P 068 BBELS-11-31
4.5 m II 1241-1244
30 MARCH 1965

$\Phi_w(f)$

N = 685
 $\Delta T = 0.2$
m = 50
DF = 35
 $\sigma_w^2 = 311.7$
 $\bar{w} = \text{---}$
V = 17.0 m SEC⁻¹ WNW

[R]

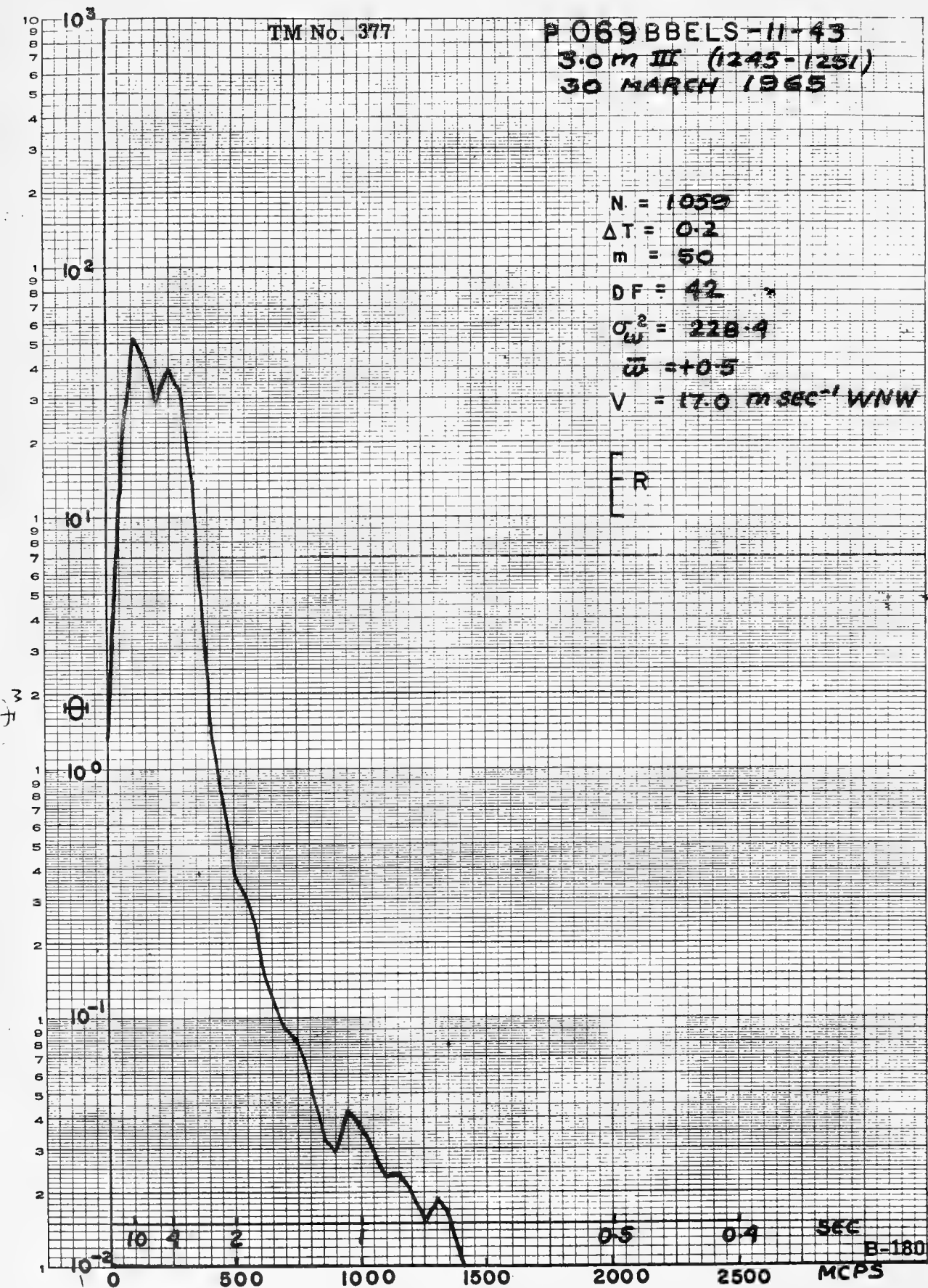


TM No. 377

P 069 BBELS-11-43
3.0 m III (1245-1251)
30 MARCH 1965

$N = 1059$
 $\Delta T = 0.2$
 $m = 50$
 $DF = 42$
 $\sigma_w^2 = 228.4$
 $\bar{w} = +0.5$
 $V = 17.0 \text{ m sec}^{-1} \text{ WNW}$

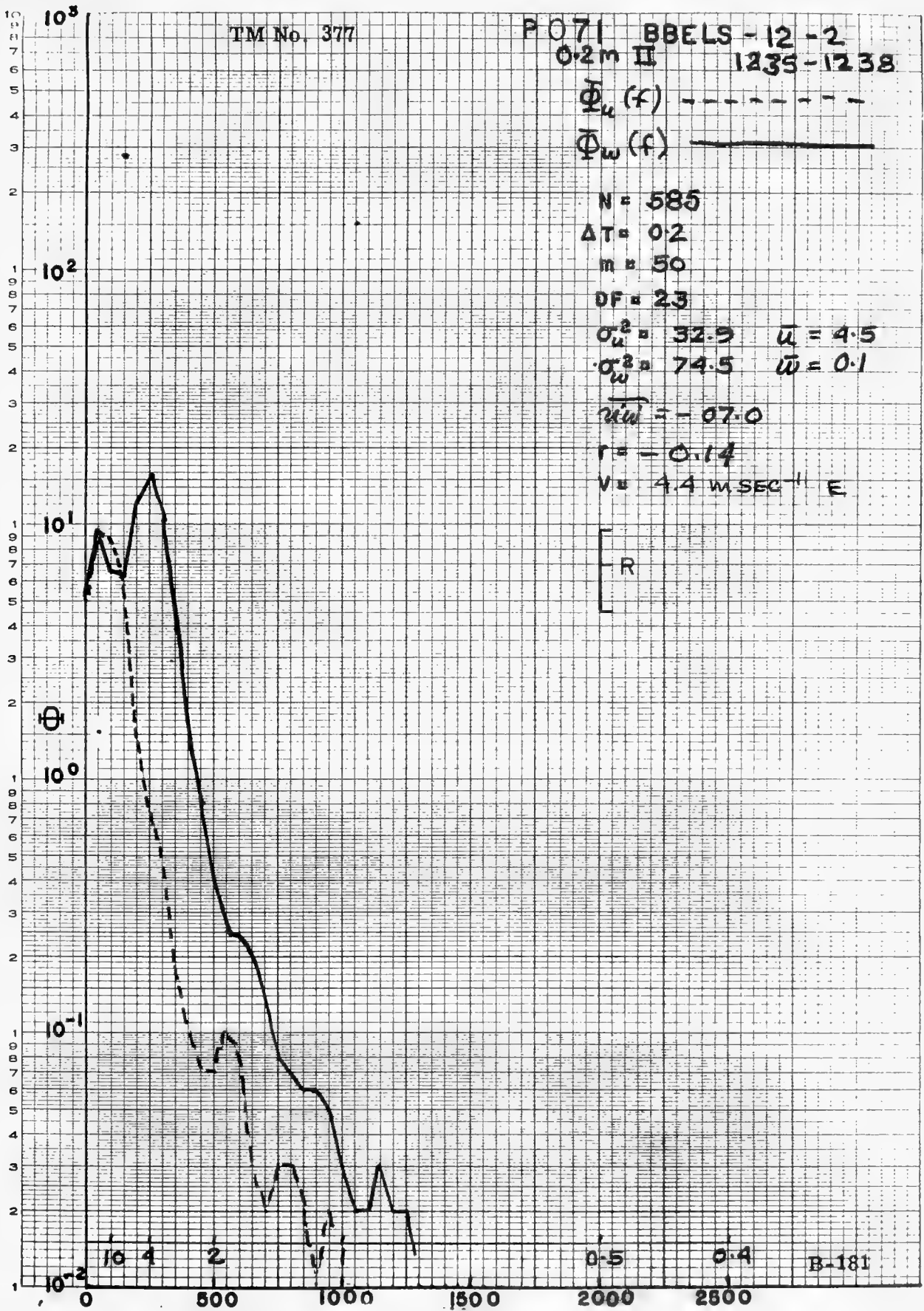
[R



B-180

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1/5 CYCLES X 10 DIVISIONS PER INCH



TM No. 377

P 072/BBELS 12-4
0.2 M III 1243-1248

$\Phi_L(f)$ - - - - -
 $\Phi_W(f)$ - - - - -

$N = 1551$

$\Delta T = 0.2$

$m = 54$

$DF = 22$

$\sigma_u^2 = 19.9$ $\bar{u} = 9.4$

$\sigma_w^2 = 87.5$ $\bar{w} = 0.1$

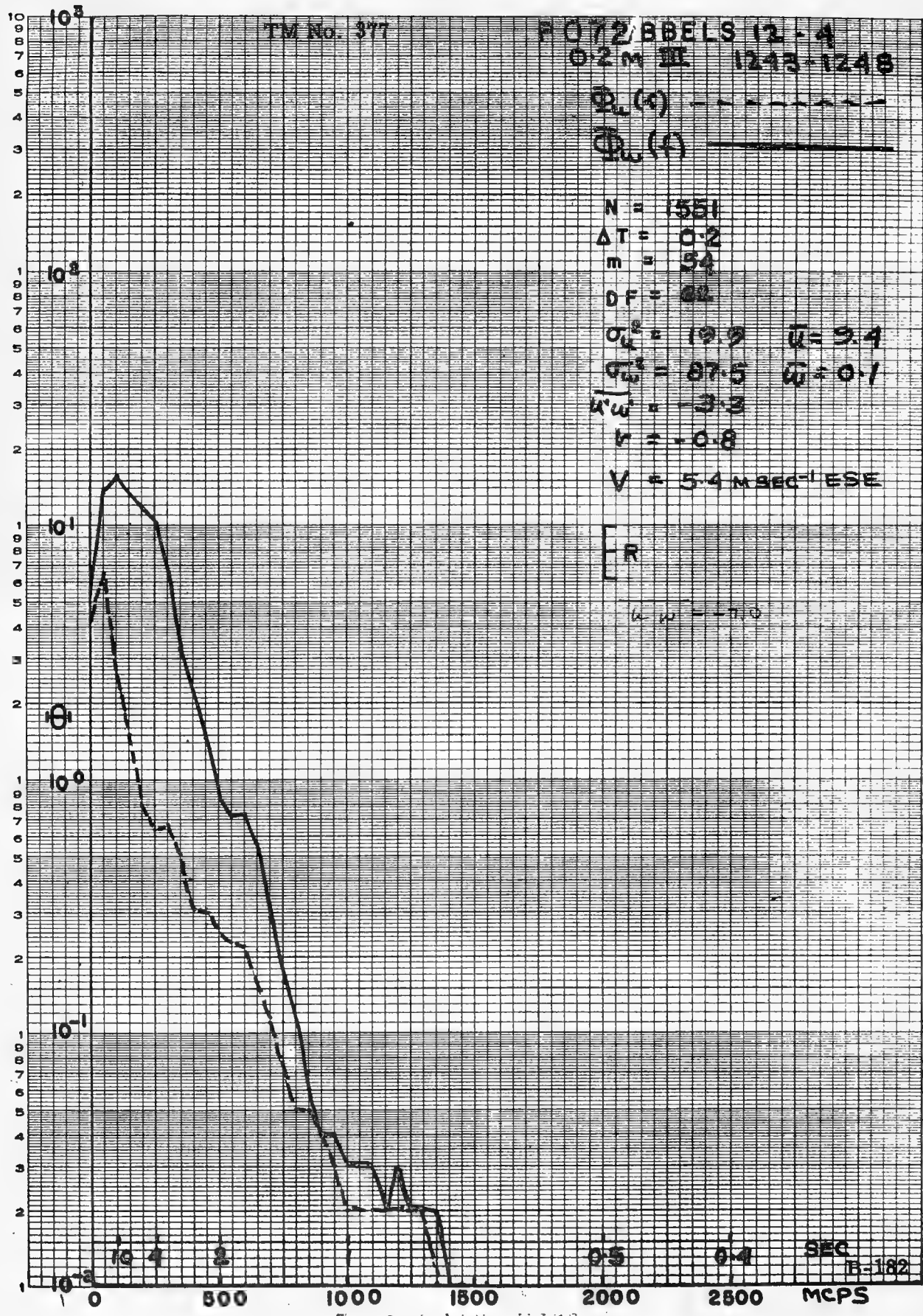
$\overline{u'w'} = -3.3$

$r = -0.8$

$V = 5.4 \text{ MSEC}^{-1} \text{ ESE}$

R

$\overline{u'w'} = -7.0$



TM No. 377

P 073 / BBELS 12

100mI (1316-1320)

7 APR. 1965

$\Phi_u (f)$ ———

$N = 1327$

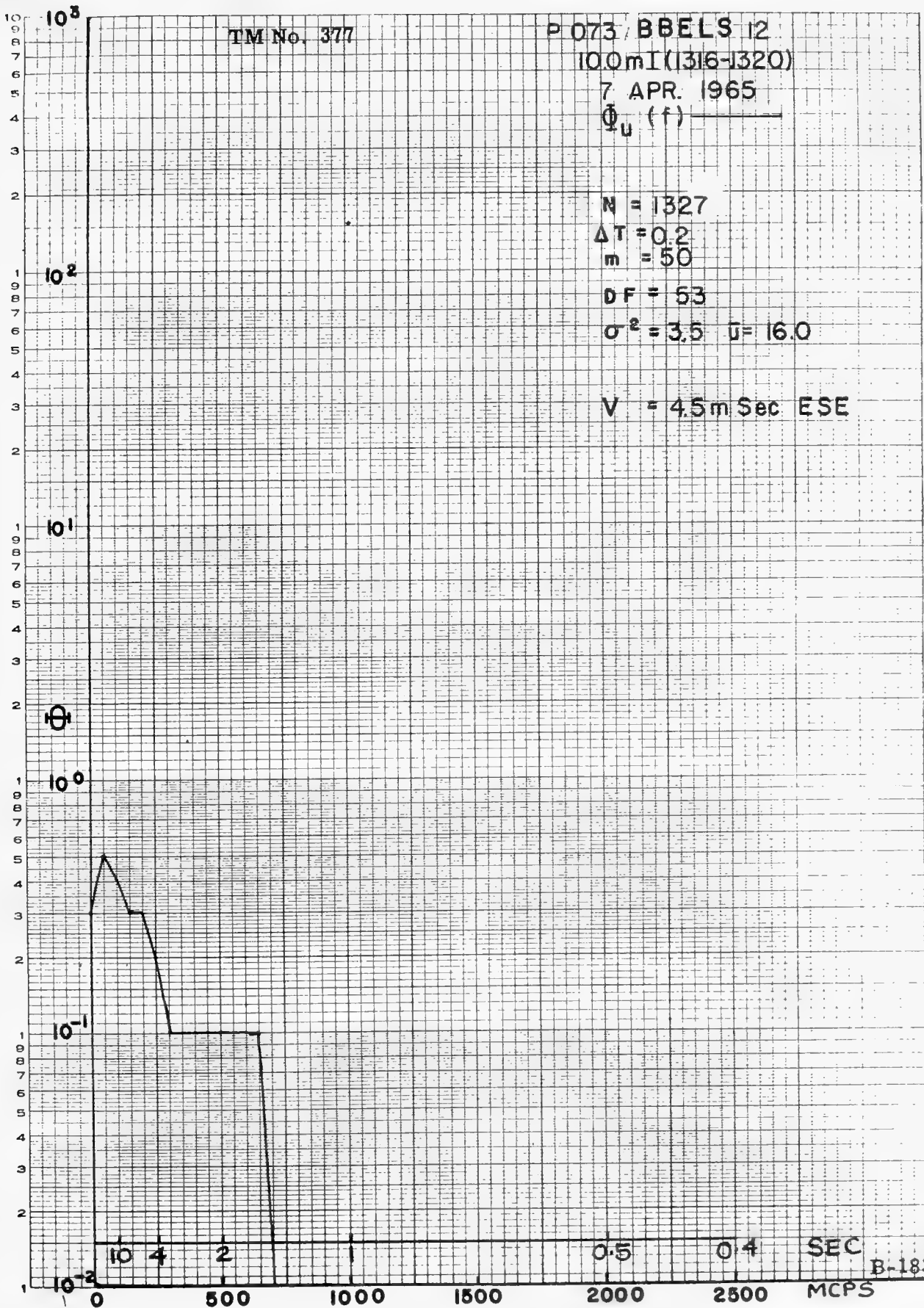
$\Delta T = 0.2$

$m = 50$

$DF = 53$

$\sigma^2 = 3.5 \quad \bar{u} = 16.0$

$V = 4.5 \text{ m Sec ESE}$



REPRODUCED FROM THE ORIGINAL RECORDING TAPE
5 CYCLES X 10 DIVISIONS PER INCH
SEMI-LOGARITHMIC
MADE IN U.S.A.

TM No. 377

P 074 / BBELS 12

(OFF BOTTOM) 0.6m I (1354-1359)

7 APRIL 1965

$\bar{\Phi}_U(f)$ ———

$N = 1202$

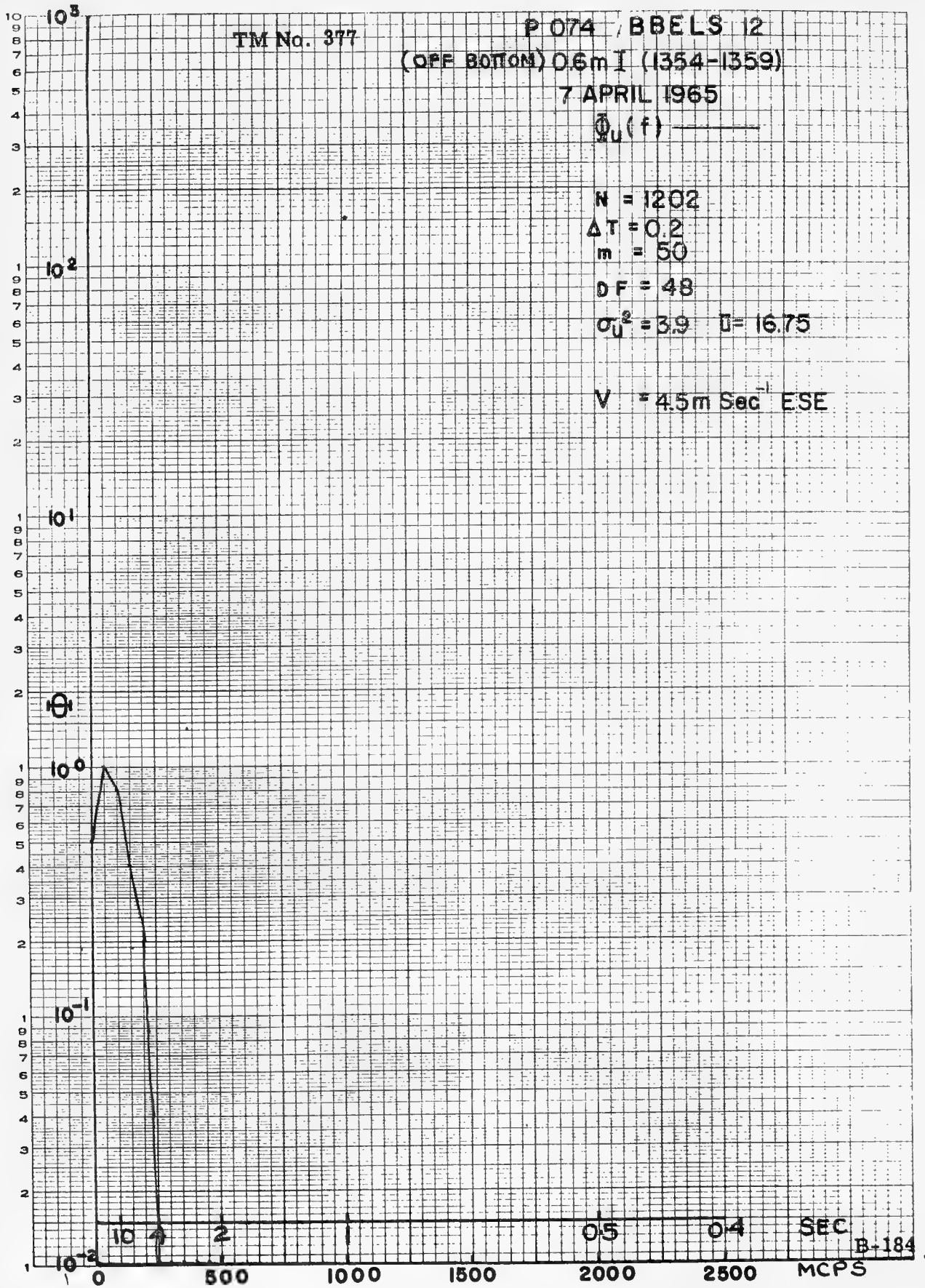
$\Delta T = 0.2$

$m = 50$

$DF = 48$

$\sigma_U^2 = 3.9$ $\bar{U} = 16.75$

$V = 4.5 \text{ m Sec}^{-1}$ ESE



TM No. 377

P 075 BBELS-12-1
1.0 m II Bottom 1415-1417

$\Phi_u(f)$ - - - - -

$N = 629$

$\Delta T = 0.2$

$m = 50$

$DF = 25$

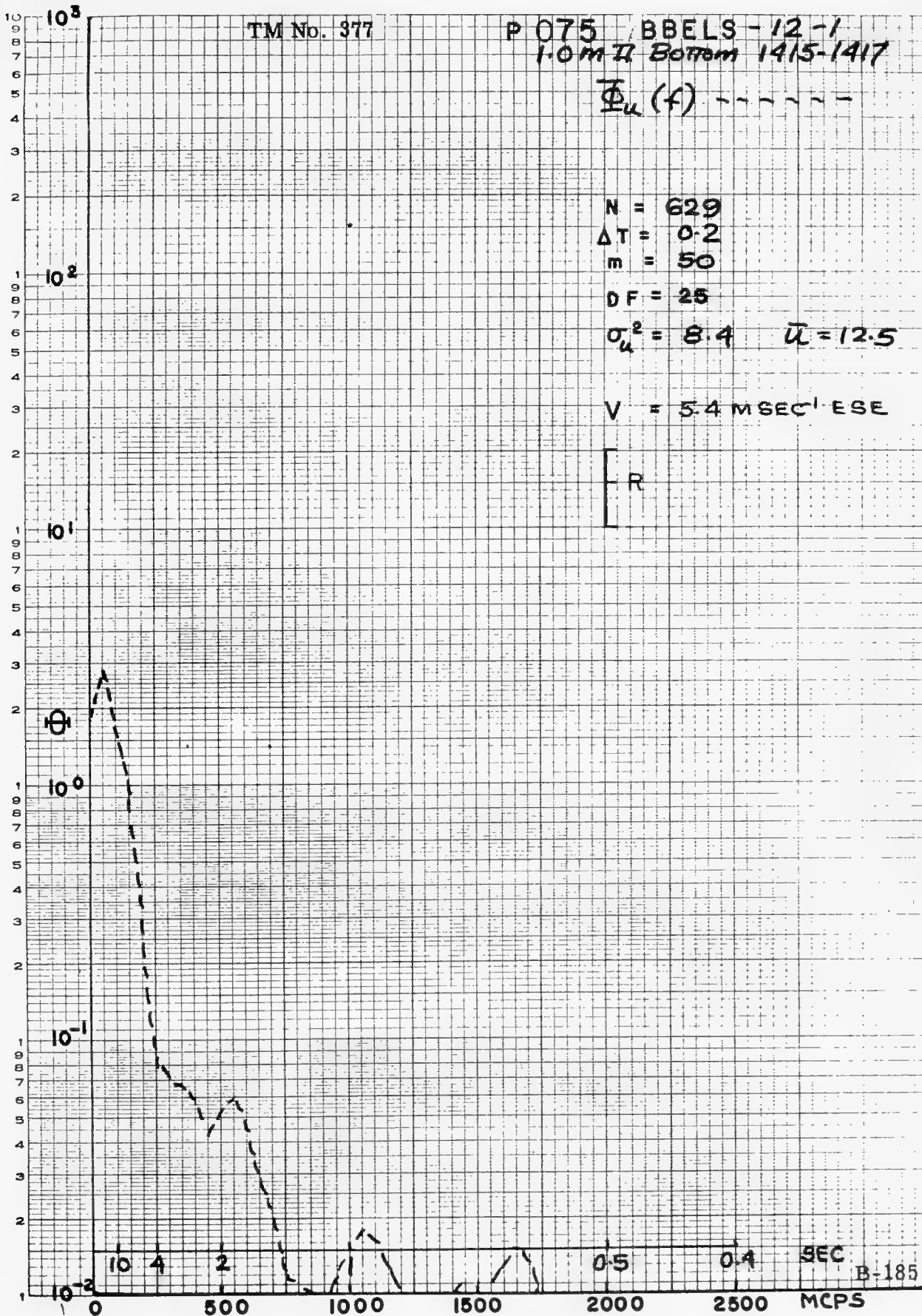
$\sigma_u^2 = 8.4$ $\bar{u} = 12.5$

$V = 5.4 \text{ MSEC}^{-1} \text{ ESE}$

R

EUGENE DIEBOLD CO.
MADE IN U.S.A.

SEMI-LOGARITHMIC
5 CYCLES X 10 DIVISIONS PER INCH



B-185

TM No. 377

P 076 / BBELS - 12-3
5.0M ABOVE BOTTOM
1440 - 1443

$\bar{\Phi}_u (f)$ - - - - -

N = 883

$\Delta T = 0.2$

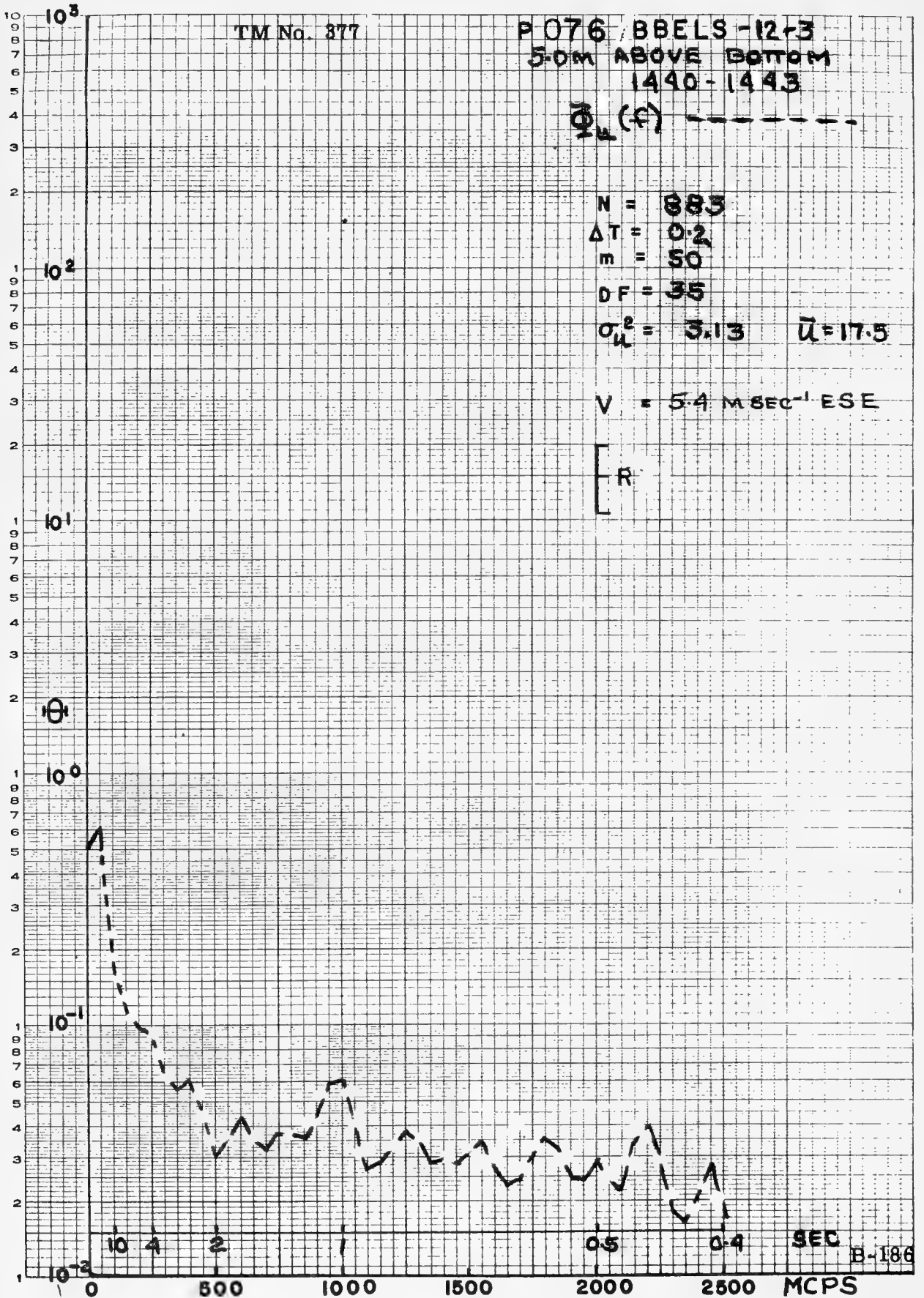
m = 50

DF = 35

$\sigma_u^2 = 3.13$ $\bar{u} = 17.5$

V = 5.4 m sec⁻¹ ESE

[R]



TM No. 377

P 077, BBELS 13

1.0m I (1705-1710)

25 MAY 1965

$\Phi_U(f)$ - - - -

$\Phi_W(f)$ - - - -

$N = 1292$

$\Delta T = 0.2$

$m = 50$

$DF = 58$

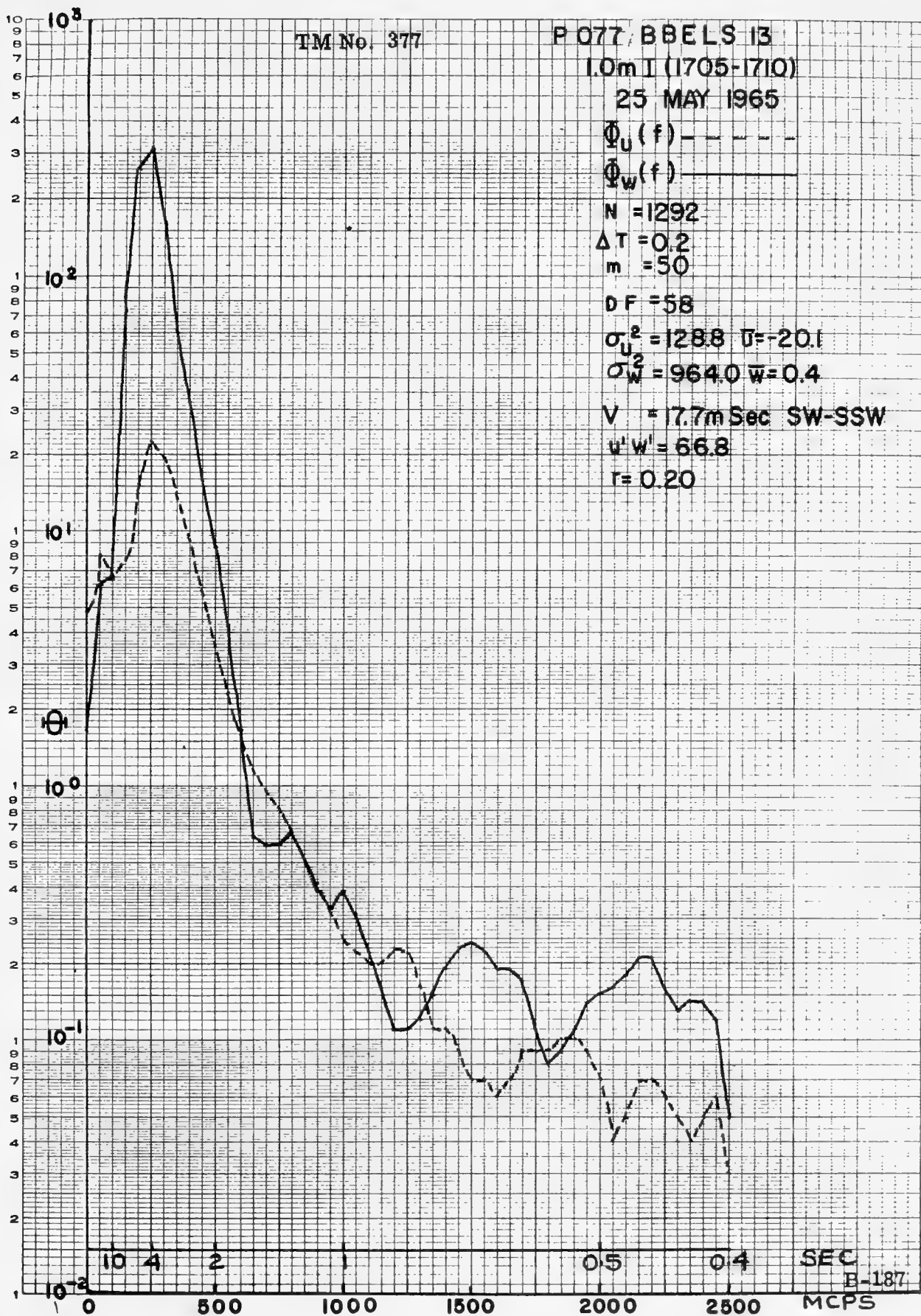
$\sigma_U^2 = 128.8 \quad \bar{U} = -20.1$

$\sigma_W^2 = 964.0 \quad \bar{W} = 0.4$

$V = 17.7 \text{m Sec SW-SSW}$

$u'w' = 66.8$

$r = 0.20$



TM No. 377

POTS BBELS 13

1.5 MI (1714-1719)

25 MAY 1965

$\Phi_u(f)$ - - - -

$\Phi_w(f)$ - - - -

$N = 1540$

$\Delta T = 0.2$

$m = 50$

$DF = 62$

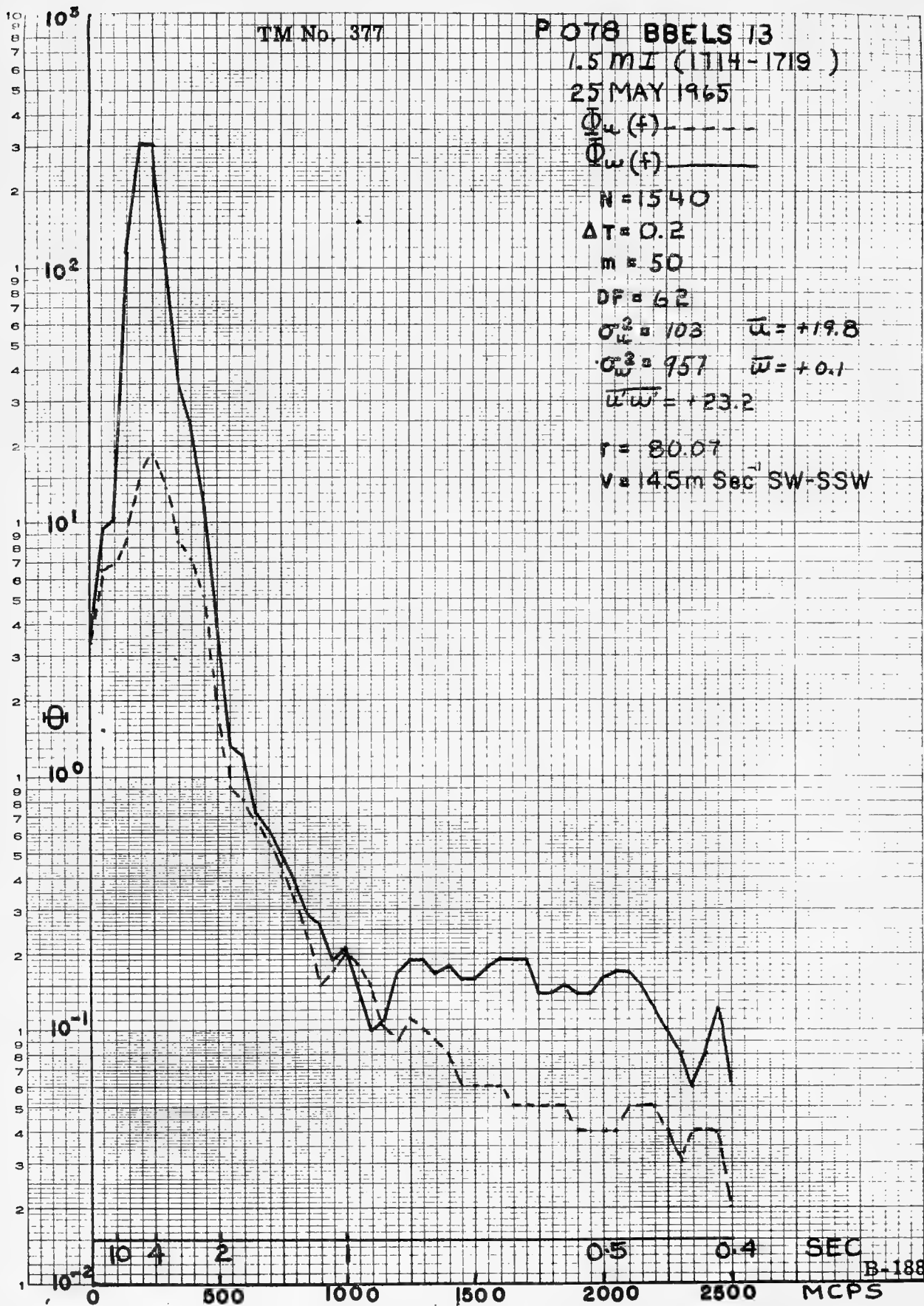
$\sigma_u^2 = 103$ $\bar{u} = +19.8$

$\sigma_w^2 = 957$ $\bar{w} = +0.1$

$\bar{u'w'} = +23.2$

$r = 80.07$

$V = 14.5 \text{ m Sec}^{-1}$ SW-SSW



TM No. 377

P 079 BBELS 13

2.5 m I (1740-1745)

25 MAY 1965

$\Phi_U(f)$ - - - -

$\Phi_W(f)$ - - - -

N = 1461

$\Delta T = 0.2$

m = 50

DF = 59

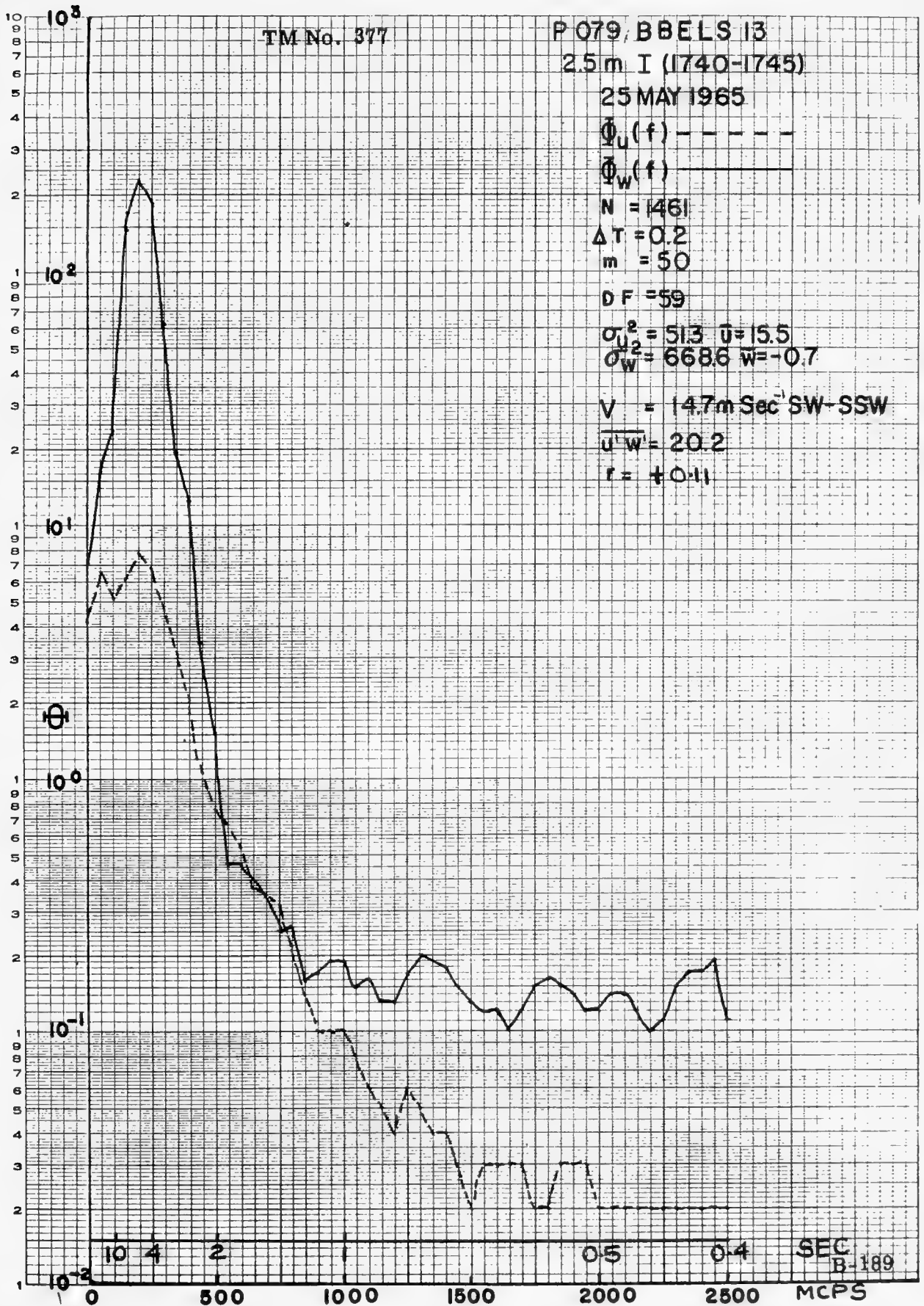
$\sigma_U^2 = 51.3 \quad \bar{U} = 15.5$

$\sigma_W^2 = 668.6 \quad \bar{W} = -0.7$

V = 14.7 m Sec⁻¹ SW-SSW

$\overline{u'w'} = 20.2$

r = +0.11



TM No. 377

P 080 · BBELS - 13 - 3

2.5 m II (1747-1752)

25 MAY 1965

$\bar{\Phi}_u(f)$ - - - - -

$\bar{\Phi}_w(f)$ ———

N = 1532

$\Delta T = 0.2$

m = 50

DF = 61

$\sigma_u^2 = 42.1$ $\bar{u} = +13.9$

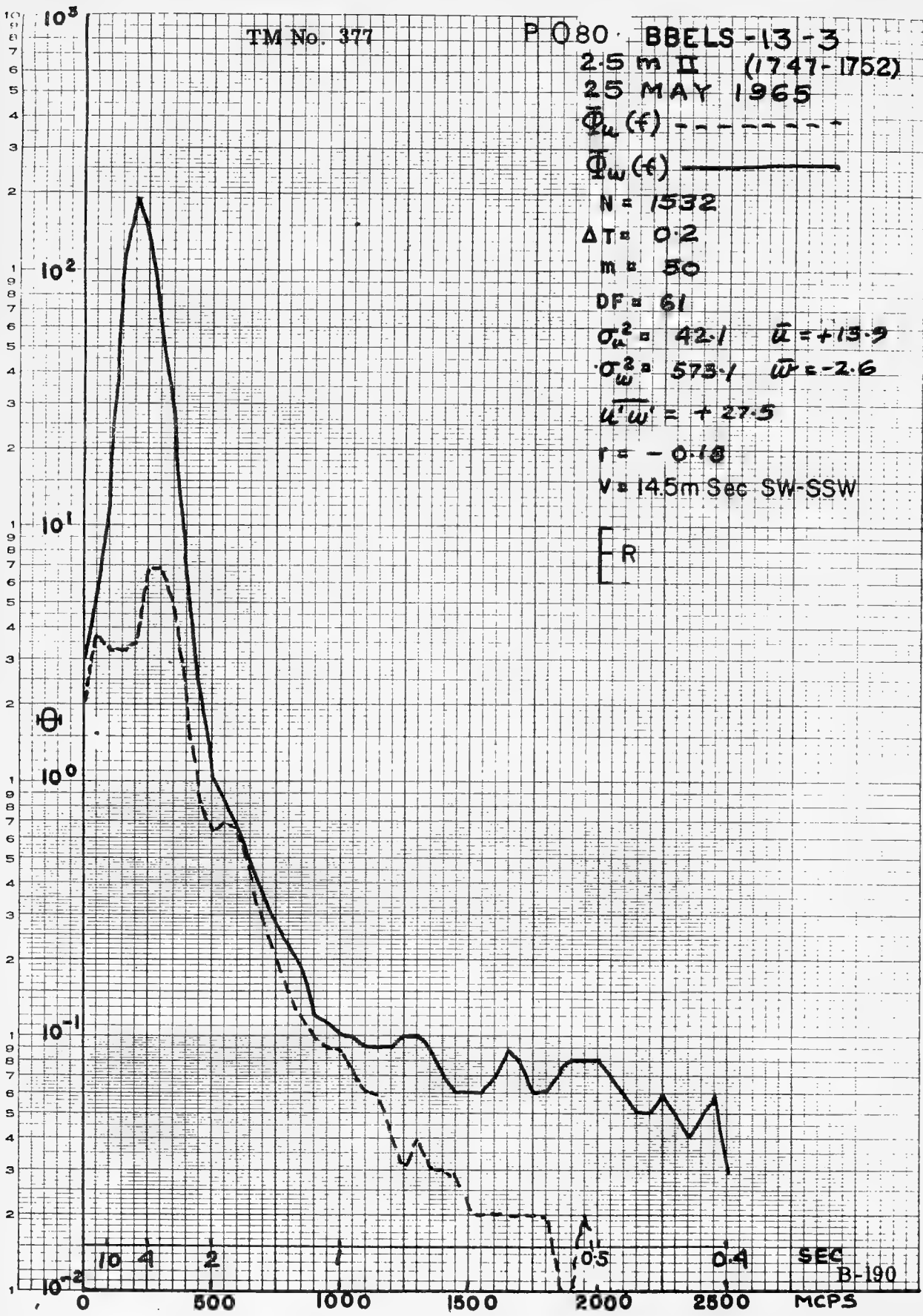
$\sigma_w^2 = 573.1$ $\bar{w} = -2.6$

$\overline{u'w'} = +27.5$

r = -0.18

V = 14.5 m Sec SW-SSW

[R]



SEC B-190

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TM No. 377

P08) BBELS 13
1.0m II (1828-1833)

25 MAY 1965

$\Phi_u(f)$ - - - - -

$\Phi_w(f)$ - - - - -

N = 1636

$\Delta T = 0.2$

m = 50

DF = 66

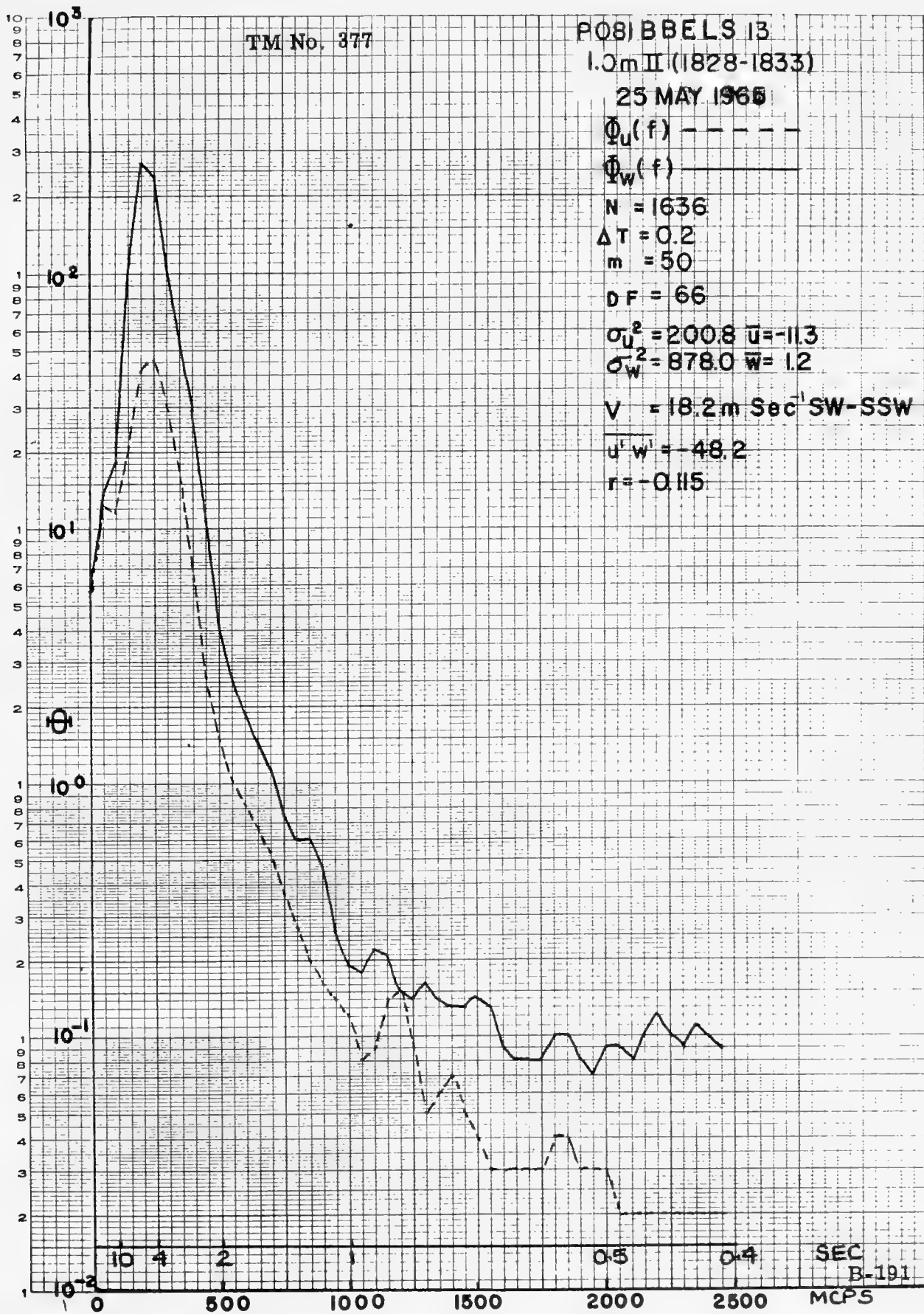
$\sigma_u^2 = 200.8 \bar{u} = -11.3$

$\sigma_w^2 = 878.0 \bar{w} = 1.2$

V = 18.2 m Sec⁻¹ SW-SSW

$u^r w^r = -48.2$

r = -0.115



5 CYCLES X 10 DIVISIONS PER INCH

SEC
B-191

TM No. 377

F 082 / BBELS13

10m III (1835-1840)

25 MAY 1965

$\Phi_U(f)$ - - - - -

$\Phi_W(f)$ - - - - -

$N = 1304$

$\Delta T = 0.2$

$m = 50$

$DF = 52$

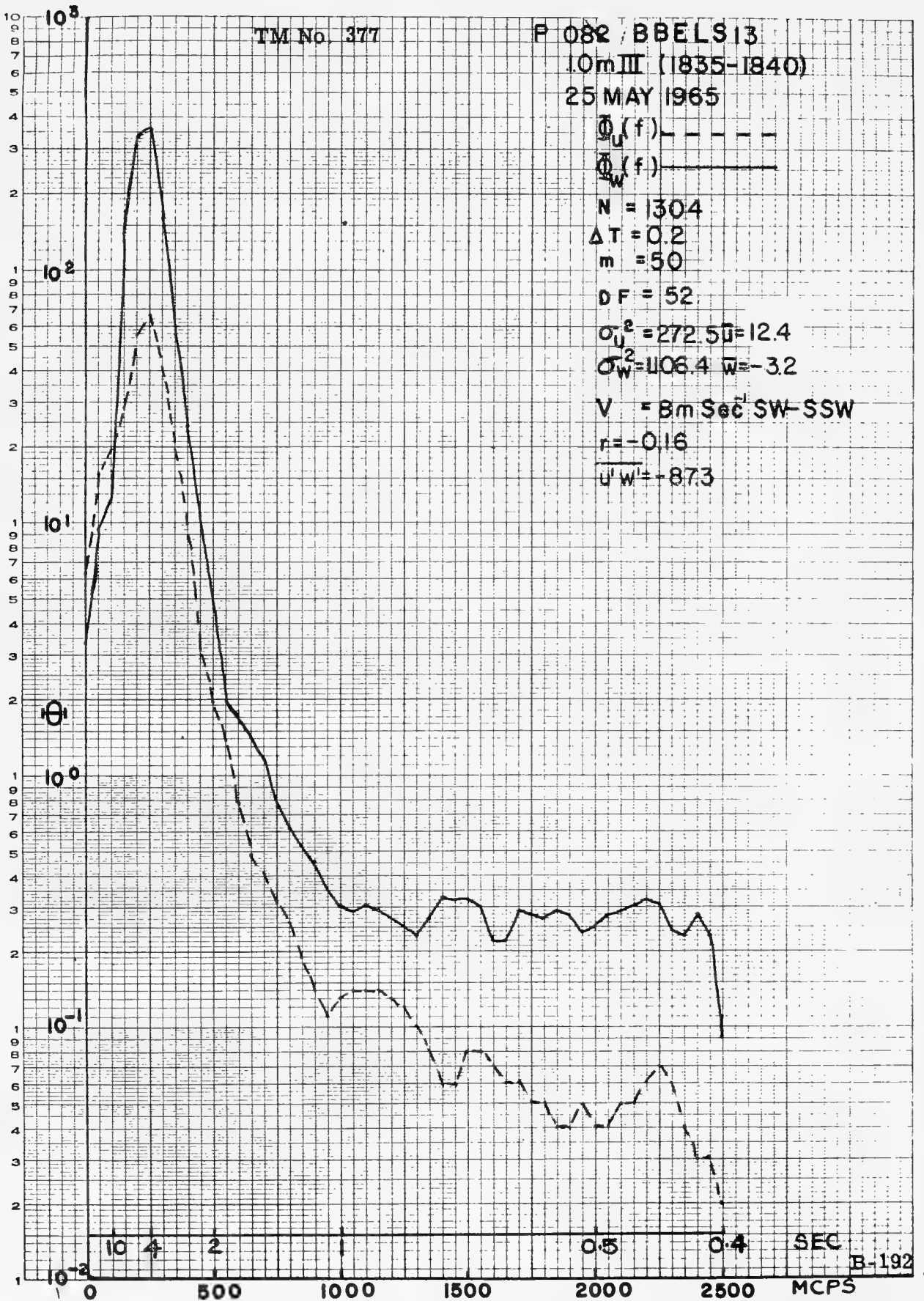
$\sigma_U^2 = 272.5 \bar{u} = 12.4$

$\sigma_W^2 = 1106.4 \bar{w} = -3.2$

$V = 8 \text{ m Sec}^{-1} \text{ SW-SSW}$

$r = -0.16$

$\overline{u'w'} = -8.73$



TM No. 377

P 084 / BBELS 13
40 m IV (2034-2037)
25 MAY 1965

$\Phi_U(f)$ - - - - -

$\Phi_W(f)$ - - - - -

$N = 723$

$\Delta T = 0.2$

$m = 50$

$DF = 29$

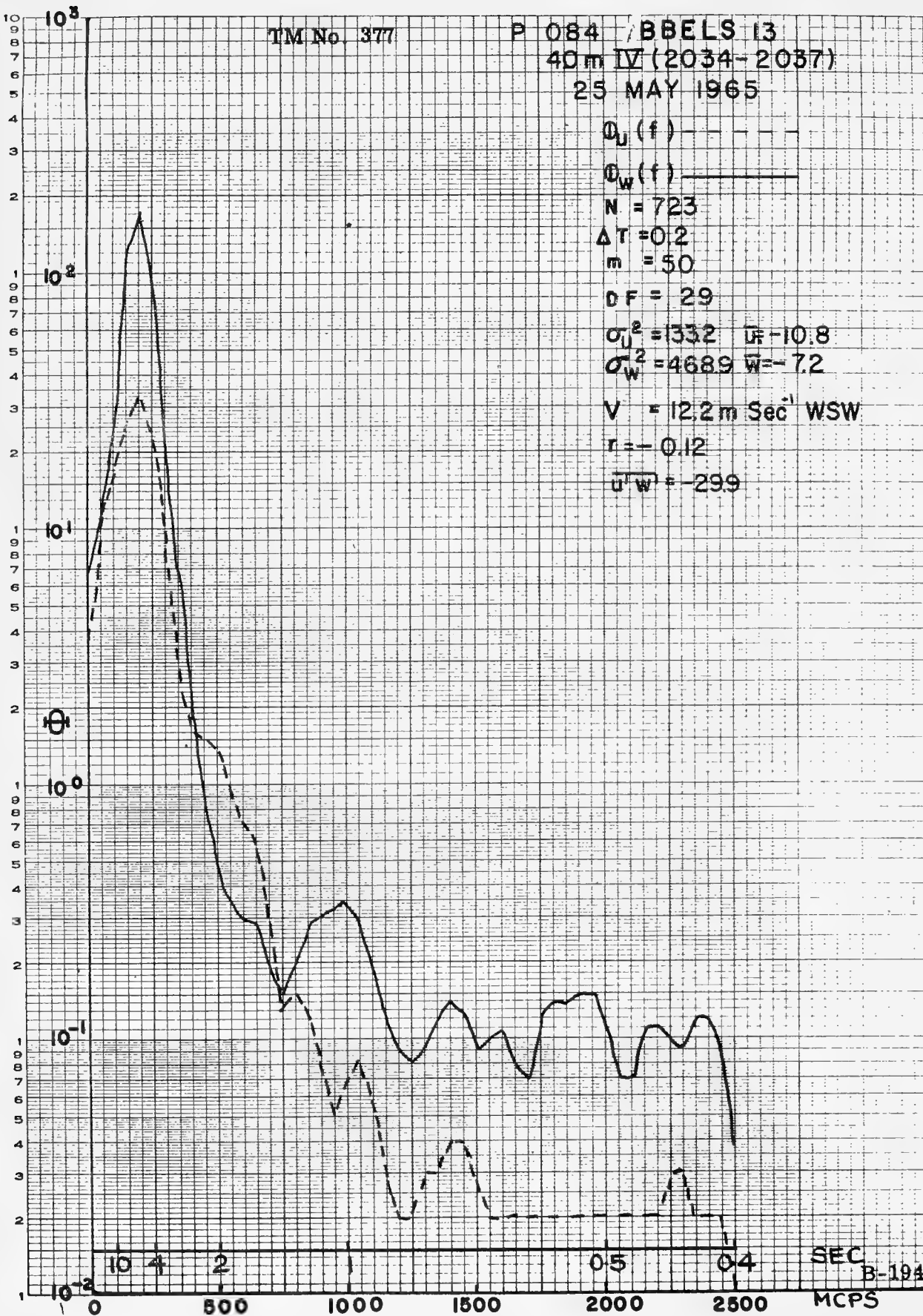
$\sigma_U^2 = 1332 \quad \bar{U} = 10.8$

$\sigma_W^2 = 4689 \quad \bar{W} = -7.2$

$V = 12.2 \text{ m Sec}^{-1} \text{ WSW}$

$r = -0.12$

$\overline{u'w'} = -299$



SEC
B-194

TM No. 377

P 085 BBELS 13

4.0 m VI (0008-001)

25 MAY 1965

$\Phi_u(f)$ - - - - -

$\Phi_w(f)$ - - - - -

N = 719

$\Delta T = 0.2$

m = 50

DF = 29

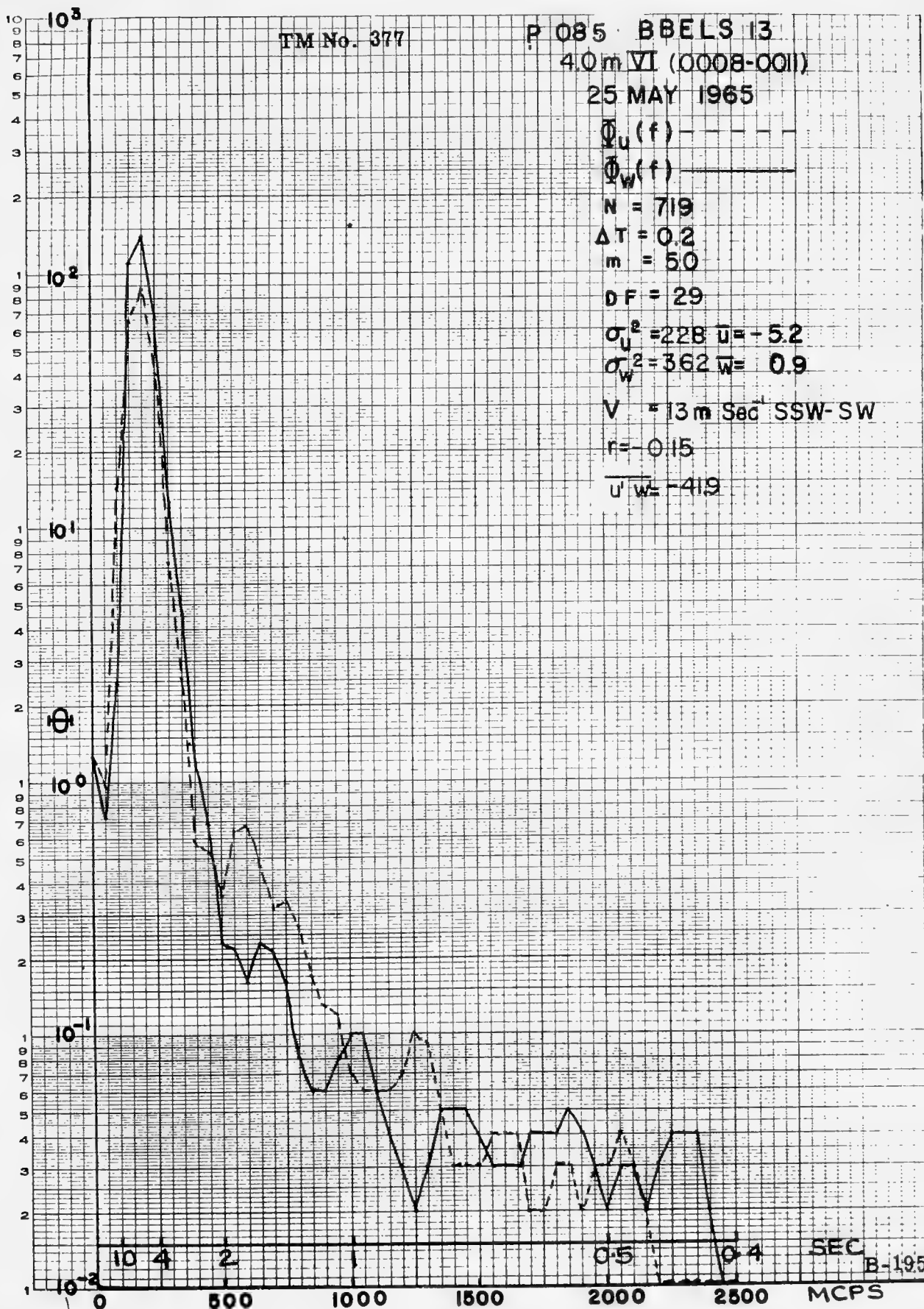
$\sigma_u^2 = 228 \bar{u} = -5.2$

$\sigma_w^2 = 362 \bar{w} = 0.9$

V = 13 m Sec⁻¹ SSW-SW

r = -0.15

$\overline{u'w'} = -419$



TM No. 377

F 086 BBELS 13

4.0m VII (0552-0557)

26 MAY 1965

$\Phi_U(f)$ - - - -

$\Phi_W(f)$ - - - -

$N = 1470$

$\Delta T = 0.2$

$m = 50$

$DF = 59$

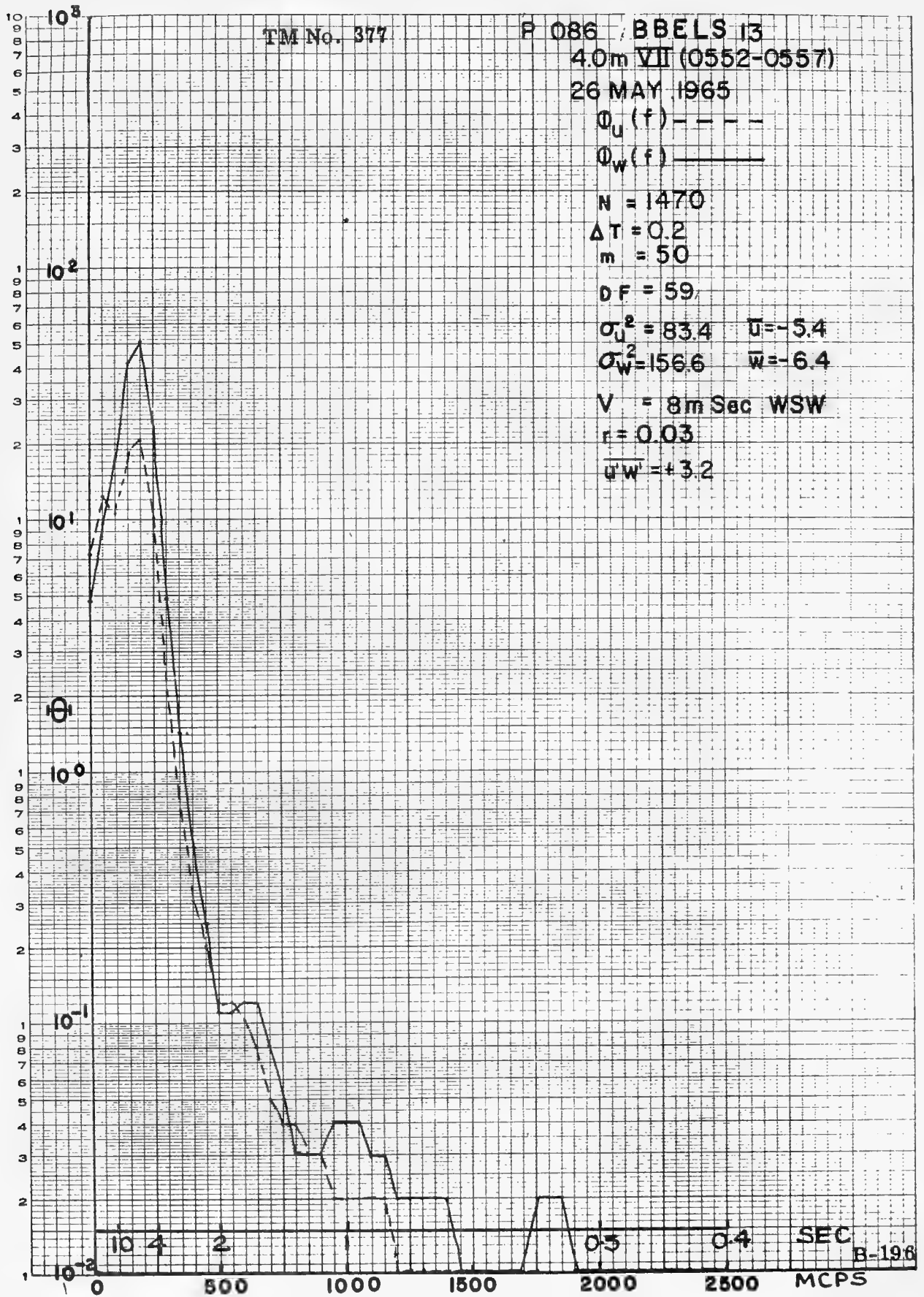
$\sigma_U^2 = 83.4$ $\bar{U} = -5.4$

$\sigma_W^2 = 156.6$ $\bar{W} = -6.4$

$V = 8 \text{ m Sec WSW}$

$r = 0.03$

$\overline{u'w'} = +3.2$



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5 CYCLES X 10 DIVISIONS PER INCH

TM No. 377

P 087, BBELS 14

0.0-2.0mII(1403-1408)

7 JUNE 1965

UP $\phi_w(f)$ - - - - -

LO $\phi_w(f)$ - - - - -

N = 1408

$\Delta T = 0.2$

m = 50

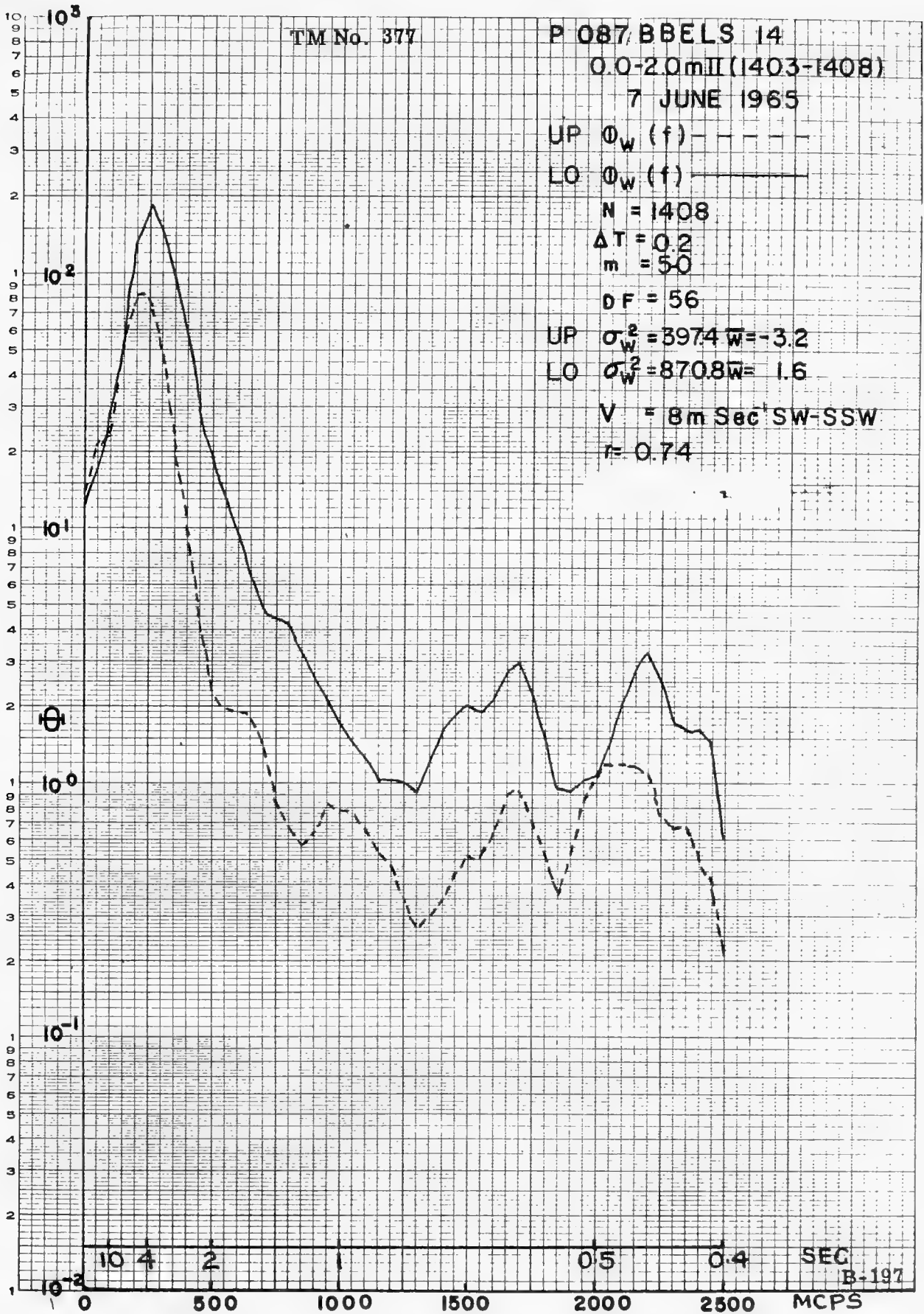
DF = 56

UP $\sigma_w^2 = 397.4 \bar{w} = -3.2$

LO $\sigma_w^2 = 870.8 \bar{w} = 1.6$

V = 8m Sec SW-SSW

r = 0.74



SEC B-197

TM No. 377

P 088BBELS - 14 - 5

O - 2M III

1912-1918

7 JUNE 1965

UP $\bar{\Phi}_w(f)$ - - - - -

LO $\bar{\Phi}_w(f)$ - - - - -

N = 1618

$\Delta T = 0.2$

m = 50

DF = 64

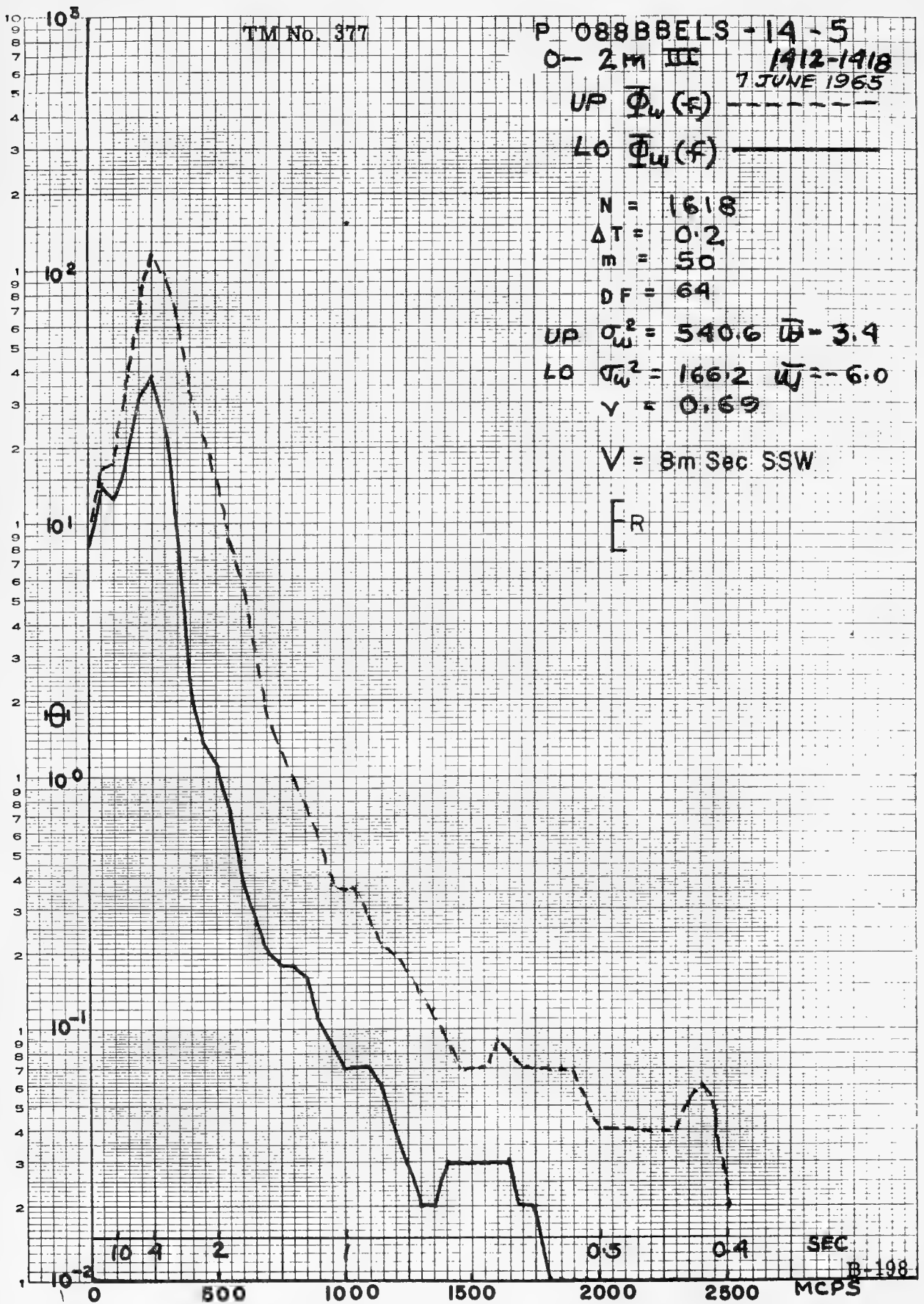
UP $\sigma_w^2 = 540.6 \bar{w} = 3.4$

LO $\sigma_w^2 = 166.2 \bar{w} = -6.0$

$\gamma = 0.69$

V = 8m Sec SSW

[R



TM No. 377

P 089 BBELS 14

10-30mI (1433-1438)

7 JUNE 1965

$\Phi_u(f)$ - - - -

$\Phi_w(f)$ - - - -

$N = 1482$

$\Delta T = 0.2$

$m = 50$

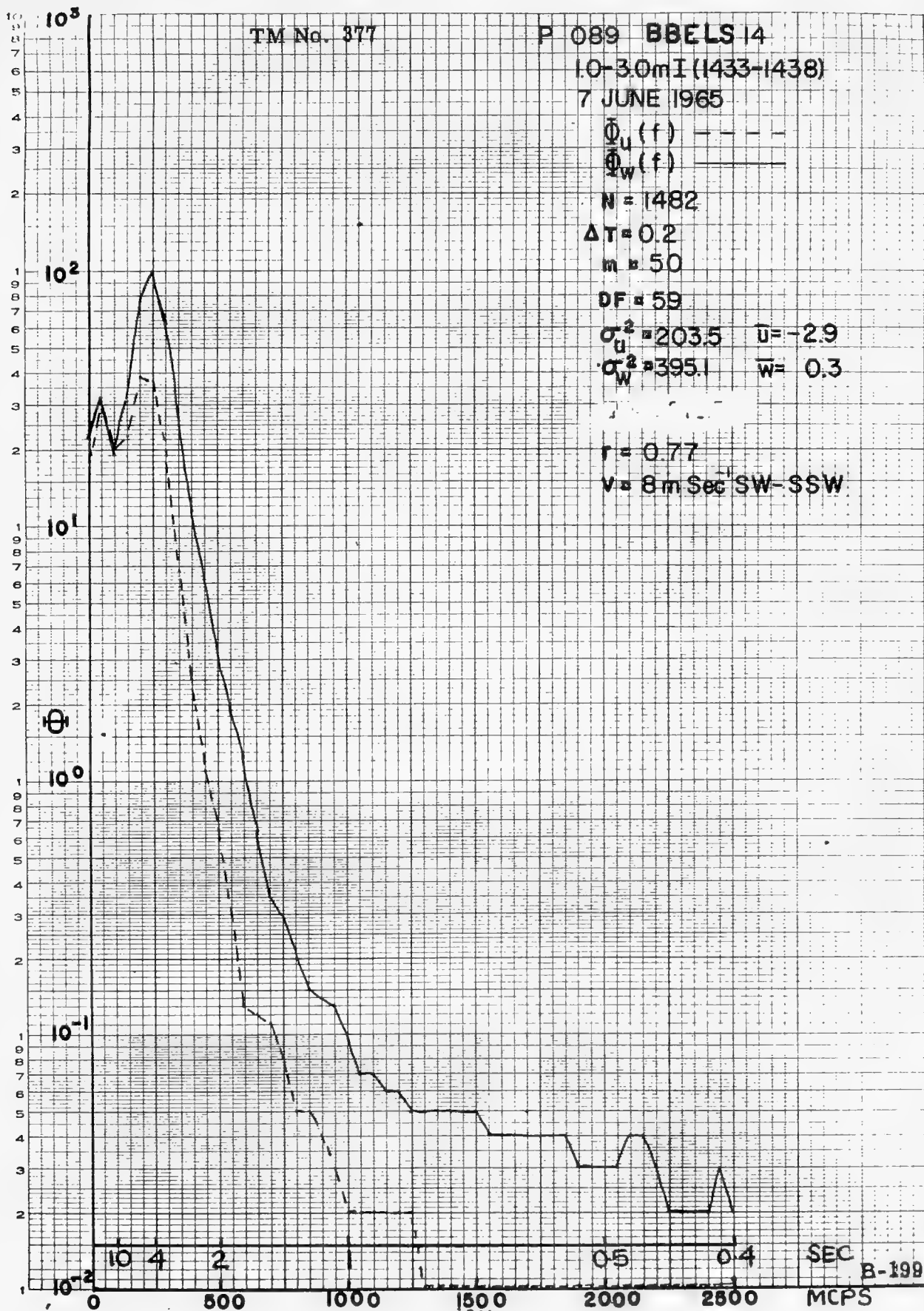
$DF = 59$

$\sigma_u^2 = 2035$ $\bar{u} = -2.9$

$\sigma_w^2 = 395.1$ $\bar{w} = 0.3$

$r = 0.77$

$V = 8 \text{ m Sec}^{-1} \text{ SW-SSW}$



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1.5 CYCLES X 10 DIVISIONS PER INCH

TM No. 377

P 090 / BBELS 14
2-4.0 m I (1454-1459)
7 JUNE 1965

UP $\Phi_w(f)$ ———
LO $\Phi_w(f)$ - - - -

N = 1395

$\Delta T = 0.2$

m = 50

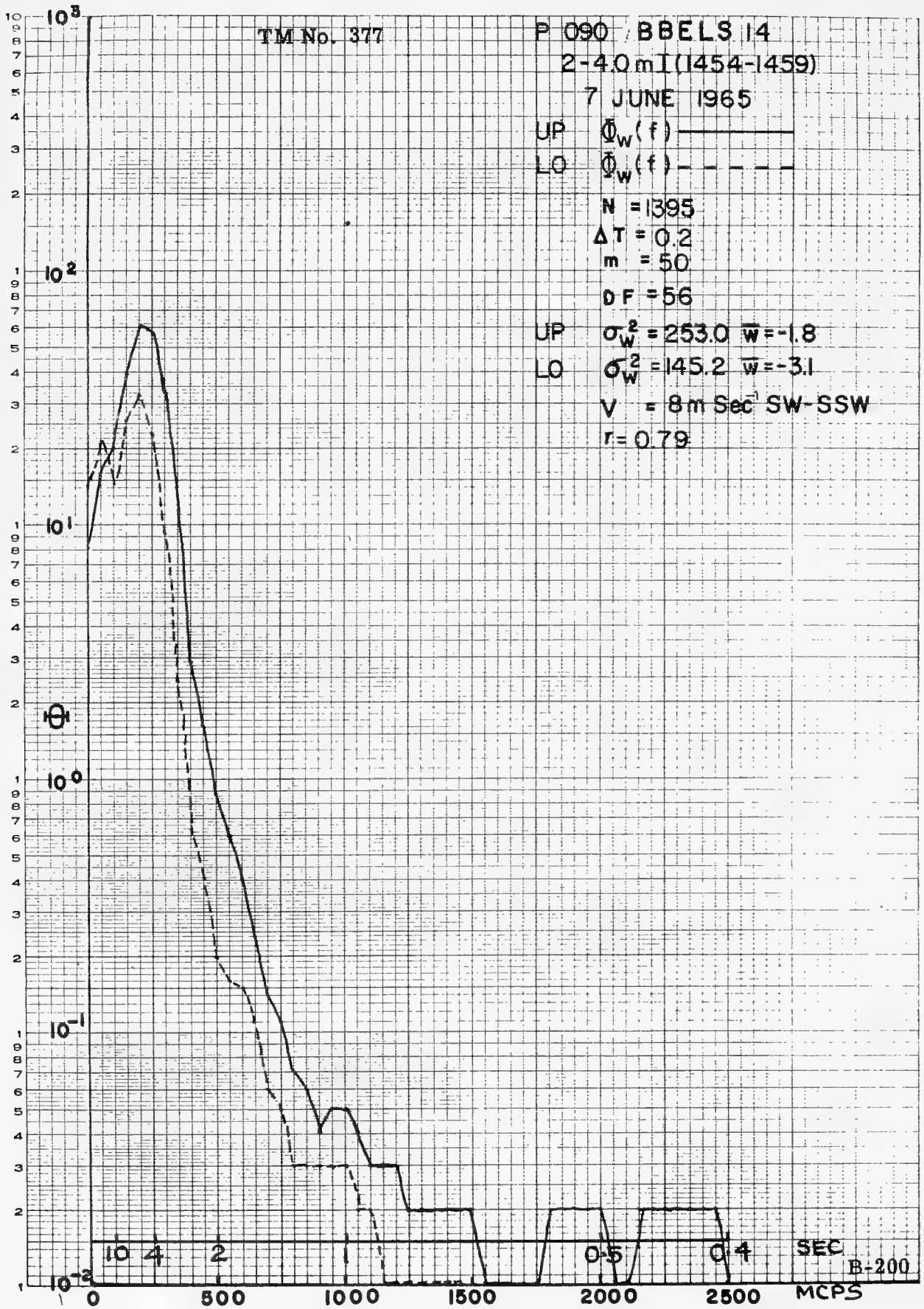
DF = 56

UP $\sigma_w^2 = 253.0 \bar{w} = -1.8$

LO $\sigma_w^2 = 145.2 \bar{w} = -3.1$

V = 8 m Sec⁻¹ SW-SSW

r = 0.79



TM No. 377

P.091 BBELS 14-8
3.0-5.0 mI (1502-1508)
7 JUNE 1965

UP $\Phi_w(f)$ - - - - -
LO $\Phi_w(f)$ - - - - -

N = 1413

$\Delta T = 0.2$

m = 50

DF = 57

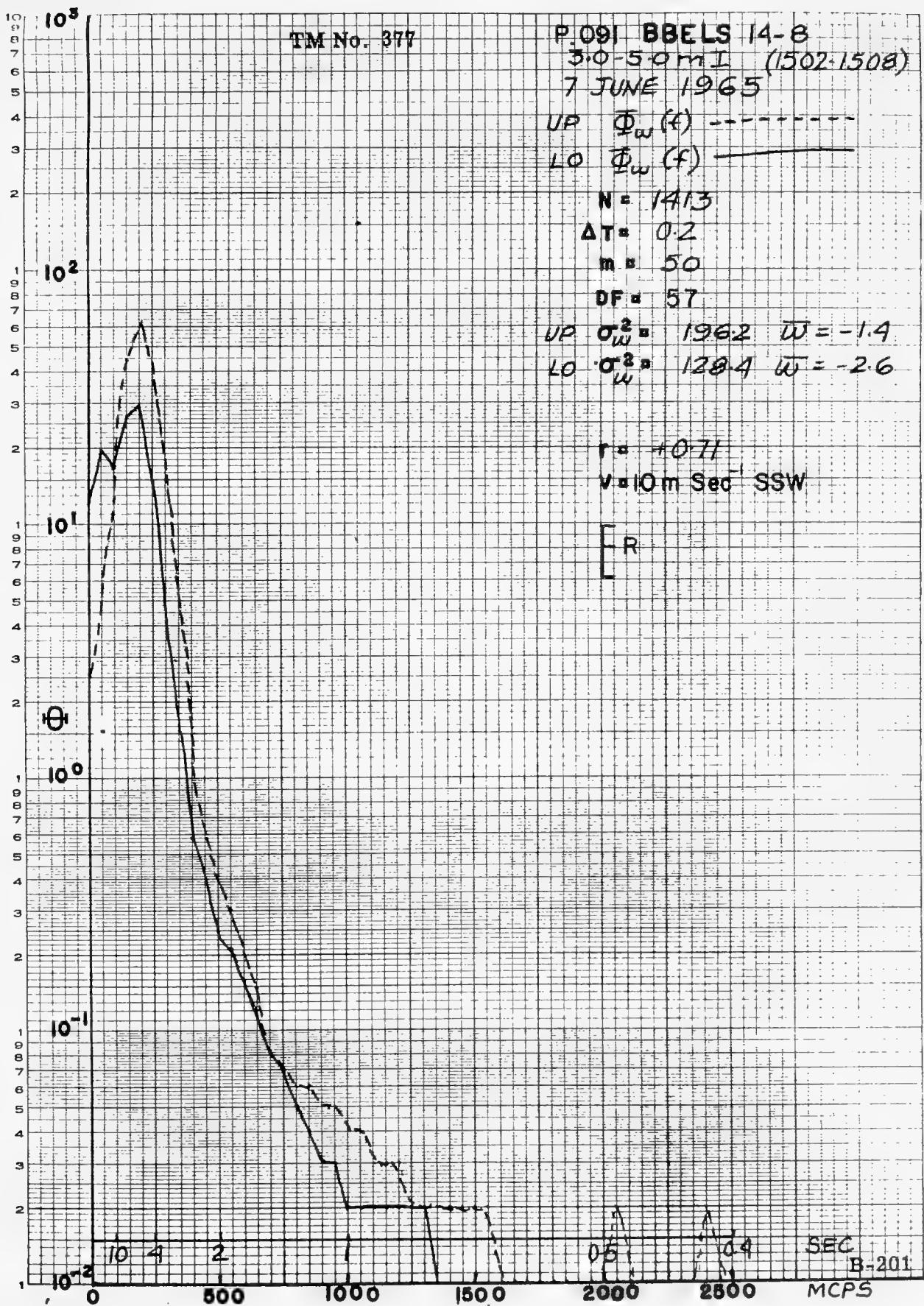
UP $\sigma_w^2 = 1962 \quad \bar{w} = -1.4$

LO $\sigma_w^2 = 1284 \quad \bar{w} = -2.6$

r = +0.71

V = 10 m Sec⁻¹ SSW

[R]



MADE IN U.S.A.

15 CYCLES X 10 DIVISIONS PER INCH

TM No. 377

P 092 BBELS-14-6
4.0-6.0 M I (1512-1517)

7 JUNE 1965

UP $\Phi_w(f)$ - - - - -

LO $\Phi_w(f)$ - - - - -

N = 1299

$\Delta T = 0.2$

m = 50

DF = 52

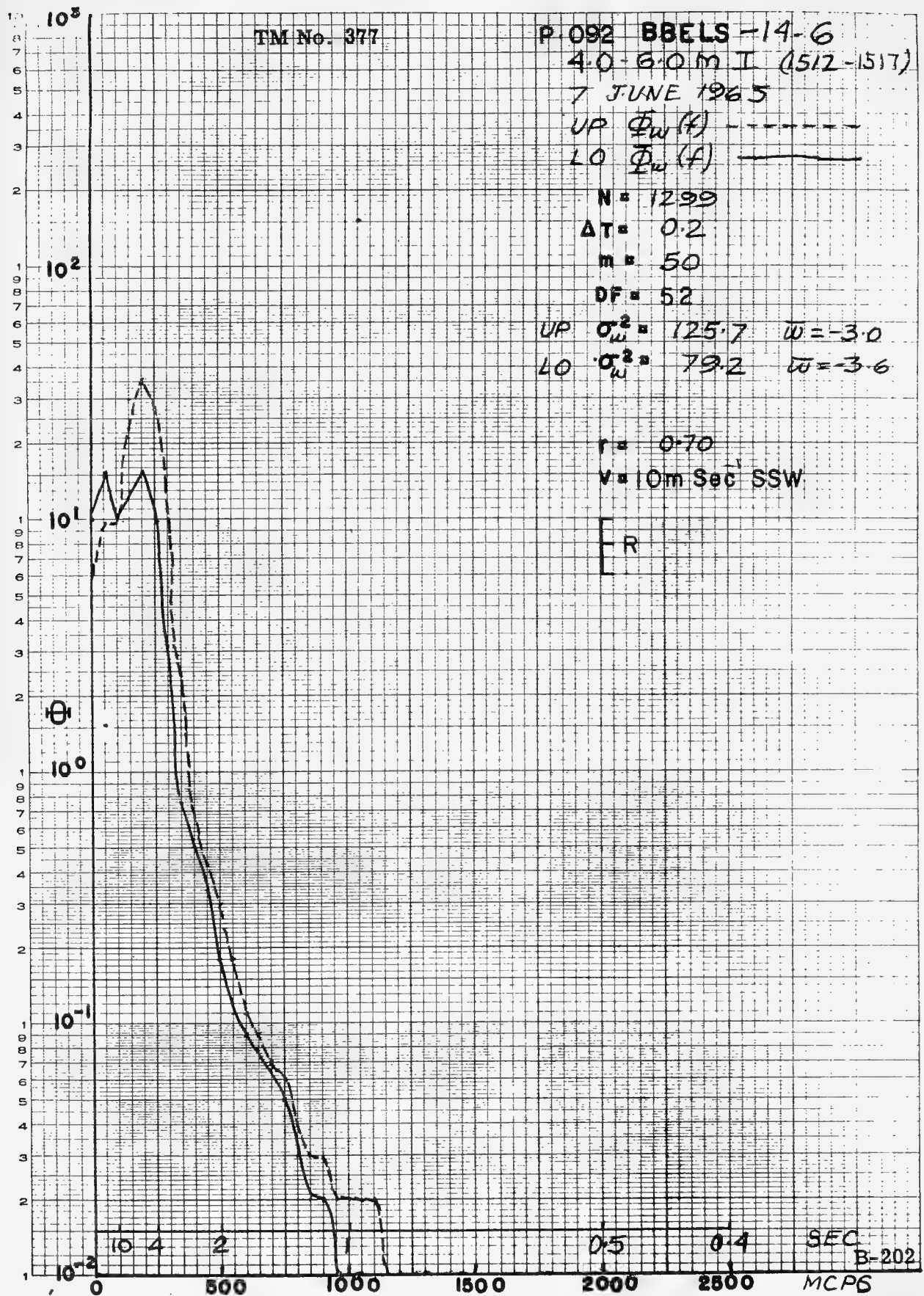
UP $\sigma_w^2 = 125.7$ $\bar{w} = -3.0$

LO $\sigma_w^2 = 79.2$ $\bar{w} = -3.6$

r = 0.70

V = 10 m Sec SSW

[R]



SEC
B-202
MCPS

TM No. 377

P 096 BBELS-14-9
8.0-10.0 MI (1604-1609)
7 JUNE 1965

UP $\bar{\Phi}_w(f)$ - - - - -

LO $\bar{\Phi}_w(f)$ - - - - -

N = 1273

$\Delta T = 0.2$

m = 50

DF = 31

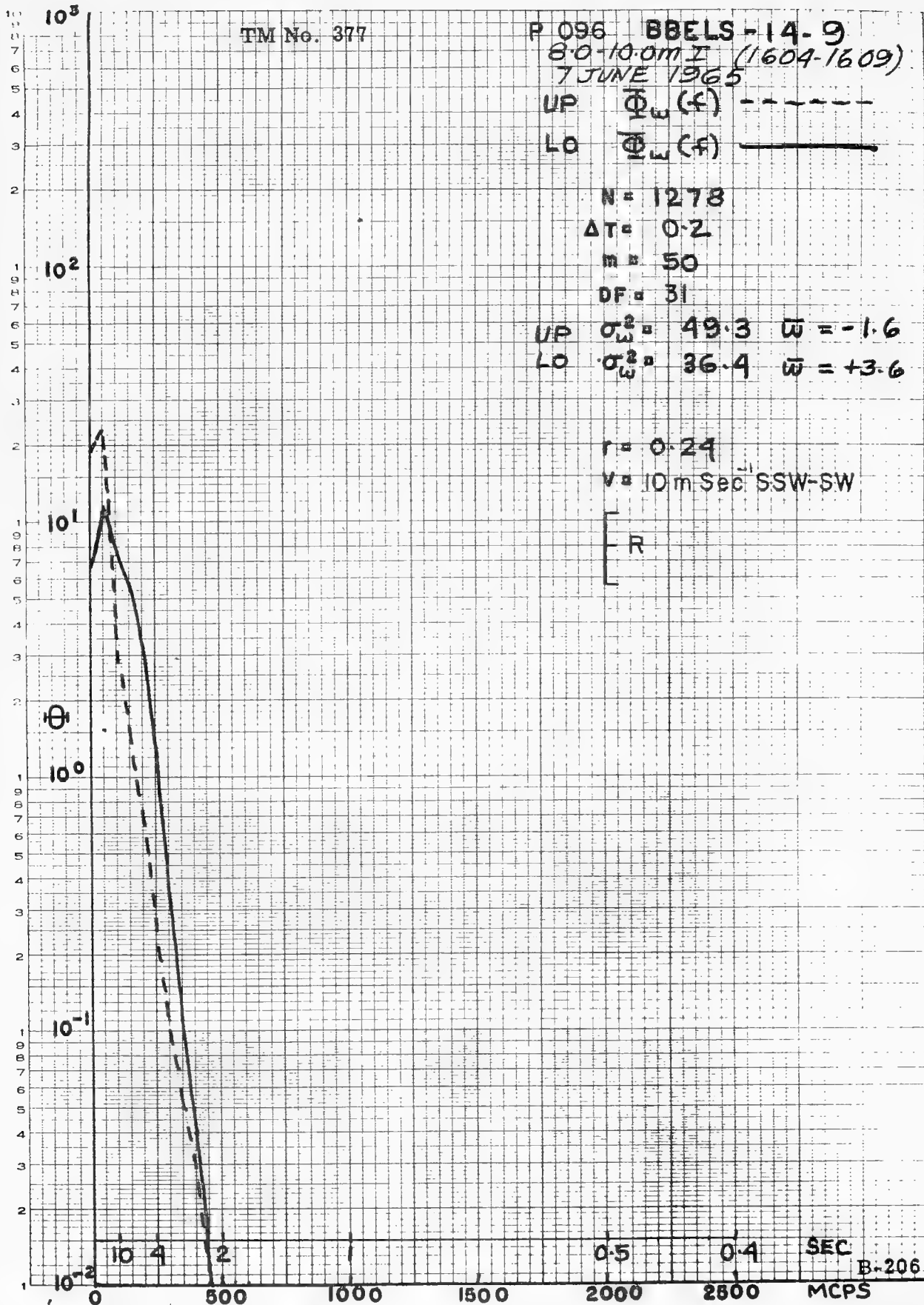
UP $\sigma_w^2 = 49.3$ $\bar{w} = -1.6$

LO $\sigma_w^2 = 36.4$ $\bar{w} = +3.6$

r = 0.29

v = 10 m Sec⁻¹ SSW-SW

[R]



MADE IN U.S.A.

5 CYCLES X 10 DIVISIONS PER INCH

TM No. 377

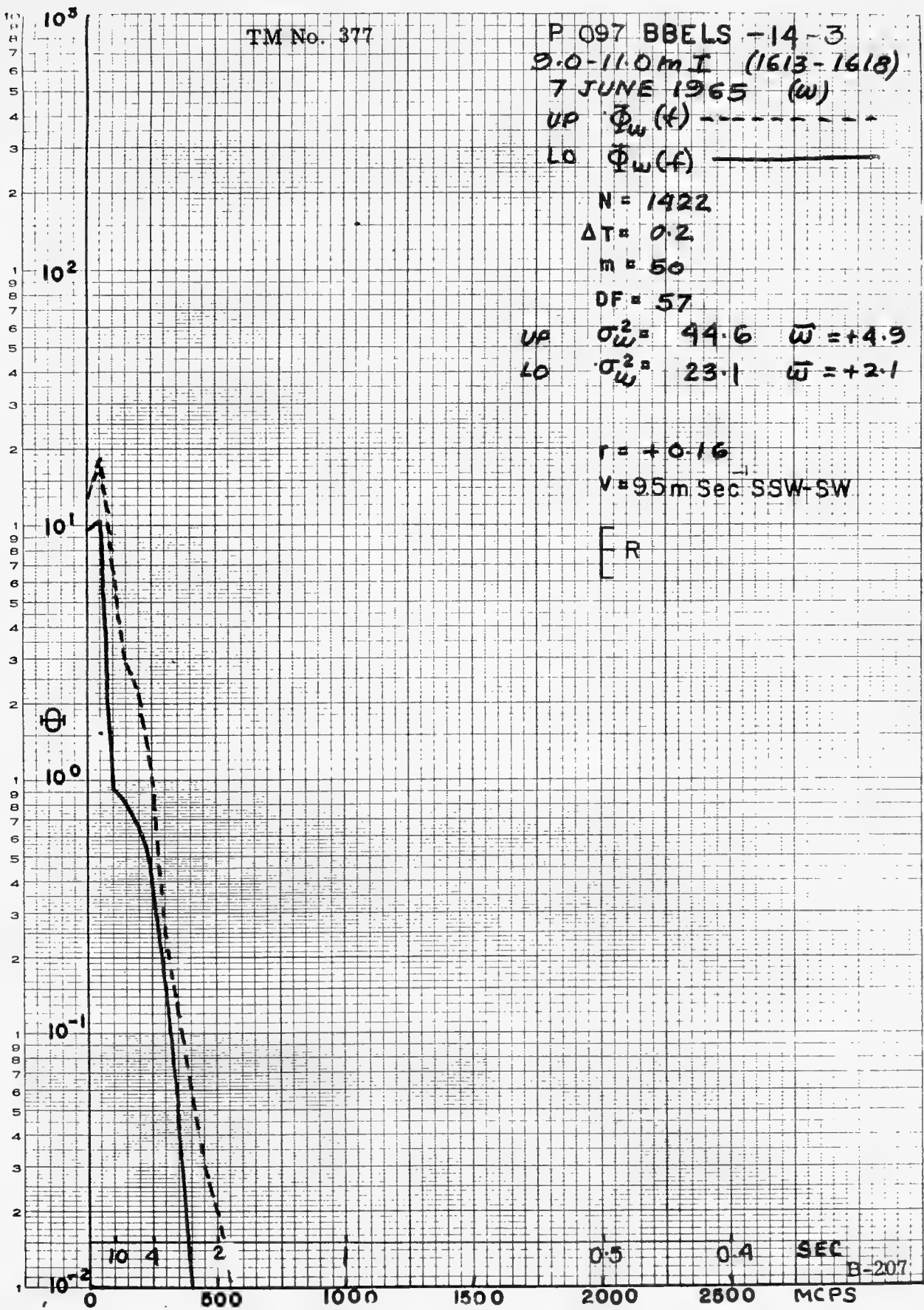
P 097 BBELS -14-3
 9.0-11.0 mI (1613-1618)
 7 JUNE 1965 (w)
 UP $\Phi_w(f)$ - - - - -
 LO $\Phi_w(f)$ - - - - -

N = 1422
 $\Delta T = 0.2$
 m = 50
 DF = 57

UP $\sigma_w^2 = 44.6$ $\bar{w} = +4.9$
 LO $\sigma_w^2 = 23.1$ $\bar{w} = +2.1$

r = +0.16
 $V = 95 \text{ m Sec}^{-1}$ SSW-SW

[R]



TM No. 377

P 098 BBELS 14

2.0-4.0m VII(2228-2234)

7 JUNE 1965

$\Phi_w(f)$ - - - -

$\Phi_w(f)$ - - - -

$N = 1706$

$\Delta T = 0.2$

$m = 50$

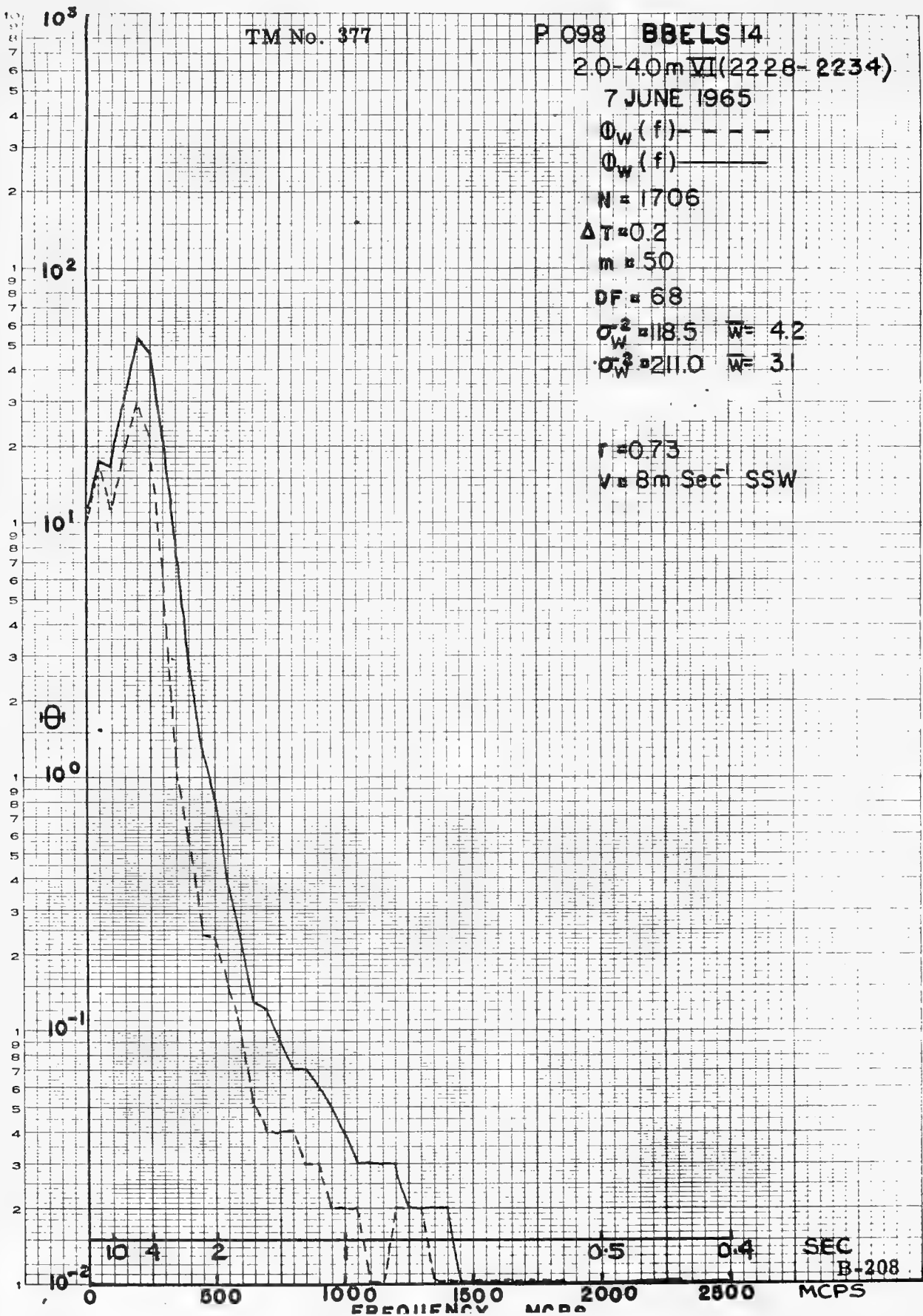
$DF = 68$

$\sigma_w^2 = 18.5$ $\bar{w} = 4.2$

$\sigma_w^3 = 211.0$ $\bar{w} = 3.1$

$r = 0.73$

$v = 8 \text{ m Sec}^{-1}$ SSW



MADE IN U.S.A.

5 CYCLES X 10 DIVISIONS PER INCH

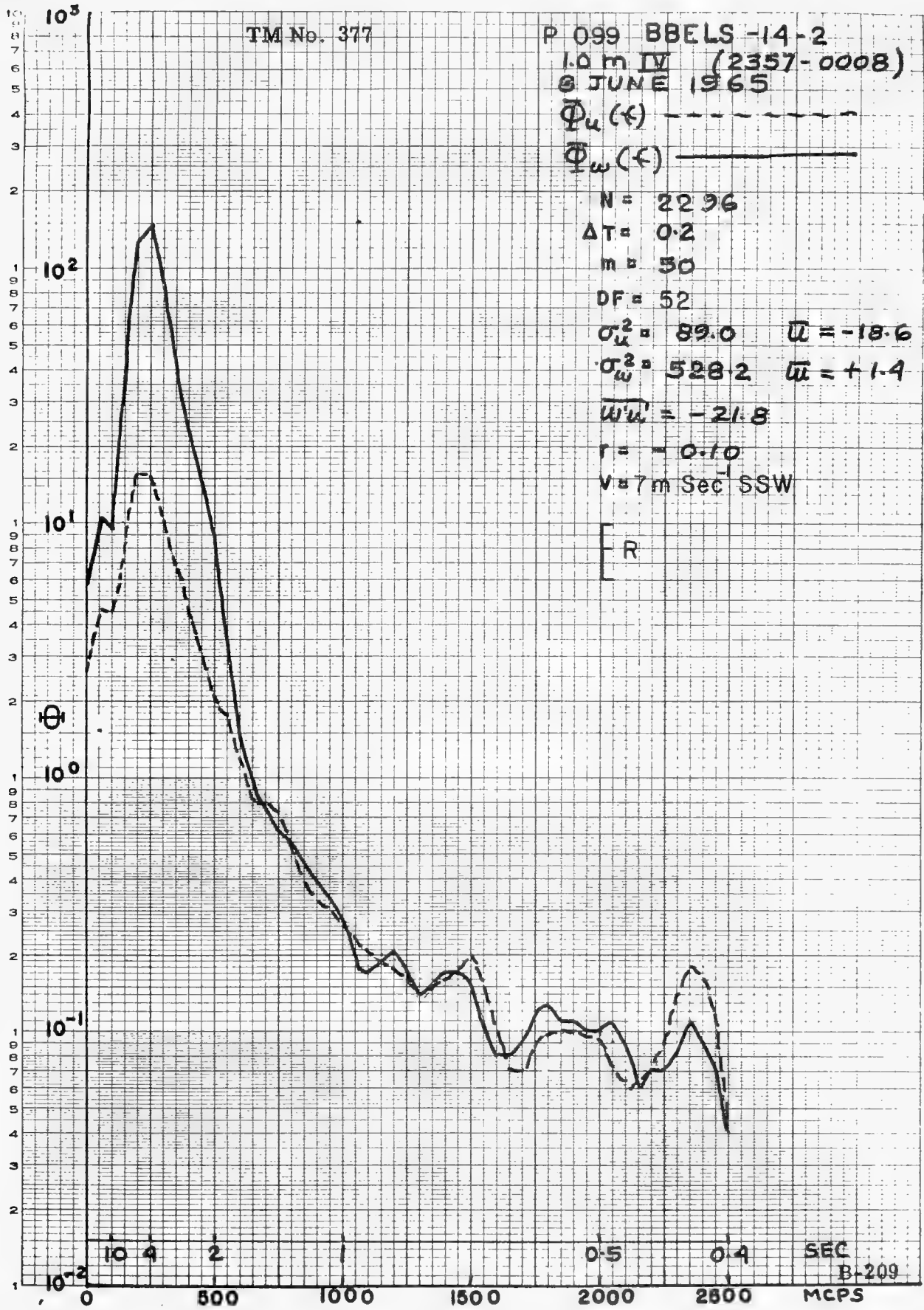
TM No. 377

P 099 BBELS -14-2
1.0 m IV (2357-0008)
8 JUNE 1965

$\Phi_u(f)$ - - - - -
 $\Phi_w(f)$ - - - - -

$N = 2296$
 $\Delta T = 0.2$
 $m = 50$
 $DF = 52$
 $\sigma_u^2 = 89.0 \quad \bar{u} = -18.6$
 $\sigma_w^2 = 528.2 \quad \bar{w} = +1.4$
 $\overline{w'u'} = -21.8$
 $r = -0.10$
 $V = 7 \text{ m Sec}^{-1} \text{ SSW}$

R



SEC
B-209
MCPS

TM No. 377

P 100 BBELS 14

20-4.0m VII (0010-0015)

8 JUNE 1965

UP $\bar{Q}_w(f)$ - - - -

LO $\bar{Q}_w(f)$ - - - -

$N = 1346$

$\Delta T = 0.2$

$m = 50$

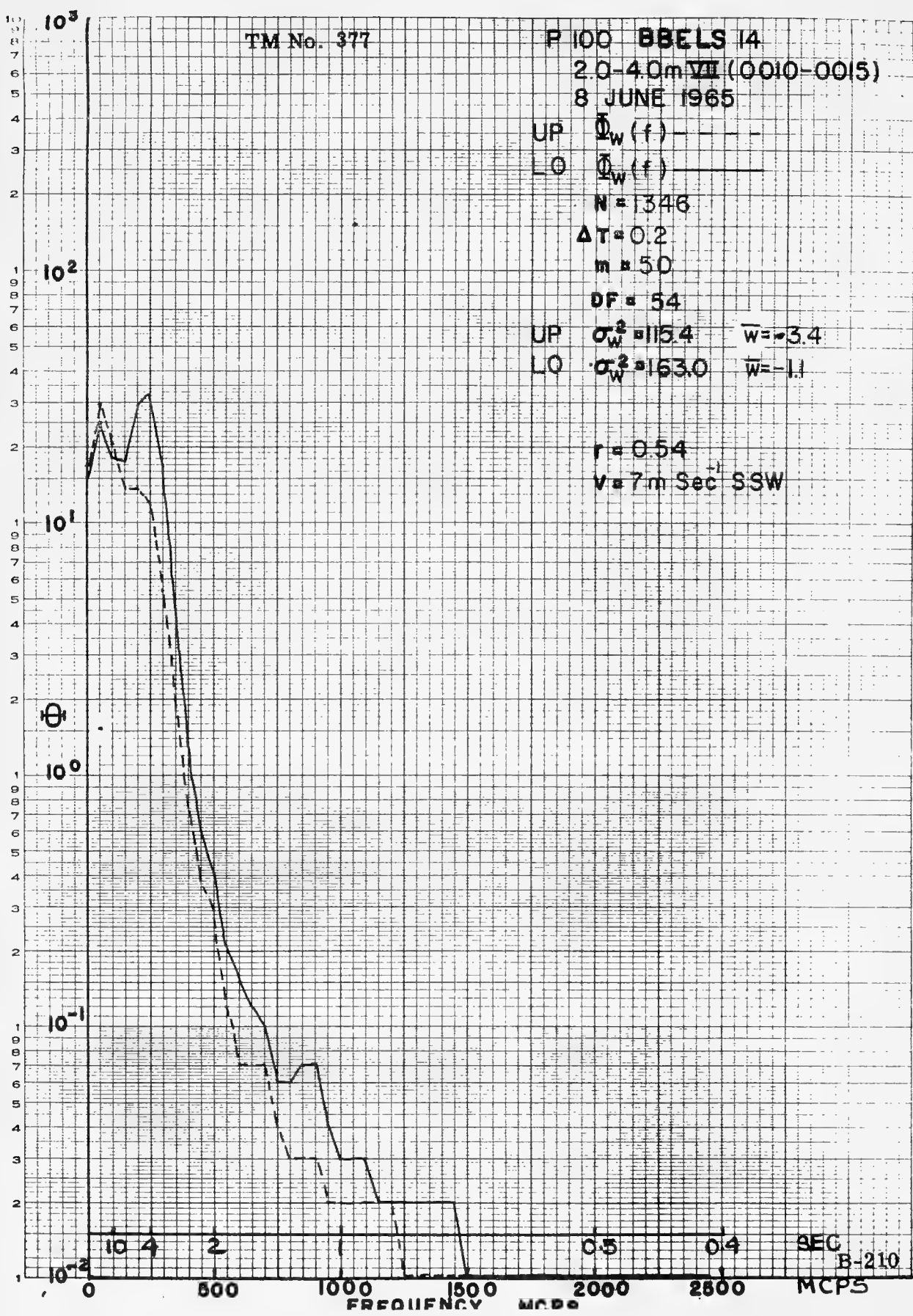
$DF = 54$

UP $\sigma_w^2 = 115.4$ $\bar{w} = 3.4$

LO $\sigma_w^2 = 153.0$ $\bar{w} = 1.1$

$r = 0.54$

$V = 7 \text{ m Sec}^{-1}$ SSW



SEC B-210

MADE IN U.S.A.

5 CYCLES X 10 DIVISIONS PER INCH

TM No. 377

P 101 BBELS 14
0.0m II (1411-1415)
8 JUNE 1965

$\Phi_U(f)$ - - - - -

$\Phi_W(f)$ - - - - -

$N = 1262$

$\Delta T = 0.2$

$m = 50$

$DF = 50$

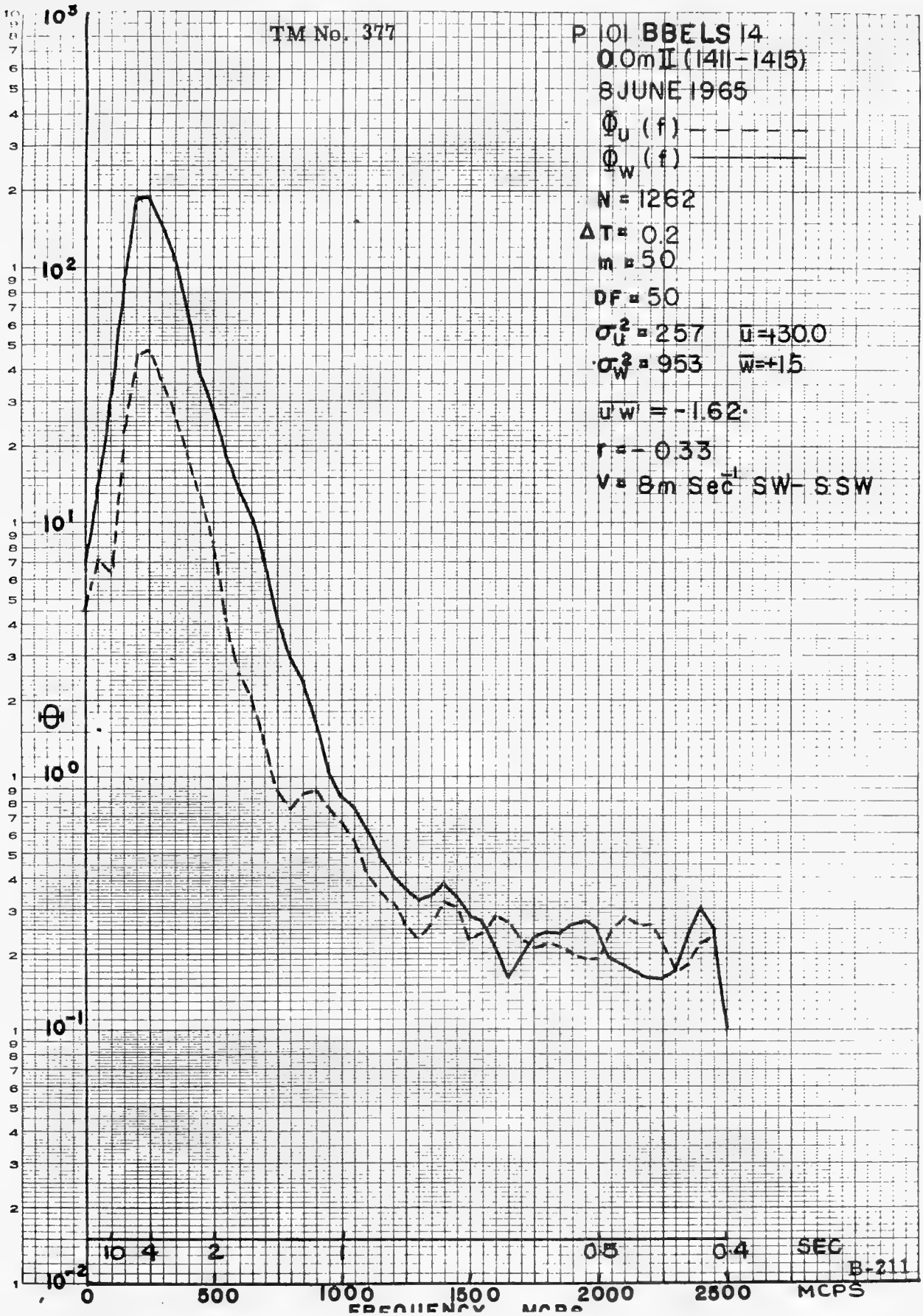
$\sigma_U^2 = 257$ $\bar{u} = 300$

$\sigma_W^2 = 953$ $\bar{w} = 15$

$u'w' = -1.62$

$r = -0.33$

$V = 8m \text{ Sec}^{-1}$ SW-SSW



TM No. 377

P 102 BBELS 14

0.5m I (1420-1424)

8 JUNE 1965

$\Phi_U(f)$ - - - - -

$\Phi_W(f)$ - - - - -

$N = 1136$

$\Delta T = 0.2$

$m = 50$

$DF = 45$

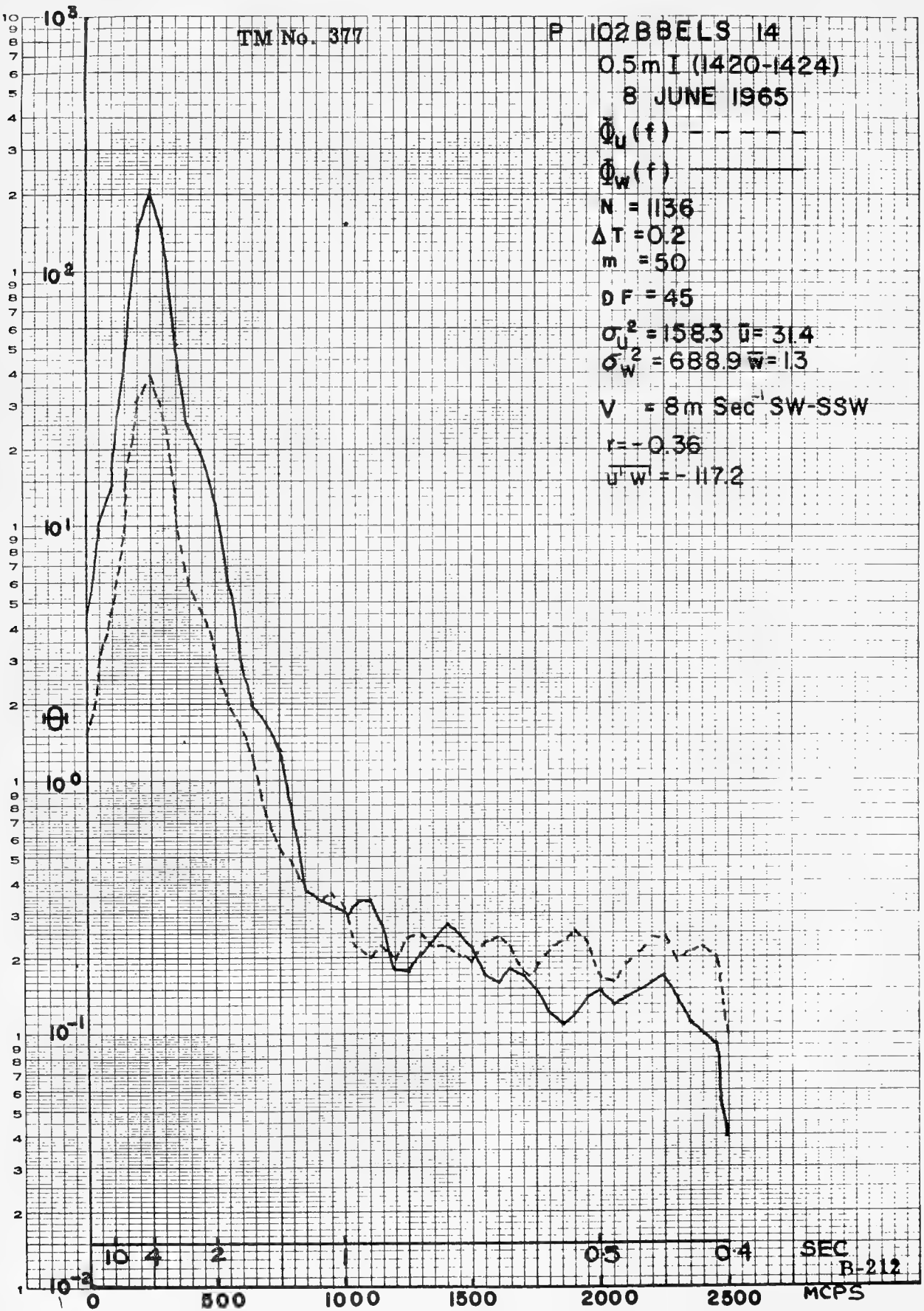
$\sigma_U^2 = 158.3 \quad \bar{U} = 31.4$

$\sigma_W^2 = 688.9 \quad \bar{W} = 13$

$V = 8 \text{ m Sec}^{-1} \text{ SW-SSW}$

$r = -0.36$

$\overline{u^*w^*} = -117.2$



TM No. 377

P 103 BBELS 14

1.0mI (1428-1432)

8 JUNE 1965

$\Phi_U(f)$ - - - -

$\Phi_W(f)$ - - - -

$N = 1039$

$\Delta T = 0.2$

$m = 50$

$DF = 42$

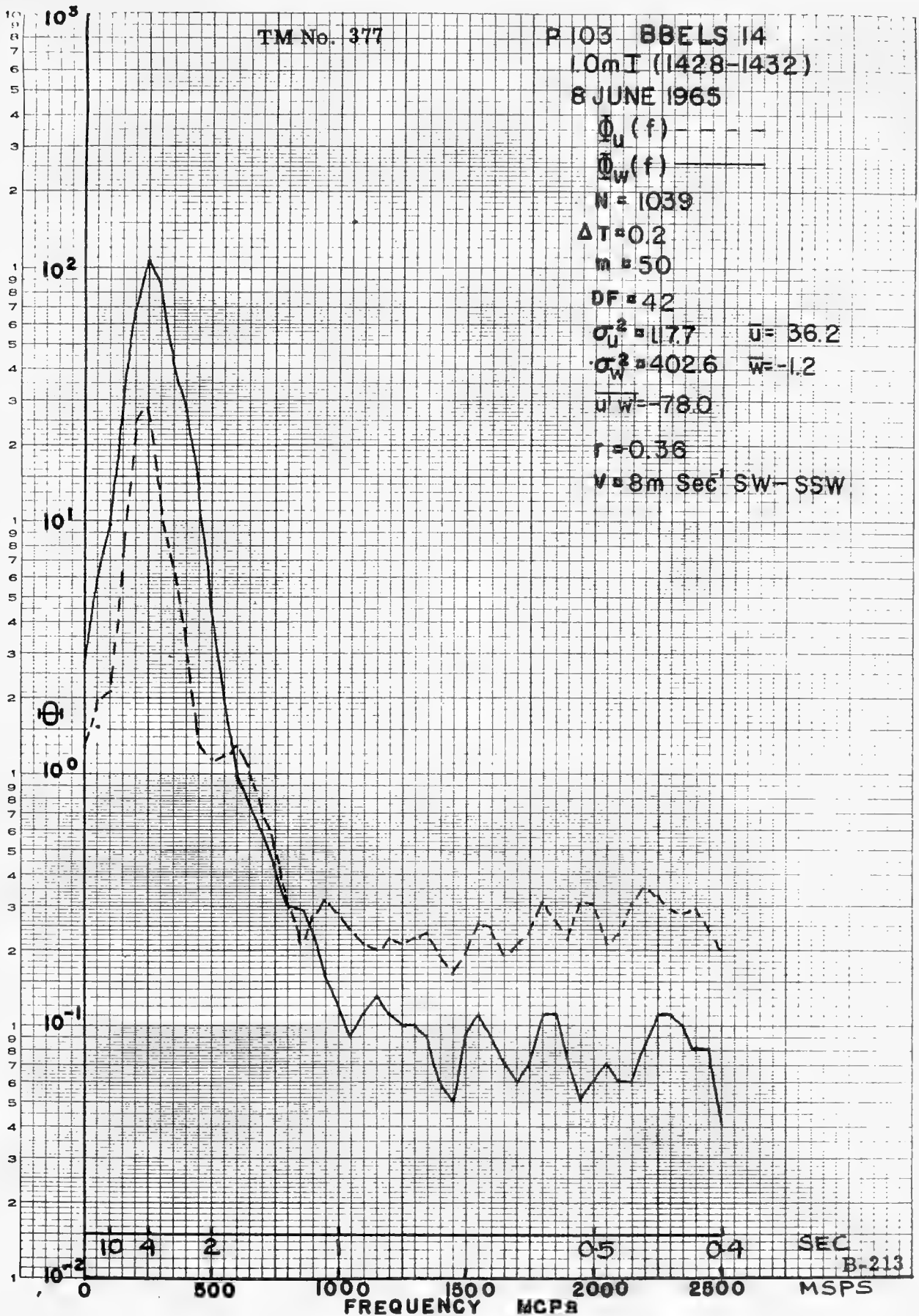
$\sigma_U^2 = 117.7$ $\bar{u} = 36.2$

$\sigma_W^2 = 402.6$ $\bar{w} = -1.2$

$\overline{uw} = -78.0$

$r = 0.36$

$V = 8 \text{ m Sec}^{-1}$ SW-SSW



TM No. 377

P 104 BBELS 14

1.5m I (1435-1439)

8 JUNE 1965

$\Phi_u(f)$ - - - -

$\Phi_w(f)$ - - - -

$N = 1022$

$\Delta T = 0.2$

$m = 50$

$DF = 41$

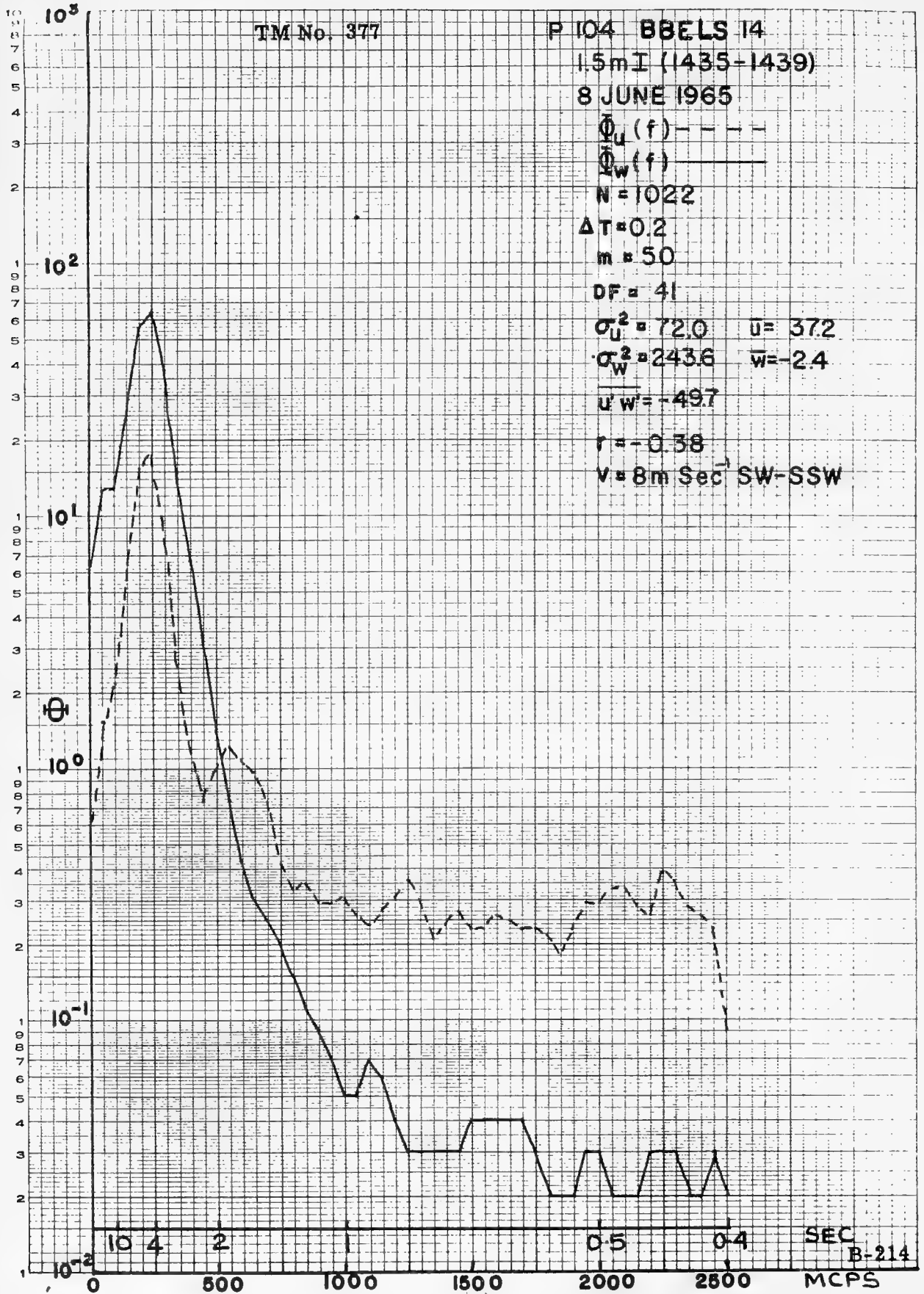
$\sigma_u^2 = 72.0$ $\bar{u} = 37.2$

$\sigma_w^2 = 243.6$ $\bar{w} = -2.4$

$\overline{u'w'} = -49.7$

$r = -0.38$

$V = 8 \text{ m Sec}^{-1}$ SW-SSW



TM No. 377

P 105 - DEELS 14
25mI (1450-1454)
8 JUNE 1965

$\Phi_u(f)$ - - - -

$\Phi_w(f)$ - - - -

N = 1088

$\Delta T = 0.2$

m = 50

DF = 42

$\sigma_u^2 = 537$ $\bar{u} = 35.2$

$\sigma_w^2 = 1594$ $\bar{w} = -3.3$

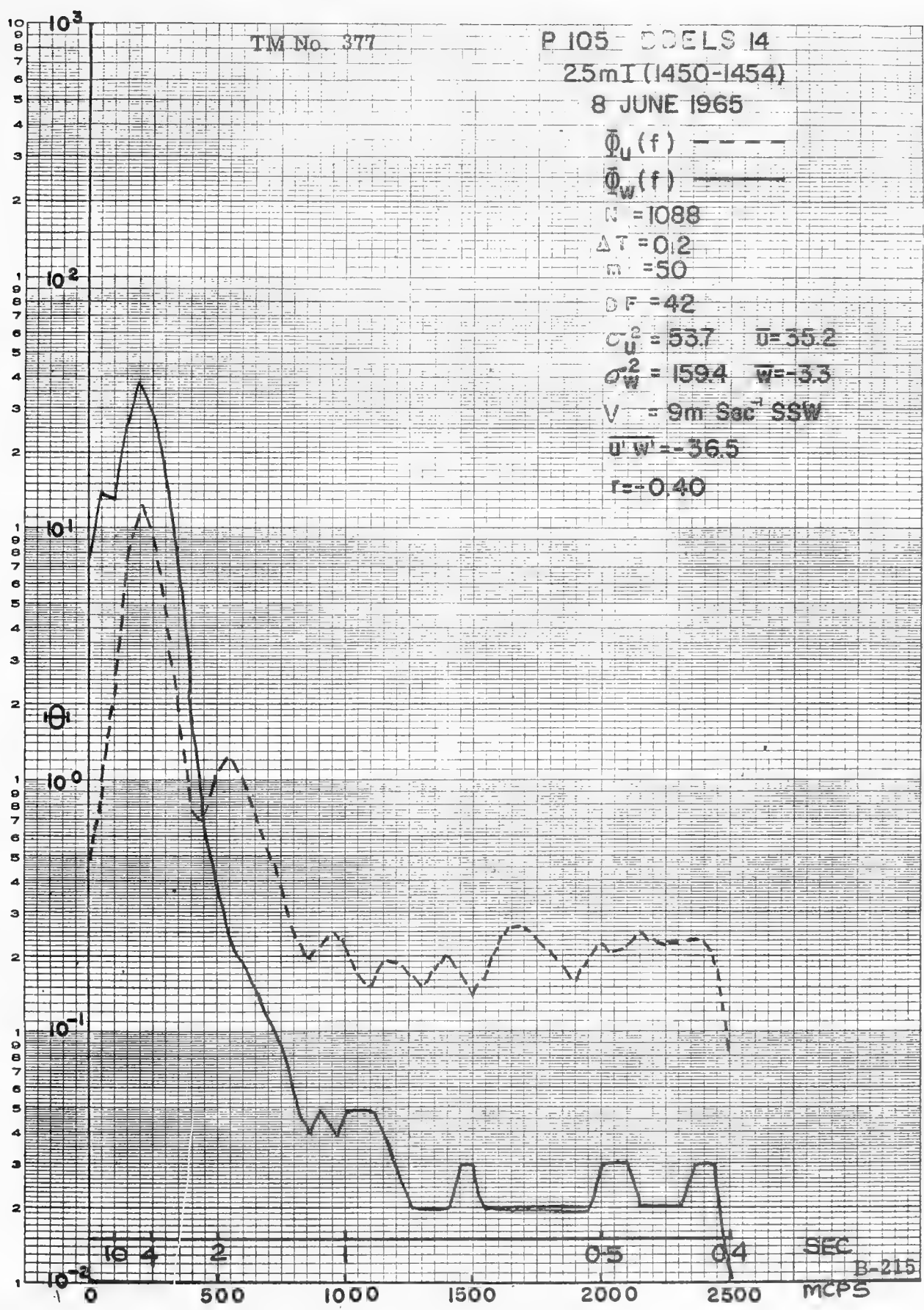
V = 9m Sec⁻¹ SSW

$\overline{u'w'} = -36.5$

r = -0.40

MADE IN U. S. A.

5 CYCLES X 10 DIVISIONS PER INCH



SEC
B-215
MCPs

TM No. 377

P 106 BBELS 14

3.0 MI (1457-1501)

8 JUNE 1965

$\hat{Q}_v(f)$ - - - - -

$\hat{Q}_w(f)$ - - - - -

$N = 1143$

$\Delta T = 0.2$

$m = 50$

$DF = 46$

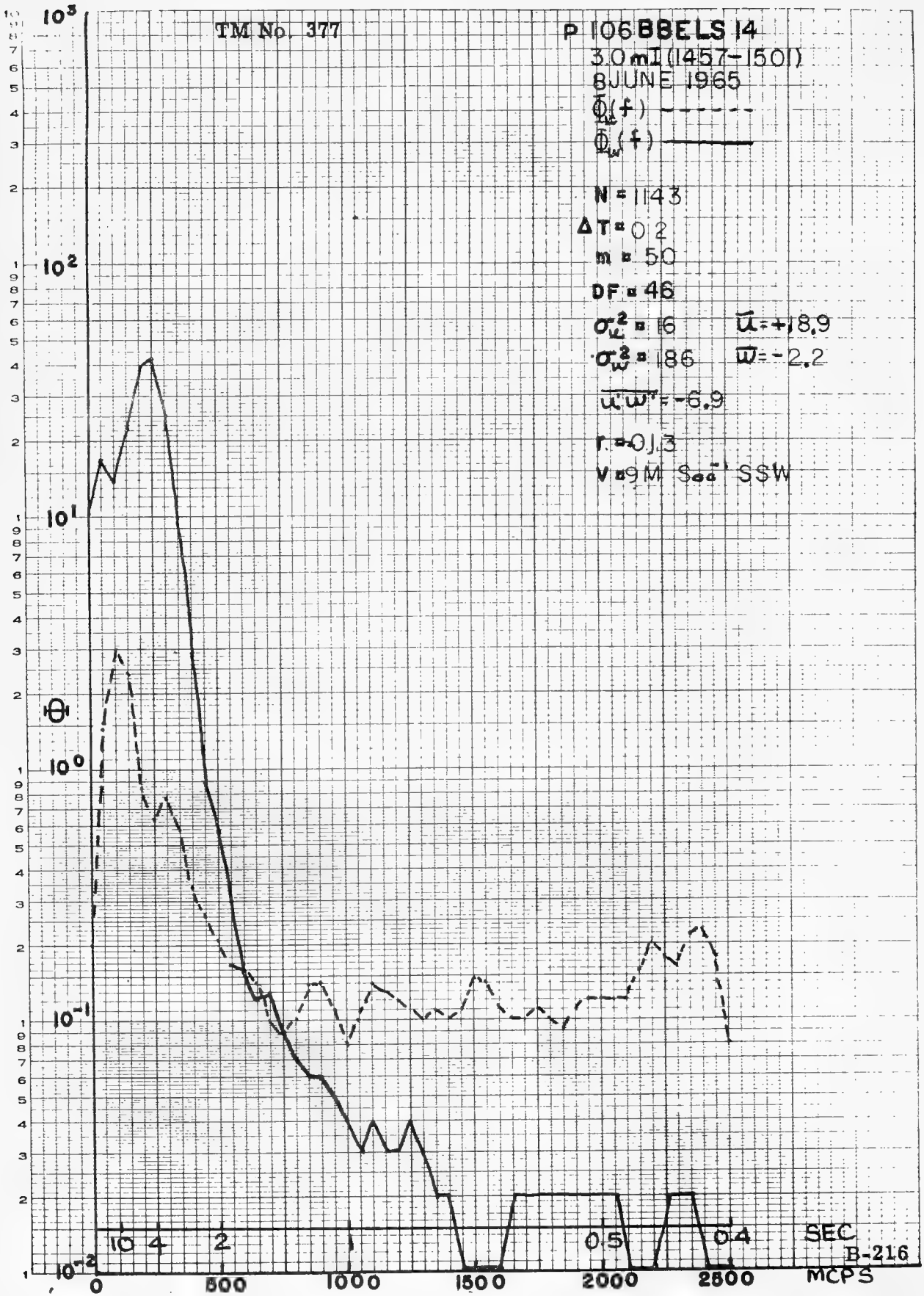
$\sigma_v^2 = 16$ $\bar{u} = +18.9$

$\sigma_w^2 = 186$ $\bar{w} = -2.2$

$\overline{u \cdot w} = -6.9$

$r = 0.13$

$V = 9 \text{ M Sec}^{-1}$ SSW



TM No. 377

P 107 BBELS 14

35mI (1508-1512)

8 JUNE 1965

$\Phi_u(f)$ - - - -

$\Phi_w(f)$ - - - -

N = 1267

$\Delta T = 0.2$

m = 50

DF = 51

$\sigma_u^2 = 41$

$\bar{u} = +30.4$

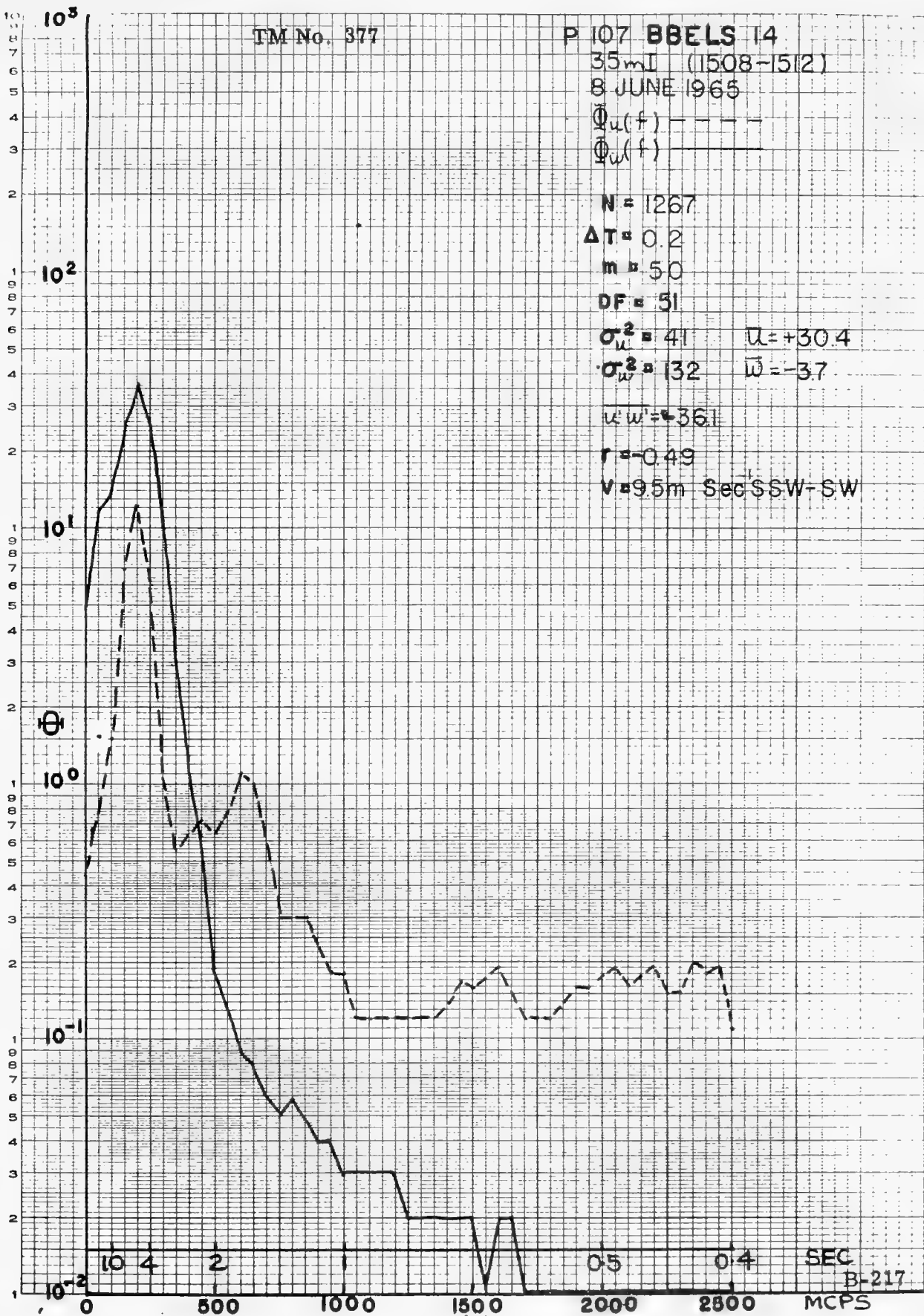
$\sigma_w^2 = 132$

$\bar{w} = -3.7$

$\overline{u'w'} = -36.1$

r = -0.49

V = 9.5m Sec SSW-SW



SEC
B-217

MCPs

5 CYCLES X 10 DIVISIONS PER INCH

MADE IN U.S.A.

TM No. 377

P 108 BBELS 14

4.5m I (1524-1528)

8 JUNE 1965

$\Phi_U(f)$ - - - -

$\Phi_W(f)$ - - - -

N = 1038

$\Delta T = 0.2$

m = 50

DF = 42

$\sigma_U^2 = 20.4$

$\bar{u} = 233$

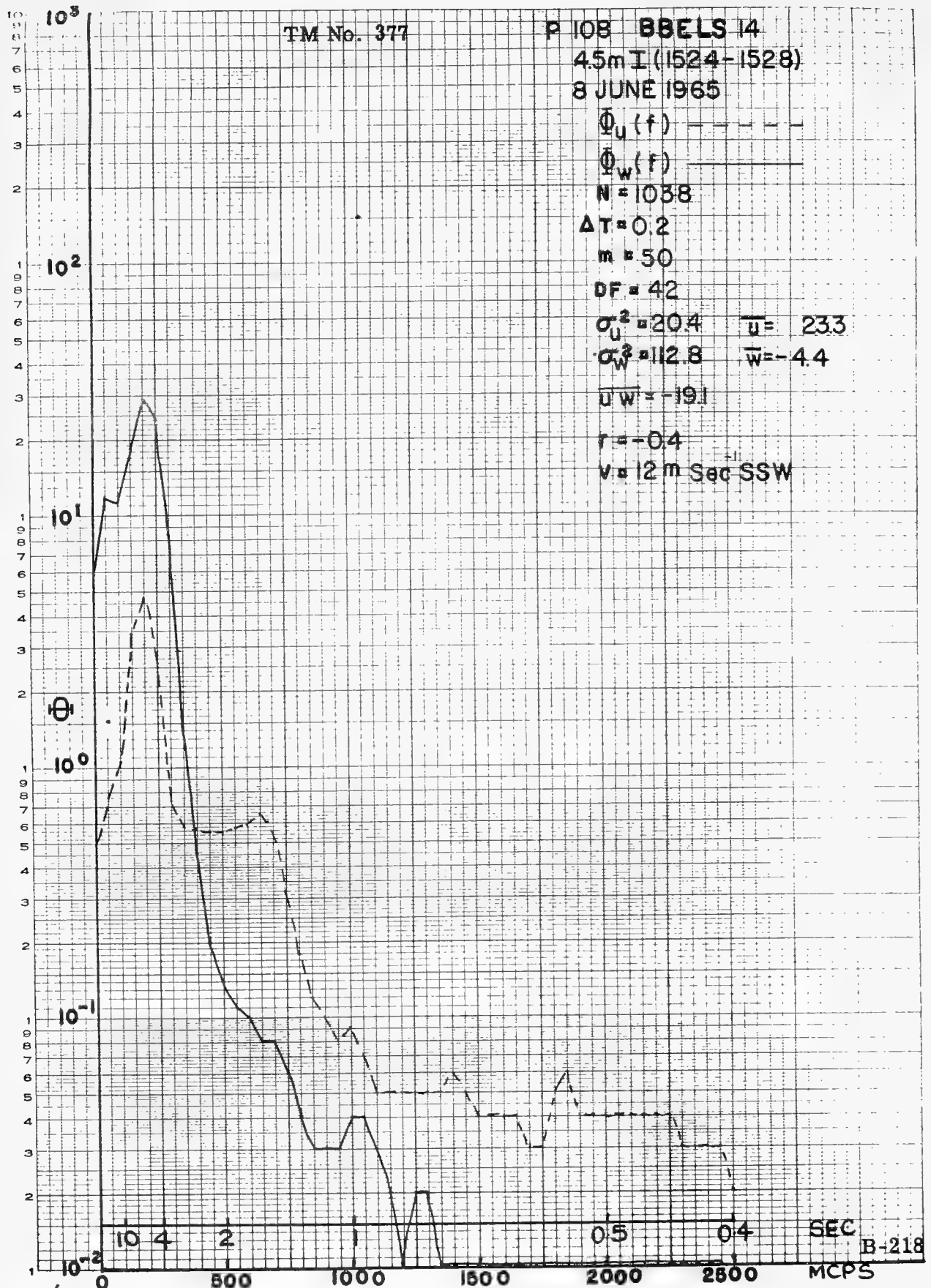
$\sigma_W^2 = 12.8$

$\bar{w} = -4.4$

$\bar{u}w = -19.1$

r = -0.4

v = 12 m Sec SSW



B-218

TM No. 377

P 109 BBELS 14

55 m I (1539-1542)

8 JUNE 1966

$\Phi_u(f)$ - - - -

$\Phi_w(f)$ - - - -

$N = 918$

$\Delta T = 0.2$

$m = 50$

$DF = 37$

$\sigma_u^2 = 15.4$

$\bar{u} = 18.3$

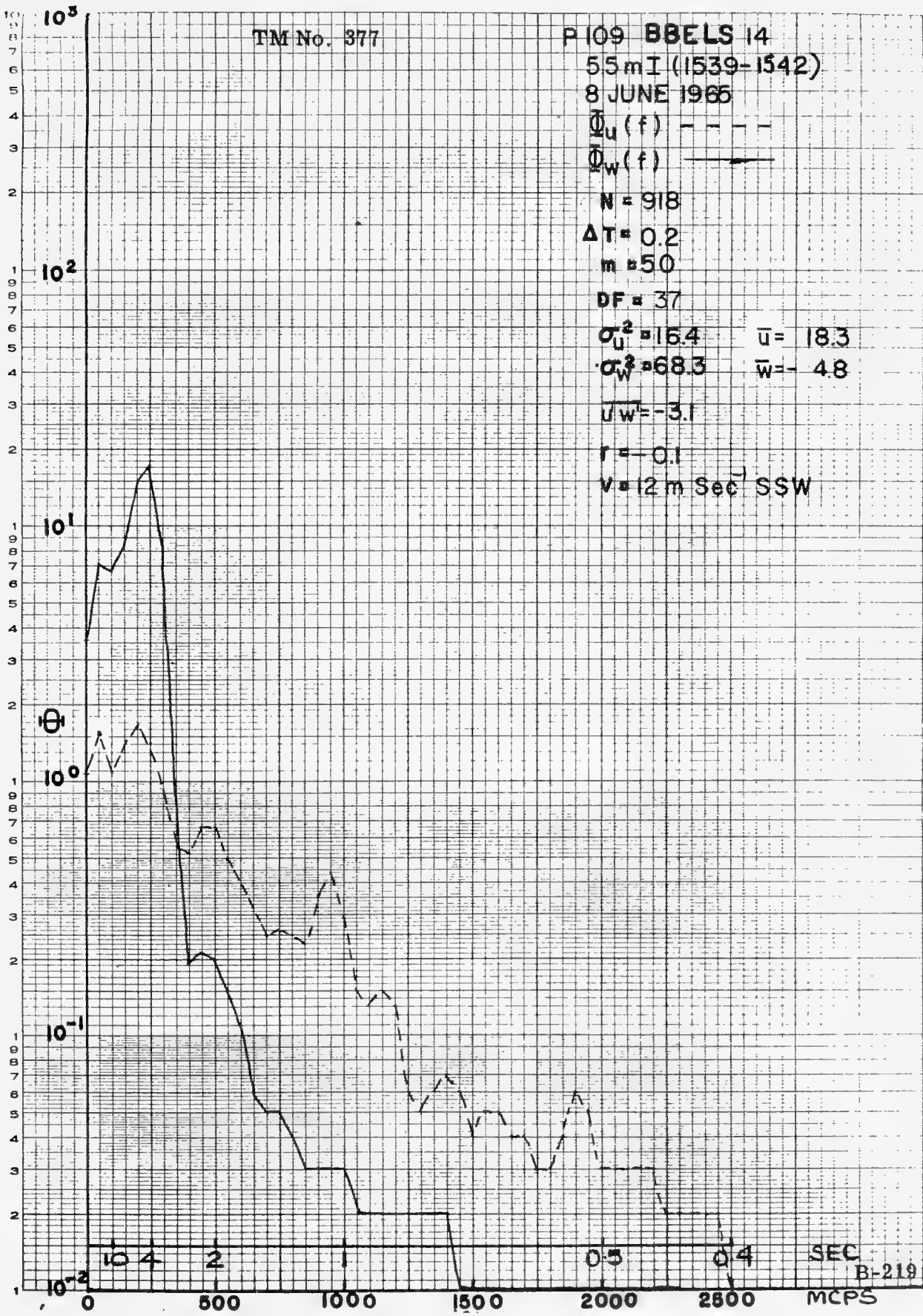
$\sigma_w^2 = 68.3$

$\bar{w} = 4.8$

$\bar{u}w = -3.1$

$r = -0.1$

$V = 12 \text{ m Sec}^{-1} \text{ SSW}$



TM No. 377

P 110

BBELS 14

65mI (1553-1557)

8 JUNE 1965

$\Phi_U(f)$ - - - - -

$\Phi_W(f)$ - - - - -

$N = 1083$

$\Delta T = 0.2$

$m = 50$

$DF = 43$

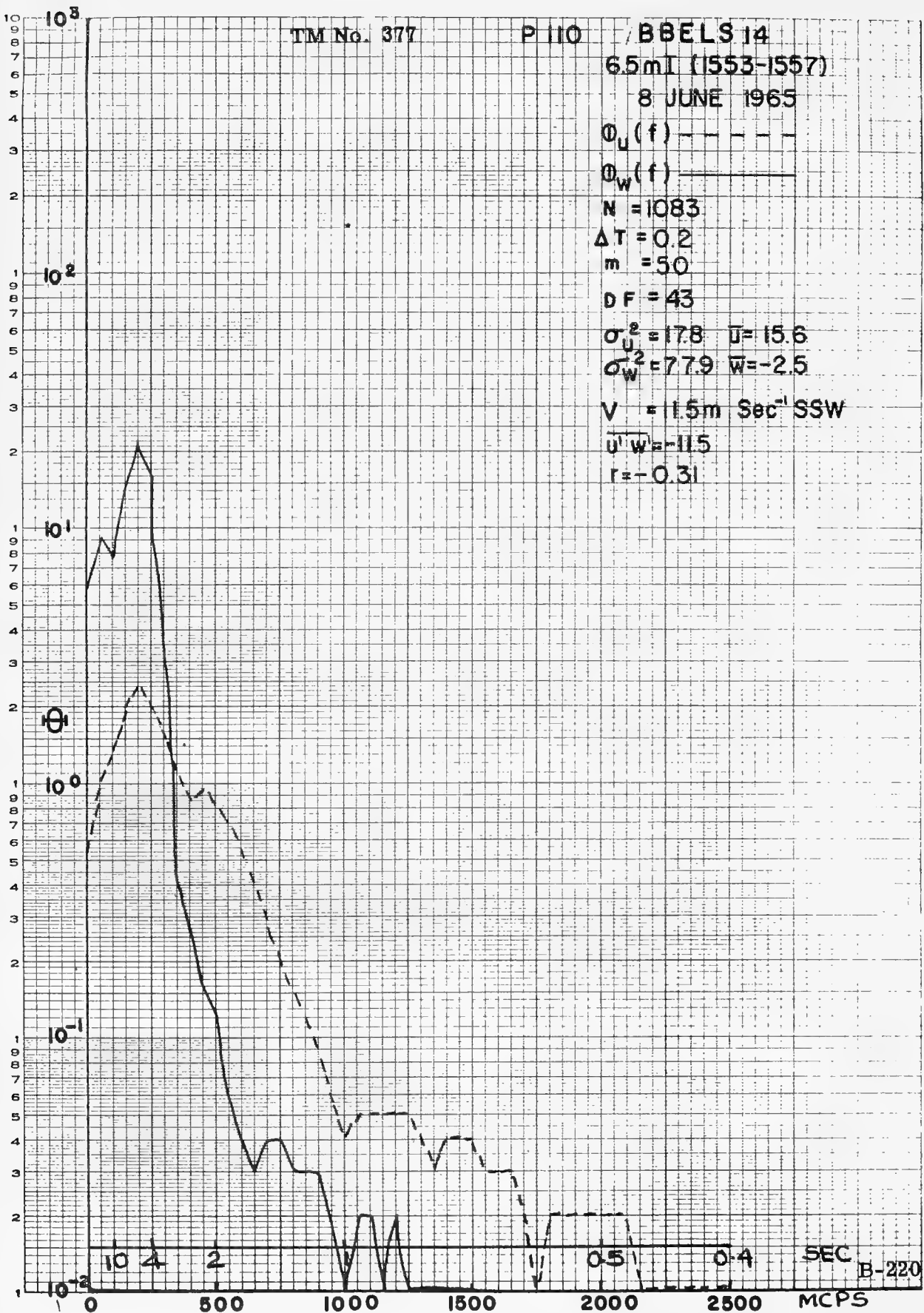
$\sigma_U^2 = 17.8$ $\bar{U} = 15.6$

$\sigma_W^2 = 77.9$ $\bar{W} = -2.5$

$V = 11.5 \text{ m Sec}^{-1} \text{ SSW}$

$\overline{U'W} = -11.5$

$r = -0.31$



B-220

TM No. 377

P III BBELS 15

0-2.5 m I (1922-1929)

19 JULY 1965

U $\Phi_u(f)$ —————

L $\Phi_L(f)$ - - - - -

N = 2088

$\Delta T = 0.2$

m = 50

DF = 83

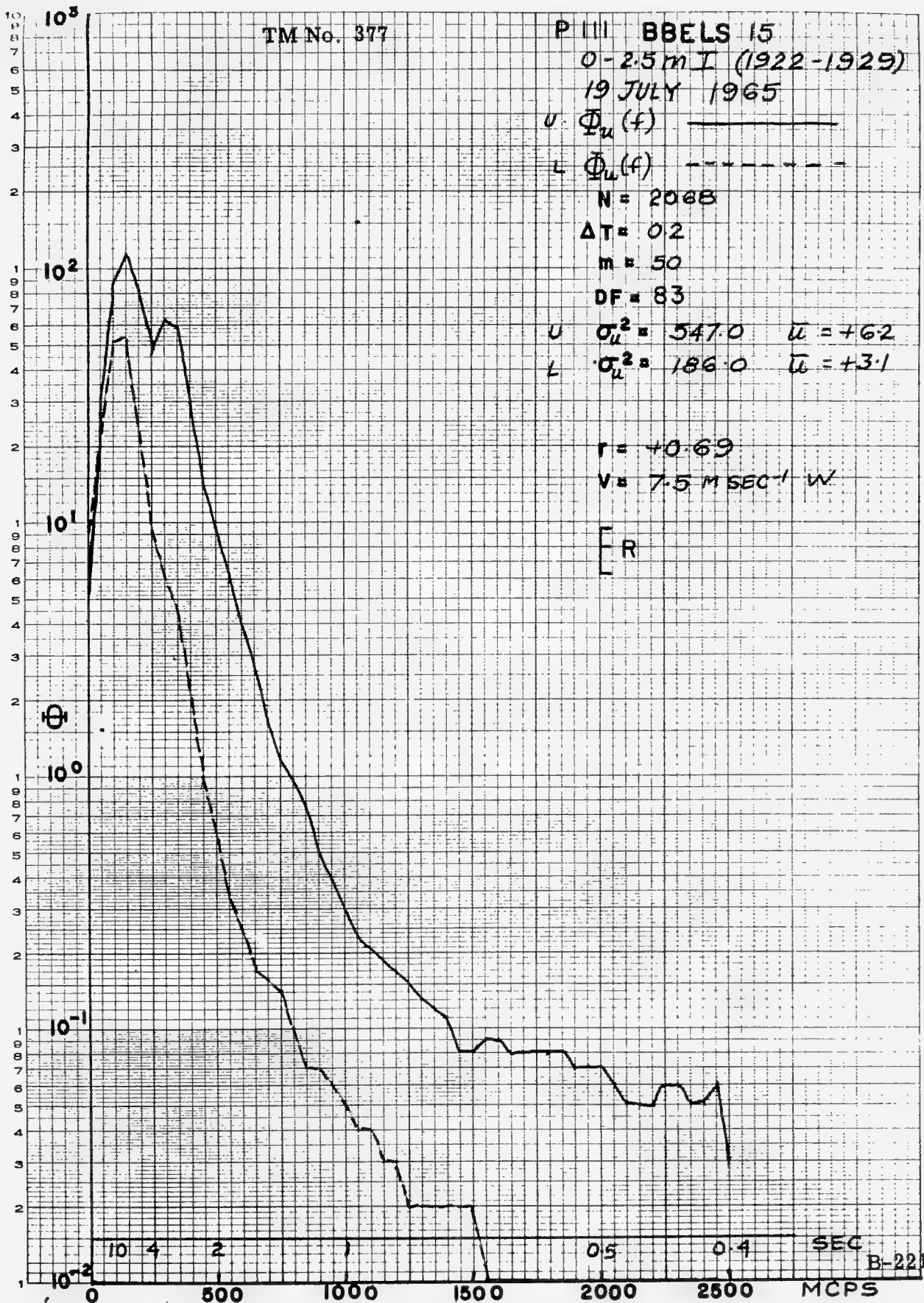
U $\sigma_u^2 = 547.0$ $\bar{u} = +6.2$

L $\sigma_u^2 = 186.0$ $\bar{u} = +3.1$

r = +0.69

V = 7.5 M SEC⁻¹ W

[R]



TM No. 377

P 112 BBELS - 15 - 2
0.0 - 2.5 m II (1940-1951)
19 JULY 1965 (U)

UP $\Phi_u(k)$ - - - - -

LO $\Phi_u(k)$ —————

N = 2013

$\Delta T = 0.2$

m = 50

DF = 80

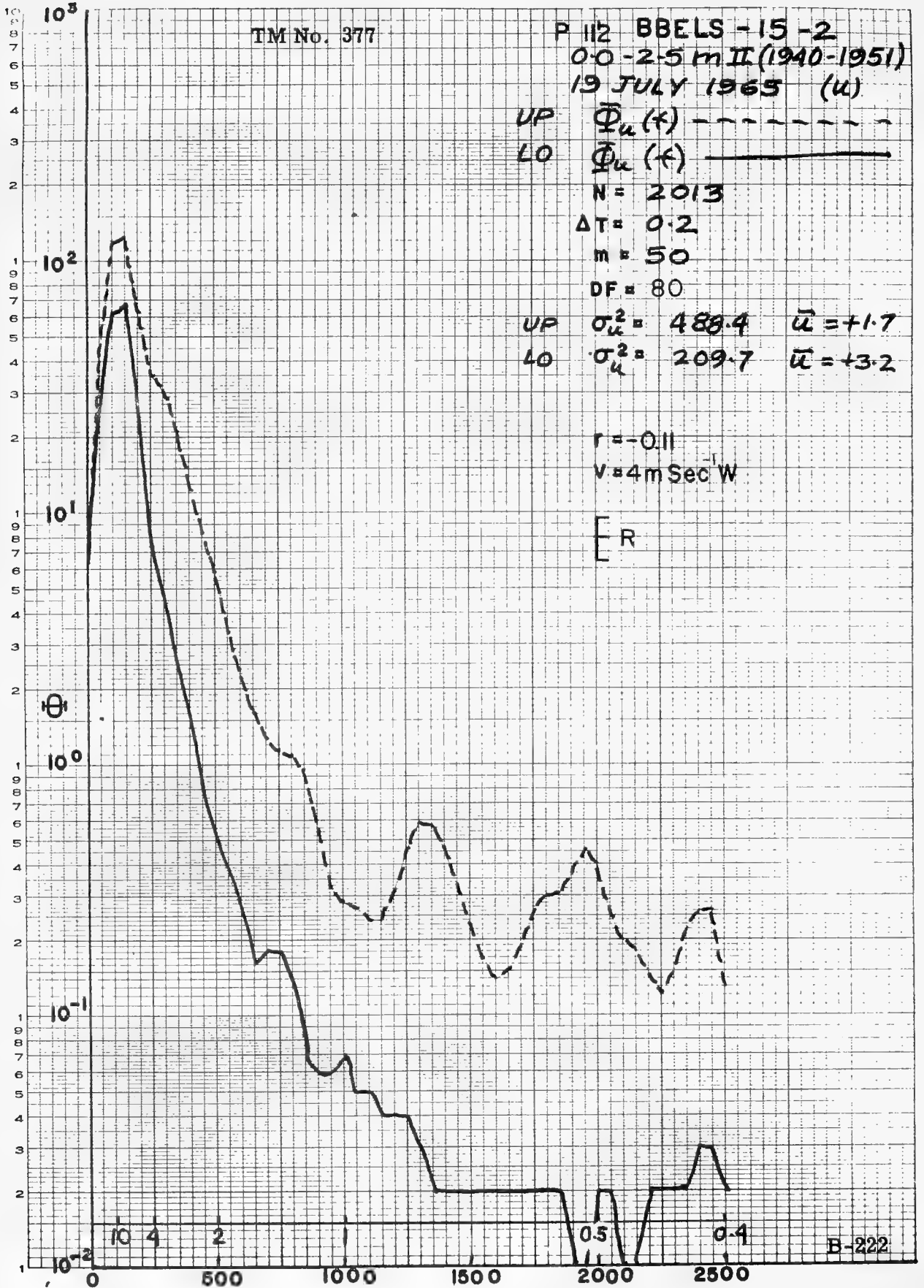
UP $\sigma_u^2 = 488.4$ $\bar{u} = +1.7$

LO $\sigma_u^2 = 209.7$ $\bar{u} = +3.2$

r = -0.11

V = 4 m Sec W

[R



TM No. 377

P 113, BBELS 15

0.0-25mIII(2003-2009)

19 JULY 1965

UP $\hat{\Phi}_u(f)$ - - - -

LO $\hat{\Phi}_u(f)$ ————

N = 1705

$\Delta T = 0.2$

m = 50

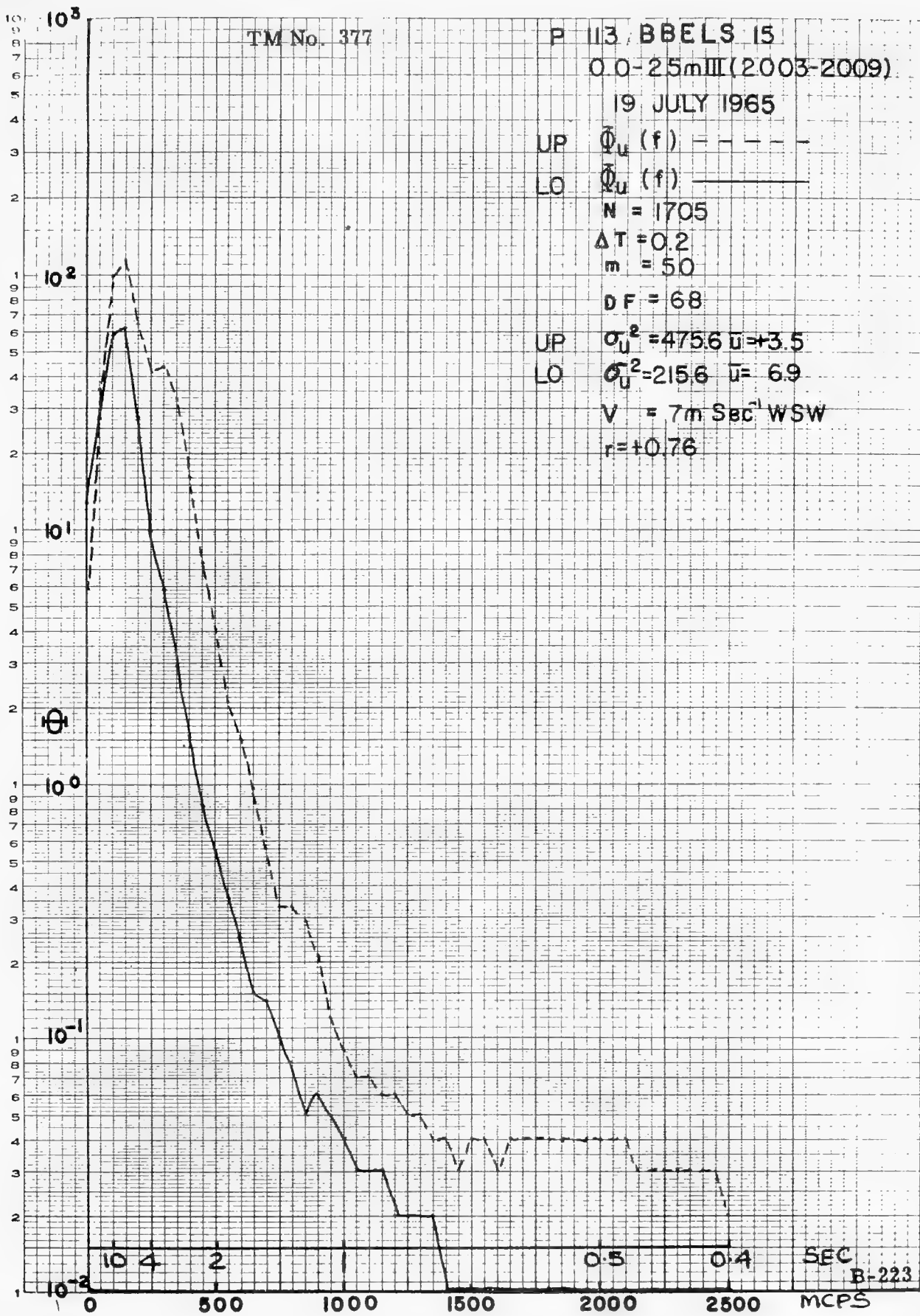
DF = 68

UP $\sigma_u^2 = 475.6 \bar{u} = +3.5$

LO $\sigma_u^2 = 215.6 \bar{u} = 6.9$

V = 7m Sec⁻¹ WSW

r = +0.76



TM No. 377

P 114 BBELS 15

0.0-2.5 m IV (2201-2209)

19 JULY 1965

UP $\Phi_u(f)$ - - - - -

LO $\Phi_u(f)$ ———

N = 1555

$\Delta T = 0.2$

m = 50

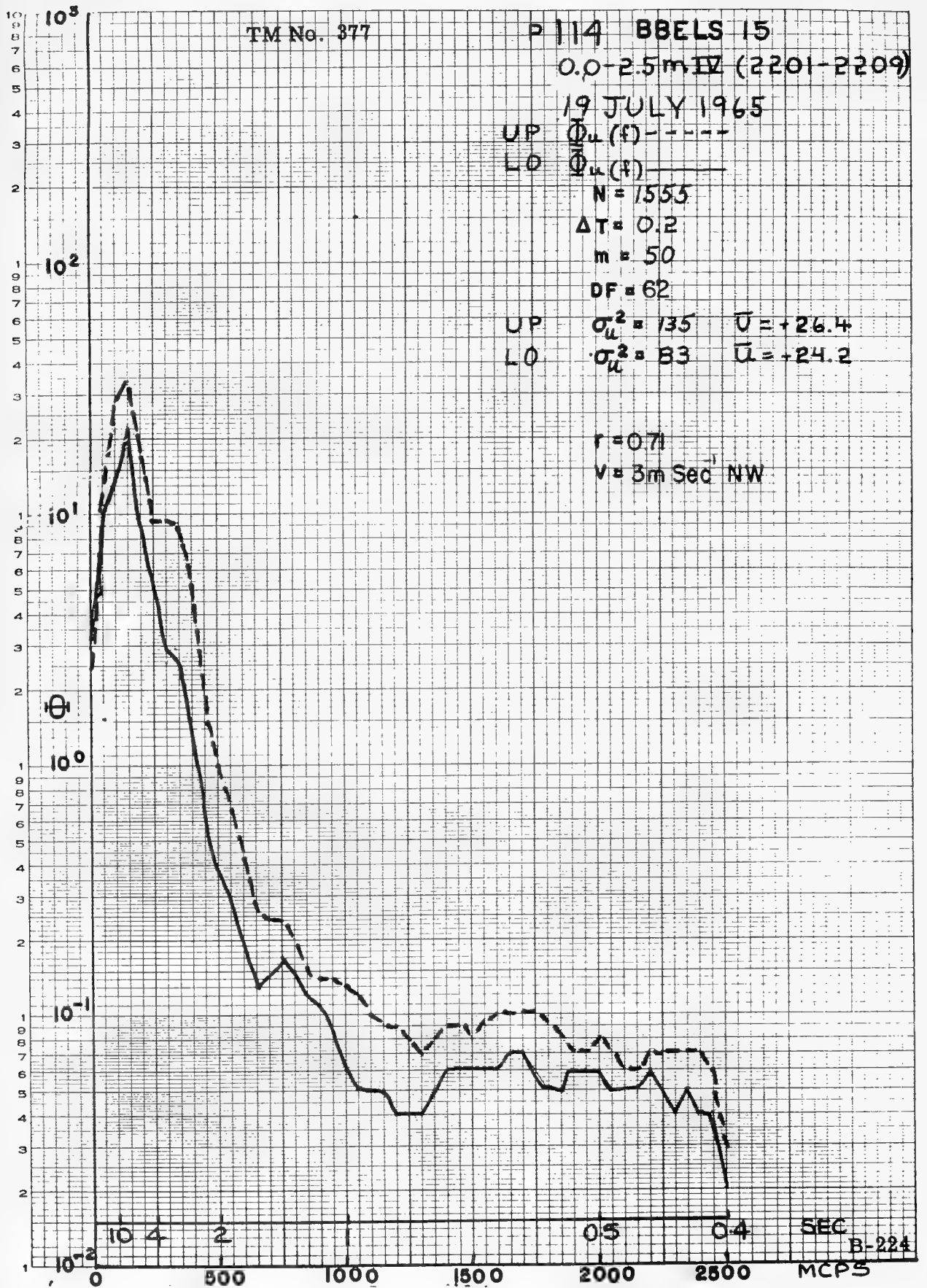
DF = 62

UP $\sigma_u^2 = 135$ $\bar{U} = +26.4$

LO $\sigma_u^2 = 83$ $\bar{U} = -24.2$

r = 0.71

V = 3 m Sec⁻¹ NW



B-224

TM No. 377

P 115A BBELS 15-5
0.0-2.5mV(2400-0008)

19 JULY 1965

up $\Phi_U(f)$ - - - -
lo $\Phi_U(f)$ - - - -

N = 2422

$\Delta T = 0.2$

m = 50

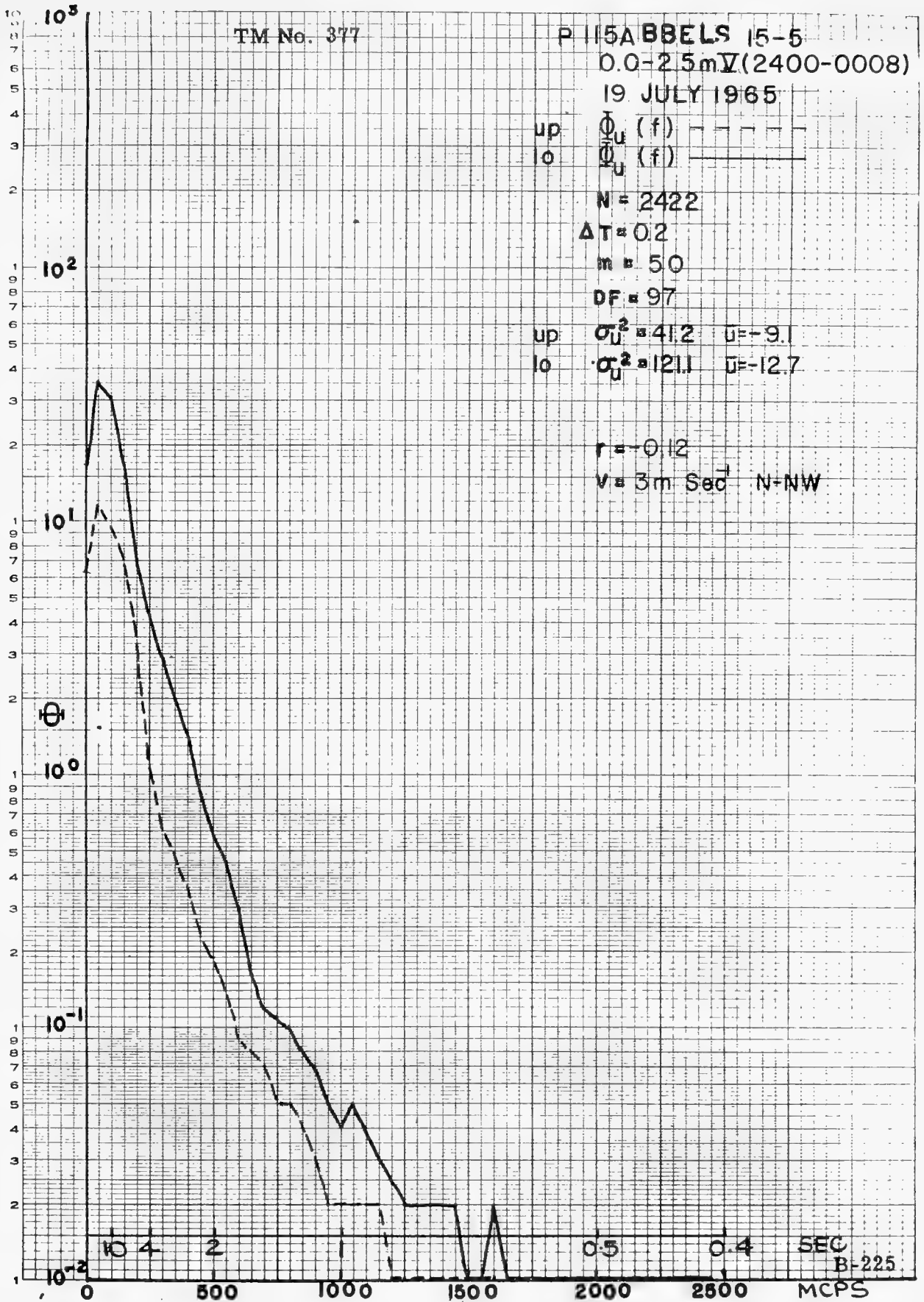
DF = 97

up $\sigma_U^2 = 41.2$ $\bar{U} = -9.1$

lo $\sigma_U^2 = 121.1$ $\bar{U} = -12.7$

r = -0.12

V = 3m Sec⁻¹ N+NW



TM No. 377

P 115B / BBELS 15
0.0-2.5 mVI (0930-0934)
20 JULY 1965

UP $\bar{\Phi}_u (f)$

$N = 806$

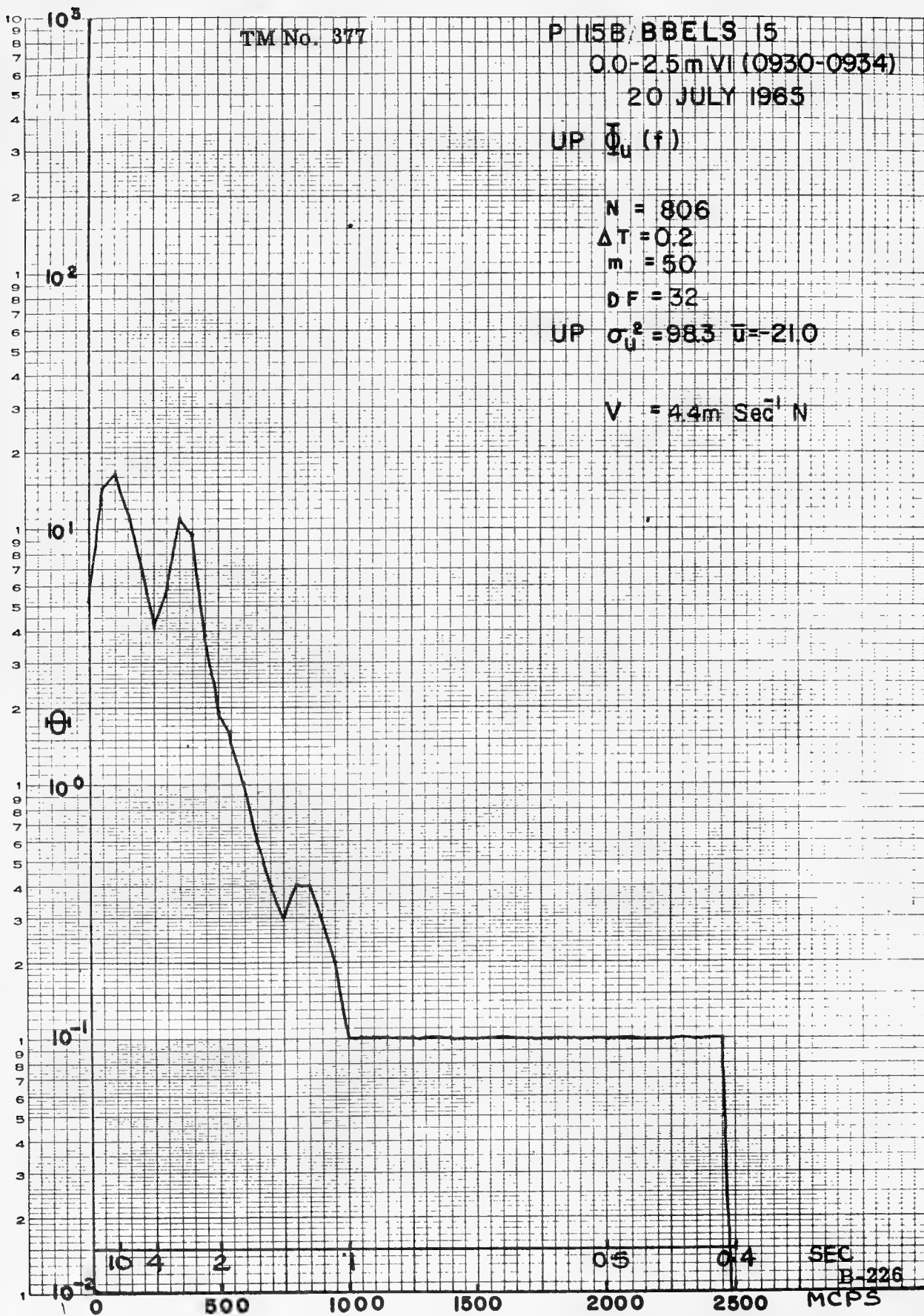
$\Delta T = 0.2$

$m = 50$

$DF = 32$

UP $\sigma_u^2 = 98.3 \quad \bar{u} = -21.0$

$V = 4.4 \text{ m Sec}^{-1} \text{ N}$



TM No. 377

P 116 BBELS -15-10
I-2.5m I 20 JULY (2034-2037)

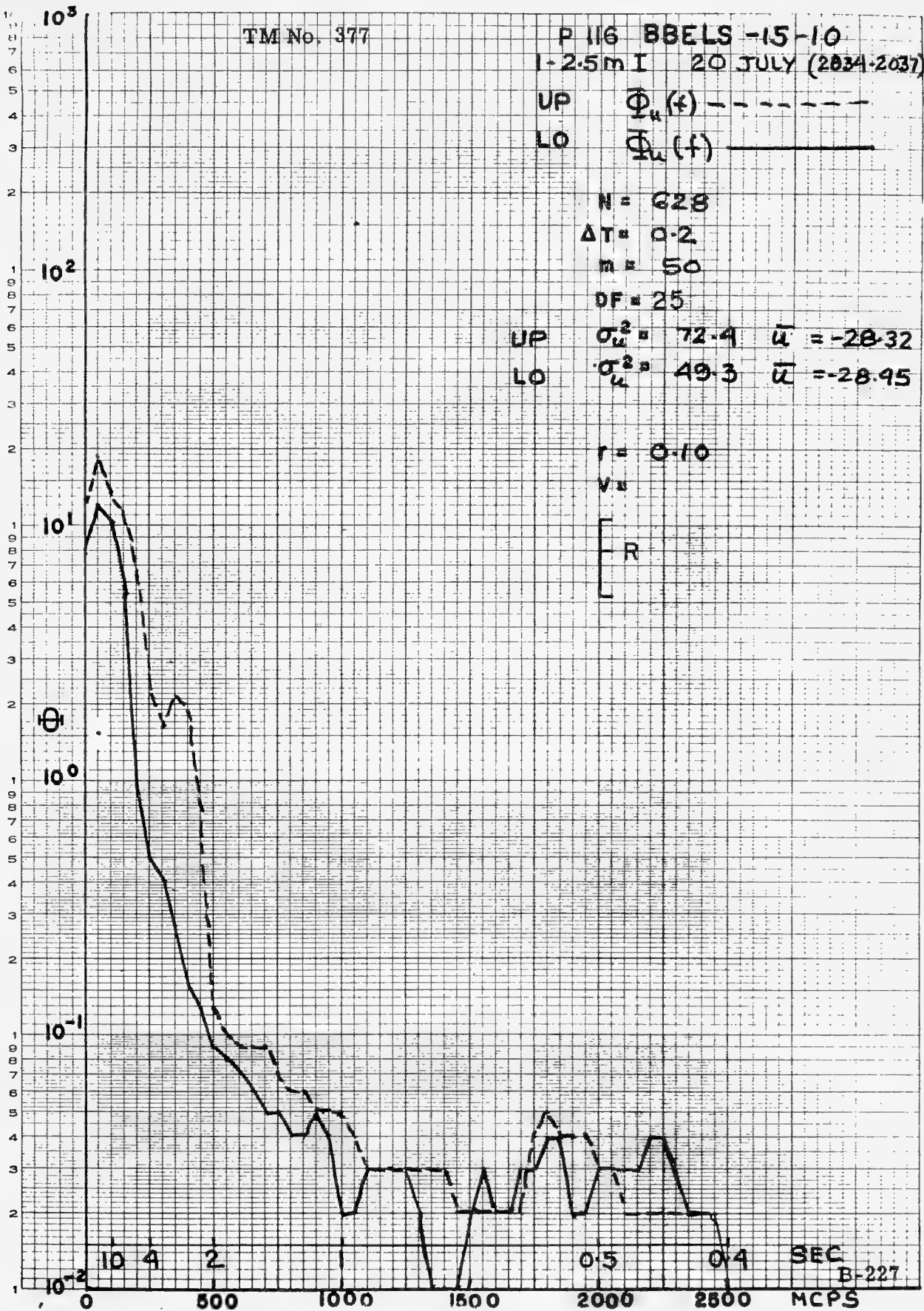
UP $\Phi_u(f)$ - - - - -
LO $\Phi_w(f)$ —————

N = 628
 $\Delta T = 0.2$
m = 50
DF = 25

UP $\sigma_w^2 = 72.4$ $\bar{u} = -28.32$
LO $\sigma_u^2 = 49.3$ $\bar{u} = -28.95$

r = 0.10
v =
L
R

5 CYCLES X 10 DIVISIONS PER INCH



SEC B-227
MCPS

TM No. 377

P 119 BBELS 16-10
-3.5m VII (0200-0207)
8 SEPT 1965

up $\bar{\Phi}_w(f)$ - - - -
lo $\Phi_w(f)$ - - - -

N = 1849

$\Delta T = 0.2$

m = 50

DF = 74

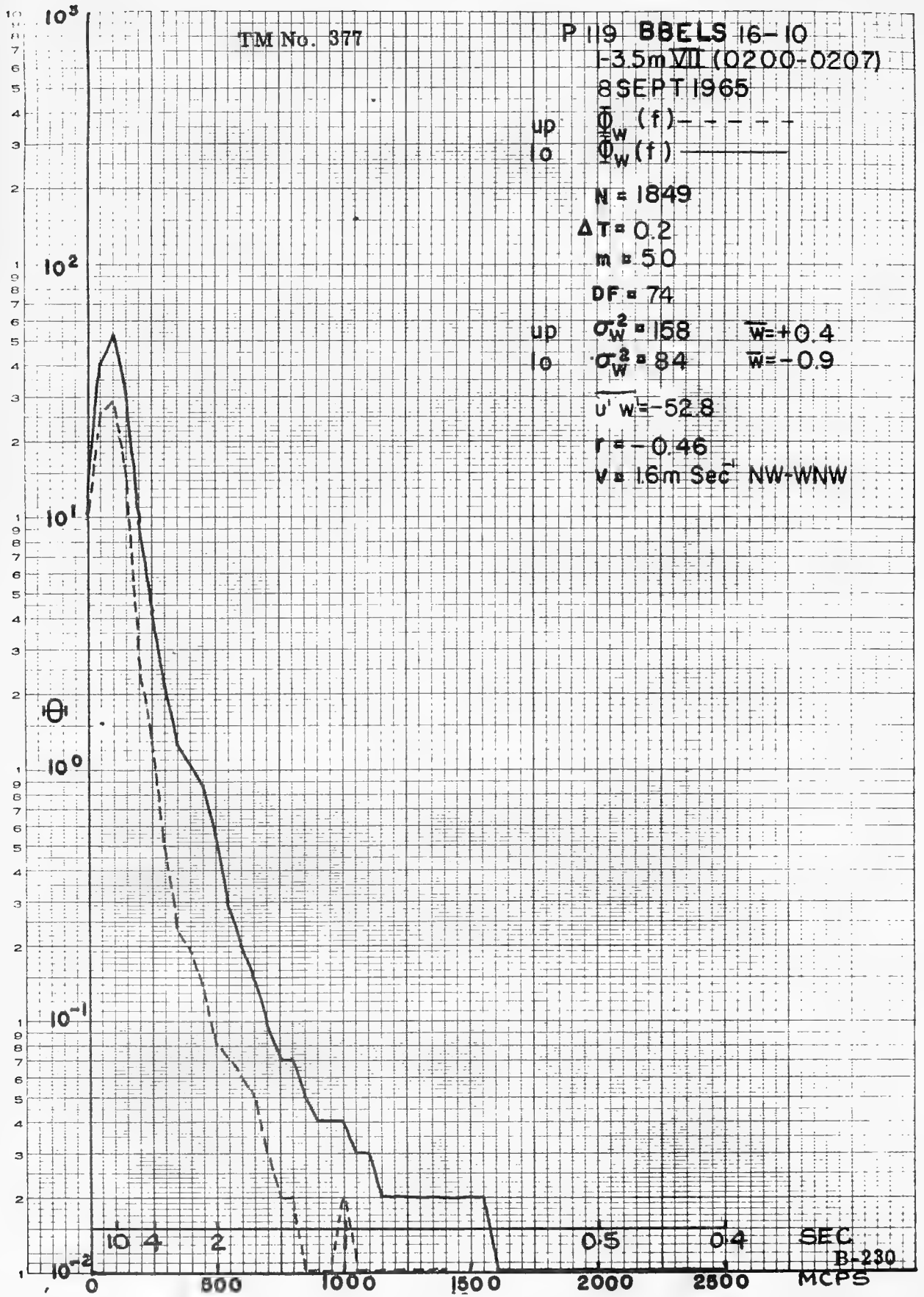
up $\sigma_w^2 = 158$ $\bar{w} = +0.4$

lo $\sigma_w^2 = 84$ $\bar{w} = -0.9$

$\overline{u'w} = -52.8$

$r = -0.46$

$v = 16 \text{ m Sec}^{-1}$ NW-WNW



SEC
B-280

TM No. 377

P 120 BBELS-16-1
0.5m I (1340-1346)
8 SEPT. 1965

$\Phi_u(f)$ - - - - -

$\Phi_w(f)$ - - - - -

N = 702

$\Delta T = 0.2$

m = 50

DF = 28

$\sigma_u^2 = 56.9$ $\bar{u} = -19.7$

$\sigma_w^2 = 256.2$ $\bar{w} = +0.4$

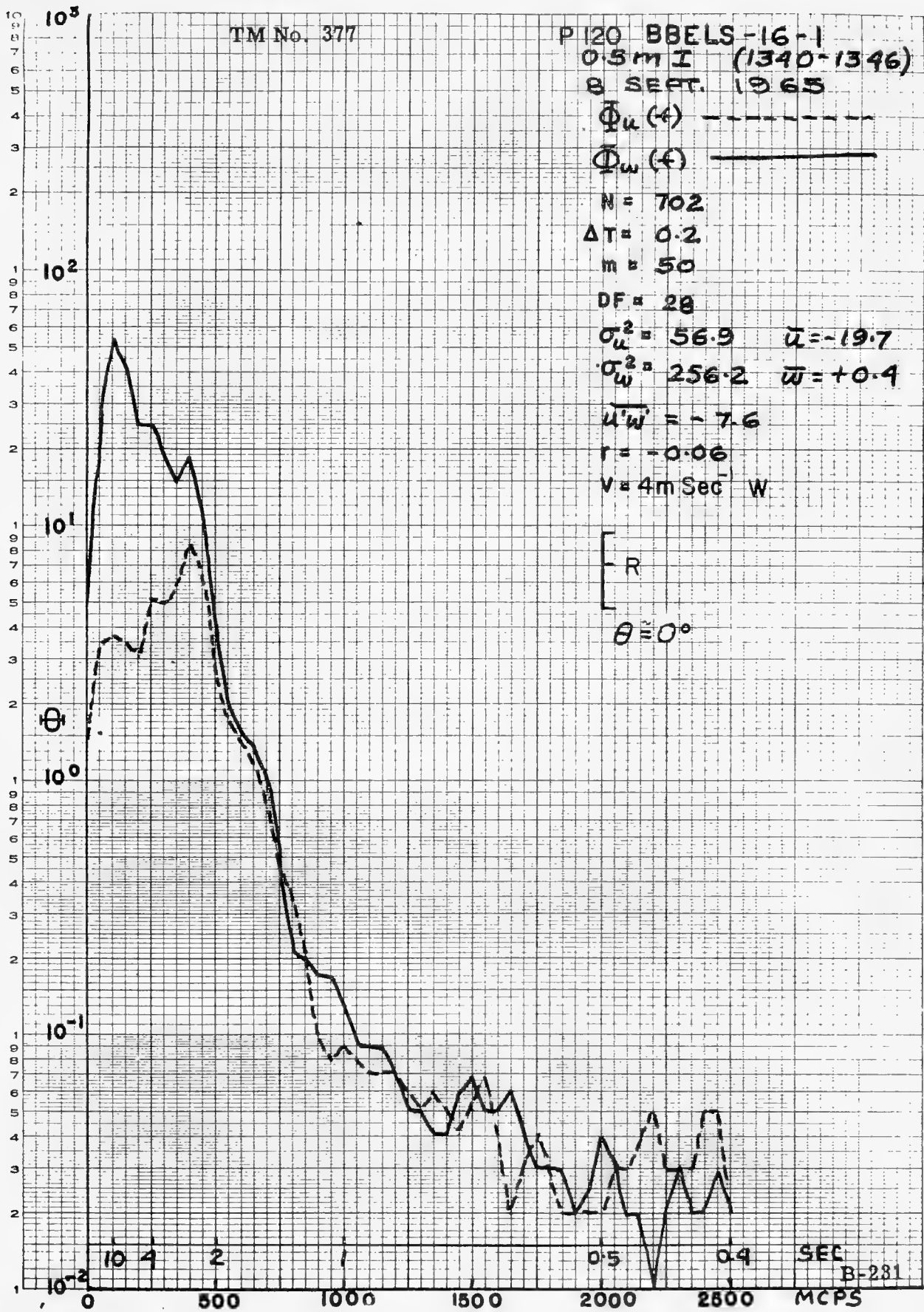
$\overline{u'w'} = -7.6$

r = -0.06

V = 4m Sec⁻¹ W

[R

$\theta \approx 0^\circ$



SEC
B-281

MADE IN U. S. A.

5 CYCLES X 10 DIVISIONS PER INCH

TM No. 377

P 121 BBELS 16

0.5mII (1350-1357)

8 SEPT 1965

$\Phi_U(f)$ - - - -

$\Phi_W(f)$ - - - -

$N = 1227$

$\Delta T = 0.2$

$m = 50$

$DF = 49$

$\sigma_U^2 = 66.1$ $\bar{U} = -19.8$

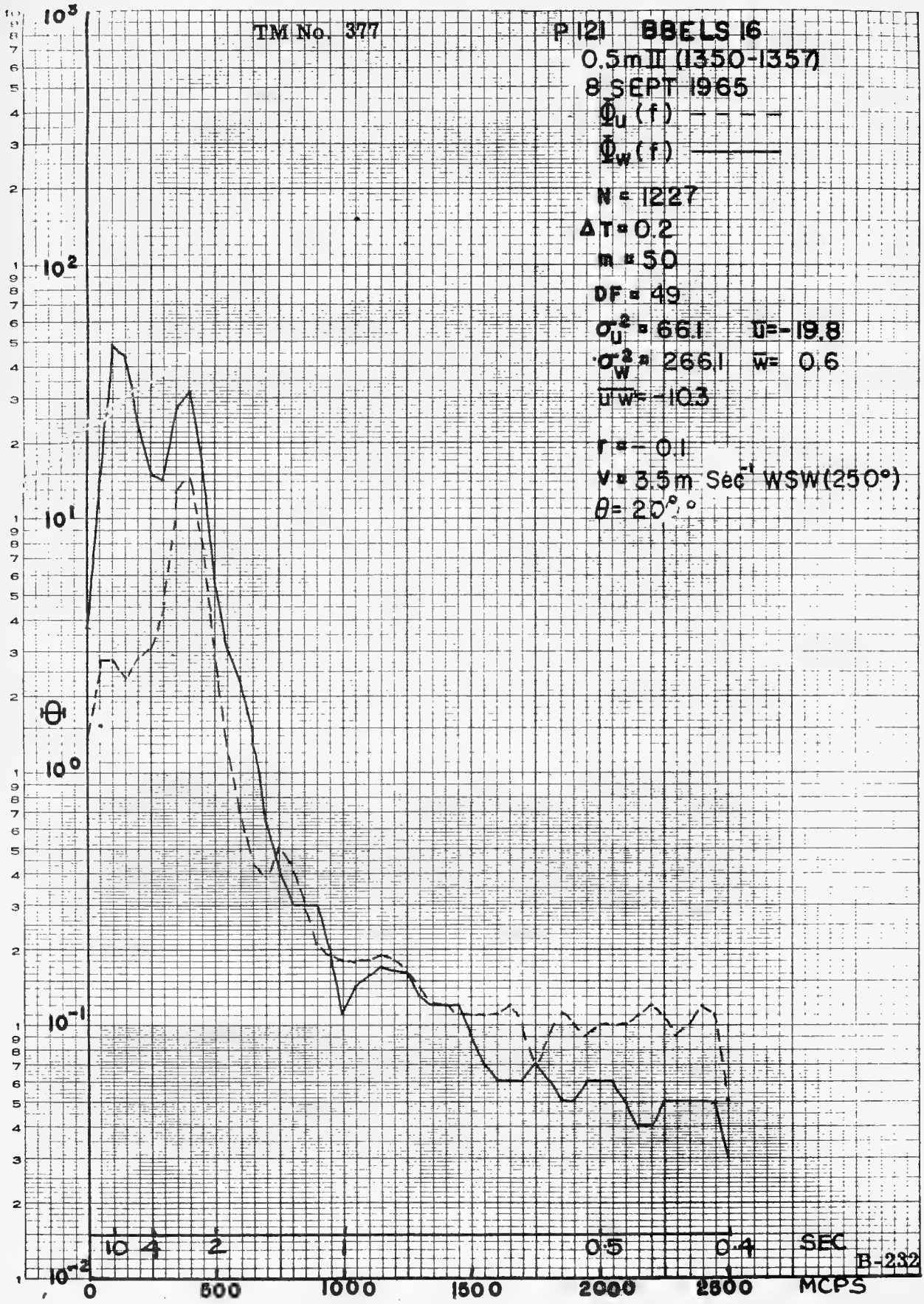
$\sigma_W^2 = 266.1$ $\bar{W} = 0.6$

$\bar{UW} = -10.3$

$r = -0.1$

$V = 3.5 \text{ m Sec}^{-1}$ WSW(250°)

$\theta = 20^\circ$



TM No. 377

P122 BBELS 16

0.5m IV (1420-1425)

8 SEPT. 1965

$\Phi_u(f)$ - - - -

$\Phi_w(f)$ - - - -

N = 1374

$\Delta T = 0.2$

m = 50

DF = 55

$\sigma_u^2 = 38$ $\bar{u} = -18.4$

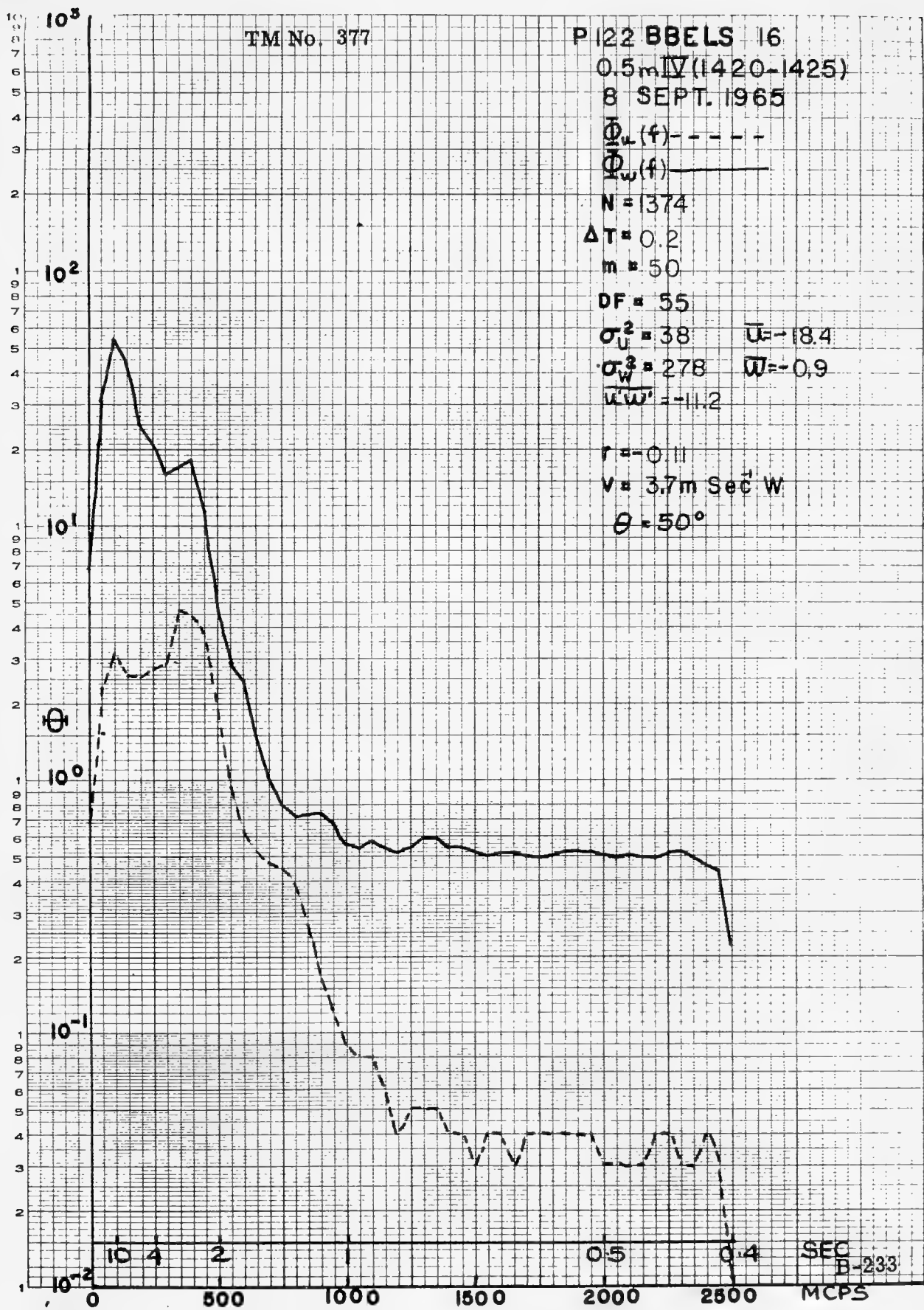
$\sigma_w^2 = 278$ $\bar{w} = -0.9$

$\overline{w^2} = -11.2$

r = -0.11

V = 3.7m Sec⁻¹ W

$\theta = 50^\circ$



TM No. 377

P 123 BBELS 16-6'

0.5m VI (1431-1436)

8 SEPT. 1965

$\Phi_{rel}(f)$ - - - - -

$\Phi_{w}(f)$ - - - - -

$N = 1152$

$\Delta T = 0.2$

$m = 50$

$DF = 46$

$\sigma_w^2 = 39.4$ $\bar{w} = 12.9$

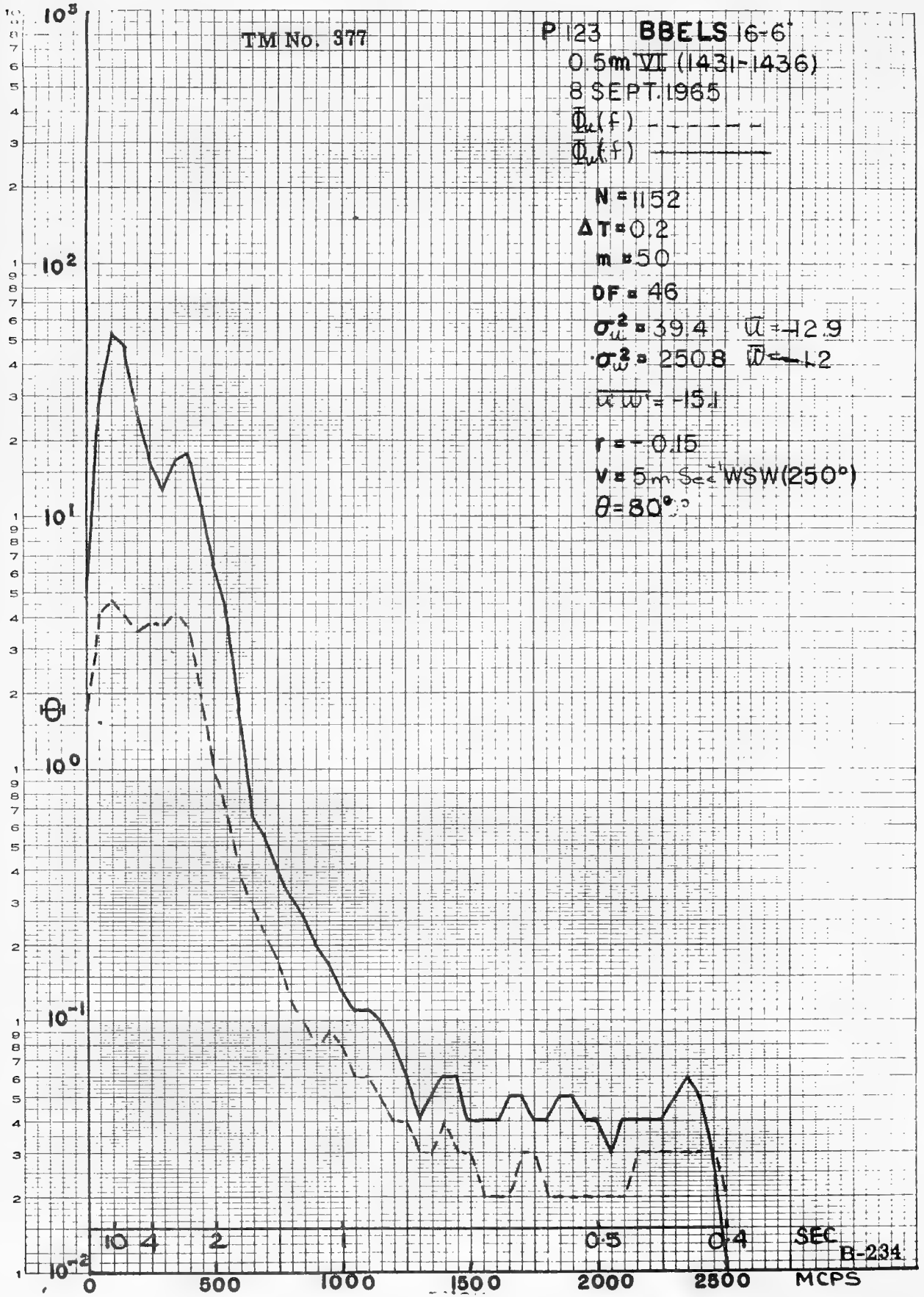
$\sigma_w^2 = 250.8$ $\bar{w} = 1.2$

$\overline{w^2} = 15.1$

$r = -0.15$

$V = 5 \text{ m Sec}^{-1} \text{ WSW}(250^\circ)$

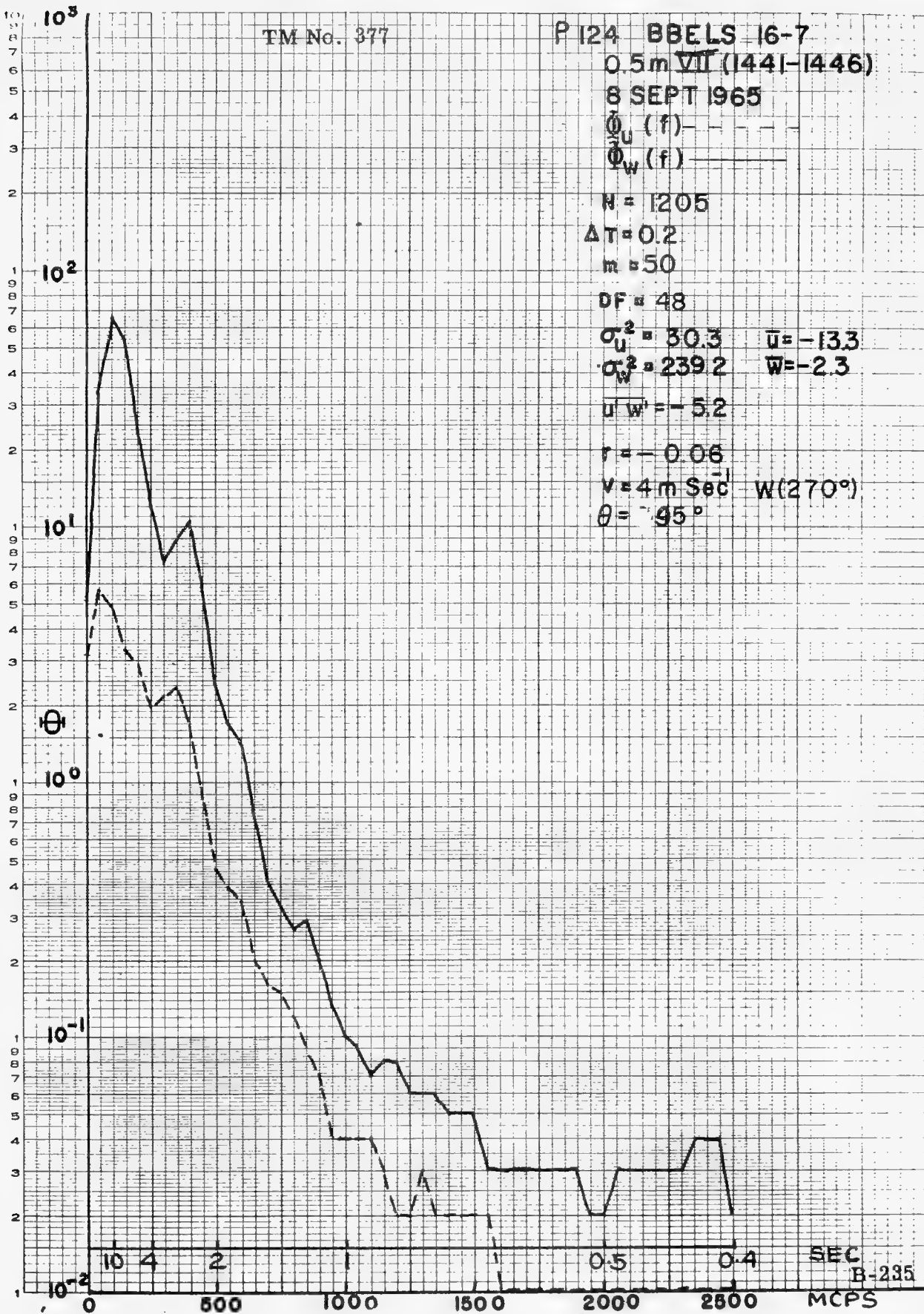
$\theta = 80^\circ$



TM No. 377

P 124 BBELS 16-7
0.5m VII (1441-1446)
8 SEPT 1965
 $\bar{\Phi}_U$ (f) - - - -
 $\bar{\Phi}_W$ (f) - - - -

N = 1205
 $\Delta T = 0.2$
m = 50
DF = 48
 $\sigma_U^2 = 30.3$ $\bar{U} = -13.3$
 $\sigma_W^2 = 239.2$ $\bar{W} = -2.3$
 $\overline{U'W'} = -5.2$
r = -0.06
V = 4 m Sec⁻¹ W(270°)
 $\theta = 95^\circ$



5 CYCLES X 10 DIVISIONS PER INCH

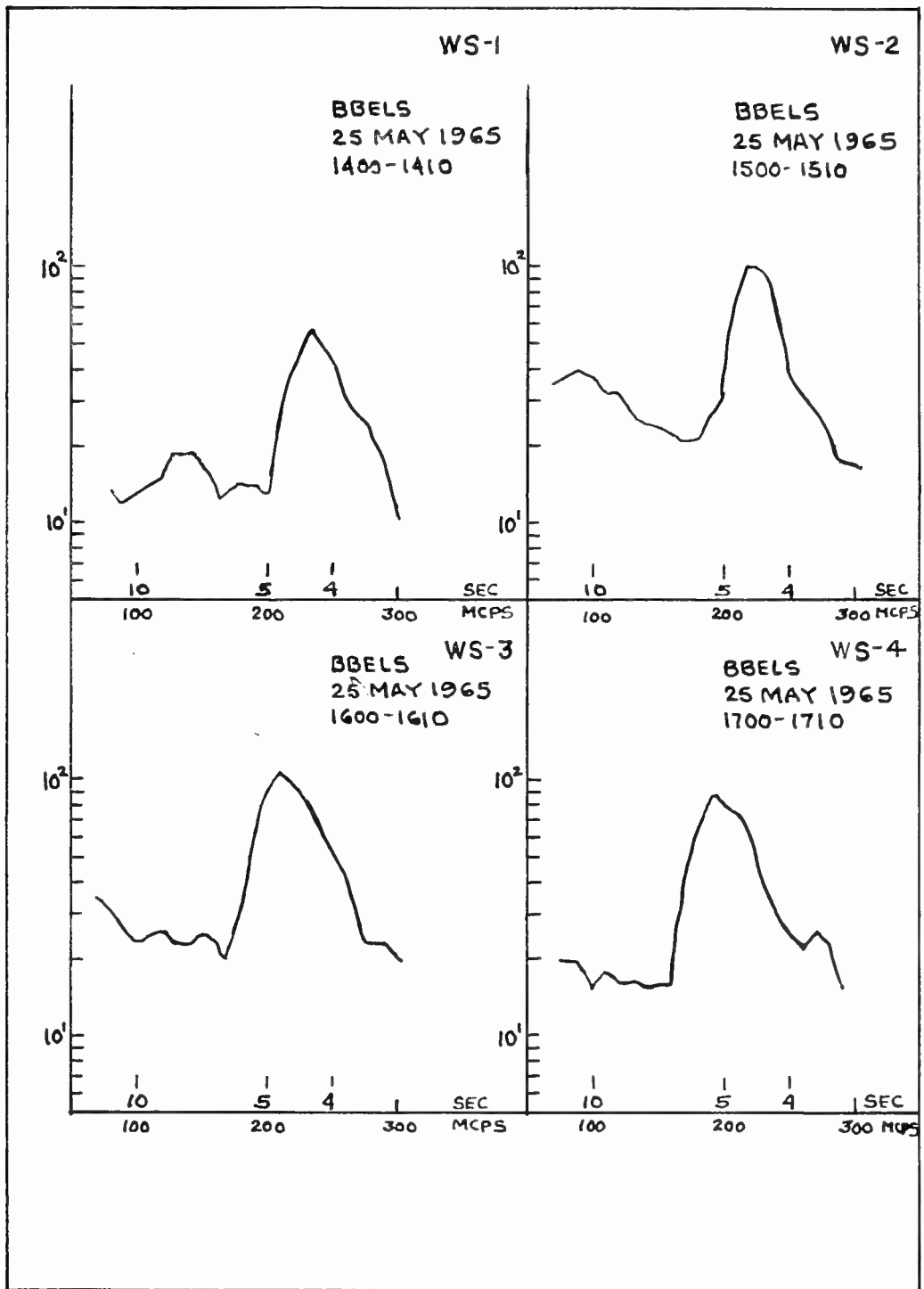
MADE IN U.S.A.

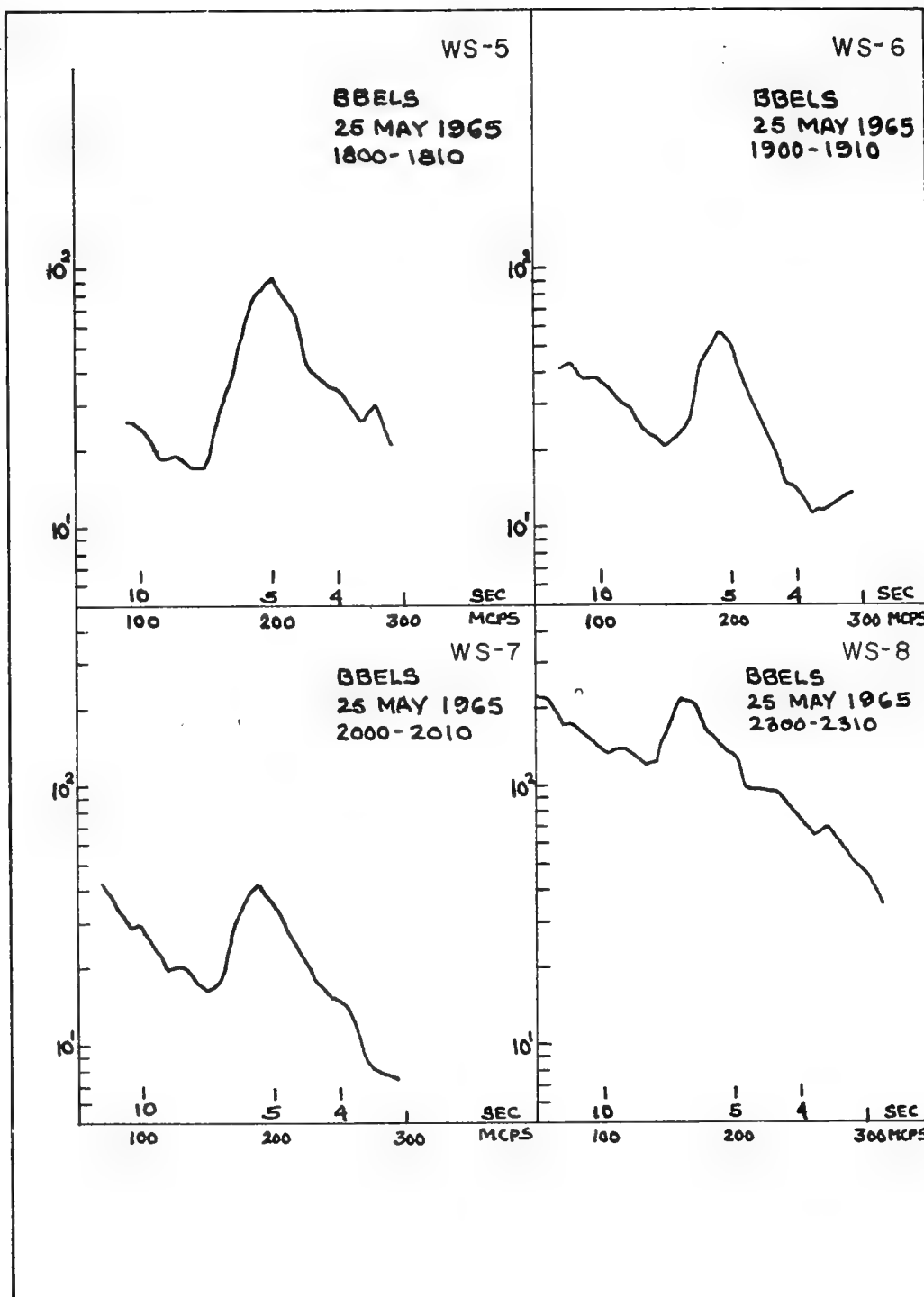
B-235

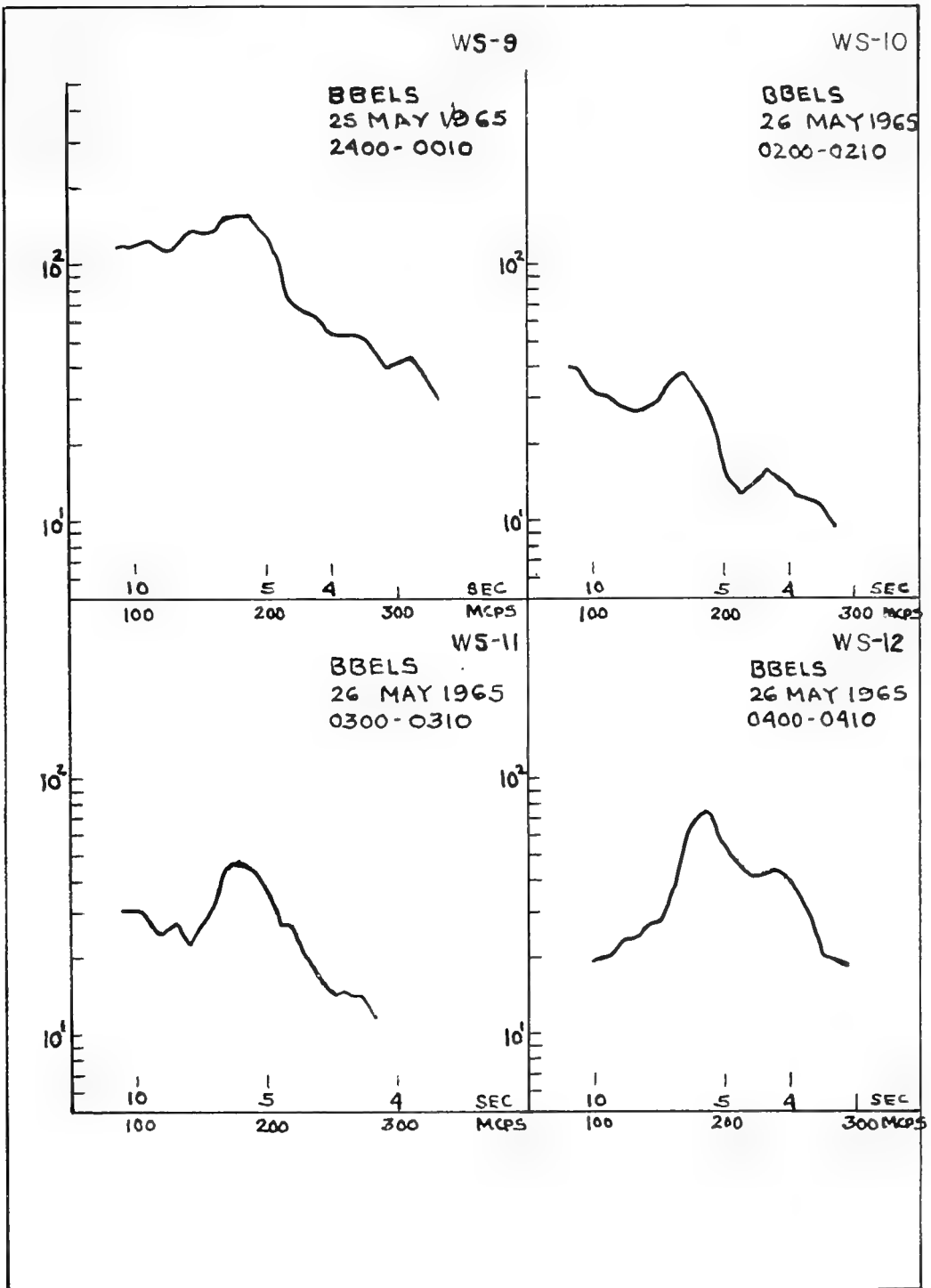
Auto-Spectra of Wave Staff Data

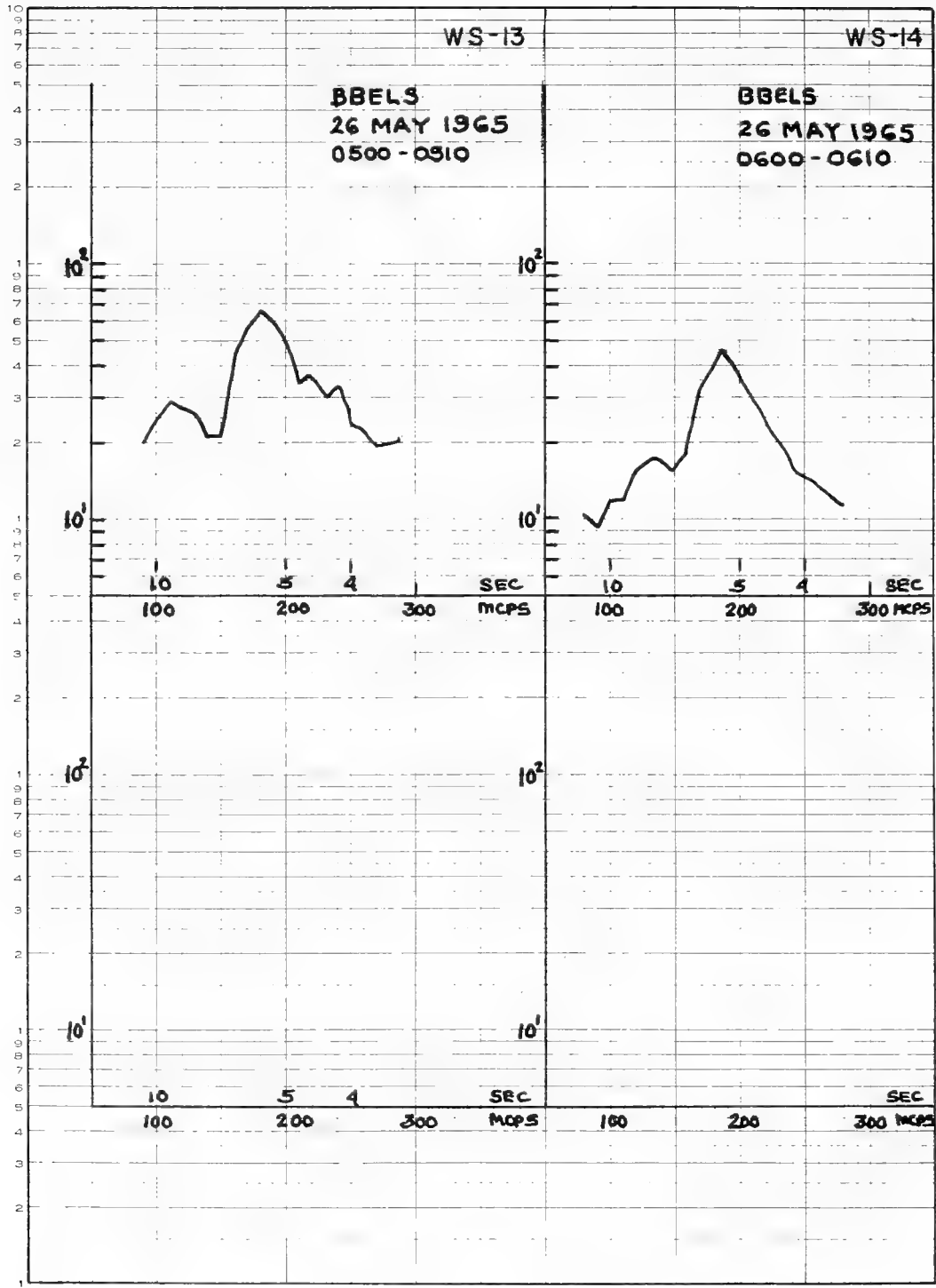
Following are plots of waves staff data obtained on BBELS using the CERC wave staff system (see chapter IV). Plots WS-1 through WS-14 are spectral data obtained from the CERC analog auto-spectrum analyzer. The curves have been translated to the Tukey spectrum equivalents using the method noted in chapter IV. The ordinate values, however, are to be considered relative magnitudes of cm^2 per cycle per second ($\text{cm}^2 \text{ sec}$).

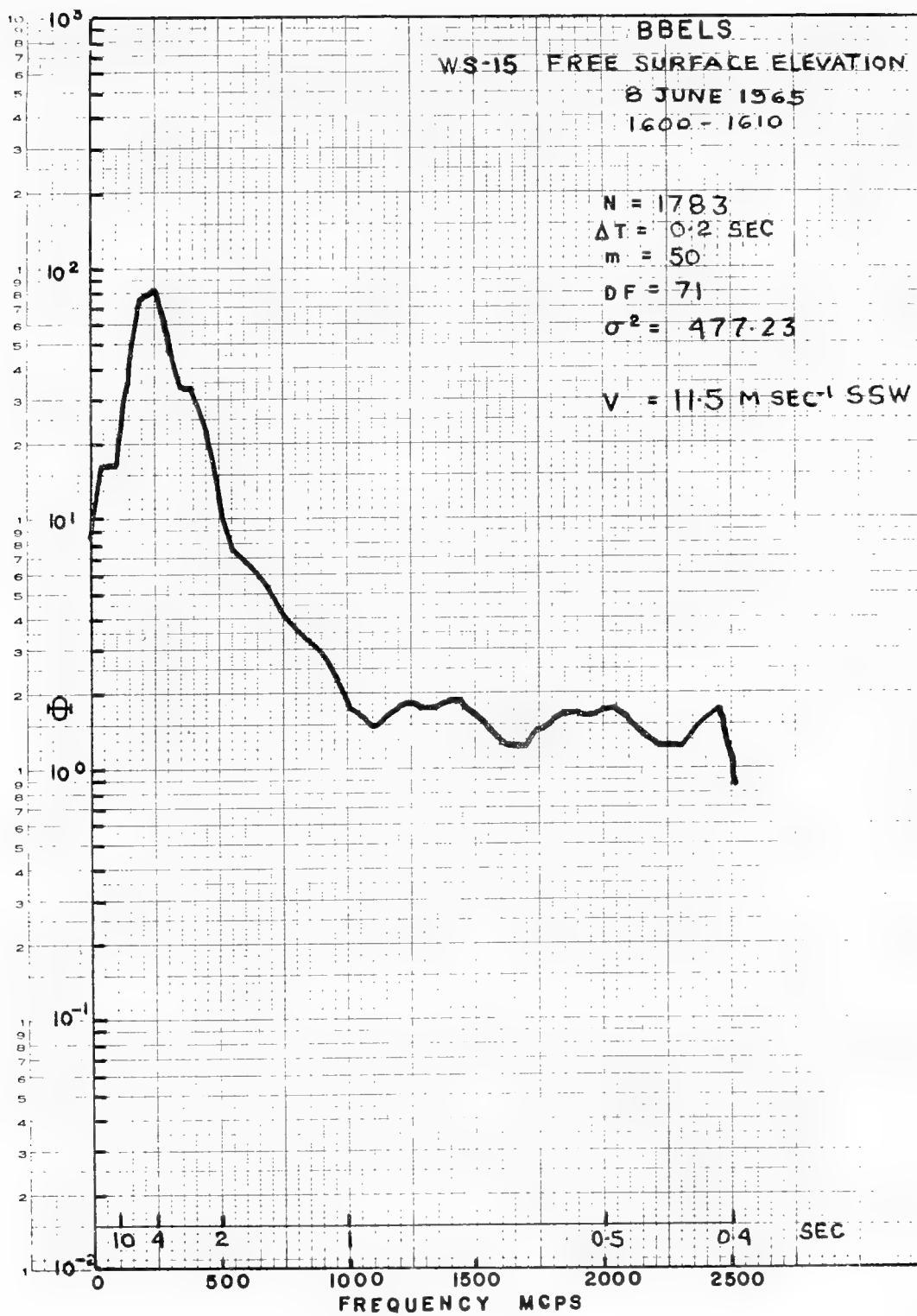
Plots WS-15 and WS-16 are also auto-spectra of CERC wave staff data. However, the data were read off the CERC paper tape record aboard BBELS and processed at the NUWS computer laboratory. The interpolated data were then analyzed with the NUWS Tukey spectrum analysis program.

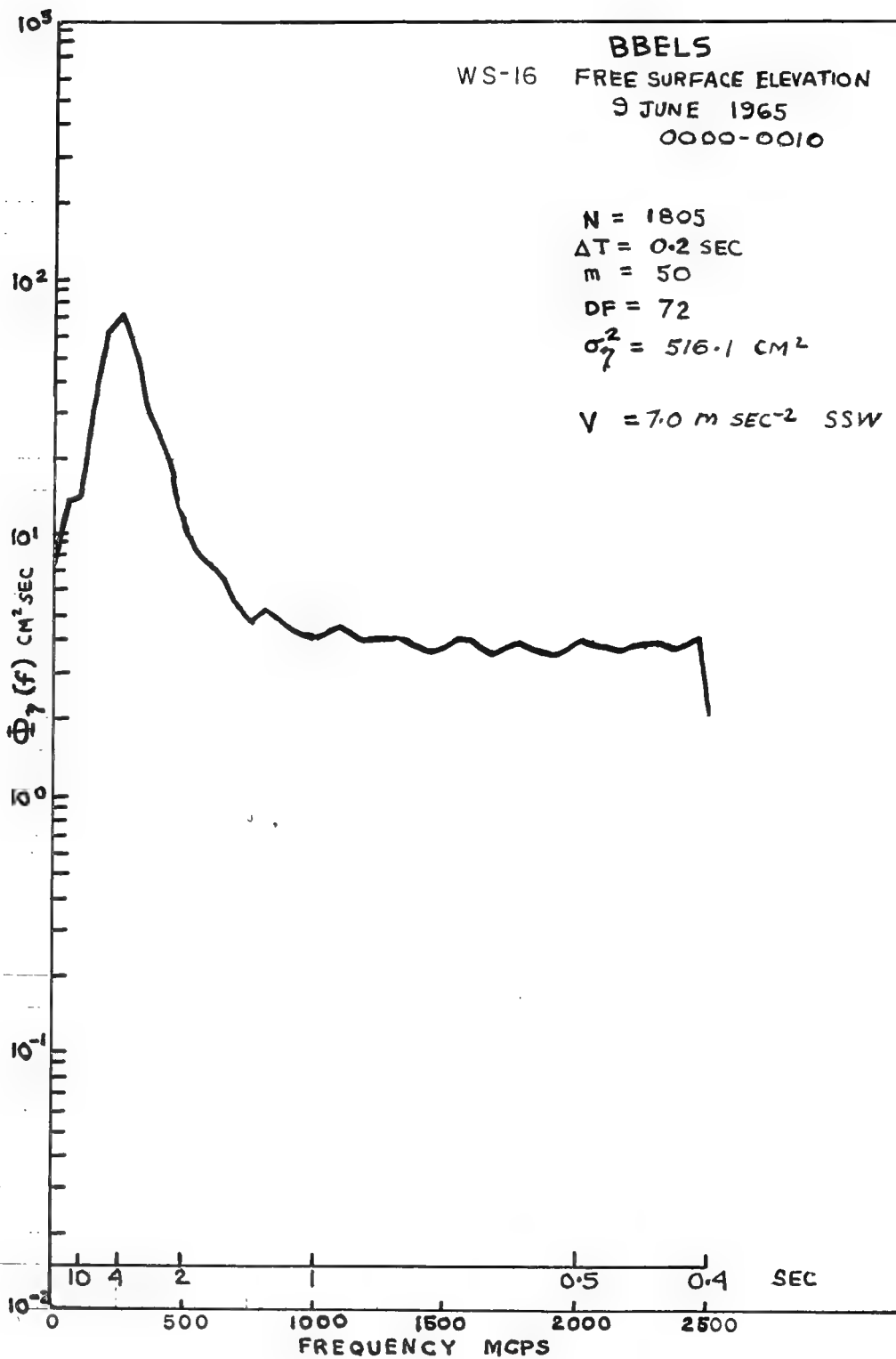












APPENDIX C

MISCELLANEOUS TABULATED DATA

Wave Meter Calibration Data

Rotating Boom Calibration of OMDUM II - The OMDUM II wave meter system was calibrated using the rotating boom tow system of the Department of Civil Engineering, Worcester Polytechnical Institute, Worcester, Mass., on 11 and 15 June 1964.

The calibration equipment details and procedures are discussed in chapter II. The following two series (1 and 2) contain tabulations of the calibration data used for preparing the calibration curves of figures II-9 and II-12.

Series 1. Data were tabulated from OMDUM II towed at steady speed with the w cylinder axis parallel to the tangential velocity vector V_T (figure II-10). The water temperature was 20.6°C. These data include run number, V_T (cm sec⁻¹), pulses per cycle per sec (pcps), and time spacing between voltage pulses (milliseconds per cycle).

Run	V_T	cm sec ⁻¹	pcps	msec cycle ⁻¹
1	+u	23.7	4.76	210.0
2	"	38.4	7.94	126.0
3	"	50.9	10.99	91.0
4	"	59.4	12.35	81.0
5	"	74.1	14.71	68.0
6	"	82.6	17.39	57.5
7	"	101.5	21.51	46.5
8	"	114.9	24.10	41.5
9	"	132.0	27.78	36.0
10	"	147.2	30.77	32.5
11	"	162.8	33.22	30.1
12	"	172.2	35.97	27.8
13	-u	24.1	5.03	199.0
14	"	36.0	8.93	112.0
15	"	49.1	10.64	94.0
16	-u	67.1	14.81	67.5
17	"	81.1	17.39	57.5
18	"	100.0	21.51	46.5
19	"	112.2	23.53	42.5
20	"	125.3	26.32	38.0
21	"	142.7	29.41	34.0
22	"	158.2	33.44	29.9
23	"	178.6	36.50	27.4

Run	V_T	cm sec ⁻¹	pcps	msec cycle ⁻¹
24	-w	22.0	4.50	222.0
25	"	37.8	8.33	120.0
26	"	49.7	10.87	92.0
27	"	65.5	14.18	70.5
28	"	79.6	16.26	61.5
29	"	99.4	21.05	47.5
30	"	111.0	23.81	42.0
31	"	126.2	27.03	37.0
32	"	143.0	29.85	33.5
33	"	157.6	33.78	29.6
34	"	186.5	41.32	24.2
35	+w	21.9	4.13	242.0
36	"	35.4	7.25	138.0
37	"	50.0	10.58	94.5
38	"	64.0	13.79	72.5
39	"	81.4	18.69	53.5
40	"	96.0	21.28	47.0
41	"	110.4	24.10	41.5
42	"	127.4	27.78	36.0
43	"	140.2	30.49	32.8
44	"	160.0	35.21	28.4
45	"	175.0	38.02	26.3

Series 2. The w meter of OMDUM II was towed at steady speeds for various values of ϕ , the angle subtending the w meter axis and the tangential velocity V_T . The water temperature was 22.8°C.

Run	V_T	msec cycle ⁻¹
	cm sec ⁻¹	
46	9.45	592.0
47	37.79	122.0
48	17.07	302.0
49	77.13	180.0
($\phi = -20^\circ$) 50	47.24	99.5
51	53.95	82.5
52	67.06	71.5
53	75.90	61.5
54	112.17	42.5
55	18.90	30.4
56	37.49	132.0
57	54.25	86.0
($\phi = -40^\circ$) 58	75.89	70.5
59	98.76	52.0
60	118.26	43.5
61	146.61	35.5

	Run	V_T cm sec ⁻¹	msec cycle ⁻¹
($\emptyset = -60^\circ$)	62	17.98	400.0
	63	37.80	164.0
	64	47.24	120.0
	65	66.14	96.5
	66	98.15	64.6
	67	98.15	61.6
	68	129.5	48.5
($\emptyset = -80^\circ$)	69	19.51	604.0
	70	37.49	282.0
	71	51.51	208.0
	72	66.72	170.0
	73	98.15	119.0
	74	130.76	78.5
	75	157.58	64.0
($\emptyset = +20$)	77	12.59	480.0
	78	34.14	160.0
	79	48.16	108.0
	80	74.67	69.5
	81	107.90	48.0
	82	135.33	39.5
	83	157.89	33.2
($\emptyset = +40$)	84	22.86	300
	85	43.89	148.0
	86	60.66	103.5
	87	71.63	92.0
	88	103.94	42.5
	89	133.81	39.0
	90	157.28	40.5
($\emptyset = +60^\circ$)	91	188.67	34.4
	92	28.96	346.0
	93	46.94	194.0
	94	56.08	158.0
	95	74.37	114.5
	96	104.85	83.5
	97	134.42	67.5
($\emptyset = +80$)	98	160.02	36.0
	99	43.59	256.0

Towing Tank Calibrations of OMDUM III and LINDUM I (individual meters) - The following are tabulations of the tow tank calibration data of the OMDUM III and LINDUM I (individual meters) obtained with the Capt. Mary P. Converse Tow Tank, in Marion, Mass. Details of the experimental setup and procedures are given in chapter II. The data presented were used to prepare calibration curves in figure II-21. An explanation of the table headings follows.

Serial: The numbered sequence of runs of steady velocity response. N or S indicates the towing direction as north or south.

V_T (cm sec⁻¹): The average speed of the carriage between two fixed points on the tank.

V_1 , V_2 , and V_3 (cm sec⁻¹): These are carriage velocities calculated at the beginning, middle, and end of the steady speed towing. They are derived from measurements of the drive shieve rotation and knowledge of its circumference.

T_p (msec cycle⁻¹): This is the average interval of time between voltage pulses from the ducted meter.

The value of angle θ subtended by the cylinder axis and the towing direction is also given in the tables. It is estimated that the uncertainty in θ is about $\pm 2^\circ$.

Series 1. This series comprises calibration data for steady towing of individual ducted meters.

Serial		V_T	V_1	V_2	V_3	T_p
u meter	$\theta = 0^\circ$					
1	S	12.6	12.5	12.5	12.7	288.7
2	N	9.1	9.2	9.1	9.2	430.7
3	S	8.2	8.1	8.3	8.2	509.0
4	N	7.0	7.0	7.2	7.0	612.7
5	S	9.5	9.6	9.6	9.6	412.3
6	N	12.3	12.3	12.4	12.4	289.7
9	S	14.6	14.4	14.7	14.7	239.2
10	N	18.2	18.1	18.2	18.3	183.8
11	S	27.8	27.5	28.1	27.9	117.2
12	N	28.4	28.2	28.2	28.2	115.5
13	S	54.4	53.7	55.1	54.4	58.0
14	N	47.0	47.4	-	47.5	67.9
15	S	71.0	69.8	70.8	70.6	44.03
16	N	79.0	-	79.4	-	39.68
17	S	64.9	67.1	-	65.8	47.92
18	N	65.8	65.9	65.7	65.5	47.52

Serial	V_T	V_1	V_2	V_3	T_p
19 S	44.0	43.3	44.0	44.0	73.61
20 N	92.5	91.0	92.9	91.6	33.48
21 S	64.9	63.8	65.1	65.1	48.39
22 N	117.1	116.1	118.0	117.1	26.49
23 S	92.4	92.7	92.7	92.7	33.47
24 N	148.9	149.7	149.2	148.2	20.99
25 S	142.5	141.6	141.1	142.0	22.01
26 N	130.9	132.7	131.6	130.0	24.41
27 S	176.0	175.6	177.7	177.0	17.75
28 N	166.2	165.2	164.6	165.0	18.92
29 S	210.7	205.5	211.4	214.4	15.54
30 N	166.6	170.2	166.4	167.7	17.22
31 S	8.25	8.11	8.14	8.26	638.8
u meter $\theta = 10^\circ$					
32 S	7.7	7.6	-	7.6	625.0
33 N	14.6	14.5	14.5	14.5	235.9
34 S	7.47	7.4	7.5	7.4	628.6
35 N	12.5	12.5	12.5	12.4	281.3
u meter $\theta = 20^\circ$					
36 S	7.0	6.8	6.9	6.9	760.9
37 N	6.5	6.5	6.6	6.5	744.3
u meter $\theta = 45^\circ$					
38 S	7.0	7.4	7.7	7.7	337.55
39 N	15.1	15.0	15.0	15.1	265.7
40 S	21.2	21.2	21.2	21.3	184.1
41 N	23.2	23.1	23.1	23.0	164.5
42 S	51.0	53.1	51.3	52.5	90.84
43 N	67.8	67.6	69.7	68.6	53.38
44 S	127.3	128.2	127.1	128.5	28.81
45 N	120.0	120.2	120.9	120.5	29.54
u meter $\theta = 60^\circ$					
47 N	15.1	15.0	14.9	15.0	357.1
49 N	11.9	11.9	12.1	12.0	467.5
50 S	83.3	83.2	84.0	83.5	57.36
51 N	33.2	33.3	33.0	33.5	152.3
u meter $\theta = 80^\circ$					
52 S	39.9	39.8	39.5	40.2	420.0
53 N	23.0	22.9	23.1	23.2	797.8
54 S	57.5	57.2	57.9	57.9	252.7
55 N	63.5	61.9	63.7	62.8	227.3

Serial	V_T	V_1	V_2	V_3	T_p
u meter $\theta = 10^\circ$					
56 S	39.3	38.8	39.1	39.8	80.84
57 N	54.8	54.7	54.7	54.7	57.15
58 S	136.1	134.7	136.8	136.8	22.73
59 N	50.7	50.7	50.7	50.7	60.35
u meter $\theta = 20^\circ$					
60 S	12.6	12.6	12.6	12.6	281.8
61 N	28.5	28.1	28.6	28.6	114.5
62 S	46.0	45.6	45.8	46.0	69.88
63 N	78.0	76.9	77.6	77.4	40.02
64 S	172.1	169.6	174.2	172.2	18.59
w meter $\theta = 0^\circ$					
65 S	9.6	9.6	9.7	9.7	425.1
66 N	7.3	7.2	7.2	7.3	773.0
67 S	19.6	19.5	19.7	19.6	173.1
68 N	34.6	34.8	34.8	34.3	93.6
69 S	26.6	26.2	26.2	26.4	126.3
70 N	24.8	25.2	24.8	24.9	135.1
71 S	54.9	55.1	54.6	54.7	58.42
72 N	45.2	45.5	44.6	44.8	71.20
73 S	102.6	99.8	102.8	102.3	30.86
74 N	76.1*	75.3	75.5	75.3	42.78
75 S	153.6	149.2	153.3	153.3	20.65
76 N	140.0	139.4	141.6	141.1	23.00

* Wire lying in front of cylinder.

Series 2. This series comprises calibration data for steady towing of coupled meters (OMDUM III). The same tabulated variables are given as in series 1, except that values of both $T_p(u)$ and $T_p(w)$ are given as the output for each meter. Blank spaces in the T_p columns indicate no meter response. The estimated uncertainty in θ is about 2° .

Serial	V_T	V_1	V_2	V_3	$T_p(u)$	$T_p(w)$
$\theta = 0^\circ$						
1 S	6.9	7.1	7.3	7.2	-	643.6
2 N	11.6	11.7	11.8	11.6	-	269.8
3 S	28.5	28.6	28.7	28.4	-	98.74
4 N	18.1	17.8	18.1	18.1	-	152.9
5 S	51.5	51.3	51.3	51.6	-	53.41
6 N	77.8	76.9	77.2	76.8	-	34.3
7 S	99.2	97.4	99.8	99.3	443.0	27.37
8 N	123.5	123.2	123.5	122.9	-	21.68

Serial	V_T	V_1	V_2	V_3	$T_p(u)$	$T_p(w)$
$\theta = 10^\circ \pm 2^\circ$						
9 S	7.1	7.1	7.1	7.1	-	657.6
10 N	10.6	10.4	10.6	10.5	-	302.3
11 S	21.3	21.2	21.5	21.3	-	135.6
12 N	35.5	35.1	36.0	35.1	-	77.57
13 S	64.9	64.5	64.3	64.4	379.8	42.52
14 N	144.2	144.8	143.9	142.9	-	18.98
$\theta = 20^\circ \pm 2^\circ$						
15 S	9.2	9.1	9.1	9.2	-	409.4
16 N	22.0	22.1	22.0	21.9	400.1	132.8
17 S	34.9	35.1	35.4	35.1	223.9	82.76
18 N	58.5	58.5	58.1	58.1	124.8	48.18
19 S	136.1	133.9	136.8	137.7	48.82	21.01
$\theta = 45^\circ \pm 2^\circ$						
21 S	11.5	11.3	11.4	11.6	335.0	386.5
22 N	9.9	9.0	9.7	9.9	436.1	441.6
23 S	21.5	21.8	21.4	21.2	165.2	172.1
24 N	51.6	51.9	51.9	51.3	67.0	68.1
25 S	-	28.4	28.6	28.4	121.3	126.7
28 N	30.9	30.8	30.9	30.6	113.2	116.3
29 S	80.0	79.6	70.8	79.6	41.44	43.33
$\theta = 60^\circ \pm 2^\circ$						
30 N	9.9	9.9	9.8	9.6	381.5	704.9
31 S	20.9	20.9	20.8	21.0	150.9	247.2
32 N	49.1	48.8	48.6	48.9	60.58	97.65
33 S	24.9	25.0	24.8	24.9	126.1	204.9
34 N	76.7	75.3	75.3	75.1	38.02	61.44
35 S	142.3	143.4	142.9	144.8	20.78	33.88
$\theta = 80^\circ \pm 2^\circ$						
37 S	8.4	8.5	8.4	8.4	423.1	-
38 N	18.3	18.3	18.4	18.3	160.5	-
39 S	32.4	32.6	32.8	32.6	87.84	919.1
40 N	46.8	46.8	46.9	46.3	59.59	783.6
41 S	152.9	153.3	154.9	154.3	20.36	194.4

Environmental Data for BBELS Current Measurements

Two series of horizontal current measurements were made at the BBELS and are discussed in chapter IV. Figures IV-6 and IV-10 show plots of the current data and the tidal height associated with the two series. The raw tide level data are presented here for completeness, along with the wind and sea conditions for the periods depicted in the plots. For

further information regarding the environmental measurements see chapter IV.

Series 1 (1964) - The series 1 record (plotted in figure IV-6) covers 29 April (1200 hours) through 11 May (1200 hours).

Tide Level Data. These data were abstracted from the Coast and Geodetic Survey raw data tapes and are given at local time (EST). The wave height η is in centimeters.

t (29 April)	η (cm)	t (30 April)	η (cm)	t	η (cm)	t	η (cm)
				14	214	03	204
12	253	01	238		198		198
	241		223				
13	226	02	210	15	195	04	192
	210		198		195		186
14	207	03	192	16	195	05	183
	201		189		195		183
15	201	04	186	17	201	06	186
	201		183		207		195
16	201	05	186	18	210	07	201
	204		189		220		207
17	204	06	195	19	226	08	217
	214		204		235		226
18	220	07	210	20	241	09	235
	232		217		247		244
19	241	08	232	21	250	10	247
	250		241		262		250
20	259	09	250	22	271	11	253
	268		253		275		353
21	274	10	259	23	278	12	853
	284		259		278		250
22	290	11	259	24	271	13	241
	284		259		265		285
				(1 May)			
23	284	12	253	01	250		
	281		244		241		
24	271	13	235	02	226		
	253		223		220		

t	η (cm)	t	η (cm)	t	η (cm)	TM 11. 377	t	η (cm)
14	226	08	201	02	250			214
	220		207		241		21	217
15	210	09	217	03	229			217
	204		223		220		22	223
16	198	10	232	04	214			229
	195		241		204		23	232
17	198	11	247	05	204			241
	198		250		201		24	247
18	204	12	256	06	198	(4 May)		250
	210		253		198		01	253
19	217	13	247	07	198			253
	223		247		198		02	256
20	229	14	241	08	201			250
	229		223		204		03	250
21	241	15	223	09	210			244
	247		210		214		04	229
22	256	16	204	10	217			223
	265		201		226		05	210
23	268	17	195	11	229			210
	288		192		238		06	201
24	271	18	192	12	247			198
(2 May)	268		198		253		07	198
01	265	19	201	13	253			192
	256		204	14	250		08	12
02	241	20	207		244			195
	226		214	15	238		09	204
03	217	21	220		232			204
	210		226	16	226		10	207
04	201	22	235		217			214
	198		241	17	210		11	223
05	195	23	250		201			229
	192		256	18	198		12	235
06	192	24	259		201			288
	192	(3 May)	262	19	204		13	241
07	195	01	262		204			244
	198		259	20	204		14	247

t	η (cm)	t	η (cm)	t	η (cm)	t	η (cm)
	250	08	201		238	19	214
15	244		198	02	244		204
	241	09	198		247	20	198
16	235		198	03	253		195
	229	10	201		253	21	192
17	223		204	04	253		189
	217	11	210		250	22	186
18	210		214	05	244		186
	207	12	220		238	23	189
19	201		229	06	229		189
	201	13	238		217	24	195
20	198		244	07	207	(7 May)	204
	201	14	247		198	01	214
21	204		250	08	192		223
	204	15	253		189	02	235
22	207		253	09	186		244
	217	16	250		186	03	250
23	223		244	10	183		256
	229	17	235		186	04	262
24	207		229	11	189		262
(5 May)	247	18	220		198	05	259
01	256		210	12	201		250
	256	19	204		204	06	241
02	259		201	13	223		235
	256	20	198		232	07	223
03	256		195	14	241		210
	256	21	195		247	08	198
04	250		198	15	250		192
	254	22	198		250	09	186
05	235		204	16	253		186
	229	23	207		250	10	180
06	220		210	17	244		180
	214	24	220		241	11	183
07	210	(6 May)	226	18	235		186
	207	01	232		223	12	192

t	η (cm)	t	η (cm)	t	η (cm)	t	η (cm)
	198	06	268		186	17	293
13	204		262	24	186		305
	217	07	253	(9 May)	186	18	311
14	229		241	01	192		314
	288	08	229		198	19	314
15	247		217	02	207		308
	353	09	207		217	20	296
16	262		198	03	229		281
	265	10	192		244	21	265
17	271		189	04	259		250
	268	11	186		268	22	232
18	259		186	05	278		217
	253	12	189		287	23	204
19	244		192	06	290		195
	238	13	201		290	24	189
20	223		210	07	284	(10 May)	186
	210	14	220		275	01	180
21	198		235	08	265		180
	192	15	247		247	02	183
22	186		259	09	235		189
	183	16	271		223	03	201
23	183		281	10	210		217
	183	17	290		201	04	232
24	186		296	11	195		250
(8 May)	195	18	296		195	05	265
01	201		290	12	189		281
	210	19	284		189	06	290
02	220		271	13	195		299
	232	20	259		204	07	302
03	244		241	14	210		299
	256	21	226		223	08	290
04	262		210	15	235		278
	268	22	201		250	09	265
05	271		195	16	268		247
	271	23	189		284	10	235

t	η (cm)	t	η (cm)	t	η (cm)
	217	21	287		299
11	201		271	08	299
	195	22	353		296
12	189		235	09	284
	183	23	214		271
13	180		201	10	353
	183	24	192		232
14	189	(11 May)	183	11	214
	195	01	177		195
15	207		174	12	180
	223	02	171		
16	238		171		
	256	03	174		
17	271		186		
	287	04	198		
18	299		210		
	311	05	229		
19	317		250		
	317	06	268		
20	311		284		
	302	07	293		

Wind Speed and Direction Data. These data were obtained from the Coast Guard Log Book at BBELS.

Day	Time (EST)	Wind Speed (cm sec ⁻¹)	Wind Direction From °T
29 April	00	7.0	080
	04	7.0	080
	08	7.0	080
	12	10.0	090
	16	7.0	090
	20	7.0	-
30 April	00	7.0	045

Day	Time (EST)	Wind Speed (cm sec ⁻¹)	Wind Direction(From) (°T)
	04	4.3	045
	08	4.3	045
	12	4.3	045
	16	4.3	045
	20	4.3	045
1 May	00	4.3	045
	04	4.3	045
	08	4.3	045
	12	2.5	045
	16	4.3	025
	20	4.3	025
2 May	00	4.3	045
	04	4.3	045
	08	4.3	045
	12	2.7	045
	16	2.7	045
	20	2.7	045
3 May	00	1.0	025
	04	1.0	025
	08	1.0	075
	12	1.0	045
	16	1.0	045
	20	1.0	045
4 May	00	0	-
	04	0	-
	08	0	-
	12	0	-
	16	1.0	180
	20	1.0	135
5 May	00	1.0	025
	04	2.5	025
	08	2.5	025
	12	2.5	025
	16	2.5	025
	20	2.5	090

Day	Time (EST)	Wind Speed (cm sec ⁻¹)	Wind Direction(From) (°T)
6 May	00	1.0	045
	04	2.5	075
	08	2.5	045
	12	1.0	045
	16	1.0	180
	20	1.0	165
7 May	00	0	-
	04	1.0	225
	08	1.0	225
	12	1.0	225
	16	4.4	225
	20	6.9	225
8 May	00	2.5	225
	04	2.5	250
	08	2.5	250
	12	2.5	225
	16	4.4	225
	20	4.4	225
9 May	00	1.0	225
	04	2.6	225
	08	2.6	225
	12	2.6	225
	16	4.4	225
	20	6.9	225
10 May	00	1.0	225
	04	1.0	250
	08	1.0	225
	12	4.4	225
	16	4.4	225
	20	6.9	280
11 May	00	2.6	270
	04	4.4	280
	08	2.6	270

Series 2 (1965) - The series 2 record (plotted in figure IV-10) covers from 24 November (1230 hours) to 25 November (1000 hours).

Tide Level Data. These data were abstracted from the Coast and Geodetic Survey raw data tapes and are given at local time (EST).

t	η (cm)	t	η (cm)
24 November	189	01	189
13	189		192
	183	02	195
14	180		198
	180	03	204
15	183		210
	189	04	220
16	198		232
	210	05	241
17	223		253
	235	06	265
18	244		277
	259	07	290
19	268		299
	274	08	305
20	274		309
	274	09	302
21	268		298
	259	10	286
22	244		265
	229	11	250
23	216		232
	204	12	220
25 November			
00	189		
	192		

Wind Speed and Direction and Sea State Data. These data were obtained from the Coast Guard Log Book at BBELS.

Day	Time (EST)	Wind Speed (m sec ⁻¹)	Wind Direction(From) (°T)	Estimated Sea Height (cm)
November 24	12	6.2	315	30
	16	5.3	000	30
	20	6.2	315	30
November 25	00	3.8	335	30
	04	2.6	315	30
	08	2.2	180	Calm
	12	2.2	180	Calm
	16	6.2	210	30
	20	8.5	210	60
November 26	00	6.7	210	30
	04	14.8	210	90
	08	11.0	220	60
	12	4.4	220	30
	16	3.5	210	60

Wave Model Data

The following are the computer listings of the Tukey spectrum analysis and the raw u and w tabulations associated with the wave models discussed in chapter V. The symbols used on the spectra tables are defined in the explanation of the plots and listings in appendix B. The definitions are also discussed in chapter III. (Note that the symbols $\phi_{uw}^{in}(\tau)$ and $\phi_{uw}^{out}(\tau)$ represent the in-phase and out-of-phase covariance functions, respectively). In the raw data tabulations the units are cm sec⁻¹, and the consecutive values run from left-to-right.

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RANDOM DATA

K	$\Phi_u(\tau)$	$\Phi_w(\tau)$	$\Phi_{uw}^{IN}(\tau)$	$\Phi_{uw}^{OUT}(\tau)$	$\Phi_u(f)$	$\Phi_w(f)$	$C_{uw}(f)$	$Q_{uw}(f)$
0	14.922	16.354	-3.703	.000	.127	.061	.019	.000
1	-.010	1.008	.486	.888	.226	.114	.013	.050
2	-1.500	-.750	.065	-2.915	.143	.301	-.023	.050
3	-.102	-1.319	.501	-1.690	.171	.658	.000	-.035
4	-.733	-.456	.570	1.423	.537	.802	-.001	-.189
5	-1.956	-1.289	1.090	-.841	.885	.900	-.167	-.325
6	-.357	-.170	-.081	.463	.703	.851	-.277	-.290
7	-2.134	-3.437	.745	.368	.474	.517	-.231	-.143
8	.054	-1.109	-1.052	-.044	.542	.327	-.176	-.092
9	1.333	-1.921	-.046	.953	.422	.400	-.116	-.174
10	-.648	.718	-.542	1.112	.372	.658	-.172	-.188
11	.145	.071	.732	.370	.561	.742	-.150	-.126
12	2.926	.424	-.664	-.024	.430	.598	.058	-.126
13	.627	1.416	-1.120	.072	.251	.713	.028	-.100
14	1.113	-.090	.924	.243	.575	.751	-.168	.050
15	-.584	-.549	.811	-.977	.833	.472	-.209	.150
16	.549	-.263	.684	-.221	.564	.462	-.141	.118
17	.440	-1.171	.291	-.544	.433	.475	-.032	.118
18	1.284	.548	-.508	.656	.470	.372	-.027	.147
19	-3.325	2.438	-.252	.086	.367	.481	-.109	.224
20	-2.676	-.381	1.219	.929	.510	.565	-.160	.354
21	-.055	.080	-.397	-1.270	.806	.511	-.240	.387
22	1.783	-.244	.337	.783	.794	.393	-.107	.320
23	.167	2.470	-.385	-.530	.581	.456	-.050	.271
24	.145	1.832	-2.228	.659	.378	.631	-.229	.214
25	1.295	-.963	.715	-.754	.270	.506	-.200	.092
26	-.643	-1.248	.864	.494	.272	.289	-.110	-.003
27	-.072	.484	-.824	-.253	.328	.237	-.043	-.063
28	-1.341	-1.110	1.315	.045	.438	.214	.031	-.126
29	.594	-1.532	.327	-.990	.349	.273	-.041	-.039
30	1.398	-1.132	-1.166	-.538	.262	.536	-.207	-.007
31	-1.911	-.545	.052	.174	.498	.714	-.300	-.157
32	.069	-.446	-.860	.375	.338	.358	-.154	-.000

CORRELATION COEFFICIENT -.23709

RANDOM-BIASED DATA - W

PSEUDO DATA RUN 1

	600	032	1	1	0	0						
→ 2	3	0	3	-2	-1	-1	-3	-5	7	2	1	
2	2	-1	-1	-6	3	5	1	-1	1	-3	-1	
1	3	-1	1	0	-3	-7	4	4	-2	1	3	
-2	-3	-7	-9	1	1	-3	3	1	-6	4	-1	
-7	-2	1	-8	-1	3	-2	1	1	6	-3	-9	
-4	2	-7	-1	1	1	0	6	5	1	0	1	
-7	2	-3	-1	-8	-3	-1	4	2	-1	6	-1	
5	1	-1	2	-3	-1	1	1	0	-2	-7	6	
1	4	3	-9	3	1	-3	-7	2	-4	-1	3	
-1	0	-1	-9	5	1	7	-7	-2	-3	1	-1	
-1	4	6	-3	-7	3	1	-1	-1	0	9	3	
-1	-4	2	-4	1	0	-3	-1	-1	1	3	4	
2	-9	4	7	-3	-1	-1	0	-1	-8	6	6	
2	3	0	3	-2	-1	-1	-3	-5	7	2	1	
2	2	-1	-1	-6	3	5	1	-1	1	-3	-1	
1	3	-1	1	0	-3	-7	4	4	-2	1	3	
-2	-3	-7	-9	1	3	-5	3	1	-6	4	-1	
-7	-2	1	-8	-1	3	-2	7	1	6	-3	-9	
-4	2	-7	-1	1	1	0	6	5	1	0	1	
-7	2	-3	-1	-8	-3	-1	4	2	-1	6	-1	
5	1	-1	2	-3	-1	1	1	0	-2	-7	6	
1	4	3	-9	3	1	-3	-7	2	-4	-1	3	
-1	0	-1	-9	5	1	7	-7	-2	-3	1	-1	
-1	4	6	-3	-7	3	1	-1	-1	0	9	3	
-1	-9	2	-4	1	0	-3	-1	-1	1	3	4	
2	-9	4	7	-3	-1	-1	0	-1	-8	6	6	
2	3	0	3	-2	-1	-1	-3	-5	7	2	1	
2	2	-1	-1	-6	3	5	1	-1	1	-3	-1	
1	3	-1	1	0	-3	-7	4	4	-2	1	3	
-2	-3	-7	-9	1	3	-5	3	1	-6	4	-1	
-7	-2	1	-8	-1	3	-2	7	1	6	-3	-9	
-4	2	-7	-1	1	1	0	6	5	1	0	1	
-7	2	-3	-1	-8	-3	-1	4	2	-1	6	-1	
5	1	-1	2	-3	-1	1	1	0	-5	-7	6	
1	4	3	-9	3	1	-3	-7	2	-4	-1	3	
-1	0	-1	-9	5	1	7	-7	-2	-3	1	-1	
-1	4	6	-3	-7	3	1	-1	-1	0	9	3	
-1	-9	2	-4	1	0	-3	-1	-1	1	3	4	
2	-9	4	7	-3	-1	-1	0	-1	-8	6	6	
2	3	0	3	-2	-1	-1	-3	-5	7	2	1	
2	2	-1	-1	-6	3	5	1	-1	1	-3	-1	
1	3	-1	1	0	-3	-7	4	4	-2	1	3	
-2	-3	-7	-9	1	3	-5	3	1	-6	4	-1	
-7	-2	1	-8	-1	3	-2	7	1	6	-3	-9	
-4	2	-7	-1	1	1	0	6	5	1	0	1	
-7	2	-3	-1	-8	-3	-1	4	2	-1	6	-1	
5	1	-1	2	-3	-1	1	1	0	-5	-7	6	
1	4	3	-9	3	1	-3	-7	2	-4	-1	3	
-1	0	-1	-9	5	1	7	-7	-2	-3	1	-1	
-1	4	6	-3	-7	3	1	-1	-1	0	9	3	→

RBM-2

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RANDOM-BIASED DATA - U

→	-1	-3	2	6	-5	-3	3	1	7	-1	-2	-2
	1	9	2	7	2	-3	-2	-1	3	-1	-6	-7
	-1	-6	5	2	3	1	4	-2	-1	1	-3	-1
	1	7	2	1	1	-6	-4	-1	-7	3	1	3
	1	8	-1	3	4	-1	-2	-7	5	9	1	-2
	-3	-7	4	-1	-2	-7	5	0	0	-1	5	5
	6	1	-2	4	3	-3	1	-9	-1	3	-1	-1
	0	2	7	-3	-4	1	-3	-7	-4	3	1	-3
	5	-3	-4	2	2	-4	-7	6	-1	3	1	-2
	3	3	-6	-3	1	-7	-9	-3	4	2	-1	8
	8	6	3	2	1	-5	-1	3	0	-4	-2	-1
	1	1	-3	5	1	7	-8	-2	-1	3	-1	7
	-7	3	-1	1	1	6	-4	7	-3	5	-2	-7
	-1	-3	2	6	-5	-3	3	1	7	-1	-2	-2
	1	9	2	7	2	-3	-2	-1	3	1	-6	-7
	-1	-6	5	2	3	1	4	-2	-1	1	-3	-1
	1	7	2	1	1	-6	-4	-1	-7	3	1	3
	1	8	-1	3	4	-1	-2	-7	5	9	1	-2
	-3	-7	4	-1	-2	-7	5	0	0	-1	5	5
	6	1	-2	4	3	-3	1	-9	-1	3	-1	-1
	0	2	7	-3	-4	1	-3	-7	-4	3	1	-3
	5	-3	-4	2	2	-4	-7	6	-1	3	1	-2
	3	3	-6	-3	1	-7	-9	-3	4	2	-1	8
	8	6	3	2	1	-5	-1	3	0	-4	-2	-1
	1	1	-3	5	1	7	-8	-2	-1	3	-1	7
	-7	3	-1	1	1	6	-4	7	-3	5	-2	-7
	-1	-3	2	6	-5	-3	3	1	7	-1	-2	-2
	1	9	2	7	2	-3	-2	-1	3	1	-6	-7
	-1	-6	5	2	3	1	4	-2	-1	1	-3	-1
	1	7	2	1	1	-6	-4	-1	-7	3	1	3
	1	8	-1	3	4	-1	-2	-7	5	9	1	-2
	-3	-7	4	-1	-2	-7	5	0	0	-1	5	5
	6	1	-2	4	3	-3	1	-9	-1	3	-1	-1
	0	2	7	-3	-4	1	-3	-7	-4	3	1	-3
	5	-3	-4	2	2	-4	-7	6	-1	3	1	-2
	3	3	-6	-3	1	-7	-9	-3	4	2	-1	8
	8	6	3	2	1	-5	-1	3	0	-4	-2	-1
	1	1	-3	5	1	7	-8	-2	-1	3	-1	7
	-7	3	-1	1	1	6	-4	7	-3	5	-2	-7
	-1	-3	2	6	-5	-3	3	1	7	-1	-2	-2
	1	9	2	7	2	-3	-2	-1	3	1	-6	-7
	-1	-6	5	2	3	1	4	-2	-1	1	-3	-1
	1	7	2	1	1	-6	-4	-1	-7	3	1	3
	1	8	-1	3	4	-1	-2	-7	5	9	1	-2
	-3	-7	4	-1	-2	-7	5	0	0	-1	5	5
	6	1	-2	4	3	-3	1	-9	-1	3	-1	-1
	0	2	7	-3	-4	1	-3	-7	-4	3	1	-3
	5	-3	-4	2	2	-4	-7	6	-1	3	1	-2
	3	3	-6	-3	1	-7	-9	-3	4	2	-1	8
	8	6	3	2	1	-5	-1	3	0	-4	-2	-1

000000

SUM

TM No. 377

SINE WAVE

K	$\Phi_u(\tau)$	$\Phi_w(\tau)$	$\Phi_{uw}^{IN}(\tau)$	$\Phi_{uw}^{OUT}(\tau)$	$\Phi_u(f)$	$\Phi_w(f)$	$C_{uw}(f)$	$Q_{uw}(f)$
0	49.899	50.027	.000	.000	.010	.006	-.001	.000
1	29.248	29.063	-.040	-40.226	-.015	-.023	-.003	.004
2	-15.344	-15.338	-.101	-47.315	.027	.025	-.003	-.008
3	-47.282	-47.257	.002	-15.268	-.019	-.010	-.006	.035
4	-40.237	-40.188	.035	29.236	.058	.057	-.009	-.031
5	-.001	.073	.080	49.730	-.073	-.083	-.005	.077
6	40.126	40.222	.056	29.182	.190	.189	-.000	-.179
7	47.256	47.117	-.056	-15.357	-.493	-.495	-.007	.498
8	15.429	15.188	-.087	-47.218	3.029	2.991	-.028	-3.005
9	-29.234	-29.209	-.007	-40.160	19.609	19.554	-.026	-19.583
10	-49.698	-49.722	-.050	.043	22.392	22.390	.013	-22.389
11	-29.264	-29.035	.157	40.188	5.588	5.622	.027	-5.606
12	15.370	15.367	.087	47.181	-.651	-.629	.013	.642
13	47.243	47.137	.007	15.292	.219	.233	.007	-.226
14	40.174	40.131	-.057	-29.217	-.094	-.084	.005	.090
15	.102	-.120	-.132	-49.718	.055	.051	.006	-.050
16	-40.160	-40.256	-.087	-29.212	-.007	-.024	.006	.022
17	-47.316	-47.185	.047	15.281	.028	.022	.003	-.023
18	-15.456	-15.204	.052	47.333	-.014	-.007	.001	.013
19	29.149	29.193	.092	40.223	.008	.018	.000	-.007
20	49.899	50.027	.000	.000	-.007	-.002	-.000	.007
21	29.250	29.060	-.043	-40.226	.004	.012	.003	-.004
22	-15.342	-15.341	-.103	-47.315	-.001	.030	.012	.005
23	-47.281	-47.259	.001	-15.268	.005	.036	.012	-.003
24	-40.238	-40.187	.037	29.237	.000	.006	.002	.002
25	-.003	.076	.083	49.730	.018	.013	-.007	.006
26	40.125	40.223	.058	29.182	.016	.013	-.009	.012
27	47.256	47.116	-.057	-15.358	.004	.010	-.001	.002
28	15.430	15.184	-.090	-47.219	-.001	.026	.002	.008
29	-29.234	-29.212	-.010	-40.160	.004	.039	.002	.010
30	-49.698	-49.722	-.050	.044	-.000	.011	.001	.004
31	-29.264	-29.032	.160	40.189	.005	.012	-.006	-.001
32	15.369	15.370	.090	47.180	.003	.011	-.006	.000
CORRELATION COEFFICIENT			.00000					

SUM - 1

TM No. 377

SINUSOIDAL-UNBIASED DATA - W

PSEUDO DATA RUN 2

	600	032	1	1	0	0						
→ 0	8	9	3	-5	-10	-7	3	9	9	0	-8	
-9	-3	6	13	6	-3	-10	-8	0	9	9	3	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
-9	-3	6	10	6	-3	-10	-8	0	8	9	3	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
06	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
-9	-3	6	13	6	-3	-10	-8	0	9	9	3	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
-9	-3	6	10	6	-3	-10	-8	0	8	9	3	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
06	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
-9	-3	6	13	6	-3	-10	-8	0	9	9	3	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
-9	-3	6	10	6	-3	-10	-8	0	8	9	3	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
06	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
-9	-3	6	13	6	-3	-10	-8	0	9	9	3	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
-9	-3	6	10	6	-3	-10	-8	0	8	9	3	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
06	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
-9	-3	6	13	6	-3	-10	-8	0	9	9	3	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
-9	-3	6	10	6	-3	-10	-8	0	8	9	3	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
06	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	→

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BIASED SINE WAVE

K	$\Phi_u(\tau)$	$\Phi_w(\tau)$	$\Phi_{uw}^{IN}(\tau)$	$\Phi_{uw}^{OUT}(\tau)$	$\Phi_u(f)$	$\Phi_w(f)$	$C_{uw}(f)$	$Q_{uw}(f)$
0	49.899	53.927	-1.799	.000	.010	.006	-.002	.000
1	29.248	31.308	-1.094	-41.776	-.015	-.025	-.002	.005
2	-15.344	-16.535	.448	-49.064	.027	.029	-.004	-.009
3	-47.282	-50.953	1.703	-15.818	-.019	-.007	-.005	.037
4	-40.237	-43.249	1.482	30.338	.058	.065	-.011	-.032
5	-.001	.124	.079	51.584	-.073	-.091	-.003	.080
6	40.126	43.333	-1.364	30.256	.190	.195	-.010	-.185
7	47.256	50.769	-1.754	-15.912	-.493	-.542	.008	.517
8	15.429	16.327	-.661	-48.997	3.029	3.222	-.136	-3.117
9	-29.234	-31.470	1.045	-41.659	19.609	21.070	-.731	-20.315
10	-49.698	-53.621	1.749	.049	22.392	24.124	-.792	-23.226
11	-29.264	-31.274	1.203	41.690	5.588	6.058	-.173	-5.817
12	15.370	16.528	-.488	48.952	-.651	-.669	.038	.661
13	47.243	50.784	-1.695	15.837	.219	.262	.002	-.240
14	40.174	43.220	-1.486	-30.293	-.094	-.089	.009	.093
15	.102	-.071	-.131	-51.564	.055	.057	.001	-.056
16	-40.160	-43.294	1.365	-30.310	-.007	-.017	.002	.013
17	-47.316	-50.889	1.746	15.831	.028	.029	.000	-.029
18	-15.456	-16.407	.603	49.084	-.014	-.010	.002	.012
19	29.149	31.448	-.953	41.772	.008	.015	.002	-.011
20	49.899	53.927	-1.799	.000	-.007	-.003	.002	.005
21	29.250	31.306	-1.097	-41.776	.004	.013	.003	-.005
22	-15.342	-16.538	.445	-49.064	-.001	.028	.012	.002
23	-47.281	-50.954	1.702	-15.818	.005	.034	.012	-.005
24	-40.238	-43.249	1.484	30.339	.000	.006	.002	.001
25	-.003	.128	.082	51.584	.018	.012	-.009	.001
26	40.125	43.335	-1.362	30.255	.016	.011	-.011	.006
27	47.256	50.769	-1.755	-15.913	.004	.011	-.001	.001
28	15.430	16.323	-.664	-48.998	-.001	.036	.002	.009
29	-29.234	-31.473	1.043	-41.658	.004	.052	.002	.012
30	-49.698	-53.621	1.749	.051	-.000	.016	.001	.004
31	-29.264	-31.271	1.206	41.690	.005	.011	-.006	-.001
32	15.369	16.531	-.485	48.951	.003	.011	-.006	.000
CORRELATION COEFFICIENT								-.03469

SINUSOIDAL-BIASED DATA-W

PSEUDO DATA RUN 3

	600	032		1	1	0	0					
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
-9	-3	6	10	6	-3	-10	-8	0	8	9	3	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
-9	-3	6	10	6	-3	-10	-8	0	8	9	3	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
-9	-3	6	10	6	-3	-10	-8	0	8	9	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
-9	-3	6	10	6	-3	-10	-8	0	8	9	3	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
-9	-3	6	10	6	-3	-10	-8	0	8	9	3	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
-9	-3	6	10	6	-3	-10	-8	0	8	9	3	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
0	8	9	3	-5	-10	-7	3	9	9	0	-8	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10	
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3	



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SINUSOIDAL-BIASED DATA - U

-10	-6	3	9	10	1	-7	-10	-4	6	11	7
-3	-9	-9	0	8	9	4	-7	-10	-6	3	9
10	1	-7	-10	-4	6	11	7	-3	-9	-9	0
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
-3	-9	-9	0	8	9	4	-7	-10	-6	3	9
10	1	-7	-10	-4	6	11	7	-3	-9	-9	0
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
-3	-9	-9	0	8	9	4	-7	-10	-6	3	9
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
-3	-9	-9	0	8	9	4	-7	-10	-6	3	9
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
10	1	-7	-10	-4	6	11	7	-3	-9	-9	0
10	1	-7	-10	-4	6	11	7	-3	-9	-9	0
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
10	1	-7	-10	-4	6	11	7	-3	-9	-9	0
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
10	1	-7	-10	-4	6	11	7	-3	-9	-9	0
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
10	1	-7	-10	-4	6	11	7	-3	-9	-9	0
-3	-9	-9	0	8	9	4	-7	-10	-6	3	9
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
10	1	-7	-10	-4	6	11	7	3	9	-9	0
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
10	1	-7	-10	-4	6	11	7	3	9	-9	0
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
10	1	-7	-10	-4	6	11	7	-3	-9	-9	0
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
-3	-9	-9	0	8	9	4	-7	-10	-6	3	9
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
10	1	-7	-10	-4	6	11	7	3	-9	-9	0
8	9	4	-7	-10	-6	3	9	10	1	-7	-10

000000

APPENDIX D

DIGITAL COMPUTER PROGRAMS

The various computer programs discussed in chapter III are presented here in abbreviated form for the convenience of those wishing to consider similar analysis of oceanographic data. These programs were used on one or all of the following digital computers.

(1) An International Business Machine (I.B.M.) 7090 digital computer at the Massachusetts Institute of Technology Computation Center.

(2) An I.B.M. 1620 and a Control Data Corporation (C.D.C.) 3200 digital computer at the Naval Underwater Weapons Research and Engineering Station computer laboratory.

The programs are in standard fortran language. A brief statement of definitions of non-standard or unique symbols and other helpful information are included.

The programs listed here were designed specifically for the wave studies. However, they can be made generally applicable to stationary time series data.

Velocity Conversion Program (VELTIME)

This program (discussed in chapter III) converts the punch card data, which contains the sign and relative time of voltage pulse occurrence (along with zero crossover information), into uninterpolated velocity data (cm sec^{-1}). The raw data punch cards contain five sequential pieces of data. A negative velocity is indicated by the number 2 (two) in the output listing.

Abbreviations used are:

EMSEC = The chart speed of the Sanburn recorder read in mm sec^{-1} .

IND(k) = Indicator of the direction of the positive pulses on the strip chart (to provide the proper sign for the velocity values);

i.e., IND = $\begin{cases} 0 & \text{denotes upward pulses} \\ 1 & \text{denotes zero crossing} \\ 2 & \text{denotes downward pulses.} \end{cases}$

Combination Spectrum Program (Program BBELS)

This flexible program contains three subprograms which include linear interpolation, orthogonal velocity corrections (of OMDUM III data), and spectrum analysis. The input is the velocity time data generated in the velocity

```

PROGRAM VELTIME
DIMENSION X(4500),IND(4500)
1 I=2
  NN=1
  N=1
  READ(60,100)EMSEC
  READ(60,102)X(1),IND(1),X(2),IND(2),X(3),IND(3),X(4),IND(4),X(5),
1 IND(5)
  8 IF(X(I) .LT. 999999)9,5
  9 IF(IND(I)-1)70,16,70
70 IF(IND(I)-IND(I-1))16,71,16
16 I=I+1
28 IF(I-(5*N+1))8,7,22
22 N=N+1
  GO TO 28
  7 READ(60,102)X(I),IND(I),X(I+1),IND(I+1),X(I+2),IND(I+2),X(I+3),
1 IND(I+3),X(I+4),IND(I+4)
  GO TO 8
71 CONTINUE
14 D=X(I)-X(I-1)
  TIME=(X(I)+X(I-1))/2.
  D=((D/15.6)/EMSEC)*1000.
  TIME=TIME/15.6
  TIME=TIME/EMSEC
  IF(D .LE. 20.99)36,37
36 Y=(D-15.54)/(7410.2907E-05-7837.2527E-06*D)+210.70000
  GO TO 25
37 IF(D .LE. 33.48)38,39
38 Y=(D-23.00)/(5994.0137E-05-8476.9629E-06*D)+140.000
  GO TO 25
39 IF(D .LE. 93.62)40,41
40 Y=.66680522E-07*D**5-.14699011E-04*D**4+.72463350E-03*D**3
  Y=Y+.55538870E-01*D**2-.69160109E+01*D+.25032362E+03
  GO TO 25
41 IF(D .LE. 239.2)42,43
42 Y=(D-115.5)/(.20498400-.038643265*D)+28.40
  GO TO 25
43 Y=(D-288.7)/(34.199517-.16685755*D)+12.60
25 IF(IND(I)-1)26,26,27
27 Y=-1.*Y
26 WRITE(10,101)Y,TIME,I
  WRITE(61,101)Y,TIME,I
  I=I+1
  NN=NN+1
  GO TO 28
5 END FILE 10
  REWIND 10
  DO 60 K=1,NN
  READ(10,101)Y,TIME,I
  WRITE(62,101)Y,TIME,I
60 CONTINUE
  REWIND 10
100 FORMAT(F6.0,I3,I3,F4.0)
101 FORMAT(F10.5,F10.5,I5)
102 FORMAT(5(F6.0,I2,8X))
  GO TO 1
END

```

conversion program. The input can be a single time series (as $w(t)$), a paired time series (as $u(t), w(t)$) from the OMDUM system, which may or may not be corrected; or a paired time series from the LINDUM system (as w_1 and w_2 , or u_1 and u_2). The usual auto-spectrum analysis is performed on the single time series. On all paired time series both the auto-spectrum and cross-spectrum operations are performed (as discussed in chapter III). The interpolation program (entitled PROGRAM BBELS) is discussed in chapter III. The correction program is entitled SUBROUTINE CORRECT. The third program, the spectrum analysis, is entitled SUBROUTINE SPECTRA. The following abbreviations are used.

$u(I)$ = Interpolated velocity data from u meter (or upper meter)

$w(I)$ = Interpolated velocity from vertical w (or lower meter)

ML = Number of lags for spectral estimates (limit is set at 100)

CODE = $\left\{ \begin{array}{l} 0 \text{ denotes single time series} \\ 1 \text{ denotes OMDUM data} \\ -1 \text{ denotes LINDUM data} \end{array} \right.$

IO1 = Number of series

YO2 = Depth of instrument

IO3 = The nth measurement at the particular depth.

YO4 = Time interval (sec)

$U(J)$ = Uninterpolated velocity

$T(J)$ = Time of occurrence of $U(J)$ velocity.

Note: The CDC 3200 program has a capacity to take 32×10^3 single time series data pieces or 2400 data pairs.

```
PROGRAM BRFLS
DIMENSION T(2400),V(2400)
COMMON VNEW(2400),YNEW(2400)
731 READ(60,600) M1,COOE
    READ(60,604) I01,Y02,I03,Y04
    WRITE(61,605) I01,Y02,I03
    WRITE(62,605) I01,Y02,I03
1000 FORMAT(1X,10H OK SO FAR)
    10 FORMAT(2F10.5,I1)
    11 FORMAT(1X,2F10.5,I5)
    600 FORMAT(I4,F4.0,I4,I4)
    604 FORMAT(5X,I3,F4.1,I2,F5.2)
    605 FORMAT(1H1,6HBRFLS-,I3,3X,F3.1,2HM-,I3)
    A=.2
    Z=.2
    M=1
    B=.2
    N=0
    J=1
    15 READ(60,10) V(J),T(J),LL
        N=N+1
        J=J+1
        IF (LL)2,15,2
    2 DO 90 J=2,N
    9 IF (T(J-1)-A)4,5,21
    21 A=A+Z
        GO TO 9
    4 IF (T(J)-A) 90,90,5
    5 TDIFF=T(J)-T(J-1)
        VDIFF=V(J)-V(J-1)
    6 TNUM=A-T(J-1)
        IF (T(J-1)-A)8,20,21
    8 RATIO=TNUM*TDIFF
        DINTP=RATIO*VDIFF
        VNEW(M)=V(J-1)+DINTP
        GO TO 220
    20 VNEW(M)=V(J-1)
    220 WRITE(61,11) VNEW(M),A,M
        M=M+1
        TEST=TDIFF-TNUM
        IF (TEST-8)90,90,25
    25 A=A+Z
        GO TO 6
    90 CONTINUE
    J1=M-1
    IF (CODE)732,555,732
732 AA=.2
    WRITE(61,1000)
    Z=.2
    MO=1
    NO=0
    J=1
    75 READ(60,10) V(J),T(J),LL
        NO=NO+1
        J=J+1
        IF (LL)22,16,22
```

```
22 DN 990 JB2.NO
98 IF (T(J-1)-AA) 44,55,210
210 AA=AA+7
    GO TO 98
44 IF (T(J)-AA) 990,990,55
55 TDIFF=T(J)-T(J-1)
    VDIFF=V(J)-V(J-1)
66 TNUM=AA-T(J-1)
    IF (T(J-1)-AA) 88,211,210
88 RATIO=TNUM/TDIFF
    DINTP=RATIO*VDIFF
    YNEW(MO)=V(J-1)+DINTP
    GO TO 222
211 YNEW(MO)=V(J-1)
222 WRITE(61,11) YNEW(MO),AA,MO
    MO=MO+1
    TEST=TDIFF-TNUM
    IF (TEST-R) 990,990,250
250 AA=AA+7
    GO TO 66
990 CONTINUE
    WRITE(61,1000)
    IF (M-MO) 888,443,777
777 JJ=MO-1
    GO TO 443
888 JJ=M-1
443 IF (CODE) 555,555,444
444 CALL CORRECT (JJ)
555 CALL SPECTRA (JJ, CODE, M1, Y04, I01, Y02, I03)
    GO TO 731
END
```

3200 FORTRAN DIAGNOSTIC RESULTS - FOR BBELS

NO ERRORS

```

SUBROUTINE CORRECT (JJ)
COMMON U(2400), W(2400)
REAL LOGF
WRITE(61,1000)
DO 999 J=1,JJ
IF (W(J)) 4,99,4
4 Y=U(J)/W(J)
YY=ABSF(Y)
IF (YY-1.5649) 10,11,11
10 X=(((-.71624037*YY-3.5271192)*YY+1.1616579)*YY+47.905764)*YY
X=X-.0001549985
GO TO 90
11 IF (YY-29.743803) 111,111,1111
111 X=ATANF(YY)
X=X*57.295788
GO TO 90
111 X=(LOGF(YY-1.2058034)+9.7816200)/.14598791
90 THETA=X
IF (Y) 3,98,2
2 IF (THETA-45.) 18,18,19
18 RYTH=(-.001+.000085*THETA)*(THETA)+1.00
A=90.-THETA
IF (A-70.) 122,122,121
122 RXTH=-.00009*(A*A)+.01238*A+.758
GO TO 20
121 RXTH=-.0005*(A*A)+.071*A-1.34
GO TO 20
19 IF (THETA-70.) 118,118,119
118 RYTH=-.00009*(THETA*THETA)+.01238*THETA+.758
A=90.-THETA
GO TO 120
119 RYTH=(-.0005*(THETA*THETA)+.071*THETA-1.34)
A=90.-THETA
120 RXTH=(-.001+.000085*A)*(A)+1.00
20 IF (U(J)) 7,98,8
7 THETA=270.-THETA
GO TO 9
8 THETA=90.-THETA
9 U(J)=U(J)/RXTH
W(J)=W(J)/RYTH
GO TO 25
98 IF (W(J)) 87,88,88
87 THETA=270.
W(J)=-W(J)
U(J)=0.
GO TO 25
88 THETA=90.
W(J)=W(J)
U(J)=0.
GO TO 25
3 IF (THETA-45.) 28,28,29
28 RYTH=(-.001+.000085*THETA)*THETA+1.00
A=90.-THETA
IF (A-70.) 222,222,221
222 RXTH=(-.00009*(A*A)+.01238*A+.758)
GO TO 30

```

```
221 RXTH=(-.0005*(A*A)+.071*A-1.38)
    GO TO 30
29 IF (THETA-70.) 218,218,219
218 RYTH=(-.00009*(THETA*THETA)+.01238*THETA+.758)
    A=90.-THETA
    GO TO 220
219 RYTH=(-.0005*(THETA*THETA)+.071*THETA-1.34)
    A=90.-THETA
220 RXTH=(-.001+.000085*A)*(A)+1.00
    30 IF (U(J)) 37,98,38
    37 THETA=90.+THETA
    GO TO 40
    38 THETA=270.+THETA
    40 U(J)=U(J)/RXTH
    W(J)=W(J)/RYTH
    25 PRINT 6,U(J),W(J),THETA
    GO TO 999
    99 IF (U(J)) 103,102,101
101 THETA=0.
    U(J)=U(J)
    W(J)=0.
    GO TO 25
102 THETA=0.
    U(J)=0.
    W(J)=0.
    GOTO 25
103 THETA=180.
    U(J)=U(J)
    W(J)=0.
    GO TO 25
    77 FORMAT(F10.5)
    6 FORMAT(2F10.5,F7.2)
666 FORMAT (I5)
1000 FORMAT(1X,10H OK SO FAR)
999 CONTINUE
    RETURN
    END
```

3200 FORTRAN DIAGNOSTIC RESULTS - FOR CORRECT

NULL STATEMENT NUMBERS

666

77

```

SUBROUTINE SPECTRA(N, CODE, M1, Y04, I01, Y02, I03)
DIMENSION A(100), B(100), C(100), D(100), E(100), F(100)
COMMON X(2400), Y(2400)
PI=3.14159
WRITE(61,605) I01, Y02, I03
SUMX=0.0
SUMY=0.0
IF(CODE) 11, 12, 11
11 DO 5 I=1, N
SUMX=SUMX+X(I)
5 SUMY=SUMY+Y(I)
EN=N
SUMY=SUMY/FN
SUMX=SUMX/FN
WRITE(62,606) M1, N, Y04
WRITE(61,606) M1, N, Y04
WRITE(62,607) SUMX
WRITE(61,607) SUMX
WRITE(62,608) SUMY
WRITE(61,608) SUMY
WRITE(62,609)
WRITE(61,609)
DO 973 I=1, N
X(I)=X(I)-SUMX
973 Y(I)=Y(I)-SUMY
GO TO 16
12 DO 4 I=1, N
4 SUMX=SUMX+X(I)
EN=N
SUMX=SUMX/FN
WRITE(62,606) M1, N, Y04
WRITE(61,606) M1, N, Y04
WRITE(62,607) SUMX
WRITE(61,607) SUMX
WRITE(61,603)
WRITE(62,603)
DO 913 I=1, N
913 X(I)=X(I)-SUMX
15 M=M1+1
M2=M1+1
DO 22 L=1, M2
SUM1=0.0
SUM2=0.0
SUM3=0.0
DO 23 I=L, N
L7=I-L+1
SUM1=SUM1+X(L7)*X(I)
SUM2=SUM2+X(L7)
23 SUM3=SUM3+X(I)
Z7=N-L+1
COEF=1./Z7
COEF2=COEF**2
A(L7)=COEF*SUM1-COEF2*SUM2*SUM3
IF(CODE) 25, 24, 25
25 SUM4=0.0
SUM5=0.0

```



```

SUM5=0.0
SUM7=0.0
SUM9=0.0
DO 26 I=L,N
L7=T-L+1
SUM4=SUM4+Y(LZ)*Y(T)
SUM5=SUM5+Y(LZ)
SUM6=SUM6+Y(I)
SUM7=SUM7+X(LZ)*Y(T)
26 SUM8=SUM8+Y(LZ)*X(T)
B(L)=COEF*SUM4-COEF2*SUM5*SUM6
C(L)=COEF*SUM7-COEF2*SUM2*SUM6
D(L)=COEF*SUM8-COEF2*SUM5*SUM3
E(L)=(D(L)+C(L))/2.
F(L)=(D(L)-C(L))/2.
24 CONTINUE
22 CONTINUE
DO 27 K=1,M2
IF(K-1) 28,28,29
28 ZM1=M1
DELT=1./(2.*ZM1)
GO TO 32
29 IF(K-M2) 31,28,28
31 ZM1=M1
DELT=1./ZM1
32 SUM1=0.0
SUM2=0.0
SUM3=0.0
SUM4=0.0
EM1=M1
CAY=K-1
DO 33 L=2,M2
EL=L-1
GUT=(1.+COSF(PI*EL/EM1))*COSF(PI*CAY*EL/EM1)
SUM1=SUM1+GUT*A(L)
IF (CODE) 35,33,35
35 SUM2=SUM2+GUT*B(L)
SUM3=SUM3+GUT*E(L)
SUM4=SUM4+(1.+COSF(PI*EL/EM1))*SINF(PI*CAY*EL/EM1)*F(L)
33 CONTINUE
X1=DELT*(SUM1+A(1))
IF (CODE) 37,36,37
37 Y1=DELT*(SUM2+B(1))
Z=DELT*(SUM3+E(1))
W=DELT*SUM4
R=SQRT((Z**2+W**2)/(X1*Y1))
T=ATANF(W/Z)
T=T/.0174533
P=7/SQRT(X1*Y1)
Q=W/SQRT(X1*Y1)
KK=K-1
XLQ=M1
XLQP=KK
FXLP=(2.*XLQ*Y04)/XLQP
WRITE(61,602)KK,A(K),B(K),E(K),F(K),X1,Y1,Z,W,FXLP,R,T
WRITE(62,602)KK,A(K),B(K),E(K),F(K),X1,Y1,Z,W,FXLP,R,T
GO TO 27

```

```

36 KK=K-1
   XI.Q=M1
   XI.QP=KK
   FXLP=(2.*XLQ*Y04)/XLQP
   FREQ=1000./FXLP
   WRITE(62,602)KK,A(K),X1,FXLP,FREQ
   WRITE(61,602)KK,A(K),X1,FXLP,FREQ
27 CONTINUE
   IF(CODE)39,38,39
39 CC=E(I)/SQRT(A(I)*R(I))
   WRITE(62,3)CC
   WRITE(61,3)CC
38 CONTINUE
609 FORMAT(4RHK   ACOV U   ACOV W   COV IN   COV OUT SP U   SP W,28H CO
1   QUA   PER   R   PHI)
608 FORMAT(1X,2HMEAN W =,F10.5)
607 FORMAT(1X,2HMEAN U =,F10.5)
605 FORMAT(1H1.6HBHFLS=,I3,3X,F3.1,2HM=,I3)
602 FORMAT(I3,2F9.3,2F8.1,7F6.2)
606 FORMAT(I3,4HLAGS,3X,I5,11HDATA POINTS,5X,3HDT=,F4.2,3HSEC)
603 FORMAT(38H K   ACOV   SP   PERIOD   F(MC))
3   FORMAT(23HCORRELATION COEFFICIENT,F10.5)
RETURN
END

```

3200 FORTRAN DIAGNOSTIC RESULTS - FOR SPECTRA

7 ERRORS
DAD,56
IN,30.NM

Head-to-Tail Vector Plot Program (entitled PROGRAM NUWS)

This program (discussed in chapter III) prepares data punch cards from current meter data (consisting of current vector speed and direction). These cards are then placed in the Benson-Lehner electro-plotter, which plots the head-to-tail vector plot.

The abbreviations used are the following:

D = Direction of current ($^{\circ}$ T)

S = Magnitude of vector (cm sec^{-1})

L = $\left\{ \begin{array}{l} 1 \text{ signifies end of data} \\ 0 \text{ continue reading.} \end{array} \right.$

PROGRAM NUWS

```
10 XX=0
11 YY=0
    K=1
    1 READ 2,DATE,S,D,L
    2 FORMAT(F6.1,25X,F6.0,24X,F4.0,I1)
      IF(L)10,5,10
    3 FORMAT(3F10.2,I4)
    5 IF (90.-D)4,6,6
    6 THETA=(90.-D)*.01745329
      GO TO7
    4 THETA=(450.-D)*.01745329
    7 X=S*COSF(THETA)
      Y=S*SINF(THETA)
      XX=XX+X
      YY=YY+Y
      PUNCH 3,DATE,XX,YY,K
      PRINT 3,DATE,XX,YY,K
      K=K+1
      GO TO 1
    END
```

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11
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4. DESCRIPTIVE NOTES (Type of report and inclusive dates) (2 Volumes)			
5. AUTHOR(S) (Last name, first name, initial) Shonting, David H.			
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10. AVAILABILITY/LIMITATION NOTICES Distribution of this report is unlimited.			
11. SUPPLEMENTARY NOTES		12. SPONSORING MILITARY ACTIVITY NUWS - NOSC	
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Security Classification

14. KEY WORDS	LINK A		LINK B		LINK C	
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Ocean Waves Oceanographic Research Sea Surface Wave Meters (ocean) Wave Motions Wind Waves						

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Naval Underwater Weapons Research and Engineering Station, Newport, R. I. (TM No. 377)

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3. Sea Surface
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5. Wave Meters (ocean)
6. Wave Motions

I. Shonting, D. H.

Task Assignment No. RU22-2E-000/219 1/R004-03-01 UNCLASSIFIED

Naval Underwater Weapons Research and Engineering Station, Newport, R. I. (TM No. 377)

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