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A general analytical method is developed for determination of the radiated noise field from highly sheared, subsonic flows in the presence of rigid surfaces. The method is specifically formulated to use measurable flow field properties as the basis input data for calculations. The governing equations of a viscous, incompressible fluid are employed to determine approximately the so-called shear noise source strength distribution in the flow. Mean rates of strain and fluctuating velocity

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AN ANALYTICAL STUDY OF NOISE GENERATION BY SUBSONIC FLOWS IN THE PRESENCE OF RIGID SURFACES

by J. P. Woolley, K. Karamcheti,
and J. L. Guenther

SUMMARY

A general analytical method is developed for determination of the radiated noise field from highly sheared, subsonic flows in the presence of rigid surfaces. The method is specifically formulated to use measurable flow field properties as the basis input data for calculations. The governing equations of a viscous, incompressible fluid are employed to determine approximately the so-called shear noise source strength distribution in the flow. Mean rates of strain and fluctuating velocity covariances are the fundamental input data for calculations. The method is applied to the wall jet region of a circular jet impinging at 45° to an infinite plane surface. Velocity field measurements of Foss are used to describe the required flow properties. Comparisons of calculated results with measured surface pressures and sound pressure levels are given and discussed.

1. INTRODUCTION

Noise generation by highly sheared turbulent flows with or without the presence of solid bodies is an important consideration in modern engineering design and particularly so for systems involving high fluid flow speeds. The methods available to carry out such designs have been largely expensive cut-and-try experimental techniques assisted by idealized noise source models for scaling. The theoretical methods are essentially all based on the Lighthill-Curle acoustic source analogy (see Curle, 1955). This theory is adequate to the task but has so far suffered from the lack of a means for representing the "sources" accurately in terms of measurable fluid dynamic quantities. This situation has been detrimental, not only to the design of aircraft for minimum noise, but also to research into the mechanisms of noise generation and reduction. The Acoustics Branch at the Langley Research Center (LRC) of the National Aeronautics and Space Administration (NASA) has sponsored a program of research at Nielsen Engineering & Research, Inc. (NEAR) to develop a fundamental theoretical representation of the fluid dynamic sources of noise in terms of measurable flow properties. Such theoretical work can be checked directly by experiment and should yield a considerable increase in understanding of the nature of the problem.

The study was directed specifically toward the noise generated by a jet impinging on a rigid surface and has direct bearing on the noise generated by externally blown flap (EBF) systems on vertical or short take-off and landing (VSTOL) aircraft. Much experimental data are available for such systems which can be used in the analysis and as a check of its results. The following is a report of the first year's efforts under the study. A brief description of the background of the problem will be given first. This is followed by the basic theoretical development of the analysis. The general application of the analysis to flow over plane surfaces is then discussed and calculations are made for an impinging jet flow. The results of these calculations are presented in graphical and tabular form and discussed in comparison with experimental measurements. This is followed by conclusions and recommendations arrived at as a result of the study. Development of some of the analytical details and a description of the computer program used for calculations are given in the appendices.

2. BACKGROUND

Any discussion of aerodynamic sound in the last twenty years must begin with the papers of Lighthill (1952 and 1954) in which a fundamental approach to evaluating the noise generated by fluid flows was laid down. Lighthill quite simply showed that the noise field radiated from an unbounded flowing fluid could be represented by a collection of acoustic quadrupole sources distributed within the fluid region. Such sources are to be considered as forcing functions to the wave equation for fluid density. The solution to the wave equation for a given source distribution is well known. Curle (1955) extended the approach to include the presence of rigid impermeable bodies within the fluid region. He showed that additional acoustic dipole sources distributed over the surface of these bodies were required for these cases. These works lay out the theory of aerodynamic sound generation in terms of the exact equations governing fluid motion. They even specify the sources in terms of fluid mechanical quantities. They also predicted that sound intensity would vary with the 8th power of the velocity for quadrupole sources and with the 6th power for dipole sources. The solutions given in these approaches are only "formal solutions" in that the unknown fluid density is included in the make-up of the source terms. Therefore, it is necessary to introduce approximations in order to evaluate these source terms before calculations can be carried out using these formal solutions to the wave equation. For the past quarter century it is largely the endeavor to obtain satisfactory approximations to the source terms that has occupied those involved in aerodynamic noise.

It is apparent from the nature of sound that it is dependent on unsteadiness in the flow. It is also dependent on spatial gradients of the mean flow. In discussing the nature of noise production arising from turbulence in highly sheared mean flows, Lighthill (1954) indicated that the major contributions to the source field in such flows was from the product of the mean rate of strain, $\bar{\epsilon}$, and the time derivative of the pressure, $\partial p/\partial t$. The exact nature of these sources will be brought out later in the report.

Lilley (1958) estimated $\partial p/\partial t$ for a subsonic circular jet and used Lighthill's analysis to predict the noise generated in good agreement with measurements. Later Lilley and Hodgson (1960) used this approach to predict surface pressure fluctuations under a turbulent wall jet, also with good results. In both instances the estimates for the fluctuating pressure assumed the flow to be incompressible and the velocity fluctuations to be insignificantly different from homogeneous, isotropic turbulence. The isotropy assumption was invoked primarily due to lack of specific information regarding the actual fluctuating velocities.

Ribner (1962), using a physically motivated approach obtained an analysis of noise generation quite similar to the Lighthill, Curle, and Lilley works. In fact, a large portion of the report was devoted to showing that the resulting representations were equivalent. He chose to separate the fluid motions into two parts, one of which was associated with propagation of sound and the other with its generation. The latter he described as "fluid dilatations." Taking advantage of the acoustic nature of the dilatations he chose to evaluate them by using spectral decomposition techniques. Using model equations for the correlations involved in the source pressure expressions, he replaced spatial with temporal gradients and applied Fourier Transform methods to obtain his solutions. The major difference with the Lilley approach, however, is that Ribner attempted to evaluate the pressure field directly from model correlations rather than using the velocity field as the basic variable in the analysis.

Both the Lilley and the Ribner analyses provide considerable insight into the generation of sound and could serve well as research tools. The only essential difference between the two is the form of the basic input data to be provided. Ribner's analysis uses pressure as the fundamental input while Lilley's uses velocity. At the time of writing of these two works there was little difference between these two choices. Since that time, however, considerable advances have been made in techniques and equipment for measuring velocity. The advances in hot-wire anemometry and the advent of laser-doppler anemometry are of principle note. Such measurement devices themselves, are less likely to disturb the existing flow than are those available for measuring pressure. These developments suggest that use of the general methods employed by Lilley (1958) with input data for the actual velocity field would today provide superior results. These methods, combined with measurements of an actual velocity field and an actual sound field, could be used to examine in detail the validity of the existing theory of noise production and investigate fundamental methods of abatement. It is this approach which has been adopted in the present study.

In order to demonstrate the capability it was necessary to become specific regarding the flow. Ayoub and Karamcheti (1976) obtained excellent results for the surface pressure resulting from the low Reynolds number wake of a cylinder and provided the impetus for the present study of a more complex flow. The flow of particular interest in this investigation is that of a subsonic, circular jet impinging obliquely on a large, rigid plane surface. Such a flow possesses many complexities which a good analytical approach should be able to deal with, yet there are substantial data available on which to base the analysis and to use in its evaluation.

Foss has carried out a comprehensive experimental investigation of subsonic circular jets impinging on a plane surface at various angles and in the absence of an external flow. He has made a particularly comprehensive study of such a jet impinging at 45° to the plate (see Foss, 1974). Both mean velocity data and auto- and cross-correlation fluctuating velocity data were obtained at an array of points in this flow. Such measurements were deemed an adequate experimental basis for representing the velocity field in the analysis. Further analytical and semi-empirical extensions were necessary, however. These were based on the investigation of Donaldson and Snedeker (1971) and of Lilley and Hodgson (1960), already referred to. The former work specifically treated the nature of flow distribution over the plate surface for the obliquely impinging jet and enabled certain necessary mean flow gradients to be analytically evaluated. Lilley and Hodgson investigated boundary conditions at the plate surface and indicated a method of solution for the fluctuating pressure field from the velocity field. A good discussion of the pressure boundary condition and the appropriate Green Function for the governing Poisson equation above an infinite plate are also contained in their report.

Measurements of the noise generated by jet impingement flows are also available. Of particular interest in the present report is the work of Olsen, Miles and Dorsch (1972) which is concerned with noise produced by circular jet impingement on a large flat board. Their measurements do not indicate a simple dipole or quadrupole variation of sound intensity as the jet velocity, V, is changed. Instead of a V^6 or V^8 variation, their results showed V^8 to $V^{9.5}$ variation at low and high velocities, respectively. On the basis of the Lighthill-Curle notions, one would expect the noise to be close to V^6 for this case, since it is expected that the major noise comes from flow interaction with the rigid surface. Any combination of the two would be expected to yield velocity exponent between 6 and 8. The $V^{9.5}$ variation at high velocities is not explained by a simple examination of the Lighthill-Curle equations and indicates either a fundamental difficulty with the theory or a changing mechanism of sound production. In either event it lends impetus to a study such as the present one in which the theoretical calculations can be based on actual flow data and the resultant noise field can be compared to corresponding data,

In the following report we will develop the analytical formulation from basic theoretical considerations and carry through to comparisons of calculated results with data for a specific flow.

3. BASIC THEORETICAL DEVELOPMENT

3.1 General Formulation

In this following section the problem of computing the noise field arising from interaction of a low-speed flow with a stationary, rigid, impermeable body will be formulated. The analysis will at first be formulated in general. Considerations concerning the information required as input are then seen to necessitate a reformulation in terms of measurable basic flow field quantities. This reformulation is then carried out in a straightforward manner to produce the format required for numerical computation.

The flow chart given in figure 3-1 may be of assistance to the reader in obtaining an overview of the analytical procedure and the integration of its several parts.

3.1.1 Noise field analysis for a rigid impermeable surface.- If S is a fixed, rigid, impermeable surface interior to an otherwise unbounded flow region, R, the acoustic density fluctuation, ρ', about the ambient density, ρ_o, of a reference uniform medium at rest is given by (see Curle, 1955):

$$4\pi a_o^2 \rho' (\vec{X},t) = \mathrm{div}_{\vec{X}} \mathrm{div}_{\vec{X}} \int_R \frac{[\tilde{T}]}{r} d\vec{Y} - \mathrm{div}_{\vec{X}} \oiint_S \frac{[\vec{P}]}{r} dS(\vec{Y}) \tag{3.1}$$

where

$\tilde{T} = \rho\vec{U}\vec{U} - \tilde{\sigma} - a_o^2 \rho \tilde{I}$

a_o = speed of sound in reference medium

$\tilde{\sigma} = -p\tilde{I} + \tilde{\tau}$

$\rho = \rho_o + \rho'$

$\vec{P} = \vec{n} \cdot \tilde{\sigma}$

$\vec{n}$ = outward (from fluid) normal to $dS(\vec{Y})$

$r = |\vec{r}| = |\vec{X} - \vec{Y}|$ (see sketch)

$d\vec{Y}$ = volume element at $\vec{Y}$ (see sketch)

$dS(\vec{Y})$ = a surface element at $\vec{Y}$ for $\vec{Y}$ on surface S

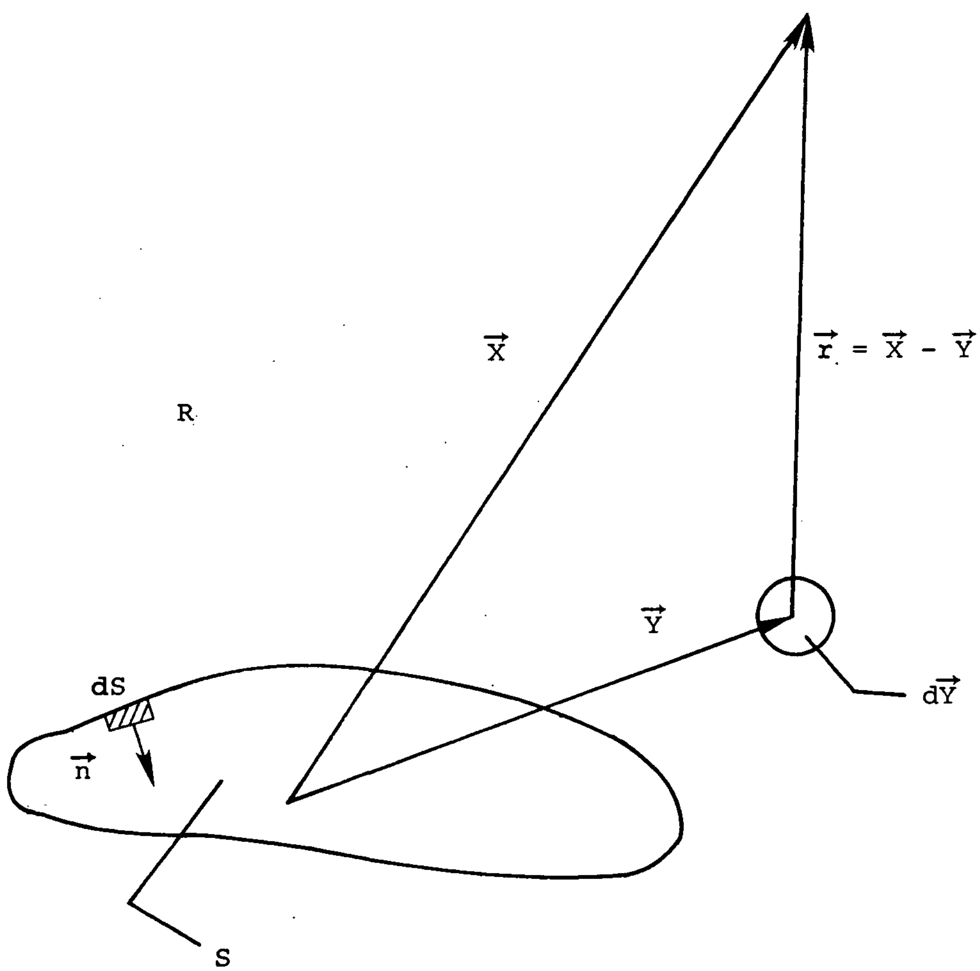
$\tilde{\tau}$ = viscous stress tensor

$\vec{U}$ = fluid velocity

$\mathrm{div}_{\vec{X}}$ = denotes the divergence operation with respect to the spatial coordinate $\vec{X}$

$[\alpha]$ = $\alpha(\vec{Y},\theta)$, a function of $\vec{Y}$ and θ

θ = $t - r/a_o$, the retarded time, t being the time



Here, the acoustic sources consist of a volume distribution of quadrupoles, $\tilde{T}$, and a surface distribution of dipoles, $\vec{P}$.

It $\vec{X}$ lies in the "far radiation field" of these distributed sources (i.e., if $r >> \lambda$, where λ is a typical acoustic wavelength), equation (3.1) may be adequately approximated by

$$4\pi a_o^2 \rho'(\vec{x},t) = \int_R \frac{\overrightarrow{rr}}{a_o^2 r^3} : \frac{\partial^2}{\partial \theta^2} [\tilde{T}] \, d\vec{Y} + \oiint_S \frac{\vec{r}}{a_o r} \frac{\partial}{\partial \theta} [\vec{P}] \, dS(\vec{Y}) \qquad (3.2)$$

Let us assume that we are interested in flows of relatively low Mach number, involving no large temperature gradients and in which direct viscous contributions are small in comparison with those resulting from turbulent fluctuations. Let us further assume that the flow regions of importance are predominantly regions of large velocity gradients in which turbulence-shear interactions may be considered to dominate turbulence-turbulence interactions. For such flows it may be shown that

$$\frac{\partial^2 \tilde{T}}{\partial t^2} \approx \frac{\partial^2}{\partial t^2} (\rho \overrightarrow{UU}) \qquad (3.3)$$

and that

$$\frac{\partial \rho \overrightarrow{UU}}{\partial t} \approx p\tilde{\epsilon} \qquad (3.4)$$

which combine to yield

$$\frac{\partial^2 \tilde{T}}{\partial t^2} \approx \frac{\partial p\tilde{\epsilon}}{\partial t} \qquad (3.5)$$

where

$$\tilde{\epsilon} = \text{grad}\, \vec{U} + (\text{grad}\, \vec{U})^T$$

$$= \text{the rate of strain tensor}$$

and

$(a_{ij})^T \equiv a_{ij}$, the transpose of the matrix element in Cartesian tensor notation

We now separate the flow field properties into mean and fluctuating parts

$$\alpha = \bar{\alpha} + \alpha' \tag{3.6}$$

Where $\bar{\alpha}$ is obtained by a suitably defined averaging operation, which is most generally the statistical, ensemble average. In the present study, however, we consider the flow to be statistically stationary with respect to time and the average can be considered as the time average; that is,

$$\bar{\alpha} \equiv \langle\alpha\rangle = \lim_{T\to\infty} \frac{1}{2T} \int_{-T}^{T} \alpha \, dt \tag{3.7}$$

Using equations (3.6) and (3.7) it follows that:

$$\langle\alpha'\rangle \equiv 0 \tag{3.8}$$

and

$$\frac{\partial\alpha}{\partial t} = \frac{\partial\alpha'}{\partial t} \tag{3.9}$$

The right-hand member of equation (3.5) may be expanded and these equations employed to achieve further simplification. From equations (3.6) and (3.9) it is seen that

$$\frac{\partial p\tilde{\epsilon}}{\partial t} = \frac{\partial(p\tilde{\epsilon})'}{\partial t} = \bar{\tilde{\epsilon}}\,\frac{\partial p'}{\partial t} + \bar{p}\,\frac{\partial\tilde{\epsilon}'}{\partial t} + \frac{\partial}{\partial t}\,(p'\epsilon') \tag{3.10}$$

In regions of large time-mean strain rates, as in the turbulent shear regions with which we will be primarily concerned, equation (3.10) is dominated on the right-hand side by the first term. For such flows, using equations (3.5) and (3.10), we may write

$$\frac{\partial^2 \tilde{T}}{\partial t^2} \approx \frac{\partial}{\partial t} (p\tilde{\epsilon}) \approx \tilde{\bar{\epsilon}} \frac{\partial p'}{\partial t} \qquad (3.11)$$

That is, the volume distribution of quadrupole sources is proportional to the distribution of the product of the mean-strain rate and the fluctuating-pressure time derivative.

We now turn our attention to the surface integral. On a rigid stationary surface (i.e., $\vec{n}' \equiv 0$), it is seen that:

$$\frac{\partial \vec{P}}{\partial t} \equiv \frac{\partial \vec{P}'}{\partial t} = \frac{\partial \vec{n} \cdot \tilde{\sigma}'}{\partial t} = - \vec{n} \frac{\partial p'}{\partial t} + \vec{n} \cdot \frac{\partial \tilde{\tau}'}{\partial t}$$

We may make the further approximation at the rigid surface that the fluctuating shear stress $\vec{n} \cdot \vec{\tau}' \ll \vec{n}p'$. Since the fluctuating shear, $\tilde{\tau}'$, is proportional to the gradient of the fluctuating velocities and these velocities are negligible in the region of the laminar sublayer adjacent to such surfaces, there can be no large gradients of fluctuating velocity at the rigid surface which is at the bottom of this layer. Therefore,

$$\frac{\partial P}{\partial t} \approx - \vec{n} \frac{\partial p'}{\partial t} \quad \text{on } S \qquad (3.12)$$

Equation (3.2) may now be rewritten to incorporate the preceding analytical development leading to equations (3.11) and (3.12).

$$4\pi a_o^2 \rho' (\vec{X},t) \approx \int_R \frac{\vec{r}\vec{r}}{a^2 r^3} : \tilde{\epsilon} \frac{\partial [p']}{\partial \theta} d\vec{Y} - \oiint_S \frac{\vec{r} \cdot \vec{n}}{a_o r^2} \frac{\partial [p']}{\partial \theta} dS(\vec{Y}) \qquad (3.13)$$

where

$$[p'] = p'(\vec{Y}, \theta)$$

This density fluctuation, due to radiation from the acoustical source region, and the acoustical intensity, I, at the observation point are related.

$$I(\vec{X}) = \frac{a_o^{\,3}}{\rho_o} < \rho'^2(\vec{X},t)> \qquad (3.14)$$

The brackets $<>$, which we have defined in equation (3.7), represent a statistical averaging operation which we may now generalize for two quantities, α and β, and call the covariance. For statistically stationary processes with which we are concerned here, the covariance is independent of time, t, but dependent on the separations in time, τ, and space, $\vec{\xi}$, of the measurements, and may be defined as follows:

$$C_{\alpha\beta}(\vec{X},\vec{\xi},\tau) = <\alpha(\vec{X},t)\beta(\vec{X} + \vec{\xi},t + \tau)> \qquad (3.15)$$

If $\alpha = \beta$, then $C_{\alpha\alpha} = C_\alpha$ and is called the auto-correlation. In equation (3.14), $\alpha = \beta = \rho'$ and $\tau = 0 = \vec{\xi}$, yielding the mean square of ρ' at $\vec{X}$.

From equations (3.13) and (3.14) it may be shown that*

$$I(\vec{X}) = \frac{1}{16\pi^2\rho_o a_o^{\,5}}\left[\iint\limits_{RR} f(\vec{Y})f(\vec{Z})\Phi(Y,Z)d\vec{Y}\,d\vec{Z}\right.$$

$$- 2a_o \int\limits_R \oiint\limits_S g(\vec{Y})f(\vec{Z})\Phi(\vec{Y},\vec{Z})dS(\vec{Y})d\vec{Z}$$

$$\left. + a_o^2 \oiint\limits_S \oiint\limits_S g(\vec{Y})g(\vec{Z})\Phi(\vec{Y},\vec{Z})dS(\vec{Y})dS(\vec{Z})\right] \qquad (3.16)$$

where

$$\Phi(\vec{Y},\vec{Z}) \equiv C_{\dot{p}}(\vec{Y},\vec{Z}) \equiv < \frac{\partial p'(\vec{Y},\theta)}{\partial t}\,\frac{\partial p'(\vec{Z},\theta')}{\partial t} > \qquad (3.17)$$

*Note that the X dependence of I is contained in r, θ, and θ' and has been suppressed in the notation for f, g, and Φ.

$$f(\zeta) = \frac{\vec{r}(\vec{\zeta})\vec{r}(\vec{\zeta})}{r^3(\zeta)} : \bar{\bar{\epsilon}}(\zeta) \tag{3.18}$$

$$g(\vec{\zeta}) = \frac{\vec{r}(\vec{\zeta}) \cdot \vec{n}(\vec{\zeta})}{r^2(\vec{\zeta})} \tag{3.19}$$

with

$$\vec{r}(\vec{\zeta}) \equiv \vec{X} - \vec{\zeta} \quad \text{and} \quad \theta' \equiv t - \frac{|\vec{X} - \vec{Z}|}{a_o} \tag{3.20}$$

It is seen that the generation of sound, under the present approximation, is the result of pressure fluctuations throughout the fluid region and on its boundaries. The noise contribution from the fluid region is assumed to be dominated by those regions of high shear (large $\bar{\bar{\epsilon}}$). Thus, the region of integration, R, may be replaced by a subregion, R', in which $\tilde{\tilde{\epsilon}}$ has elements of significant magnitude. This subregion will include, but not be limited to, fluid near the boundary, S. The assumptions invoked to achieve this simplification appear plausible for many flows of engineering interest. Rigorous proofs of the assumptions are not readily available, however, and for the present we must rely on engineering judgment as to their accuracy and look forward to comparison with experimental data for their a posteriori verification.

Thus, the acoustic intensity in regions of high mean shear has been shown to be expressible as an integral function of the covariance of $\partial p'/\partial t$. The remaining fundamental task is now reduced to representing this covariance Φ, in these regions (i.e., in R').

3.1.2 Source representation.- Previously, we have invoked assumptions restricting the analysis to flow fields of low Mach number and small thermal gradients. Under such constraints the fluid will behave largely as though it were incompressible. Therefore, we will continue with these assumptions and attempt to determine the noise producing pressure fluctuations by treating the fluid in those regions as though it were incompressible. The governing equations are:

$$\operatorname{div} \vec{U} = 0 \tag{3.21}$$

$$\rho_o \left(\frac{\partial \vec{U}}{\partial t} + \operatorname{div} \vec{U}\vec{U}\right) = - \operatorname{grad} p + \mu \operatorname{div} \operatorname{grad} \vec{U} \tag{3.22}$$

Taking the divergence of equation (3.22) and using equation (3.21) yields

$$\nabla^2 p \equiv \operatorname{div} \operatorname{grad} p = - \rho_o \operatorname{div} \operatorname{div} \vec{U}\vec{U} \tag{3.23}$$

For notational simplicity we now make the replacements

$$\left.\begin{aligned} \vec{V} &= \langle\vec{U}\rangle = \bar{\vec{U}} \\ \vec{v} &= \vec{u}' \end{aligned}\right\} \tag{3.24}$$

The diadic product $\vec{U}\vec{U}$ expressed in terms of these replacements is

$$\vec{U}\vec{U} = \vec{V}\vec{V} + \vec{V}\vec{v} + \vec{v}\vec{V} + \vec{v}\vec{v} \tag{3.25}$$

The fluctuating pressure, p', may now be expressed using (3.25) and (3.23) and subtracting from it the time average of the resultant equation.

$$\nabla^2 p' = -\rho_o \operatorname{div} \operatorname{div}(2\vec{V}\vec{v} + \vec{v}\vec{v} - \langle\vec{v}\vec{v}\rangle)$$

Here, the first term on the right-hand side represents the contribution due to amplification of the fluctuations by shear of the mean flow. The remaining two terms represent contribution due to turbulence-turbulence interaction. Continuing, as in the earlier parts of the analysis, to emphasize regions of high mean shear, we neglect the latter contributions and arrive at the approximate expression which is accurate in those regions.

$$\nabla^2 p' \approx - 2\rho_o \mathrm{div}\ \mathrm{div}(\vec{V}\vec{v}) \qquad (3.26)$$

If we differentiate equation (3.26) with respect to time and use equations (3.4) and (3.11), we obtain the approximate relation

$$\nabla^2 \frac{\partial p'}{\partial t} \approx \mathrm{div}\ \mathrm{div}(\bar{\bar{\epsilon}} p') \qquad (3.27)$$

With equations (3.26) and (3.27) we now have $(\partial p'/\partial t)$ solely in terms of the velocity field. The solution of these equations requires two nested solutions of the Poisson Equation to be obtained. If we can determine a Green Function, G, for the present boundary conditions, the solution is a straightforward matter in principle. Thus, if

$$\nabla^2 f(\vec{X}) = - q(\vec{X})$$

and the Green Function for the associated boundary conditions is $G(\vec{X},\vec{Y})$, with $(\mathrm{grad}\ G)\cdot n = 0$ on S and $G \to 0$ as $\vec{X} \to \infty$. Then

$$f(\vec{X}) = \frac{1}{4\pi} \int_R G(\vec{X},\vec{Y}) q(\vec{Y}) d\vec{Y} + \oint\!\!\oint_S G(\vec{X},\vec{Y}) \mathrm{grad}\ f(\vec{Y}) \cdot \vec{n}\ dS(\vec{Y})$$

The boundary conditions are most familiarly stated in terms of the fluid velocity. Far away from the source region $(\vec{X} \to \infty)$ it is usually assumed that $\vec{U}$ and its gradients vanish. The condition at a rigid impermeable surface is $\vec{U} = 0$ on the surface, S. By use of the equations of motion, equation (3.22), the pressure boundary condition may be derived. The fluctuating pressure, p', and its gradients are found to vanish as $\vec{X} \to \infty$. At the surface, S, it is found from (3.22) and the conditions for $\vec{U}$ that p' satisfies the relation

$$\vec{n}\cdot \mathrm{grad}\ p' = \vec{n}\cdot \mathrm{div}\ \tilde{\tau}' = \mu \vec{n}\cdot \nabla^2 \vec{v} \qquad (3.28)$$

As previously stated, fluctuating velocities, $\vec{v}$, are small over a finite region (i.e., the laminar sublayer) near S. Hence, it may be surmised that gradients of $\vec{v}$ at the surface are also small. In addition, for the high Reynolds numbers normally associated with turbulent flows, the fluid viscosity, μ, may also be considered a small quantity. Therefore, a good approximation to the right-hand side of equation (3.28) is that it vanishes on the surface and the boundary condition for p' is

$$\vec{n}\cdot\text{grad } p' \approx 0 \quad \text{on } S \tag{3.29}$$

If the flow is statistically stationary with respect to time, as has already been assumed, equation (3.7), the time derivative of equation (3.22) may be used to obtain the boundary condition for $(\partial p'/\partial t)$. The result is

$$\vec{n}\cdot\text{grad } \frac{\partial p'}{\partial t} \approx 0 \quad \text{on } S \tag{3.30}$$

and, of course its vanishing as $\vec{X} \to \infty$.

Thus, the boundary conditions for both p' and $(\partial p'/\partial t)$ are the same and both are governed by a Poisson equation (although the inhomogeneous source terms are of course different for the two).

A Green Function, G, which satisfies the conditions

$$\left.\begin{aligned} &\nabla_X^2 G(\vec{X},\vec{Y}) = \delta(\vec{Y} - \vec{Y}_o) \\ &G \to 0 \quad \text{as} \quad \vec{X} \to \infty \\ &\vec{n}\cdot\text{grad}_{\vec{X}} G = 0 \quad \text{on } S \end{aligned}\right\} \tag{3.31}$$

will yield a general solution to the equation

$$\left.\begin{aligned} &\nabla^2 F = -Q \\ &F(\vec{X}) \to \infty \quad \text{as} \quad \vec{X} \to \infty \end{aligned}\right\} \tag{3.32}$$

where

Q	is a spatial distribution of "sources"
$\vec{X}_o$	is an arbitrary point
δ	is the generalized delta function which vanishes for nonzero argument

The general solution for F in terms of G is

$$F(\vec{X}) = \frac{1}{4\pi} \int_R G(\vec{X},\vec{Y})\, Q(\vec{Y})\, d\vec{Y} + \oiint_S G(\vec{X},\vec{Y}) \,\text{grad}\; F(\vec{Y}) \cdot \vec{n}\; dS(\vec{Y}) \qquad (3.33)$$

where

R	is the domain of definition of F
S	represents all surfaces bounding R

If $n \cdot \text{grad}\; F$ should vanish on S, the surface integral in equation (3.33) also vanishes.

Both p' and $(\partial p'/\partial t)$ satisfy equations of the form (3.32) and therefore may be solved using the Green Function of (3.31) in equation (3.33). Since both p' and $(\partial p'/\partial t)$ have small normal gradients on the bounding surface, S (see equations (3.29) and (3.30)) we expect to be able to neglect the surface integral of equation (3.33). Hence, we may now write

$$p'(\vec{Y}',t) = \frac{\rho o}{2\pi} \int_R G(\vec{Y}',\vec{Y}'')\, \text{div}_{\vec{Y}''} \text{div}_{\vec{Y}''} [\vec{V}(\vec{Y}'')\vec{v}(\vec{Y}'',t)]\, d\vec{Y}'' \qquad (3.34)$$

$$\frac{\partial p'}{\partial t}(\vec{Y},t) = \frac{1}{4\pi} \int_R G(\vec{Y},\vec{Y}')\, \text{div}_{\vec{Y}'} \text{div}_{\vec{Y}'} [\bar{\bar{\epsilon}}(\vec{Y}')\, p'(\vec{Y},t)]\, d\vec{Y} \qquad (3.35)$$

With the understanding that p' from equation (3.34) can be used in (3.35) and (3.35) can be used in (3.16) for the sound intensity, I, we have now completed the formal representation of the sound field in terms of "knowable" properties of the sound production region, that is, the velocity field.

3.2 Reformulation For Computational Convenience

It is appropriate to discuss briefly at this point several practical matters regarding the reduction of the analysis to computational form. These have to do with the general nature of the numerical solution methods as well as the input information to be used.

It is for the specific purpose of having a theoretical noise calculation method which would be based on easily measurable physical quantities that the present analysis was developed. It was ascertained that the quantities which can be most easily measured with minimum interference by the measuring instruments are velocities. Hence, we will attempt to express the analysis, as far as possible, in terms of velocities.

One might be tempted to solve equation (3.34) for p' and then differentiate the result with respect to time instead of solving the additional Poisson Equation (equation (3.35)) to obtain $\partial p'/\partial t$. This would be the most straightforward approach if we expected to have p' in an analytical form. Unfortunately, that is not likely to be the case. The available information for input to any calculations is likely to be in numerical form.

As is well known, the differentiation operation(in space or time) is highly inaccurate when performed with numerical data. Integration, on the other hand, is quite compatible with numerical input data. Thus, we have chosen to solve equation (3.27) using the integral equations (3.35) and (3.34).

With regard to the accurate handling of numerical data, however, equation (3.34) involves gradients of the velocity field. Evaluation of these gradients, particularly those involving the fluctuating velocities, is again likely to require numerical differentiation, which is undesirable for the reason stated above. Therefore, as far as possible we will also attempt to transfer by mathematical reformulation, the differentiation from the numerically represented velocity field to the analytically expressed Green Function where it can be performed more accurately. The reformulation is accomplished by successive applications of the Divergence Theorem to the integrals involved. The operations involved are outlined in Appendix A.

The fluctuating pressure and its time derivative are shown in Appendix A to be expressible in the form of equation (A.6).

$$p'(\vec{Y}',t) = \frac{\rho_o}{2}\left\{\int_R \vec{V}(\vec{Y}'')\vec{v}(\vec{Y}'',t):\mathrm{grad}_{\vec{Y}''}\mathrm{grad}_{\vec{Y}''}G(\vec{Y}',\vec{Y}'')\,d\vec{Y}'' - \int_{S_o} \mathrm{grad}_{\vec{Y}''}G\cdot\vec{V}\vec{v}\cdot\vec{n}\;dS(\vec{Y}'')\right\} \tag{3.36}$$

and equations (A.8) and (A.9) may be combined to yield

$$\frac{\partial p'}{\partial t}(\vec{Y},t) = \frac{1}{4\pi}\left\{\int_R p'\tilde{\tilde{\epsilon}}:\mathrm{grad}_{\vec{Y}'}\mathrm{grad}_{\vec{Y}'}G(\vec{Y},\vec{Y}')\,d\vec{Y}' - \int_{S_o} \mathrm{grad}_{\vec{Y}'}G\cdot p'\tilde{\tilde{\epsilon}}\cdot n\;dS(\vec{Y}') + \int_S \left[p'(G\,\mathrm{div}_{\vec{Y}'}\tilde{\tilde{\epsilon}} - \tilde{\tilde{\epsilon}}\cdot\mathrm{grad}_{\vec{Y}'}G) + G\tilde{\tilde{\epsilon}}\cdot\mathrm{grad}_{\vec{Y}'}p'\right]\cdot\vec{n}\;dS(\vec{Y}')\right\} \tag{3.37}$$

where R is the entire fluid region excluding a region surrounding the singularity in G at $\vec{Y}''=\vec{Y}'$, S_o is a closed surface surrounding that singularity and S is the bounding surface of the fluid region.

It is intended here to use equation (3.36) to determine p' for inclusion in the solution of equation (3.37). The grad p' can be obtained from equation (3.36) as shown by equation (A.10).

$$\mathrm{grad}_{\vec{Y}'}p'(\vec{Y}',t) = \frac{\rho_o}{2\pi}\left[\int_R \vec{V}(\vec{Y}'')\vec{v}(\vec{Y}'',t):\mathrm{grad}_{\vec{Y}''}\mathrm{grad}_{\vec{Y}''}(\mathrm{grad}_{\vec{Y}'}G(\vec{Y}',\vec{Y}')\,d\vec{Y}'' - \int_{S_o} \mathrm{grad}_{\vec{Y}''}\mathrm{grad}_{\vec{Y}'}G(\vec{Y}',\vec{Y}'')\cdot\vec{V}\vec{v}\cdot\vec{n}\;dS(\vec{Y}'')\right] \tag{3.38}$$

The present equations (equations (3.36), (3.37), and (3.38) achieved the principle requirements of the reformulation in that the pressure field has been expressed entirely in terms of the velocity field and all differentiation operations have been removed from the fluctuating velocity field. Gradients of the mean velocity field remain in terms of the time mean rate of strain tensor, $\bar{\bar{\epsilon}}$, and its divergence, however, and further reduction along the present lines does not appear possible. The appearance of $\bar{\bar{\epsilon}}$ in the subsequent calculation of ρ' would lessen the advantage of the reduction in any event. Thus, we can only attempt to improve the accuracy of these differentiations by using model analytical expressions for the mean velocity.

These relations constitute the fundamental analysis of the problem of representing the source terms. One additional step is now necessary to arrive at the noise field as expressed by the noise intensity. That is, to represent the appropriate covariances by statistical data on the flow field.

Starting from the equations developed for the fluctuating quantities the task is a straightforward, if slightly tedious one, therefore, the development is shown in Appendix B. In essence, it is shown that the $\partial p'/\partial t$ covariance, Φ, can be expressed in terms of the pressure covariance and that of its gradient, using equation (3.37). These, in turn may be expressed in terms of integral functions of the covariances of the fluctuating velocity components through equations (3.36) and (3.38). The resultant expressions are equations (B.8) and (B.9) for the p' and grad p'; covariances, respectively, equation (B.10) for the p', grad p' cross correlation, and equation (B.11) for the $\partial p'/\partial t$ covariance, Φ.

The remaining task now is to obtain the necessary input information in the form of the velocity covariances, the mean rate of strain and the Green function appropriate to the flow and geometry under study. In the proceeding sections we will specialize to the flow field of a jet impinging on a plane, rigid impermeable surface. This will enable us to describe the development of the calculational aspects of the analysis in the framework of a comprehensive specific problem.

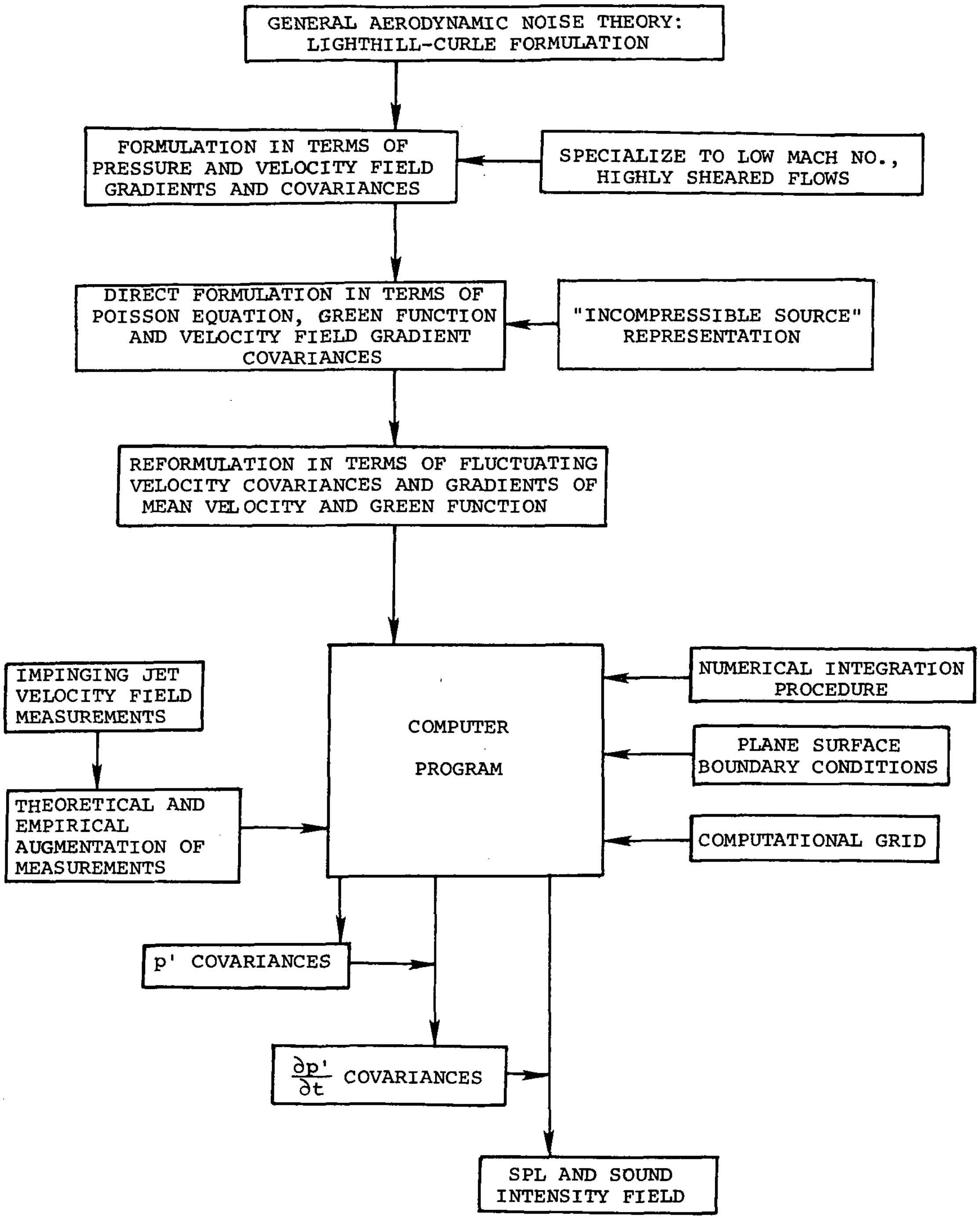


Figure 3-1.- Flow chart showing development of computational method.

4. APPLICATION OF ANALYSIS TO FLOW OVER PLANE SURFACES

The analysis developed in the foregoing section has yielded an expression of the noise field in terms of measurable, basic flow quantities which may be considered to be responsible for its generation. As long as the assumptions imposed remain valid it is quite a general analysis which is envisioned as being applicable for estimation of the noise generated by a large number of flow fields of engineering interest. However, there remain many items to be determined in order to carry out the calculations for a particular flow. They range from the more general items of program organization and numerical techniques to the more specific items of representing the required elements of the flow field to be investigated. In the following sections we will describe the features of a computational scheme to calculate noise generated by a jet impinging at an angle to an infinite plane surface. A description of the general program organization, the computational approach and certain general simplifications may be considered as a general format for calculations and are discussed first. Then a calculational example is given in which the nature of the input data are described and the results are compared to experimental measurements.

4.1 General Nature of Problem

The analysis requires that certain volume and surface integrals involving flow quantities and the particular Green Function associated with the boundary conditions of the problem be carried out. These integrals are almost never of a form which can be carried out analytically and must be treated numerically.

The shear number of arithmetic operations necessary to carry out numerical integrations makes it highly attractive for both economy and accuracy to introduce at an early stage any analytical simplifications possible. The most general of these which is available is the condition at the rigid, impermeable bounding surface.

The following two sections contain descriptions of the computational procedures chosen for the analysis and of the simplification afforded by imposing the wall boundary conditions. These may be considered as a description of the general computational approach for problems of this type.

4.1.1 Computational procedures.- Carrying out the complicated integrals (both surface and volume) in evaluating the noise field it is necessary to resort to numerical methods. These integrations themselves present some interesting numerical problems. For example, the specified integration domain is infinite and the integrand is singular at certain points in the domain. The means used to alleviate these numerical difficulties are discussed in this section in the process of describing the general approach to the computational procedure.

The integrations to be performed generally may have infinite limits of integration, however, the integrands involved will be found to be of diminished magnitude in all but a finite region of space. The shape of this significant region is largely dependent on the flow geometry involved in the particular problem. It was decided to divide the physical space over which the integrations are to be performed into a Cartesian grid of elements. Subintegrals can be performed over the elements and the results summed over all elements producing a significant contribution. The details are given in Appendix C, Integration Method. In this manner, the domain of integration can be satisfactorily truncated. Considerable saving of computational time can be achieved by astute selection of the truncated domain. It is necessary to point out, however, that this truncated domain is not necessarily the same for all integrals in a given problem.

One may be relatively assured that all regions of importance have been included if the truncated domain includes the entire region of "active" flow. However, the burden of carrying out all computations over this region is usually found to be excessive. Other features of the subintegrals and specifically of their integrands can be exploited to reduce the computations wherever possible.

The integrands of the subintegrals are the product of rapidly and slowly varying factors. The slowly varying factor may be assigned an average value for a given Cartesian element with an accuracy dependent primarily on the size of the element. The rapidly varying factor has been associated with the Green Function and is definitely the dominant feature of the integrand in the neighborhood of its singular point. The procedure used was to evaluate the elemental subintegrals of the Green Function (or its derivatives), multiplying them by the chosen mean values of the "slow" portion of the integrand and sum over the elements; that is,

$$\int_R f \cdot g(G)\, dR = \sum_\alpha f_\alpha \int_{R_\alpha} g(G)\, dR \tag{4.1}$$

where

- f is the "slowly" varying part of the integrand
- g is the function of G or its derivative
- G is the Green Function
- f_α is the value of f chosen to be associated with the elemental region R_α; that is, an average value for the elemental region

This procedure presumes that $g(G)$ is the "fast" integrand factor throughout the region when this may be the case only in the neighborhood of the singularity. As such, it will tie the accuracy of the integrand outside that neighborhood to the size of the subregion elements and the gradients of f. This is not necessarily a severe limitation. The major advantage provided by this method, and the reason it was chosen, is the removal of the Green Function, G, singularity from the numerical procedures. It accomplishes this very nicely by permitting a direct analytical integration of the g(G) (which is generally known in analytical form). Whereas the G, and hence, g(G), may be singular, its integral over an associated element is not. Thus, the necessity of treating a singular function in the numerical procedures is completely avoided and, except for summing the subintegrals, numerical integration is also avoided.

Even with the considerable simplification afforded by this integration procedure, if all integrations indicated by the general formulation had to be evaluated individually,it would represent an enormous task, even for a high speed electronic computer. We have already suggested that the infinite region indicated by the formal analysis can be truncated with insignificant accuracy loss to include only those regions of active flow. There remains two additional general considerations by which the task can be further reduced. There are discussed in the next section.

4.1.2 Correlation regions.- It is envisioned that a major application of the analysis will be to flows involving turbulence as a primary contributor to noise generation. Methods are available to reduce the numerical task at hand for other types of flow (for example, the production of discrete sound by periodic motion) but will not be discussed here. Knowledge that correlation diminishes rapidly between events associated with turbulence as they become remote in either space or time will be explored in this regard for turbulent flows.

The covariance, $C_{\alpha\beta}$, between two statistically stationary quantities, α and β was defined in equation (3.15).

$$C_{\alpha\beta}(\vec{X},\vec{\xi},\tau) \equiv < \alpha(\vec{X},t)\beta(\vec{X}+\vec{\xi},t+\tau) > \tag{4.2}$$

As indicated, $C_{\alpha\beta}$ may be dependent on position $\vec{X}$ and usually is highly dependent on separation in time, τ, and space, $\vec{\xi}$. The general nature of $C_{\alpha\beta}$ is, in fact, such that it can be well approximated by a function of the form

$$C_{\alpha\beta}(\vec{X},\vec{\xi},\tau) \approx C_{\alpha\beta_{max}}(\vec{X})\psi(\vec{\xi},\tau) \tag{4.3}$$

and

$$C_{\alpha\beta_{max}}(\vec{X}) = C_{\alpha\alpha}^{1/2}(\vec{X},\vec{o},o)C_{\beta\beta}^{1/2}(\vec{X},\vec{o},o) \tag{4.4}$$

where $\psi(\vec{\xi},\tau)$ is the so-called phase function $0 \leq |\psi| \leq 1$. The nature of $C_{\alpha\beta_{max}}(\vec{X})$ is dependent on the local turbulence intensity at $\vec{X}$, while ψ has the nature of an exponentially damped, traveling wave (see fig.4.1). One might represent its major features by a function of the form

$$\psi(\xi,\tau) \approx e^{-|\vec{a}\cdot\vec{\xi}+b\tau|}\cos\frac{2\pi|\vec{\xi}-\vec{V}_c\tau|}{\lambda} \tag{4.5}$$

where

$\vec{a}$ is the spatial damping rate

b is the temporal damping rate

$\vec{V}_c$ is the apparent phase velocity of the traveling wave and related to the rate at which disturbances are convected in the flow

λ is the wave length and related to that of the basic disturbances

Briefly, we observe that a highly coherent phenomenon will exhibit a nearly sinusoidal covariance and the damping factors ($\vec{a}$ and b) will be small. In highly random flows, on the other hand, ψ will be dominated by the exponential damping feature. The latter is expected to be the situation in the turbulent flows to which the present analysis is addressed. We may use this feature to advantage to reduce the compu computational work required to carry out the analysis.

The noise intensity was shown in the earlier analysis to depend on two-point, two-time covariances of fluctuating quantities in the turbulent flow field. Such covariances are factors in the integrands of various multiple volume and surface integrations over the fluid region and wetted surfaces (see equations (3.36) and (3.37), for example). It was argued earlier that the integrands could only be significant in regions of active flow (i.e., where $C_{\alpha\beta_{max}}$ and the mean flow gradients are significant) so that the integration regions could be made to coincide with these and little accuracy would be sacrificed. Based on the nature of covariances in turbulent flows we have just discussed, a further reduction is possible using reasoning of a similar nature.

Covariances (ψ's in particular) are indicated above to achieve their maximum absolute value when the points and times at which the quantities are compared are coincidental. For turbulent flows the maximum possible covariance vanishes rapidly as separation increases. Hence, the covariances and therefore the integrands, can produce a significant contribution to the integration only when the two points are within reasonable proximity of one another. Thus, we may write

$$\int_R \int_R < \alpha(\vec{Y})\beta(\vec{Z}) > d\vec{Z}\ d\vec{Y} \approx \int_R \int_{N(Y)} < \alpha(\vec{Y})\beta(\vec{Y} + \vec{\xi}) > d\vec{\xi}\ d\vec{Y} \tag{4.6}$$

where

$N(\vec{Y})$ is the so-called correlation region about the point $\vec{Y}$ and represents all points at which $C_{\alpha\beta}(\vec{Y},\vec{Z})$ specifically ψ, is of significant value to make a contribution (not necessarily a spherical neighborhood of $\vec{Y}$)

$\vec{\xi}$ is the spatial separation of $\vec{Y}$ and $\vec{Z}$, $\vec{\xi} = \vec{Z} - \vec{Y}$

It is seen that the multiple integrations are now reduced from two integrations over the entire region with independent bounds, to a primary integration over the entire region with secondary integrations performed over only the correlation region. Specific boundaries need not be specified for $N(\vec{Y})$ if we can define ψ such that it may be rapidly computed. We merely set an arbitrarily small limiting value for ψ which may be checked before the elemental volume integral is calculated. If ψ for an element is less than the limit, the element is ignored. Other time-saving devices also become evident for particular problems and may be incorporated.

The above treatment implied that the integration was a volume-volume integration; however, the approach is straightforwardly applied to surface-surface and surface-volume integrals as well.

4.2 Boundary Conditions For Plane Surfaces

Although considerable reduction has already been made in the information required to carry out the noise calculations, we are still faced with an enormous computational problem. Further simplifications must be obtained and are available through application of boundary conditions. Let us begin by specifying the geometry as indicated in figure 4-2.

The surface to be considered lies in the $x_1 - x_2$ plane and its normal, $\vec{n}$, is $\vec{e}_3$ in the x_3 direction. The jet axis makes an angle, α, with the $-x_1$ axis and intersects the surface at the origin.

Looking at the surface integral, it appears that some simplifications are now available for this specific geometry. We will use the following general properties in these initial simplifications.

On the plane surface, S

$$\frac{\partial p'}{\partial x_3} = \frac{\partial p'}{\partial n} = \vec{n}\cdot\text{grad } p' \approx 0 \tag{4.7}$$

(recalling equations (3.28) and (3.29)). By definition

$$\frac{\partial G}{\partial x_3} = \frac{\partial G}{\partial n} = 0 \tag{4.8}$$

and from the boundary conditions for a rigid, impermeable surface

$$\vec{V} = 0 \tag{4.9}$$

From the latter we may also surmise for a surface lying in the $x_1 - x_2$ plane.

$$\frac{\partial^k \vec{V}}{\partial x_i^k} = 0 \qquad (i = 1 \text{ and } 2;\ k \geq 0) \tag{4.10}$$

Also, we observe that the rate of strain tensor, $\tilde{\epsilon}$, is symmetric throughout the fluid region; that is,

$$\epsilon_{ij} = \epsilon_{ji} \tag{4.11}$$

Aided by these boundary conditions and observations, we now proceed to reduce some of the expressions appearing in the analysis to more specific forms.

In the surface integrals of the analysis, we have factors like:

$$\vec{n}\cdot\text{div}\ \tilde{\tilde{\epsilon}}, \qquad \vec{n}\cdot\tilde{\tilde{\epsilon}}\cdot\text{grad}\ p', \qquad \vec{n}\cdot\tilde{\tilde{\epsilon}}\cdot\text{grad}\ G$$

On the plane surface:

$$n\cdot\text{div}\ \tilde{\tilde{\epsilon}} = \frac{\partial \epsilon_{i3}}{\partial x_i}$$

$$= \frac{\partial}{\partial x_i}\ \frac{\partial v_3}{\partial x_i} + \frac{\partial v_i}{\partial x_3} \tag{4.12}$$

Since all velocity components vanish on the surface, their gradients <u>in the surface</u> to all orders must also vanish. Hence, from equation (4.10)

$$\frac{\partial v_3}{\partial x_i} = 0, \qquad i = 1,2 \tag{4.13}$$

and in view of the incompressibility assumption in the source region

$$\frac{\partial v_i}{\partial x_i} = 0 \tag{4.14}$$

Therefore, there results

$$\frac{\partial}{\partial x_i}\frac{\partial v_i}{\partial x_3} = \frac{\partial}{\partial x_3}\frac{\partial v_i}{\partial x_i} \equiv 0 \tag{4.15}$$

Equations (4.13) and (4.15) may be used to reduce equation (4.12) to the expression

$$n\cdot \operatorname{div} \tilde{\tilde{\epsilon}} = \frac{\partial^2 v_3}{\partial x_3^2} \qquad \text{on} \quad S \tag{4.16}$$

The second factor from above may be similarly reduced

$$n\cdot\epsilon\cdot \operatorname{grad} p' = \epsilon_{3i}\frac{\partial p'}{\partial x_i}$$

$$= \frac{\partial v_i}{\partial x_3} + \frac{\partial v_3}{\partial x_i}\frac{\partial p'}{\partial x_i}, \qquad i = 1,2 \tag{4.17}$$

From equation (4.10) and (4.14)

$$\frac{\partial v_3}{\partial x_3} = -\frac{\partial v_1}{\partial x_1} + \frac{\partial v_2}{\partial x_2} = 0 \qquad \text{on} \quad S$$

This, in addition to equation (4.13), yields

$$\frac{\partial v_3}{\partial x_i} = 0, \qquad i = 1,2,3 \quad \text{on} \quad S \tag{4.18}$$

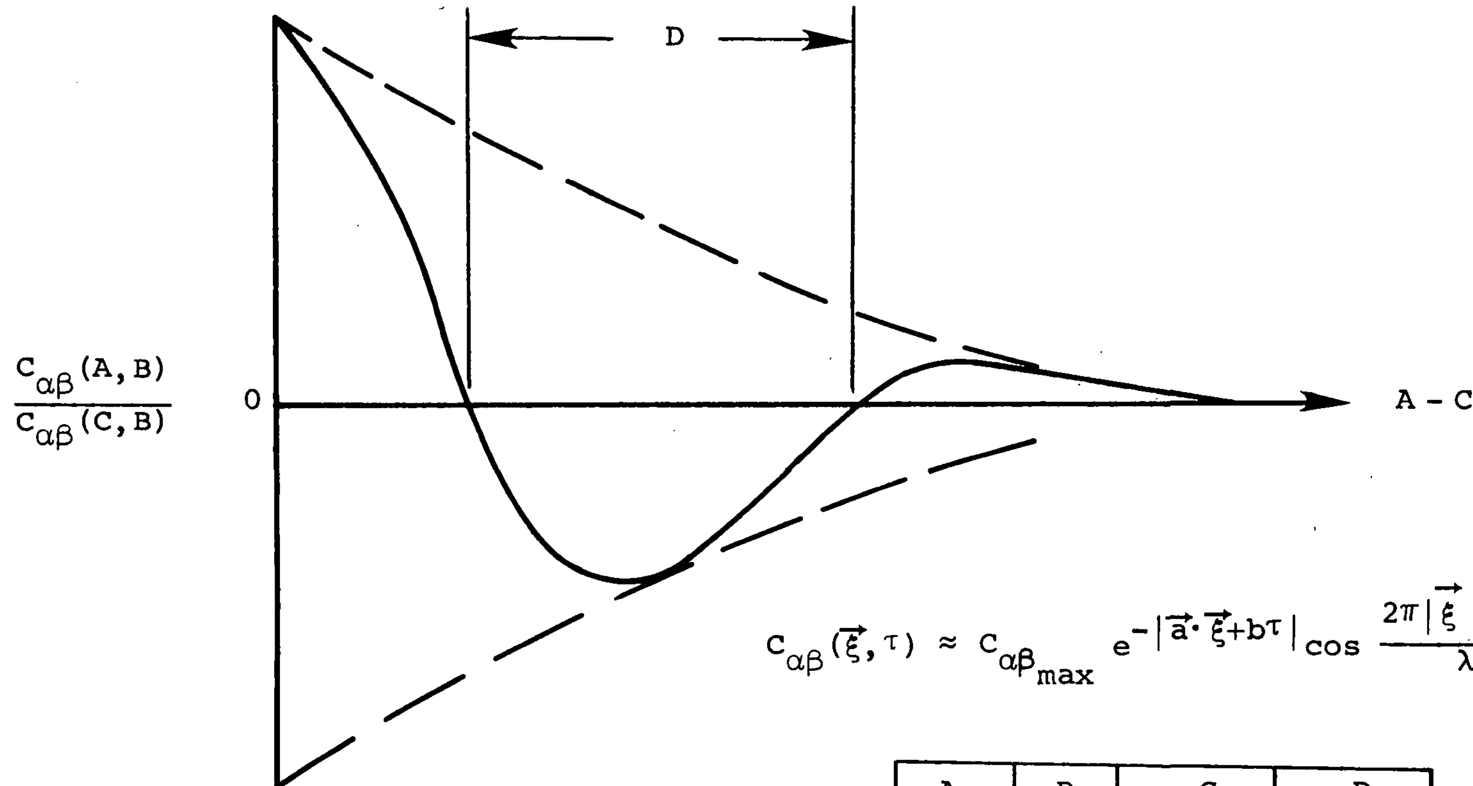
Therefore, equation (4.18) reduces to

$$n \cdot \bar{\bar{\varepsilon}} \cdot \text{grad } p' = \frac{\partial v_i}{\partial x_3} \frac{\partial p'}{\partial x_i}, \qquad i = 1,2 \tag{4.19}$$

Similarly,

$$n \cdot \bar{\bar{\varepsilon}} \cdot \text{grad } G = \frac{\partial v_i}{\partial x_3} \frac{\partial G}{\partial x_i}, \qquad i = 1,2 \tag{4.20}$$

Considerations such as the above reduce the integration task as well as clarify the nature of contributing factors to the noise field. We may now proceed to the calculational example for a demonstration of the nature of results obtained from the analysis.



$$C_{\alpha\beta}(\vec{\xi},\tau) \approx C_{\alpha\beta_{max}} \, e^{-|\vec{a}\cdot\vec{\xi}+b\tau|} \cos \frac{2\pi|\vec{\xi} - \vec{V}_c\tau|}{\lambda_o}$$

A	B	C	D
ξ	τ	$\vec{V}_c\tau$	$\frac{\lambda_o}{2}$
τ	$\vec{\xi}$	$\left\lvert\frac{\vec{\xi}}{\vec{V}_c}\right\rvert$	$\frac{\lambda_o}{2\bar{V}_c}$

Figure 4-1.- A characteristic covariance function.

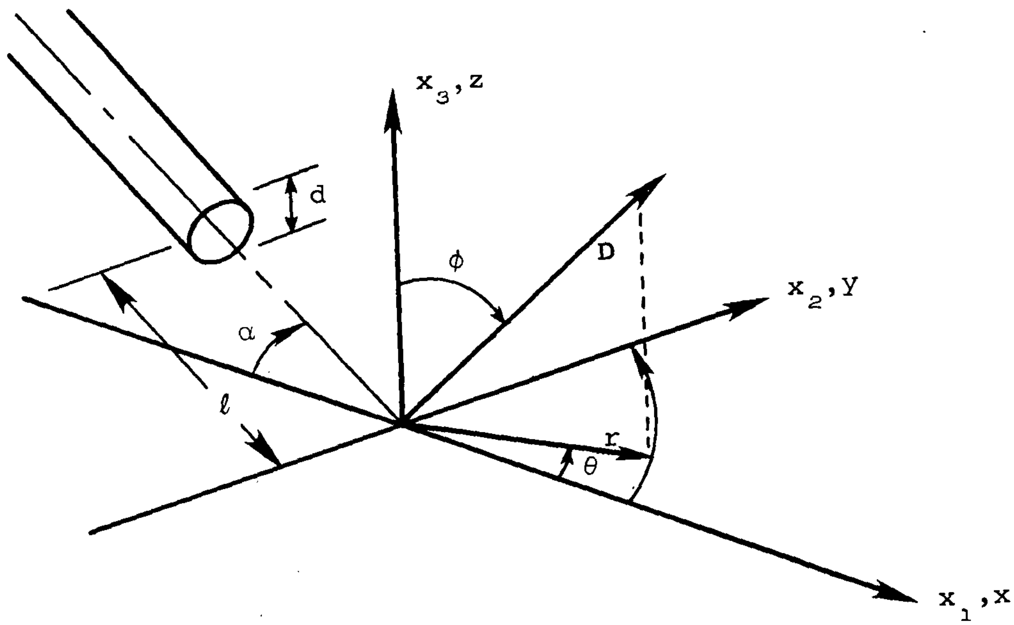


Figure 4-2.- Coordinate system for obliquely impinging jet.

5. CALCULATIONS AND COMPARISONS WITH EXPERIMENT

A calculational example was worked out for several obvious reasons. Primary among these were to assess the task of providing appropriate input data for and the accuracy of the combined theoretical and calculational approach. In choosing the example to be investigated it was desired to determine that sufficient and accurate data were available for input as well as for comparison of the calculated results. It was also desired to pick a flow that was not overly simple in order that the flexibility of the program could be demonstrated. To a large degree these objectives were met, although some compromise was necessary in each category.

We chose to perform computations on a subsonic circular jet impinging at 45° on a large plane surface (see figure 4-2). The velocity field of such a jet has been experimentally investigated by Foss (1974). Noise radiation measurements were made by Olsen et al., (1972) for a similar jet, reporting OASPL measurements at 15°, 30°, 60° and 90° impingement angles. The stand-off distance ℓ/d between the nozzle and the geometric impingement point was the same for both the experiments by Foss and those by Olsen et al. Strong et al., (1967) obtained measurements of fluctuating pressures on the flat impingement surface for a similar case. Thus, these experimental works will afford us sufficient data for input to the calculation and evaluation of the results at two stages of the calculations - the surface (fluctuating) pressures calculated from the velocity field and the noise field calculated subsequently using the calculated pressures.

5.1 Problem Description

The flow of a jet impinging on an infinite plane surface has several distinct regions as depicted in figure 5-1. These are primarily determined by the features of their local mean flow and will be very helpful in describing the necessary input flow field data.

Region I — The near field jet mixing region, extending from the nozzle to the end of the potential core.

Region II — The far field jet mixing region, beginning with the termination of the potential core and extending until the influence of the flow impingement begins to significantly alter the flow.

Region III The impingement region is that region where strong curvature of streamlines are present due to the flow from the jet being turned by the impingement surface.

Region IV The wall jet region where the flow takes on a characteristic self-similar structure as it spreads out over the surface.

These divisions are not intended to be rigid. More or fewer regions may be identified in a given flow configuration by inserting transition regions between the major regions or by merging of regions (e.g., the jet Region II and/or I into Region III) due to a particular flow configuration. It is intended to set up a means of representing the necessary flow quantities required as input, in a systematic manner that is generally applicable to the types of flows being considered. This is merely the one adopted here. Others may be equally valid.

This discussion is limited to the wall jet region, Region IV, in this presentation, however. The primary reason for this limitation is to emphasize at this stage of the development the major new area of capability of the present approach, noise generation by flows adjacent to a surface.

Noise generation by Regions I and II have been well covered in the literature on jet noise. The effect of the surface is primarily that it reflects the noise generated in the jet regions. Any direct interaction with this surface would move this into Region III.

The impingement region, Region III, on the other hand, is strongly affected by the presence of the surface but little information of the type necessary for the present analysis is known about its flow field. Hence, we have decided to restrict our attention in the present calculational example to the wall jet region.

Description of the mean and fluctuating velocities is the basic requirement for the calculations (see Appendix B). The specific flow field, to be described in the present calculational example is that of the wall jet region of a subsonic axisymmetric jet impinging on an infinite plane surface. The basic flow data for the calculations were taken from Foss (1974). His experiment was concerned with a circular air jet impinging at 45^{o} to a large flat plate. The distance along the nozzle centerline from the exhaust to intersection with the plane was seven nozzle diameters. The jet velocity at exhaust was 115 feet per second and the Reynolds number was 4.8×10^4, based on the nozzle diameter.

Measurements of the velocity were made at various heights (0.013 to 1.386 nozzle diameters) above the impingement plate and at various radii (up to eight diameters) from the intersection of the nozzle centerline with the plane. Radial traverses were made at 0°, 15°, 30°, 45°, 60°, 90°, 135° and 180° from the plane of maximum velocity. Measurements were made of velocities in planes parallel to the impingement surface. Both radial and angular mean velocities were reported as were the mean square of their fluctuating components. The cross correlation of the radial and angular velocity was also measured at each point (i.e., $C_{v_r v_\theta}(\vec{Y},0,0)$). These extensive measurements are presented in Foss (1974) in both tabular and graphical form and will not be reproduced here.

As comprehensive as Foss's measurements were, it was still necessary to augment them with analytical and empirical extensions in order to obtain adequate input to the analysis. These extensions are described in Sections 5.1.2 and 5.1.3. In the next section, we will describe the Cartesian elements used in the calculations.

5.1.1 Computational mesh.- The active flow region of Region IV was subdivided into a mesh of Cartesian elements, as is the general procedure which was adopted for these computations. The particular subdivision used in these calculations is depicted in figure 5-2. It does not represent any particular optimum choice other than a reasonable compromise among requirements for a check out of both the computer program and the analytical method and to conform with the capacity of the available computer (the CDC 6600).

Region IV for the present calculations lies between one and two nozzle diameters both forward and aft as well as to each side of the impingement point. It extends to a height of 0.35 diameter above the surface of the horizontal impingement plane. This latter was chosen specifically as the limit of the "active" flow region indicated by Foss's data.

The same elements were used at all three levels of integration (p', dp'/dt and I) in the present calculations. This is a convenient but not an essential procedure. The element size at each integration stage could be altered if there were a good reason to do so. Since the p' integration involves the mean velocity and the $\partial p'/\partial t$ and intensity integrations involve the gradients of the mean velocity (appearing in $\bar{\bar{\varepsilon}}$), it is conceivable that an element size change might be desirable under some circumstances, but it is probable that the advantages would warrant the extra work involved only for unusual flows.

5.1.2 Mean flow description.- The mean flow velocities measured by Foss were used whenever the present calculations called for velocities at a point. However, the analysis calls for numerous gradients of the mean velocity as well. It would have been highly inaccurate to obtain such gradients from numerical differences in the data. For these purposes it was essential to develop a representation of the mean flow which could be differentiated analytically to obtain the necessary gradients.

The mean flow of a jet impinging obliquely on a flat plate will be described in two stages. The general features of the velocity profile will be described for a normally impinging jet. Then, modifications due to the oblique impingement will be described.

The mean flow velocity in a turbulent wall jet created by the normal impingement of an axisymmetric jet on a plane may be described with good accuracy from relations given by Guantner et al. (1972). Such relations are based on self-similar velocity distributions with auxiliary relations to account for the radial decrease in velocity due to spreading and friction and for growth of the wall jet layer thickness. Referring to figure 5-3, the wall jet velocity profile is divided into two layers: the wall boundary layer and the outer free turbulent layer. The velocity is maximum, V_{max}, where these layers join, at a height, δ, above the surface. Both V_{max} and δ are functions of the radial distance from the impingement point as shown in Table I.

The velocity profile in each layer is scaled on V_{max} and δ. The inner layer is characterized in a manner similar to the boundary layer on a plate in a uniform flow with V_{max} representing the uniform flow velocity and δ the boundary-layer thickness. The outer flow is represented as a plane jet having its center plane coincident with the plane of the surface. The jet velocity is considered to be proportional to V_{max} and the characteristic jet width, $z_{.5}$, is assumed to be proportional to δ. The particular relations used are given in Table I.

For an obliquely impinging jet it may be assumed that the flow in the wall jet region is essentially in radial planes such that there is no velocity in the azimuthal, θ, direction as in the axisymmetric case just described. Any flow that exists in any radial plane is then proportional to the maximum radial velocity in that plane. This velocity will be a function of both the azimuthal angle, θ, and the impingement angle α. By reviewing the data of Donaldson and Snedeker (1971) for jets impinging at 45°, 60° and 75°, it was found that this maximum velocity, V_{max}, can be represented by the empirical expression

$$V_{m\alpha\theta} = V_{max}\left[1 + 2.45\ (1 - \frac{\alpha}{90^{\circ}})\right]\left[1 - \cos^{1/2}\alpha \sin\frac{\alpha}{2}\right] \tag{5.1}$$

This expression is not recommended for impingement angles much below 45° but is quite adequate between 45° and 90°. Using $V_{m\alpha\theta}$ in place of V_{max}, the relation for the velocity profile in any radial plane (at any θ) may be represented by the expressions in Table I for the normally impinging jet.

The above expressions are adequate for determining the mean velocity in the wall jet region if actual experimental data are not available. However, they may also be used to obtain the derivatives of the velocity profile necessary to compute, for example, the rate of strain tensor, $\bar{\bar{\epsilon}}$, required in this analysis. This was their major usage in the present calculations. There is one area where the representation fails, however, and that is at the rigid surface.

The normal velocity gradient at the wall given by the power law relation is infinite. While the actual velocity gradient is maximum at the wall, it is finite and must correspond to the local skin friction stress on the wall, τ_w. It is from an estimate of the latter, τ_w, that the wall velocity gradient was determined in the present calculations. The skin friction was calculated from

$$\tau_w = \frac{c_f}{2}\ \rho V^2_{m\alpha\theta} \tag{5.2}$$

From empirical correlations of skin friction in a turbulent boundary layer on a flat plate in a uniform flow, the local value of c_f has been correlated with the local Reynolds number, $R_\infty = U_\infty\ x/\nu$, using the equation (see, e.g., von Kármán, 1934)

$$c_f^{-1/2} = 1.70 + 4.15\ c_f \log_{10} R_\infty$$

For the present calculations this relation was cumbersome to solve for c_f and was replaced by

$$c_f = 1.45\left(V_{m\alpha\theta} \frac{r}{\nu}\right)^{-0.07} \tag{5.3}$$

which is within $\pm$ 5 percent of the above in the range $10^3 \leq R_\infty < 10^8$ and can be solved directly for c_f. These relations were then used as input to the equation

$$\left.\frac{\partial V_r}{\partial z}\right|_{z=0} = \frac{\tau_w}{\mu} \tag{5.4}$$

for the normal gradient of velocity at the wall. Other gradients of the velocity at the wall and throughout the wall jet flow may be obtained by judicious use of the relations presented above for the properties of the radial velocity profile along with the continuity equation, the assumption that the azimuthal velocity, V_θ, is nonexistent and the appropriate boundary conditions, $\vec{V} = 0$ on S. A summary of the relations used for the rate of strain tensor is given in Table II.

5.1.3 Statistical description of velocity fluctuations.- As previously indicated, the present analysis requires the two-point, two-time covariance of the fluctuating velocity components; that is

$$\langle v_i(\vec{Y},\theta) v_j(\vec{Z},\theta')\rangle$$

in order to compute the corresponding pressure covariances and eventually the sound intensity field. To have a total set of these measurements would be impractical, but we have also previously discussed the nature of such covariances in turbulent flows and how their local behavior might be represented by a damped sinusoidal functions (see equation (4.5)). Such a relation may be used to extend data which are available, provided the necessary coefficients in the equation can be obtained for the flow under investigation.

Foss (1974) reports auto- and cross-correlation measurements of the radial and azimuthal fluctuating velocities, v_r and v_θ, for the wall jet of the present calculations. These are constituents of the major Reynolds stresses of the flow and may reasonably be expected to be the major contributors to the noise field. These data were used as the starting point for our description of the fluctuating velocity field for the present calculations.

It was decided to represent the current flow as one in which regions of significant correlations were extremely restricted. The spatial damping factor, $\vec{a}$, of equation (4.5) was chosen to be such that $\vec{a}\cdot\vec{\xi} = |\vec{a}|\,|\vec{\xi}|$; that is, independent of direction. It was also assumed that $|\vec{a}|$ would be large such that correlations could be significant in only a small volume around a given point.

This assumption had the further implication that the time delays for which significant correlations are possible would be quite short. The maximum delay must be the order of the time to traverse the correlation volume at the convection speed, $|\vec{V}c|$. The convection speed in turbulent flows is usually found to be 60 to 80 percent of the maximum velocity, V_{max} (see, for example, Wills, 1964). If the correlation volume is small and both of the correlated source points, $\vec{Y}$ and $\vec{Z}$, must be within it in order to significantly contribute and further, if the observation point, $\vec{X}$, is far outside the flow regions, the delay time is

$$\begin{aligned}
\tau &= \theta - \theta' \\
&= \frac{|\vec{X} - \vec{Y}| - |\vec{X} - \vec{Z}|}{a_o} \approx \frac{\vec{X}}{|\vec{X}|} \cdot (\vec{Z} - \vec{Y}) \\
&\leq \frac{|\vec{Z} - \vec{Y}|}{a_o} \\
&\leq \frac{|\vec{\xi}_{max}|}{a_o}
\end{aligned}$$

for $|\vec{Y}|$ and $|\vec{Z}| << |\vec{X}|$ and where $\vec{\xi}_{max}$ is the maximum dimension of the correlation volume. Hence, it appears that we would be justified in neglecting the delay time for flows of limited correlation volume, as is the present turbulent flow, and we will only require two-point covariances in the calculations. We will, in fact, further approximate the two-point covariance such that equation (4.5) is reduced to the form

$$\psi(\xi,\tau) \approx \psi(\xi) \equiv e^{-|\vec{\xi}|/s} \tag{5.5}$$

where s is related to ξ_{max} and is the reciprocal of a. The required covariances are then represented by

$$C'_{\alpha\beta}(\vec{X},\vec{\xi}) = C_{\alpha\beta_{max}}(\vec{X})\psi(\vec{\xi}) \tag{5.6}$$

In the present calculations, the choice of $s \approx 0.15\,d$ effectively eliminated velocity covariances between elements displaced horizontally. An arbitrary cut-off was imposed requiring $\psi \geq 0.05$ in order for a point to be considered as a contributor. This set of elements not having identical x_1 and x_2 were well outside the cut-off range ($\psi \leq 0.04$) while those only displaced vertically were well within it ($\psi \geq 0.1$) for the computational mesh used.

Using Foss's data and the above equations, we now have the necessary relations to carry out the analysis computations.

5.2 Results

Computations using the jet impingement data of Foss with the extensions described above were carried out by the computer program described in Appendix D. A summary of the input instructions and data (other than velocities) is given in Table III. The program carries out the computations in three stages, corresponding to the three levels of integration required. A printout of the major results has been obtained from each stage. These are presented in Tables IV, V and VI in the form of reduced reproductions of the computer printout.

5.2.1 Pressure covariance.- Table IV presents the results of the pressure covariance calculations for all elements in Region IV which are not identically taken to be zero due to ψ being less than the cut-off value of 0.05. In the column headings, y_1; y_2; y_3; z_1; z_2; z_3 denote the Cartesian coordinates of the centers of the primary $(\vec{Y})$ and secondary $(\vec{Z})$ elements. The numbers listed are nondimensionalized by the jet diameter, d. The seventh column, labeled P/C is the root-mean-square (rms) of the pressure covariance for the two points. It is presented in nondimensional form with $C = \rho_o V_j^2$, twice the dynamic pressure of the jet at the nozzle exhaust (32 lbs/ft^2), as the normalizing factor. Absolute values are used for the negative covariances to avoid imaginary rms values.

The eighth column, PP, is the dimensional $(lbs/ft^2)^2$ pressure covariance, $< p(\vec{Y})p(\vec{Z}) >$, and is obtained by summing the corresponding values in the remaining columns, PP0, PP1, PP2, PP3. The latter are contributions to the pressure covariance from certain subintegrals.

As indicated in Appendix A, the fluctuating pressure is obtained by evaluating two integrals necessitated by the singularity in G. One of the integrals is an integral over a surface, S_o, which surrounds the singularity. The other integral is over the volume, R', of the fluid region outside of S_o. Thus,

$$p' = \int_{R'} + \int_{S_o}$$

In obtaining the pressure covariance, the time average is taken of the product of two such expressions, yielding

$$<p'(\vec{Y})p'(\vec{Z})> = \int_{R'(Y)} \int_{R'(Z)} + \int_{S_o(Y)} \int_{R'(Z)} + \int_{R'(Y)} \int_{S_o(Z)}$$

$$+ \int_{S_o(Y)} \int_{S_o(Z)}$$

The right-hand members of this equation are respectively: PP0, PP1, PP2, and PP3.

As one proceeds down these last four columns, blank spaces are encountered. They represent covariances which have been evaluated by symmetry with previous calculations; that is,

$$<p'(\vec{Y})p'(\vec{Z})> = <p'(\vec{Z})p'(\vec{Y})>$$

The symmetry property, which is available primarily by virtue of the neglected time separation of the covariance (i.e., $\tau = 0$) is a major economy since it reduces the computer time required for this computation by almost 50 percent. Other symmetries (e.g., geometric) have been found to be similarly useful.

The subintegrals, PP0, PP1, PP2, and PP3, were printed out to assess their relative contribution to the pressure covariance. In this case, however, it is seen that there is no clearly dominant nor negligible contribution and it appears that all of the subintegrals must be retained. In the subsequent calculations for the remaining covariances, however, it is found that some of the subintegrals can be eliminated and a savings accomplished.

5.2.2 Covariances of $\partial p'/\partial t$.- Table V presents the computation for the $\partial p'/\partial t$ covariances between elements. The format is similar to that of Table IV with the first six columns indicating the positions of the two elements centers. The seventh column, labeled DP, is the dimensional $\partial p'/\partial t$ (lbs/ft^2-sec) covariance, Φ. The remaining columns are subintegrals which were summed to obtain DP, similar to those indicated for the pressure covariance in Table IV. The expression for $\partial p'/\partial t$ given in Appendix A, however, has additionally an integral over the impingement surface, S. Hence, its covariance is the sum of a series of subintegrals

$$\Phi = \left\langle \frac{\partial p'}{\partial t}(\vec{Y})\,\frac{\partial p'}{\partial t}(\vec{Z})\right\rangle = \int_{R(Y)}\int_{R(Z)} + \left[\int_{R(Y)}\int_{S_o(Z)} + \int_{R(Z)}\int_{S_o(Y)}\right]$$

$$+ \left[\int_{R(Y)}\int_{S(Z)} + \int_{R(Z)}\int_{S(Y)}\right] + \left[\int_{S(Y)}\int_{S_o(Z)} + \int_{S_o(Y)}\int_{S(Z)}\right]$$

$$+ \int_{S(Y)}\int_{S(Z)} + \int_{S_o(Y)}\int_{S_o(Z)}$$

involving the singularity surface, S_o, the impingement surface, S, and the fluid region, R', bounded by these surfaces. The columns, DP0, DP1, DP3, DP5, DP7, and DP8, respectively, represent the terms in the above expression.

In contrast to the subintegrals involved in the p' covariances, those for Φ exhibit large differences in magnitude. In fact, Φ is dominated by a single subintegral, DP7, which is the result of correlations on the impingement surface, SS. The nearest in magnitude to DP7 is DP3, which is the impingement surface-fluid volume correlation, SR. DP3 is at most four orders of magnitude less than DP7, however, and has little influence on Φ. The other subintegrals range from two to twenty orders of magnitude less than DP3 and have even less influence on Φ. It would appear from these calculations that the solution for Φ in the wall jet region could be greatly streamlined by eliminating all but the DP7 surface-surface calculations.

5.2.3 Noise intensity.- The sound pressure level (SPL) due to the calculated pressure fluctuations was computed for several points on a spherical surface 57.6 jet diameters from the impingement point. These results are presented in Table VI. The first two columns labeled ϕ and θ represent the angle from vertical and the azimuthal angle, respectively, for locating the point at the given radius (see fig. 5-1). The next column is the SPL at the point in decibels (dB) with respect to 2×10^{-5} Newton/Meter^2 (N/M^2) (4.2×10^{-7} lbs/ft^2). The fourth column is the intensity I (N/M^2) as calculated from equation(B.5). The remaining columns are the contributors of each of the three terms on the right-hand side of equation (B.5): the volume-volume, I0, the volume-surface, I1, and the surface-surface, I2, correlations. It is noted that these expressions do not involve the singularity surface since the observation point is well outside the active flow region and there is, therefore, no contribution by the singularity of the Green Function.

The dominant contributor to the intensity for all points above the plane of the surface, $\phi = 90^\circ$, is the surface-surface integral.

The program indicates that there is a rapid decrease in acoustic output from the surface in its own plane, however. The output from the surface terms toward this direction should be identically zero, in fact, since the factors

$$(\vec{X} - \vec{Y})\cdot\vec{n}(\vec{Y}) \quad \text{and} \quad (\vec{X} - \vec{Z})\cdot\vec{n}(\vec{Z})$$

identically vanish when $\vec{X}$ is on the surface. Hence, although the surface correlations are strong sources of noise, the nature of their directivity pattern prohibits their radiating along the surface and noise received from the volume correlation dominates there. Due to the importance of each of the terms in certain regions of the radiation field we are not able to eliminate any of them from calculations for I on the basis of order-of-magnitude assessments as was possible for Φ.

5.3 Discussion

The computations carried out in the present study were specifically chosen such that experimental data would be available both for input as well as for comparing with the results of the computations. Although the latter were of necessity abbreviated and the mesh size coarse, due to computer limitations, some direct comparisons of specific results at two levels of the calculations were possible. First, some general observations regarding the nature of the results. To illustrate the typical nature of the calculated fluctuating pressure, samples of the calculated correlations were plotted in figures 5-4 and 5-5. Figure 5-4 shows how the auto-correlation $\langle p^2(\vec{Y},t)\rangle^{1/2}$ varies normal to the surface at three locations around the jet impingement point - ahead, behind and to the side, as indicated by the sketch on figure 5-4. Each of the auto-correlations is normalized by its local value at the element nearest the surface. The calculated auto-correlations are seen to be maximum near the surface and to decay more or less rapidly as one moves away from the surface. The auto-correlation forward of the impingement point are indicated to decay least rapidly at first, then to drop quickly and become almost coincident with those for the point behind the impingement. This slower initial drop off is probably due to the shear layer forward of the impingement point being thicker than in any other direction. The high intensity pressure fluctuations one might expect in the inner shear region accordingly extend further from the surface than where the layer is thinner. The element size is probably too coarse to show similar, but less extensive regions at the side and back positions.

The behavior at the back position (i.e., behind the impingement) reflects only the contributions from the wall jet in the present calculations. It would be expected that a higher level of fluctuation could extend further out from the surface in this position if these calculations included the jet regions above the impingement surface.

The calculated covariance of the pressure fluctuations are shown in figure 5-5 for the same points as the auto-correlations of figure 5-4. There are two items worthy of comment for these figures. First, when normalized by their local root-mean-square values, the curves are nearly identical for all of the points. Second, although the velocity covariances from which these were calculated were highly simplified, and specifically were always positive, the calculated pressure covariances are both positive and negative and begin to show the character indicated in figure 4-1 as typical of correlations in a turbulent flow. This result is encouraging regarding the amount of detailed information required to obtain reasonable results. It is much too early to make any definitive statement on this subject, however, and a specific study of the effects of the input velocity covariances should be one of the first items in further evaluations of this calculation approach.

Direct comparison of calculations with measurements from actual flows is possible for pressure fluctuations on the impingement surface. In figure 5-6 the rms surface pressures normalized by the jet dynamic pressure are shown for the present calculations in comparison to measured values from two other investigations.

The measurements of Strong, et al. (1967) were for low-speed jets at seven diameters axially from the impingement point (the same as the present calculations) and various angles of impingement, α. Although $\alpha = 45^o$ was not specifically measured, a cross plot of the data from various impingement angles produced the points shown in the figure. The values indicated for points forward of the impingement point compare very favorable with the calculations. Calculated values for the point behind the impingement point appear to be lower than measurements would indicate. However, it has already been observed that these points should receive substantial contributions from the jet itself, which has been omitted from the calculations.

The data of Yu, et al. (1973) for a Mach 0.5 jet at 5.7 diameters axially from impingement and at $\alpha = 45^o$ are also shown in the figure. These data indicate a somewhat higher level of fluctuations for the same dynamic pressure than either the calculations or the measurements of Strong, et al. This is probably entirely due to the effects closer proximity of the jet to the surface in this case.

Another level of comparison is available with the sound level measurements of Olsen, Miles and Dorsch (1972). The latter measured the overall (nonspectral) sound pressure level, OASPL, for a jet having a velocity of 286 meters per second and at impingement angles of 30° and 60°. The OASPL was measured at 57.7 diameters from the impingement point on a "large flat board." The OASPL for the two α's are shown in figure 5-7 as a function of angular position. There is seen to be no dramatic difference between the two, although the $\alpha = 60^{\circ}$ case is generally noisier. Hence, the OASPL for $\alpha = 45^{\circ}$ is not expected to be characteristically different from these, but should lie somewhere between them. It would be expected to show a peak reading of 114 dB at an angle, $\phi = 60^{\circ}$, forward of the impingement point, perhaps a level of 107 dB directly above the impingement point, $\phi = 0$ and a reading of 106 dB at $\phi = 90^{\circ}$, in the plane of the plate.

The OASPL of the present calculations, also shown on figure 5-7,are for a much lower speed jet (35 meters per second) than were the measurements. The calculations yield a sound level of 83 dB at $\phi = 0$, 71 dB at $\phi = 60^{\circ}$ and 19 dB at $\phi = 90^{\circ}$. If the differences were ascribed totally to velocity differences,they would indicate the sound level was proportional to velocity raised to the 2.6 power for $\phi = 0^{\circ}$ to the 4.7 power for $\phi = 60^{\circ}$ and to the 9.5 power for $\phi = 90^{\circ}$. The exponents of the velocity are somewhat less than one would expect from the essentially dipole surface noise radiating toward $\phi = 0$ and the increased component of quadrupole (volume) noise radiating toward $\phi = 60^{\circ}$ (see Table VI for the make-up of the radiated noise arising from surface and volume terms in the analytical expression). These exponents should be 6 and 8, for the pure dipole and pure quadrupole, respectively, and somewhere between for a combination of the two.

According to Table VI, the noise at $\phi = 90^{\circ}$ should be entirely from the volume (quadrupole) sources and, hence, the velocity exponent should be around 8. While the velocity exponent necessary to bring the directional noise levels (measured and calculated) into accord does increase as a large portion of the noise results from quadrupole sources, it is believed that it is too early to say that satisfactory results have been obtained. Other factors such as the skewness of the measured values in comparison to the symmetry of the calculated values with respect to $+\phi$ and $-\phi$ need to be addressed. This will require a further and fuller investigation than was possible during the current study. Additional measurements of both the noise field and the velocity field are required. Measurements of each at corresponding impingement angles and distances would be desirable. However, further velocity measurements which would allow calculations in the impingement region would be of more significance.

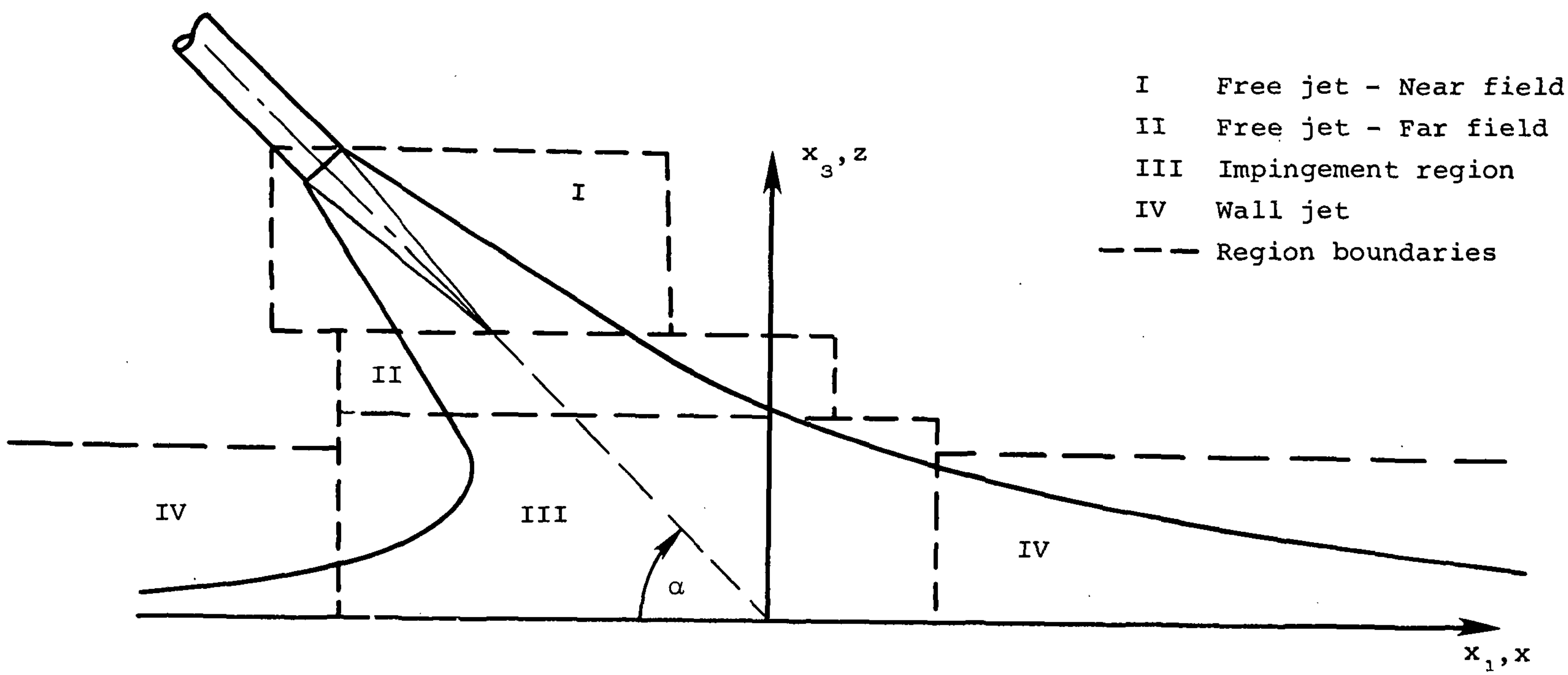


Figure 5-1.- Flow field regions for impinging jet.

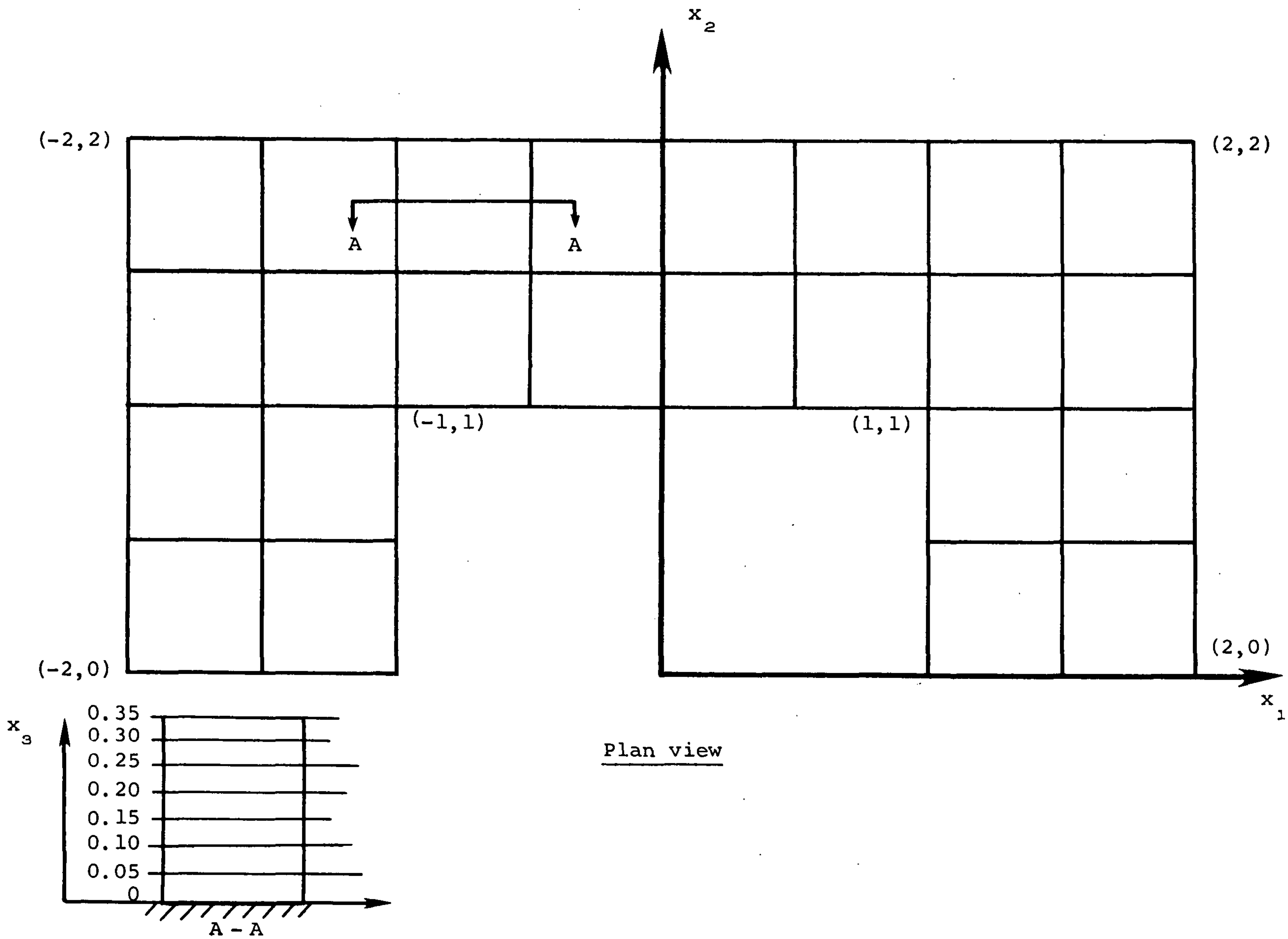


Figure 5-2.- Computational mesh.

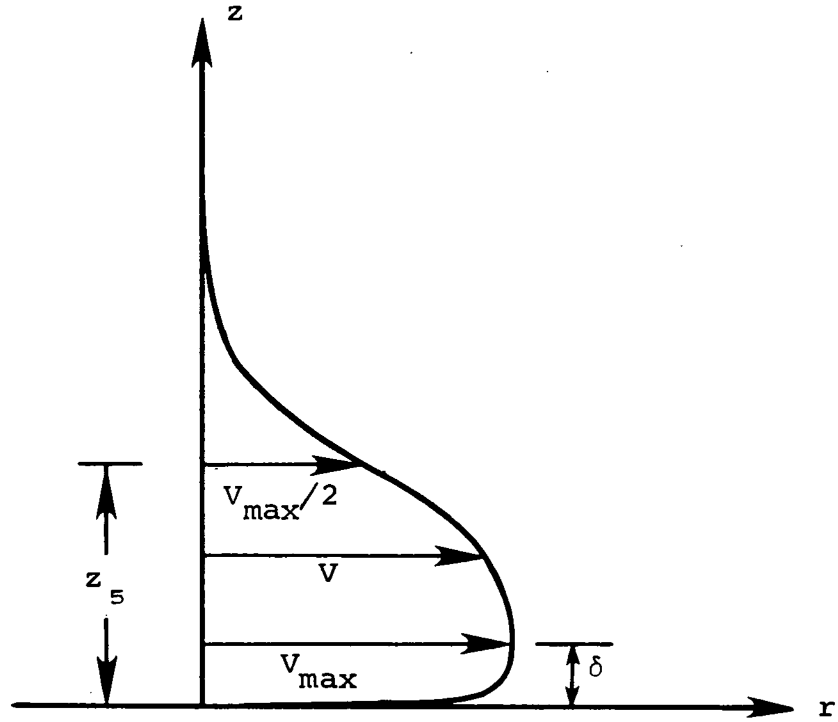


Figure 5-3.- Typical wall jet velocity profile.

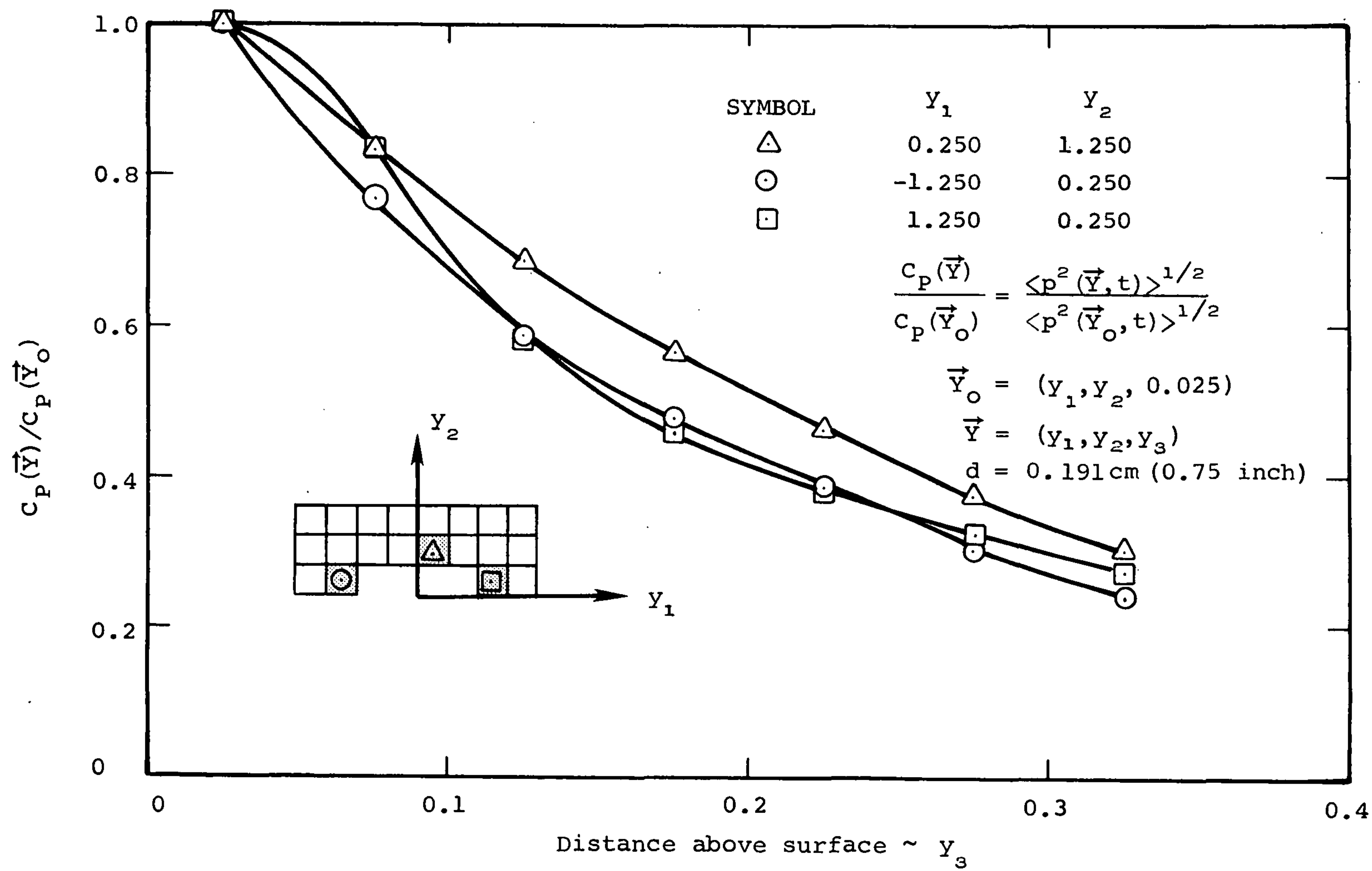


Figure 5-4.- Pressure autocorrelation normal to surface.

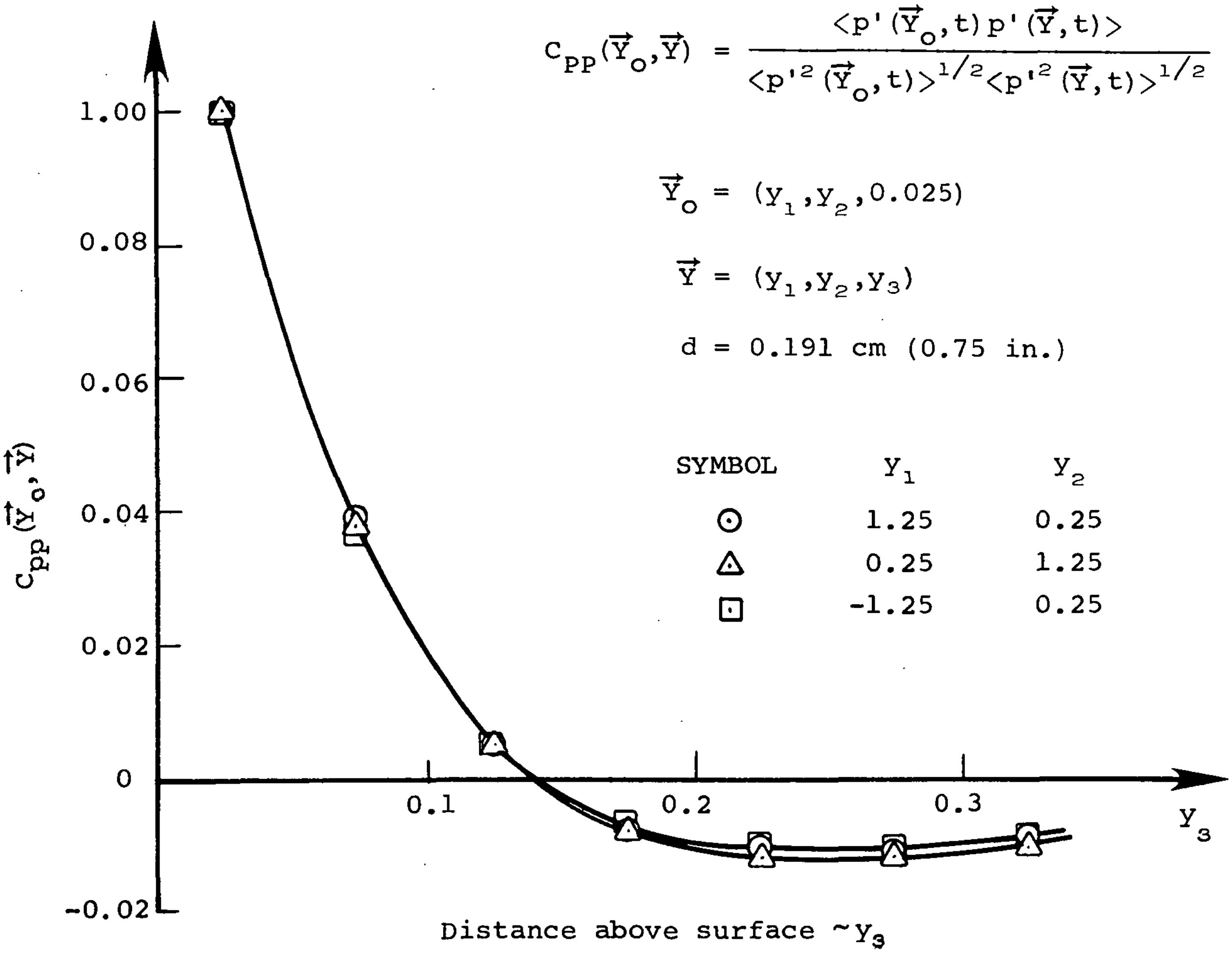


Figure 5-5.- Pressure covariance normal to surface.

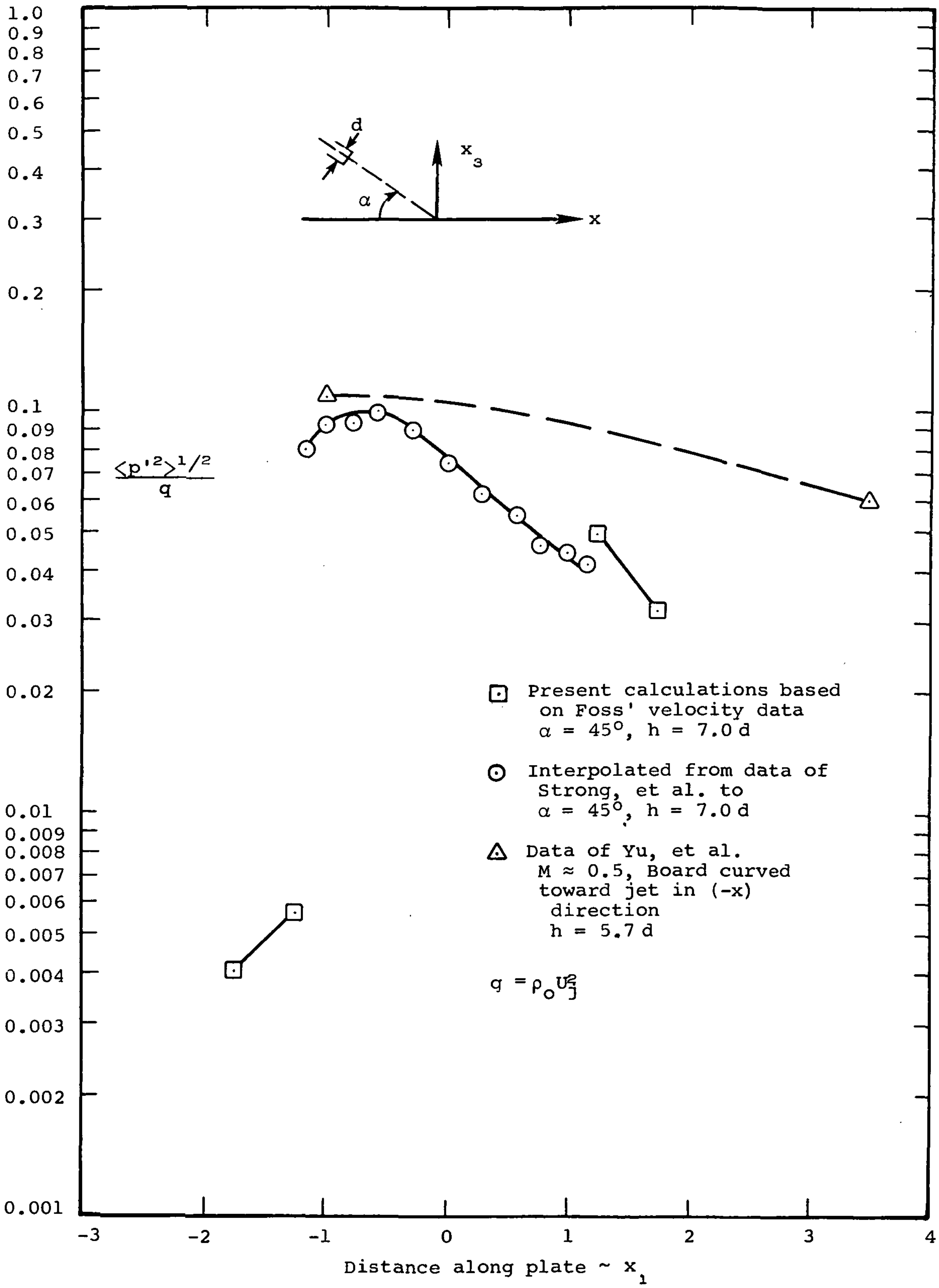


Figure 5-6 .- Surface pressure fluctuations.

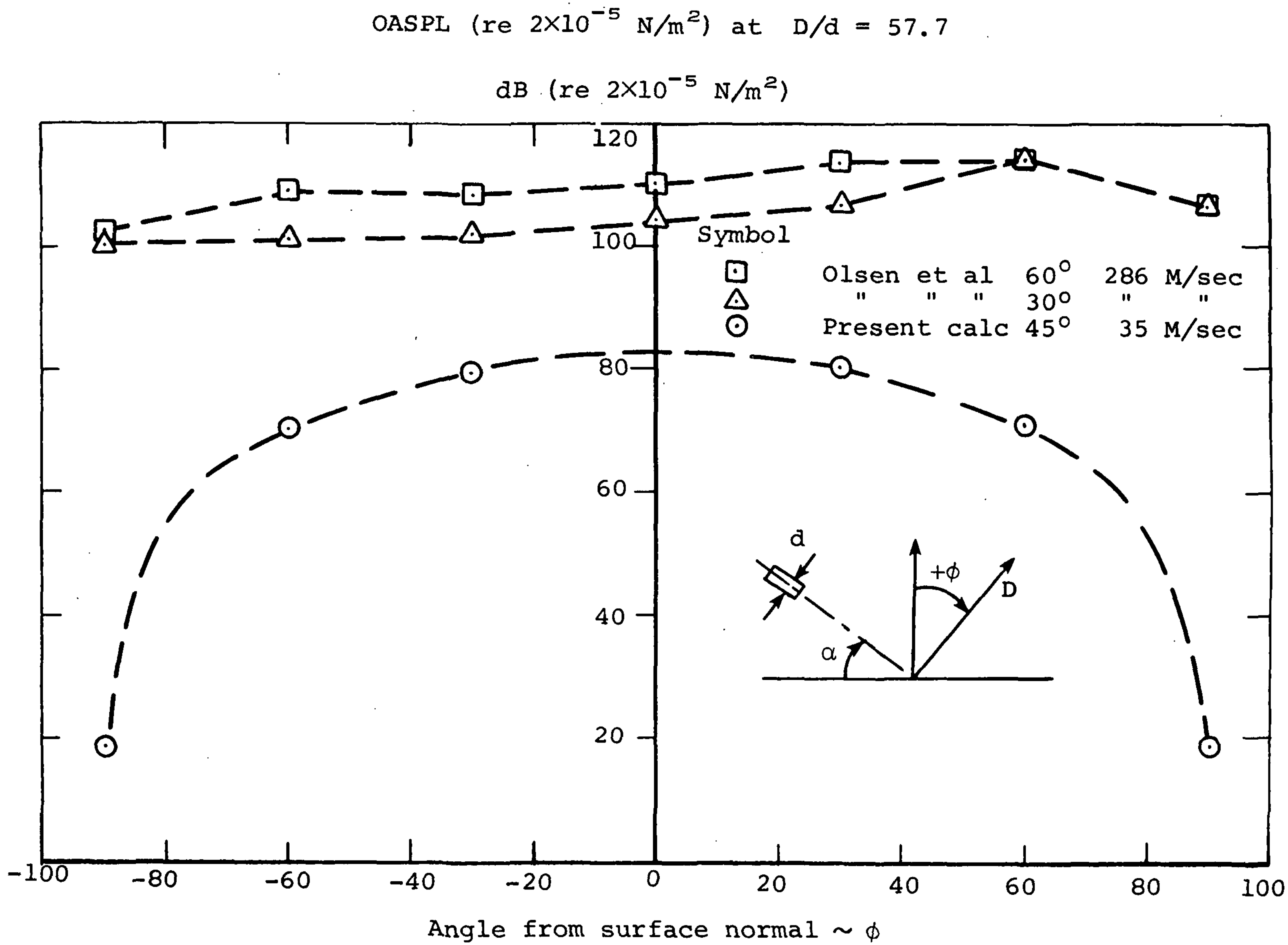


Figure 5-7.- Calculated wall jet and measured jet impingement sound pressure levels.

6. CONCLUSIONS AND RECOMMENDATIONS

An analysis permitting fluctuations and noise levels to be calculated from measurable steady and fluctuating velocity field quantities has been developed. The analysis has been put in the form of a computer program and preliminary calculations carried out for the wall jet region of an infinite plane. Encouraging results were obtained in comparisons of the calculated surface pressure fluctuations and sound pressure levels with data obtained from representative experiments. Much refinement remains, however, for both the program for computations and in the required experimental data. Both mean flow description in the impingement region and further statistical features of the fluctuating velocity in this and the wall jet are needed for input to the program. The computer program itself needs refinement to eliminate costly computations which, according to results of the present study, contribute insignificantly to the results. The program should also be expanded to permit a better representation of the noise producing features of the flow. Adaptation to a larger core faster computer (e.g., the CDC 7600) would yield more accurate results as well as computational economies.

It is suggested that further studies be carried out on other flows for which more complete information about the necessary mean and fluctuating flow quantities and the noise field is known while awaiting such information on the obliquely impinging jets. Among the candidates would be the turbulent boundary layer over a flat plate and a jet exhausting tangentially on a flat plate.

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Mountain View, California
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APPENDIX A

REFORMULATION IN TERMS OF FUNDAMENTAL FLOW VARIABLES

The direct derivation of the analysis has left the equations in a form which is difficult to evaluate. The basic input to the analysis, the velocity field, is required in the form of multiple spatial gradients. While experimental measurements may be made rather easily of the velocity itself, the experimental determination of gradients is difficult at best and likely to be inaccurate. This is particularly true of the fluctuating velocity, $\vec{v}$. The necessity for specifying the local mean rate of strain, $\bar{\bar{\epsilon}}$, provides little hope of remedy of this difficulty for the mean velocity $\vec{V}$, but the existence of semi-analytical representations for $\vec{V}$ in most flows of interest alleviates the problem somewhat in its case. That of the fluctuating velocity remains to be dealt with, however.

The fluctuating pressure was related to the velocity field by equation (3.34) in the main text.

$$p'(\vec{Y}',t) = \frac{\rho_o}{2\pi} \int_R G(\vec{Y}',\vec{Y}'') \; \mathrm{div}_{\vec{Y}''} \mathrm{div}_{\vec{Y}''} \left[\vec{V}(\vec{Y}'')\vec{v}(\vec{Y}'',t)\right] \; d\vec{Y}''$$

where G is the Green Function which behaves like $|\vec{Y}' - \vec{Y}''|^{-1}$ near $\vec{Y}'' = \vec{Y}'$. Noting the general rule for the divergence of the product of a scalar and vector

$$\mathrm{div}(\alpha\vec{F}) = \alpha \; \mathrm{div} \; \vec{F} + \vec{F}\cdot\mathrm{grad} \; \alpha \tag{A.1}$$

the above integral can be transformed into

$$I_p \equiv \int_R G \; \mathrm{div} \; \mathrm{div}(\vec{V}\vec{v}) \; d\vec{Y}'' = \int_{R'} \mathrm{div} \left[G \; \mathrm{div}(\vec{V}\vec{v})\right] d\vec{Y}'' - \int_{R'} \mathrm{grad}\, G\cdot \mathrm{div} \; \vec{V}\vec{v} \; d\vec{Y}''$$

$$+ \int_{R_o} G \; \mathrm{div} \; \mathrm{div}(\vec{V}\vec{v}) \; d\vec{Y}'' \tag{A.2}$$

Since a singularity in G occurs at $Y'' = Y'$, the integration volumes have also been separated into R' and R_o, where R_o is a small volume containing the singularity and R' is the remainder of the whole region R. We will now employ the Divergence Theorem.

$$\int_{R'} \operatorname{div} \vec{F} \, d\vec{Y}'' = \oint_{\sum_S} \vec{F} \cdot \vec{n} \, dS(\vec{Y}'') \tag{A.3}$$

where $\vec{F}$ is continuous and differentiable throughout R', $\sum_S$ are all of the bounding surfaces of R' and are piecewise smooth, and $\vec{n}$ is the outward normal from R' on these surfaces.

Using equation (A.3) on the first integral of equation (A.2) yields

$$I_p = \int_S G \operatorname{div} (\overrightarrow{\overrightarrow{Vv}}) \cdot \vec{n} \, dS + \int_{S_o} G \operatorname{div} (\overrightarrow{\overrightarrow{Vv}}) \cdot \vec{n} \, dS$$

$$- \int_{R'} \operatorname{grad} G \cdot \operatorname{div} (\overrightarrow{\overrightarrow{Vv}}) \, d\vec{Y}'' + \int_{R_o} G \operatorname{div} \operatorname{div} (\overrightarrow{\overrightarrow{Vv}}) d\vec{Y}'' \tag{A.4}$$

In the present case S is the rigid impingement surface bounding R, and S_o is the surface between R' and R_o. Since both $\vec{V}$ and $\vec{v}$ vanish on S, the first surface integral vanishes. Also, since $\overrightarrow{\overrightarrow{Vv}}$ is a continuously differentiable function and G behaves as $|\vec{Y}' - \vec{Y}''|^{-1}$ in R_o, R_o can be made vanishingly small such that only the third integral of equation (A.4) survives. One may again apply equations (A.1) and (A.3) to the remaining volume integral to yield by similar considerations.

$$I_p = -\int_R \operatorname{grad} G \cdot \operatorname{div} (\overrightarrow{\overrightarrow{Vv}}) \, d\vec{Y}'' = \int_{R'} (\operatorname{grad} \operatorname{grad} G) : \overrightarrow{\overrightarrow{Vv}} \, d\vec{Y}''$$

$$- \int_{S_o} \operatorname{grad} G \cdot (\overrightarrow{\overrightarrow{Vv}}) \cdot \vec{n} \, dS - \int_{R_o} \operatorname{grad} G \cdot \operatorname{div} (\overrightarrow{\overrightarrow{Vv}}) \, d\vec{Y}'' \tag{A.5}$$

In this case, however, as R_o is made to vanish, the surface integral over S_o approaches a nonzero limit and must be retained. The resulting equation for the fluctuating pressure is:

$$p'(\vec{Y}',t) = \frac{\rho_o}{2\pi}\left[\int_R (\mathrm{grad}_{\vec{Y}''}\mathrm{grad}_{\vec{Y}''}G):(\vec{V}\vec{v})\ d\vec{Y}'' - \int_{S_o} (\mathrm{grad}_{\vec{Y}''}G)\cdot(\vec{V}\vec{v})\cdot\vec{n}\ ds\right] \quad (A.6)$$

Thus, for the fluctuating pressure, we have succeeded in transferring the differentiation operations from the physical properties of the flow field to the Green Function, G. Since G will have an analytical representation, its gradients may be relatively easily obtained.

A similar approach may be utilized in evaluating the pressure time derivative, $\partial p'/\partial t$, and may be formally expressed as

$$\frac{\partial p}{\partial t}(\vec{Y},t) = \frac{1}{4\pi}\int_R G(\vec{Y},\vec{Y}')\mathrm{div}_{\vec{Y}'}\mathrm{div}_{\vec{Y}'}\left[p'(\vec{Y}',t)\bar{\bar{\epsilon}}(\vec{Y}')\right]\ d\vec{Y}' \quad (A.7)$$

Using a similar approach, equation (A.7) may be reduced as was equation (3.34) above. In this case, however, surface integrals on S survive because $\bar{\bar{\epsilon}}$ and p' do not vanish there as did $\vec{V}$ and $\vec{v}$. The resultant expression is

$$\frac{\partial p}{\partial t}(\vec{Y},t) = \frac{1}{4\pi}\left[\int_R (\mathrm{grad\ grad}\ G):\ p'\bar{\bar{\epsilon}}\ d\vec{Y}' - \int_{S_o}\mathrm{grad}\ G\cdot p'\bar{\bar{\epsilon}}\cdot\vec{n}\ dS\right.$$

$$\left. - \int_S \mathrm{grad}\ G\cdot p'\bar{\bar{\epsilon}}\cdot\vec{n}\ dS + \int_S G\ \mathrm{div}(p'\bar{\bar{\epsilon}})\cdot n\ dS\right] \quad (A.8)$$

The last integral of equation (A.8) still contains spatial derivatives of physical properties of the flow and should be further modified. We begin by expanding the divergence operation guided by equation (A.1).

$$\mathrm{div}(p'\bar{\bar{\epsilon}}) = p' \,\mathrm{div}\, \bar{\bar{\epsilon}} + \mathrm{grad}\, p' \cdot \bar{\bar{\epsilon}} \tag{A.9}$$

We will accept the $\mathrm{div}\, \bar{\bar{\epsilon}}$ in the first terms, since it is applied to a mean flow quantity and some assistance may be available to perform the differentiations analytically. However, the grad p' may present considerable difficulty for evaluation in its present form and deserves further consideration.

We may attempt to evaluate $\mathrm{grad}_{\vec{Y}'}$ of p' by the straightforward process of operating on equation (A.6). However, let it first be noted that G in (A.6) is the only term in the integrand which is dependent on $\vec{Y}'$. If the limits of integration are independent of $\vec{Y}'$, we may write

$$\mathrm{grad}_{\vec{Y}'}\, p'(\vec{Y}'t) = \frac{\rho_o}{2\pi}\left[\int_R (\mathrm{grad}_{\vec{Y}''}\mathrm{grad}_{\vec{Y}''}\mathrm{grad}_{\vec{Y}'}G) : (\vec{V}\vec{v})\, d\vec{Y}'' - \int_{S_o} (\mathrm{grad}_{\vec{Y}''}\mathrm{grad}_{\vec{Y}'}G) \cdot \vec{V}\vec{v} \cdot \vec{n}\, dS\right] \tag{A.10}$$

Equations (A.9) and (A.10) may be substituted into (A.8) to obtain an expression for $\partial p'/\partial t$ free of any gradient operation on fluctuating properties of the fluid. Problems due to the additional singularity arising in $G(\vec{Y}',\vec{Y}'')$ due to the additional gradient operation would arise if equation (A.10) were used to obtain grad p' as an end result. However, the singularity is integrable and the integrated contribution to $\partial p'/\partial t$ may be obtained without undue difficulties on its account.

APPENDIX B

INTRODUCTION OF STATISTICAL QUANTITIES

The formal solutions for the instantaneous pressure and density fluctuations have been obtained in terms of the instantaneous velocity fluctuations and the mean flow properties. It is unlikely that information on the instantaneous velocities throughout the active flow region will be available, however. We are apt to have only a statistical description of these quantities. Furthermore, we are probably only interested in the statistical nature of any of the fluctuating quantities. In the following we will show how statistical velocity information can be used with the present formulation to obtain the acoustic intensity field, I, as well as statistical properties of the fluctuating pressures. We begin with the definition of the sound intensity field, I, our major objective.

$$I(\vec{X}) \equiv \frac{a_o^3}{\rho_o} < \rho'^2(\vec{X},t) > \tag{B.1}$$

By the Lighthill-Curle formal solution for ρ', equation (3.2), this becomes:

$$\begin{aligned} I(\vec{X}) = \frac{1}{16\pi^2 \rho_o a_o^5} \Bigg[& \int_R \int_R \frac{(\vec{X} - \vec{Y})^2 (\vec{X} - \vec{Z})^2}{|\vec{X} - \vec{Y}|^3 |\vec{X} - \vec{Z}|^3} < \frac{\partial^2 \tilde{T}(\vec{Y},\theta)}{\partial t^2} \frac{\partial^2 \tilde{T}(\vec{Z},\theta')}{\partial t^2} > d\vec{Y}\, d\vec{Z} \\ & + 2a_o \int_R \oiint_S \frac{(\vec{X} - \vec{Y})\ (\vec{X} - \vec{Z})^2}{|\vec{X} - \vec{Y}|^2 |\vec{X} - \vec{Z}|^3} < \frac{\partial \vec{P}(\vec{Y},\theta)}{\partial t} \frac{\partial^2 \tilde{T}(\vec{Z},\theta')}{\partial t^2} > dS(\vec{Y})\, d\vec{Z} \\ & + a_o^2 \oiint_S \oiint_S \frac{(\vec{X} - \vec{Y})(\vec{X} - \vec{Z})}{|\vec{X} - \vec{Y}|^2 |\vec{X} - \vec{Z}|^2} < \frac{\partial \vec{P}(\vec{Y},\theta)}{\partial t} \frac{\partial \vec{P}(\vec{Z},\theta')}{\partial t} > dS(\vec{Y})\, dS(\vec{Z}) \Bigg] \end{aligned} \tag{B.2}$$

where

$$\theta = t - \frac{|\vec{X} - \vec{Y}|}{a_o} \tag{B.3}$$

$$\theta' = t - \frac{|\vec{X} - \vec{Z}|}{a_o} \tag{B.4}$$

Equation (B.2) may be expanded in terms of the approximations developed previously for $(\partial^2\tilde{T}/\partial t^2)$ and $(\partial\vec{P}/\partial t)$ and rewritten using equation (3.12).

$$I(\vec{X}) \approx \frac{1}{16\pi^2\rho_o a_o^5}\left[\int_R\int_R \frac{(\vec{X} - \vec{Y})^2 : \tilde{\epsilon}(\vec{Y})\,(\vec{X} - \vec{Z})^2 : \tilde{\epsilon}(\vec{Z})}{|\vec{X} - \vec{Y}|^3\,|\vec{X} - \vec{Z}|^3}\,\Phi\, d\vec{Y}\, d\vec{Z}\right.$$

$$- 2a_o \int_R \oiint_S \frac{(\vec{X} - \vec{Y})\cdot\vec{n}(\vec{Y})\,(\vec{X} - \vec{Z})^2 : \tilde{\epsilon}(\vec{Z})}{|\vec{X} - \vec{Y}|^2\,|\vec{X} - \vec{Z}|^3}\,\Phi\, dS(\vec{Y})\, d\vec{Z}$$

$$\left. + a_o^2 \oiint_S \oiint_S \frac{(\vec{X} - \vec{Y})\cdot\vec{n}(\vec{Y})\,(\vec{X} - \vec{Z})\cdot\vec{n}(\vec{Z})}{|\vec{X} - \vec{Y}|^2\,|\vec{X} - \vec{Z}|^2}\,\Phi\, dS(\vec{Y})\, dS(\vec{Z})\right] \tag{B.5}$$

where Φ is the pressure-time derivative covariance

$$\Phi \equiv \left< \frac{\partial p'(Y,\theta)}{\partial t}\,\frac{\partial p'(Z,\theta')}{\partial t} \right> \tag{B.6}$$

Equations (A.6), (A.8), and (A.10) may be used to obtain the further reduced equation for Φ, as follows.

Let us first define the velocity covariance

$$\tilde{\Psi} = \left< \vec{v}(\vec{Y}'',\theta)\vec{v}(\vec{Z}'',\theta') \right> \tag{B.7}$$

which will be the basic statistical input for the analysis.

The pressure covariance, Ω, may be obtained as a function of $\tilde{\Psi}$ from equation (A.6).

$$\Omega = \langle p'(\vec{Y}',\theta)p'(\vec{Z}',\theta') \rangle = \frac{\rho_o^2}{4\pi^2}\left[\int_R\int_R \vec{M}(\vec{Y}',\vec{Y}'')\vec{M}(\vec{Z}',\vec{Z}''):\tilde{\Psi}\ d\vec{Y}''\ d\vec{Z}''\right.$$

$$-\int_R\int_{S_o} \vec{M}(\vec{Y}',\vec{Y}'')\vec{L}(\vec{Z}',\vec{Z}''):\tilde{\Psi}\ dS(\vec{Z}'')d\vec{Y}''$$

$$-\int_R\int_{S_o} M(\vec{Z}',\vec{Z}'')\vec{L}(\vec{Y}',\vec{Y}''):\tilde{\Psi}\ dS(\vec{Y}'')d\vec{Z}''$$

$$\left.+\int_{S_o}\int_{S_o} \vec{L}(\vec{Y}',\vec{Y}'')\vec{L}(\vec{Z}',\vec{Z}''):\tilde{\Psi}\ dS(\vec{Z}'')dS(\vec{Y}'')\right] \tag{B.8}$$

and $\tilde{\Gamma}$, the pressure gradient covariance may be written using equation (A.10).

$$\tilde{\Gamma} = \langle \mathrm{grad}_{\vec{Y}'}\, p'(\vec{Y}',\theta)\ \mathrm{grad}_{\vec{Z}'}\, p'(\vec{Z}',\theta) \rangle = \frac{\rho_o^2}{4\pi^2}\left[\int_R\int_R \tilde{N}\tilde{N}:\tilde{\Psi}\ d\vec{Z}''\ d\vec{Y}''\right.$$

$$-\int_R\int_{S_o} \tilde{N}\tilde{Q}:\tilde{\Psi}\ dS(\vec{Z}'')d\vec{Y}'' - \int_R\int_{S_o} NQ:\tilde{\Psi}\ dS(\vec{Y}'')d\vec{Z}''$$

$$\left.+\int_{S_o}\int_{S_o} \tilde{Q}\tilde{Q}:\tilde{\Psi}\ dS(\vec{Y}'')dS(\vec{Z}'')\right] \tag{B.9}$$

These expressions may be examined and shown to yield $\vec{\Lambda}$, the covariance of the fluctuating pressure and its gradient

$$\vec{\Lambda} = \langle p'(\vec{Y}',\theta)\,\mathrm{grad}\, p'(\vec{Z}',\theta') \rangle = \frac{\rho_o}{4\pi^2}\Bigg[\int_R\int_R \overrightarrow{MN}:\tilde{\Psi}\; d\vec{Z}''\; d\vec{Y}''$$

$$- \int_R\int_{S_o} \overrightarrow{MQ}:\tilde{\Psi}\; dS(\vec{Z}'')d\vec{Y}'' - \int_R\int_{S_o} \widetilde{NL}:\tilde{\Psi}\; dS(\vec{Y}'')d\vec{Z}''$$

$$+ \int_{S_o}\int_{S_o} \widetilde{QL}:\tilde{\Psi}\; dS(\vec{Y}'')dS(\vec{Z}'')\Bigg] \tag{B.10}$$

With these fundamental covariances, $\tilde{\Gamma}$ and $\vec{\Lambda}$, specified in terms of the basic velocity covariance, $\tilde{\Psi}$, we may now proceed to calculate Φ

$$\Phi = \frac{1}{(4\pi)^2}\Bigg(\int_R\int_R HH\Omega\; d\vec{Z}'\; d\vec{Y}' - \int_R\int_{S_o} \Omega\Big[HA\; dS(\vec{Z}')d\vec{Y}' + HA\; dS(\vec{Y}')d\vec{Z}'\Big]$$

$$- \int_R\int_S \Big\{ H\Big[(A - B)\Omega + \vec{D}\cdot\vec{\Lambda}\Big]dS(\vec{Z}')d\vec{Y}' + H\Big[(A - B)\Omega + \vec{D}\cdot\vec{\Lambda}\Big]dS(\vec{Y}')d\vec{Z}'\Big\}$$

$$+ \int_{S_o}\int_S \Big\{ A\Big[(A - B)\Omega + \vec{D}\cdot\vec{\Lambda}\Big]dS(\vec{Z}')d\vec{Y}' + A\Big[(A - B)\Omega + \vec{D}\cdot\vec{\Lambda}\Big]dS(\vec{Y}')d\vec{Z}'\Big\}$$

$$+ \int_{S_o}\int_{S_o} AA\; dS(\vec{Z}')dS(\vec{Y}') + \int_S\int_S \Big[(A - B)(A - B)\Omega + (A - B)\vec{D}\cdot\vec{\Lambda}$$

$$+ \vec{\Lambda}\cdot\vec{D}(A - B) + \overrightarrow{DD}:\tilde{\Gamma}\Big]dS(\vec{Y}')dS(\vec{Z}')\Bigg) \tag{B.11}$$

where the integrand factors are determined from

$$\left.\begin{aligned}
A(\vec{X},\vec{X}') &= \mathrm{grad}_{\vec{X}'}\, G(\vec{X},\vec{X}')\cdot\tilde{\epsilon}\cdot\vec{n} \\
B(\vec{X},\vec{X}') &= G(\vec{X},\vec{X}')\,\mathrm{div}\,\tilde{\tilde{\epsilon}}\cdot\vec{n} \\
H(\vec{X},\vec{X}') &= \mathrm{grad}_{\vec{X}'}\, \mathrm{grad}_{\vec{X}'}\, G(\vec{X},\vec{X}'):\tilde{\tilde{\epsilon}}, \\
\vec{D}(\vec{X},\vec{X}') &\quad G(\vec{X},\vec{X}')\tilde{\tilde{\epsilon}}\cdot\vec{n} \\
\vec{M}(\vec{X},\vec{X}') &= \vec{V}(\vec{X}')\cdot\mathrm{grad}_{\vec{X}'}\, \mathrm{grad}_{\vec{X}'}\, G(\vec{X},\vec{X}') \\
\tilde{N}(\vec{X},\vec{X}') &= \vec{V}(\vec{X}')\cdot\mathrm{grad}_{\vec{X}'}\, \mathrm{grad}_{\vec{X}'}\left[\mathrm{grad}_{\vec{X}}\, G(\vec{X},\vec{X}')\right] \\
\tilde{Q}(\vec{X},\vec{X}') &= \vec{V}(\vec{X}')\cdot\mathrm{grad}_{\vec{X}'}\left[\mathrm{grad}_{\vec{X}}\, G(\vec{X},\vec{X}')\right]\vec{n}(\vec{X}')
\end{aligned}\right\} \qquad (B.12)$$

Equations (B.8) and (B.11) are used with equations (B.9), (B.10), and (B.12) to compute Ω and Φ. Substitutions of Φ into equation (B.5) permits calculation of I. Equations (B.9) and (B.10) are not solved explicitly due to the singularity caused by the additional gradient on G. The singularity is integrable, however, when evaluated in equation (B.11).

This completes the set of equations necessary to calculate the fluctuating pressure and noise fields. It is seen that they may be computed as a function of only the statistical properties of the fluctuating velocity field embodied in $\tilde{\Psi}$.

APPENDIX C

INTEGRATION METHOD

The integration method can be explained by reference to the integrals to be evaluated and properties of the flow field. Consider the volume integral in the fluctuating pressure covariance calculation.

$$\langle p(\vec{Y},\tau),p(\vec{Z},\tau')\rangle_{RR} = \frac{1}{(2\pi)^2}\left\langle \int_R \int_R \nabla_Y \nabla_Y G(\vec{Y},\vec{Y}')\nabla Z \nabla Z G(\vec{Z},\vec{Z}')::\right.$$

$$\left. \times\ \vec{V}(\vec{Y}')\vec{V}(\vec{Z}')\vec{v}(\vec{Y}',\tau)\vec{v}(\vec{Z}',\tau')d\vec{Y}'\ d\vec{Y}' \right\rangle \tag{C.1}$$

The integrations over R may be replaced by the sum of integrations over all the elemental volumes contained in R; that is,

$$R = \sum_\alpha \int_{R_\alpha}$$

$$\int_R = \sum_\alpha \int_{R_\alpha}$$

The elemental volumes contributing most significantly to the integrals of equation (C.1) are near the singularities of the Green Function. Within these volumes the Green Function represents the major variation, and the volumes may be chosen such that the integrals can be approximated by

$$\int_{R_\alpha} \vec{V}(\vec{Y}')\vec{v}(\vec{Y}',\tau):\nabla_{\vec{Y}'}\nabla_{\vec{Y}'}\ G(\vec{Y},\vec{Y}')d\vec{Y}' \approx \vec{V}_\alpha \vec{v}_\alpha \int_{R_\alpha} \nabla_{\vec{Y}'}\nabla_{\vec{Y}'}\ G(\vec{Y},\vec{Y}')d\vec{Y}'$$

where $\vec{V}_\alpha$ and $\vec{v}_\alpha$ are chosen as representative values for the region R_α. This approximation is extended to subregions away from the singularity and should result in little error if the subregions and the representative values, $\vec{V}_\alpha$ and $\vec{v}_\alpha$, are well chosen for the flow field. The form of the resulting expression used to evaluate equation (C.1) is

$$<p'(\vec{Y},\tau)p'(\vec{Z},\tau')>_{RR} = \frac{1}{(2\pi)^2}\sum_\alpha\sum_\beta V_\alpha V_\beta <v_\alpha v_\beta>::$$

$$\times \int_{R_\alpha}\int_{R_\beta} \nabla_{\vec{Y}'}\nabla_{\vec{Y}'}\, G(\vec{Y},\vec{Y}')\nabla_{\vec{Z}'}\nabla_{\vec{Z}'}\, G(\vec{Z},\vec{Z}')d\vec{Y}'d\vec{Z}' \quad (C.2)$$

Examination of the integral shows that for each point pair $\vec{Y},\vec{Z}$ one can obtain a pressure covariance by summing over all of the points in the mesh. This is not necessary, however, and would cost a good deal of computer time. Given a value of $\vec{Y}$, there exists a neighborhood of points $N(\vec{Y},\vec{Z})$ where pressure covariances are of "significant" value. Then for each point pair $\vec{Y},\vec{Z}$ obtained using this neighborhood distance, one need only sum contributions in $\vec{Y}',\vec{Z}'$ that are in the neighborhood of $\vec{Y},\vec{Z}$. Using the notation of $N_\alpha(\vec{Y},\vec{Y}'_\alpha)$ to indicate that set of $\vec{Y}'$ that "significantly" contributes to the pressure covariance at $\vec{Y}$, one can write equation (C.2) as:

$$<p(\vec{Y},\tau),p(\vec{Z},\tau')>_{R(Y)N(\vec{Y},\vec{Z})} = \frac{1}{(2\pi)^2}\sum_{N(\vec{Y},\vec{Y}_\alpha)}\sum_{N(\vec{Z},\vec{Z}'_\beta)} \vec{V}_\alpha\vec{V}_\beta<\vec{v}_\alpha\vec{v}_\beta>::$$

$$\times \int_{R_\alpha} \nabla\nabla G(\vec{Y},\vec{Y}')d\vec{Y}' \int_{R_\beta} \nabla\nabla G(\vec{Z},\vec{Z}')d\vec{Z}' \quad (C.3)$$

The neighborhood distance used is dependent on the convergence of the Green Function and its derivatives as one moves away from the point of observation. Values have been input which are a compromise to save computer time and yet take into account "significant" (5 percent) contributions.

APPENDIX D

DESCRIPTION OF COMPUTER PROGRAM

The main program is shown on the first page of the flow chart (fig. D-1). This program calls all of the principle modules and cycles back to do another case if more than one case is input. First, the number of cases (NCASE) is read from an input card. Then, the parameters for the integration mesh, and a spherical lattice (observation) are read. Third, one enters the flow field input module (FLFLT) to input flow field parameters and data describing the flow field. (Currently, only a detailed means for describing Flow Region IV is available.) Fourth, using the above input data, pressure covariances for each significant pair of points in the integration region are computed in the module PPYZ. Fifth, using flow data for computing the strain tensors and the pressure covariances of the previous step, the module DPDPYZ is called to compute the pressure time-derivative covariances. Finally, the last module (SOUND) is called to compute sound intensities on a spherical lattice surrounding the flow field.

The programs PPYZ (pressure covariances), DPDPYZ (pressure time-derivative covariances), SOUND (sound field calculation) are general and relate to all flow field region computations. However, flow field quantities such as fluctuating velocity covariances, mean velocities, strain tensor components are specific to each region. Therefore, these programs have been divided up into specific programs relating to calculations for the region of concern. Therefore, FLFLT (as flow field input program) calls either FLFLT1, FLFLT2, FLFLT3, or FLFLT4 to input parameters related to a specific region. The velocity program, making a decision based on a user input region number, calls a velocity program specific to that region. This holds true of the fluctuating velocity covariances and the strain tensor computations. At present, only detailed programs for Flow Region IV exist, but the program structure is such that other flow regions can be added by replacing "dummy" subroutines with actual ones.

The flow chart of the program shows the main program and each of the subroutines that are called through the main program. This is not a detailed flow chart and some subroutines are mentioned by name only.

USER INSTRUCTION (PROGRAM INPUT)

A listing of the data deck with control cards for running on the CDC 6600 Boeing Computer Services, Inc. computer with KRONOS system program is shown in figure D-2. These cards are broken up into sets and the significance of each number and its format is described in a subsection below. Consistent dimensional units must be used for all physical quantities input.

Card Input Description

Card 1 is a card with only one number right adjusted to column 10. It gives the number of cases.

Card 2 is a comment card which serves as a heading for the data following. This can be any statement or name spanning the full 80 columns.

Card 3 contains the step sizes for the integration mesh. The first value is a step size for the X-Y plane and the second is the step size for the Z direction. These are given in columns 1-10 and 11-20 in F10.5 format. (All input formats for real numbers are in F10.5 format. All numbers have a ten-column range.)

Card 4 contains the limits of the integration mesh given in the dimension of the unit system. The first value is the starting X location and the second value is the final X location. The Y span is obtained by the limits -(XY2 - XY1)/2, (XY2 - XY1)/2 where XY1 is the starting X value and XY2 is the final X value. The third value is the starting X location of the center "hole" area and the fourth value is the final X coordinate of the center "hole" area. The Y span is obtained by the limits -(XY4 - XY3)/2, (XY4 - XY3)/2 where XY3 is the starting X value and XY4 is the final Y value. (Note: the "hole" area may not be defined, but it is useful for defining the integration limits for Region IV since this does not include the jet impact area.)

Card 5 contains the Z limits of integration. The first value is the starting Z coordinate and the second value is the final Z coordinate.

Card 6 contains two values. The first is the distance for the phase function. The second is the displacement in the given set of units for integration domain of a point.

Card 7 contains three values. The first is the observation distance for the sound computation. Normally this is well away from the flow field. The second value is the stepwise angular distance from the "pole" of the sphere or longitudinal increment. The third value is the latitudinal increment for the stepping around the sphere.

Card 8 is a comment card describing the flow data in any words the user desires. Currently, only flow data for Region IV can be processed.

Card 9 is the region number of the flow field being analyzed. The number is from 1 to 4 and adjusted to the right in column 10.

Card 10 contains six values. The first value is the jet diameter; the second value is jet velocity, the third value is the jet angle (degrees); the fourth value is the jet nozzle height; the fifth value is the reference Reynolds number; and the sixth value is the density.

Card 11 contains two values. The first value is the maximum velocity (jet direction) at a given radial coordinate. The second value is the radial coordinate.

Card 12 contains two values. The first value is the Z coordinate of the maximum velocity. The second value is the radial coordinate.

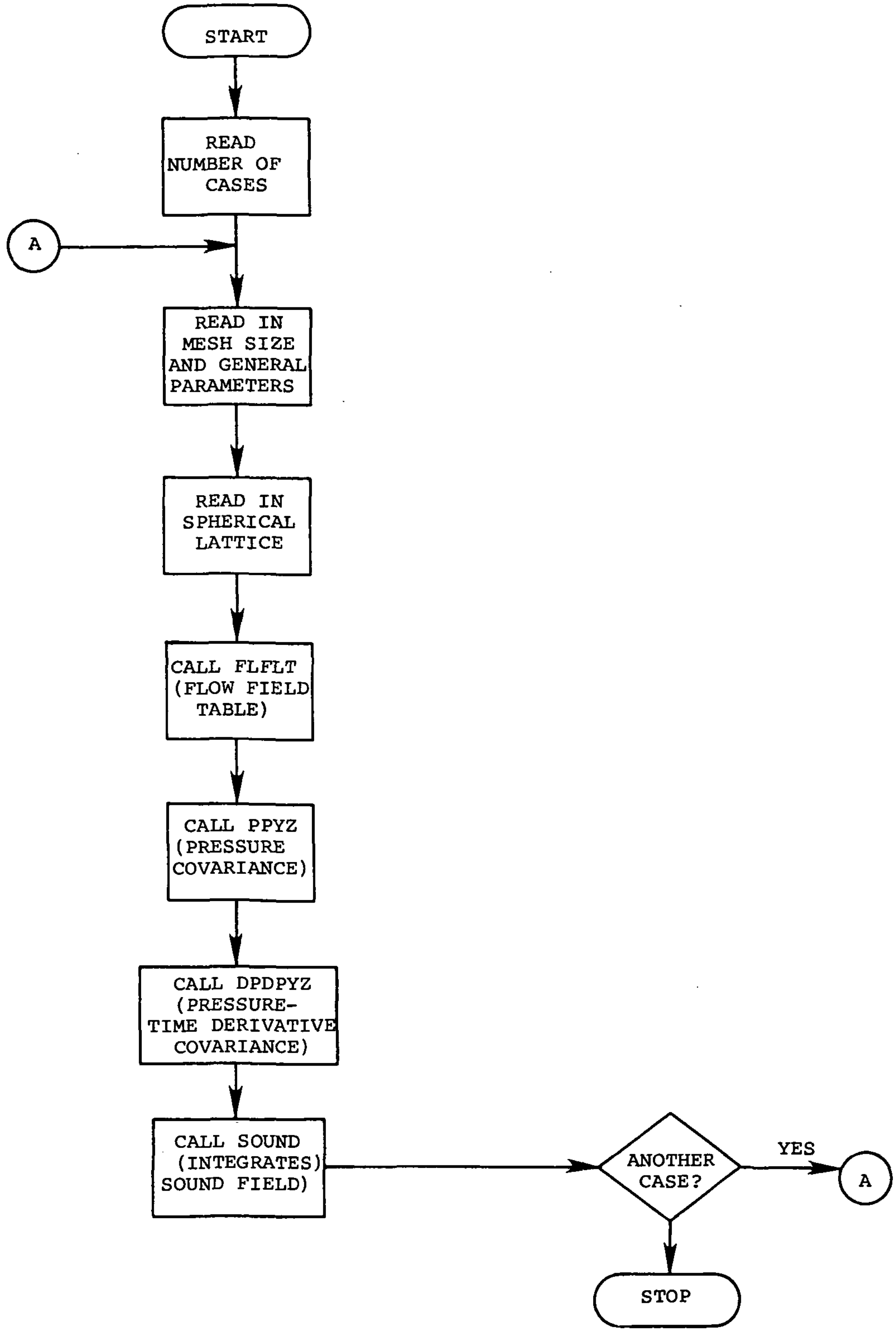
Card 13 contains two integer values. These are the number of horizontal traces and the number of vertical traces respectively. (A trace is a set of fluctuating velocity covariances.)

Card 14 is the header card for a given trace. The first value is the number of trace points and the second value is the angular coordinate in degrees of the trace.

Card 15 is a detail card for a trace. The first two values are the Z/DIA, R/DIA (DIA = jet diameter) coordinates of the trace point. The other three values are the covariances (u^2/u_o^2, v^2/u_o^2, uv/u^2_o) of the fluctuating velocities. Hence, u is a radial component, v is a component at 90° to the radial vector. NOTE: All other cards following Card 15 make up traces and are identical to Card 14 or Card 15.

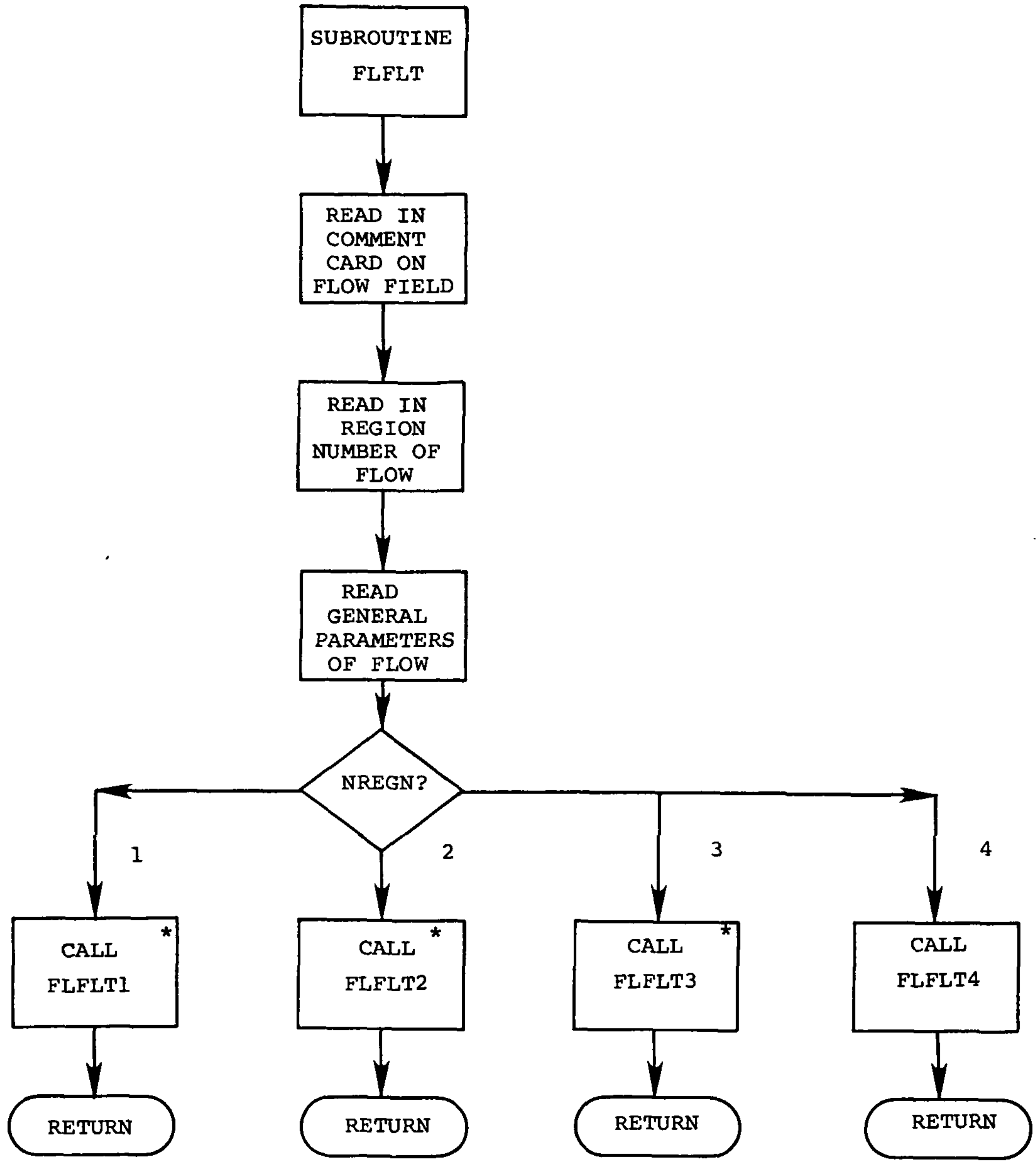
Run Considerations

The job requires four job control cards and a complete set of data. The only job control card that a user need change is the JOB card that begins the deck. It contains a job name, time limit, core size, and priority. The core size is about 250,000 octal units. The time limit depends on the mesh size but can run from 500 to 1,000 seconds. With a proper choice of time limit, the user can run any set of data.



(a) Main program.

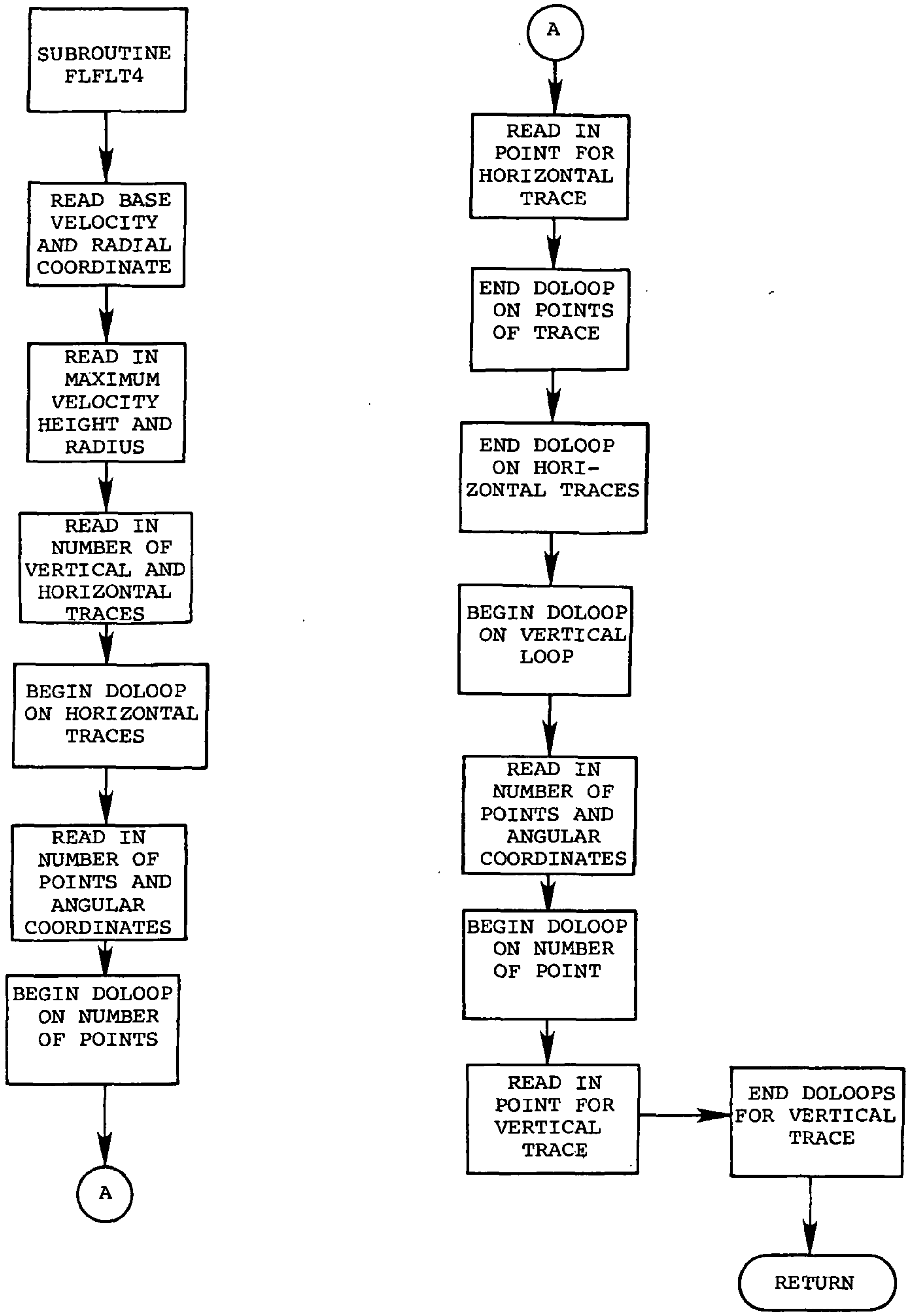
Figure D-1.- Flow charts.



*TO BE SUPPLIED LATER.

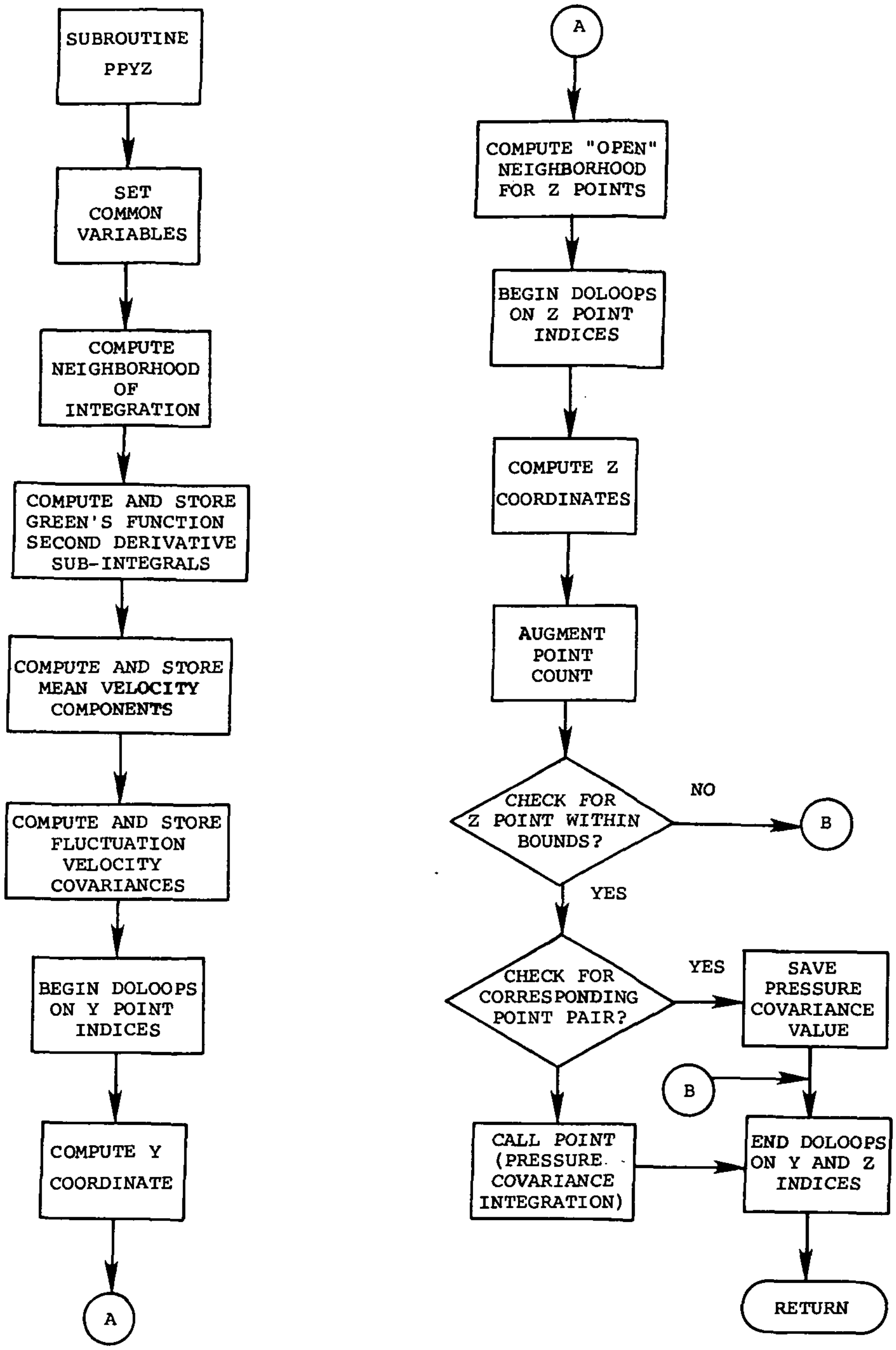
(b) Subroutine FLFLT.

Figure D-1.- Continued.



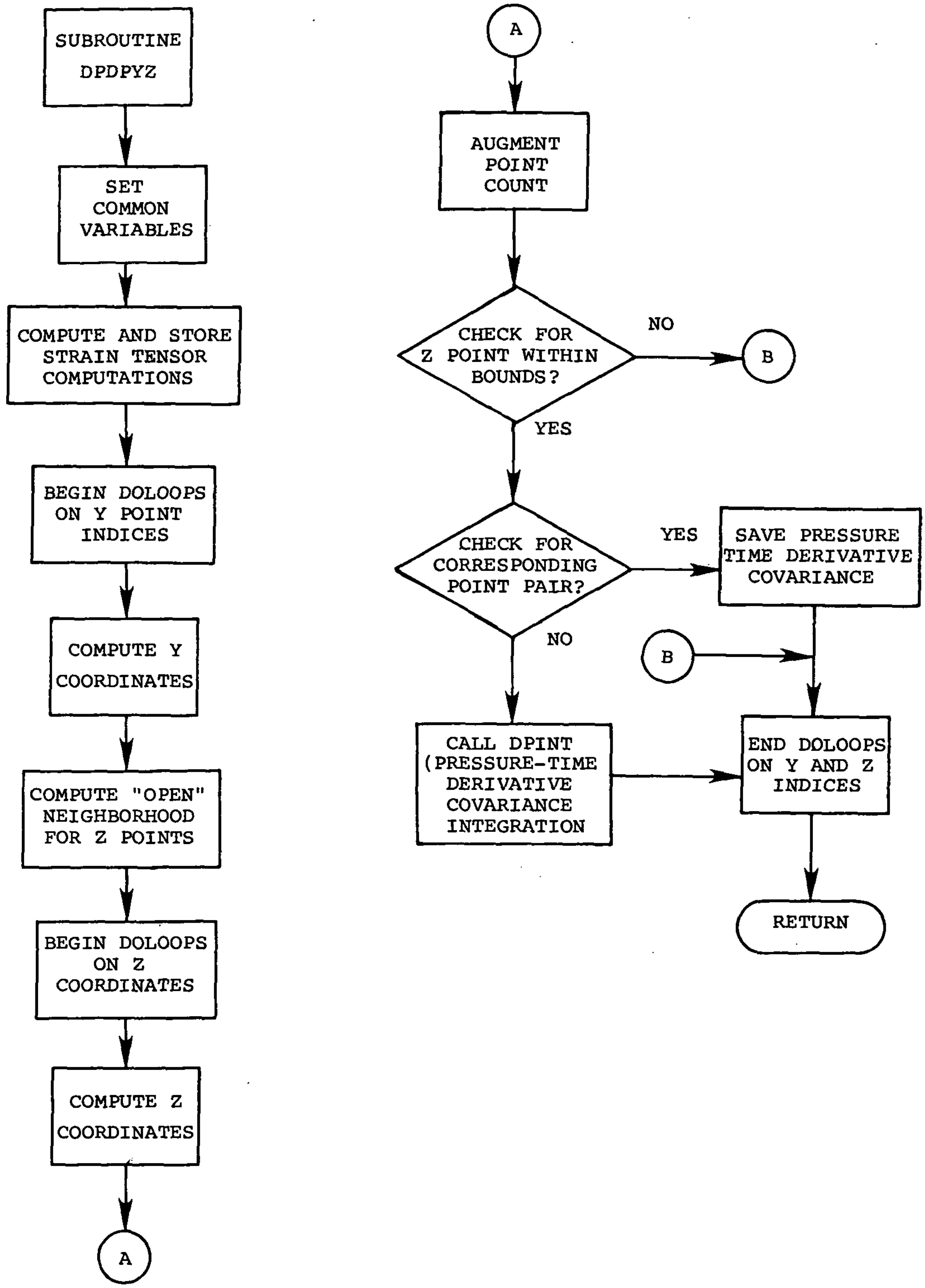
(c) Subroutine FLFLT4.

Figure D-1.- Continued.



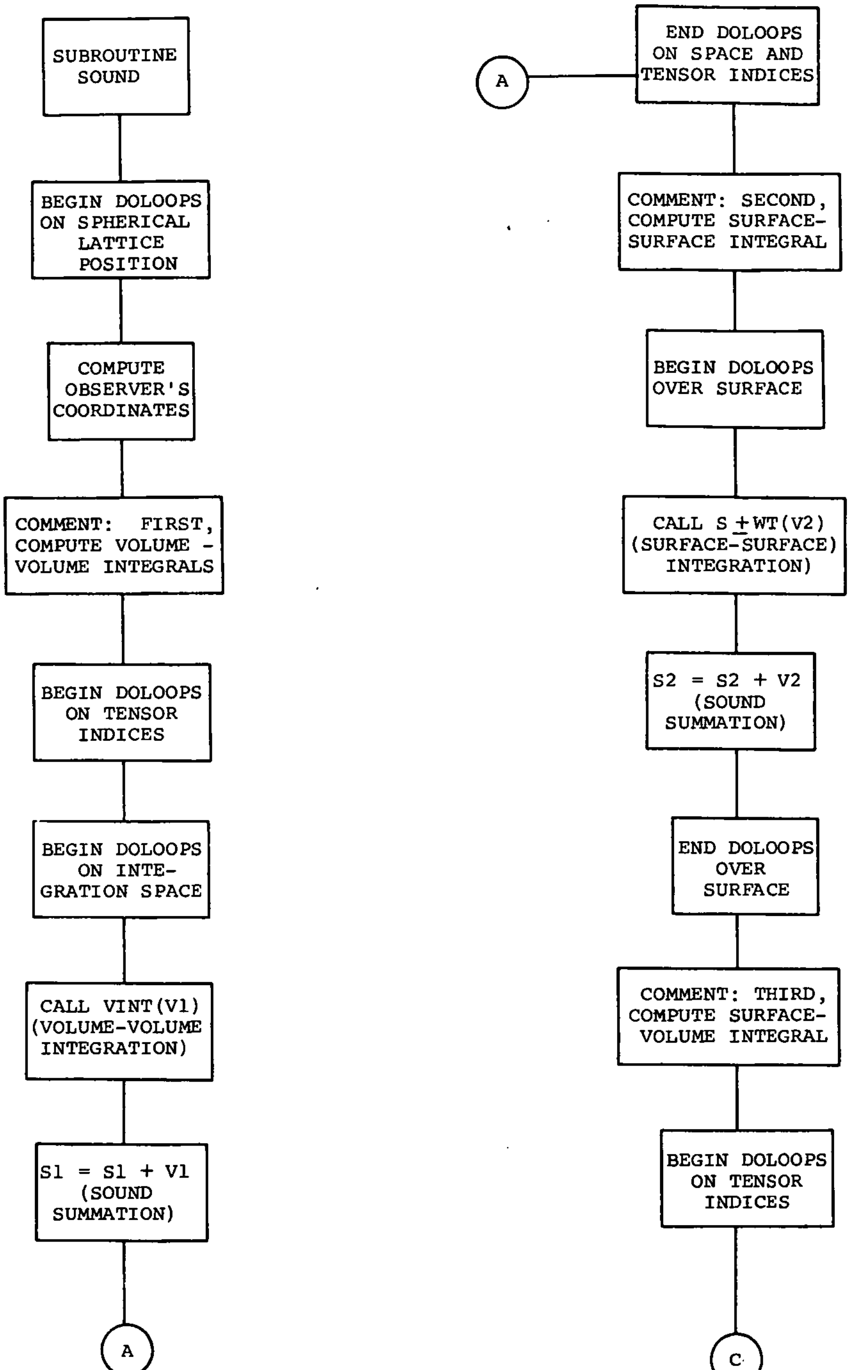
(d) Subroutine PPYZ.

Figure D-1.- Continued.



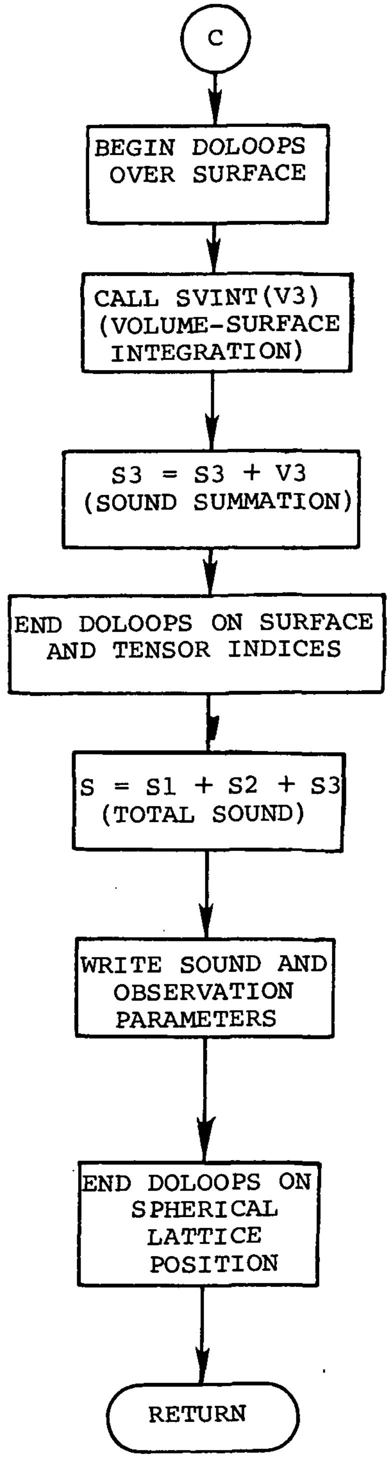
(e) Subroutine *DPDPYZ*.

Figure D-1.- Continued.



(f) Subroutine SOUND.

Figure D-1.- Continued.



(g) Subroutine SOUND.

Figure D-1.- Concluded.

```
JPWUP,T300,CM250000,P12.
ACCOUNT,YNEROS,KRONOS,  285////P/
GET(JPW285)
JPW285.
*                                                                    CARD NO.
         1                                                              1
  THIS IS A TEST OF FUNTIONS.                                           2
  .5        .025                                                        3
    -2.       2.        -1.        1.                                   4
0.          .4                                                          5
  .15       .4                                                          6
    0.        0.        0.                                              7
  FLOW DATA FOR REGION 4 (FOSSREPORT 9242)                              8
        04                                                              9
         1.        1.        45.        5.       48000.    1.          10
   .759      1.333                                                     11
  .053      1.333                                                      12
         8         6                                                   13
        13        0.                                                   14
0.000     0.053     2.71      1.30      -0.00                          15
0.666     0.053     2.36      0.76       0.00
1.333     0.053     2.06      0.40      -0.01
2.000     0.053     1.83      0.36      -0.00
2.666     0.053     1.73      0.45      -0.00
3.333     0.053     1.68      0.64      -0.00
4.000     0.053     1.73      0.67      -0.00
4.666     0.053     1.73      0.67       0.00
5.333     0.053     1.65      0.55       0.01
6.000     0.053     1.47      0.46      -0.00
6.666     0.053     1.29      0.36       0.00
7.333     0.053     1.11      0.28       0.00
8.000     0.053     0.93      0.24       0.00
        12        15.
0.000     0.053     2.65      1.53       0.39
0.666     0.053     2.46      0.88       0.28
1.333     0.053     2.19      0.45       0.16
2.000     0.053     1.95      0.38       0.07
2.666     0.053     1.83      0.48       0.01
3.333     0.053     1.81      0.61      -0.02
4.000     0.053     1.80      0.72      -0.04
4.666     0.053     1.78      0.65      -0.05
5.333     0.053     1.66      0.58      -0.04
6.000     0.053     1.49      0.46      -0.03
6.666     0.053     1.29      0.37      -0.02
7.333     0.053     1.10      0.27      -0.01
        13        30.
0.000     0.053     1.55      1.13       0.54
0.666     0.053     1.49      0.78       0.30
1.333     0.053     1.34      0.49       0.17
2.000     0.053     1.22      0.44       0.07
2.666     0.053     1.20      0.46       0.01
3.333     0.053     1.24      0.44       0.00
4.000     0.053     1.25      0.30      -0.00
4.666     0.053     1.14      0.09       0.01
5.333     0.053     0.96      0.03       0.01
6.000     0.053     0.76      0.10       0.00
6.666     0.053     0.54      0.10      -0.00
7.333     0.053     0.40      0.09      -0.00
8.000     0.053     0.28      0.07      -0.00
        12        48.
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Figure D-2.- Sample input data.

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TABLE I

EXPRESSIONS DESCRIBING THE VELOCITY FIELD OF AXISYMMETRIC WALL JET

Quantity	Expression for Calculation of Quantity	Description
V_{max}	$\dfrac{V_{ref}}{\left(\dfrac{r}{r_{ref}}\right)^{1.14}}$	Maximum wall jet velocity
δ	$0.018\ r$	Height above surface to V_{max} velocity
$z_{.5}$	$5\ \delta$	Height above surface to position of 1/2 V_{max} velocity
$V_r(z)$	$V_{max} \begin{cases} \left(\frac{z}{\delta}\right)^{1/7}, & 0 < z < \delta \\ \frac{1}{0.97}\ \text{sech}^2\left(0.18\ \frac{z}{\delta}\right), & z > \delta \end{cases}$	Wall jet velocity profile
V_{ref}	Taken from experimental data at the reference radius, r_{ref}	Scale velocity for wall jet flow

TABLE II

CALCULATION OF THE RATE OF STRAIN TENSOR IN AN INCOMPRESSIBLE WALL JET FLOW

$$\tilde{\tilde{\epsilon}} = \text{grad } \vec{V} + (\text{grad } \vec{V})^T$$

in cylindrical coordinates with $V_\theta \equiv 0$

$$\tilde{\tilde{\epsilon}} = \begin{pmatrix} 2\dfrac{\partial V_r}{\partial r} & \dfrac{1}{r}\dfrac{\partial V_r}{\partial \theta} & \dfrac{\partial V_r}{\partial z} + \dfrac{\partial V_z}{\partial r} \\[2ex] \dfrac{1}{r}\dfrac{\partial V_r}{\partial \theta} & \dfrac{2\,V_r}{r} & \dfrac{1}{r}\dfrac{\partial V_z}{\partial \theta} \\[2ex] \dfrac{\partial V_r}{\partial z} + \dfrac{\partial V_z}{\partial r} & \dfrac{1}{r}\dfrac{\partial V_z}{\partial \theta} & 2\dfrac{\partial V_z}{\partial z} \end{pmatrix}$$

in terms of functions of V_r

$$\tilde{\tilde{\epsilon}} = \begin{pmatrix} 2\dfrac{\partial V_r}{\partial r} & \dfrac{1}{r}\dfrac{\partial V_r}{\partial \theta} & \dfrac{\partial V_r}{\partial z} - I_1 \\[2ex] \dfrac{1}{r}\dfrac{\partial V_r}{\partial \theta} & 2\dfrac{V_r}{r} & -\,I_2 \\[2ex] \dfrac{\partial V_r}{\partial z} - I_1 & -\,I_2 & -\,2\dfrac{\partial V_r}{\partial r} \end{pmatrix}$$

$$I_1 = \int_0^z \frac{\partial}{\partial r}\left(\frac{1}{r}\frac{\partial r V_r}{\partial r}\right) dz$$

$$I_2 = \frac{1}{r^2}\int_0^z \frac{\partial^2 r V_r}{\partial \theta \partial r}\, dz$$

TABLE III

INPUT CONSTANTS

Jet Physical Data		
Diameter, d	0.0625	Ft
Velocity, U_j	115.0	Ft/sec
Density, ρ_o	2.4×10^{-3}	$Slugs/ft^3$
Reynolds number, $R = U_j d/\nu$	4.8×10^{4}	
Speed of Sound, a_o	1130.0	Ft/sec
Angle of incidence, α	45.0	Degrees
Wall Jet Physical Data		
Reference velocity, V_{ref}	83.8	Ft/sec
Reference position		
r/d	1.333	
z/d	0.053	
θ	0.0	Degrees
Calculation Instructions		
Correlation length, s/d	0.15	
Flow element size		
Δx_1	0.50	
Δx_2	0.50	
Δx_3	0.05	
Noise intensity position		
Radius of observation sphere, D/d	57.7	
Longitudinal increment, $\Delta\theta$	90.0	Degrees
Latitudinal increment, $\Delta\phi$	30.0	Degrees

Y1/D	Y2/D	Y3/D	Z1/D	Z2/D	Z3/D	$P/\rho U^2$	PP	PP0	PP1	PP2	PP3
-1,750	-1,750	,025	-1,750	-1,750	,025	,4764E-02	,2325E-01	,4730E-02	,3565E-02	,3565E-02	,1139E-01
-1,750	-1,750	,025	-1,750	-1,750	,075	,3071E-02	,9660E-02	,4548E-03	,2125E-02	-,1719E-02	,8799E-02
-1,750	-1,750	,025	-1,750	-1,750	,125	,1271E-02	,1655E-02	-,1779E-02	-,2802E-03	-,2209E-02	,5924E-02
-1,750	-1,750	,025	-1,750	-1,750	,175	,1109E-02	-,1260E-02	-,1794E-02	-,1797E-02	-,2090E-02	,4420E-02
-1,750	-1,750	,025	-1,750	-1,750	,225	,1564E-02	-,2505E-02	-,1390E-02	-,2559E-02	-,1645E-02	,3089E-02
-1,750	-1,750	,025	-1,750	-1,750	,275	,1615E-02	-,2671E-02	-,8353E-03	-,2795E-02	-,1117E-02	,2076E-02
-1,750	-1,750	,025	-1,750	-1,750	,325	,1529E-02	-,2396E-02	-,3524E-03	-,2703E-02	-,6770E-03	,1336E-02
-1,250	-1,750	,025	-1,250	-1,750	,025	,7616E-02	,5941E-01	,1016E-01	,1001E-01	,1001E-01	,2923E-01
-1,250	-1,750	,025	-1,250	-1,750	,075	,5077E-02	,2640E-01	,7796E-03	,3776E-02	,9296E-03	,2092E-01
-1,250	-1,750	,025	-1,250	-1,750	,125	,2124E-02	,4621E-02	-,3097E-02	-,2326E-02	-,2457E-02	,1250E-01
-1,250	-1,750	,025	-1,250	-1,750	,175	,1891E-02	-,3664E-02	-,3821E-02	-,4567E-02	-,3298E-02	,8022E-02
-1,250	-1,750	,025	-1,250	-1,750	,225	,2458E-02	-,6189E-02	-,3212E-02	-,5206E-02	-,2964E-02	,5193E-02
-1,250	-1,750	,025	-1,250	-1,750	,275	,2464E-02	-,6219E-02	-,2192E-02	-,5104E-02	-,2229E-02	,3306E-02
-1,250	-1,750	,025	-1,250	-1,750	,325	,2256E-02	-,5215E-02	-,1211E-02	-,4622E-02	-,1447E-02	,2065E-02
-,750	-1,750	,025	-,750	-1,750	,025	,1177E-01	,1419E+00	,2520E-01	,2290E-01	,2290E-01	,7088E-01
-,750	-1,750	,025	-,750	-1,750	,075	,7999E-02	,6554E-01	,1705E-02	,8968E-02	,3085E-02	,5178E-01
-,750	-1,750	,025	-,750	-1,750	,125	,3285E-02	,1105E-01	-,7863E-02	-,5648E-02	-,5818E-02	,3038E-01
-,750	-1,750	,025	-,750	-1,750	,175	,2956E-02	-,8953E-02	-,9424E-02	-,1054E-01	-,8213E-02	,1922E-01
-,750	-1,750	,025	-,750	-1,750	,225	,3838E-02	-,1509E-01	-,7786E-02	-,1183E-01	-,7628E-02	,1215E-01
-,750	-1,750	,025	-,750	-1,750	,275	,3826E-02	-,1500E-01	-,5160E-02	-,1149E-01	-,5866E-02	,7519E-02
-,750	-1,750	,025	-,750	-1,750	,325	,3488E-02	-,1246E-01	-,2738E-02	-,1034E-01	-,3952E-02	,4567E-02
-,250	-1,750	,025	-,250	-1,750	,025	,1592E-01	,2595E+00	,4356E-01	,4676E-01	,4676E-01	,1224E+00
-,250	-1,750	,025	-,250	-1,750	,075	,1031E-01	,1088E+00	,3140E-02	,1385E-01	,7619E-02	,8419E-01
-,250	-1,750	,025	-,250	-1,750	,125	,4334E-02	,1924E-01	-,1361E-01	-,9631E-02	-,1050E-01	,5298E-01
-,250	-1,750	,025	-,250	-1,750	,175	,4276E-02	-,1873E-01	-,1646E-01	-,1994E-01	-,1559E-01	,3327E-01
-,250	-1,750	,025	-,250	-1,750	,225	,5456E-02	-,3050E-01	-,1361E-01	-,2304E-01	-,1465E-01	,2081E-01
-,250	-1,750	,025	-,250	-1,750	,275	,5435E-02	-,3026E-01	-,9015E-02	-,2266E-01	-,1129E-01	,1270E-01
-,250	-1,750	,025	-,250	-1,750	,325	,4970E-02	-,2530E-01	-,4839E-02	-,2046E-01	-,7625E-02	,7621E-02
,250	-1,750	,025	,250	-1,750	,025	,1989E-01	,4053E+00	,6631E-01	,7676E-01	,7676E-01	,1855E+00
,250	-1,750	,025	,250	-1,750	,075	,1273E-01	,1660E+00	,4808E-02	,2414E-01	,9530E-02	,1275E+00
,250	-1,750	,025	,250	-1,750	,125	,4853E-02	,2413E-01	-,2086E-01	-,1414E-01	-,2067E-01	,7980E-01
,250	-1,750	,025	,250	-1,750	,175	,5967E-02	-,3647E-01	-,2509E-01	-,3295E-01	-,2850E-01	,5007E-01
,250	-1,750	,025	,250	-1,750	,225	,7331E-02	-,5505E-01	-,2066E-01	-,3936E-01	-,2641E-01	,3138E-01
,250	-1,750	,025	,250	-1,750	,275	,7262E-02	-,5401E-01	-,1363E-01	-,3928E-01	-,2030E-01	,1919E-01
,250	-1,750	,025	,250	-1,750	,325	,6636E-02	-,4511E-01	-,7283E-02	-,3563E-01	-,1371E-01	,1152E-01
,750	-1,750	,025	,750	-1,750	,025	,1982E-01	,4024E+00	,7734E-01	,6534E-01	,6534E-01	,1944E+00
,750	-1,750	,025	,750	-1,750	,075	,1293E-01	,1711E+00	,8713E-02	,3257E-01	-,1277E-01	,1426E+00
,750	-1,750	,025	,750	-1,750	,125	,2382E-02	,5811E-02	-,2389E-01	-,9205E-02	-,4573E-01	,8464E-01
,750	-1,750	,025	,750	-1,750	,175	,7665E-02	-,6018E-01	-,3065E-01	-,5046E-01	-,5203E-01	,5296E-01
,750	-1,750	,025	,750	-1,750	,225	,8774E-02	-,7886E-01	-,2508E-01	-,4113E-01	-,4618E-01	,3353E-01
,750	-1,750	,025	,750	-1,750	,275	,8517E-02	-,7430E-01	-,1594E-01	-,4368E-01	-,3594E-01	,2125E-01
,750	-1,750	,025	,750	-1,750	,325	,7681E-02	-,6042E-01	-,7020E-02	-,4169E-01	-,2509E-01	,1337E-01
1,250	-1,750	,025	1,250	-1,750	,025	,2049E-01	,4302E+00	,8133E-01	,6889E-01	,6889E-01	,2111E+00
1,250	-1,750	,025	1,250	-1,750	,075	,1307E-01	,1749E+00	,8281E-02	,3041E-01	-,9917E-02	,1461E+00
1,250	-1,750	,025	1,250	-1,750	,125	,2360E-02	,5705E-02	-,2453E-01	-,1097E-01	-,4185E-01	,8305E-01
1,250	-1,750	,025	1,250	-1,750	,175	,7630E-02	-,5963E-01	-,3082E-01	-,3166E-01	-,4805E-01	,5091E-01
1,250	-1,750	,025	1,250	-1,750	,225	,8751E-02	-,7845E-01	-,2620E-01	-,4108E-01	-,4387E-01	,3271E-01
1,250	-1,750	,025	1,250	-1,750	,275	,8566E-02	-,7515E-01	-,1824E-01	-,4288E-01	-,3534E-01	,2131E-01
1,250	-1,750	,025	1,250	-1,750	,325	,7807E-02	-,6243E-01	-,1014E-01	-,4057E-01	-,2576E-01	,1404E-01
1,750	-1,750	,025	1,750	-1,750	,025	,2251E-01	,5188E+00	,1084E+00	,7946E-01	,7946E-01	,2516E+00
1,750	-1,750	,025	1,750	-1,750	,075	,1521E-01	,2369E+00	,1771E-01	,3717E-01	-,1468E-01	,1967E+00
1,750	-1,750	,025	1,750	-1,750	,125	,4574E-02	,2143E-01	-,2843E-01	-,1569E-01	-,6442E-01	,1300E+00
1,750	-1,750	,025	1,750	-1,750	,175	,8819E-02	-,7966E-01	-,4430E-01	-,4229E-01	-,8202E-01	,8895E-01
1,750	-1,750	,025	1,750	-1,750	,225	,9908E-02	-,1005E+00	-,3847E-01	-,4543E-01	-,7884E-01	,6220E-01
1,750	-1,750	,025	1,750	-1,750	,275	,9608E-02	-,9456E-01	-,2476E-01	-,4703E-01	-,6385E-01	,4108E-01
1,750	-1,750	,025	1,750	-1,750	,325	,8492E-02	-,7386E-01	-,1045E-01	-,4455E-01	-,4533E-01	,2647E-01
-1,750	-1,250	,025	-1,750	-1,250	,025	,6661E-02	,4545E-01	,7086E-02	,9117E-02	,9117E-02	,2013E-01
-1,750	-1,250	,025	-1,750	-1,250	,075	,4272E-02	,1870E-01	,4482E-03	,3355E-02	,9797E-03	,1391E-01
-1,750	-1,250	,025	-1,750	-1,250	,125	,1181E-02	,1429E-02	-,2220E-02	-,2004E-02	-,2299E-02	,7952E-02
-1,750	-1,250	,025	-1,750	-1,250	,175	,2169E-02	-,4819E-02	-,2638E-02	-,4068E-02	-,3109E-02	,4996E-02
-1,750	-1,250	,025	-1,750	-1,250	,225	,2552E-02	-,6672E-02	-,2198E-02	-,4743E-02	-,2858E-02	,3127E-02
-1,750	-1,250	,025	-1,750	-1,250	,275	,2513E-02	-,6471E-02	-,1500E-02	-,4695E-02	-,2187E-02	,1911E-02
-1,750	-1,250	,025	-1,750	-1,250	,325	,2295E-02	-,5393E-02	-,8378E-03	-,4266E-02	-,1390E-02	,1101E-02
-1,250	-1,250	,025	-1,250	-1,250	,025	,9269E-02	,8800E-01	,1467E-01	,1453E-01	,1453E-01	,4427E-01
-1,250	-1,250	,025	-1,250	-1,250	,075	,5916E-02	,3585E-01	,7066E-03	,4201E-02	,2058E-02	,2889E-01
-1,250	-1,250	,025	-1,250	-1,250	,125	,2766E-02	,7835E-02	-,4564E-02	-,2985E-02	-,2101E-02	,1749E-01
-1,250	-1,250	,025	-1,250	-1,250	,175	,1920E-02	-,3776E-02	-,5471E-02	-,6137E-02	-,3023E-02	,1085E-01
-1,250	-1,250	,025	-1,250	-1,250	,225	,2726E-02	-,7614E-02	-,4549E-02	-,7108E-02	-,2656E-02	,6700E-02
-1,250	-1,250	,025	-1,250	-1,250	,275	,2796E-02	-,8007E-02	-,3147E-02	-,6992E-02	-,1898E-02	,4030E-02
-1,250	-1,250	,025	-1,250	-1,250	,325	,2606E-02	-,6955E-02	-,1872E-02	-,6310E-02	-,1134E-02	,2360E-02
-,750	-1,250	,025	-,750	-1,250	,025	,1661E-01	,2824E+00	,4796E-01	,4603E-01	,4603E-01	,1424E+00
-,750	-1,250	,025	-,750	-1,250	,075	,1060E-01	,1151E+00	,1705E-02	,1192E-01	,1026E-01	,9121E-01
-,750	-1,250	,025	-,750	-1,250	,125	,4889E-02	,2449E-01	-,1560E-01	-,1005E-01	-,4312E-02	,5444E-01
-,750	-1,250	,025	-,750	-1,250	,175	,3477E-02	-,1238E-01	-,1781E-01	-,1907E-01	-,8079E-02	,3258E-01
-,750	-1,250	,025	-,750	-1,250	,225	,4832E-02	-,2392E-01	-,1437E-01	-,2142E-01	-,7362E-02	,1923E-01
-,750	-1,250	,025	-,750	-1,250	,275	,4903E-02	-,2462E-01	-,9716E-02	-,2065E-01	-,5262E-02	,1101E-01
-,750	-1,250	,025	-,750	-1,250	,325	,4557E-02	-,2127E-01	-,5817E-02	-,1837E-01	-,3217E-02	,6133E-02
-,250	-1,250	,025	-,250	-1,250	,025	,2799E-01	,8025E+00	,1237E+00	,1534E+00	,1534E+00	,3719E+00
-,250	-1,250	,025	-,250	-1,250	,075	,1756E-01	,3159E+00	,3186E-02	,3752E-01	,3954E-01	,2357E+00
-,250	-1,250	,025	-,250	-1,250	,125	,7506E-02	,5771E-01	-,4097E-01	-,3293E-01	-,8289E-02	,1399E+00
-,250	-1,250	,025	-,250	-1,250	,175	,6860E-02	-,4820E-01	-,4577E-01	-,6274E-01	-,2082E-01	,8113E-01
-,250	-1,250	,025	-,250	-1,250	,225	,8829E-02	-,7976E-01	-,3641E-01	-,7035E-01	-,1908E-01	,4607E-01
-,250	-1,250	,025	-,250	-1,250	,275	,8834E-02	-,7993E-01	-,2461E-01	-,6728E-01	-,1329E-01	,2525E-01
-,250	-1,250	,025	-,250	-1,250	,325	,8197E-02	-,6882E-01	-,1517E-01	-,5920E-01	-,7951E-02	,1350E-01
,250	-1,250	,025	,250	-1,250	,025	,3842E-01	,1512E+01	,2217E+00	,3137E+00	,3137E+00	,6630E+00
,250	-1,250	,025	,250	-1,250	,075	,2377E-01	,5785E+00	,5828E-02	,8278E-01	,7045E-01	,4195E+00
,250	-1,250	,025	,250	-1,250	,125	,9097E-02	,8477E-01	-,7403E-01	-,6043E-01	-,2807E-01	,2473E+00
,250	-1,250	,025	,250	-1,250	,175	,1078E-01	-,1191E+00	-,8211E-01	-,1295E+00	-,5070E-01	,1432E+00
,250	-1,250	,025	,250	-1,250	,225	,1320E-01	-,1783E+00	-,6497E-01	-,1502E+00	-,4466E-01	,8153E-01
,250	-1,250	,025	,250	-1,250	,275	,1309E-01	-,1755E+00	-,4371E-01	-,1457E+00	-,3086E-01	,4478E-01
,250	-1,250	,025	,250	-1,250	,325	,1211E-01	-,1501E+00	-,2685E-01	-,1288E+00	-,1842E-01	,2396E-01
,750	-1,250	,025	,750	-1,250	,025	,3252E-01	,1083E+01	,1911E+00	,1849E+00	,1849E+00	,5224E+00
,750	-1,250	,025	,750	-1,250	,075	,1972E-01	,3984E+00	,1049E-01	,6036E-01	,4107E-02	,3235E+00
,750	-1,250	,025	,750	-1,250	,125	,5149E-02	,2715E-01	-,6380E-01	-,2402E-01	-,6827E-01	,1832E+00
,750	-1,250	,025	,750	-1,250	,175	,1099E-01	-,1237E+00	-,7320E-01	-,7709E-01	-,7818E-01	,1048E+00

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Table IV.- Covariances for pressure.

Y1/D	Y2/D	Y3/D	Z1/D	Z2/D	Z3/D	$P/\rho U^2$	PP	PPO	PP1	PP2	PP3
.750	-1.250	.025	.750	-1.250	.225	.1258E-01	-.1620E+00	-.5764E-01	-.1009E+00	-.6504E-01	.6163E-01
.750	-1.250	.025	.750	-1.250	.275	.1219E-01	-.1521E+00	-.3769E-01	-.1044E+00	-.4636E-01	.3630E-01
.750	-1.250	.025	.750	-1.250	.325	.1108E-01	-.1258E+00	-.2084E-01	-.9695E-01	-.2947E-01	.2149E-01
1.250	-1.250	.025	1.250	-1.250	.025	.3982E-01	.1624E+01	.2809E+00	.2800E+00	.2800E+00	.7833E+00
1.250	-1.250	.025	1.250	-1.250	.075	.2423E-01	.6015E+00	.1416E-01	.7840E-01	.2450E-01	.4844E+00
1.250	-1.250	.025	1.250	-1.250	.125	.7267E-02	.5409E-01	-.8876E-01	-.5253E-01	-.7861E-01	.2740E+00
1.250	-1.250	.025	1.250	-1.250	.175	.1238E-01	-.1569E+00	-.1028E+00	-.1164E+00	-.1023E+00	.1646E+00
1.250	-1.250	.025	1.250	-1.250	.225	.1452E-01	-.2158E+00	-.8531E-01	-.1393E+00	-.9378E-01	.1026E+00
1.250	-1.250	.025	1.250	-1.250	.275	.1424E-01	-.2078E+00	-.5974E-01	-.1391E+00	-.7272E-01	.6384E-01
1.250	-1.250	.025	1.250	-1.250	.325	.1301E-01	-.1735E+00	-.3605E-01	-.1273E+00	-.4983E-01	.3968E-01
1.750	-1.250	.025	1.750	-1.250	.025	.2937E-01	.8836E+00	.1471E+00	.1609E+00	.1609E+00	.4148E+00
1.750	-1.250	.025	1.750	-1.250	.075	.1879E-01	.3618E+00	.1056E-01	.5552E-01	.1424E-01	.2815E+00
1.750	-1.250	.025	1.750	-1.250	.125	.5890E-02	.3553E-01	-.4348E-01	-.3576E-01	-.4569E-01	.1605E+00
1.750	-1.250	.025	1.750	-1.250	.175	.9089E-02	-.8462E-01	-.5307E-01	-.7093E-01	-.6154E-01	.1009E+00
1.750	-1.250	.025	1.750	-1.250	.225	.1095E-01	-.1229E+00	-.4635E-01	-.8262E-01	-.5950E-01	.6557E-01
1.750	-1.250	.025	1.750	-1.250	.275	.1093E-01	-.1224E+00	-.3409E-01	-.8179E-01	-.4905E-01	.4252E-01
1.750	-1.250	.025	1.750	-1.250	.325	.1011E-01	-.1047E+00	-.2151E-01	-.7470E-01	-.3594E-01	.2743E-01
-1.750	-.750	.025	-1.750	-.750	.025	.7503E-02	.5766E-01	.8868E-02	.1145E-01	.1145E-01	.2589E-01
-1.750	-.750	.025	-1.750	-.750	.075	.4876E-02	.2035E-01	.4004E-03	.4231E-02	.1774E-02	.1791E-01
-1.750	-.750	.025	-1.750	-.750	.125	.1477E-02	.2234E-02	-.2854E-02	-.2655E-02	-.2163E-02	.9905E-02
-1.750	-.750	.025	-1.750	-.750	.175	.2287E-02	-.5356E-02	-.3296E-02	-.5076E-02	-.3120E-02	.6135E-02
-1.750	-.750	.025	-1.750	-.750	.225	.2731E-02	-.7641E-02	-.2695E-02	-.5852E-02	-.2879E-02	.3784E-02
-1.750	-.750	.025	-1.750	-.750	.275	.2701E-02	-.7471E-02	-.1822E-02	-.5741E-02	-.2184E-02	.2276E-02
-1.750	-.750	.025	-1.750	-.750	.325	.2483E-02	-.6315E-02	-.1035E-02	-.5177E-02	-.1413E-02	.1310E-02
-1.250	-.750	.025	-1.250	-.750	.025	.1116E-01	.1276E+00	.1697E-01	.2742E-01	.2742E-01	.5581E-01
-1.250	-.750	.025	-1.250	-.750	.075	.6867E-02	.4830E-01	.8268E-03	.6990E-02	.3806E-02	.3668E-01
-1.250	-.750	.025	-1.250	-.750	.125	.3262E-02	.1090E-01	-.4825E-02	-.5530E-02	-.1503E-02	.2276E-01
-1.250	-.750	.025	-1.250	-.750	.175	.2491E-02	-.6355E-02	-.6335E-02	-.1117E-01	-.2511E-02	.1366E-01
-1.250	-.750	.025	-1.250	-.750	.225	.3526E-02	-.1273E-01	-.5616E-02	-.1292E-01	-.2150E-02	.7956E-02
-1.250	-.750	.025	-1.250	-.750	.275	.3677E-02	-.1385E-01	-.4267E-02	-.1259E-01	-.1451E-02	.4460E-02
-1.250	-.750	.025	-1.250	-.750	.325	.3499E-02	-.1254E-01	-.2968E-02	-.1121E-01	-.7978E-03	.2435E-02
1.250	-.750	.025	1.250	-.750	.025	.5533E-01	.3136E+01	.4693E+00	.6389E+00	.6389E+00	.1389E+01
1.250	-.750	.025	1.250	-.750	.075	.3318E-01	.1127E+01	.1437E-01	.1303E+00	.1515E+00	.8312E+00
1.250	-.750	.025	1.250	-.750	.125	.1151E-01	.1356E+00	-.1502E+00	-.1369E+00	-.4037E-01	.4631E+00
1.250	-.750	.025	1.250	-.750	.175	.1535E-01	-.2413E+00	-.1699E+00	-.2516E+00	-.9021E-01	.2703E+00
1.250	-.750	.025	1.250	-.750	.225	.1851E-01	-.3508E+00	-.1408E+00	-.2835E+00	-.8725E-01	.1608E+00
1.250	-.750	.025	1.250	-.750	.275	.1838E-01	-.3460E+00	-.1012E+00	-.2730E+00	-.6614E-01	.9433E-01
1.250	-.750	.025	1.250	-.750	.325	.1705E-01	-.2979E+00	-.6649E-01	-.2428E+00	-.4329E-01	.5467E-01
1.750	-.750	.025	1.750	-.750	.025	.4118E-01	.1737E+01	.2757E+00	.3316E+00	.3316E+00	.7982E+00
1.750	-.750	.025	1.750	-.750	.075	.2660E-01	.7246E+00	.1541E-01	.1141E+00	.5308E-01	.5420E+00
1.750	-.750	.025	1.750	-.750	.125	.8464E-02	.7337E-01	-.8425E-01	-.8188E-01	-.6055E-01	.3001E+00
1.750	-.750	.025	1.750	-.750	.175	.1210E-01	-.1499E+00	-.9948E-01	-.1467E+00	-.9062E-01	.1869E+00
1.750	-.750	.025	1.750	-.750	.225	.1460E-01	-.2184E+00	-.8511E-01	-.1643E+00	-.8804E-01	.1191E+00
1.750	-.750	.025	1.750	-.750	.275	.1453E-01	-.2164E+00	-.6153E-01	-.1589E+00	-.7118E-01	.7522E-01
1.750	-.750	.025	1.750	-.750	.325	.1343E-01	-.1847E+00	-.3856E-01	-.1426E+00	-.5058E-01	.4699E-01
-1.750	-.250	.025	-1.750	-.250	.025	.8147E-02	.6798E-01	.1039E-01	.1354E-01	.1354E-01	.3051E-01
-1.750	-.250	.025	-1.750	-.250	.075	.5095E-02	.2659E-01	.4604E-03	.3478E-02	.2966E-02	.1969E-01
-1.750	-.250	.025	-1.750	-.250	.125	.1964E-02	.3949E-02	-.3277E-02	-.2994E-02	-.1484E-02	.1170E-01
-1.750	-.250	.025	-1.750	-.250	.175	.2192E-02	-.4920E-02	-.3848E-02	-.5543E-02	-.2734E-02	.7205E-02
-1.750	-.250	.025	-1.750	-.250	.225	.2742E-02	-.7699E-02	-.3182E-02	-.6288E-02	-.2610E-02	.4382E-02
-1.750	-.250	.025	-1.750	-.250	.275	.2737E-02	-.7676E-02	-.2190E-02	-.6103E-02	-.1975E-02	.2592E-02
-1.750	-.250	.025	-1.750	-.250	.325	.2530E-02	-.6559E-02	-.1294E-02	-.5471E-02	-.1270E-02	.1477E-02
-1.250	-.250	.025	-1.250	-.250	.025	.1137E-01	.1325E+00	.1900E-01	.2805E-01	.2805E-01	.5743E-01
-1.250	-.250	.025	-1.250	-.250	.075	.6855E-02	.4814E-01	.2325E-03	.5984E-02	.7776E-02	.3415E-01
-1.250	-.250	.025	-1.250	-.250	.125	.2531E-02	.6559E-02	-.6169E-02	-.6343E-02	-.3173E-04	.1910E-01
-1.250	-.250	.025	-1.250	-.250	.175	.3001E-02	-.9225E-02	-.6848E-02	-.1113E-01	-.2084E-02	.1083E-01
-1.250	-.250	.025	-1.250	-.250	.225	.3683E-02	-.1389E-01	-.5588E-02	-.1229E-01	-.1985E-02	.5970E-02
-1.250	-.250	.025	-1.250	-.250	.275	.3666E-02	-.1377E-01	-.3991E-02	-.1161E-01	-.1360E-02	.3195E-02
-1.250	-.250	.025	-1.250	-.250	.325	.3416E-02	-.1195E-01	-.2689E-02	-.1014E-01	-.7685E-03	.1640E-02
1.250	-.250	.025	1.250	-.250	.025	.1005E+00	.1034E+02	.1495E+01	.2149E+01	.2149E+01	.4552E+01
1.250	-.250	.025	1.250	-.250	.075	.6341E-01	.4118E+01	.3020E-01	.6301E+00	.5833E+00	.2875E+01
1.250	-.250	.025	1.250	-.250	.125	.2028E-01	.4211E+00	-.5054E+00	-.5256E+00	-.3470E-01	.1487E+01
1.250	-.250	.025	1.250	-.250	.175	.2761E-01	-.7808E+00	-.5301E+00	-.9282E+00	-.1601E+00	.8378E+00
1.250	-.250	.025	1.250	-.250	.225	.3342E-01	-.1144E+01	-.4289E+00	-.1008E+01	-.1749E+00	.4678E+00
1.250	-.250	.025	1.250	-.250	.275	.3249E-01	-.1081E+01	-.3179E+00	-.9194E+00	-.1161E+00	.2723E+00
1.250	-.250	.025	1.250	-.250	.325	.3028E-01	-.9389E+00	-.2196E+00	-.7959E+00	-.7366E-01	.1503E+00
1.750	-.250	.025	1.750	-.250	.025	.6414E-01	.4214E+01	.6477E+00	.8267E+00	.8267E+00	.1913E+01
1.750	-.250	.025	1.750	-.250	.075	.4184E-01	.1793E+01	.2950E-01	.2839E+00	.1706E+00	.1309E+01
1.750	-.250	.025	1.750	-.250	.125	.1430E-01	.2094E+00	-.2071E+00	-.2035E+00	-.1032E+00	.7232E+00
1.750	-.250	.025	1.750	-.250	.175	.1809E-01	-.3352E+00	-.2314E+00	-.3747E+00	-.1610E+00	.4318E+00
1.750	-.250	.025	1.750	-.250	.225	.2204E-01	-.4975E+00	-.1914E+00	-.4097E+00	-.1660E+00	.2695E+00
1.750	-.250	.025	1.750	-.250	.275	.2161E-01	-.4785E+00	-.1416E+00	-.3809E+00	-.1273E+00	.1713E+00
1.750	-.250	.025	1.750	-.250	.325	.2003E-01	-.4110E+00	-.9117E-01	-.3353E+00	-.9063E-01	.1062E+00
-1.750	.250	.025	-1.750	.250	.025	.8136E-02	.6781E-01	.1040E-01	.1345E-01	.1345E-01	.3051E-01
-1.750	.250	.025	-1.750	.250	.075	.5091E-02	.2655E-01	.4613E-03	.3457E-02	.2946E-02	.1969E-01
-1.750	.250	.025	-1.750	.250	.125	.1971E-02	.3979E-02	-.3276E-02	-.2984E-02	-.1462E-02	.1170E-01
-1.750	.250	.025	-1.750	.250	.175	.2177E-02	-.4855E-02	-.3850E-02	-.5510E-02	-.2695E-02	.7200E-02
-1.750	.250	.025	-1.750	.250	.225	.2717E-02	-.7559E-02	-.3186E-02	-.6244E-02	-.2518E-02	.4389E-02
-1.750	.250	.025	-1.750	.250	.275	.2711E-02	-.7530E-02	-.2191E-02	-.6056E-02	-.1892E-02	.2609E-02
-1.750	.250	.025	-1.750	.250	.325	.2507E-02	-.6439E-02	-.1295E-02	-.5429E-02	-.1210E-02	.1495E-02
-1.250	.250	.025	-1.250	.250	.025	.1133E-01	.1314E+00	.1887E-01	.2755E-01	.2755E-01	.5743E-01
-1.250	.250	.025	-1.250	.250	.075	.6837E-02	.4788E-01	.2472E-03	.5868E-02	.7412E-02	.3435E-01
-1.250	.250	.025	-1.250	.250	.125	.2623E-02	.7048E-02	-.6084E-02	-.6253E-02	.7916E-05	.1938E-01
-1.250	.250	.025	-1.250	.250	.175	.2907E-02	-.8655E-02	-.6805E-02	-.1093E-01	-.1964E-02	.1104E-01
-1.250	.250	.025	-1.250	.250	.225	.3620E-02	-.1342E-01	-.5571E-02	-.1205E-01	-.1926E-02	.6126E-02
-1.250	.250	.025	-1.250	.250	.275	.3624E-02	-.1345E-01	-.4008E-02	-.1138E-01	-.1333E-02	.3269E-02
-1.250	.250	.025	-1.250	.250	.325	.3385E-02	-.1174E-01	-.2720E-02	-.9932E-02	-.7595E-03	.1673E-02
1.250	.250	.025	1.250	.250	.025	.1009E+00	.1043E+02	.1487E+01	.2193E+01	.2193E+01	.4552E+01
1.250	.250	.025	1.250	.250	.075	.6344E-01	.4122E+01	.2473E-01	.5865E+00	.6392E+00	.2872E+01
1.250	.250	.025	1.250	.250	.125	.2101E-01	.4522E+00	-.4932E+00	-.5541E+00	-.2506E-02	.1502E+01
1.250	.250	.025	1.250	.250	.175	.2795E-01	-.8002E+00	-.5291E+00	-.9371E+00	-.1568E+00	.8228E+00
1.250	.250	.025	1.250	.250	.225	.3270E-01	-.1095E+01	-.4294E+00	-.9769E+00	-.1565E+00	.4675E+00
1.250	.250	.025	1.250	.250	.275	.3249E-01	-.1081E+01	-.3167E+00	-.9076E+00	-.1210E+00	.2643E+00
1.250	.250	.025	1.250	.250	.325	.3015E-01	-.9311E+00	-.2184E+00	-.7825E+00	-.7677E-01	.1466E+00
1.750	.250	.025	1.750	.250	.025	.6428E-01	.4233E+01	.6461E+00	.8368E+00	.8368E+00	.1913E+01

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Table IV.- Continued.

Y1/D	Y2/D	Y3/D	Z1/D	Z2/D	Z3/D	$P/\rho U^2$	PP	PP0	PP1	PP2	PP3
1.750	.250	.025	1.750	.250	.075	.4188E-01	.1796E+01	.2818E-01	.2752E+00	.1843E+00	.1309E+01
1.750	.250	.025	1.750	.250	.125	.1447E-01	.2144E+00	-.2055E+00	-.2098E+00	-.9577E-01	.7255E+00
1.750	.250	.025	1.750	.250	.175	.1623E-01	-.3404E+00	-.2299E+00	-.3774E+00	-.1639E+00	.4308E+00
1.750	.250	.025	1.750	.250	.225	.2176E-01	-.4850E+00	-.1922E+00	-.4024E+00	-.1599E+00	.2694E+00
1.750	.250	.025	1.750	.250	.275	.2170E-01	-.4822E+00	-.1407E+00	-.3791E+00	-.1321E+00	.1697E+00
1.750	.250	.025	1.750	.250	.325	.2005E-01	-.4120E+00	-.9060E-01	-.3329E+00	-.9391E-01	.1054E+00
-1.750	-1.750	.075	-1.750	-1.750	.025	.3071E-02	.9660E-02				
-1.750	-1.750	.075	-1.750	-1.750	.075	.5229E-02	.2800E-01	.3505E-02	.5376E-02	.5376E-02	.1375E-01
-1.750	-1.750	.075	-1.750	-1.750	.125	.3268E-02	.1094E-01	-.2424E-03	.1521E-02	.2069E-03	.9453E-02
-1.750	-1.750	.075	-1.750	-1.750	.175	.1912E-02	.3744E-02	-.1277E-02	-.1092E-02	-.7892E-03	.6902E-02
-1.750	-1.750	.075	-1.750	-1.750	.225	.5106E-03	-.2670E-03	-.1543E-02	-.2561E-02	-.9297E-03	.4767E-02
-1.750	-1.750	.075	-1.750	-1.750	.275	.1432E-02	-.2101E-02	-.1347E-02	-.3190E-02	-.7350E-03	.3171E-02
-1.750	-1.750	.075	-1.750	-1.750	.325	.1638E-02	-.2747E-02	-.1011E-02	-.3279E-02	-.4772E-03	.2020E-02
-1.250	-1.750	.075	-1.250	-1.750	.025	.5077E-02	.2640E-01				
-1.250	-1.750	.075	-1.250	-1.750	.075	.7168E-02	.5263E-01	.7250E-02	.8355E-02	.8355E-02	.2867E-01
-1.250	-1.750	.075	-1.250	-1.750	.125	.4276E-02	.1873E-01	-.2594E-03	.2552E-03	.1705E-02	.1703E-01
-1.250	-1.750	.075	-1.250	-1.750	.175	.2012E-02	.4145E-02	-.2843E-02	-.3105E-02	-.7889E-03	.1088E-01
-1.250	-1.750	.075	-1.250	-1.750	.225	.1479E-02	-.2239E-02	-.3280E-02	-.4433E-02	-.1512E-02	.6986E-02
-1.250	-1.750	.075	-1.250	-1.750	.275	.2100E-02	-.4518E-02	-.2764E-02	-.4756E-02	-.1407E-02	.4409E-02
-1.250	-1.750	.075	-1.250	-1.750	.325	.2150E-02	-.4735E-02	-.1956E-02	-.4514E-02	-.9934E-03	.2729E-02
-.750	-1.750	.075	-.750	-1.750	.025	.7999E-02	.6554E-01				
-.750	-1.750	.075	-.750	-1.750	.075	.1157E-01	.1370E+00	.1883E-01	.2225E-01	.2225E-01	.7369E-01
-.750	-1.750	.075	-.750	-1.750	.125	.6854E-02	.4812E-01	-.6811E-03	.9327E-04	.5448E-02	.4326E-01
-.750	-1.750	.075	-.750	-1.750	.175	.3177E-02	.1034E-01	-.7299E-02	-.8427E-02	-.1301E-02	.2737E-01
-.750	-1.750	.075	-.750	-1.750	.225	.2483E-02	-.6315E-02	-.8420E-02	-.1169E-01	-.3497E-02	.1729E-01
-.750	-1.750	.075	-.750	-1.750	.275	.3459E-02	-.1225E-01	-.7104E-02	-.1239E-01	-.3456E-02	.1070E-01
-.750	-1.750	.075	-.750	-1.750	.325	.3538E-02	-.1282E-01	-.5087E-02	-.1167E-01	-.2557E-02	.6494E-02
-.250	-1.750	.075	-.250	-1.750	.025	.1031E-01	.1088E+00				
-.250	-1.750	.075	-.250	-1.750	.075	.1447E-01	.2144E+00	.2836E-01	.3662E-01	.3662E-01	.1128E+00
-.250	-1.750	.075	-.250	-1.750	.125	.8846E-02	.8016E-01	-.7852E-03	.2295E-02	.7743E-02	.7091E-01
-.250	-1.750	.075	-.250	-1.750	.175	.3698E-02	.1401E-01	-.1144E-01	-.1459E-01	-.4492E-02	.4452E-01
-.250	-1.750	.075	-.250	-1.750	.225	.3782E-02	-.1465E-01	-.1299E-01	-.2147E-01	-.8039E-02	.2786E-01
-.250	-1.750	.075	-.250	-1.750	.275	.4862E-02	-.2422E-01	-.1062E-01	-.2317E-01	-.7442E-02	.1701E-01
-.250	-1.750	.075	-.250	-1.750	.325	.4878E-02	-.2437E-01	-.7270E-02	-.2192E-01	-.5395E-02	.1021E-01
.250	-1.750	.075	.250	-1.750	.025	.1273E-01	.1660E+00				
.250	-1.750	.075	.250	-1.750	.075	.1819E-01	.3387E+00	.4308E-01	.6238E-01	.6238E-01	.1709E+00
.250	-1.750	.075	.250	-1.750	.125	.1103E-01	.1247E+00	-.1270E-02	.6754E-02	.1199E-01	.1072E+00
.250	-1.750	.075	.250	-1.750	.175	.4179E-02	.1789E-01	-.1741E-01	-.2337E-01	-.8645E-02	.6731E-01
.250	-1.750	.075	.250	-1.750	.225	.5275E-02	-.2850E-01	-.1972E-01	-.3648E-01	-.1447E-01	.4216E-01
.250	-1.750	.075	.250	-1.750	.275	.6531E-02	-.4369E-01	-.1609E-01	-.4008E-01	-.1328E-01	.2577E-01
.250	-1.750	.075	.250	-1.750	.325	.6498E-02	-.4325E-01	-.1101E-01	-.3809E-01	-.9611E-02	.1547E-01
.750	-1.750	.075	.750	-1.750	.025	.1293E-01	.1711E+00				
.750	-1.750	.075	.750	-1.750	.075	.2038E-01	.4255E+00	.5652E-01	.8032E-01	.8032E-01	.2083E+00
.750	-1.750	.075	.750	-1.750	.125	.1218E-01	.1520E+00	-.1326E-02	.1638E-01	.9453E-02	.1275E+00
.750	-1.750	.075	.750	-1.750	.175	.4419E-02	.2000E-01	-.2337E-01	-.1967E-01	-.1829E-01	.8134E-01
.750	-1.750	.075	.750	-1.750	.225	.6326E-02	-.4099E-01	-.2692E-01	-.4028E-01	-.2558E-01	.5180E-01
.750	-1.750	.075	.750	-1.750	.275	.7726E-02	-.6113E-01	-.2220E-01	-.4832E-01	-.2337E-01	.3275E-01
.750	-1.750	.075	.750	-1.750	.325	.7698E-02	-.6070E-01	-.1482E-01	-.4885E-01	-.1739E-01	.2036E-01
1.250	-1.750	.075	1.250	-1.750	.025	.1307E-01	.1749E+00				
1.250	-1.750	.075	1.250	-1.750	.075	.1988E-01	.4050E+00	.5433E-01	.7428E-01	.7428E-01	.2021E+00
1.250	-1.750	.075	1.250	-1.750	.125	.1164E-01	.1389E+00	-.1609E-02	.1414E-01	.7197E-02	.1191E+00
1.250	-1.750	.075	1.250	-1.750	.175	.3810E-02	.1487E-01	-.2185E-01	-.1969E-01	-.1829E-01	.7471E-01
1.250	-1.750	.075	1.250	-1.750	.225	.6284E-02	-.4044E-01	-.2538E-01	-.3794E-01	-.2542E-01	.4830E-01
1.250	-1.750	.075	1.250	-1.750	.275	.7577E-02	-.5880E-01	-.2156E-01	-.4481E-01	-.2383E-01	.3139E-01
1.250	-1.750	.075	1.250	-1.750	.325	.7538E-02	-.5821E-01	-.1510E-01	-.4503E-01	-.1847E-01	.2040E-01
1.750	-1.750	.075	1.750	-1.750	.025	.1521E-01	.2369E+00				
1.750	-1.750	.075	1.750	-1.750	.075	.2392E-01	.5859E+00	.8440E-01	.1005E+00	.1005E+00	.3004E+00
1.750	-1.750	.075	1.750	-1.750	.125	.1488E-01	.2267E+00	.1735E-02	.1388E-01	.1170E-01	.1994E+00
1.750	-1.750	.075	1.750	-1.750	.175	.5851E-02	.3507E-01	-.3591E-01	-.3372E-01	-.3221E-01	.1369E+00
1.750	-1.750	.075	1.750	-1.750	.225	.6268E-02	-.4024E-01	-.4239E-01	-.4606E-01	-.4719E-01	.9540E-01
1.750	-1.750	.075	1.750	-1.750	.275	.8336E-02	-.7118E-01	-.3560E-01	-.5414E-01	-.4436E-01	.6292E-01
1.750	-1.750	.075	1.750	-1.750	.325	.8340E-02	-.7125E-01	-.2366E-01	-.5459E-01	-.3348E-01	.4048E-01
-1.750	-1.250	.075	-1.750	-1.250	.025	.4272E-02	.1870E-01				
-1.750	-1.250	.075	-1.750	-1.250	.075	.6227E-02	.3972E-01	.4776E-02	.8051E-02	.8051E-02	.1884E-01
-1.750	-1.250	.075	-1.750	-1.250	.125	.3517E-02	.1267E-01	-.2212E-03	.4136E-03	.1620E-02	.1086E-01
-1.750	-1.250	.075	-1.750	-1.250	.175	.1133E-02	.1315E-02	-.1865E-02	-.2927E-02	-.7331E-03	.6840E-02
-1.750	-1.250	.075	-1.750	-1.250	.225	.1887E-02	-.3646E-02	-.2125E-02	-.4371E-02	-.1437E-02	.4287E-02
-1.750	-1.250	.075	-1.750	-1.250	.275	.2268E-02	-.5268E-02	-.1780E-02	-.4754E-02	-.1356E-02	.2623E-02
-1.750	-1.250	.075	-1.750	-1.250	.325	.2254E-02	-.5203E-02	-.1260E-02	-.4529E-02	-.9341E-03	.1520E-02
-1.250	-1.250	.075	-1.250	-1.250	.025	.5916E-02	.3585E-01				
-1.250	-1.250	.075	-1.250	-1.250	.075	.7828E-02	.6276E-01	.8669E-02	.9060E-02	.9060E-02	.3597E-01
-1.250	-1.250	.075	-1.250	-1.250	.125	.4764E-02	.2325E-01	-.4407E-03	.5467E-03	.1652E-02	.2149E-01
-1.250	-1.250	.075	-1.250	-1.250	.175	.2277E-02	.5311E-02	-.3480E-02	-.3635E-02	-.8548E-03	.1328E-01
-1.250	-1.250	.075	-1.250	-1.250	.225	.1562E-02	-.2498E-02	-.3821E-02	-.5369E-02	-.1451E-02	.8143E-02
-1.250	-1.250	.075	-1.250	-1.250	.275	.2267E-02	-.5263E-02	-.3084E-02	-.5793E-02	-.1248E-02	.4863E-02
-1.250	-1.250	.075	-1.250	-1.250	.325	.2331E-02	-.5566E-02	-.2109E-02	-.5475E-02	-.8017E-03	.2819E-02
-.750	-1.250	.075	-.750	-1.250	.025	.1060E-01	.1151E+00				
-.750	-1.250	.075	-.750	-1.250	.075	.1398E-01	.2002E+00	.2734E-01	.2955E-01	.2955E-01	.1137E+00
-.750	-1.250	.075	-.750	-1.250	.125	.8488E-02	.7379E-01	-.1527E-02	.3930E-03	.7028E-02	.6789E-01
-.750	-1.250	.075	-.750	-1.250	.175	.3815E-02	.1491E-01	-.1102E-01	-.1313E-01	-.1568E-02	.4062E-01
-.750	-1.250	.075	-.750	-1.250	.225	.3106E-02	-.9880E-02	-.1182E-01	-.1824E-01	-.3771E-02	.2395E-01
-.750	-1.250	.075	-.750	-1.250	.275	.4215E-02	-.1820E-01	-.9404E-02	-.1914E-01	-.3344E-02	.1369E-01
-.750	-1.250	.075	-.750	-1.250	.325	.4291E-02	-.1886E-01	-.6490E-02	-.1777E-01	-.2211E-02	.7619E-02
-.250	-1.250	.075	-.250	-1.250	.025	.1756E-01	.3159E+00				
-.250	-1.250	.075	-.250	-1.250	.075	.2319E-01	.5510E+00	.6906E-01	.9558E-01	.9558E-01	.2908E+00
-.250	-1.250	.075	-.250	-1.250	.125	.1377E-01	.1941E+00	-.4264E-02	.7407E-03	.2510E-01	.1725E+00
-.250	-1.250	.075	-.250	-1.250	.175	.5008E-02	.2568E-01	-.2784E-01	-.4443E-01	-.2076E-02	.1000E+00
-.250	-1.250	.075	-.250	-1.250	.225	.6456E-02	-.4269E-01	-.2931E-01	-.6128E-01	-.8941E-02	.5683E-01
-.250	-1.250	.075	-.250	-1.250	.275	.7873E-02	-.6349E-01	-.2316E-01	-.6350E-01	-.7989E-02	.3115E-01
-.250	-1.250	.075	-.250	-1.250	.325	.7835E-02	-.6288E-01	-.1621E-01	-.5813E-01	-.5199E-02	.1667E-01
.250	-1.250	.075	.250	-1.250	.025	.2377E-01	.5785E+00				
.250	-1.250	.075	.250	-1.250	.075	.3199E-01	.1048E+01	.1234E+00	.2033E+00	.2033E+00	.5183E+00
.250	-1.250	.075	.250	-1.250	.125	.1876E-01	.3605E+00	-.7869E-02	.1259E-01	.4913E-01	.3066E+00
.250	-1.250	.075	.250	-1.250	.175	.5542E-02	.3146E-01	-.4985E-01	-.8900E-01	-.7362E-02	.1777E+00
.250	-1.250	.075	.250	-1.250	.225	.9978E-02	-.1020E+00	-.5231E-01	-.1298E+00	-.2090E-01	.1011E+00

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Table IV.- Continued.

Y1/D	Y2/D	Y3/D	Z1/D	Z2/D	Z3/D	$P/\rho U^2$	PP	PP0	PP1	PP2	PP3
.250	-1.250	.075	.250	-1.250	.275	.1173E-01	-.1409E+00	-.4129E-01	-.1369E+00	-.1822E-01	.5547E-01
.250	-1.250	.075	.250	-1.250	.325	.1156E-01	-.1369E+00	-.2890E-01	-.1258E+00	-.1180E-01	.2967E-01
.750	-1.250	.075	.750	-1.250	.025	.1972E-01	.3984E+00				
.750	-1.250	.075	.750	-1.250	.075	.2787E-01	.7957E+00	.1021E+00	.1447E+00	.1447E+00	.4061E+00
.750	-1.250	.075	.750	-1.250	.125	.1667E-01	.2846E+00	-.6129E-02	.3398E-01	.1687E-01	.2399E+00
.750	-1.250	.075	.750	-1.250	.175	.4946E-02	.2506E-01	-.4317E-01	-.4406E-01	-.2885E-01	.1411E+00
.750	-1.250	.075	.750	-1.250	.225	.9075E-02	-.8436E-01	-.4548E-01	-.8574E-01	-.3679E-01	.8366E-01
.750	-1.250	.075	.750	-1.250	.275	.1066E-01	-.1164E+00	-.3537E-01	-.9984E-01	-.3037E-01	.4917E-01
.750	-1.250	.075	.750	-1.250	.325	.1051E-01	-.1131E+00	-.2321E-01	-.9803E-01	-.2047E-01	.2858E-01
1.250	-1.250	.075	1.250	-1.250	.025	.2423E-01	.6015E+00				
1.250	-1.250	.075	1.250	-1.250	.075	.3376E-01	.1168E+01	.1533E+00	.2008E+00	.2008E+00	.6126E+00
1.250	-1.250	.075	1.250	-1.250	.125	.1995E-01	.4077E+00	-.6259E-02	.2775E-01	.2640E-01	.3598E+00
1.250	-1.250	.075	1.250	-1.250	.175	.6921E-02	.4906E-01	-.6051E-01	-.7139E-01	-.3942E-01	.2204E+00
1.250	-1.250	.075	1.250	-1.250	.225	.1013E-01	-.1050E+00	-.6820E-01	-.1188E+00	-.5605E-01	.1380E+00
1.250	-1.250	.075	1.250	-1.250	.275	.1229E-01	-.1547E+00	-.5675E-01	-.1333E+00	-.5034E-01	.8570E-01
1.250	-1.250	.075	1.250	-1.250	.325	.1223E-01	-.1532E+00	-.3993E-01	-.1294E+00	-.3657E-01	.5269E-01
1.750	-1.250	.075	1.750	-1.250	.025	.1879E-01	.3618E+00				
1.750	-1.250	.075	1.750	-1.250	.075	.2697E-01	.7452E+00	.9559E-01	.1379E+00	.1379E+00	.3739E+00
1.750	-1.250	.075	1.750	-1.250	.125	.1540E-01	.2429E+00	-.3335E-02	.7462E-02	.2402E-01	.2107E+00
1.750	-1.250	.075	1.750	-1.250	.175	.5444E-02	.3036E-01	-.3639E-01	-.4978E-01	-.1909E-01	.1356E+00
1.750	-1.250	.075	1.750	-1.250	.225	.7821E-02	-.6266E-01	-.4276E-01	-.7498E-01	-.3311E-01	.8819E-01
1.750	-1.250	.075	1.750	-1.250	.275	.9608E-02	-.9456E-01	-.3725E-01	-.8181E-01	-.3267E-01	.5716E-01
1.750	-1.250	.075	1.750	-1.250	.325	.9626E-02	-.9490E-01	-.2743E-01	-.7857E-01	-.2569E-01	.3680E-01
-1.750	-.750	.075	-1.750	-.750	.025	.4876E-02	.2435E-01				
-1.750	-.750	.075	-1.750	-.750	.075	.7012E-02	.5037E-01	.6067E-02	.1005E-01	.1005E-01	.2420E-01
-1.750	-.750	.075	-1.750	-.750	.125	.3903E-02	.1560E-01	-.3693E-03	.1905E-03	.2323E-02	.1346E-01
-1.750	-.750	.075	-1.750	-.750	.175	.1321E-02	.1788E-02	-.2356E-02	-.3783E-02	-.4205E-03	.8348E-02
-1.750	-.750	.075	-1.750	-.750	.225	.2035E-02	-.4243E-02	-.2628E-02	-.5490E-02	-.1267E-02	.5143E-02
-1.750	-.750	.075	-1.750	-.750	.275	.2466E-02	-.6229E-02	-.2189E-02	-.5885E-02	-.1243E-02	.3088E-02
-1.750	-.750	.075	-1.750	-.750	.325	.2465E-02	-.6222E-02	-.1566E-02	-.5550E-02	-.8824E-03	.1776E-02
-1.250	-.750	.075	-1.250	-.750	.025	.6867E-02	.4830E-01				
-1.250	-.750	.075	-1.250	-.750	.075	.8362E-02	.7163E-01	.9151E-02	.1120E-01	.1120E-01	.4007E-01
-1.250	-.750	.075	-1.250	-.750	.125	.4953E-02	.2513E-01	-.7228E-03	.6621E-03	.2089E-02	.2310E-01
-1.250	-.750	.075	-1.250	-.750	.175	.2146E-02	.4716E-02	-.3617E-02	-.4797E-02	-.5306E-03	.1366E-01
-1.250	-.750	.075	-1.250	-.750	.225	.2001E-02	-.4101E-02	-.3756E-02	-.7129E-02	-.1088E-02	.7872E-02
-1.250	-.750	.075	-1.250	-.750	.275	.2629E-02	-.7077E-02	-.2942E-02	-.7604E-02	-.8995E-03	.4369E-02
-1.250	-.750	.075	-1.250	-.750	.325	.2666E-02	-.7281E-02	-.2013E-02	-.7064E-02	-.5316E-03	.2328E-02
1.250	-.750	.075	1.250	-.750	.025	.3318E-01	.1127E+01				
1.250	-.750	.075	1.250	-.750	.075	.4307E-01	.1900E+01	.2336E+00	.3444E+00	.3444E+00	.9780E+00
1.250	-.750	.075	1.250	-.750	.125	.2444E-01	.6116E+00	-.1515E-01	.6051E-02	.6680E-01	.5539E+00
1.250	-.750	.075	1.250	-.750	.175	.6435E-02	.4242E-01	-.9211E-01	-.1612E+00	-.3003E-01	.3258E+00
1.250	-.750	.075	1.250	-.750	.225	.1353E-01	-.1874E+00	-.9907E-01	-.2290E+00	-.5344E-01	.1941E+00
1.250	-.750	.075	1.250	-.750	.275	.1579E-01	-.2554E+00	-.8050E-01	-.2414E+00	-.4737E-01	.1138E+00
1.250	-.750	.075	1.250	-.750	.325	.1559E-01	-.2489E+00	-.5703E-01	-.2248E+00	-.3281E-01	.6569E-01
1.750	-.750	.075	1.750	-.750	.025	.2660E-01	.7246E+00				
1.750	-.750	.075	1.750	-.750	.075	.3769E-01	.1455E+01	.1816E+00	.2763E+00	.2763E+00	.7209E+00
1.750	-.750	.075	1.750	-.750	.125	.2101E-01	.4519E+00	-.8948E-02	-.1832E-02	.6153E-01	.4012E+00
1.750	-.750	.075	1.750	-.750	.175	.7403E-02	.5613E-01	-.6884E-01	-.1086E+00	-.1690E-01	.2505E+00
1.750	-.750	.075	1.750	-.750	.225	.1052E-01	-.1134E+00	-.7923E-01	-.1510E+00	-.4291E-01	.1597E+00
1.750	-.750	.075	1.750	-.750	.275	.1290E-01	-.1704E+00	-.6826E-01	-.1593E+00	-.4376E-01	.1009E+00
1.750	-.750	.075	1.750	-.750	.325	.1292E-01	-.1710E+00	-.5038E-01	-.1496E+00	-.3390E-01	.6292E-01
-1.750	-.250	.075	-1.750	-.250	.025	.5095E-02	.2659E-01				
-1.750	-.250	.075	-1.750	-.250	.075	.6892E-02	.4865E-01	.6029E-02	.8933E-02	.8933E-02	.2475E-01
-1.750	-.250	.075	-1.750	-.250	.125	.4021E-02	.1656E-01	-.2917E-03	.1105E-03	.2024E-02	.1472E-01
-1.750	-.250	.075	-1.750	-.250	.175	.1451E-02	.2158E-02	-.2403E-02	-.3851E-02	-.6483E-03	.9060E-02
-1.750	-.250	.075	-1.750	-.250	.225	.1980E-02	-.4014E-02	-.2651E-02	-.5475E-02	-.1398E-02	.5510E-02
-1.750	-.250	.075	-1.750	-.250	.275	.2416E-02	-.5979E-02	-.2146E-02	-.5803E-02	-.1289E-02	.3260E-02
-1.750	-.250	.075	-1.750	-.250	.325	.2410E-02	-.5949E-02	-.1473E-02	-.5443E-02	-.8903E-03	.1857E-02
-1.250	-.250	.075	-1.250	-.250	.025	.6855E-02	.4814E-01				
-1.250	-.250	.075	-1.250	-.250	.075	.8757E-02	.7855E-01	.9253E-02	.1485E-01	.1485E-01	.3959E-01
-1.250	-.250	.075	-1.250	-.250	.125	.4920E-02	.2480E-01	-.6963E-03	-.5435E-03	.3852E-02	.2218E-01
-1.250	-.250	.075	-1.250	-.250	.175	.1247E-02	.1593E-02	-.3650E-02	-.7377E-02	.2735E-04	.1259E-01
-1.250	-.250	.075	-1.250	-.250	.225	.2738E-02	-.7679E-02	-.3803E-02	-.9914E-02	-.9058E-03	.6944E-02
-1.250	-.250	.075	-1.250	-.250	.275	.3162E-02	-.1024E-01	-.3022E-02	-.1012E-01	-.8180E-03	.3712E-02
-1.250	-.250	.075	-1.250	-.250	.325	.3114E-02	-.9933E-02	-.2160E-02	-.9172E-02	-.5038E-03	.1902E-02
1.250	-.250	.075	1.250	-.250	.025	.6341E-01	.4118E+01				
1.250	-.250	.075	1.250	-.250	.075	.8420E-01	.7262E+01	.8567E+00	.1430E+01	.1430E+01	.3546E+01
1.250	-.250	.075	1.250	-.250	.125	.4504E-01	.2078E+01	-.8008E-01	-.8048E-01	.3921E+00	.1846E+01
1.250	-.250	.075	1.250	-.250	.175	.8824E-02	.7976E-01	-.3262E+00	-.6808E+00	.5207E-01	.1035E+01
1.250	-.250	.075	1.250	-.250	.225	.2597E-01	-.6906E+00	-.3455E+00	-.8767E+00	-.4482E-01	.5764E+00
1.250	-.250	.075	1.250	-.250	.275	.2896E-01	-.8590E+00	-.2915E+00	-.8502E+00	-.5293E-01	.3357E+00
1.250	-.250	.075	1.250	-.250	.325	.2860E-01	-.8380E+00	-.2216E+00	-.7626E+00	-.3920E-01	.1854E+00
1.750	-.250	.075	1.750	-.250	.025	.4184E-01	.1793E+01				
1.750	-.250	.075	1.750	-.250	.075	.5877E-01	.3538E+01	.4358E+00	.6776E+00	.6776E+00	.1747E+01
1.750	-.250	.075	1.750	-.250	.125	.3276E-01	.1100E+01	-.2568E-01	-.1484E-01	.1726E+00	.9675E+00
1.750	-.250	.075	1.750	-.250	.175	.1048E-01	.1126E+00	-.1652E+00	-.2919E+00	-.7892E-02	.5776E+00
1.750	-.250	.075	1.750	-.250	.225	.1642E-01	-.2763E+00	-.1840E+00	-.3834E+00	-.6840E-01	.3595E+00
1.750	-.250	.075	1.750	-.250	.275	.1941E-01	-.3857E+00	-.1605E+00	-.3824E+00	-.7168E-01	.2288E+00
1.750	-.250	.075	1.750	-.250	.325	.1942E-01	-.3863E+00	-.1208E+00	-.3505E+00	-.5683E-01	.1419E+00
-1.750	.250	.075	-1.750	.250	.025	.5091E-02	.2655E-01				
-1.750	.250	.075	-1.750	.250	.075	.6881E-02	.4850E-01	.6030E-02	.8856E-02	.8856E-02	.2475E-01
-1.750	.250	.075	-1.750	.250	.125	.4017E-02	.1653E-01	-.2911E-03	.9550E-04	.2010E-02	.1472E-01
-1.750	.250	.075	-1.750	.250	.175	.1463E-02	.2193E-02	-.2405E-02	-.3823E-02	-.6365E-03	.9058E-02
-1.750	.250	.075	-1.750	.250	.225	.1953E-02	-.3906E-02	-.2653E-02	-.5424E-02	-.1350E-02	.5520E-02
-1.750	.250	.075	-1.750	.250	.275	.2389E-02	-.5847E-02	-.2146E-02	-.5744E-02	-.1236E-02	.3280E-02
-1.750	.250	.075	-1.750	.250	.325	.2386E-02	-.5831E-02	-.1473E-02	-.5387E-02	-.8495E-03	.1878E-02
-1.250	.250	.075	-1.250	.250	.025	.6837E-02	.4788E-01				
-1.250	.250	.075	-1.250	.250	.075	.8668E-02	.7695E-01	.9217E-02	.1407E-01	.1407E-01	.3959E-01
-1.250	.250	.075	-1.250	.250	.125	.4906E-02	.2465E-01	-.6899E-03	-.5605E-03	.3675E-02	.2223E-01
-1.250	.250	.075	-1.250	.250	.175	.1415E-02	.2050E-02	-.3623E-02	-.7010E-02	.3781E-04	.1265E-01
-1.250	.250	.075	-1.250	.250	.225	.2623E-02	-.7045E-02	-.3769E-02	-.9390E-02	-.8787E-03	.6993E-02
-1.250	.250	.075	-1.250	.250	.275	.3070E-02	-.9653E-02	-.3000E-02	-.9570E-02	-.8030E-03	.3720E-02
-1.250	.250	.075	-1.250	.250	.325	.3033E-02	-.9423E-02	-.2144E-02	-.8675E-02	-.4988E-03	.1896E-02
1.250	.250	.075	1.250	.250	.025	.6344E-01	.4122E+01				

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Table IV.- Continued.

Y1/D	Y2/D	Y3/D	Z1/D	Z2/D	Z3/D	$P/\rho U^2$	PP	PP0	PP1	PP2	PP3
1.250	.250	.075	1.250	.250	.075	.8389E-01	.7208E+01	.8556E+00	.1403E+01	.1403E+01	.3546E+01
1.250	.250	.075	1.250	.250	.125	.4494E-01	.2069E+01	-.7078E-01	-.1124E+00	.3961E+00	.1856E+01
1.250	.250	.075	1.250	.250	.175	.6620E-02	.4488E-01	-.3269E+00	-.7005E+00	.5551E-01	.1017E+01
1.250	.250	.075	1.250	.250	.225	.2566E-01	-.6744E+00	-.3483E+00	-.8542E+00	-.4421E-01	.5723E+00
1.250	.250	.075	1.250	.250	.275	.2917E-01	-.8716E+00	-.2902E+00	-.8499E+00	-.5767E-01	.3262E+00
1.250	.250	.075	1.250	.250	.325	.2865E-01	-.8406E+00	-.2199E+00	-.7592E+00	-.4239E-01	.1809E+00
1.750	.250	.075	1.750	.250	.025	.4188E-01	.1796E+01				
1.750	.250	.075	1.750	.250	.075	.5870E-01	.3529E+01	.4354E+00	.6735E+00	.6735E+00	.1747E+01
1.750	.250	.075	1.750	.250	.125	.3271E-01	.1096E+01	-.2422E-01	-.2260E-01	.1739E+00	.9690E+00
1.750	.250	.075	1.750	.250	.175	.1012E-01	.1048E+00	-.1643E+00	-.2980E+00	-.8168E-02	.5753E+00
1.750	.250	.075	1.750	.250	.225	.1630E-01	-.2722E+00	-.1853E+00	-.3779E+00	-.6745E-01	.3584E+00
1.750	.250	.075	1.750	.250	.275	.1957E-01	-.3925E+00	-.1599E+00	-.3838E+00	-.7531E-01	.2265E+00
1.750	.250	.075	1.750	.250	.325	.1951E-01	-.3898E+00	-.1202E+00	-.3509E+00	-.5950E-01	.1407E+00
-1.750	-1.750	.125	-1.750	-1.750	.025	.1271E-02	.1655E-02				
-1.750	-1.750	.125	-1.750	-1.750	.075	.3268E-02	.1094E-01				
-1.750	-1.750	.125	-1.750	-1.750	.125	.4271E-02	.1869E-01	.2997E-02	.2705E-02	.2705E-02	.1028E-01
-1.750	-1.750	.125	-1.750	-1.750	.175	.2863E-02	.8399E-02	.4460E-03	.6914E-03	.5330E-03	.6728E-02
-1.750	-1.750	.125	-1.750	-1.750	.225	.1727E-02	.3053E-02	-.5148E-03	-.5668E-03	-.2244E-03	.4359E-02
-1.750	-1.750	.125	-1.750	-1.750	.275	.6758E-03	.4678E-03	-.6764E-03	-.1234E-02	-.3720E-03	.2750E-02
-1.750	-1.750	.125	-1.750	-1.750	.325	.7746E-03	-.6146E-03	-.5044E-03	-.1501E-02	-.2915E-03	.1682E-02
-1.250	-1.750	.125	-1.250	-1.750	.025	.2124E-02	.4621E-02				
-1.250	-1.750	.125	-1.250	-1.750	.075	.4276E-02	.1873E-01				
-1.250	-1.750	.125	-1.250	-1.750	.125	.5771E-02	.3411E-01	.5361E-02	.4540E-02	.4540E-02	.1967E-01
-1.250	-1.750	.125	-1.250	-1.750	.175	.3736E-02	.1430E-01	.8026E-03	.8395E-04	.8573E-03	.1255E-01
-1.250	-1.750	.125	-1.250	-1.750	.225	.2036E-02	.4244E-02	-.1028E-02	-.2110E-02	-.6391E-03	.8022E-02
-1.250	-1.750	.125	-1.250	-1.750	.275	.6435E-03	-.4242E-03	-.1404E-02	-.3090E-02	-.9694E-03	.5039E-02
-1.250	-1.750	.125	-1.250	-1.750	.325	.1436E-02	-.2112E-02	-.1117E-02	-.3318E-02	-.7795E-03	.3102E-02
-.750	-1.750	.125	-.750	-1.750	.025	.3285E-02	.1105E-01				
-.750	-1.750	.125	-.750	-1.750	.075	.6854E-02	.4812E-01				
-.750	-1.750	.125	-.750	-1.750	.125	.9169E-02	.8612E-01	.1346E-01	.1159E-01	.1159E-01	.4948E-01
-.750	-1.750	.125	-.750	-1.750	.175	.5872E-02	.3531E-01	.1983E-02	-.2713E-03	.2297E-02	.3131E-01
-.750	-1.750	.125	-.750	-1.750	.225	.3072E-02	.9667E-02	-.2560E-02	-.6012E-02	-.1548E-02	.1979E-01
-.750	-1.750	.125	-.750	-1.750	.275	.1461E-02	-.2186E-02	-.3468E-02	-.8501E-02	-.2456E-02	.1224E-01
-.750	-1.750	.125	-.750	-1.750	.325	.2497E-02	-.6386E-02	-.2776E-02	-.9004E-02	-.2040E-02	.7433E-02
-.250	-1.750	.125	-.250	-1.750	.025	.4334E-02	.1924E-01				
-.250	-1.750	.125	-.250	-1.750	.075	.8846E-02	.8016E-01				
-.250	-1.750	.125	-.250	-1.750	.125	.1252E-01	.1606E+00	.2353E-01	.2516E-01	.2516E-01	.8673E-01
-.250	-1.750	.125	-.250	-1.750	.175	.7897E-02	.6387E-01	.3172E-02	.3172E-03	.5925E-02	.5446E-01
-.250	-1.750	.125	-.250	-1.750	.225	.3855E-02	.1522E-01	-.4778E-02	-.1203E-01	-.2070E-02	.3410E-01
-.250	-1.750	.125	-.250	-1.750	.275	.2616E-02	-.7012E-02	-.6320E-02	-.1739E-01	-.4140E-02	.2084E-01
-.250	-1.750	.125	-.250	-1.750	.325	.3773E-02	-.1458E-01	-.5111E-02	-.1844E-01	-.3553E-02	.1252E-01
.250	-1.750	.125	.250	-1.750	.025	.4853E-02	.2413E-01				
.250	-1.750	.125	.250	-1.750	.075	.1103E-01	.1247E+00				
.250	-1.750	.125	.250	-1.750	.125	.1588E-01	.2582E+00	.3585E-01	.4546E-01	.4546E-01	.1315E+00
.250	-1.750	.125	.250	-1.750	.175	.9940E-02	.1012E+00	.4942E-02	.2275E-02	.1145E-01	.8254E-01
.250	-1.750	.125	.250	-1.750	.225	.4602E-02	.2169E-01	-.7192E-02	-.2004E-01	-.2753E-02	.5168E-01
.250	-1.750	.125	.250	-1.750	.275	.3769E-02	-.1455E-01	-.9579E-02	-.2987E-01	-.6657E-02	.3156E-01
.250	-1.750	.125	.250	-1.750	.325	.5083E-02	-.2646E-01	-.7757E-02	-.3178E-01	-.5858E-02	.1893E-01
.750	-1.750	.125	.750	-1.750	.025	.2382E-02	.5811E-02				
.750	-1.750	.125	.750	-1.750	.075	.1218E-01	.1520E+00				
.750	-1.750	.125	.750	-1.750	.125	.1792E-01	.3290E+00	.4436E-01	.6312E-01	.6312E-01	.1584E+00
.750	-1.750	.125	.750	-1.750	.175	.1162E-01	.1383E+00	.6502E-02	.1388E-01	.1434E-01	.1036E+00
.750	-1.750	.125	.750	-1.750	.225	.5658E-02	.3278E-01	-.9759E-02	-.1766E-01	-.6213E-02	.6642E-01
.750	-1.750	.125	.750	-1.750	.275	.4075E-02	-.1701E-01	-.1330E-01	-.3359E-01	-.1200E-01	.4188E-01
.750	-1.750	.125	.750	-1.750	.325	.5866E-02	-.3525E-01	-.1073E-01	-.3947E-01	-.1068E-01	.2564E-01
1.250	-1.750	.125	1.250	-1.750	.025	.2360E-02	.5705E-02				
1.250	-1.750	.125	1.250	-1.750	.075	.1164E-01	.1389E+00				
1.250	-1.750	.125	1.250	-1.750	.125	.1712E-01	.3001E+00	.4141E-01	.5744E-01	.5744E-01	.1438E+00
1.250	-1.750	.125	1.250	-1.750	.175	.1102E-01	.1244E+00	.7285E-02	.1221E-01	.1212E-01	.9283E-01
1.250	-1.750	.125	1.250	-1.750	.225	.5424E-02	.3013E-01	-.7567E-02	-.1573E-01	-.7056E-02	.6048E-01
1.250	-1.750	.125	1.250	-1.750	.275	.3795E-02	-.1476E-01	-.1136E-01	-.2978E-01	-.1281E-01	.3918E-01
1.250	-1.750	.125	1.250	-1.750	.325	.5528E-02	-.3130E-01	-.9536E-02	-.3503E-01	-.1177E-01	.2503E-01
1.750	-1.750	.125	1.750	-1.750	.025	.4574E-02	.2143E-01				
1.750	-1.750	.125	1.750	-1.750	.075	.1488E-01	.2267E+00				
1.750	-1.750	.125	1.750	-1.750	.125	.2195E-01	.4936E+00	.7071E-01	.8163E-01	.8163E-01	.2596E+00
1.750	-1.750	.125	1.750	-1.750	.175	.1434E-01	.2108E+00	.6185E-02	.9930E-02	.1506E-01	.1796E+00
1.750	-1.750	.125	1.750	-1.750	.225	.8115E-02	.6744E-01	-.2043E-01	-.1883E-01	-.1738E-01	.1241E+00
1.750	-1.750	.125	1.750	-1.750	.275	.3181E-02	-.1037E-01	-.2643E-01	-.3894E-01	-.2654E-01	.8154E-01
1.750	-1.750	.125	1.750	-1.750	.325	.6152E-02	-.3876E-01	-.2122E-01	-.4696E-01	-.2284E-01	.5226E-01
-1.750	-1.250	.125	-1.750	-1.250	.025	.1181E-02	.1429E-02				
-1.750	-1.250	.125	-1.750	-1.250	.075	.3517E-02	.1267E-01				
-1.750	-1.250	.125	-1.750	-1.250	.125	.4928E-02	.2488E-01	.3445E-02	.4538E-02	.4538E-02	.1235E-01
-1.750	-1.250	.125	-1.750	-1.250	.175	.3056E-02	.9567E-02	.5941E-03	.1751E-03	.9901E-03	.7808E-02
-1.750	-1.250	.125	-1.750	-1.250	.225	.1317E-02	.1777E-02	-.5491E-03	-.2107E-02	-.4661E-03	.4900E-02
-1.750	-1.250	.125	-1.750	-1.250	.275	.1305E-02	-.1745E-02	-.7875E-03	-.3126E-02	-.8311E-03	.3000E-02
-1.750	-1.250	.125	-1.750	-1.250	.325	.1678E-02	-.2883E-02	-.6151E-03	-.3355E-02	-.6637E-03	.1751E-02
-1.250	-1.250	.125	-1.250	-1.250	.025	.2766E-02	.7835E-02				
-1.250	-1.250	.125	-1.250	-1.250	.075	.4764E-02	.2325E-01				
-1.250	-1.250	.125	-1.250	-1.250	.125	.6418E-02	.4220E-01	.6775E-02	.5304E-02	.5304E-02	.2481E-01
-1.250	-1.250	.125	-1.250	-1.250	.175	.4156E-02	.1769E-01	.1118E-02	.6091E-04	.1221E-02	.1529E-01
-1.250	-1.250	.125	-1.250	-1.250	.225	.2289E-02	.5366E-02	-.1021E-02	-.2585E-02	-.3485E-03	.9321E-02
-1.250	-1.250	.125	-1.250	-1.250	.275	.5360E-03	-.2943E-03	-.1408E-02	-.3726E-02	-.6913E-03	.5531E-02
-1.250	-1.250	.125	-1.250	-1.250	.325	.1524E-02	-.2379E-02	-.1085E-02	-.3939E-02	-.5339E-03	.3179E-02
-.750	-1.250	.125	-.750	-1.250	.025	.4889E-02	.2449E-01				
-.750	-1.250	.125	-.750	-1.250	.075	.8488E-02	.7379E-01				
-.750	-1.250	.125	-.750	-1.250	.125	.1150E-01	.1354E+00	.2181E-01	.1727E-01	.1727E-01	.7900E-01
-.750	-1.250	.125	-.750	-1.250	.175	.7247E-02	.5380E-01	.3680E-02	-.1332E-02	.4191E-02	.4726E-01
-.750	-1.250	.125	-.750	-1.250	.225	.3703E-02	.1405E-01	-.2920E-02	-.1013E-01	-.7487E-03	.2785E-01
-.750	-1.250	.125	-.750	-1.250	.275	.1888E-02	-.3653E-02	-.4095E-02	-.1363E-01	-.1830E-02	.1590E-01
-.750	-1.250	.125	-.750	-1.250	.325	.3103E-02	-.9864E-02	-.3245E-02	-.1400E-01	-.1458E-02	.8843E-02
-.250	-1.250	.125	-.250	-1.250	.025	.7506E-02	.5771E-01				
-.250	-1.250	.125	-.250	-1.250	.075	.1377E-01	.1941E+00				
-.250	-1.250	.125	-.250	-1.250	.125	.1889E-01	.3656E+00	.5502E-01	.5577E-01	.5577E-01	.1991E+00
-.250	-1.250	.125	-.250	-1.250	.175	.1139E-01	.1329E+00	.9395E-02	-.6821E-02	.1484E-01	.1155E+00
-.250	-1.250	.125	-.250	-1.250	.225	.4737E-02	.2298E-01	-.6561E-02	-.3594E-01	-.1529E-03	.6564E-01

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Table IV.- Continued.

Y1/D	Y2/D	Y3/D	Z1/D	Z2/D	Z3/D	$P/\rho U^2$	PP	PP0	PP1	PP2	PP3
-.250	-1.250	.125	-.250	-1.250	.275	.4791E-02	-.2351E-01	-.9348E-02	-.4657E-01	-.3605E-02	.3601E-01
-.250	-1.250	.125	-.250	-1.250	.325	.6087E-02	-.3796E-01	-.7565E-02	-.4667E-01	-.3003E-02	.1928E-01
.250	-1.250	.125	.250	-1.250	.025	.9097E-02	.8477E-01				
.250	-1.250	.125	.250	-1.250	.075	.1876E-01	.3605E+00				
.250	-1.250	.125	.250	-1.250	.125	.2630E-01	.7085E+00	.9882E-01	.1274E+00	.1274E+00	.3549E+00
.250	-1.250	.125	.250	-1.250	.175	.1564E-01	.2506E+00	.1724E-01	-.6472E-02	.3606E-01	.2058E+00
.250	-1.250	.125	.250	-1.250	.225	.5702E-02	.3330E-01	-.1150E-01	-.7442E-01	.2243E-02	.1170E+00
.250	-1.250	.125	.250	-1.250	.275	.7514E-02	-.5782E-01	-.1664E-01	-.9898E-01	-.6526E-02	.6412E-01
.250	-1.250	.125	.250	-1.250	.325	.9080E-02	-.8445E-01	-.1350E-01	-.9952E-01	-.5716E-02	.3428E-01
.750	-1.250	.125	.750	-1.250	.025	.5149E-02	.2715E-01				
.750	-1.250	.125	.750	-1.250	.075	.1667E-01	.2846E+00				
.750	-1.250	.125	.750	-1.250	.125	.2480E-01	.6300E+00	.8578E-01	.1253E+00	.1253E+00	.2936E+00
.750	-1.250	.125	.750	-1.250	.175	.1564E-01	.2504E+00	.1687E-01	.2110E-01	.3416E-01	.1783E+00
.750	-1.250	.125	.750	-1.250	.225	.7175E-02	.5273E-01	-.1037E-01	-.4239E-01	-.1127E-02	.1066E+00
.750	-1.250	.125	.750	-1.250	.275	.5938E-02	-.3611E-01	-.1613E-01	-.7189E-01	-.1054E-01	.6245E-01
.750	-1.250	.125	.750	-1.250	.325	.8108E-02	-.6733E-01	-.1320E-01	-.8023E-01	-.9503E-02	.3561E-01
1.250	-1.250	.125	1.250	-1.250	.025	.7267E-02	.5409E-01				
1.250	-1.250	.125	1.250	-1.250	.075	.1995E-01	.4077E+00				
1.250	-1.250	.125	1.250	-1.250	.125	.2880E-01	.8499E+00	.1219E+00	.1529E+00	.1529E+00	.4222E+00
1.250	-1.250	.125	1.250	-1.250	.175	.1821E-01	.3397E+00	.2376E-01	.1783E-01	.3635E-01	.2618E+00
1.250	-1.250	.125	1.250	-1.250	.225	.8786E-02	.7907E-01	-.1584E-01	-.5801E-01	-.1144E-01	.1644E+00
1.250	-1.250	.125	1.250	-1.250	.275	.6306E-02	-.4074E-01	-.2516E-01	-.9293E-01	-.2463E-01	.1020E+00
1.250	-1.250	.125	1.250	-1.250	.325	.9009E-02	-.8313E-01	-.2081E-01	-.1028E+00	-.2176E-01	.6228E-01
1.750	-1.250	.125	1.750	-1.250	.025	.5890E-02	.3553E-01				
1.750	-1.250	.125	1.750	-1.250	.075	.1540E-01	.2429E+00				
1.750	-1.250	.125	1.750	-1.250	.125	.2156E-01	.4763E+00	.6891E-01	.8214E-01	.8214E-01	.2431E+00
1.750	-1.250	.125	1.750	-1.250	.175	.1355E-01	.1881E+00	.1264E-01	.5526E-02	.1545E-01	.1545E+00
1.750	-1.250	.125	1.750	-1.250	.225	.6403E-02	.4200E-01	-.1083E-01	-.3507E-01	-.1271E-01	.1006E+00
1.750	-1.250	.125	1.750	-1.250	.275	.5032E-02	-.2593E-01	-.1683E-01	-.5345E-01	-.2084E-01	.6519E-01
1.750	-1.250	.125	1.750	-1.250	.325	.6949E-02	-.4946E-01	-.1414E-01	-.5845E-01	-.1869E-01	.4182E-01
-1.750	-.750	.125	-1.750	-.750	.025	.1477E-02	.2234E-02				
-1.750	-.750	.125	-1.750	-.750	.075	.3903E-02	.1560E-01				
-1.750	-.750	.125	-1.750	-.750	.125	.5314E-02	.2893E-01	.4122E-02	.5033E-02	.5033E-02	.1474E-01
-1.750	-.750	.125	-1.750	-.750	.175	.3281E-02	.1103E-01	.7676E-03	-.5353E-04	.1154E-02	.9158E-02
-1.750	-.750	.125	-1.750	-.750	.225	.1394E-02	.1991E-02	-.5380E-03	-.2706E-02	-.3956E-03	.5631E-02
-1.750	-.750	.125	-1.750	-.750	.275	.1412E-02	-.2043E-02	-.7959E-03	-.3836E-02	-.7792E-03	.3369E-02
-1.750	-.750	.125	-1.750	-.750	.325	.1809E-02	-.3353E-02	-.6081E-03	-.4039E-02	-.6395E-03	.1934E-02
-1.250	-.750	.125	-1.250	-.750	.025	.3262E-02	.1090E-01				
-1.250	-.750	.125	-1.250	-.750	.075	.4953E-02	.2513E-01				
-1.250	-.750	.125	-1.250	-.750	.125	.6542E-02	.4384E-01	.6690E-02	.5991E-02	.5991E-02	.2517E-01
-1.250	-.750	.125	-1.250	-.750	.175	.4136E-02	.1752E-01	.1291E-02	-.1640E-03	.1612E-02	.1478E-01
-1.250	-.750	.125	-1.250	-.750	.225	.2120E-02	.4605E-02	-.5565E-03	-.3338E-02	.3197E-04	.8468E-02
-1.250	-.750	.125	-1.250	-.750	.275	.1028E-02	-.1063E-02	-.8329E-03	-.4583E-02	-.3382E-03	.4671E-02
-1.250	-.750	.125	-1.250	-.750	.325	.1734E-02	-.3079E-02	-.5865E-03	-.4682E-02	-.2661E-03	.2456E-02
1.250	-.750	.125	1.250	-.750	.025	.1151E-01	.1356E+00				
1.250	-.750	.125	1.250	-.750	.075	.2444E-01	.6116E+00				
1.250	-.750	.125	1.250	-.750	.125	.3447E-01	.1217E+01	.1798E+00	.2083E+00	.2083E+00	.6203E+00
1.250	-.750	.125	1.250	-.750	.175	.2084E-01	.4450E+00	.3940E-01	-.1128E-01	.4907E-01	.3674E+00
1.250	-.750	.125	1.250	-.750	.225	.8623E-02	.7616E-01	-.1306E-01	-.1205E+00	-.9453E-02	.2192E+00
1.250	-.750	.125	1.250	-.750	.275	.9016E-02	-.8326E-01	-.2443E-01	-.1637E+00	-.2359E-01	.1284E+00
1.250	-.750	.125	1.250	-.750	.325	.1146E-01	-.1345E+00	-.1959E-01	-.1689E+00	-.1988E-01	.7388E-01
1.750	-.750	.125	1.750	-.750	.025	.8464E-02	.7337E-01				
1.750	-.750	.125	1.750	-.750	.075	.2101E-01	.4519E+00				
1.750	-.750	.125	1.750	-.750	.125	.2849E-01	.8316E+00	.1237E+00	.1352E+00	.1352E+00	.4374E+00
1.750	-.750	.125	1.750	-.750	.175	.1766E-01	.3194E+00	.2394E-01	-.4103E-02	.2571E-01	.2739E+00
1.750	-.750	.125	1.750	-.750	.225	.8051E-02	.6639E-01	-.1624E-01	-.7311E-01	-.1893E-01	.1747E+00
1.750	-.750	.125	1.750	-.750	.275	.6860E-02	-.4821E-01	-.2574E-01	-.1021E+00	-.3068E-01	.1103E+00
1.750	-.750	.125	1.750	-.750	.325	.9188E-02	-.8647E-01	-.2097E-01	-.1076E+00	-.2662E-01	.6873E-01
-1.750	-.250	.125	-1.750	-.250	.025	.1964E-02	.3949E-02				
-1.750	-.250	.125	-1.750	-.250	.075	.4021E-02	.1656E-01				
-1.750	-.250	.125	-1.750	-.250	.125	.5615E-02	.3229E-01	.4716E-02	.5266E-02	.5266E-02	.1705E-01
-1.750	-.250	.125	-1.750	-.250	.175	.3468E-02	.1232E-01	.8071E-03	-.2294E-03	.1203E-02	.1049E-01
-1.750	-.250	.125	-1.750	-.250	.225	.1522E-02	.2373E-02	-.6758E-03	-.2989E-02	-.3458E-03	.6383E-02
-1.750	-.250	.125	-1.750	-.250	.275	.1404E-02	-.2020E-02	-.9526E-03	-.4120E-02	-.7238E-03	.3776E-02
-1.750	-.250	.125	-1.750	-.250	.325	.1842E-02	-.3477E-02	-.7389E-03	-.4300E-02	-.5900E-03	.2152E-02
-1.250	-.250	.125	-1.250	-.250	.025	.2531E-02	.6559E-02				
-1.250	-.250	.125	-1.250	-.250	.075	.4920E-02	.2480E-01				
-1.250	-.250	.125	-1.250	-.250	.125	.6711E-02	.4612E-01	.6985E-02	.7432E-02	.7432E-02	.2028E-01
-1.250	-.250	.125	-1.250	-.250	.175	.3941E-02	.1591E-01	.1548E-02	-.1372E-02	.1936E-02	.1380E-01
-1.250	-.250	.125	-1.250	-.250	.225	.1332E-02	.1817E-02	-.3430E-03	-.5487E-02	.2906E-04	.7618E-02
-1.250	-.250	.125	-1.250	-.250	.275	.1948E-02	-.3887E-02	-.7042E-03	-.6875E-02	-.3711E-03	.4064E-02
-1.250	-.250	.125	-1.250	-.250	.325	.2330E-02	-.5561E-02	-.5589E-03	-.6787E-02	-.2931E-03	.2078E-02
1.250	-.250	.125	1.250	-.250	.025	.2028E-01	.4211E+00				
1.250	-.250	.125	1.250	-.250	.075	.4504E-01	.2078E+01				
1.250	-.250	.125	1.250	-.250	.125	.5900E-01	.3566E+01	.5559E+00	.5584E+00	.5584E+00	.1893E+01
1.250	-.250	.125	1.250	-.250	.175	.3369E-01	.1163E+01	.1340E+00	-.1518E+00	.1282E+00	.1052E+01
1.250	-.250	.125	1.250	-.250	.225	.1055E-01	.1140E+00	-.1157E-01	-.4550E+00	-.3031E-02	.5837E+00
1.250	-.250	.125	1.250	-.250	.275	.1605E-01	-.2639E+00	-.4499E-01	-.5226E+00	-.3637E-01	.3401E+00
1.250	-.250	.125	1.250	-.250	.325	.1952E-01	-.3905E+00	-.3756E-01	-.5097E+00	-.3131E-01	.1881E+00
1.750	-.250	.125	1.750	-.250	.025	.1430E-01	.2094E+00				
1.750	-.250	.125	1.750	-.250	.075	.3276E-01	.1100E+01				
1.750	-.250	.125	1.750	-.250	.125	.4373E-01	.1959E+01	.2935E+00	.3092E+00	.3092E+00	.1047E+01
1.750	-.250	.125	1.750	-.250	.175	.2613E-01	.6993E+00	.5548E-01	-.4480E-01	.6377E-01	.6248E+00
1.750	-.250	.125	1.750	-.250	.225	.1120E-01	.1285E+00	-.3388E-01	-.1981E+00	-.2704E-01	.3876E+00
1.750	-.250	.125	1.750	-.250	.275	.1014E-01	-.1053E+00	-.5649E-01	-.2447E+00	-.5125E-01	.2471E+00
1.750	-.250	.125	1.750	-.250	.325	.1356E-01	-.1884E+00	-.4750E-01	-.2484E+00	-.4577E-01	.1533E+00
-1.750	.250	.125	-1.750	.250	.025	.1971E-02	.3979E-02				
-1.750	.250	.125	-1.750	.250	.075	.4017E-02	.1653E-01				
-1.750	.250	.125	-1.750	.250	.125	.5603E-02	.3216E-01	.4715E-02	.5199E-02	.5199E-02	.1705E-01
-1.750	.250	.125	-1.750	.250	.175	.3462E-02	.1228E-01	.8044E-03	-.2361E-03	.1218E-02	.1049E-01
-1.750	.250	.125	-1.750	.250	.225	.1536E-02	.2416E-02	-.6773E-03	-.2958E-02	-.3430E-03	.6395E-02
-1.750	.250	.125	-1.750	.250	.275	.1372E-02	-.1927E-02	-.9511E-03	-.4073E-02	-.7010E-03	.3798E-02
-1.750	.250	.125	-1.750	.250	.325	.1817E-02	-.3381E-02	-.7373E-03	-.4250E-02	-.5677E-03	.2174E-02
-1.250	.250	.125	-1.250	.250	.025	.2623E-02	.7048E-02				
-1.250	.250	.125	-1.250	.250	.075	.4906E-02	.2465E-01				

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Table IV.- Continued.

Y1/D	Y2/D	Y3/D	Z1/D	Z2/D	Z3/D	$P/\rho U^2$	PP	PP0	PP1	PP2	PP3
-1.250	.250	.125	-1.250	.250	.125	.6647E-02	.4525E-01	.6947E-02	.7015E-02	.7015E-02	.2428E-01
-1.250	.250	.125	-1.250	.250	.175	.3931E-02	.1583E-01	.1531E-02	-.1328E-02	.1825E-02	.1380E-01
-1.250	.250	.125	-1.250	.250	.225	.1427E-02	.2086E-02	-.3427E-03	-.5213E-02	.1517E-04	.7626E-02
-1.250	.250	.125	-1.250	.250	.275	.1859E-02	-.3539E-02	-.6969E-03	-.6522E-02	-.3736E-03	.4054E-02
-1.250	.250	.125	-1.250	.250	.325	.2257E-02	-.5218E-02	-.5482E-03	-.6437E-02	-.2956E-03	.2063E-02
1.250	.250	.125	1.250	.250	.025	.2101E-01	.4522E+00				
1.250	.250	.125	1.250	.250	.075	.4494E-01	.2069E+01				
1.250	.250	.125	1.250	.250	.125	.5872E-01	.3532E+01	.5515E+00	.5437E+00	.5437E+00	.1893E+01
1.250	.250	.125	1.250	.250	.175	.3309E-01	.1122E+01	.1311E+00	-.1743E+00	.1278E+00	.1037E+01
1.250	.250	.125	1.250	.250	.225	.1040E-01	.1108E+00	-.1478E-01	-.4448E+00	-.1219E-01	.5826E+00
1.250	.250	.125	1.250	.250	.275	.1686E-01	-.2912E+00	-.4475E-01	-.5363E+00	-.4272E-01	.3326E+00
1.250	.250	.125	1.250	.250	.325	.1997E-01	-.4085E+00	-.3723E-01	-.5201E+00	-.3555E-01	.1844E+00
1.750	.250	.125	1.750	.250	.025	.1447E-01	.2144E+00				
1.750	.250	.125	1.750	.250	.075	.3271E-01	.1096E+01				
1.750	.250	.125	1.750	.250	.125	.4365E-01	.1951E+01	.2933E+00	.3056E+00	.3056E+00	.1047E+01
1.750	.250	.125	1.750	.250	.175	.2594E-01	.6894E+00	.5504E-01	-.5094E-01	.6374E-01	.6215E+00
1.750	.250	.125	1.750	.250	.225	.1120E-01	.1285E+00	-.3504E-01	-.1941E+00	-.2936E-01	.3869E+00
1.750	.250	.125	1.750	.250	.275	.1060E-01	-.1151E+00	-.5615E-01	-.2086E+00	-.5497E-01	.2447E+00
1.750	.250	.125	1.750	.250	.325	.1380E-01	-.1951E+00	-.4710E-01	-.2514E+00	-.4861E-01	.1520E+00
-1.750	-1.750	.175	-1.750	-1.750	.025	.1109E-02	-.1260E-02				
-1.750	-1.750	.175	-1.750	-1.750	.075	.1912E-02	.3744E-02				
-1.750	-1.750	.175	-1.750	-1.750	.125	.2863E-02	.8399E-02				
-1.750	-1.750	.175	-1.750	-1.750	.175	.3880E-02	.1542E-01	.2717E-02	.2185E-02	.2185E-02	.8334E-02
-1.750	-1.750	.175	-1.750	-1.750	.225	.2666E-02	.7283E-02	.7444E-03	.5774E-03	.6619E-03	.5299E-02
-1.750	-1.750	.175	-1.750	-1.750	.275	.1695E-02	.2944E-02	-.4252E-04	-.3840E-03	.8278E-04	.3288E-02
-1.750	-1.750	.175	-1.750	-1.750	.325	.9011E-03	.8317E-03	-.2118E-03	-.8819E-03	-.5879E-04	.1984E-02
-1.250	-1.750	.175	-1.250	-1.750	.025	.1891E-02	-.3664E-02				
-1.250	-1.750	.175	-1.250	-1.750	.075	.2012E-02	.4145E-02				
-1.250	-1.750	.175	-1.250	-1.750	.125	.3736E-02	.1430E-01				
-1.250	-1.750	.175	-1.250	-1.750	.175	.5284E-02	.2860E-01	.5430E-02	.3795E-02	.3795E-02	.1559E-01
-1.250	-1.750	.175	-1.250	-1.750	.225	.3583E-02	.1315E-01	.1725E-02	.4605E-03	.1021E-02	.9942E-02
-1.250	-1.750	.175	-1.250	-1.750	.275	.2195E-02	.4935E-02	.1308E-03	-.1356E-02	-.7282E-04	.6232E-02
-1.250	-1.750	.175	-1.250	-1.750	.325	.1021E-02	.1067E-02	-.2914E-03	-.2163E-02	-.3060E-03	.3828E-02
-.750	-1.750	.175	-.750	-1.750	.025	.2956E-02	-.8953E-02				
-.750	-1.750	.175	-.750	-1.750	.075	.3177E-02	.1034E-01				
-.750	-1.750	.175	-.750	-1.750	.125	.5872E-02	.3531E-01				
-.750	-1.750	.175	-.750	-1.750	.175	.8345E-02	.7132E-01	.1350E-01	.9623E-02	.9623E-02	.3858E-01
-.750	-1.750	.175	-.750	-1.750	.225	.5603E-02	.3215E-01	.4340E-02	.7272E-03	.2709E-02	.2438E-01
-.750	-1.750	.175	-.750	-1.750	.275	.3330E-02	.1136E-01	.4166E-03	-.4037E-02	-.9426E-04	.1508E-01
-.750	-1.750	.175	-.750	-1.750	.325	.1284E-02	.1690E-02	-.6442E-03	-.6085E-02	-.7342E-03	.9153E-02
-.250	-1.750	.175	-.250	-1.750	.025	.4276E-02	-.1873E-01				
-.250	-1.750	.175	-.250	-1.750	.075	.3698E-02	.1401E-01				
-.250	-1.750	.175	-.250	-1.750	.125	.7897E-02	.6387E-01				
-.250	-1.750	.175	-.250	-1.750	.175	.1125E-01	.1297E+00	.2297E-01	.2007E-01	.2007E-01	.6660E-01
-.250	-1.750	.175	-.250	-1.750	.225	.7416E-02	.5634E-01	.7129E-02	.1312E-02	.6190E-02	.4171E-01
-.250	-1.750	.175	-.250	-1.750	.275	.4164E-02	.1776E-01	.4337E-03	-.8629E-02	.4674E-03	.2549E-01
-.250	-1.750	.175	-.250	-1.750	.325	.4906E-03	.2466E-03	-.1348E-02	-.1273E-01	-.9834E-03	.1531E-01
.250	-1.750	.175	.250	-1.750	.025	.5967E-02	-.3647E-01				
.250	-1.750	.175	.250	-1.750	.075	.4179E-02	.1789E-01				
.250	-1.750	.175	.250	-1.750	.125	.9940E-02	.1012E+00				
.250	-1.750	.175	.250	-1.750	.175	.1426E-01	.2082E+00	.3493E-01	.3614E-01	.3614E-01	.1010E+00
.250	-1.750	.175	.250	-1.750	.225	.9297E-02	.8854E-01	.1083E-01	.2717E-02	.1179E-01	.6320E-01
.250	-1.750	.175	.250	-1.750	.275	.5015E-02	.2576E-01	.6344E-03	-.1501E-01	.1546E-02	.3859E-01
.250	-1.750	.175	.250	-1.750	.325	.1502E-02	-.2309E-02	-.2073E-02	-.2214E-01	-.1247E-02	.2315E-01
.750	-1.750	.175	.750	-1.750	.025	.7665E-02	-.6018E-01				
.750	-1.750	.175	.750	-1.750	.075	.4419E-02	.2000E-01				
.750	-1.750	.175	.750	-1.750	.125	.1162E-01	.1383E+00				
.750	-1.750	.175	.750	-1.750	.175	.1703E-01	.2971E+00	.4620E-01	.5855E-01	.5855E-01	.1338E+00
.750	-1.750	.175	.750	-1.750	.225	.1137E-01	.1329E+00	.1360E-01	.1242E-01	.2037E-01	.8613E-01
.750	-1.750	.175	.750	-1.750	.275	.6467E-02	.4284E-01	-.8831E-03	-.1419E-01	.3695E-02	.5422E-01
.750	-1.750	.175	.750	-1.750	.325	.8527E-03	-.7448E-03	-.4845E-02	-.2742E-01	-.1391E-02	.3291E-01
1.250	-1.750	.175	1.250	-1.750	.025	.7630E-02	-.5963E-01				
1.250	-1.750	.175	1.250	-1.750	.075	.3810E-02	.1487E-01				
1.250	-1.750	.175	1.250	-1.750	.125	.1102E-01	.1244E+00				
1.250	-1.750	.175	1.250	-1.750	.175	.1617E-01	.2678E+00	.4279E-01	.5320E-01	.5320E-01	.1186E+00
1.250	-1.750	.175	1.250	-1.750	.225	.1090E-01	.1218E+00	.1379E-01	.1230E-01	.1806E-01	.7763E-01
1.250	-1.750	.175	1.250	-1.750	.275	.6375E-02	.4163E-01	.4289E-03	-.1135E-01	.2346E-02	.5021E-01
1.250	-1.750	.175	1.250	-1.750	.325	.1530E-02	.2398E-02	-.3545E-02	-.2333E-01	-.2503E-02	.3177E-01
1.750	-1.750	.175	1.750	-1.750	.025	.8819E-02	-.7966E-01				
1.750	-1.750	.175	1.750	-1.750	.075	.5851E-02	.3507E-01				
1.750	-1.750	.175	1.750	-1.750	.125	.1434E-01	.2108E+00				
1.750	-1.750	.175	1.750	-1.750	.175	.2170E-01	.4824E+00	.7742E-01	.8169E-01	.8169E-01	.2416E+00
1.750	-1.750	.175	1.750	-1.750	.225	.1510E-01	.2336E+00	.1853E-01	.2652E-01	.2594E-01	.1626E+00
1.750	-1.750	.175	1.750	-1.750	.275	.9164E-02	.8602E-01	-.7457E-02	-.1182E-01	-.1884E-03	.1055E+00
1.750	-1.750	.175	1.750	-1.750	.325	.3773E-02	.1458E-01	-.1347E-01	-.3171E-01	-.6939E-02	.6670E-01
-1.750	-1.250	.175	-1.750	-1.250	.025	.2169E-02	-.4819E-02				
-1.750	-1.250	.175	-1.750	-1.250	.075	.1133E-02	.1315E-02				
-1.750	-1.250	.175	-1.750	-1.250	.125	.3056E-02	.9567E-02				
-1.750	-1.250	.175	-1.750	-1.250	.175	.4492E-02	.2066E-01	.3481E-02	.3781E-02	.3781E-02	.9622E-02
-1.750	-1.250	.175	-1.750	-1.250	.225	.2920E-02	.8734E-02	.1179E-02	.3468E-03	.1166E-02	.6043E-02
-1.750	-1.250	.175	-1.750	-1.250	.275	.1551E-02	.2464E-02	.1824E-03	-.1503E-02	.8274E-04	.3703E-02
-1.750	-1.250	.175	-1.750	-1.250	.325	.6272E-03	-.4030E-03	-.9394E-04	-.2294E-02	-.1821E-03	.2167E-02
-1.250	-1.250	.175	-1.250	-1.250	.025	.1920E-02	-.3776E-02				
-1.250	-1.250	.175	-1.250	-1.250	.075	.2277E-02	.5311E-02				
-1.250	-1.250	.175	-1.250	-1.250	.125	.4156E-02	.1769E-01				
-1.250	-1.250	.175	-1.250	-1.250	.175	.5681E-02	.3306E-01	.6727E-02	.4003E-02	.4003E-02	.1833E-01
-1.250	-1.250	.175	-1.250	-1.250	.225	.3814E-02	.1490E-01	.2371E-02	.1983E-03	.1170E-02	.1116E-01
-1.250	-1.250	.175	-1.250	-1.250	.275	.2309E-02	.5460E-02	.5555E-03	-.1803E-02	.9564E-04	.6612E-02
-1.250	-1.250	.175	-1.250	-1.250	.325	.1022E-02	.1069E-02	.3911E-04	-.2615E-02	-.1460E-03	.3791E-02
-.750	-1.250	.175	-.750	-1.250	.025	.3477E-02	-.1238E-01				
-.750	-1.250	.175	-.750	-1.250	.075	.3815E-02	.1491E-01				
-.750	-1.250	.175	-.750	-1.250	.125	.7247E-02	.5380E-01				
-.750	-1.250	.175	-.750	-1.250	.175	.9679E-02	.9997E-01	.2082E-01	.1205E-01	.1205E-01	.5506E-01
-.750	-1.250	.175	-.750	-1.250	.225	.6476E-02	.4296E-01	.7693E-02	-.6626E-03	.3493E-02	.3244E-01
-.750	-1.250	.175	-.750	-1.250	.275	.3713E-02	.1412E-01	.2309E-02	-.7042E-02	.3400E-03	.1852E-01
-.750	-1.250	.175	-.750	-1.250	.325	.1072E-02	.1177E-02	.6727E-03	-.9424E-02	-.3621E-03	.1029E-01

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Table IV.- Continued.

Y1/D	Y2/D	Y3/D	Z1/D	Z2/D	Z3/D	$P/\rho U^2$	PP	PP0	PP1	PP2	PP3
-.250	-1.250	.175	-.250	-1.250	.025	.6860E-02	-.4820E-01				
-.250	-1.250	.175	-.250	-1.250	.075	.5008E-02	.2568E-01				
-.250	-1.250	.175	-.250	-1.250	.125	.1139E-01	.1329E+00				
-.250	-1.250	.175	-.250	-1.250	.175	.1568E-01	.2519E+00	.5109E-01	.3522E-01	.3522E-01	.1304E+00
-.250	-1.250	.175	-.250	-1.250	.225	.9830E-02	.9898E-01	.1999E-01	-.5717E-02	.1056E-01	.7414E-01
-.250	-1.250	.175	-.250	-1.250	.275	.4911E-02	.2470E-01	.7408E-02	-.2511E-01	.1728E-02	.4068E-01
-.250	-1.250	.175	-.250	-1.250	.325	.2551E-02	-.6665E-02	.3292E-02	-.3138E-01	-.3522E-03	.2178E-01
.250	-1.250	.175	.250	-1.250	.025	.1078E-01	-.1191E+00				
.250	-1.250	.175	.250	-1.250	.075	.5542E-02	.3146E-01				
.250	-1.250	.175	.250	-1.250	.125	.1564E-01	.2506E+00				
.250	-1.250	.175	.250	-1.250	.175	.2175E-01	.4846E+00	.9141E-01	.8038E-01	.8038E-01	.2324E+00
.250	-1.250	.175	.250	-1.250	.225	.1337E-01	.1830E+00	.3572E-01	-.1068E-01	.2582E-01	.1321E+00
.250	-1.250	.175	.250	-1.250	.275	.6037E-02	.3733E-01	.1315E-01	-.5381E-01	.5594E-02	.7240E-01
.250	-1.250	.175	.250	-1.250	.325	.4694E-02	-.2257E-01	.5796E-02	-.6734E-01	.2723E-03	.3871E-01
.750	-1.250	.175	.750	-1.250	.025	.1099E-01	-.1237E+00				
.750	-1.250	.175	.750	-1.250	.075	.4946E-02	.2506E-01				
.750	-1.250	.175	.750	-1.250	.125	.1564E-01	.2504E+00				
.750	-1.250	.175	.750	-1.250	.175	.2198E-01	.4949E+00	.8377E-01	.9830E-01	.9830E-01	.2145E+00
.750	-1.250	.175	.750	-1.250	.225	.1420E-01	.2064E+00	.3070E-01	.1185E-01	.3501E-01	.1288E+00
.750	-1.250	.175	.750	-1.250	.275	.7501E-02	.5764E-01	.7844E-02	-.3482E-01	.9285E-02	.7533E-01
.750	-1.250	.175	.750	-1.250	.325	.3250E-02	-.1082E-01	.5104E-03	-.5521E-01	.1349E-02	.4253E-01
1.250	-1.250	.175	1.250	-1.250	.025	.1238E-01	-.1569E+00				
1.250	-1.250	.175	1.250	-1.250	.075	.6921E-02	.4906E-01				
1.250	-1.250	.175	1.250	-1.250	.125	.1821E-01	.3397E+00				
1.250	-1.250	.175	1.250	-1.250	.175	.2604E-01	.6948E+00	.1205E+00	.1281E+00	.1281E+00	.3181E+00
1.250	-1.250	.175	1.250	-1.250	.225	.1722E-01	.3036E+00	.4331E-01	.1741E-01	.4292E-01	.2000E+00
1.250	-1.250	.175	1.250	-1.250	.275	.9730E-02	.9697E-01	.9244E-02	-.4290E-01	.6618E-02	.1240E+00
1.250	-1.250	.175	1.250	-1.250	.325	.4620E-03	.2187E-03	-.1161E-02	-.7029E-01	-.3822E-02	.7549E-01
1.750	-1.250	.175	1.750	-1.250	.025	.9089E-02	-.8462E-01				
1.750	-1.250	.175	1.750	-1.250	.075	.5444E-02	.3036E-01				
1.750	-1.250	.175	1.750	-1.250	.125	.1355E-01	.1881E+00				
1.750	-1.250	.175	1.750	-1.250	.175	.1994E-01	.4072E+00	.7000E-01	.7258E-01	.7258E-01	.1920E+00
1.750	-1.250	.175	1.750	-1.250	.225	.1333E-01	.1819E+00	.2393E-01	.1070E-01	.2219E-01	.1251E+00
1.750	-1.250	.175	1.750	-1.250	.275	.7714E-02	.6095E-01	.2986E-02	-.2308E-01	.7676E-05	.8103E-01
1.750	-1.250	.175	1.750	-1.250	.325	.1949E-02	.3891E-02	-.3213E-02	-.3867E-01	-.6128E-02	.5190E-01
-1.750	-.750	.175	-1.750	-.750	.025	.2287E-02	-.5356E-02				
-1.750	-.750	.175	-1.750	-.750	.075	.1321E-02	.1788E-02				
-1.750	-.750	.175	-1.750	-.750	.125	.3281E-02	.1103E-01				
-1.750	-.750	.175	-1.750	-.750	.175	.4771E-02	.2331E-01	.4154E-02	.4035E-02	.4035E-02	.1109E-01
-1.750	-.750	.175	-1.750	-.750	.225	.3074E-02	.9677E-02	.1502E-02	.7862E-04	.1280E-02	.6816E-02
-1.750	-.750	.175	-1.750	-.750	.275	.1599E-02	.2618E-02	.3712E-03	-.1986E-02	.1569E-03	.4075E-02
-1.750	-.750	.175	-1.750	-.750	.325	.7443E-03	-.5674E-03	.4451E-04	-.2819E-02	-.1324E-03	.2339E-02
-1.250	-.750	.175	-1.250	-.750	.025	.2491E-02	-.6355E-02				
-1.250	-.750	.175	-1.250	-.750	.075	.2146E-02	.4716E-02				
-1.250	-.750	.175	-1.250	-.750	.125	.4136E-02	.1752E-01				
-1.250	-.750	.175	-1.250	-.750	.175	.5551E-02	.3157E-01	.6744E-02	.3967E-02	.3967E-02	.1689E-01
-1.250	-.750	.175	-1.250	-.750	.225	.3622E-02	.1344E-01	.2839E-02	-.3305E-03	.1269E-02	.9664E-02
-1.250	-.750	.175	-1.250	-.750	.275	.2079E-02	.4426E-02	.1246E-02	-.2425E-02	.2790E-03	.5326E-02
-1.250	-.750	.175	-1.250	-.750	.325	.6169E-03	.3897E-03	.7046E-03	-.3129E-02	.2154E-04	.2793E-02
1.250	-.750	.175	1.250	-.750	.025	.1535E-01	-.2413E+00				
1.250	-.750	.175	1.250	-.750	.075	.6435E-02	.4242E-01				
1.250	-.750	.175	1.250	-.750	.125	.2084E-01	.4450E+00				
1.250	-.750	.175	1.250	-.750	.175	.2959E-01	.8966E+00	.1744E+00	.1485E+00	.1485E+00	.4251E+00
1.250	-.750	.175	1.250	-.750	.225	.1888E-01	.3652E+00	.7198E-01	-.6469E-02	.4593E-01	.2538E+00
1.250	-.750	.175	1.250	-.750	.275	.9851E-02	.9940E-01	.2798E-01	-.8359E-01	.6331E-02	.1487E+00
1.250	-.750	.175	1.250	-.750	.325	.4189E-02	-.1797E-01	.1311E-01	-.1128E+00	-.3683E-02	.8539E-01
1.750	-.750	.175	1.750	-.750	.025	.1210E-01	-.1499E+00				
1.750	-.750	.175	1.750	-.750	.075	.7403E-02	.5613E-01				
1.750	-.750	.175	1.750	-.750	.125	.1766E-01	.3194E+00				
1.750	-.750	.175	1.750	-.750	.175	.2585E-01	.6842E+00	.1253E+00	.1122E+00	.1122E+00	.3345E+00
1.750	-.750	.175	1.750	-.750	.225	.1707E-01	.2984E+00	.4544E-01	.6826E-02	.3280E-01	.2134E+00
1.750	-.750	.175	1.750	-.750	.275	.9660E-02	.9558E-01	.9914E-02	-.4842E-01	-.6532E-03	.1347E+00
1.750	-.750	.175	1.750	-.750	.325	.1438E-02	.2117E-02	-.7404E-03	-.7192E-01	-.9117E-02	.8390E-01
-1.750	-.250	.175	-1.750	-.250	.025	.2192E-02	-.4920E-02				
-1.750	-.250	.175	-1.750	-.250	.075	.1451E-02	.2158E-02				
-1.750	-.250	.175	-1.750	-.250	.125	.3468E-02	.1232E-01				
-1.750	-.250	.175	-1.750	-.250	.175	.4974E-02	.2534E-01	.4651E-02	.4052E-02	.4052E-02	.1259E-01
-1.750	-.250	.175	-1.750	-.250	.225	.3202E-02	.1050E-01	.1653E-02	-.6227E-04	.1259E-02	.7654E-02
-1.750	-.250	.175	-1.750	-.250	.275	.1687E-02	.2916E-02	.3975E-03	-.2161E-02	.1521E-03	.4528E-02
-1.750	-.250	.175	-1.750	-.250	.325	.7030E-03	-.5062E-03	.3410E-04	-.2999E-02	-.1216E-03	.2580E-02
-1.250	-.250	.175	-1.250	-.250	.025	.3001E-02	-.9225E-02				
-1.250	-.250	.175	-1.250	-.250	.075	.1247E-02	.1593E-02				
-1.250	-.250	.175	-1.250	-.250	.125	.3941E-02	.1591E-01				
-1.250	-.250	.175	-1.250	-.250	.175	.5486E-02	.3082E-01	.6606E-02	.4466E-02	.4466E-02	.1529E-01
-1.250	-.250	.175	-1.250	-.250	.225	.3349E-02	.1149E-01	.2931E-02	-.1179E-02	.1292E-02	.8444E-02
-1.250	-.250	.175	-1.250	-.250	.275	.1535E-02	.2414E-02	.1412E-02	-.3734E-02	.2361E-03	.4500E-02
-1.250	-.250	.175	-1.250	-.250	.325	.1151E-02	-.1358E-02	.8452E-03	-.4494E-02	-.7517E-05	.2299E-02
1.250	-.250	.175	1.250	-.250	.025	.2761E-01	-.7808E+00				
1.250	-.250	.175	1.250	-.250	.075	.8824E-02	.7976E-01				
1.250	-.250	.175	1.250	-.250	.125	.3369E-01	.1163E+01				
1.250	-.250	.175	1.250	-.250	.175	.4607E-01	.2174E+01	.5134E+00	.2772E+00	.2772E+00	.1106E+01
1.250	-.250	.175	1.250	-.250	.225	.2847E-01	.8303E+00	.2457E+00	-.1064E+00	.8219E-01	.6087E+00
1.250	-.250	.175	1.250	-.250	.275	.1545E-01	.2446E+00	.1367E+00	-.2495E+00	.2177E-02	.3552E+00
1.250	-.250	.175	1.250	-.250	.325	.4501E-02	-.2075E-01	.9236E-01	-.2982E+00	-.1176E-01	.1969E+00
1.750	-.250	.175	1.750	-.250	.025	.1800E-01	-.3352E+00				
1.750	-.250	.175	1.750	-.250	.075	.1048E-01	.1126E+00				
1.750	-.250	.175	1.750	-.250	.125	.2613E-01	.6993E+00				
1.750	-.250	.175	1.750	-.250	.175	.3700E-01	.1402E+01	.2822E+00	.2007E+00	.2007E+00	.7188E+00
1.750	-.250	.175	1.750	-.250	.225	.2400E-01	.5900E+00	.1081E+00	-.1642E-01	.5602E-01	.4419E+00
1.750	-.250	.175	1.750	-.250	.275	.1398E-01	.2002E+00	.3553E-01	-.1118E+00	-.6652E-02	.2831E+00
1.750	-.250	.175	1.750	-.250	.325	.3868E-02	.1532E-01	.1172E-01	-.1519E+00	-.2035E-01	.1759E+00
-1.750	.250	.175	-1.750	.250	.025	.2177E-02	-.4855E-02				
-1.750	.250	.175	-1.750	.250	.075	.1463E-02	.2193E-02				
-1.750	.250	.175	-1.750	.250	.125	.3462E-02	.1228E-01				
-1.750	.250	.175	-1.750	.250	.175	.4961E-02	.2521E-01	.4648E-02	.3990E-02	.3990E-02	.1259E-01
-1.750	.250	.175	-1.750	.250	.225	.3197E-02	.1047E-01	.1654E-02	-.6033E-04	.1206E-02	.7668E-02

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Table IV.- Continued.

Y1/D	Y2/D	Y3/D	Z1/D	Z2/D	Z3/D	$P/\rho U^2$	PP	PP0	PP1	PP2	PP3
-1,750	,250	,175	-1,750	,250	,275	,1701E-02	,2904E-02	,4017E-03	-,2127E-02	,1578E-03	,4552E-02
-1,750	,250	,175	-1,750	,250	,325	,6493E-03	-,4318E-03	,3831E-04	-,2953E-02	-,1217E-03	,2605E-02
-1,250	,250	,175	-1,250	,250	,025	,2907E-02	-,8655E-02				
-1,250	,250	,175	-1,250	,250	,075	,1415E-02	,2050E-02				
-1,250	,250	,175	-1,250	,250	,125	,3931E-02	,1583E-01				
-1,250	,250	,175	-1,250	,250	,175	,5402E-02	,3033E-01	,6586E-02	,4232E-02	,4232E-02	,1529E-01
-1,250	,250	,175	-1,250	,250	,225	,3348E-02	,1148E-01	,2924E-02	-,1127E-02	,1246E-02	,8442E-02
-1,250	,250	,175	-1,250	,250	,275	,1580E-02	,2569E-02	,1413E-02	-,3553E-02	,2227E-03	,4486E-02
-1,250	,250	,175	-1,250	,250	,325	,1063E-02	-,1156E-02	,8517E-03	-,4276E-02	-,1321E-04	,2282E-02
1,250	,250	,175	1,250	,250	,025	,2795E-01	-,8002E+00				
1,250	,250	,175	1,250	,250	,075	,6620E-02	,4488E-01				
1,250	,250	,175	1,250	,250	,125	,3309E-01	,1122E+01				
1,250	,250	,175	1,250	,250	,175	,4615E-01	,2181E+01	,5132E+00	,2808E+00	,2808E+00	,1106E+01
1,250	,250	,175	1,250	,250	,225	,2858E-01	,8366E+00	,2460E+00	-,9587E-01	,6463E-01	,6218E+00
1,250	,250	,175	1,250	,250	,275	,1440E-01	,2125E+00	,1348E+00	-,2740E+00	-,3252E-02	,3549E+00
1,250	,250	,175	1,250	,250	,325	,7253E-02	-,5389E-01	,8865E-01	-,3236E+00	-,1568E-01	,1968E+00
1,750	,250	,175	1,750	,250	,025	,1823E-01	-,3404E+00				
1,750	,250	,175	1,750	,250	,075	,1012E-01	,1048E+00				
1,750	,250	,175	1,750	,250	,125	,2594E-01	,6894E+00				
1,750	,250	,175	1,750	,250	,175	,3707E-01	,1407E+01	,2803E+00	,2042E+00	,2042E+00	,7188E+00
1,750	,250	,175	1,750	,250	,225	,2413E-01	,5965E+00	,1089E+00	-,1058E-01	,5065E-01	,4475E+00
1,750	,250	,175	1,750	,250	,275	,1360E-01	,1894E+00	,3453E-01	-,1189E+00	-,9132E-02	,2829E+00
1,750	,250	,175	1,750	,250	,325	,1908E-02	,3728E-02	,1039E-01	-,1599E+00	-,2258E-01	,1758E+00
-1,750	-1,750	,225	-1,750	-1,750	,025	,1564E-02	-,2505E-02				
-1,750	-1,750	,225	-1,750	-1,750	,075	,5106E-03	-,2670E-03				
-1,750	-1,750	,225	-1,750	-1,750	,125	,1727E-02	,3053E-02				
-1,750	-1,750	,225	-1,750	-1,750	,175	,2666E-02	,7283E-02				
-1,750	-1,750	,225	-1,750	-1,750	,225	,3506E-02	,1259E-01	,2546E-02	,1782E-02	,1782E-02	,6480E-02
-1,750	-1,750	,225	-1,750	-1,750	,275	,2448E-02	,6137E-02	,9843E-03	,5100E-03	,6686E-03	,3974E-02
-1,750	-1,750	,225	-1,750	-1,750	,325	,1634E-02	,2733E-02	,3496E-03	-,2378E-03	,2445E-03	,2377E-02
-1,250	-1,750	,225	-1,250	-1,750	,025	,2458E-02	-,6189E-02				
-1,250	-1,750	,225	-1,250	-1,750	,075	,1479E-02	-,2239E-02				
-1,250	-1,750	,225	-1,250	-1,750	,125	,2036E-02	,4244E-02				
-1,250	-1,750	,225	-1,250	-1,750	,175	,3583E-02	,1315E-01				
-1,250	-1,750	,225	-1,250	-1,750	,225	,4881E-02	,2440E-01	,5289E-02	,3401E-02	,3401E-02	,1231E-01
-1,250	-1,750	,225	-1,250	-1,750	,275	,3415E-02	,1194E-01	,2233E-02	,7477E-03	,1268E-02	,7695E-02
-1,250	-1,750	,225	-1,250	-1,750	,325	,2289E-02	,5348E-02	,9007E-03	-,6882E-03	,4264E-03	,4709E-02
-,750	-1,750	,225	-,750	-1,750	,025	,3838E-02	-,1509E-01				
-,750	-1,750	,225	-,750	-1,750	,075	,2483E-02	-,6315E-02				
-,750	-1,750	,225	-,750	-1,750	,125	,3072E-02	,9667E-02				
-,750	-1,750	,225	-,750	-1,750	,175	,5603E-02	,3215E-01				
-,750	-1,750	,225	-,750	-1,750	,225	,7681E-02	,6043E-01	,1309E-01	,8682E-02	,8682E-02	,2997E-01
-,750	-1,750	,225	-,750	-1,750	,275	,5316E-02	,2894E-01	,5612E-02	,1480E-02	,3332E-02	,1852E-01
-,750	-1,750	,225	-,750	-1,750	,325	,3487E-02	,1245E-01	,2348E-02	-,2326E-02	,1199E-02	,1123E-01
-,250	-1,750	,225	-,250	-1,750	,025	,5456E-02	-,3050E-01				
-,250	-1,750	,225	-,250	-1,750	,075	,3782E-02	-,1465E-01				
-,250	-1,750	,225	-,250	-1,750	,125	,3855E-02	,1522E-01				
-,250	-1,750	,225	-,250	-1,750	,175	,7416E-02	,5634E-01				
-,250	-1,750	,225	-,250	-1,750	,225	,1023E-01	,1072E+00	,2204E-01	,1717E-01	,1717E-01	,5085E-01
-,250	-1,750	,225	-,250	-1,750	,275	,6943E-02	,4938E-01	,9341E-02	,2219E-02	,6758E-02	,3106E-01
-,250	-1,750	,225	-,250	-1,750	,325	,4380E-02	,1965E-01	,3847E-02	-,5416E-02	,2572E-02	,1865E-01
,250	-1,750	,225	,250	-1,750	,025	,7331E-02	-,5505E-01				
,250	-1,750	,225	,250	-1,750	,075	,5275E-02	-,2850E-01				
,250	-1,750	,225	,250	-1,750	,125	,4602E-02	,2169E-01				
,250	-1,750	,225	,250	-1,750	,175	,9297E-02	,8854E-01				
,250	-1,750	,225	,250	-1,750	,225	,1292E-01	,1708E+00	,3341E-01	,3019E-01	,3019E-01	,7707E-01
,250	-1,750	,225	,250	-1,750	,275	,8665E-02	,7691E-01	,1413E-01	,3548E-02	,1216E-01	,4707E-01
,250	-1,750	,225	,250	-1,750	,325	,5328E-02	,2907E-01	,5800E-02	-,9743E-02	,4777E-02	,2824E-01
,750	-1,750	,225	,750	-1,750	,025	,8774E-02	-,7886E-01				
,750	-1,750	,225	,750	-1,750	,075	,6326E-02	-,4099E-01				
,750	-1,750	,225	,750	-1,750	,125	,5658E-02	,3278E-01				
,750	-1,750	,225	,750	-1,750	,175	,1137E-01	,1325E+00				
,750	-1,750	,225	,750	-1,750	,225	,1577E-01	,2548E+00	,4461E-01	,5103E-01	,5103E-01	,1081E+00
,750	-1,750	,225	,750	-1,750	,275	,1079E-01	,1193E+00	,1748E-01	,1168E-01	,2206E-01	,6804E-01
,750	-1,750	,225	,750	-1,750	,325	,6660E-02	,4543E-01	,5405E-02	-,1072E-01	,9541E-02	,4120E-01
1,250	-1,750	,225	1,250	-1,750	,025	,8751E-02	-,7845E-01				
1,250	-1,750	,225	1,250	-1,750	,075	,6284E-02	-,4044E-01				
1,250	-1,750	,225	1,250	-1,750	,125	,5424E-02	,3013E-01				
1,250	-1,750	,225	1,250	-1,750	,175	,1090E-01	,1218E+00				
1,250	-1,750	,225	1,250	-1,750	,225	,1527E-01	,2388E+00	,4190E-01	,4896E-01	,4896E-01	,9903E-01
1,250	-1,750	,225	1,250	-1,750	,275	,1062E-01	,1155E+00	,1706E-01	,1311E-01	,2135E-01	,6402E-01
1,250	-1,750	,225	1,250	-1,750	,325	,6827E-02	,4774E-01	,5735E-02	-,7646E-02	,9232E-02	,4042E-01
1,750	-1,750	,225	1,750	-1,750	,025	,9908E-02	-,1005E+00				
1,750	-1,750	,225	1,750	-1,750	,075	,6268E-02	-,4024E-01				
1,750	-1,750	,225	1,750	-1,750	,125	,8119E-02	,6744E-01				
1,750	-1,750	,225	1,750	-1,750	,175	,1510E-01	,2336E+00				
1,750	-1,750	,225	1,750	-1,750	,225	,2142E-01	,4700E+00	,7796E-01	,9101E-01	,9101E-01	,2100E+00
1,750	-1,750	,225	1,750	-1,750	,275	,1502E-01	,2310E+00	,2663E-01	,3025E-01	,3886E-01	,1352E+00
1,750	-1,750	,225	1,750	-1,750	,325	,9889E-02	,1002E+00	,4792E-02	-,5331E-02	,1586E-01	,8485E-01
-1,750	-1,250	,225	-1,750	-1,250	,025	,2552E-02	-,6672E-02				
-1,750	-1,250	,225	-1,750	-1,250	,075	,1887E-02	-,3646E-02				
-1,750	-1,250	,225	-1,750	-1,250	,125	,1317E-02	,1777E-02				
-1,750	-1,250	,225	-1,750	-1,250	,175	,2920E-02	,8734E-02				
-1,750	-1,250	,225	-1,750	-1,250	,225	,4106E-02	,1727E-01	,3340E-02	,3263E-02	,3263E-02	,7405E-02
-1,750	-1,250	,225	-1,750	-1,250	,275	,2761E-02	,7810E-02	,1474E-02	,4990E-03	,1291E-02	,4546E-02
-1,750	-1,250	,225	-1,750	-1,250	,325	,1664E-02	,2835E-02	,6435E-03	-,9027E-03	,4641E-03	,2671E-02
-1,250	-1,250	,225	-1,250	-1,250	,025	,2726E-02	-,7614E-02				
-1,250	-1,250	,225	-1,250	-1,250	,075	,1562E-02	-,2498E-02				
-1,250	-1,250	,225	-1,250	-1,250	,125	,2289E-02	,5366E-02				
-1,250	-1,250	,225	-1,250	-1,250	,175	,3814E-02	,1490E-01				
-1,250	-1,250	,225	-1,250	-1,250	,225	,5015E-02	,2576E-01	,6287E-02	,3130E-02	,3130E-02	,1322E-01
-1,250	-1,250	,225	-1,250	-1,250	,275	,3454E-02	,1222E-01	,2920E-02	,3288E-03	,1147E-02	,7825E-02
-1,250	-1,250	,225	-1,250	-1,250	,325	,2256E-02	,5213E-02	,1436E-02	-,1088E-02	,3862E-03	,4479E-02
-,750	-1,250	,225	-,750	-1,250	,025	,4832E-02	-,2392E-01				
-,750	-1,250	,225	-,750	-1,250	,075	,3106E-02	-,9880E-02				

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Table IV.- Continued.

Y1/D	Y2/D	Y3/D	Z1/D	Z2/D	Z3/D	$P/\rho U^2$	PP	PP0	PP1	PP2	PP3
-.750	-1.250	.225	-.750	-1.250	.125	.3705E-02	.1405E-01				
-.750	-1.250	.225	-.750	-1.250	.175	.6476E-02	.4296E-01				
-.750	-1.250	.225	-.750	-1.250	.225	.8499E-02	.7399E-01	.1891E-01	.8938E-02	.8938E-02	.3720E-01
-.750	-1.250	.225	-.750	-1.250	.275	.5731E-02	.3364E-01	.9253E-02	-.4865E-04	.3211E-02	.2122E-01
-.750	-1.250	.225	-.750	-1.250	.325	.3629E-02	.1349E-01	.4974E-02	-.4386E-02	.1113E-02	.1179E-01
-.250	-1.250	.225	-.250	-1.250	.025	.8825E-02	-.7976E-01				
-.250	-1.250	.225	-.250	-1.250	.075	.6456E-02	-.4269E-01				
-.250	-1.250	.225	-.250	-1.250	.125	.4737E-02	.2298E-01				
-.250	-1.250	.225	-.250	-1.250	.175	.9830E-02	.9898E-01				
-.250	-1.250	.225	-.250	-1.250	.225	.1302E-01	.1736E+00	.4540E-01	.2305E-01	.2305E-01	.8206E-01
-.250	-1.250	.225	-.250	-1.250	.275	.8437E-02	.7292E-01	.2365E-01	-.3807E-02	.8070E-02	.4500E-01
-.250	-1.250	.225	-.250	-1.250	.325	.4943E-02	.2502E-01	.1385E-01	-.1572E-01	.2818E-02	.2408E-01
.250	-1.250	.225	.250	-1.250	.025	.1320E-01	-.1783E+00				
.250	-1.250	.225	.250	-1.250	.075	.9978E-02	-.1020E+00				
.250	-1.250	.225	.250	-1.250	.125	.5702E-02	.3330E-01				
.250	-1.250	.225	.250	-1.250	.175	.1337E-01	.1830E+00				
.250	-1.250	.225	.250	-1.250	.225	.1792E-01	.3291E+00	.8090E-01	.5094E-01	.5094E-01	.1463E+00
.250	-1.250	.225	.250	-1.250	.275	.1135E-01	.1320E+00	.4207E-01	-.8743E-02	.1845E-01	.8018E-01
.250	-1.250	.225	.250	-1.250	.325	.6223E-02	.3966E-01	.2458E-01	-.3451E-01	.6718E-02	.4287E-01
.750	-1.250	.225	.750	-1.250	.025	.1258E-01	-.1620E+00				
.750	-1.250	.225	.750	-1.250	.075	.9075E-02	-.8436E-01				
.750	-1.250	.225	.750	-1.250	.125	.7175E-02	.5273E-01				
.750	-1.250	.225	.750	-1.250	.175	.1420E-01	.2064E+00				
.750	-1.250	.225	.750	-1.250	.225	.1895E-01	.3680E+00	.7453E-01	.7131E-01	.7131E-01	.1509E+00
.750	-1.250	.225	.750	-1.250	.275	.1246E-01	.1569E+00	.3461E-01	.6805E-02	.2932E-01	.8817E-01
.750	-1.250	.225	.750	-1.250	.325	.7125E-02	.5200E-01	.1660E-01	-.2658E-01	.1232E-01	.4965E-01
1.250	-1.250	.225	1.250	-1.250	.025	.1452E-01	-.2158E+00				
1.250	-1.250	.225	1.250	-1.250	.075	.1013E-01	-.1050E+00				
1.250	-1.250	.225	1.250	-1.250	.125	.8786E-02	.7907E-01				
1.250	-1.250	.225	1.250	-1.250	.175	.1722E-01	.3036E+00				
1.250	-1.250	.225	1.250	-1.250	.225	.2371E-01	.5758E+00	.1140E+00	.1085E+00	.1085E+00	.2449E+00
1.250	-1.250	.225	1.250	-1.250	.275	.1615E-01	.2670E+00	.5143E-01	.1871E-01	.4499E-01	.1519E+00
1.250	-1.250	.225	1.250	-1.250	.325	.1010E-01	.1044E+00	.2324E-01	-.2960E-01	.1840E-01	.9238E-01
1.750	-1.250	.225	1.750	-1.250	.025	.1095E-01	-.1229E+00				
1.750	-1.250	.225	1.750	-1.250	.075	.7821E-02	-.6266E-01				
1.750	-1.250	.225	1.750	-1.250	.125	.6403E-02	.4200E-01				
1.750	-1.250	.225	1.750	-1.250	.175	.1533E-01	.1819E+00				
1.750	-1.250	.225	1.750	-1.250	.225	.1891E-01	.3664E+00	.6940E-01	.6908E-01	.6908E-01	.1588E+00
1.750	-1.250	.225	1.750	-1.250	.275	.1317E-01	.1776E+00	.2993E-01	.1607E-01	.2875E-01	.1029E+00
1.750	-1.250	.225	1.750	-1.250	.325	.8627E-02	.7623E-01	.1206E-01	-.1311E-01	.1143E-01	.6585E-01
-1.750	-.750	.225	-1.750	-.750	.025	.2731E-02	-.7641E-02				
-1.750	-.750	.225	-1.750	-.750	.075	.2035E-02	-.4243E-02				
-1.750	-.750	.225	-1.750	-.750	.125	.1394E-02	.1991E-02				
-1.750	-.750	.225	-1.750	-.750	.175	.3074E-02	.9677E-02				
-1.750	-.750	.225	-1.750	-.750	.225	.4265E-02	.1863E-01	.3903E-02	.3281E-02	.3281E-02	.8166E-02
-1.750	-.750	.225	-1.750	-.750	.275	.2830E-02	.8206E-02	.1815E-02	.2045E-03	.1299E-02	.4888E-02
-1.750	-.750	.225	-1.750	-.750	.325	.1666E-02	.2843E-02	.8844E-03	-.1342E-02	.4922E-03	.2808E-02
-1.250	-.750	.225	-1.250	-.750	.025	.3526E-02	-.1273E-01				
-1.250	-.750	.225	-1.250	-.750	.075	.2001E-02	-.4101E-02				
-1.250	-.750	.225	-1.250	-.750	.125	.2120E-02	.4605E-02				
-1.250	-.750	.225	-1.250	-.750	.175	.3622E-02	.1344E-01				
-1.250	-.750	.225	-1.250	-.750	.225	.4629E-02	.2195E-01	.6157E-02	.2510E-02	.2510E-02	.1077E-01
-1.250	-.750	.225	-1.250	-.750	.275	.3105E-02	.9872E-02	.3333E-02	-.3068E-03	.9063E-03	.5940E-02
-1.250	-.750	.225	-1.250	-.750	.325	.1947E-02	.3881E-02	.2020E-02	-.1564E-02	.3117E-03	.3114E-02
1.250	-.750	.225	1.250	-.750	.025	.1851E-01	-.3508E+00				
1.250	-.750	.225	1.250	-.750	.075	.1353E-01	-.1874E+00				
1.250	-.750	.225	1.250	-.750	.125	.8623E-02	.7616E-01				
1.250	-.750	.225	1.250	-.750	.175	.1888E-01	.3652E+00				
1.250	-.750	.225	1.250	-.750	.225	.2572E-01	.6775E+00	.1592E+00	.1116E+00	.1116E+00	.2951E+00
1.250	-.750	.225	1.250	-.750	.275	.1701E-01	.2965E+00	.8134E-01	-.2416E-03	.4247E-01	.1729E+00
1.250	-.750	.225	1.250	-.750	.325	.1019E-01	.1063E+00	.4555E-01	-.5448E-01	.1600E-01	.9926E-01
1.750	-.750	.225	1.750	-.750	.025	.1460E-01	-.2184E+00				
1.750	-.750	.225	1.750	-.750	.075	.1052E-01	-.1134E+00				
1.750	-.750	.225	1.750	-.750	.125	.8051E-02	.6639E-01				
1.750	-.750	.225	1.750	-.750	.175	.1707E-01	.2984E+00				
1.750	-.750	.225	1.750	-.750	.225	.2405E-01	.5924E+00	.1220E+00	.1026E+00	.1026E+00	.2651E+00
1.750	-.750	.225	1.750	-.750	.275	.1654E-01	.2803E+00	.5534E-01	.1652E-01	.4101E-01	.1674E+00
1.750	-.750	.225	1.750	-.750	.325	.1068E-01	.1163E+00	.2525E-01	-.2871E-01	.1551E-01	.1042E+00
-1.750	-.250	.225	-1.750	-.250	.025	.2742E-02	-.7699E-02				
-1.750	-.250	.225	-1.750	-.250	.075	.1980E-02	-.4014E-02				
-1.750	-.250	.225	-1.750	-.250	.125	.1522E-02	.2373E-02				
-1.750	-.250	.225	-1.750	-.250	.175	.3202E-02	.1050E-01				
-1.750	-.250	.225	-1.750	-.250	.225	.4398E-02	.1981E-01	.4340E-02	.3202E-02	.3202E-02	.9067E-02
-1.750	-.250	.225	-1.750	-.250	.275	.2919E-02	.8725E-02	.2024E-02	.1031E-03	.1234E-02	.5364E-02
-1.750	-.250	.225	-1.750	-.250	.325	.1730E-02	.3066E-02	.9969E-03	-.1449E-02	.4607E-03	.3057E-02
-1.250	-.250	.225	-1.250	-.250	.025	.3683E-02	-.1389E-01				
-1.250	-.250	.225	-1.250	-.250	.075	.2738E-02	-.7679E-02				
-1.250	-.250	.225	-1.250	-.250	.125	.1332E-02	.1817E-02				
-1.250	-.250	.225	-1.250	-.250	.175	.3349E-02	.1149E-01				
-1.250	-.250	.225	-1.250	-.250	.225	.4422E-02	.2003E-01	.5801E-02	.2577E-02	.2577E-02	.9076E-02
-1.250	-.250	.225	-1.250	-.250	.275	.2821E-02	.8153E-02	.3287E-02	-.8141E-03	.8589E-03	.4822E-02
-1.250	-.250	.225	-1.250	-.250	.325	.1585E-02	.2573E-02	.2096E-02	-.2260E-02	.2836E-03	.2454E-02
1.250	-.250	.225	1.250	-.250	.025	.3342E-01	-.1144E+01				
1.250	-.250	.225	1.250	-.250	.075	.2597E-01	-.6906E+00				
1.250	-.250	.225	1.250	-.250	.125	.1055E-01	.1140E+00				
1.250	-.250	.225	1.250	-.250	.175	.2847E-01	.8303E+00				
1.250	-.250	.225	1.250	-.250	.225	.3858E-01	.1525E+01	.4619E+00	.1846E+00	.1846E+00	.6937E+00
1.250	-.250	.225	1.250	-.250	.275	.2578E-01	.6809E+00	.2716E+00	-.4683E-01	.5206E-01	.4041E+00
1.250	-.250	.225	1.250	-.250	.325	.1568E-01	.2517E+00	.1748E+00	-.1601E+00	.1384E-01	.2231E+00
1.750	-.250	.225	1.750	-.250	.025	.2204E-01	-.4975E+00				
1.750	-.250	.225	1.750	-.250	.075	.1642E-01	-.2763E+00				
1.750	-.250	.225	1.750	-.250	.125	.1120E-01	.1285E+00				
1.750	-.250	.225	1.750	-.250	.175	.2400E-01	.5900E+00				

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Table IV.- Continued.

Y1/D	Y2/D	Y3/D	Z1/D	Z2/D	Z3/D	$P/\rho U^2$	PP	PP0	PP1	PP2	PP3
1.750	-.250	.225	1.750	-.250	.225	.3391E-01	.1178E+01	.2701E+00	.1802E+00	.1802E+00	.5470E+00
1.750	-.250	.225	1.750	-.250	.275	.2345E-01	.5632E+00	.1313E+00	.2081E-01	.6306E-01	.3481E+00
1.750	-.250	.225	1.750	-.250	.325	.1523E-01	.2376E+00	.6658E-01	-.6520E-01	.2042E-01	.2158E+00
-1.750	.250	.225	-1.750	.250	.025	.2717E-02	-.7559E-02				
-1.750	.250	.225	-1.750	.250	.075	.1953E-02	-.3906E-02				
-1.750	.250	.225	-1.750	.250	.125	.1536E-02	.2416E-02				
-1.750	.250	.225	-1.750	.250	.175	.3197E-02	.1047E-01				
-1.750	.250	.225	-1.750	.250	.225	.4374E-02	.1960E-01	.4343E-02	.3095E-02	.3095E-02	.9067E-02
-1.750	.250	.225	-1.750	.250	.275	.2911E-02	.8679E-02	.2023E-02	.1071E-03	.1181E-02	.5367E-02
-1.750	.250	.225	-1.750	.250	.325	.1741E-02	.3106E-02	.9977E-03	-.1391E-02	.4368E-03	.3063E-02
-1.250	.250	.225	-1.250	.250	.025	.3620E-02	-.1342E-01				
-1.250	.250	.225	-1.250	.250	.075	.2623E-02	-.7045E-02				
-1.250	.250	.225	-1.250	.250	.125	.1427E-02	.2086E-02				
-1.250	.250	.225	-1.250	.250	.175	.3348E-02	.1148E-01				
-1.250	.250	.225	-1.250	.250	.225	.4405E-02	.1987E-01	.5773E-02	.2513E-02	.2513E-02	.9076E-02
-1.250	.250	.225	-1.250	.250	.275	.2821E-02	.8153E-02	.3278E-02	-.7865E-03	.8423E-03	.4820E-02
-1.250	.250	.225	-1.250	.250	.325	.1601E-02	.2625E-02	.2094E-02	-.2198E-02	.2789E-03	.2449E-02
1.250	.250	.225	1.250	.250	.025	.3270E-01	-.1095E+01				
1.250	.250	.225	1.250	.250	.075	.2566E-01	-.6744E+00				
1.250	.250	.225	1.250	.250	.125	.1040E-01	.1108E+00				
1.250	.250	.225	1.250	.250	.175	.2858E-01	.8366E+00				
1.250	.250	.225	1.250	.250	.225	.3905E-01	.1562E+01	.4659E+00	.2010E+00	.2010E+00	.6937E+00
1.250	.250	.225	1.250	.250	.275	.2563E-01	.6731E+00	.2690E+00	-.5371E-01	.6836E-01	.3894E+00
1.250	.250	.225	1.250	.250	.325	.1576E-01	.2545E+00	.1757E+00	-.1590E+00	.2180E-01	.2160E+00
1.750	.250	.225	1.750	.250	.025	.2176E-01	-.4850E+00				
1.750	.250	.225	1.750	.250	.075	.1630E-01	-.2722E+00				
1.750	.250	.225	1.750	.250	.125	.1120E-01	.1285E+00				
1.750	.250	.225	1.750	.250	.175	.2413E-01	.5965E+00				
1.750	.250	.225	1.750	.250	.225	.3408E-01	.1189E+01	.2706E+00	.1859E+00	.1859E+00	.5470E+00
1.750	.250	.225	1.750	.250	.275	.2343E-01	.5624E+00	.1303E+00	.1711E-01	.7148E-01	.3435E+00
1.750	.250	.225	1.750	.250	.325	.1528E-01	.2390E+00	.6676E-01	-.6597E-01	.2478E-01	.2135E+00
-1.750	-1.750	.275	-1.750	-1.750	.025	.1615E-02	-.2671E-02				
-1.750	-1.750	.275	-1.750	-1.750	.075	.1432E-02	-.2101E-02				
-1.750	-1.750	.275	-1.750	-1.750	.125	.6758E-03	.4678E-03				
-1.750	-1.750	.275	-1.750	-1.750	.175	.1695E-02	.2940E-02				
-1.750	-1.750	.275	-1.750	-1.750	.225	.2448E-02	.6137E-02				
-1.750	-1.750	.275	-1.750	-1.750	.275	.3088E-02	.9769E-02	.2301E-02	.1385E-02	.1385E-02	.4698E-02
-1.750	-1.750	.275	-1.750	-1.750	.325	.2206E-02	.4987E-02	.1145E-02	.4279E-03	.6243E-03	.2789E-02
-1.250	-1.750	.275	-1.250	-1.750	.025	.2464E-02	-.6219E-02				
-1.250	-1.750	.275	-1.250	-1.750	.075	.2100E-02	-.4518E-02				
-1.250	-1.750	.275	-1.250	-1.750	.125	.6435E-03	-.4242E-03				
-1.250	-1.750	.275	-1.250	-1.750	.175	.2195E-02	.4935E-02				
-1.250	-1.750	.275	-1.250	-1.750	.225	.3415E-02	.1194E-01				
-1.250	-1.750	.275	-1.250	-1.750	.275	.4444E-02	.2023E-01	.4903E-02	.2992E-02	.2992E-02	.9340E-02
-1.250	-1.750	.275	-1.250	-1.750	.325	.3213E-02	.1057E-01	.2530E-02	.9542E-03	.1394E-02	.5695E-02
-.750	-1.750	.275	-.750	-1.750	.025	.3826E-02	-.1500E-01				
-.750	-1.750	.275	-.750	-1.750	.075	.3459E-02	-.1225E-01				
-.750	-1.750	.275	-.750	-1.750	.125	.1461E-02	-.2186E-02				
-.750	-1.750	.275	-.750	-1.750	.175	.3330E-02	.1136E-01				
-.750	-1.750	.275	-.750	-1.750	.225	.5316E-02	.2894E-01				
-.750	-1.750	.275	-.750	-1.750	.275	.6945E-02	.4941E-01	.1199E-01	.7582E-02	.7582E-02	.2226E-01
-.750	-1.750	.275	-.750	-1.750	.325	.4983E-02	.2544E-01	.6284E-02	.2020E-02	.3649E-02	.1348E-01
-.250	-1.750	.275	-.250	-1.750	.025	.5435E-02	-.3026E-01				
-.250	-1.750	.275	-.250	-1.750	.075	.4862E-02	-.2422E-01				
-.250	-1.750	.275	-.250	-1.750	.125	.2616E-02	-.7012E-02				
-.250	-1.750	.275	-.250	-1.750	.175	.4164E-02	.1776E-01				
-.250	-1.750	.275	-.250	-1.750	.225	.6943E-02	.4938E-01				
-.250	-1.750	.275	-.250	-1.750	.275	.9131E-02	.8540E-01	.1998E-01	.1424E-01	.1424E-01	.3694E-01
-.250	-1.750	.275	-.250	-1.750	.325	.6449E-02	.4259E-01	.1047E-01	.3069E-02	.6880E-02	.2217E-01
.250	-1.750	.275	.250	-1.750	.025	.7262E-02	-.5401E-01				
.250	-1.750	.275	.250	-1.750	.075	.6531E-02	-.4369E-01				
.250	-1.750	.275	.250	-1.750	.125	.3769E-02	-.1455E-01				
.250	-1.750	.275	.250	-1.750	.175	.5015E-02	.2576E-01				
.250	-1.750	.275	.250	-1.750	.225	.8665E-02	.7691E-01				
.250	-1.750	.275	.250	-1.750	.275	.1149E-01	.1352E+00	.3027E-01	.2449E-01	.2449E-01	.5600E-01
.250	-1.750	.275	.250	-1.750	.325	.8044E-02	.6627E-01	.1587E-01	.4906E-02	.1190E-01	.3360E-01
.750	-1.750	.275	.750	-1.750	.025	.8517E-02	-.7430E-01				
.750	-1.750	.275	.750	-1.750	.075	.7726E-02	-.6113E-01				
.750	-1.750	.275	.750	-1.750	.125	.4075E-02	-.1701E-01				
.750	-1.750	.275	.750	-1.750	.175	.6467E-02	.4284E-01				
.750	-1.750	.275	.750	-1.750	.225	.1079E-01	.1193E+00				
.750	-1.750	.275	.750	-1.750	.275	.1439E-01	.2121E+00	.4135E-01	.4366E-01	.4366E-01	.8339E-01
.750	-1.750	.275	.750	-1.750	.325	.1008E-01	.1040E+00	.2007E-01	.1074E-01	.2264E-01	.5055E-01
1.250	-1.750	.275	1.250	-1.750	.025	.8566E-02	-.7515E-01				
1.250	-1.750	.275	1.250	-1.750	.075	.7577E-02	-.5880E-01				
1.250	-1.750	.275	1.250	-1.750	.125	.3795E-02	-.1476E-01				
1.250	-1.750	.275	1.250	-1.750	.175	.6375E-02	.4163E-01				
1.250	-1.750	.275	1.250	-1.750	.225	.1062E-01	.1155E+00				
1.250	-1.750	.275	1.250	-1.750	.275	.1434E-01	.2105E+00	.3995E-01	.4495E-01	.4495E-01	.8063E-01
1.250	-1.750	.275	1.250	-1.750	.325	.1029E-01	.1085E+00	.1983E-01	.1357E-01	.2411E-01	.5096E-01
1.750	-1.750	.275	1.750	-1.750	.025	.9608E-02	-.9456E-01				
1.750	-1.750	.275	1.750	-1.750	.075	.8336E-02	-.7118E-01				
1.750	-1.750	.275	1.750	-1.750	.125	.3181E-02	-.1037E-01				
1.750	-1.750	.275	1.750	-1.750	.175	.9164E-02	.8602E-01				
1.750	-1.750	.275	1.750	-1.750	.225	.1502E-01	.2310E+00				
1.750	-1.750	.275	1.750	-1.750	.275	.2019E-01	.4174E+00	.7551E-01	.8644E-01	.8644E-01	.1690E+00
1.750	-1.750	.275	1.750	-1.750	.325	.1457E-01	.2174E+00	.3465E-01	.3285E-01	.4434E-01	.1056E+00
-1.750	-1.250	.275	-1.750	-1.250	.025	.2513E-02	-.6471E-02				
-1.750	-1.250	.275	-1.750	-1.250	.075	.2268E-02	-.5268E-02				
-1.750	-1.250	.275	-1.750	-1.250	.125	.1305E-02	-.1745E-02				
-1.750	-1.250	.275	-1.750	-1.250	.175	.1551E-02	.2464E-02				
-1.750	-1.250	.275	-1.750	-1.250	.225	.2761E-02	.7810E-02				
-1.750	-1.250	.275	-1.750	-1.250	.275	.3691E-02	.1396E-01	.3035E-02	.2736E-02	.2736E-02	.5449E-02
-1.750	-1.250	.275	-1.750	-1.250	.325	.2559E-02	.6709E-02	.1603E-02	.6385E-03	.1254E-02	.3214E-02
-1.250	-1.250	.275	-1.250	-1.250	.025	.2796E-02	-.8007E-02				

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Table IV.- Continued.

Y1/D	Y2/D	Y3/D	Z1/D	Z2/D	Z3/D	$P/\rho U^2$	PP	PP0	PP1	PP2	PP3
-1.250	-1.250	.275	-1.250	-1.250	.075	.2267E-02	-.5263E-02				
-1.250	-1.250	.275	-1.250	-1.250	.125	.5360E-03	-.2943E-03				
-1.250	-1.250	.275	-1.250	-1.250	.175	.2309E-02	.5460E-02				
-1.250	-1.250	.275	-1.250	-1.250	.225	.3454E-02	.1222E-01				
-1.250	-1.250	.275	-1.250	-1.250	.275	.4337E-02	.1927E-01	.5495E-02	.2378E-02	.2378E-02	.9019E-02
-1.250	-1.250	.275	-1.250	-1.250	.325	.3072E-02	.9666E-02	.3036E-02	.4528E-03	.1025E-02	.5153E-02
-.750	-1.250	.275	-.750	-1.250	.025	.4903E-02	-.2462E-01				
-.750	-1.250	.275	-.750	-1.250	.075	.4215E-02	-.1820E-01				
-.750	-1.250	.275	-.750	-1.250	.125	.1888E-02	-.3653E-02				
-.750	-1.250	.275	-.750	-1.250	.175	.3713E-02	.1412E-01				
-.750	-1.250	.275	-.750	-1.250	.225	.5731E-02	.3364E-01				
-.750	-1.250	.275	-.750	-1.250	.275	.7147E-02	.5231E-01	.1597E-01	.6384E-02	.6384E-02	.2357E-01
-.750	-1.250	.275	-.750	-1.250	.325	.5000E-02	.2560E-01	.9283E-02	.4665E-03	.2774E-02	.1308E-01
-.250	-1.250	.275	-.250	-1.250	.025	.8834E-02	-.7993E-01				
-.250	-1.250	.275	-.250	-1.250	.075	.7873E-02	-.6349E-01				
-.250	-1.250	.275	-.250	-1.250	.125	.4791E-02	-.2351E-01				
-.250	-1.250	.275	-.250	-1.250	.175	.4911E-02	.2470E-01				
-.250	-1.250	.275	-.250	-1.250	.225	.8437E-02	.7292E-01				
-.250	-1.250	.275	-.250	-1.250	.275	.1056E-01	.1142E+00	.3737E-01	.1441E-01	.1441E-01	.4803E-01
-.250	-1.250	.275	-.250	-1.250	.325	.7193E-02	.5299E-01	.2296E-01	-.1689E-02	.6027E-02	.2569E-01
.250	-1.250	.275	.250	-1.250	.025	.1309E-01	-.1755E+00				
.250	-1.250	.275	.250	-1.250	.075	.1173E-01	-.1409E+00				
.250	-1.250	.275	.250	-1.250	.125	.7514E-02	-.5782E-01				
.250	-1.250	.275	.250	-1.250	.175	.6037E-02	.3733E-01				
.250	-1.250	.275	.250	-1.250	.225	.1135E-01	.1320E+00				
.250	-1.250	.275	.250	-1.250	.275	.1444E-01	.2136E+00	.6654E-01	.3074E-01	.3074E-01	.8562E-01
.250	-1.250	.275	.250	-1.250	.325	.9639E-02	.9517E-01	.4087E-01	-.4425E-02	.1295E-01	.4578E-01
.750	-1.250	.275	.750	-1.250	.025	.1219E-01	-.1521E+00				
.750	-1.250	.275	.750	-1.250	.075	.1066E-01	-.1164E+00				
.750	-1.250	.275	.750	-1.250	.125	.5938E-02	-.3611E-01				
.750	-1.250	.275	.750	-1.250	.175	.7501E-02	.5764E-01				
.750	-1.250	.275	.750	-1.250	.225	.1246E-01	.1589E+00				
.750	-1.250	.275	.750	-1.250	.275	.1602E-01	.2627E+00	.6256E-01	.4990E-01	.4990E-01	.1004E+00
.750	-1.250	.275	.750	-1.250	.325	.1076E-01	.1187E+00	.3428E-01	.4023E-02	.2377E-01	.5659E-01
1.250	-1.250	.275	1.250	-1.250	.025	.1424E-01	-.2078E+00				
1.250	-1.250	.275	1.250	-1.250	.075	.1229E-01	-.1547E+00				
1.250	-1.250	.275	1.250	-1.250	.125	.6306E-02	-.4074E-01				
1.250	-1.250	.275	1.250	-1.250	.175	.9730E-02	.9697E-01				
1.250	-1.250	.275	1.250	-1.250	.225	.1615E-01	.2670E+00				
1.250	-1.250	.275	1.250	-1.250	.275	.2136E-01	.4674E+00	.1030E+00	.9047E-01	.9047E-01	.1834E+00
1.250	-1.250	.275	1.250	-1.250	.325	.1504E-01	.2316E+00	.5505E-01	.1969E-01	.4525E-01	.1116E+00
1.750	-1.250	.275	1.750	-1.250	.025	.1093E-01	-.1224E+00				
1.750	-1.250	.275	1.750	-1.250	.075	.9608E-02	-.9456E-01				
1.750	-1.250	.275	1.750	-1.250	.125	.5032E-02	-.2593E-01				
1.750	-1.250	.275	1.750	-1.250	.175	.7714E-02	.6095E-01				
1.750	-1.250	.275	1.750	-1.250	.225	.1317E-01	.1776E+00				
1.750	-1.250	.275	1.750	-1.250	.275	.1789E-01	.3280E+00	.6683E-01	.6571E-01	.6571E-01	.1298E+00
1.750	-1.250	.275	1.750	-1.250	.325	.1299E-01	.1729E+00	.3479E-01	.2057E-01	.3449E-01	.8308E-01
-1.750	-.750	.275	-1.750	-.750	.025	.2701E-02	-.7471E-02				
-1.750	-.750	.275	-1.750	-.750	.075	.2466E-02	-.6229E-02				
-1.750	-.750	.275	-1.750	-.750	.125	.1412E-02	-.2043E-02				
-1.750	-.750	.275	-1.750	-.750	.175	.1599E-02	.2618E-02				
-1.750	-.750	.275	-1.750	-.750	.225	.2830E-02	.8206E-02				
-1.750	-.750	.275	-1.750	-.750	.275	.3736E-02	.1429E-01	.3437E-02	.2574E-02	.2574E-02	.5708E-02
-1.750	-.750	.275	-1.750	-.750	.325	.2557E-02	.6697E-02	.1886E-02	.3252E-03	.1202E-02	.3284E-02
-1.250	-.750	.275	-1.250	-.750	.025	.3677E-02	-.1385E-01				
-1.250	-.750	.275	-1.250	-.750	.075	.2620E-02	-.7077E-02				
-1.250	-.750	.275	-1.250	-.750	.125	.1028E-02	-.1083E-02				
-1.250	-.750	.275	-1.250	-.750	.175	.2079E-02	.4426E-02				
-1.250	-.750	.275	-1.250	-.750	.225	.3105E-02	.9872E-02				
-1.250	-.750	.275	-1.250	-.750	.275	.3764E-02	.1451E-01	.5128E-02	.1498E-02	.1498E-02	.6388E-02
-1.250	-.750	.275	-1.250	-.750	.325	.2606E-02	.6957E-02	.3182E-02	-.1622E-03	.5875E-03	.3350E-02
1.250	-.750	.275	1.250	-.750	.025	.1838E-01	-.3460E+00				
1.250	-.750	.275	1.250	-.750	.075	.1579E-01	-.2554E+00				
1.250	-.750	.275	1.250	-.750	.125	.9016E-02	-.8326E-01				
1.250	-.750	.275	1.250	-.750	.175	.9851E-02	.9940E-01				
1.250	-.750	.275	1.250	-.750	.225	.1701E-01	.2965E+00				
1.250	-.750	.275	1.250	-.750	.275	.2206E-01	.4985E+00	.1357E+00	.8272E-01	.8272E-01	.1973E+00
1.250	-.750	.275	1.250	-.750	.325	.1519E-01	.2365E+00	.7955E-01	.5329E-02	.3830E-01	.1133E+00
1.750	-.750	.275	1.750	-.750	.025	.1453E-01	-.2164E+00				
1.750	-.750	.275	1.750	-.750	.075	.1290E-01	-.1704E+00				
1.750	-.750	.275	1.750	-.750	.125	.6860E-02	-.4821E-01				
1.750	-.750	.275	1.750	-.750	.175	.9660E-02	.9558E-01				
1.750	-.750	.275	1.750	-.750	.225	.1654E-01	.2803E+00				
1.750	-.750	.275	1.750	-.750	.275	.2223E-01	.5061E+00	.1135E+00	.9335E-01	.9335E-01	.2059E+00
1.750	-.750	.275	1.750	-.750	.325	.1595E-01	.2604E+00	.6091E-01	.2421E-01	.4709E-01	.1282E+00
-1.750	-.250	.275	-1.750	-.250	.025	.2737E-02	-.7676E-02				
-1.750	-.250	.275	-1.750	-.250	.075	.2416E-02	-.5979E-02				
-1.750	-.250	.275	-1.750	-.250	.125	.1404E-02	-.2020E-02				
-1.750	-.250	.275	-1.750	-.250	.175	.1687E-02	.2916E-02				
-1.750	-.250	.275	-1.750	-.250	.225	.2919E-02	.8725E-02				
-1.750	-.250	.275	-1.750	-.250	.275	.3807E-02	.1485E-01	.3785E-02	.2441E-02	.2441E-02	.6181E-02
-1.750	-.250	.275	-1.750	-.250	.325	.2606E-02	.6957E-02	.2094E-02	.2213E-03	.1120E-02	.3522E-02
-1.250	-.250	.275	-1.250	-.250	.025	.3666E-02	-.1377E-01				
-1.250	-.250	.275	-1.250	-.250	.075	.3162E-02	-.1024E-01				
-1.250	-.250	.275	-1.250	-.250	.125	.1948E-02	-.3887E-02				
-1.250	-.250	.275	-1.250	-.250	.175	.1535E-02	.2414E-02				
-1.250	-.250	.275	-1.250	-.250	.225	.2821E-02	.8153E-02				
-1.250	-.250	.275	-1.250	-.250	.275	.3492E-02	.1249E-01	.4660E-02	.1425E-02	.1425E-02	.4982E-02
-1.250	-.250	.275	-1.250	-.250	.325	.2344E-02	.5626E-02	.3023E-02	-.4780E-03	.5503E-03	.2531E-02
1.250	-.250	.275	1.250	-.250	.025	.3249E-01	-.1081E+01				
1.250	-.250	.275	1.250	-.250	.075	.2896E-01	-.8590E+00				
1.250	-.250	.275	1.250	-.250	.125	.1605E-01	-.2639E+00				
1.250	-.250	.275	1.250	-.250	.175	.1545E-01	.2446E+00				
1.250	-.250	.275	1.250	-.250	.225	.2578E-01	.6809E+00				

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Table IV.- Continued.

Y1/D	Y2/D	Y3/D	Z1/D	Z2/D	Z3/D	$P/\rho U^2$	PP	PP0	PP1	PP2	PP3
1,250	-,250	,275	1,250	-,250	,275	,3245E-01	,1079E+01	.3809E+00	.1329E+00	.1329E+00	.4320E+00
1,250	-,250	,275	1,250	-,250	,325	,2272E-01	,5289E+00	.2464E+00	-.1409E-01	.5709E-01	.2396E+00
1,750	-,250	,275	1,750	-,250	,025	,2161E-01	-,4785E+00				
1,750	-,250	,275	1,750	-,250	,075	,1941E-01	-,3857E+00				
1,750	-,250	,275	1,750	-,250	,125	,1014E-01	-,1053E+00				
1,750	-,250	,275	1,750	-,250	,175	,1398E-01	,2002E+00				
1,750	-,250	,275	1,750	-,250	,225	,2345E-01	,5632E+00				
1,750	-,250	,275	1,750	-,250	,275	,3131E-01	,1004E+01	.2487E+00	.1665E+00	.1665E+00	.4226E+00
1,750	-,250	,275	1,750	-,250	,325	,2264E-01	,5249E+00	.1392E+00	.4037E-01	.8276E-01	.2626E+00
-1,750	,250	,275	-1,750	,250	,025	,2711E-02	-,7530E-02				
-1,750	,250	,275	-1,750	,250	,075	,2389E-02	-,5847E-02				
-1,750	,250	,275	-1,750	,250	,125	,1372E-02	-,1927E-02				
-1,750	,250	,275	-1,750	,250	,175	,1701E-02	,2964E-02				
-1,750	,250	,275	-1,750	,250	,225	,2911E-02	,8679E-02				
-1,750	,250	,275	-1,750	,250	,275	,3783E-02	,1466E-01	.3780E-02	.2349E-02	.2349E-02	.6181E-02
-1,750	,250	,275	-1,750	,250	,325	,2597E-02	,6908E-02	.2089E-02	.2223E-03	.1073E-02	.3524E-02
-1,250	,250	,275	-1,250	,250	,025	,3624E-02	-,1345E-01				
-1,250	,250	,275	-1,250	,250	,075	,3070E-02	-,9653E-02				
-1,250	,250	,275	-1,250	,250	,125	,1859E-02	-,3539E-02				
-1,250	,250	,275	-1,250	,250	,175	,1584E-02	,2569E-02				
-1,250	,250	,275	-1,250	,250	,225	,2821E-02	,8153E-02				
-1,250	,250	,275	-1,250	,250	,275	,3488E-02	,1246E-01	.4658E-02	.1411E-02	.1411E-02	.4982E-02
-1,250	,250	,275	-1,250	,250	,325	,2347E-02	,5645E-02	.3027E-02	-.4615E-03	.5492E-03	.2530E-02
1,250	,250	,275	1,250	,250	,025	,3249E-01	-,1081E+01				
1,250	,250	,275	1,250	,250	,075	,2917E-01	-,8716E+00				
1,250	,250	,275	1,250	,250	,125	,1686E-01	-,2912E+00				
1,250	,250	,275	1,250	,250	,175	,1440E-01	,2125E+00				
1,250	,250	,275	1,250	,250	,225	,2563E-01	,6731E+00				
1,250	,250	,275	1,250	,250	,275	,3262E-01	,1090E+01	.3825E+00	.1377E+00	.1377E+00	.4320E+00
1,250	,250	,275	1,250	,250	,325	,2266E-01	,5257E+00	.2459E+00	-.1817E-01	.5842E-01	.2395E+00
1,750	,250	,275	1,750	,250	,025	,2170E-01	-,4822E+00				
1,750	,250	,275	1,750	,250	,075	,1957E-01	-,3925E+00				
1,750	,250	,275	1,750	,250	,125	,1060E-01	-,1151E+00				
1,750	,250	,275	1,750	,250	,175	,1360E-01	,1894E+00				
1,750	,250	,275	1,750	,250	,225	,2343E-01	,5624E+00				
1,750	,250	,275	1,750	,250	,275	,3149E-01	,1016E+01	.2488E+00	.1721E+00	.1721E+00	.4226E+00
1,750	,250	,275	1,750	,250	,325	,2269E-01	,5274E+00	.1388E+00	.4093E-01	.8509E-01	.2626E+00
-1,750	-1,750	,325	-1,750	-1,750	,025	,1529E-02	-,2396E-02				
-1,750	-1,750	,325	-1,750	-1,750	,075	,1638E-02	-,2747E-02				
-1,750	-1,750	,325	-1,750	-1,750	,125	,7746E-03	-,6146E-03				
-1,750	-1,750	,325	-1,750	-1,750	,175	,9011E-03	,8317E-03				
-1,750	-1,750	,325	-1,750	-1,750	,225	,1634E-02	,2733E-02				
-1,750	-1,750	,325	-1,750	-1,750	,275	,2206E-02	,4987E-02				
-1,750	-1,750	,325	-1,750	-1,750	,325	,2688E-02	,7401E-02	.2081E-02	.1050E-02	.1050E-02	.3220E-02
-1,250	-1,750	,325	-1,250	-1,750	,025	,2256E-02	-,5215E-02				
-1,250	-1,750	,325	-1,250	-1,750	,075	,2150E-02	-,4735E-02				
-1,250	-1,750	,325	-1,250	-1,750	,125	,1436E-02	-,2112E-02				
-1,250	-1,750	,325	-1,250	-1,750	,175	,1021E-02	,1067E-02				
-1,250	-1,750	,325	-1,250	-1,750	,225	,2285E-02	,5348E-02				
-1,250	-1,750	,325	-1,250	-1,750	,275	,3213E-02	,1057E-01				
-1,250	-1,750	,325	-1,250	-1,750	,325	,4000E-02	,1639E-01	.4476E-02	.2588E-02	.2588E-02	.6734E-02
-,750	-1,750	,325	-,750	-1,750	,025	,3488E-02	-,1246E-01				
-,750	-1,750	,325	-,750	-1,750	,075	,3538E-02	-,1282E-01				
-,750	-1,750	,325	-,750	-1,750	,125	,2497E-02	-,6386E-02				
-,750	-1,750	,325	-,750	-1,750	,175	,1284E-02	,1690E-02				
-,750	-1,750	,325	-,750	-1,750	,225	,3487E-02	,1245E-01				
-,750	-1,750	,325	-,750	-1,750	,275	,4983E-02	,2544E-01				
-,750	-1,750	,325	-,750	-1,750	,325	,6243E-02	,3992E-01	.1088E-01	.6574E-02	.6574E-02	.1589E-01
-,250	-1,750	,325	-,250	-1,750	,025	,4970E-02	-,2530E-01				
-,250	-1,750	,325	-,250	-1,750	,075	,4878E-02	-,2437E-01				
-,250	-1,750	,325	-,250	-1,750	,125	,3773E-02	-,1458E-01				
-,250	-1,750	,325	-,250	-1,750	,175	,4906E-03	,2466E-03				
-,250	-1,750	,325	-,250	-1,750	,225	,4380E-02	,1969E-01				
-,250	-1,750	,325	-,250	-1,750	,275	,6449E-02	,4259E-01				
-,250	-1,750	,325	-,250	-1,750	,325	,8132E-02	,6774E-01	.1797E-01	.1193E-01	.1193E-01	.2591E-01
,250	-1,750	,325	,250	-1,750	,025	,6636E-02	-,4511E-01				
,250	-1,750	,325	,250	-1,750	,075	,6498E-02	-,4325E-01				
,250	-1,750	,325	,250	-1,750	,125	,5083E-02	-,2646E-01				
,250	-1,750	,325	,250	-1,750	,175	,1502E-02	-,2309E-02				
,250	-1,750	,325	,250	-1,750	,225	,5328E-02	,2907E-01				
,250	-1,750	,325	,250	-1,750	,275	,8044E-02	,6627E-01				
,250	-1,750	,325	,250	-1,750	,325	,1023E-01	,1072E+00	.2724E-01	.2035E-01	.2035E-01	.3927E-01
,750	-1,750	,325	,750	-1,750	,025	,7681E-02	-,6042E-01				
,750	-1,750	,325	,750	-1,750	,075	,7698E-02	-,6070E-01				
,750	-1,750	,325	,750	-1,750	,125	,5866E-02	-,3525E-01				
,750	-1,750	,325	,750	-1,750	,175	,8527E-03	-,7448E-03				
,750	-1,750	,325	,750	-1,750	,225	,6660E-02	,4543E-01				
,750	-1,750	,325	,750	-1,750	,275	,1008E-01	,1040E+00				
,750	-1,750	,325	,750	-1,750	,325	,1289E-01	,1702E+00	.3787E-01	.3617E-01	.3617E-01	.5999E-01
1,250	-1,750	,325	1,250	-1,750	,025	,7807E-02	-,6243E-01				
1,250	-1,750	,325	1,250	-1,750	,075	,7538E-02	-,5821E-01				
1,250	-1,750	,325	1,250	-1,750	,125	,5528E-02	-,3130E-01				
1,250	-1,750	,325	1,250	-1,750	,175	,1530E-02	,2398E-02				
1,250	-1,750	,325	1,250	-1,750	,225	,6827E-02	,4774E-01				
1,250	-1,750	,325	1,250	-1,750	,275	,1029E-01	,1085E+00				
1,250	-1,750	,325	1,250	-1,750	,325	,1338E-01	,1832E+00	.3870E-01	.4074E-01	.4074E-01	.6305E-01
1,750	-1,750	,325	1,750	-1,750	,025	,8492E-02	-,7386E-01				
1,750	-1,750	,325	1,750	-1,750	,075	,8340E-02	-,7125E-01				
1,750	-1,750	,325	1,750	-1,750	,125	,6152E-02	-,3876E-01				
1,750	-1,750	,325	1,750	-1,750	,175	,3773E-02	,1458E-01				
1,750	-1,750	,325	1,750	-1,750	,225	,9889E-02	,1002E+00				
1,750	-1,750	,325	1,750	-1,750	,275	,1457E-01	,2174E+00				
1,750	-1,750	,325	1,750	-1,750	,325	,1875E-01	,3600E+00	.7324E-01	.7940E-01	.7940E-01	.1280E+00
-1,750	-1,250	,325	-1,750	-1,250	,025	,2295E-02	-,5393E-02				
-1,750	-1,250	,325	-1,750	-1,250	,075	,2250E-02	-,5203E-02				

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Table IV.- Continued.

Y1/D	Y2/D	Y3/D	Z1/D	Z2/D	Z3/D	P/ρU²	PP	PP0	PP1	PP2	PP3
-1.750	-1.250	.325	-1.750	-1.250	.125	.1678E-02	-.2883E-02				
-1.750	-1.250	.325	-1.750	-1.250	.175	.6272E-03	-.4030E-03				
-1.750	-1.250	.325	-1.750	-1.250	.225	.1664E-02	.2835E-02				
-1.750	-1.250	.325	-1.750	-1.250	.275	.2559E-02	.6709E-02				
-1.750	-1.250	.325	-1.750	-1.250	.325	.3241E-02	.1076E-01	.2688E-02	.2172E-02	.2172E-02	.3727E-02
-1.250	-1.250	.325	-1.250	-1.250	.025	.2606E-02	-.6955E-02				
-1.250	-1.250	.325	-1.250	-1.250	.075	.2331E-02	-.5566E-02				
-1.250	-1.250	.325	-1.250	-1.250	.125	.1524E-02	-.2379E-02				
-1.250	-1.250	.325	-1.250	-1.250	.175	.1022E-02	.1069E-02				
-1.250	-1.250	.325	-1.250	-1.250	.225	.2256E-02	.5213E-02				
-1.250	-1.250	.325	-1.250	-1.250	.275	.3072E-02	.9666E-02				
-1.250	-1.250	.325	-1.250	-1.250	.325	.3674E-02	.1383E-01	.4600E-02	.1756E-02	.1756E-02	.5715E-02
-.750	-1.250	.325	-.750	-1.250	.025	.4557E-02	-.2127E-01				
-.750	-1.250	.325	-.750	-1.250	.075	.4291E-02	-.1886E-01				
-.750	-1.250	.325	-.750	-1.250	.125	.3103E-02	-.9864E-02				
-.750	-1.250	.325	-.750	-1.250	.175	.1072E-02	.1177E-02				
-.750	-1.250	.325	-.750	-1.250	.225	.3629E-02	.1349E-01				
-.750	-1.250	.325	-.750	-1.250	.275	.5000E-02	.2560E-01				
-.750	-1.250	.325	-.750	-1.250	.325	.5947E-02	.3622E-01	.1301E-01	.4547E-02	.4547E-02	.1412E-01
-.250	-1.250	.325	-.250	-1.250	.025	.8197E-02	-.6882E-01				
-.250	-1.250	.325	-.250	-1.250	.075	.7835E-02	-.6288E-01				
-.250	-1.250	.325	-.250	-1.250	.125	.6087E-02	-.3796E-01				
-.250	-1.250	.325	-.250	-1.250	.175	.2551E-02	-.6665E-02				
-.250	-1.250	.325	-.250	-1.250	.225	.4943E-02	.2502E-01				
-.250	-1.250	.325	-.250	-1.250	.275	.7193E-02	.5299E-01				
-.250	-1.250	.325	-.250	-1.250	.325	.8545E-02	.7479E-01	.2955E-01	.9246E-02	.9246E-02	.2675E-01
.250	-1.250	.325	.250	-1.250	.025	.1211E-01	-.1501E+00				
.250	-1.250	.325	.250	-1.250	.075	.1156E-01	-.1369E+00				
.250	-1.250	.325	.250	-1.250	.125	.9080E-02	-.8445E-01				
.250	-1.250	.325	.250	-1.250	.175	.4694E-02	-.2257E-01				
.250	-1.250	.325	.250	-1.250	.225	.6223E-02	.3966E-01				
.250	-1.250	.325	.250	-1.250	.275	.9639E-02	.9517E-01				
.250	-1.250	.325	.250	-1.250	.325	.1166E-01	.1391E+00	.5263E-01	.1941E-01	.1941E-01	.4769E-01
.750	-1.250	.325	.750	-1.250	.025	.1108E-01	-.1258E+00				
.750	-1.250	.325	.750	-1.250	.075	.1051E-01	-.1131E+00				
.750	-1.250	.325	.750	-1.250	.125	.8108E-02	-.6733E-01				
.750	-1.250	.325	.750	-1.250	.175	.3250E-02	-.1082E-01				
.750	-1.250	.325	.750	-1.250	.225	.7125E-02	.5200E-01				
.750	-1.250	.325	.750	-1.250	.275	.1076E-01	.1187E+00				
.750	-1.250	.325	.750	-1.250	.325	.1331E-01	.1814E+00	.5133E-01	.3378E-01	.3378E-01	.6249E-01
1.250	-1.250	.325	1.250	-1.250	.025	.1301E-01	-.1735E+00				
1.250	-1.250	.325	1.250	-1.250	.075	.1223E-01	-.1532E+00				
1.250	-1.250	.325	1.250	-1.250	.125	.9009E-02	-.8313E-01				
1.250	-1.250	.325	1.250	-1.250	.175	.4620E-03	.2187E-03				
1.250	-1.250	.325	1.250	-1.250	.225	.1010E-01	.1044E+00				
1.250	-1.250	.325	1.250	-1.250	.275	.1504E-01	.2316E+00				
1.250	-1.250	.325	1.250	-1.250	.325	.1911E-01	.3741E+00	.9289E-01	.7434E-01	.7434E-01	.1325E+00
1.750	-1.250	.325	1.750	-1.250	.025	.1011E-01	-.1047E+00				
1.750	-1.250	.325	1.750	-1.250	.075	.9626E-02	-.9490E-01				
1.750	-1.250	.325	1.750	-1.250	.125	.6949E-02	-.4946E-01				
1.750	-1.250	.325	1.750	-1.250	.175	.1949E-02	.3891E-02				
1.750	-1.250	.325	1.750	-1.250	.225	.8627E-02	.7623E-01				
1.750	-1.250	.325	1.750	-1.250	.275	.1299E-01	.1729E+00				
1.750	-1.250	.325	1.750	-1.250	.325	.1694E-01	.2940E+00	.6561E-01	.6236E-01	.6236E-01	.1037E+00
-1.750	-.750	.325	-1.750	-.750	.025	.2483E-02	-.6315E-02				
-1.750	-.750	.325	-1.750	-.750	.075	.2465E-02	-.6222E-02				
-1.750	-.750	.325	-1.750	-.750	.125	.1809E-02	-.3353E-02				
-1.750	-.750	.325	-1.750	-.750	.175	.7443E-03	-.5674E-03				
-1.750	-.750	.325	-1.750	-.750	.225	.1666E-02	.2843E-02				
-1.750	-.750	.325	-1.750	-.750	.275	.2557E-02	.6697E-02				
-1.750	-.750	.325	-1.750	-.750	.325	.3202E-02	.1050E-01	.2908E-02	.1956E-02	.1956E-02	.3683E-02
-1.250	-.750	.325	-1.250	-.750	.025	.3499E-02	-.1254E-01				
-1.250	-.750	.325	-1.250	-.750	.075	.2666E-02	-.7281E-02				
-1.250	-.750	.325	-1.250	-.750	.125	.1734E-02	-.3079E-02				
-1.250	-.750	.325	-1.250	-.750	.175	.6169E-03	.3897E-03				
-1.250	-.750	.325	-1.250	-.750	.225	.1947E-02	.3881E-02				
-1.250	-.750	.325	-1.250	-.750	.275	.2606E-02	.6957E-02				
-1.250	-.750	.325	-1.250	-.750	.325	.2982E-02	.9109E-02	.3989E-02	.8534E-03	.8534E-03	.3413E-02
1.250	-.750	.325	1.250	-.750	.025	.1705E-01	-.2979E+00				
1.250	-.750	.325	1.250	-.750	.075	.1559E-01	-.2489E+00				
1.250	-.750	.325	1.250	-.750	.125	.1146E-01	-.1349E+00				
1.250	-.750	.325	1.250	-.750	.175	.4189E-02	-.1797E-01				
1.250	-.750	.325	1.250	-.750	.225	.1019E-01	.1063E+00				
1.250	-.750	.325	1.250	-.750	.275	.1519E-01	.2365E+00				
1.250	-.750	.325	1.250	-.750	.325	.1882E-01	.3626E+00	.1126E+00	.6164E-01	.6164E-01	.1268E+00
1.750	-.750	.325	1.750	-.750	.025	.1343E-01	-.1847E+00				
1.750	-.750	.325	1.750	-.750	.075	.1292E-01	-.1710E+00				
1.750	-.750	.325	1.750	-.750	.125	.9188E-02	-.8647E-01				
1.750	-.750	.325	1.750	-.750	.175	.1438E-02	.2117E-02				
1.750	-.750	.325	1.750	-.750	.225	.1065E-01	.1163E+00				
1.750	-.750	.325	1.750	-.750	.275	.1595E-01	.2604E+00				
1.750	-.750	.325	1.750	-.750	.325	.2051E-01	.4311E+00	.1058E+00	.8486E-01	.8486E-01	.1555E+00
-1.750	-.250	.325	-1.750	-.250	.025	.2530E-02	-.6559E-02				
-1.750	-.250	.325	-1.750	-.250	.075	.2410E-02	-.5949E-02				
-1.750	-.250	.325	-1.750	-.250	.125	.1842E-02	-.3477E-02				
-1.750	-.250	.325	-1.750	-.250	.175	.7030E-03	-.5062E-03				
-1.750	-.250	.325	-1.750	-.250	.225	.1730E-02	.3066E-02				
-1.750	-.250	.325	-1.750	-.250	.275	.2606E-02	.6957E-02				
-1.750	-.250	.325	-1.750	-.250	.325	.3227E-02	.1066E-01	.3170E-02	.1793E-02	.1793E-02	.3909E-02
-1.250	-.250	.325	-1.250	-.250	.025	.3416E-02	-.1195E-01				
-1.250	-.250	.325	-1.250	-.250	.075	.3114E-02	-.9933E-02				
-1.250	-.250	.325	-1.250	-.250	.125	.2330E-02	-.5561E-02				
-1.250	-.250	.325	-1.250	-.250	.175	.1151E-02	-.1358E-02				
-1.250	-.250	.325	-1.250	-.250	.225	.1585E-02	.2573E-02				
-1.250	-.250	.325	-1.250	-.250	.275	.2344E-02	.5626E-02				

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Table IV.- Continued.

Y1/D	Y2/D	Y3/D	Z1/D	Z2/D	Z3/D	P/ρU^2	PP	PP0	PP1	PP2	PP3
-1.250	-.250	.325	-1.250	-.250	.325	.2720E-02	.7578E-02	.3545E-02	.7672E-03	.7672E-03	.2499E-02
1.250	-.250	.325	1.250	-.250	.025	.3028E-01	-.9389E+00				
1.250	-.250	.325	1.250	-.250	.075	.2860E-01	-.8380E+00				
1.250	-.250	.325	1.250	-.250	.125	.1952E-01	-.3905E+00				
1.250	-.250	.325	1.250	-.250	.175	.4501E-02	-.2075E-01				
1.250	-.250	.325	1.250	-.250	.225	.1568E-01	.2517E+00				
1.250	-.250	.325	1.250	-.250	.275	.2272E-01	.5289E+00				
1.250	-.250	.325	1.250	-.250	.325	.2711E-01	.7529E+00	.3019E+00	.9620E-01	.9620E-01	.2587E+00
1.750	-.250	.325	1.750	-.250	.025	.2003E-01	-.4110E+00				
1.750	-.250	.325	1.750	-.250	.075	.1942E-01	-.3863E+00				
1.750	-.250	.325	1.750	-.250	.125	.1356E-01	-.1884E+00				
1.750	-.250	.325	1.750	-.250	.175	.3868E-02	.1532E-01				
1.750	-.250	.325	1.750	-.250	.225	.1523E-01	.2376E+00				
1.750	-.250	.325	1.750	-.250	.275	.2264E-01	.5249E+00				
1.750	-.250	.325	1.750	-.250	.325	.2891E-01	.8563E+00	.2285E+00	.1550E+00	.1550E+00	.3178E+00
-1.750	.250	.325	-1.750	.250	.025	.2507E-02	-.6439E-02				
-1.750	.250	.325	-1.750	.250	.075	.2386E-02	-.5831E-02				
-1.750	.250	.325	-1.750	.250	.125	.1817E-02	-.3381E-02				
-1.750	.250	.325	-1.750	.250	.175	.6493E-03	-.4318E-03				
-1.750	.250	.325	-1.750	.250	.225	.1741E-02	.3106E-02				
-1.750	.250	.325	-1.750	.250	.275	.2597E-02	.6908E-02				
-1.750	.250	.325	-1.750	.250	.325	.3204E-02	.1052E-01	.3163E-02	.1722E-02	.1722E-02	.3909E-02
-1.250	.250	.325	-1.250	.250	.025	.3385E-02	-.1174E-01				
-1.250	.250	.325	-1.250	.250	.075	.3033E-02	-.9423E-02				
-1.250	.250	.325	-1.250	.250	.125	.2257E-02	-.5218E-02				
-1.250	.250	.325	-1.250	.250	.175	.1063E-02	-.1156E-02				
-1.250	.250	.325	-1.250	.250	.225	.1601E-02	.2625E-02				
-1.250	.250	.325	-1.250	.250	.275	.2347E-02	.5645E-02				
-1.250	.250	.325	-1.250	.250	.325	.2722E-02	.7592E-02	.3552E-02	.7702E-03	.7702E-03	.2499E-02
1.250	.250	.325	1.250	.250	.025	.3015E-01	-.9311E+00				
1.250	.250	.325	1.250	.250	.075	.2865E-01	-.8406E+00				
1.250	.250	.325	1.250	.250	.125	.1997E-01	-.4085E+00				
1.250	.250	.325	1.250	.250	.175	.7253E-02	-.5389E-01				
1.250	.250	.325	1.250	.250	.225	.1576E-01	.2545E+00				
1.250	.250	.325	1.250	.250	.275	.2266E-01	.5257E+00				
1.250	.250	.325	1.250	.250	.325	.2729E-01	.7629E+00	.3023E+00	.1010E+00	.1010E+00	.2587E+00
1.750	.250	.325	1.750	.250	.025	.2005E-01	-.4120E+00				
1.750	.250	.325	1.750	.250	.075	.1951E-01	-.3898E+00				
1.750	.250	.325	1.750	.250	.125	.1380E-01	-.1951E+00				
1.750	.250	.325	1.750	.250	.175	.1908E-02	.3728E-02				
1.750	.250	.325	1.750	.250	.225	.1528E-01	.2390E+00				
1.750	.250	.325	1.750	.250	.275	.2269E-01	.5274E+00				
1.750	.250	.325	1.750	.250	.325	.2911E-01	.8678E+00	.2285E+00	.1607E+00	.1607E+00	.3178E+00

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Table IV.- Concluded.

Y1	Y2	Y3	Z1	Z2	Z3	DP	DP0	DP1	DP3	DP5	DP7	DP8
-1.750	-1.750	.025	-1.750	-1.750	.025	.366E+09	.974E+01	-.123E-13	.523E+05	.0	.385E+09	.289E+04
-1.750	-1.750	.025	-1.750	-1.750	.075	.416E+09	-.308E+01	-.222E-15	.123E+05	.0	.416E+09	.602E+03
-1.750	-1.750	.025	-1.750	-1.750	.125	.421E+09	-.288E+01	.250E-14	-.204E+05	.0	.421E+09	.371E+01
-1.750	-1.750	.025	-1.750	-1.750	.175	.408E+09	-.240E+01	-.366E-14	-.211E+05	.588E-17	.408E+09	.507E+01
-1.750	-1.750	.025	-1.750	-1.750	.225	.386E+09	-.162E+01	-.333E-14	-.187E+05	-.588E-17	.386E+09	.231E+02
-1.750	-1.750	.025	-1.750	-1.750	.275	.361E+09	-.911E+00	-.255E-14	-.149E+05	-.588E-17	.361E+09	.354E+02
-1.750	-1.750	.025	-1.750	-1.750	.325	.335E+09	-.423E+00	-.266E-14	-.114E+05	-.588E-17	.335E+09	.384E+02
-1.250	-1.750	.025	-1.250	-1.750	.025	.174E+10	.532E+02	-.921E-12	.272E+06	.353E-16	.174E+10	.135E+05
-1.250	-1.750	.025	-1.250	-1.750	.075	.188E+10	-.761E+01	.105E-12	.757E+05	.118E-16	.188E+10	.302E+04
-1.250	-1.750	.025	-1.250	-1.750	.125	.190E+10	-.176E+02	.376E-12	-.111E+06	-.118E-16	.190E+10	-.271E+02
-1.250	-1.750	.025	-1.250	-1.750	.175	.184E+10	-.160E+02	.327E-12	-.117E+06	.118E-16	.184E+10	.710E+02
-1.250	-1.750	.025	-1.250	-1.750	.225	.174E+10	-.118E+02	.294E-12	-.999E+05	.235E-16	.174E+10	.184E+03
-1.250	-1.750	.025	-1.250	-1.750	.275	.163E+10	-.779E+01	.209E-12	-.781E+05	.0	.163E+10	.227E+03
-1.250	-1.750	.025	-1.250	-1.750	.325	.151E+10	-.483E+01	.149E-12	-.582E+05	.0	.151E+10	.210E+03
-.750	-1.750	.025	-.750	-1.750	.025	.767E+10	.307E+03	-.961E-12	.137E+07	.0	.767E+10	.589E+05
-.750	-1.750	.025	-.750	-1.750	.075	.829E+10	-.508E+02	-.318E-11	.416E+06	-.471E-16	.828E+10	.128E+05
-.750	-1.750	.025	-.750	-1.750	.125	.837E+10	-.102E+03	-.888E-12	-.577E+06	.235E-16	.837E+10	-.555E+03
-.750	-1.750	.025	-.750	-1.750	.175	.812E+10	-.902E+02	-.526E-12	-.599E+06	-.235E-16	.812E+10	.693E+03
-.750	-1.750	.025	-.750	-1.750	.225	.768E+10	-.651E+02	-.437E-12	-.509E+06	.0	.768E+10	.144E+04
-.750	-1.750	.025	-.750	-1.750	.275	.718E+10	-.420E+02	.576E-12	-.394E+06	.0	.718E+10	.156E+04
-.750	-1.750	.025	-.750	-1.750	.325	.666E+10	-.257E+02	-.327E-12	-.292E+06	.235E-16	.666E+10	.131E+04
-.250	-1.750	.025	-.250	-1.750	.025	.249E+11	.127E+04	.160E-10	.543E+07	.471E-16	.249E+11	.186E+06
-.250	-1.750	.025	-.250	-1.750	.075	.269E+11	-.198E+03	-.140E-11	-.435E+06	-.471E-16	.269E+11	-.906E+04
-.250	-1.750	.025	-.250	-1.750	.125	.272E+11	-.402E+03	.826E-11	-.155E+07	-.471E-16	.272E+11	-.292E+04
-.250	-1.750	.025	-.250	-1.750	.175	.264E+11	-.394E+03	-.632E-11	-.171E+07	.0	.264E+11	.374E+04
-.250	-1.750	.025	-.250	-1.750	.225	.250E+11	-.304E+03	.810E-12	-.147E+07	.0	.250E+11	.691E+04
-.250	-1.750	.025	-.250	-1.750	.275	.233E+11	-.209E+03	-.112E-11	-.113E+07	.0	.233E+11	.706E+04
-.250	-1.750	.025	-.250	-1.750	.325	.217E+11	-.137E+03	.455E-12	-.829E+06	.235E-16	.217E+11	.569E+04
.250	-1.750	.025	.250	-1.750	.025	.590E+11	.307E+04	-.767E-10	.130E+08	.188E-15	.590E+11	.439E+06
.250	-1.750	.025	.250	-1.750	.075	.638E+11	-.379E+03	-.216E-10	-.102E+07	.0	.638E+11	-.209E+05
.250	-1.750	.025	.250	-1.750	.125	.645E+11	-.969E+03	.177E-10	-.371E+07	-.471E-16	.644E+11	-.550E+04
.250	-1.750	.025	.250	-1.750	.175	.625E+11	-.950E+03	.847E-11	-.410E+07	.0	.625E+11	.110E+05
.250	-1.750	.025	.250	-1.750	.225	.591E+11	-.730E+03	.247E-11	-.352E+07	-.471E-16	.591E+11	.189E+05
.250	-1.750	.025	.250	-1.750	.275	.552E+11	-.498E+03	.441E-11	-.270E+07	-.471E-16	.552E+11	.191E+05
.250	-1.750	.025	.250	-1.750	.325	.513E+11	-.324E+03	-.682E-12	-.196E+07	.0	.513E+11	.154E+05
.750	-1.750	.025	.750	-1.750	.025	.707E+11	.319E+04	-.182E-10	.133E+08	.0	.707E+11	.520E+06
.750	-1.750	.025	.750	-1.750	.075	.764E+11	-.635E+03	.713E-11	.363E+07	-.471E-16	.763E+11	.974E+05
.750	-1.750	.025	.750	-1.750	.125	.772E+11	-.104E+04	.205E-10	-.532E+07	.0	.772E+11	-.128E+04
.750	-1.750	.025	.750	-1.750	.175	.748E+11	-.926E+03	-.844E-11	-.571E+07	.0	.748E+11	.183E+05
.750	-1.750	.025	.750	-1.750	.225	.708E+11	-.637E+03	.634E-11	-.487E+07	.0	.708E+11	.282E+05
.750	-1.750	.025	.750	-1.750	.275	.661E+11	-.371E+03	.290E-11	-.370E+07	.0	.661E+11	.282E+05
.750	-1.750	.025	.750	-1.750	.325	.614E+11	-.185E+03	-.432E-11	-.264E+07	.471E-16	.614E+11	.228E+05
1.250	-1.750	.025	1.250	-1.750	.025	.749E+11	.254E+04	.279E-11	.123E+08	.0	.749E+11	.527E+06
1.250	-1.750	.025	1.250	-1.750	.075	.809E+11	-.422E+03	-.171E-12	.304E+07	.0	.809E+11	.926E+05
1.250	-1.750	.025	1.250	-1.750	.125	.818E+11	-.826E+03	-.301E-11	-.482E+07	.235E-16	.818E+11	-.974E+03
1.250	-1.750	.025	1.250	-1.750	.175	.793E+11	-.751E+03	-.824E-12	-.516E+07	.706E-16	.793E+11	.145E+05
1.250	-1.750	.025	1.250	-1.750	.225	.751E+11	-.542E+03	-.315E-11	-.443E+07	.471E-16	.751E+11	.230E+05
1.250	-1.750	.025	1.250	-1.750	.275	.701E+11	-.340E+03	-.176E-11	-.342E+07	.235E-16	.701E+11	.243E+05
1.250	-1.750	.025	1.250	-1.750	.325	.651E+11	-.189E+03	.682E-12	-.248E+07	-.235E-16	.651E+11	.208E+05
1.750	-1.750	.025	1.750	-1.750	.025	.795E+11	.205E+04	.439E-11	.110E+08	.0	.795E+11	.531E+06
1.750	-1.750	.025	1.750	-1.750	.075	.859E+11	-.332E+03	.149E-11	.356E+07	-.235E-16	.859E+11	.102E+06
1.750	-1.750	.025	1.750	-1.750	.125	.868E+11	-.639E+03	.142E-12	-.425E+07	.0	.868E+11	-.252E+04
1.750	-1.750	.025	1.750	-1.750	.175	.842E+11	-.630E+03	.0	-.498E+07	.235E-16	.842E+11	.134E+05
1.750	-1.750	.025	1.750	-1.750	.225	.797E+11	-.457E+03	-.597E-12	-.428E+07	-.235E-16	.797E+11	.210E+05
1.750	-1.750	.025	1.750	-1.750	.275	.744E+11	-.262E+03	.597E-12	-.331E+07	.0	.744E+11	.224E+05
1.750	-1.750	.025	1.750	-1.750	.325	.691E+11	-.111E+03	.0	-.236E+07	-.118E-16	.691E+11	.186E+05
-1.750	-1.250	.025	-1.750	-1.250	.025	.830E+09	.266E+02	.986E-13	.135E+06	-.118E-16	.830E+09	.687E+04
-1.750	-1.250	.025	-1.750	-1.250	.075	.897E+09	-.414E+01	.577E-14	.327E+05	.118E-16	.896E+09	.153E+04
-1.750	-1.250	.025	-1.750	-1.250	.125	.906E+09	-.877E+01	-.875E-13	-.536E+05	.0	.906E+09	.860E+01
-1.750	-1.250	.025	-1.750	-1.250	.175	.879E+09	-.786E+01	-.959E-13	-.560E+05	-.118E-16	.879E+09	.144E+02
-1.750	-1.250	.025	-1.750	-1.250	.225	.831E+09	-.577E+01	-.457E-13	-.478E+05	.118E-16	.831E+09	.676E+02
-1.750	-1.250	.025	-1.750	-1.250	.275	.777E+09	-.377E+01	-.373E-13	-.370E+05	.118E-16	.777E+09	.986E+02
-1.750	-1.250	.025	-1.750	-1.250	.325	.721E+09	-.229E+01	-.338E-13	-.272E+05	.176E-16	.721E+09	.992E+02
-1.250	-1.250	.025	-1.250	-1.250	.025	.316E+10	.158E+03	.441E-12	.685E+06	.0	.316E+10	.295E+05
-1.250	-1.250	.025	-1.250	-1.250	.075	.342E+10	-.216E+02	-.280E-12	-.667E+05	.118E-16	.342E+10	.146E+04
-1.250	-1.250	.025	-1.250	-1.250	.125	.345E+10	-.485E+02	-.373E-13	-.196E+06	.0	.345E+10	.830E+02
-1.250	-1.250	.025	-1.250	-1.250	.175	.335E+10	-.474E+02	-.151E-13	-.210E+06	.118E-16	.335E+10	.510E+02
-1.250	-1.250	.025	-1.250	-1.250	.225	.317E+10	-.372E+02	-.977E-13	-.181E+06	-.118E-16	.317E+10	.232E+03
-1.250	-1.250	.025	-1.250	-1.250	.275	.296E+10	-.266E+02	-.693E-13	-.141E+06	.0	.296E+10	.323E+03
-1.250	-1.250	.025	-1.250	-1.250	.325	.275E+10	-.184E+02	-.284E-13	-.105E+06	.118E-16	.275E+10	.308E+03
-.750	-1.250	.025	-.750	-1.250	.025	.229E+11	.175E+04	-.186E-10	.616E+07	.471E-16	.229E+11	.219E+06
-.750	-1.250	.025	-.750	-1.250	.075	.247E+11	-.262E+03	-.228E-11	-.680E+06	.0	.247E+11	.275E+04
-.750	-1.250	.025	-.750	-1.250	.125	.250E+11	-.546E+03	.220E-11	-.180E+07	.0	.250E+11	-.158E+04
-.750	-1.250	.025	-.750	-1.250	.175	.242E+11	-.518E+03	.240E-11	-.188E+07	-.235E-16	.242E+11	.153E+04
-.750	-1.250	.025	-.750	-1.250	.225	.229E+11	-.400E+03	.176E-11	-.158E+07	.235E-16	.229E+11	.366E+04
-.750	-1.250	.025	-.750	-1.250	.275	.214E+11	-.246E+03	.938E-12	-.121E+07	.0	.214E+11	.390E+04
-.750	-1.250	.025	-.750	-1.250	.325	.199E+11	-.201E+03	.290E-11	-.900E+06	-.235E-16	.199E+11	.314E+04
-.250	-1.250	.025	-.250	-1.250	.025	.150E+12	.157E+05	-.278E-09	.476E+08	.188E-15	.150E+12	.130E+07
-.250	-1.250	.025	-.250	-1.250	.075	.162E+12	-.252E+04	.720E-10	-.581E+07	.0	.162E+12	-.906E+05
-.250	-1.250	.025	-.250	-1.250	.125	.164E+12	-.491E+04	-.334E-10	-.140E+08	.941E-16	.164E+12	-.289E+05
-.250	-1.250	.025	-.250	-1.250	.175	.159E+12	-.457E+04	.780E-10	-.144E+08	.0	.159E+12	.290E+05
-.250	-1.250	.025	-.250	-1.250	.225	.151E+12	-.351E+04	.620E-10	-.119E+08	.941E-16	.151E+12	.481E+05
-.250	-1.250	.025	-.250	-1.250	.275	.141E+12	-.252E+04	.210E-10	-.901E+07	.0	.141E+12	.433E+05
-.250	-1.250	.025	-.250	-1.250	.325	.131E+12	-.179E+04	.769E-10	-.662E+07	.941E-16	.131E+12	.311E+05
.250	-1.250	.025	.250	-1.250	.025	.505E+12	.534E+05	.288E-09	.161E+09	.0	.505E+12	.435E+07
.250	-1.250	.025	.250	-1.250	.075	.545E+12	-.859E+04	-.172E-10	-.196E+08	.0	.545E+12	-.306E+06
.250	-1.250	.025	.250	-1.250	.125	.551E+12	-.168E+05	.155E-09	-.475E+08	-.941E-16	.551E+12	-.771E+05
.250	-1.250	.025	.250	-1.250	.175	.535E+12	-.156E+05	-.179E-09	-.488E+08	.282E-15	.534E+12	.129E+06
.250	-1.250	.025	.250	-1.250	.225	.506E+12	-.119E+05	-.189E-09	-.402E+08	.0	.506E+12	.194E+06
.250	-1.250	.025	.250	-1.250	.275	.473E+12	-.847E+04	.116E-09	-.302E+08	.471E-16	.472E+12	.171E+06
.250	-1.250	.025	.250	-1.250	.325	.439E+12	-.596E+04	-.273E-10	-.220E+08	.471E-16	.439E+12	.122E+06
.750	-1.250	.025	.750	-1.250	.025	.418E+12	.340E+05	.875E-11	.116E+09	.0	.418E+12	.347E+07
.750	-1.250	.025	.750	-1.250	.075	.452E+12	-.496E+04	-.566E-10	-.125E+08	-.941E-16	.452E+12	-.156E+06
.750	-1.250	.025	.750	-1.250	.125	.457E+12	-.109E+05	-.182E-10	-.343E+08	.941E-16	.457E+12	-.209E+05
.750	-1.250	.025	.750	-1.250	.175	.443E+12	-.103E+05	-.227E-12	-.359E+08	.0	.443E+12	.123E+06
.750	-1.250	.025	.750	-1.250	.225	.419E+12	-.766E+04	-.257E-10	-.296E+08	.941E-16	.419E+12	.173E+06

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Table V.- Covariances for $\partial p'/\partial t$.

Y1	Y2	Y3	Z1	Z2	Z3	DP	DP0	DP1	DP3	DP5	DP7	DP8
.750	-1.250	.025	.750	-1.250	.275	.391E+12	-.520E+04	.114E-10	-.220E+08	.941E-16	.391E+12	.157E+06
.750	-1.250	.025	.750	-1.250	.325	.363E+12	-.344E+04	.200E-10	-.157E+08	.0	.363E+12	.116E+06
1.250	-1.250	.025	1.250	-1.250	.025	.540E+12	.283E+05	.546E-10	.120E+09	.0	.539E+12	.408E+07
1.250	-1.250	.025	1.250	-1.250	.075	.583E+12	-.382E+04	.682E-12	-.116E+08	.0	.583E+12	-.148E+06
1.250	-1.250	.025	1.250	-1.250	.125	.589E+12	-.893E+04	-.227E-12	-.350E+08	-.941E-16	.589E+12	-.262E+05
1.250	-1.250	.025	1.250	-1.250	.175	.571E+12	-.858E+04	-.819E-11	-.371E+08	.471E-16	.571E+12	.103E+06
1.250	-1.250	.025	1.250	-1.250	.225	.541E+12	-.659E+04	.250E-10	-.312E+08	-.471E-16	.540E+12	.162E+06
1.250	-1.250	.025	1.250	-1.250	.275	.505E+12	-.456E+04	.864E-11	-.238E+08	-.235E-16	.505E+12	.162E+06
1.250	-1.250	.025	1.250	-1.250	.325	.469E+12	-.301E+04	.127E-10	-.172E+08	.471E-16	.469E+12	.151E+06
1.750	-1.250	.025	1.750	-1.250	.025	.225E+12	.715E+04	-.250E-10	.364E+08	.0	.225E+12	.157E+07
1.750	-1.250	.025	1.750	-1.250	.075	.243E+12	-.104E+04	-.142E-11	.865E+07	.471E-16	.243E+12	.272E+06
1.750	-1.250	.025	1.750	-1.250	.125	.245E+12	-.234E+04	.193E-10	-.144E+08	-.471E-16	.245E+12	-.950E+04
1.750	-1.250	.025	1.750	-1.250	.175	.238E+12	-.212E+04	-.784E-11	-.150E+08	-.141E-15	.238E+12	.314E+05
1.750	-1.250	.025	1.750	-1.250	.225	.225E+12	-.159E+04	.750E-11	-.129E+08	-.471E-16	.225E+12	.546E+05
1.750	-1.250	.025	1.750	-1.250	.275	.210E+12	-.107E+04	.205E-11	-.100E+08	.0	.210E+12	.595E+05
1.750	-1.250	.025	1.750	-1.250	.325	.195E+12	-.669E+03	.864E-11	-.744E+07	.235E-16	.195E+12	.523E+05
-1.750	-.750	.025	-1.750	-.750	.025	.109E+10	.446E+02	-.157E-12	.201E+06	.0	.109E+10	.930E+04
-1.750	-.750	.025	-1.750	-.750	.075	.118E+10	-.702E+01	-.582E-13	.508E+05	.0	.118E+10	.212E+04
-1.750	-.750	.025	-1.750	-.750	.125	.119E+10	-.149E+02	.300E-12	-.825E+05	.118E-16	.119E+10	-.238E+01
-1.750	-.750	.025	-1.750	-.750	.175	.115E+10	-.131E+02	.107E-12	-.842E+05	.118E-16	.115E+10	.636E+02
-1.750	-.750	.025	-1.750	-.750	.225	.109E+10	-.957E+01	.777E-13	-.711E+05	-.235E-16	.109E+10	.150E+03
-1.750	-.750	.025	-1.750	-.750	.275	.102E+10	-.634E+01	.135E-12	-.548E+05	.118E-16	.102E+10	.182E+03
-1.750	-.750	.025	-1.750	-.750	.325	.948E+09	-.402E+01	.284E-13	-.404E+05	.0	.947E+09	.166E+03
-1.250	-.750	.025	-1.250	-.750	.025	.516E+10	.396E+03	-.164E-11	.140E+07	.0	.516E+10	.574E+05
-1.250	-.750	.025	-1.250	-.750	.075	.558E+10	-.610E+02	.250E-12	-.172E+06	.235E-16	.558E+10	.364E+04
-1.250	-.750	.025	-1.250	-.750	.125	.564E+10	-.117E+03	-.373E-13	-.396E+06	.235E-16	.564E+10	.278E+03
-1.250	-.750	.025	-1.250	-.750	.175	.547E+10	-.115E+03	.380E-12	-.419E+06	-.471E-16	.546E+10	.725E+02
-1.250	-.750	.025	-1.250	-.750	.225	.517E+10	-.927E+02	.243E-12	-.358E+06	.0	.517E+10	.433E+03
-1.250	-.750	.025	-1.250	-.750	.275	.483E+10	-.685E+02	.0	-.278E+06	.353E-16	.483E+10	.613E+03
-1.250	-.750	.025	-1.250	-.750	.325	.448E+10	-.491E+02	.313E-12	-.206E+06	-.118E-16	.448E+10	.576E+03
1.250	-.750	.025	1.250	-.750	.025	.212E+13	.167E+06	.108E-08	.584E+09	.0	.212E+13	.172E+08
1.250	-.750	.025	1.250	-.750	.075	.229E+13	-.262E+05	-.133E-08	-.718E+08	.941E-16	.229E+13	-.938E+06
1.250	-.750	.025	1.250	-.750	.125	.232E+13	-.520E+05	.140E-09	-.172E+09	.188E-15	.232E+13	-.201E+06
1.250	-.750	.025	1.250	-.750	.175	.225E+13	-.488E+05	-.518E-09	-.175E+09	.0	.225E+13	.448E+06
1.250	-.750	.025	1.250	-.750	.225	.213E+13	-.377E+05	.310E-09	-.145E+09	.0	.213E+13	.692E+06
1.250	-.750	.025	1.250	-.750	.275	.199E+13	-.271E+05	.491E-10	-.110E+09	.0	.199E+13	.654E+06
1.250	-.750	.025	1.250	-.750	.325	.184E+13	-.190E+05	-.138E-09	-.805E+08	.941E-16	.184E+13	.501E+06
1.750	-.750	.025	1.750	-.750	.025	.731E+12	.297E+05	-.517E-09	.134E+09	.0	.730E+12	.528E+07
1.750	-.750	.025	1.750	-.750	.075	.789E+12	-.442E+04	.146E-09	.327E+08	-.941E-16	.789E+12	.942E+06
1.750	-.750	.025	1.750	-.750	.125	.797E+12	-.989E+04	.213E-09	-.549E+08	-.188E-15	.797E+12	-.427E+05
1.750	-.750	.025	1.750	-.750	.175	.773E+12	-.875E+04	.584E-10	-.558E+08	.0	.773E+12	.117E+06
1.750	-.750	.025	1.750	-.750	.225	.732E+12	-.650E+04	-.209E-10	-.472E+08	.0	.732E+12	.196E+06
1.750	-.750	.025	1.750	-.750	.275	.683E+12	-.440E+04	-.186E-10	-.365E+08	-.941E-16	.683E+12	.205E+06
1.750	-.750	.025	1.750	-.750	.325	.635E+12	-.285E+04	.127E-10	-.270E+08	.0	.634E+12	.173E+06
-1.750	-.250	.025	-1.750	-.250	.025	.128E+10	.650E+02	.250E-12	.280E+06	.0	.128E+10	.979E+04
-1.750	-.250	.025	-1.750	-.250	.075	.138E+10	-.882E+01	.118E-11	-.264E+05	-.235E-16	.138E+10	-.311E+03
-1.750	-.250	.025	-1.750	-.250	.125	.139E+10	-.203E+02	-.149E-12	-.811E+05	.706E-16	.139E+10	-.100E+03
-1.750	-.250	.025	-1.750	-.250	.175	.135E+10	-.196E+02	.325E-12	-.864E+05	.0	.135E+10	.173E+03
-1.750	-.250	.025	-1.750	-.250	.225	.128E+10	-.153E+02	-.586E-13	-.736E+05	.0	.128E+10	.314E+03
-1.750	-.250	.025	-1.750	-.250	.275	.119E+10	-.108E+02	.282E-12	-.567E+05	.0	.119E+10	.327E+03
-1.750	-.250	.025	-1.750	-.250	.325	.111E+10	-.734E+01	.128E-12	-.417E+05	.118E-16	.111E+10	.272E+03
-1.250	-.250	.025	-1.250	-.250	.025	.541E+10	.569E+03	-.130E-10	.173E+07	.471E-16	.540E+10	.514E+05
-1.250	-.250	.025	-1.250	-.250	.075	.584E+10	-.953E+02	.110E-11	-.230E+06	.0	.584E+10	-.137E+04
-1.250	-.250	.025	-1.250	-.250	.125	.590E+10	-.177E+03	.117E-11	-.514E+06	.0	.590E+10	-.518E+03
-1.250	-.250	.025	-1.250	-.250	.175	.572E+10	-.163E+03	.209E-11	-.514E+06	.0	.572E+10	.974E+03
-1.250	-.250	.025	-1.250	-.250	.225	.542E+10	-.126E+03	.321E-11	-.421E+06	.235E-16	.541E+10	.154E+04
-1.250	-.250	.025	-1.250	-.250	.275	.506E+10	-.916E+02	.600E-12	-.317E+06	.0	.506E+10	.141E+04
-1.250	-.250	.025	-1.250	-.250	.325	.470E+10	-.697E+02	.220E-11	-.233E+06	.118E-16	.469E+10	.103E+04
1.250	-.250	.025	1.250	-.250	.025	.133E+14	.140E+07	.365E-08	.424E+10	.0	.133E+14	.113E+09
1.250	-.250	.025	1.250	-.250	.075	.144E+14	-.218E+06	-.764E-08	-.479E+09	.376E-15	.144E+14	-.916E+07
1.250	-.250	.025	1.250	-.250	.125	.146E+14	-.444E+06	-.781E-08	-.130E+10	.0	.146E+14	-.155E+07
1.250	-.250	.025	1.250	-.250	.175	.141E+14	-.404E+06	-.809E-08	-.129E+10	.376E-15	.141E+14	.338E+07
1.250	-.250	.025	1.250	-.250	.225	.134E+14	-.313E+06	-.203E-08	-.105E+10	.376E-15	.134E+14	.492E+07
1.250	-.250	.025	1.250	-.250	.275	.125E+14	-.226E+06	-.175E-09	-.788E+09	.941E-16	.125E+14	.416E+07
1.250	-.250	.025	1.250	-.250	.325	.116E+14	-.162E+06	-.550E-08	-.578E+09	.941E-16	.116E+14	.301E+07
1.750	-.250	.025	1.750	-.250	.025	.269E+13	.137E+06	.404E-08	.589E+09	.0	.269E+13	.199E+08
1.750	-.250	.025	1.750	-.250	.075	.291E+13	-.173E+05	.819E-09	-.423E+08	.188E-15	.291E+13	-.104E+07
1.750	-.250	.025	1.750	-.250	.125	.294E+13	-.435E+05	-.281E-09	-.176E+09	.0	.294E+13	-.216E+06
1.750	-.250	.025	1.750	-.250	.175	.285E+13	-.412E+05	.309E-10	-.186E+09	-.188E-15	.285E+13	.453E+06
1.750	-.250	.025	1.750	-.250	.225	.270E+13	-.322E+05	-.831E-09	-.158E+09	.0	.270E+13	.759E+06
1.750	-.250	.025	1.750	-.250	.275	.252E+13	-.228E+05	-.214E-09	-.120E+09	.0	.252E+13	.750E+06
1.750	-.250	.025	1.750	-.250	.325	.234E+13	-.157E+05	-.349E-09	-.886E+08	.0	.234E+13	.620E+06
-1.750	-1.750	.075	-1.750	-1.750	.025	.416E+09						
-1.750	-1.750	.075	-1.750	-1.750	.075	.450E+09	.140E+02	.281E-13	.133E+05	.0	.450E+09	.114E+04
-1.750	-1.750	.075	-1.750	-1.750	.125	.455E+09	-.197E+01	.311E-14	-.220E+05	.0	.455E+09	.175E+03
-1.750	-1.750	.075	-1.750	-1.750	.175	.441E+09	-.358E+01	-.104E-13	-.228E+05	.588E-17	.441E+09	.480E+02
-1.750	-1.750	.075	-1.750	-1.750	.225	.417E+09	-.373E+01	.777E-15	-.202E+05	-.588E-17	.417E+09	-.264E+01
-1.750	-1.750	.075	-1.750	-1.750	.275	.390E+09	-.321E+01	-.888E-14	-.161E+05	-.588E-17	.390E+09	-.154E+02
-1.750	-1.750	.075	-1.750	-1.750	.325	.362E+09	-.253E+01	-.355E-14	-.123E+05	-.588E-17	.362E+09	-.141E+02
-1.250	-1.750	.075	-1.250	-1.750	.025	.188E+10						
-1.250	-1.750	.075	-1.250	-1.750	.075	.203E+10	.608E+02	-.576E-12	.818E+05	.118E-16	.203E+10	.391E+04
-1.250	-1.750	.075	-1.250	-1.750	.125	.205E+10	-.111E+02	.101E-12	-.120E+06	-.118E-16	.205E+10	.454E+03
-1.250	-1.750	.075	-1.250	-1.750	.175	.199E+10	-.182E+02	.109E-12	-.126E+06	.118E-16	.199E+10	.717E+02
-1.250	-1.750	.075	-1.250	-1.750	.225	.188E+10	-.176E+02	.355E-14	-.108E+06	.235E-16	.188E+10	-.253E+02
-1.250	-1.750	.075	-1.250	-1.750	.275	.176E+10	-.143E+02	.884E-13	-.843E+05	.0	.176E+10	-.289E+02
-1.250	-1.750	.075	-1.250	-1.750	.325	.163E+10	-.107E+02	.711E-13	-.628E+05	.0	.163E+10	-.126E+02
-.750	-1.750	.075	-.750	-1.750	.025	.829E+10						
-.750	-1.750	.075	-.750	-1.750	.075	.895E+10	.388E+03	.595E-11	.450E+06	-.471E-16	.895E+10	.158E+05
-.750	-1.750	.075	-.750	-1.750	.125	.904E+10	-.728E+02	-.430E-12	-.623E+06	.235E-16	.904E+10	.661E+03
-.750	-1.750	.075	-.750	-1.750	.175	.877E+10	-.115E+03	-.192E-11	-.647E+06	-.235E-16	.877E+10	.546E+01
-.750	-1.750	.075	-.750	-1.750	.225	.830E+10	-.110E+03	-.200E-11	-.550E+06	.0	.830E+10	.599E+02
-.750	-1.750	.075	-.750	-1.750	.275	.775E+10	-.895E+02	-.487E-12	-.426E+06	.0	.775E+10	.198E+03
-.750	-1.750	.075	-.750	-1.750	.325	.720E+10	-.673E+02	-.182E-11	-.316E+06	.235E-16	.720E+10	.255E+03
-.250	-1.750	.075	-.250	-1.750	.025	.269E+11						

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Table V.- Continued.

Y1	Y2	Y3	Z1	Z2	Z3	DP	DP0	DP1	DP3	DP5	DP7	DP8
-.250	-1.750	.075	-.250	-1.750	.075	.291E+11	.264E+03	.606E-11	-.469E+06	-.471E-16	.291E+11	.137E+05
-.250	-1.750	.075	-.250	-1.750	.125	.294E+11	.193E+02	.433E-11	-.168E+07	-.471E-16	.294E+11	.590E+04
-.250	-1.750	.075	-.250	-1.750	.175	.285E+11	-.521E+02	-.104E-10	-.185E+07	.0	.285E+11	.110E+04
-.250	-1.750	.075	-.250	-1.750	.225	.270E+11	-.527E+02	-.247E-11	-.159E+07	.0	.270E+11	-.115E+04
-.250	-1.750	.075	-.250	-1.750	.275	.252E+11	-.339E+02	-.100E-10	-.123E+07	.0	.252E+11	-.181E+04
-.250	-1.750	.075	-.250	-1.750	.325	.234E+11	-.169E+02	-.756E-11	-.895E+06	.235E-16	.234E+11	-.167E+04
.250	-1.750	.075	.250	-1.750	.025	.638E+11						
.250	-1.750	.075	.250	-1.750	.075	.689E+11	.644E+03	.437E-10	-.110E+07	.0	.689E+11	.330E+05
.250	-1.750	.075	.250	-1.750	.125	.696E+11	.447E+02	-.295E-10	-.400E+07	-.471E-16	.696E+11	.139E+05
.250	-1.750	.075	.250	-1.750	.175	.675E+11	-.131E+03	-.127E-10	-.443E+07	.0	.675E+11	.213E+04
.250	-1.750	.075	.250	-1.750	.225	.639E+11	-.132E+03	.369E-12	-.381E+07	-.471E-16	.639E+11	-.340E+04
.250	-1.750	.075	.250	-1.750	.275	.597E+11	-.847E+02	.422E-11	-.292E+07	-.471E-16	.597E+11	-.496E+04
.250	-1.750	.075	.250	-1.750	.325	.554E+11	-.426E+02	-.136E-11	-.212E+07	.0	.554E+11	-.449E+04
.750	-1.750	.075	.750	-1.750	.025	.762E+11						
.750	-1.750	.075	.750	-1.750	.075	.825E+11	.415E+04	.474E-10	.392E+07	-.471E-16	.825E+11	.127E+06
.750	-1.750	.075	.750	-1.750	.125	.834E+11	-.679E+03	-.881E-12	-.574E+07	.0	.834E+11	-.345E+04
.750	-1.750	.075	.750	-1.750	.175	.808E+11	-.121E+04	-.372E-11	-.617E+07	.0	.808E+11	-.121E+04
.750	-1.750	.075	.750	-1.750	.225	.765E+11	-.119E+04	-.329E-11	-.526E+07	.0	.765E+11	.355E+04
.750	-1.750	.075	.750	-1.750	.275	.714E+11	-.954E+03	-.227E-11	-.400E+07	.0	.714E+11	.622E+04
.750	-1.750	.075	.750	-1.750	.325	.663E+11	-.701E+03	-.591E-11	-.286E+07	.471E-16	.663E+11	.651E+04
1.250	-1.750	.075	1.250	-1.750	.025	.809E+11						
1.250	-1.750	.075	1.250	-1.750	.075	.874E+11	.297E+04	.753E-11	.329E+07	.0	.874E+11	.108E+06
1.250	-1.750	.075	1.250	-1.750	.125	.884E+11	-.479E+03	-.165E-11	-.521E+07	.235E-16	.884E+11	-.207E+04
1.250	-1.750	.075	1.250	-1.750	.175	.857E+11	-.872E+03	-.162E-11	-.557E+07	.706E-16	.857E+11	-.685E+03
1.250	-1.750	.075	1.250	-1.750	.225	.811E+11	-.859E+03	-.256E-12	-.478E+07	.471E-16	.811E+11	.282E+04
1.250	-1.750	.075	1.250	-1.750	.275	.757E+11	-.698E+03	-.153E-11	-.369E+07	.235E-16	.757E+11	.504E+04
1.250	-1.750	.075	1.250	-1.750	.325	.703E+11	-.515E+03	-.682E-12	-.268E+07	-.235E-16	.703E+11	.549E+04
1.750	-1.750	.075	1.750	-1.750	.025	.859E+11						
1.750	-1.750	.075	1.750	-1.750	.075	.928E+11	.273E+04	.172E-10	.385E+07	-.235E-16	.928E+11	.119E+06
1.750	-1.750	.075	1.750	-1.750	.125	.938E+11	-.394E+03	.114E-12	-.459E+07	.0	.938E+11	-.318E+04
1.750	-1.750	.075	1.750	-1.750	.175	.909E+11	-.836E+03	-.301E-11	-.538E+07	.235E-16	.909E+11	-.125E+04
1.750	-1.750	.075	1.750	-1.750	.225	.860E+11	-.833E+03	-.529E-11	-.463E+07	-.235E-16	.860E+11	.213E+04
1.750	-1.750	.075	1.750	-1.750	.275	.804E+11	-.681E+03	-.264E-11	-.358E+07	.0	.804E+11	.470E+04
1.750	-1.750	.075	1.750	-1.750	.325	.746E+11	-.495E+03	-.136E-11	-.255E+07	-.118E-16	.746E+11	.530E+04
-1.750	-1.250	.075	-1.750	-1.250	.025	.897E+09						
-1.750	-1.250	.075	-1.750	-1.250	.075	.968E+09	.299E+02	-.213E-12	.353E+05	.118E-16	.968E+09	.233E+04
-1.750	-1.250	.075	-1.750	-1.250	.125	.979E+09	-.529E+01	.731E-13	-.579E+05	.0	.979E+09	.335E+03
-1.750	-1.250	.075	-1.750	-1.250	.175	.949E+09	-.879E+01	.970E-13	-.605E+05	-.118E-16	.949E+09	.282E+02
-1.750	-1.250	.075	-1.750	-1.250	.225	.898E+09	-.852E+01	.102E-12	-.516E+05	.118E-16	.898E+09	-.613E+02
-1.750	-1.250	.075	-1.750	-1.250	.275	.839E+09	-.691E+01	.857E-13	-.400E+05	.118E-16	.839E+09	-.675E+02
-1.750	-1.250	.075	-1.750	-1.250	.325	.779E+09	-.516E+01	.622E-13	-.294E+05	.176E-16	.779E+09	-.495E+02
-1.250	-1.250	.075	-1.250	-1.250	.025	.342E+10						
-1.250	-1.250	.075	-1.250	-1.250	.075	.369E+10	.281E+02	-.204E-12	-.721E+05	.118E-16	.369E+10	.629E+04
-1.250	-1.250	.075	-1.250	-1.250	.125	.373E+10	.299E+01	.981E-13	-.211E+06	.0	.373E+10	.230E+04
-1.250	-1.250	.075	-1.250	-1.250	.175	.362E+10	-.380E+01	.112E-12	-.227E+06	.118E-16	.362E+10	.502E+03
-1.250	-1.250	.075	-1.250	-1.250	.225	.342E+10	-.397E+01	.101E-12	-.195E+06	-.118E-16	.342E+10	-.218E+03
-1.250	-1.250	.075	-1.250	-1.250	.275	.320E+10	-.244E+01	.830E-13	-.152E+06	.0	.320E+10	-.410E+03
-1.250	-1.250	.075	-1.250	-1.250	.325	.297E+10	-.107E+01	.604E-13	-.113E+06	.118E-16	.297E+10	-.378E+03
-.750	-1.250	.075	-.750	-1.250	.025	.247E+11						
-.750	-1.250	.075	-.750	-1.250	.075	.267E+11	.288E+03	.252E-11	-.735E+06	.0	.267E+11	.435E+05
-.750	-1.250	.075	-.750	-1.250	.125	.270E+11	.403E+02	-.121E-11	-.194E+07	.0	.270E+11	.163E+05
-.750	-1.250	.075	-.750	-1.250	.175	.261E+11	-.250E+02	-.265E-11	-.203E+07	-.235E-16	.261E+11	.313E+04
-.750	-1.250	.075	-.750	-1.250	.225	.247E+11	-.268E+02	-.125E-11	-.171E+07	.235E-16	.247E+11	-.187E+04
-.750	-1.250	.075	-.750	-1.250	.275	.231E+11	-.151E+02	-.244E-11	-.131E+07	.0	.231E+11	-.297E+04
-.750	-1.250	.075	-.750	-1.250	.325	.215E+11	-.572E+01	-.185E-11	-.972E+06	-.235E-16	.215E+11	-.256E+04
-.250	-1.250	.075	-.250	-1.250	.025	.162E+12						
-.250	-1.250	.075	-.250	-1.250	.075	.175E+12	.241E+04	.100E-09	-.627E+07	.0	.175E+12	.174E+06
-.250	-1.250	.075	-.250	-1.250	.125	.177E+12	.420E+03	.218E-10	-.151E+08	.941E-16	.177E+12	.697E+05
-.250	-1.250	.075	-.250	-1.250	.175	.172E+12	-.878E+02	-.106E-09	-.156E+08	.0	.172E+12	.925E+04
-.250	-1.250	.075	-.250	-1.250	.225	.163E+12	-.116E+03	-.120E-09	-.128E+08	.941E-16	.163E+12	-.140E+05
-.250	-1.250	.075	-.250	-1.250	.275	.152E+12	-.552E+02	-.583E-10	-.973E+07	.0	.152E+12	-.177E+05
-.250	-1.250	.075	-.250	-1.250	.325	.141E+12	-.106E+02	-.357E-10	-.715E+07	.941E-16	.141E+12	-.141E+05
.250	-1.250	.075	.250	-1.250	.025	.545E+12						
.250	-1.250	.075	.250	-1.250	.075	.589E+12	.836E+04	-.881E-11	-.212E+08	.0	.589E+12	.570E+06
.250	-1.250	.075	.250	-1.250	.125	.595E+12	.142E+04	-.113E-09	-.513E+08	-.941E-16	.595E+12	.225E+06
.250	-1.250	.075	.250	-1.250	.175	.577E+12	-.361E+03	.888E-10	-.527E+08	.282E-15	.577E+12	.198E+05
.250	-1.250	.075	.250	-1.250	.225	.546E+12	-.452E+03	-.121E-09	-.434E+08	.0	.546E+12	-.586E+05
.250	-1.250	.075	.250	-1.250	.275	.510E+12	-.232E+03	-.120E-09	-.326E+08	.471E-16	.510E+12	-.689E+05
.250	-1.250	.075	.250	-1.250	.325	.474E+12	-.696E+02	-.227E-10	-.238E+08	.471E-16	.474E+12	-.539E+05
.750	-1.250	.075	.750	-1.250	.025	.452E+12						
.750	-1.250	.075	.750	-1.250	.075	.488E+12	.596E+04	.133E-09	-.135E+08	-.941E-16	.488E+12	.417E+06
.750	-1.250	.075	.750	-1.250	.125	.493E+12	.747E+03	-.360E-10	-.370E+08	.941E-16	.493E+12	.166E+06
.750	-1.250	.075	.750	-1.250	.175	.478E+12	-.727E+03	-.639E-10	-.388E+08	.0	.478E+12	.148E+05
.750	-1.250	.075	.750	-1.250	.225	.452E+12	-.723E+03	-.473E-10	-.320E+08	.941E-16	.453E+12	-.471E+05
.750	-1.250	.075	.750	-1.250	.275	.423E+12	-.408E+03	-.595E-10	-.238E+08	.941E-16	.423E+12	-.579E+05
.750	-1.250	.075	.750	-1.250	.325	.392E+12	-.161E+03	-.409E-10	-.170E+08	.0	.392E+12	-.478E+05
1.250	-1.250	.075	1.250	-1.250	.025	.583E+12						
1.250	-1.250	.075	1.250	-1.250	.075	.629E+12	.527E+04	-.232E-10	-.125E+08	.0	.629E+12	.310E+06
1.250	-1.250	.075	1.250	-1.250	.125	.636E+12	.595E+03	-.114E-12	-.378E+08	-.941E-16	.636E+12	.121E+06
1.250	-1.250	.075	1.250	-1.250	.175	.617E+12	-.792E+03	-.375E-11	-.400E+08	.471E-16	.617E+12	.152E+05
1.250	-1.250	.075	1.250	-1.250	.225	.584E+12	-.860E+03	-.330E-11	-.337E+08	-.471E-16	.584E+12	-.320E+05
1.250	-1.250	.075	1.250	-1.250	.275	.545E+12	-.553E+03	.443E-11	-.257E+08	-.235E-16	.545E+12	-.445E+05
1.250	-1.250	.075	1.250	-1.250	.325	.506E+12	-.258E+03	.0	-.186E+08	.471E-16	.506E+12	-.400E+05
1.750	-1.250	.075	1.750	-1.250	.025	.243E+12						
1.750	-1.250	.075	1.750	-1.250	.075	.262E+12	.776E+04	-.853E-10	.932E+07	.471E-16	.262E+12	.272E+06
1.750	-1.250	.075	1.750	-1.250	.125	.265E+12	-.136E+04	.966E-12	-.155E+08	-.471E-16	.265E+12	-.104E+05
1.750	-1.250	.075	1.750	-1.250	.175	.257E+12	-.228E+04	.393E-10	-.162E+08	-.141E-15	.257E+12	-.265E+04
1.750	-1.250	.075	1.750	-1.250	.225	.243E+12	-.222E+04	.178E-10	-.139E+08	-.471E-16	.243E+12	.753E+04
1.750	-1.250	.075	1.750	-1.250	.275	.227E+12	-.181E+04	.174E-10	-.108E+08	.0	.227E+12	.134E+05
1.750	-1.250	.075	1.750	-1.250	.325	.211E+12	-.136E+04	.214E-10	-.804E+07	.235E-16	.211E+12	.144E+05
-1.750	-.750	.075	-1.750	-.750	.025	.118E+10						
-1.750	-.750	.075	-1.750	-.750	.075	.127E+10	.512E+02	.107E-13	.549E+05	.0	.127E+10	.314E+04
-1.750	-.750	.075	-1.750	-.750	.125	.129E+10	-.976E+01	-.132E-12	-.891E+05	.118E-16	.129E+10	.376E+03
-1.750	-.750	.075	-1.750	-.750	.175	.125E+10	-.151E+02	.250E-12	-.909E+05	.118E-16	.125E+10	.322E+02
-1.750	-.750	.075	-1.750	-.750	.225	.118E+10	-.143E+02	-.138E-13	-.768E+05	-.235E-16	.118E+10	-.539E+02

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Table V.- Continued.

Y1	Y2	Y3	Z1	Z2	Z3	DP	DP0	DP1	DP3	DP5	DP7	DP8
-1,750	-,750	.075	-1.750	-.750	.275	.110E+10	-.115E+02	-.573E-13	-.592E+05	.118E-16	.110E+10	-.527E+02
-1,750	-,750	.075	-1.750	-.750	.325	.102E+10	-.867E+01	.320E-13	-.437E+05	.0	.102E+10	-.327E+02
-1,250	-,750	.075	-1.250	-.750	.075	.602E+10	.519E+02	.635E-13	-.186E+06	.235E-16	.602E+10	.124E+05
-1,250	-,750	.075	-1.250	-.750	.125	.609E+10	.100E+02	.650E-12	-.428E+06	.235E-16	.609E+10	.429E+04
-1,250	-,750	.075	-1.250	-.750	.175	.590E+10	.558E+00	.729E-12	-.453E+06	-.471E-16	.590E+10	.738E+03
-1,250	-,750	.075	-1.250	-.750	.225	.559E+10	-.460E-01	.423E-12	-.387E+06	.0	.559E+10	-.566E+03
-1,250	-,750	.075	-1.250	-.750	.275	.522E+10	.903E+00	.710E-12	-.300E+06	.353E-16	.522E+10	-.829E+03
-1,250	-,750	.075	-1.250	-.750	.325	.484E+10	.142E+01	.430E-12	-.222E+06	-.118E-16	.484E+10	-.699E+03
1,250	-,750	.075	1.250	-.750	.025	.229E+13						
1,250	-,750	.075	1.250	-.750	.075	.248E+13	.250E+05	-.502E-09	-.776E+08	.941E-16	.248E+13	.146E+07
1,250	-,750	.075	1.250	-.750	.125	.250E+13	.455E+04	.461E-09	-.186E+09	.188E-15	.250E+13	.543E+06
1,250	-,750	.075	1.250	-.750	.175	.243E+13	-.904E+03	.454E-09	-.189E+09	.0	.243E+13	.391E+05
1,250	-,750	.075	1.250	-.750	.225	.230E+13	-.132E+04	.306E-09	-.157E+09	.0	.230E+13	-.165E+06
1,250	-,750	.075	1.250	-.750	.275	.214E+13	-.603E+03	.330E-09	-.119E+09	.0	.214E+13	-.202E+06
1,250	-,750	.075	1.250	-.750	.325	.199E+13	-.922E+01	.207E-09	-.870E+08	.941E-16	.199E+13	-.168E+06
1,750	-,750	.075	1.750	-.750	.025	.789E+12						
1,750	-,750	.075	1.750	-.750	.075	.852E+12	.327E+05	-.429E-09	.353E+08	-.941E-16	.852E+12	.933E+06
1,750	-,750	.075	1.750	-.750	.125	.861E+12	-.624E+04	.187E-09	-.593E+08	-.188E-15	.861E+12	-.529E+05
1,750	-,750	.075	1.750	-.750	.175	.835E+12	-.962E+04	.113E-09	-.603E+08	.0	.835E+12	-.114E+05
1,750	-,750	.075	1.750	-.750	.225	.790E+12	-.914E+04	-.796E-10	-.510E+08	.0	.790E+12	.294E+05
1,750	-,750	.075	1.750	-.750	.275	.738E+12	-.740E+04	-.427E-10	-.394E+08	-.941E-16	.738E+12	.493E+05
1,750	-,750	.075	1.750	-.750	.325	.685E+12	-.556E+04	-.582E-10	-.292E+08	.0	.685E+12	.506E+05
-1,750	-,250	.075	-1.750	-.250	.025	.138E+10						
-1,750	-,250	.075	-1.750	-.250	.075	.149E+10	.119E+02	.261E-12	-.285E+05	-.235E-16	.149E+10	.846E+03
-1,750	-,250	.075	-1.750	-.250	.125	.150E+10	.123E+01	-.524E-12	-.876E+05	.706E-16	.150E+10	.314E+03
-1,750	-,250	.075	-1.750	-.250	.175	.146E+10	-.174E+01	-.469E-12	-.934E+05	.0	.146E+10	.420E+02
-1,750	-,250	.075	-1.750	-.250	.225	.138E+10	-.182E+01	-.229E-12	-.796E+05	.0	.138E+10	-.764E+02
-1,750	-,250	.075	-1.750	-.250	.275	.129E+10	-.115E+01	-.369E-12	-.613E+05	.0	.129E+10	-.106E+03
-1,750	-,250	.075	-1.750	-.250	.325	.120E+10	-.538E+00	-.181E-12	-.450E+05	.118E-16	.120E+10	-.956E+02
-1,250	-,250	.075	-1.250	-.250	.025	.584E+10						
-1,250	-,250	.075	-1.250	-.250	.075	.631E+10	.787E+02	-.471E-11	-.249E+06	.0	.631E+10	.803E+04
-1,250	-,250	.075	-1.250	-.250	.125	.637E+10	.176E+02	.167E-11	-.555E+06	.0	.637E+10	.268E+04
-1,250	-,250	.075	-1.250	-.250	.175	.618E+10	.201E+01	-.752E-12	-.555E+06	.0	.618E+10	.165E+03
-1,250	-,250	.075	-1.250	-.250	.225	.585E+10	.114E+00	-.131E-12	-.454E+06	.235E-16	.585E+10	-.704E+03
-1,250	-,250	.075	-1.250	-.250	.275	.546E+10	.845E+00	.782E-12	-.343E+06	.0	.546E+10	-.782E+03
-1,250	-,250	.075	-1.250	-.250	.325	.507E+10	.138E+01	-.185E-12	-.251E+06	.118E-16	.507E+10	-.603E+03
1,250	-,250	.075	1.250	-.250	.025	.144E+14						
1,250	-,250	.075	1.250	-.250	.075	.155E+14	.217E+06	.902E-08	-.517E+09	.376E-15	.155E+14	.140E+08
1,250	-,250	.075	1.250	-.250	.125	.157E+14	.342E+05	.741E-08	-.141E+10	.0	.157E+14	.468E+07
1,250	-,250	.075	1.250	-.250	.175	.152E+14	-.872E+04	.736E-08	-.139E+10	.376E-15	.152E+14	.183E+06
1,250	-,250	.075	1.250	-.250	.225	.144E+14	-.130E+05	.214E-08	-.114E+10	.376E-15	.144E+14	-.146E+07
1,250	-,250	.075	1.250	-.250	.275	.135E+14	-.928E+04	.487E-09	-.852E+09	.941E-16	.135E+14	-.155E+07
1,250	-,250	.075	1.250	-.250	.325	.125E+14	-.540E+04	.537E-08	-.624E+09	.941E-16	.125E+14	-.122E+07
1,750	-,250	.075	1.750	-.250	.025	.291E+13						
1,750	-,250	.075	1.750	-.250	.075	.314E+13	.285E+05	.637E-09	-.457E+08	.188E-15	.314E+13	.141E+07
1,750	-,250	.075	1.750	-.250	.125	.317E+13	.173E+04	.364E-10	-.190E+09	.0	.317E+13	.510E+06
1,750	-,250	.075	1.750	-.250	.175	.308E+13	-.508E+04	-.111E-09	-.201E+09	-.188E-15	.308E+13	.561E+05
1,750	-,250	.075	1.750	-.250	.225	.291E+13	-.537E+04	-.268E-10	-.170E+09	.0	.291E+13	-.139E+06
1,750	-,250	.075	1.750	-.250	.275	.272E+13	-.395E+04	.300E-09	-.130E+09	.0	.272E+13	-.185E+06
1,750	-,250	.075	1.750	-.250	.325	.253E+13	-.245E+04	.0	-.957E+08	.0	.253E+13	-.170E+06
-1,750	-1,750	.125	-1.750	-1.750	.025	.421E+09						
-1,750	-1,750	.125	-1.750	-1.750	.075	.455E+09						
-1,750	-1,750	.125	-1.750	-1.750	.125	.459E+09	.303E+01	-.397E-14	-.222E+05	.0	.460E+09	.445E+03
-1,750	-1,750	.125	-1.750	-1.750	.175	.446E+09	.131E+01	.139E-16	-.231E+05	.588E-17	.446E+09	.199E+03
-1,750	-1,750	.125	-1.750	-1.750	.225	.422E+09	.656E+00	-.130E-14	-.204E+05	-.588E-17	.422E+09	.705E+02
-1,750	-1,750	.125	-1.750	-1.750	.275	.394E+09	.448E+00	-.278E-16	-.163E+05	-.588E-17	.394E+09	.103E+02
-1,750	-1,750	.125	-1.750	-1.750	.325	.366E+09	.396E+00	.444E-15	-.124E+05	-.588E-17	.366E+09	-.128E+02
-1,250	-1,750	.125	-1.250	-1.750	.025	.190E+10						
-1,250	-1,750	.125	-1.250	-1.750	.075	.205E+10						
-1,250	-1,750	.125	-1.250	-1.750	.125	.207E+10	.158E+02	-.132E-12	-.121E+06	-.118E-16	.207E+10	.149E+04
-1,250	-1,750	.125	-1.250	-1.750	.175	.201E+10	.851E+01	.111E-15	-.127E+06	.118E-16	.201E+10	.626E+03
-1,250	-1,750	.125	-1.250	-1.750	.225	.190E+10	.497E+01	-.470E-13	-.109E+06	.235E-16	.190E+10	.181E+03
-1,250	-1,750	.125	-1.250	-1.750	.275	.178E+10	.340E+01	-.591E-13	-.852E+05	.0	.178E+10	-.172E+02
-1,250	-1,750	.125	-1.250	-1.750	.325	.165E+10	.267E+01	-.639E-13	-.635E+05	.0	.165E+10	-.795E+02
-,750	-1,750	.125	-.750	-1.750	.025	.837E+10						
-,750	-1,750	.125	-.750	-1.750	.075	.904E+10						
-,750	-1,750	.125	-.750	-1.750	.125	.914E+10	.941E+02	-.369E-11	-.630E+06	.235E-16	.914E+10	.567E+04
-,750	-1,750	.125	-.750	-1.750	.175	.886E+10	.520E+02	-.965E-12	-.654E+06	-.235E-16	.887E+10	.242E+04
-,750	-1,750	.125	-.750	-1.750	.225	.839E+10	.317E+02	.218E-12	-.556E+06	.0	.839E+10	.657E+03
-,750	-1,750	.125	-.750	-1.750	.275	.783E+10	.222E+02	.419E-12	-.431E+06	.0	.784E+10	-.142E+03
-,750	-1,750	.125	-.750	-1.750	.325	.727E+10	.173E+02	-.675E-13	-.319E+06	.235E-16	.727E+10	-.382E+03
-,250	-1,750	.125	-.250	-1.750	.025	.272E+11						
-,250	-1,750	.125	-.250	-1.750	.075	.294E+11						
-,250	-1,750	.125	-.250	-1.750	.125	.297E+11	.285E+03	-.566E-11	-.170E+07	-.471E-16	.297E+11	.144E+05
-,250	-1,750	.125	-.250	-1.750	.175	.288E+11	.103E+03	.156E-11	-.187E+07	.0	.288E+11	.633E+04
-,250	-1,750	.125	-.250	-1.750	.225	.273E+11	.327E+02	-.446E-11	-.161E+07	.0	.273E+11	.155E+04
-,250	-1,750	.125	-.250	-1.750	.275	.255E+11	.115E+02	-.157E-11	-.124E+07	.0	.255E+11	-.691E+03
-,250	-1,750	.125	-.250	-1.750	.325	.236E+11	.798E+01	-.114E-12	-.905E+06	.235E-16	.236E+11	-.133E+04
,250	-1,750	.125	.250	-1.750	.025	.645E+11						
,250	-1,750	.125	.250	-1.750	.075	.696E+11						
,250	-1,750	.125	.250	-1.750	.125	.704E+11	.697E+03	.193E-10	-.405E+07	-.471E-16	.704E+11	.352E+05
,250	-1,750	.125	.250	-1.750	.175	.682E+11	.249E+03	-.632E-11	-.448E+07	.0	.682E+11	.152E+05
,250	-1,750	.125	.250	-1.750	.225	.646E+11	.748E+02	-.605E-11	-.385E+07	-.471E-16	.646E+11	.335E+04
,250	-1,750	.125	.250	-1.750	.275	.603E+11	.230E+02	-.669E-11	-.295E+07	-.471E-16	.603E+11	-.217E+04
,250	-1,750	.125	.250	-1.750	.325	.560E+11	.147E+02	-.563E-11	-.214E+07	.0	.560E+11	-.366E+04
,750	-1,750	.125	.750	-1.750	.025	.772E+11						
,750	-1,750	.125	.750	-1.750	.075	.834E+11						
,750	-1,750	.125	.750	-1.750	.125	.842E+11	.104E+04	.275E-10	-.581E+07	.0	.843E+11	.511E+05
,750	-1,750	.125	.750	-1.750	.175	.817E+11	.500E+03	-.877E-11	-.624E+07	.0	.817E+11	.233E+05
,750	-1,750	.125	.750	-1.750	.225	.773E+11	.251E+03	-.114E-11	-.532E+07	.0	.773E+11	.565E+04
,750	-1,750	.125	.750	-1.750	.275	.722E+11	.153E+03	-.469E-11	-.404E+07	.0	.722E+11	-.286E+04
,750	-1,750	.125	.750	-1.750	.325	.670E+11	.115E+03	.568E-12	-.289E+07	.471E-16	.670E+11	-.555E+04
1,250	-1,750	.125	1.250	-1.750	.025	.818E+11						
1,250	-1,750	.125	1.250	-1.750	.075	.884E+11						

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Table V.- Continued.

Y1	Y2	Y3	Z1	Z2	Z3	DP	DP0	DP1	DP3	DP5	DP7	DP8
1.250	-1.750	.125	1.250	-1.750	.125	.893E+11	.788E+03	-.603E-11	-.526E+07	.235E-16	.893E+11	.348E+05
1.250	-1.750	.125	1.250	-1.750	.175	.866E+11	.385E+03	-.137E-11	-.563E+07	.706E-16	.866E+11	.156E+05
1.250	-1.750	.125	1.250	-1.750	.225	.820E+11	.193E+03	.855E-12	-.484E+07	.471E-16	.820E+11	.391E+04
1.250	-1.750	.125	1.250	-1.750	.275	.765E+11	.114E+03	.109E-11	-.373E+07	.235E-16	.766E+11	-.191E+04
1.250	-1.750	.125	1.250	-1.750	.325	.711E+11	.861E+02	.165E-11	-.271E+07	-.235E-16	.711E+11	-.389E+04
1.750	-1.750	.125	1.750	-1.750	.025	.868E+11						
1.750	-1.750	.125	1.750	-1.750	.075	.938E+11						
1.750	-1.750	.125	1.750	-1.750	.125	.948E+11	.758E+03	-.269E-11	-.464E+07	.0	.948E+11	.338E+05
1.750	-1.750	.125	1.750	-1.750	.175	.919E+11	.299E+03	.469E-12	-.544E+07	.235E-16	.919E+11	.157E+05
1.750	-1.750	.125	1.750	-1.750	.225	.870E+11	.878E+02	-.476E-12	-.468E+07	-.235E-16	.870E+11	.525E+04
1.750	-1.750	.125	1.750	-1.750	.275	.812E+11	.223E+02	.696E-12	-.362E+07	.0	.812E+11	-.818E+03
1.750	-1.750	.125	1.750	-1.750	.325	.754E+11	.208E+02	-.568E-13	-.258E+07	-.118E-16	.754E+11	-.302E+04
-1.750	-1.250	.125	-1.750	-1.250	.025	.906E+09						
-1.750	-1.250	.125	-1.750	-1.250	.075	.979E+09						
-1.750	-1.250	.125	-1.750	-1.250	.125	.989E+09	.772E+01	-.139E-13	-.585E+05	.0	.989E+09	.934E+03
-1.750	-1.250	.125	-1.750	-1.250	.175	.959E+09	.416E+01	-.994E-14	-.611E+05	-.118E-16	.959E+09	.354E+03
-1.750	-1.250	.125	-1.750	-1.250	.225	.908E+09	.244E+01	.977E-14	-.522E+05	.118E-16	.908E+09	.631E+02
-1.750	-1.250	.125	-1.750	-1.250	.275	.848E+09	.166E+01	.522E-14	-.404E+05	.118E-16	.848E+09	-.581E+02
-1.750	-1.250	.125	-1.750	-1.250	.325	.787E+09	.129E+01	.129E-13	-.297E+05	.176E-16	.787E+09	-.882E+02
-1.250	-1.250	.125	-1.250	-1.250	.025	.345E+10						
-1.250	-1.250	.125	-1.250	-1.250	.075	.373E+10						
-1.250	-1.250	.125	-1.250	-1.250	.125	.377E+10	.296E+02	.290E-13	-.213E+06	.0	.377E+10	.425E+04
-1.250	-1.250	.125	-1.250	-1.250	.175	.366E+10	.128E+02	.276E-13	-.230E+06	.118E-16	.366E+10	.174E+04
-1.250	-1.250	.125	-1.250	-1.250	.225	.346E+10	.598E+01	-.104E-13	-.197E+06	-.118E-16	.346E+10	.495E+03
-1.250	-1.250	.125	-1.250	-1.250	.275	.323E+10	.349E+01	-.755E-14	-.154E+06	.0	.323E+10	-.246E+02
-1.250	-1.250	.125	-1.250	-1.250	.325	.300E+10	.258E+01	-.355E-14	-.115E+06	.118E-16	.300E+10	-.176E+03
-.750	-1.250	.125	-.750	-1.250	.025	.250E+11						
-.750	-1.250	.125	-.750	-1.250	.075	.270E+11						
-.750	-1.250	.125	-.750	-1.250	.125	.273E+11	.311E+03	-.351E-11	-.196E+07	.0	.273E+11	.316E+05
-.750	-1.250	.125	-.750	-1.250	.175	.264E+11	.144E+03	.384E-11	-.205E+07	-.235E-16	.264E+11	.123E+05
-.750	-1.250	.125	-.750	-1.250	.225	.250E+11	.760E+02	.689E-12	-.173E+07	.235E-16	.250E+11	.298E+04
-.750	-1.250	.125	-.750	-1.250	.275	.234E+11	.480E+02	.686E-12	-.133E+07	.0	.234E+11	-.678E+03
-.750	-1.250	.125	-.750	-1.250	.325	.217E+11	.347E+02	.313E-12	-.983E+06	-.235E-16	.217E+11	-.154E+04
-.250	-1.250	.125	-.250	-1.250	.025	.164E+12						
-.250	-1.250	.125	-.250	-1.250	.075	.177E+12						
-.250	-1.250	.125	-.250	-1.250	.125	.179E+12	.261E+04	-.138E-09	-.153E+08	.941E-16	.179E+12	.158E+06
-.250	-1.250	.125	-.250	-1.250	.175	.174E+12	.130E+04	-.901E-11	-.157E+08	.0	.174E+12	.592E+05
-.250	-1.250	.125	-.250	-1.250	.225	.164E+12	.751E+03	.138E-10	-.130E+08	.941E-16	.164E+12	.950E+04
-.250	-1.250	.125	-.250	-1.250	.275	.154E+12	.495E+03	.127E-10	-.984E+07	.0	.154E+12	-.834E+04
-.250	-1.250	.125	-.250	-1.250	.325	.143E+12	.355E+03	.135E-10	-.723E+07	.941E-16	.143E+12	-.109E+05
.250	-1.250	.125	.250	-1.250	.025	.551E+12						
.250	-1.250	.125	.250	-1.250	.075	.595E+12						
.250	-1.250	.125	.250	-1.250	.125	.602E+12	.904E+04	.462E-10	-.519E+08	-.941E-16	.602E+12	.535E+06
.250	-1.250	.125	.250	-1.250	.175	.583E+12	.445E+04	-.110E-09	-.533E+08	.282E-15	.584E+12	.196E+06
.250	-1.250	.125	.250	-1.250	.225	.552E+12	.251E+04	-.959E-10	-.439E+08	.0	.552E+12	.242E+05
.250	-1.250	.125	.250	-1.250	.275	.516E+12	.163E+04	-.608E-11	-.330E+08	.471E-16	.516E+12	-.361E+05
.250	-1.250	.125	.250	-1.250	.325	.479E+12	.115E+04	-.500E-11	-.240E+08	.471E-16	.479E+12	-.428E+05
.750	-1.250	.125	.750	-1.250	.025	.457E+12						
.750	-1.250	.125	.750	-1.250	.075	.493E+12						
.750	-1.250	.125	.750	-1.250	.125	.498E+12	.676E+04	-.167E-10	-.374E+08	.941E-16	.498E+12	.433E+06
.750	-1.250	.125	.750	-1.250	.175	.483E+12	.288E+04	-.178E-10	-.392E+08	.0	.483E+12	.181E+06
.750	-1.250	.125	.750	-1.250	.225	.457E+12	.127E+04	.277E-10	-.323E+08	.941E-16	.457E+12	.367E+05
.750	-1.250	.125	.750	-1.250	.275	.427E+12	.660E+03	.222E-10	-.241E+08	.941E-16	.427E+12	-.227E+05
.750	-1.250	.125	.750	-1.250	.325	.397E+12	.425E+03	.123E-10	-.172E+08	.0	.397E+12	-.363E+05
1.250	-1.250	.125	1.250	-1.250	.025	.589E+12						
1.250	-1.250	.125	1.250	-1.250	.075	.636E+12						
1.250	-1.250	.125	1.250	-1.250	.125	.643E+12	.574E+04	.460E-10	-.382E+08	-.941E-16	.643E+12	.297E+06
1.250	-1.250	.125	1.250	-1.250	.175	.624E+12	.235E+04	-.557E-11	-.405E+08	.471E-16	.624E+12	.128E+06
1.250	-1.250	.125	1.250	-1.250	.225	.590E+12	.934E+03	-.197E-10	-.341E+08	-.471E-16	.590E+12	.303E+05
1.250	-1.250	.125	1.250	-1.250	.275	.551E+12	.440E+03	-.227E-10	-.260E+08	-.235E-16	.551E+12	-.150E+05
1.250	-1.250	.125	1.250	-1.250	.325	.512E+12	.301E+03	-.159E-10	-.188E+08	.471E-16	.512E+12	-.281E+05
1.750	-1.250	.125	1.750	-1.250	.025	.245E+12						
1.750	-1.250	.125	1.750	-1.250	.075	.265E+12						
1.750	-1.250	.125	1.750	-1.250	.125	.268E+12	.205E+04	.208E-10	-.157E+08	-.471E-16	.268E+12	.715E+05
1.750	-1.250	.125	1.750	-1.250	.175	.260E+12	.110E+04	-.156E-10	-.164E+08	-.141E-15	.260E+12	.311E+05
1.750	-1.250	.125	1.750	-1.250	.225	.246E+12	.637E+03	-.112E-10	-.140E+08	-.471E-16	.246E+12	.727E+04
1.750	-1.250	.125	1.750	-1.250	.275	.230E+12	.425E+03	-.284E-11	-.110E+08	.0	.230E+12	-.451E+04
1.750	-1.250	.125	1.750	-1.250	.325	.213E+12	.328E+03	-.125E-11	-.813E+07	.235E-16	.213E+12	-.832E+04
-1.750	-.750	.125	-1.750	-.750	.025	.119E+10						
-1.750	-.750	.125	-1.750	-.750	.075	.129E+10						
-1.750	-.750	.125	-1.750	-.750	.125	.130E+10	.126E+02	-.117E-12	-.900E+05	.118E-16	.130E+10	.116E+04
-1.750	-.750	.125	-1.750	-.750	.175	.126E+10	.739E+01	-.301E-13	-.919E+05	.118E-16	.126E+10	.437E+03
-1.750	-.750	.125	-1.750	-.750	.225	.119E+10	.477E+01	-.699E-14	-.776E+05	-.235E-16	.119E+10	.754E+02
-1.750	-.750	.125	-1.750	-.750	.275	.111E+10	.341E+01	.331E-13	-.599E+05	.118E-16	.111E+10	-.717E+02
-1.750	-.750	.125	-1.750	-.750	.325	.103E+10	.262E+01	.533E-14	-.441E+05	.0	.103E+10	-.106E+03
-1.250	-.750	.125	-1.250	-.750	.025	.564E+10						
-1.250	-.750	.125	-1.250	-.750	.075	.609E+10						
-1.250	-.750	.125	-1.250	-.750	.125	.615E+10	.573E+02	-.895E-12	-.432E+06	.235E-16	.615E+10	.747E+04
-1.250	-.750	.125	-1.250	-.750	.175	.597E+10	.320E+02	.351E-12	-.458E+06	-.471E-16	.597E+10	.283E+04
-1.250	-.750	.125	-1.250	-.750	.225	.565E+10	.203E+02	.166E-12	-.391E+06	.0	.565E+10	.670E+03
-1.250	-.750	.125	-1.250	-.750	.275	.527E+10	.142E+02	.802E-13	-.303E+06	.353E-16	.527E+10	-.136E+03
-1.250	-.750	.125	-1.250	-.750	.325	.489E+10	.103E+02	.204E-12	-.225E+06	-.118E-16	.490E+10	-.319E+03
1.250	-.750	.125	1.250	-.750	.025	.232E+13						
1.250	-.750	.125	1.250	-.750	.075	.250E+13						
1.250	-.750	.125	1.250	-.750	.125	.253E+13	.275E+05	-.124E-10	-.188E+09	.188E-15	.253E+13	.132E+07
1.250	-.750	.125	1.250	-.750	.175	.245E+13	.139E+05	.653E-10	-.192E+09	.0	.245E+13	.516E+06
1.250	-.750	.125	1.250	-.750	.225	.232E+13	.792E+04	.112E-09	-.159E+09	.0	.232E+13	.862E+05
1.250	-.750	.125	1.250	-.750	.275	.217E+13	.518E+04	.146E-09	-.120E+09	.0	.217E+13	-.857E+05
1.250	-.750	.125	1.250	-.750	.325	.201E+13	.372E+04	.107E-09	-.879E+08	.941E-16	.201E+13	-.119E+06
1.750	-.750	.125	1.750	-.750	.025	.797E+12						
1.750	-.750	.125	1.750	-.750	.075	.861E+12						
1.750	-.750	.125	1.750	-.750	.125	.870E+12	.821E+04	.221E-10	-.600E+08	-.188E-15	.871E+12	.264E+06
1.750	-.750	.125	1.750	-.750	.175	.844E+12	.486E+04	-.254E-10	-.610E+08	.0	.844E+12	.113E+06
1.750	-.750	.125	1.750	-.750	.225	.799E+12	.313E+04	-.796E-10	-.515E+08	.0	.799E+12	.244E+05

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Table V.- Continued.

Y1	Y2	Y3	Z1	Z2	Z3	DP	DP0	DP1	DP3	DP5	DP7	DP8
1,750	-.750	.125	1,750	-.750	.275	.746E+12	.223E+04	-.686E-10	-.398E+08	-.941E-16	.746E+12	-.175E+05
1,750	-.750	.125	1,750	-.750	.325	.693E+12	.171E+04	-.487E-10	-.295E+08	.0	.693E+12	-.296E+05
-1,750	-.250	.125	-1,750	-.250	.025	.139E+10						
-1,750	-.250	.125	-1,750	-.250	.075	.150E+10						
-1,750	-.250	.125	-1,750	-.250	.125	.152E+10	.126E+02	-.517E-12	-.886E+05	.706E-16	.152E+10	.705E+03
-1,750	-.250	.125	-1,750	-.250	.175	.147E+10	.534E+01	.102E-12	-.944E+05	.0	.147E+10	.287E+03
-1,750	-.250	.125	-1,750	-.250	.225	.140E+10	.238E+01	.339E-12	-.804E+05	.0	.140E+10	.550E+02
-1,750	-.250	.125	-1,750	-.250	.275	.130E+10	.133E+01	.270E-12	-.619E+05	.0	.130E+10	-.449E+02
-1,750	-.250	.125	-1,750	-.250	.325	.121E+10	.977E+00	.163E-12	-.455E+05	.118E-16	.121E+10	-.707E+02
-1,250	-.250	.125	-1,250	-.250	.025	.590E+10						
-1,250	-.250	.125	-1,250	-.250	.075	.637E+10						
-1,250	-.250	.125	-1,250	-.250	.125	.644E+10	.852E+02	.163E-11	-.561E+06	.0	.644E+10	.555E+04
-1,250	-.250	.125	-1,250	-.250	.175	.625E+10	.477E+02	.198E-12	-.561E+06	.0	.625E+10	.190E+04
-1,250	-.250	.125	-1,250	-.250	.225	.591E+10	.302E+02	-.577E-14	-.459E+06	.235E-16	.591E+10	.196E+03
-1,250	-.250	.125	-1,250	-.250	.275	.552E+10	.208E+02	.267E-12	-.347E+06	.0	.552E+10	-.394E+03
-1,250	-.250	.125	-1,250	-.250	.325	.513E+10	.150E+02	-.135E-12	-.254E+06	.118E-16	.513E+10	-.407E+03
1,250	-.250	.125	1,250	-.250	.025	.146E+14						
1,250	-.250	.125	1,250	-.250	.075	.157E+14						
1,250	-.250	.125	1,250	-.250	.125	.159E+14	.216E+06	.509E-09	-.142E+10	.0	.159E+14	.990E+07
1,250	-.250	.125	1,250	-.250	.175	.154E+14	.123E+06	-.121E-08	-.141E+10	.376E-15	.154E+14	.337E+07
1,250	-.250	.125	1,250	-.250	.225	.146E+14	.796E+05	-.119E-08	-.115E+10	.376E-15	.146E+14	.309E+06
1,250	-.250	.125	1,250	-.250	.275	.136E+14	.549E+05	-.589E-09	-.861E+09	.941E-16	.136E+14	-.617E+06
1,250	-.250	.125	1,250	-.250	.325	.126E+14	.396E+05	-.110E-08	-.631E+09	.941E-16	.126E+14	-.743E+06
1,750	-.250	.125	1,750	-.250	.025	.294E+13						
1,750	-.250	.125	1,750	-.250	.075	.317E+13						
1,750	-.250	.125	1,750	-.250	.125	.321E+13	.269E+05	-.162E-09	-.193E+09	.0	.321E+13	.112E+07
1,750	-.250	.125	1,750	-.250	.175	.311E+13	.118E+05	.134E-09	-.203E+09	-.188E-15	.311E+13	.446E+06
1,750	-.250	.125	1,750	-.250	.225	.294E+13	.564E+04	.197E-09	-.172E+09	.0	.294E+13	.845E+05
1,750	-.250	.125	1,750	-.250	.275	.275E+13	.323E+04	.980E-10	-.131E+09	.0	.275E+13	-.672E+05
1,750	-.250	.125	1,750	-.250	.325	.255E+13	.233E+04	.118E-09	-.967E+08	.0	.255E+13	-.112E+06
-1,750	-1,750	.175	-1,750	-1,750	.025	.408E+09						
-1,750	-1,750	.175	-1,750	-1,750	.075	.441E+09						
-1,750	-1,750	.175	-1,750	-1,750	.125	.446E+09						
-1,750	-1,750	.175	-1,750	-1,750	.175	.432E+09	.311E+01	-.923E-14	-.224E+05	.588E-17	.432E+09	.368E+03
-1,750	-1,750	.175	-1,750	-1,750	.225	.409E+09	.162E+01	-.300E-14	-.198E+05	-.588E-17	.409E+09	.171E+03
-1,750	-1,750	.175	-1,750	-1,750	.275	.382E+09	.925E+00	.186E-14	-.158E+05	-.588E-17	.382E+09	.670E+02
-1,750	-1,750	.175	-1,750	-1,750	.325	.355E+09	.622E+00	.366E-14	-.120E+05	-.588E-17	.355E+09	.180E+02
-1,250	-1,750	.175	-1,250	-1,750	.025	.184E+10						
-1,250	-1,750	.175	-1,250	-1,750	.075	.199E+10						
-1,250	-1,750	.175	-1,250	-1,750	.125	.201E+10						
-1,250	-1,750	.175	-1,250	-1,750	.175	.195E+10	.165E+02	-.136E-13	-.124E+06	.118E-16	.195E+10	.128E+04
-1,250	-1,750	.175	-1,250	-1,750	.225	.185E+10	.935E+01	.728E-13	-.106E+06	.235E-16	.185E+10	.981E+03
-1,250	-1,750	.175	-1,250	-1,750	.275	.172E+10	.564E+01	.218E-13	-.826E+05	.0	.172E+10	.210E+03
-1,250	-1,750	.175	-1,250	-1,750	.325	.160E+10	.379E+01	.622E-14	-.616E+05	.0	.160E+10	.429E+02
-.750	-1,750	.175	-.750	-1,750	.025	.812E+10						
-.750	-1,750	.175	-.750	-1,750	.075	.877E+10						
-.750	-1,750	.175	-.750	-1,750	.125	.886E+10						
-.750	-1,750	.175	-.750	-1,750	.175	.860E+10	.967E+02	-.265E-12	-.634E+06	-.235E-16	.860E+10	.520E+04
-.750	-1,750	.175	-.750	-1,750	.225	.813E+10	.565E+02	-.315E-12	-.539E+06	.0	.814E+10	.237E+04
-.750	-1,750	.175	-.750	-1,750	.275	.760E+10	.352E+02	-.724E-13	-.418E+06	.0	.760E+10	.808E+03
-.750	-1,750	.175	-.750	-1,750	.325	.705E+10	.241E+02	-.266E-13	-.310E+06	.235E-16	.705E+10	.112E+03
-.250	-1,750	.175	-.250	-1,750	.025	.264E+11						
-.250	-1,750	.175	-.250	-1,750	.075	.285E+11						
-.250	-1,750	.175	-.250	-1,750	.125	.288E+11						
-.250	-1,750	.175	-.250	-1,750	.175	.279E+11	.254E+03	-.151E-10	-.182E+07	.0	.279E+11	.145E+05
-.250	-1,750	.175	-.250	-1,750	.225	.264E+11	.116E+03	.256E-11	-.156E+07	.0	.264E+11	.655E+04
-.250	-1,750	.175	-.250	-1,750	.275	.247E+11	.552E+02	.370E-12	-.120E+07	.0	.247E+11	.202E+04
-.250	-1,750	.175	-.250	-1,750	.325	.229E+11	.307E+02	.160E-11	-.878E+06	.235E-16	.229E+11	.261E+02
.250	-1,750	.175	.250	-1,750	.025	.625E+11						
.250	-1,750	.175	.250	-1,750	.075	.675E+11						
.250	-1,750	.175	.250	-1,750	.125	.682E+11						
.250	-1,750	.175	.250	-1,750	.175	.662E+11	.619E+03	-.274E-11	-.434E+07	.0	.662E+11	.353E+05
.250	-1,750	.175	.250	-1,750	.225	.626E+11	.281E+03	.582E-12	-.373E+07	-.471E-16	.626E+11	.156E+05
.250	-1,750	.175	.250	-1,750	.275	.585E+11	.131E+03	-.379E-11	-.286E+07	-.471E-16	.585E+11	.444E+04
.250	-1,750	.175	.250	-1,750	.325	.543E+11	.709E+02	.154E-11	-.207E+07	.0	.543E+11	-.370E+03
.750	-1,750	.175	.750	-1,750	.025	.748E+11						
.750	-1,750	.175	.750	-1,750	.075	.808E+11						
.750	-1,750	.175	.750	-1,750	.125	.817E+11						
.750	-1,750	.175	.750	-1,750	.175	.792E+11	.110E+04	-.198E-10	-.605E+07	.0	.792E+11	.556E+05
.750	-1,750	.175	.750	-1,750	.225	.750E+11	.580E+03	-.415E-11	-.515E+07	.0	.750E+11	.258E+05
.750	-1,750	.175	.750	-1,750	.275	.700E+11	.318E+03	.125E-11	-.392E+07	.0	.700E+11	.821E+04
.750	-1,750	.175	.750	-1,750	.325	.650E+11	.195E+03	.160E-11	-.280E+07	.471E-16	.650E+11	-.135E+03
1,250	-1,750	.175	1,250	-1,750	.025	.793E+11						
1,250	-1,750	.175	1,250	-1,750	.075	.857E+11						
1,250	-1,750	.175	1,250	-1,750	.125	.866E+11						
1,250	-1,750	.175	1,250	-1,750	.175	.840E+11	.835E+03	-.997E-11	-.546E+07	.706E-16	.840E+11	.373E+05
1,250	-1,750	.175	1,250	-1,750	.225	.795E+11	.440E+03	-.255E-11	-.469E+07	.471E-16	.795E+11	.179E+05
1,250	-1,750	.175	1,250	-1,750	.275	.742E+11	.238E+03	.115E-11	-.362E+07	.235E-16	.742E+11	.615E+04
1,250	-1,750	.175	1,250	-1,750	.325	.689E+11	.145E+03	.249E-11	-.263E+07	-.235E-16	.689E+11	.344E+03
1,750	-1,750	.175	1,750	-1,750	.025	.842E+11						
1,750	-1,750	.175	1,750	-1,750	.075	.909E+11						
1,750	-1,750	.175	1,750	-1,750	.125	.919E+11						
1,750	-1,750	.175	1,750	-1,750	.175	.891E+11	.880E+03	-.371E-11	-.927E+07	.235E-16	.891E+11	.399E+05
1,750	-1,750	.175	1,750	-1,750	.225	.843E+11	.392E+03	.615E-12	-.454E+07	-.235E-16	.843E+11	.206E+05
1,750	-1,750	.175	1,750	-1,750	.275	.788E+11	.161E+03	.149E-11	-.351E+07	.0	.788E+11	.781E+04
1,750	-1,750	.175	1,750	-1,750	.325	.731E+11	.745E+02	.159E-11	-.250E+07	-.118E-16	.731E+11	.132E+04
-1,750	-1,250	.175	-1,750	-1,250	.025	.879E+09						
-1,750	-1,250	.175	-1,750	-1,250	.075	.949E+09						
-1,750	-1,250	.175	-1,750	-1,250	.125	.959E+09						
-1,750	-1,250	.175	-1,750	-1,250	.175	.930E+09	.789E+01	.190E-13	-.593E+05	-.118E-16	.930E+09	.763E+03
-1,750	-1,250	.175	-1,750	-1,250	.225	.880E+09	.455E+01	.175E-13	-.506E+05	.118E-16	.880E+09	.314E+03
-1,750	-1,250	.175	-1,750	-1,250	.275	.822E+09	.274E+01	-.221E-14	-.392E+05	.118E-16	.822E+09	.839E+02
-1,750	-1,250	.175	-1,750	-1,250	.325	.763E+09	.183E+01	-.999E-14	-.288E+05	.176E-16	.763E+09	-.127E+02
-1,250	-1,250	.175	-1,250	-1,250	.025	.335E+10						
-1,250	-1,250	.175	-1,250	-1,250	.075	.362E+10						

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Table V.- Continued.

Y1	Y2	Y3	Z1	Z2	Z3	DP	DP0	DP1	DP3	DP5	DP7	DP8
-1.250	-1.250	.175	-1.250	-1.250	.125	.366E+10						
-1.250	-1.250	.175	-1.250	-1.250	.175	.354E+10	.264E+02	-.778E-13	-.223E+06	.118E-16	.355E+10	.322E+04
-1.250	-1.250	.175	-1.250	-1.250	.225	.335E+10	.136E+02	-.450E-14	-.191E+06	-.118E-16	.336E+10	.138E+04
-1.250	-1.250	.175	-1.250	-1.250	.275	.313E+10	.759E+01	.216E-13	-.149E+06	.0	.313E+10	.465E+03
-1.250	-1.250	.175	-1.250	-1.250	.325	.291E+10	.480E+01	.235E-13	-.111E+06	.118E-16	.291E+10	.809E+02
-.750	-1.250	.175	-.750	-1.250	.025	.242E+11						
-.750	-1.250	.175	-.750	-1.250	.075	.261E+11						
-.750	-1.250	.175	-.750	-1.250	.125	.264E+11						
-.750	-1.250	.175	-.750	-1.250	.175	.256E+11	.263E+03	-.347E-12	-.199E+07	-.235E-16	.256E+11	.830E+05
-.750	-1.250	.175	-.750	-1.250	.225	.242E+11	.146E+03	-.460E-12	-.168E+07	.235E-16	.243E+11	.927E+04
-.750	-1.250	.175	-.750	-1.250	.275	.226E+11	.886E+02	-.584E-12	-.129E+07	.0	.227E+11	.270E+04
-.750	-1.250	.175	-.750	-1.250	.325	.210E+11	.591E+02	-.519E-12	-.953E+06	-.235E-16	.210E+11	.190E+03
-.250	-1.250	.175	-.250	-1.250	.025	.159E+12						
-.250	-1.250	.175	-.250	-1.250	.075	.172E+12						
-.250	-1.250	.175	-.250	-1.250	.125	.174E+12						
-.250	-1.250	.175	-.250	-1.250	.175	.168E+12	.213E+04	.132E-10	-.152E+08	.0	.168E+12	.118E+06
-.250	-1.250	.175	-.250	-1.250	.225	.159E+12	.126E+04	.233E-10	-.126E+08	.941E-16	.159E+12	.432E+05
-.250	-1.250	.175	-.250	-1.250	.275	.149E+12	.815E+03	-.107E-10	-.954E+07	.0	.149E+12	.930E+04
-.250	-1.250	.175	-.250	-1.250	.325	.138E+12	.560E+03	-.315E-11	-.701E+07	.941E-16	.138E+12	-.204E+04
.250	-1.250	.175	.250	-1.250	.025	.535E+12						
.250	-1.250	.175	.250	-1.250	.075	.577E+12						
.250	-1.250	.175	.250	-1.250	.125	.583E+12						
.250	-1.250	.175	.250	-1.250	.175	.566E+12	.733E+04	-.774E-10	-.517E+08	.282E-15	.566E+12	.398E+06
.250	-1.250	.175	.250	-1.250	.225	.535E+12	.432E+04	-.733E-11	-.425E+08	.0	.535E+12	.141E+06
.250	-1.250	.175	.250	-1.250	.275	.500E+12	.275E+04	-.131E-10	-.320E+08	.471E-16	.500E+12	.248E+05
.250	-1.250	.175	.250	-1.250	.325	.464E+12	.187E+04	.275E-10	-.233E+08	.471E-16	.464E+12	-.122E+05
.750	-1.250	.175	.750	-1.250	.025	.443E+12						
.750	-1.250	.175	.750	-1.250	.075	.478E+12						
.750	-1.250	.175	.750	-1.250	.125	.483E+12						
.750	-1.250	.175	.750	-1.250	.175	.469E+12	.566E+04	-.298E-11	-.380E+08	.0	.469E+12	.383E+06
.750	-1.250	.175	.750	-1.250	.225	.443E+12	.287E+04	.142E-11	-.314E+08	.941E-16	.444E+12	.156E+06
.750	-1.250	.175	.750	-1.250	.275	.414E+12	.156E+04	-.731E-11	-.233E+08	.941E-16	.414E+12	.396E+05
.750	-1.250	.175	.750	-1.250	.325	.385E+12	.941E+03	-.124E-10	-.167E+08	.0	.385E+12	-.641E+04
1.250	-1.250	.175	1.250	-1.250	.025	.571E+12						
1.250	-1.250	.175	1.250	-1.250	.075	.617E+12						
1.250	-1.250	.175	1.250	-1.250	.125	.624E+12						
1.250	-1.250	.175	1.250	-1.250	.175	.605E+12	.506E+04	-.260E-10	-.392E+08	.471E-16	.605E+12	.291E+06
1.250	-1.250	.175	1.250	-1.250	.225	.572E+12	.244E+04	-.841E-11	-.331E+08	-.471E-16	.572E+12	.131E+06
1.250	-1.250	.175	1.250	-1.250	.275	.534E+12	.122E+04	.728E-11	-.252E+08	-.235E-16	.534E+12	.405E+05
1.250	-1.250	.175	1.250	-1.250	.325	.496E+12	.701E+03	.914E-11	-.182E+08	.471E-16	.496E+12	.849E+02
1.750	-1.250	.175	1.750	-1.250	.025	.238E+12						
1.750	-1.250	.175	1.750	-1.250	.075	.257E+12						
1.750	-1.250	.175	1.750	-1.250	.125	.260E+12						
1.750	-1.250	.175	1.750	-1.250	.175	.252E+12	.213E+04	.379E-10	-.159E+08	-.141E-15	.252E+12	.760E+05
1.750	-1.250	.175	1.750	-1.250	.225	.238E+12	.120E+04	.333E-11	-.136E+08	-.471E-16	.238E+12	.362E+05
1.750	-1.250	.175	1.750	-1.250	.275	.223E+12	.712E+03	-.105E-10	-.106E+08	.0	.223E+12	.123E+05
1.750	-1.250	.175	1.750	-1.250	.325	.207E+12	.469E+03	-.840E-11	-.788E+07	.235E-16	.207E+12	.767E+03
-1.750	-.750	.175	-1.750	-.750	.025	.115E+10						
-1.750	-.750	.175	-1.750	-.750	.075	.125E+10						
-1.750	-.750	.175	-1.750	-.750	.125	.126E+10						
-1.750	-.750	.175	-1.750	-.750	.175	.122E+10	.127E+02	-.136E-13	-.891E+05	.118E-16	.122E+10	.931E+03
-1.750	-.750	.175	-1.750	-.750	.225	.116E+10	.773E+01	.326E-13	-.753E+05	-.235E-16	.116E+10	.375E+03
-1.750	-.750	.175	-1.750	-.750	.275	.108E+10	.498E+01	-.361E-15	-.581E+05	.118E-16	.108E+10	.951E+02
-1.750	-.750	.175	-1.750	-.750	.325	.100E+10	.345E+01	.142E-13	-.428E+05	.0	.100E+10	-.188E+02
-1.250	-.750	.175	-1.250	-.750	.025	.547E+10						
-1.250	-.750	.175	-1.250	-.750	.075	.590E+10						
-1.250	-.750	.175	-1.250	-.750	.125	.597E+10						
-1.250	-.750	.175	-1.250	-.750	.175	.578E+10	.510E+02	.228E-12	-.444E+06	-.471E-16	.579E+10	.493E+04
-1.250	-.750	.175	-1.250	-.750	.225	.547E+10	.316E+02	.207E-12	-.379E+06	.0	.548E+10	.191E+04
-1.250	-.750	.175	-1.250	-.750	.275	.511E+10	.209E+02	-.574E-13	-.294E+06	.353E-16	.511E+10	.548E+03
-1.250	-.750	.175	-1.250	-.750	.325	.475E+10	.145E+02	-.919E-13	-.218E+06	-.118E-16	.475E+10	.403E+02
1.250	-.750	.175	1.250	-.750	.025	.225E+13						
1.250	-.750	.175	1.250	-.750	.075	.243E+13						
1.250	-.750	.175	1.250	-.750	.125	.245E+13						
1.250	-.750	.175	1.250	-.750	.175	.238E+13	.231E+05	-.258E-09	-.186E+09	.0	.238E+13	.113E+07
1.250	-.750	.175	1.250	-.750	.225	.225E+13	.133E+05	.151E-10	-.154E+09	.0	.225E+13	.455E+06
1.250	-.750	.175	1.250	-.750	.275	.210E+13	.828E+04	.287E-10	-.117E+09	.0	.210E+13	.113E+06
1.250	-.750	.175	1.250	-.750	.325	.195E+13	.555E+04	.248E-10	-.853E+08	.941E-16	.195E+13	-.177E+05
1.750	-.750	.175	1.750	-.750	.025	.773E+12						
1.750	-.750	.175	1.750	-.750	.075	.835E+12						
1.750	-.750	.175	1.750	-.750	.125	.844E+12						
1.750	-.750	.175	1.750	-.750	.175	.819E+12	.830E+04	-.110E-09	-.591E+08	.0	.819E+12	.275E+06
1.750	-.750	.175	1.750	-.750	.225	.775E+12	.504E+04	-.456E-11	-.499E+08	.0	.775E+12	.126E+06
1.750	-.750	.175	1.750	-.750	.275	.723E+12	.323E+04	.113E-10	-.386E+08	-.941E-16	.724E+12	.404E+05
1.750	-.750	.175	1.750	-.750	.325	.672E+12	.223E+04	-.293E-11	-.286E+08	.0	.672E+12	.851E+03
-1.750	-.250	.175	-1.750	-.250	.025	.135E+10						
-1.750	-.250	.175	-1.750	-.250	.075	.146E+10						
-1.750	-.250	.175	-1.750	-.250	.125	.147E+10						
-1.750	-.250	.175	-1.750	-.250	.175	.143E+10	.112E+02	-.257E-14	-.915E+05	.0	.143E+10	.644E+03
-1.750	-.250	.175	-1.750	-.250	.225	.135E+10	.564E+01	.111E-12	-.780E+05	.0	.135E+10	.272E+03
-1.750	-.250	.175	-1.750	-.250	.275	.126E+10	.306E+01	.148E-12	-.601E+05	.0	.126E+10	.727E+02
-1.750	-.250	.175	-1.750	-.250	.325	.117E+10	.189E+01	-.516E-13	-.441E+05	.118E-16	.117E+10	-.116E+02
-1.250	-.250	.175	-1.250	-.250	.025	.572E+10						
-1.250	-.250	.175	-1.250	-.250	.075	.618E+10						
-1.250	-.250	.175	-1.250	-.250	.125	.625E+10						
-1.250	-.250	.175	-1.250	-.250	.175	.606E+10	.696E+02	-.332E-12	-.544E+06	.0	.606E+10	.371E+04
-1.250	-.250	.175	-1.250	-.250	.225	.573E+10	.439E+02	.578E-12	-.445E+06	.235E-16	.573E+10	.126E+04
-1.250	-.250	.175	-1.250	-.250	.275	.535E+10	.294E+02	-.276E-12	-.336E+06	.0	.535E+10	.226E+03
-1.250	-.250	.175	-1.250	-.250	.325	.497E+10	.205E+02	-.124E-13	-.246E+06	.118E-16	.497E+10	-.103E+03
1.250	-.250	.175	1.250	-.250	.025	.141E+14						
1.250	-.250	.175	1.250	-.250	.075	.152E+14						
1.250	-.250	.175	1.250	-.250	.125	.154E+14						
1.250	-.250	.175	1.250	-.250	.175	.149E+14	.173E+06	.477E-09	-.136E+10	.376E-15	.149E+14	.668E+07
1.250	-.250	.175	1.250	-.250	.225	.141E+14	.113E+06	-.132E-08	-.112E+10	.376E-15	.141E+14	.240E+07
1.250	-.250	.175	1.250	-.250	.275	.132E+14	.773E+05	-.986E-09	-.835E+09	.941E-16	.132E+14	.613E+06

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Table V.- Continued.

Y1	Y2	Y3	Z1	Z2	Z3	DP	DP0	DP1	DP3	DP5	DP7	DP8
1.250	-.250	.175	1.250	-.250	.325	.123E+14	.546E+05	-.682E-11	-.612E+09	.941E-16	.123E+14	-.424E+05
1.750	-.250	.175	1.750	-.250	.025	.285E+13						
1.750	-.250	.175	1.750	-.250	.075	.308E+13						
1.750	-.250	.175	1.750	-.250	.125	.311E+13						
1.750	-.250	.175	1.750	-.250	.175	.302E+13	.232E+05	-.655E-10	-.197E+09	-.188E-15	.302E+13	.101E+07
1.750	-.250	.175	1.750	-.250	.225	.285E+13	.124E+05	.339E-10	-.167E+09	.0	.285E+13	.446E+06
1.750	-.250	.175	1.750	-.250	.275	.267E+13	.717E+04	-.269E-10	-.127E+09	.0	.267E+13	.148E+06
1.750	-.250	.175	1.750	-.250	.325	.247E+13	.464E+04	.130E-10	-.938E+08	.0	.248E+13	.106E+05
-1.750	-1.750	.225	-1.750	-1.750	.025	.386E+09						
-1.750	-1.750	.225	-1.750	-1.750	.075	.417E+09						
-1.750	-1.750	.225	-1.750	-1.750	.125	.422E+09						
-1.750	-1.750	.225	-1.750	-1.750	.175	.409E+09						
-1.750	-1.750	.225	-1.750	-1.750	.225	.387E+09	.264E+01	.944E-14	-.187E+05	-.588E-17	.387E+09	.295E+03
-1.750	-1.750	.225	-1.750	-1.750	.275	.361E+09	.145E+01	.150E-14	-.149E+05	-.588E-17	.361E+09	.140E+03
-1.750	-1.750	.225	-1.750	-1.750	.325	.335E+09	.880E+00	-.133E-14	-.114E+05	-.588E-17	.336E+09	.596E+02
-1.250	-1.750	.225	-1.250	-1.750	.025	.174E+10						
-1.250	-1.750	.225	-1.250	-1.750	.075	.188E+10						
-1.250	-1.750	.225	-1.250	-1.750	.125	.190E+10						
-1.250	-1.750	.225	-1.250	-1.750	.175	.185E+10						
-1.250	-1.750	.225	-1.250	-1.750	.225	.175E+10	.131E+02	-.204E-12	-.100E+06	.235E-16	.175E+10	.108E+04
-1.250	-1.750	.225	-1.250	-1.750	.275	.163E+10	.750E+01	-.431E-13	-.782E+05	.0	.163E+10	.512E+03
-1.250	-1.750	.225	-1.250	-1.750	.325	.151E+10	.461E+01	.107E-13	-.583E+05	.0	.151E+10	.217E+03
-.750	-1.750	.225	-.750	-1.750	.025	.768E+10						
-.750	-1.750	.225	-.750	-1.750	.075	.830E+10						
-.750	-1.750	.225	-.750	-1.750	.125	.839E+10						
-.750	-1.750	.225	-.750	-1.750	.175	.813E+10						
-.750	-1.750	.225	-.750	-1.750	.225	.770E+10	.756E+02	.441E-12	-.510E+06	.0	.770E+10	.455E+04
-.750	-1.750	.225	-.750	-1.750	.275	.719E+10	.446E+02	.353E-12	-.395E+06	.0	.719E+10	.212E+04
-.750	-1.750	.225	-.750	-1.750	.325	.667E+10	.282E+02	.213E-13	-.293E+06	.235E-16	.667E+10	.855E+03
-.250	-1.750	.225	-.250	-1.750	.025	.250E+11						
-.250	-1.750	.225	-.250	-1.750	.075	.270E+11						
-.250	-1.750	.225	-.250	-1.750	.125	.273E+11						
-.250	-1.750	.225	-.250	-1.750	.175	.264E+11						
-.250	-1.750	.225	-.250	-1.750	.225	.250E+11	.191E+03	.665E-11	-.148E+07	.0	.250E+11	.131E+05
-.250	-1.750	.225	-.250	-1.750	.275	.234E+11	.957E+02	.131E-11	-.114E+07	.0	.234E+11	.591E+04
-.250	-1.750	.225	-.250	-1.750	.325	.217E+11	.520E+02	-.284E-12	-.831E+06	.235E-16	.217E+11	.220E+04
.250	-1.750	.225	.250	-1.750	.025	.591E+11						
.250	-1.750	.225	.250	-1.750	.075	.639E+11						
.250	-1.750	.225	.250	-1.750	.125	.646E+11						
.250	-1.750	.225	.250	-1.750	.175	.626E+11						
.250	-1.750	.225	.250	-1.750	.225	.592E+11	.465E+03	-.703E-11	-.353E+07	-.471E-16	.592E+11	.316E+05
.250	-1.750	.225	.250	-1.750	.275	.553E+11	.231E+03	-.122E-11	-.271E+07	-.471E-16	.553E+11	.140E+05
.250	-1.750	.225	.250	-1.750	.325	.514E+11	.124E+03	-.171E-11	-.196E+07	.0	.514E+11	.493E+04
.750	-1.750	.225	.750	-1.750	.025	.708E+11						
.750	-1.750	.225	.750	-1.750	.075	.765E+11						
.750	-1.750	.225	.750	-1.750	.125	.773E+11						
.750	-1.750	.225	.750	-1.750	.175	.750E+11						
.750	-1.750	.225	.750	-1.750	.225	.709E+11	.874E+03	.790E-11	-.488E+07	.0	.709E+11	.520E+05
.750	-1.750	.225	.750	-1.750	.275	.663E+11	.471E+03	.735E-11	-.371E+07	.0	.663E+11	.242E+05
.750	-1.750	.225	.750	-1.750	.325	.615E+11	.270E+03	-.261E-11	-.265E+07	.471E-16	.615E+11	.874E+04
1.250	-1.750	.225	1.250	-1.750	.025	.751E+11						
1.250	-1.750	.225	1.250	-1.750	.075	.811E+11						
1.250	-1.750	.225	1.250	-1.750	.125	.820E+11						
1.250	-1.750	.225	1.250	-1.750	.175	.795E+11						
1.250	-1.750	.225	1.250	-1.750	.225	.752E+11	.681E+03	-.622E-11	-.444E+07	.471E-16	.752E+11	.373E+05
1.250	-1.750	.225	1.250	-1.750	.275	.702E+11	.361E+03	-.115E-11	-.342E+07	.235E-16	.702E+11	.183E+05
1.250	-1.750	.225	1.250	-1.750	.325	.652E+11	.202E+03	.0	-.249E+07	-.235E-16	.652E+11	.740E+04
1.750	-1.750	.225	1.750	-1.750	.025	.797E+11						
1.750	-1.750	.225	1.750	-1.750	.075	.860E+11						
1.750	-1.750	.225	1.750	-1.750	.125	.870E+11						
1.750	-1.750	.225	1.750	-1.750	.175	.843E+11						
1.750	-1.750	.225	1.750	-1.750	.225	.798E+11	.753E+03	.760E-11	-.429E+07	-.235E-16	.798E+11	.448E+05
1.750	-1.750	.225	1.750	-1.750	.275	.745E+11	.337E+03	.711E-12	-.332E+07	.0	.745E+11	.229E+05
1.750	-1.750	.225	1.750	-1.750	.325	.692E+11	.148E+03	-.114E-11	-.237E+07	-.118E-16	.692E+11	.996E+04
-1.750	-1.250	.225	-1.750	-1.250	.025	.831E+09						
-1.750	-1.250	.225	-1.750	-1.250	.075	.898E+09						
-1.750	-1.250	.225	-1.750	-1.250	.125	.908E+09						
-1.750	-1.250	.225	-1.750	-1.250	.175	.880E+09						
-1.750	-1.250	.225	-1.750	-1.250	.225	.833E+09	.633E+01	-.170E-13	-.479E+05	.118E-16	.833E+09	.609E+03
-1.750	-1.250	.225	-1.750	-1.250	.275	.778E+09	.363E+01	-.477E-14	-.371E+05	.118E-16	.778E+09	.263E+03
-1.750	-1.250	.225	-1.750	-1.250	.325	.722E+09	.222E+01	.133E-14	-.272E+05	.176E-16	.722E+09	.890E+02
-1.250	-1.250	.225	-1.250	-1.250	.025	.317E+10						
-1.250	-1.250	.225	-1.250	-1.250	.075	.342E+10						
-1.250	-1.250	.225	-1.250	-1.250	.125	.346E+10						
-1.250	-1.250	.225	-1.250	-1.250	.175	.335E+10						
-1.250	-1.250	.225	-1.250	-1.250	.225	.317E+10	.194E+02	.088E-13	-.181E+06	-.118E-16	.317E+10	.230E+04
-1.250	-1.250	.225	-1.250	-1.250	.275	.297E+10	.108E+02	.120E-13	-.141E+06	.0	.297E+10	.101E+04
-1.250	-1.250	.225	-1.250	-1.250	.325	.275E+10	.651E+01	-.124E-13	-.105E+06	.118E-16	.275E+10	.385E+03
-.750	-1.250	.225	-.750	-1.250	.025	.229E+11						
-.750	-1.250	.225	-.750	-1.250	.075	.247E+11						
-.750	-1.250	.225	-.750	-1.250	.125	.250E+11						
-.750	-1.250	.225	-.750	-1.250	.175	.242E+11						
-.750	-1.250	.225	-.750	-1.250	.225	.229E+11	.183E+03	.153E-11	-.159E+07	.235E-16	.230E+11	.151E+05
-.750	-1.250	.225	-.750	-1.250	.275	.214E+11	.110E+03	-.286E-12	-.122E+07	.0	.214E+11	.612E+04
-.750	-1.250	.225	-.750	-1.250	.325	.199E+11	.714E+02	-.114E-12	-.902E+06	-.235E-16	.199E+11	.208E+04
-.250	-1.250	.225	-.250	-1.250	.025	.151E+12						
-.250	-1.250	.225	-.250	-1.250	.075	.163E+12						
-.250	-1.250	.225	-.250	-1.250	.125	.164E+12						
-.250	-1.250	.225	-.250	-1.250	.175	.159E+12						
-.250	-1.250	.225	-.250	-1.250	.225	.151E+12	.142E+04	-.147E-10	-.119E+08	.941E-16	.151E+12	.712E+05
-.250	-1.250	.225	-.250	-1.250	.275	.141E+12	.913E+03	-.140E-10	-.903E+07	.0	.141E+12	.259E+05
-.250	-1.250	.225	-.250	-1.250	.325	.131E+12	.620E+03	-.466E-11	-.663E+07	.941E-16	.131E+12	.724E+04
.250	-1.250	.225	.250	-1.250	.025	.506E+12						
.250	-1.250	.225	.250	-1.250	.075	.546E+12						
.250	-1.250	.225	.250	-1.250	.125	.552E+12						

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Table V.- Continued.

Y1	Y2	Y3	Z1	Z2	Z3	DP	DP0	DP1	DP3	DP5	DP7	DP8
.250	-1.250	.225	.250	-1.250	.175	.535E+12						
.250	-1.250	.225	.250	-1.250	.225	.507E+12	.448E+04	-.362E-10	-.403E+08	.0	.507E+12	.239E+06
.250	-1.250	.225	.250	-1.250	.275	.473E+12	.311E+04	-.833E-11	-.303E+08	.471E-16	.473E+12	.829E+05
.250	-1.250	.225	.250	-1.250	.325	.439E+12	.209E+04	-.167E-10	-.220E+08	.471E-16	.439E+12	.203E+05
.750	-1.250	.225	.750	-1.250	.025	.419E+12						
.750	-1.250	.225	.750	-1.250	.075	.452E+12						
.750	-1.250	.225	.750	-1.250	.125	.457E+12						
.750	-1.250	.225	.750	-1.250	.175	.443E+12						
.750	-1.250	.225	.750	-1.250	.225	.420E+12	.385E+04	-.390E-10	-.297E+08	.941E-16	.420E+12	.273E+06
.750	-1.250	.225	.750	-1.250	.275	.392E+12	.214E+04	-.338E-11	-.221E+08	.941E-16	.392E+12	.108E+06
.750	-1.250	.225	.750	-1.250	.325	.364E+12	.129E+04	.273E-11	-.158E+08	.0	.364E+12	.305E+05
1.250	-1.250	.225	1.250	-1.250	.025	.541E+12						
1.250	-1.250	.225	1.250	-1.250	.075	.584E+12						
1.250	-1.250	.225	1.250	-1.250	.125	.590E+12						
1.250	-1.250	.225	1.250	-1.250	.175	.572E+12						
1.250	-1.250	.225	1.250	-1.250	.225	.541E+12	.375E+04	.172E-10	-.313E+08	-.471E-16	.542E+12	.257E+06
1.250	-1.250	.225	1.250	-1.250	.275	.506E+12	.192E+04	.603E-11	-.238E+08	-.235E-16	.506E+12	.116E+06
1.250	-1.250	.225	1.250	-1.250	.325	.469E+12	.106E+04	.136E-11	-.173E+08	.471E-16	.470E+12	.423E+05
1.750	-1.250	.225	1.750	-1.250	.025	.225E+12						
1.750	-1.250	.225	1.750	-1.250	.075	.243E+12						
1.750	-1.250	.225	1.750	-1.250	.125	.246E+12						
1.750	-1.250	.225	1.750	-1.250	.175	.238E+12						
1.750	-1.250	.225	1.750	-1.250	.225	.226E+12	.172E+04	.158E-10	-.129E+08	-.471E-16	.226E+12	.783E+05
1.750	-1.250	.225	1.750	-1.250	.275	.211E+12	.967E+03	.392E-11	-.101E+08	.0	.211E+12	.388E+05
1.750	-1.250	.225	1.750	-1.250	.325	.196E+12	.578E+03	-.227E-11	-.746E+07	.235E-16	.196E+12	.164E+05
-1.750	-.750	.225	-1.750	-.750	.025	.109E+10						
-1.750	-.750	.225	-1.750	-.750	.075	.118E+10						
-1.750	-.750	.225	-1.750	-.750	.125	.119E+10						
-1.750	-.750	.225	-1.750	-.750	.175	.116E+10						
-1.750	-.750	.225	-1.750	-.750	.225	.109E+10	.974E+01	-.149E-12	-.712E+05	-.235E-16	.109E+10	.708E+03
-1.750	-.750	.225	-1.750	-.750	.275	.102E+10	.596E+01	.249E-13	-.549E+05	.118E-16	.102E+10	.295E+03
-1.750	-.750	.225	-1.750	-.750	.325	.949E+09	.387E+01	.484E-13	-.405E+05	.0	.949E+09	.936E+02
-1.250	-.750	.225	-1.250	-.750	.025	.517E+10						
-1.250	-.750	.225	-1.250	-.750	.075	.559E+10						
-1.250	-.750	.225	-1.250	-.750	.125	.565E+10						
-1.250	-.750	.225	-1.250	-.750	.175	.547E+10						
-1.250	-.750	.225	-1.250	-.750	.225	.518E+10	.358E+02	-.246E-13	-.359E+06	.0	.518E+10	.288E+04
-1.250	-.750	.225	-1.250	-.750	.275	.484E+10	.232E+02	-.844E-14	-.278E+06	.353E-16	.484E+10	.113E+04
-1.250	-.750	.225	-1.250	-.750	.325	.449E+10	.158E+02	.711E-14	-.206E+06	-.118E-16	.449E+10	.373E+03
1.250	-.750	.225	1.250	-.750	.025	.213E+13						
1.250	-.750	.225	1.250	-.750	.075	.230E+13						
1.250	-.750	.225	1.250	-.750	.125	.232E+13						
1.250	-.750	.225	1.250	-.750	.175	.225E+13						
1.250	-.750	.225	1.250	-.750	.225	.213E+13	.159E+05	.172E-09	-.146E+09	.0	.213E+13	.837E+06
1.250	-.750	.225	1.250	-.750	.275	.199E+13	.967E+04	-.124E-09	-.110E+09	.0	.199E+13	.336E+06
1.250	-.750	.225	1.250	-.750	.325	.185E+13	.627E+04	-.337E-10	-.807E+08	.941E-16	.185E+13	.105E+06
1.750	-.750	.225	1.750	-.750	.025	.732E+12						
1.750	-.750	.225	1.750	-.750	.075	.790E+12						
1.750	-.750	.225	1.750	-.750	.125	.799E+12						
1.750	-.750	.225	1.750	-.750	.175	.775E+12						
1.750	-.750	.225	1.750	-.750	.225	.733E+12	.645E+04	-.874E-10	-.473E+08	.0	.733E+12	.267E+06
1.750	-.750	.225	1.750	-.750	.275	.685E+12	.388E+04	.147E-10	-.366E+08	-.941E-16	.685E+12	.127E+06
1.750	-.750	.225	1.750	-.750	.325	.636E+12	.249E+04	.346E-10	-.271E+08	.0	.636E+12	.503E+05
-1.750	-.250	.225	-1.750	-.250	.025	.128E+10						
-1.750	-.250	.225	-1.750	-.250	.075	.138E+10						
-1.750	-.250	.225	-1.750	-.250	.125	.140E+10						
-1.750	-.250	.225	-1.750	-.250	.175	.135E+10						
-1.750	-.250	.225	-1.750	-.250	.225	.128E+10	.820E+01	-.253E-12	-.738E+05	.0	.128E+10	.527E+03
-1.750	-.250	.225	-1.750	-.250	.275	.120E+10	.446E+01	-.518E-13	-.568E+05	.0	.120E+10	.225E+03
-1.750	-.250	.225	-1.750	-.250	.325	.111E+10	.263E+01	.107E-13	-.418E+05	.118E-16	.111E+10	.732E+02
-1.250	-.250	.225	-1.250	-.250	.025	.542E+10						
-1.250	-.250	.225	-1.250	-.250	.075	.585E+10						
-1.250	-.250	.225	-1.250	-.250	.125	.591E+10						
-1.250	-.250	.225	-1.250	-.250	.175	.573E+10						
-1.250	-.250	.225	-1.250	-.250	.225	.542E+10	.460E+02	-.369E-12	-.422E+06	.235E-16	.543E+10	.203E+04
-1.250	-.250	.225	-1.250	-.250	.275	.507E+10	.307E+02	.675E-13	-.318E+06	.0	.507E+10	.707E+03
-1.250	-.250	.225	-1.250	-.250	.325	.470E+10	.213E+02	-.266E-14	-.233E+06	.118E-16	.470E+10	.180E+03
1.250	-.250	.225	1.250	-.250	.025	.134E+14						
1.250	-.250	.225	1.250	-.250	.075	.144E+14						
1.250	-.250	.225	1.250	-.250	.125	.146E+14						
1.250	-.250	.225	1.250	-.250	.175	.141E+14						
1.250	-.250	.225	1.250	-.250	.225	.134E+14	.117E+06	-.238E-08	-.106E+10	.376E-15	.134E+14	.417E+07
1.250	-.250	.225	1.250	-.250	.275	.125E+14	.784E+05	-.158E-09	-.790E+09	.941E-16	.125E+14	.162E+07
1.250	-.250	.225	1.250	-.250	.325	.116E+14	.545E+05	-.146E-10	-.579E+09	.941E-16	.116E+14	.488E+06
1.750	-.250	.225	1.750	-.250	.025	.270E+13						
1.750	-.250	.225	1.750	-.250	.075	.291E+13						
1.750	-.250	.225	1.750	-.250	.125	.294E+13						
1.750	-.250	.225	1.750	-.250	.175	.285E+13						
1.750	-.250	.225	1.750	-.250	.225	.270E+13	.175E+05	.243E-09	-.158E+09	.0	.270E+13	.936E+06
1.750	-.250	.225	1.750	-.250	.275	.252E+13	.973E+04	-.707E-10	-.121E+09	.0	.252E+13	.441E+06
1.750	-.250	.225	1.750	-.250	.325	.234E+13	.585E+04	-.167E-09	-.888E+08	.0	.234E+13	.174E+06
-1.750	-1.750	.275	-1.750	-1.750	.025	.361E+09						
-1.750	-1.750	.275	-1.750	-1.750	.075	.390E+09						
-1.750	-1.750	.275	-1.750	-1.750	.125	.394E+09						
-1.750	-1.750	.275	-1.750	-1.750	.175	.382E+09						
-1.750	-1.750	.275	-1.750	-1.750	.225	.361E+09						
-1.750	-1.750	.275	-1.750	-1.750	.275	.338E+09	.197E+01	.655E-14	-.140E+05	-.588E-17	.338E+09	.219E+03
-1.750	-1.750	.275	-1.750	-1.750	.325	.313E+09	.116E+01	.444E-14	-.106E+05	-.588E-17	.313E+09	.107E+03
-1.250	-1.750	.275	-1.250	-1.750	.025	.163E+10						
-1.250	-1.750	.275	-1.250	-1.750	.075	.176E+10						
-1.250	-1.750	.275	-1.250	-1.750	.125	.178E+10						
-1.250	-1.750	.275	-1.250	-1.750	.175	.172E+10						
-1.250	-1.750	.275	-1.250	-1.750	.225	.163E+10						
-1.250	-1.750	.275	-1.250	-1.750	.275	.152E+10	.927E+01	.635E-13	-.730E+05	.0	.152E+10	.848E+03
-1.250	-1.750	.275	-1.250	-1.750	.325	.141E+10	.949E+01	-.142E-13	-.544E+05	.0	.141E+10	.420E+03

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Table V.- Continued.

Y1	Y2	Y3	Z1	Z2	Z3	DP	DP0	DP1	DP3	DP5	DP7	DP8
-.750	-1.750	.275	-.750	-1.750	.025	.718E+10						
-.750	-1.750	.275	-.750	-1.750	.075	.775E+10						
-.750	-1.750	.275	-.750	-1.750	.125	.783E+10						
-.750	-1.750	.275	-.750	-1.750	.175	.766E+10						
-.750	-1.750	.275	-.750	-1.750	.225	.719E+10						
-.750	-1.750	.275	-.750	-1.750	.275	.671E+10	.519E+02	-.210E-12	-.369E+06	.0	.672E+10	.355E+04
-.750	-1.750	.275	-.750	-1.750	.325	.623E+10	.317E+02	-.313E-12	-.274E+06	.235E-16	.623E+10	.172E+04
-.250	-1.750	.275	-.250	-1.750	.025	.233E+11						
-.250	-1.750	.275	-.250	-1.750	.075	.252E+11						
-.250	-1.750	.275	-.250	-1.750	.125	.255E+11						
-.250	-1.750	.275	-.250	-1.750	.175	.247E+11						
-.250	-1.750	.275	-.250	-1.750	.225	.234E+11						
-.250	-1.750	.275	-.250	-1.750	.275	.218E+11	.129E+03	-.171E-11	-.106E+07	.0	.218E+11	.101E+05
-.250	-1.750	.275	-.250	-1.750	.325	.203E+11	.713E+02	.114E-12	-.776E+06	.235E-16	.203E+11	.470E+04
.250	-1.750	.275	.250	-1.750	.025	.552E+11						
.250	-1.750	.275	.250	-1.750	.075	.597E+11						
.250	-1.750	.275	.250	-1.750	.125	.603E+11						
.250	-1.750	.275	.250	-1.750	.175	.565E+11						
.250	-1.750	.275	.250	-1.750	.225	.553E+11						
.250	-1.750	.275	.250	-1.750	.275	.517E+11	.313E+03	.912E-11	-.253E+07	-.471E-16	.517E+11	.242E+05
.250	-1.750	.275	.250	-1.750	.325	.480E+11	.172E+03	-.239E-11	-.183E+07	.0	.480E+11	.111E+05
.750	-1.750	.275	.750	-1.750	.025	.661E+11						
.750	-1.750	.275	.750	-1.750	.075	.714E+11						
.750	-1.750	.275	.750	-1.750	.125	.722E+11						
.750	-1.750	.275	.750	-1.750	.175	.700E+11						
.750	-1.750	.275	.750	-1.750	.225	.663E+11						
.750	-1.750	.275	.750	-1.750	.275	.619E+11	.609E+03	-.146E-10	-.346E+07	.0	.619E+11	.429E+05
.750	-1.750	.275	.750	-1.750	.325	.574E+11	.343E+03	-.909E-12	-.247E+07	.471E-16	.575E+11	.200E+05
1.250	-1.750	.275	1.250	-1.750	.025	.701E+11						
1.250	-1.750	.275	1.250	-1.750	.075	.757E+11						
1.250	-1.750	.275	1.250	-1.750	.125	.765E+11						
1.250	-1.750	.275	1.250	-1.750	.175	.742E+11						
1.250	-1.750	.275	1.250	-1.750	.225	.702E+11						
1.250	-1.750	.275	1.250	-1.750	.275	.656E+11	.497E+03	-.210E-11	-.320E+07	.235E-16	.656E+11	.341E+05
1.250	-1.750	.275	1.250	-1.750	.325	.609E+11	.273E+03	-.909E-12	-.232E+07	-.235E-16	.609E+11	.172E+05
1.750	-1.750	.275	1.750	-1.750	.025	.744E+11						
1.750	-1.750	.275	1.750	-1.750	.075	.804E+11						
1.750	-1.750	.275	1.750	-1.750	.125	.812E+11						
1.750	-1.750	.275	1.750	-1.750	.175	.788E+11						
1.750	-1.750	.275	1.750	-1.750	.225	.745E+11						
1.750	-1.750	.275	1.750	-1.750	.275	.696E+11	.581E+03	.114E-12	-.310E+07	.0	.696E+11	.432E+05
1.750	-1.750	.275	1.750	-1.750	.325	.646E+11	.283E+03	-.136E-11	-.221E+07	-.118E-16	.646E+11	.227E+05
-1.750	-1.250	.275	-1.750	-1.250	.025	.777E+09						
-1.750	-1.250	.275	-1.750	-1.250	.075	.839E+09						
-1.750	-1.250	.275	-1.750	-1.250	.125	.848E+09						
-1.750	-1.250	.275	-1.750	-1.250	.175	.822E+09						
-1.750	-1.250	.275	-1.750	-1.250	.225	.778E+09						
-1.750	-1.250	.275	-1.750	-1.250	.275	.727E+09	.442E+01	-.360E-13	-.347E+05	.118E-16	.727E+09	.452E+03
-1.750	-1.250	.275	-1.750	-1.250	.325	.675E+09	.262E+01	-.124E-13	-.254E+05	.176E-16	.675E+09	.204E+03
-1.250	-1.250	.275	-1.250	-1.250	.025	.296E+10						
-1.250	-1.250	.275	-1.250	-1.250	.075	.320E+10						
-1.250	-1.250	.275	-1.250	-1.250	.125	.323E+10						
-1.250	-1.250	.275	-1.250	-1.250	.175	.313E+10						
-1.250	-1.250	.275	-1.250	-1.250	.225	.297E+10						
-1.250	-1.250	.275	-1.250	-1.250	.275	.277E+10	.129E+02	-.844E-14	-.132E+06	.0	.277E+10	.148E+04
-1.250	-1.250	.275	-1.250	-1.250	.325	.257E+10	.770E+01	.0	-.982E+05	.118E-16	.257E+10	.668E+03
-.750	-1.250	.275	-.750	-1.250	.025	.214E+11						
-.750	-1.250	.275	-.750	-1.250	.075	.231E+11						
-.750	-1.250	.275	-.750	-1.250	.125	.234E+11						
-.750	-1.250	.275	-.750	-1.250	.175	.226E+11						
-.750	-1.250	.275	-.750	-1.250	.225	.214E+11						
-.750	-1.250	.275	-.750	-1.250	.275	.200E+11	.114E+03	.490E-12	-.114E+07	.0	.200E+11	.851E+04
-.750	-1.250	.275	-.750	-1.250	.325	.186E+11	.740E+02	-.270E-12	-.842E+06	-.235E-16	.186E+11	.355E+04
-.250	-1.250	.275	-.250	-1.250	.025	.141E+12						
-.250	-1.250	.275	-.250	-1.250	.075	.152E+12						
-.250	-1.250	.275	-.250	-1.250	.125	.154E+12						
-.250	-1.250	.275	-.250	-1.250	.175	.149E+12						
-.250	-1.250	.275	-.250	-1.250	.225	.141E+12						
-.250	-1.250	.275	-.250	-1.250	.275	.132E+12	.856E+03	.638E-11	-.843E+07	.0	.132E+12	.352E+05
-.250	-1.250	.275	-.250	-1.250	.325	.122E+12	.583E+03	.188E-11	-.619E+07	.941E-16	.122E+12	.133E+05
.250	-1.250	.275	.250	-1.250	.025	.473E+12						
.250	-1.250	.275	.250	-1.250	.075	.510E+12						
.250	-1.250	.275	.250	-1.250	.125	.516E+12						
.250	-1.250	.275	.250	-1.250	.175	.500E+12						
.250	-1.250	.275	.250	-1.250	.225	.473E+12						
.250	-1.250	.275	.250	-1.250	.275	.442E+12	.292E+04	.161E-10	-.283E+08	.471E-16	.442E+12	.116E+06
.250	-1.250	.275	.250	-1.250	.325	.410E+12	.197E+04	.136E-11	-.206E+08	.471E-16	.410E+12	.424E+05
.750	-1.250	.275	.750	-1.250	.025	.391E+12						
.750	-1.250	.275	.750	-1.250	.075	.423E+12						
.750	-1.250	.275	.750	-1.250	.125	.427E+12						
.750	-1.250	.275	.750	-1.250	.175	.414E+12						
.750	-1.250	.275	.750	-1.250	.225	.392E+12						
.750	-1.250	.275	.750	-1.250	.275	.366E+12	.237E+04	-.258E-10	-.206E+08	.941E-16	.366E+12	.163E+06
.750	-1.250	.275	.750	-1.250	.325	.340E+12	.143E+04	-.637E-11	-.147E+08	.0	.340E+12	.639E+05
1.250	-1.250	.275	1.250	-1.250	.025	.505E+12						
1.250	-1.250	.275	1.250	-1.250	.075	.545E+12						
1.250	-1.250	.275	1.250	-1.250	.125	.551E+12						
1.250	-1.250	.275	1.250	-1.250	.175	.534E+12						
1.250	-1.250	.275	1.250	-1.250	.225	.506E+12						
1.250	-1.250	.275	1.250	-1.250	.275	.472E+12	.252E+04	.534E-11	-.223E+08	-.235E-16	.472E+12	.200E+06
1.250	-1.250	.275	1.250	-1.250	.325	.438E+12	.139E+04	.182E-11	-.161E+08	.471E-16	.439E+12	.922E+05
1.750	-1.250	.275	1.750	-1.250	.025	.210E+12						
1.750	-1.250	.275	1.750	-1.250	.075	.227E+12						
1.750	-1.250	.275	1.750	-1.250	.125	.230E+12						
1.750	-1.250	.275	1.750	-1.250	.175	.223E+12						

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Table V.- Continued.

Y1	Y2	Y3	Z1	Z2	Z3	DP	DP0	DP1	DP3	DP5	DP7	DP8
1.750	-1.250	.275	1.750	-1.250	.225	.211E+12						
1.750	-1.250	.275	1.750	-1.250	.275	.197E+12	.125E+04	-.341E-11	-.939E+07	.0	.197E+12	.738E+05
1.750	-1.250	.275	1.750	-1.250	.325	.183E+12	.719E+03	.318E-11	-.697E+07	.235E-16	.183E+12	.383E+05
-1.750	-.750	.275	-1.750	-.750	.025	.102E+10						
-1.750	-.750	.275	-1.750	-.750	.075	.110E+10						
-1.750	-.750	.275	-1.750	-.750	.125	.111E+10						
-1.750	-.750	.275	-1.750	-.750	.175	.108E+10						
-1.750	-.750	.275	-1.750	-.750	.225	.102E+10						
-1.750	-.750	.275	-1.750	-.750	.275	.955E+09	.652E+01	-.631E-13	-.513E+05	.118E-16	.955E+09	.489E+03
-1.750	-.750	.275	-1.750	-.750	.325	.887E+09	.410E+01	-.497E-13	-.378E+05	.0	.887E+09	.211E+03
-1.250	-.750	.275	-1.250	-.750	.025	.483E+10						
-1.250	-.750	.275	-1.250	-.750	.075	.522E+10						
-1.250	-.750	.275	-1.250	-.750	.125	.527E+10						
-1.250	-.750	.275	-1.250	-.750	.175	.511E+10						
-1.250	-.750	.275	-1.250	-.750	.225	.464E+10						
-1.250	-.750	.275	-1.250	-.750	.275	.452E+10	.222E+02	-.154E-12	-.260E+06	.353E-16	.452E+10	.146E+04
-1.250	-.750	.275	-1.250	-.750	.325	.420E+10	.151E+02	-.995E-13	-.193E+06	-.118E-16	.420E+10	.590E+03
1.250	-.750	.275	1.250	-.750	.025	.199E+13						
1.250	-.750	.275	1.250	-.750	.075	.214E+13						
1.250	-.750	.275	1.250	-.750	.125	.217E+13						
1.250	-.750	.275	1.250	-.750	.175	.210E+13						
1.250	-.750	.275	1.250	-.750	.225	.199E+13						
1.250	-.750	.275	1.250	-.750	.275	.186E+13	.984E+04	-.143E-10	-.103E+09	.0	.186E+13	.521E+06
1.250	-.750	.275	1.250	-.750	.325	.172E+13	.629E+04	-.127E-10	-.754E+08	.941E-16	.173E+13	.215E+06
1.750	-.750	.275	1.750	-.750	.025	.683E+12						
1.750	-.750	.275	1.750	-.750	.075	.738E+12						
1.750	-.750	.275	1.750	-.750	.125	.746E+12						
1.750	-.750	.275	1.750	-.750	.175	.723E+12						
1.750	-.750	.275	1.750	-.750	.225	.685E+12						
1.750	-.750	.275	1.750	-.750	.275	.639E+12	.442E+04	.530E-10	-.342E+08	-.941E-16	.640E+12	.230E+06
1.750	-.750	.275	1.750	-.750	.325	.594E+12	.271E+04	.637E-11	-.253E+08	.0	.594E+12	.114E+06
-1.750	-.250	.275	-1.750	-.250	.025	.119E+10						
-1.750	-.250	.275	-1.750	-.250	.075	.129E+10						
-1.750	-.250	.275	-1.750	-.250	.125	.130E+10						
-1.750	-.250	.275	-1.750	-.250	.175	.126E+10						
-1.750	-.250	.275	-1.750	-.250	.225	.120E+10						
-1.750	-.250	.275	-1.750	-.250	.275	.112E+10	.539E+01	.733E-14	-.531E+05	.0	.112E+10	.373E+03
-1.750	-.250	.275	-1.750	-.250	.325	.104E+10	.316E+01	-.195E-13	-.390E+05	.118E-16	.104E+10	.162E+03
-1.250	-.250	.275	-1.250	-.250	.025	.506E+10						
-1.250	-.250	.275	-1.250	-.250	.075	.546E+10						
-1.250	-.250	.275	-1.250	-.250	.125	.552E+10						
-1.250	-.250	.275	-1.250	-.250	.175	.535E+10						
-1.250	-.250	.275	-1.250	-.250	.225	.507E+10						
-1.250	-.250	.275	-1.250	-.250	.275	.473E+10	.273E+02	-.711E-13	-.297E+06	.0	.473E+10	.929E+03
-1.250	-.250	.275	-1.250	-.250	.325	.439E+10	.190E+02	.231E-13	-.218E+06	.118E-16	.439E+10	.339E+03
1.250	-.250	.275	1.250	-.250	.025	.125E+14						
1.250	-.250	.275	1.250	-.250	.075	.135E+14						
1.250	-.250	.275	1.250	-.250	.125	.136E+14						
1.250	-.250	.275	1.250	-.250	.175	.132E+14						
1.250	-.250	.275	1.250	-.250	.225	.125E+14						
1.250	-.250	.275	1.250	-.250	.275	.117E+14	.688E+05	-.115E-08	-.738E+09	.941E-16	.117E+14	.223E+07
1.250	-.250	.275	1.250	-.250	.325	.108E+14	.476E+05	-.313E-09	-.541E+09	.941E-16	.108E+14	.893E+06
1.750	-.250	.275	1.750	-.250	.025	.252E+13						
1.750	-.250	.275	1.750	-.250	.075	.272E+13						
1.750	-.250	.275	1.750	-.250	.125	.275E+13						
1.750	-.250	.275	1.750	-.250	.175	.267E+13						
1.750	-.250	.275	1.750	-.250	.225	.252E+13						
1.750	-.250	.275	1.750	-.250	.275	.236E+13	.117E+05	.100E-10	-.113E+09	.0	.236E+13	.776E+06
1.750	-.250	.275	1.750	-.250	.325	.219E+13	.683E+04	-.207E-09	-.829E+08	.0	.219E+13	.380E+06
-1.750	-1.750	.325	-1.750	-1.750	.025	.335E+09						
-1.750	-1.750	.325	-1.750	-1.750	.075	.362E+09						
-1.750	-1.750	.325	-1.750	-1.750	.125	.366E+09						
-1.750	-1.750	.325	-1.750	-1.750	.175	.355E+09						
-1.750	-1.750	.325	-1.750	-1.750	.225	.335E+09						
-1.750	-1.750	.325	-1.750	-1.750	.275	.313E+09						
-1.750	-1.750	.325	-1.750	-1.750	.325	.291E+09	.141E+01	.622E-14	-.987E+04	-.588E-17	.291E+09	.154E+03
-1.250	-1.750	.325	-1.250	-1.750	.025	.151E+10						
-1.250	-1.750	.325	-1.250	-1.750	.075	.163E+10						
-1.250	-1.750	.325	-1.250	-1.750	.125	.165E+10						
-1.250	-1.750	.325	-1.250	-1.750	.175	.160E+10						
-1.250	-1.750	.325	-1.250	-1.750	.225	.151E+10						
-1.250	-1.750	.325	-1.250	-1.750	.275	.141E+10						
-1.250	-1.750	.325	-1.250	-1.750	.325	.131E+10	.630E+01	.249E-13	-.505E+05	.0	.131E+10	.621E+03
-.750	-1.750	.325	-.750	-1.750	.025	.666E+10						
-.750	-1.750	.325	-.750	-1.750	.075	.720E+10						
-.750	-1.750	.325	-.750	-1.750	.125	.727E+10						
-.750	-1.750	.325	-.750	-1.750	.175	.705E+10						
-.750	-1.750	.325	-.750	-1.750	.225	.667E+10						
-.750	-1.750	.325	-.750	-1.750	.275	.623E+10						
-.750	-1.750	.325	-.750	-1.750	.325	.579E+10	.341E+02	-.114E-12	-.254E+06	.235E-16	.579E+10	.255E+04
-.250	-1.750	.325	-.250	-1.750	.025	.217E+11						
-.250	-1.750	.325	-.250	-1.750	.075	.234E+11						
-.250	-1.750	.325	-.250	-1.750	.125	.236E+11						
-.250	-1.750	.325	-.250	-1.750	.175	.229E+11						
-.250	-1.750	.325	-.250	-1.750	.225	.217E+11						
-.250	-1.750	.325	-.250	-1.750	.275	.203E+11						
-.250	-1.750	.325	-.250	-1.750	.325	.188E+11	.845E+02	.171E-11	-.720E+06	.235E-16	.188E+11	.702E+04
.250	-1.750	.325	.250	-1.750	.025	.513E+11						
.250	-1.750	.325	.250	-1.750	.075	.554E+11						
.250	-1.750	.325	.250	-1.750	.125	.560E+11						
.250	-1.750	.325	.250	-1.750	.175	.543E+11						
.250	-1.750	.325	.250	-1.750	.225	.514E+11						
.250	-1.750	.325	.250	-1.750	.275	.480E+11						
.250	-1.750	.325	.250	-1.750	.325	.445E+11	.205E+03	-.682E-12	-.170E+07	.0	.445E+11	.168E+05
.750	-1.750	.325	.750	-1.750	.025	.614E+11						

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Table V.- Continued.

Y1	Y2	Y3	Z1	Z2	Z3	DP	DP0	DP1	DP3	DP5	DP7	DP8
.750	-1.750	.325	.750	-1.750	.075	.663E+11						
.750	-1.750	.325	.750	-1.750	.125	.670E+11						
.750	-1.750	.325	.750	-1.750	.175	.650E+11						
.750	-1.750	.325	.750	-1.750	.225	.615E+11						
.750	-1.750	.325	.750	-1.750	.275	.574E+11						
.750	-1.750	.325	.750	-1.750	.325	.533E+11	.405E+03	.0	-.230E+07	.471E-16	.533E+11	.313E+05
1.250	-1.750	.325	1.250	-1.750	.025	.651E+11						
1.250	-1.750	.325	1.250	-1.750	.075	.703E+11						
1.250	-1.750	.325	1.250	-1.750	.125	.711E+11						
1.250	-1.750	.325	1.250	-1.750	.175	.689E+11						
1.250	-1.750	.325	1.250	-1.750	.225	.652E+11						
1.250	-1.750	.325	1.250	-1.750	.275	.609E+11						
1.250	-1.750	.325	1.250	-1.750	.325	.565E+11	.355E+03	.455E-12	-.216E+07	-.235E-16	.565E+11	.287E+05
1.750	-1.750	.325	1.750	-1.750	.025	.691E+11						
1.750	-1.750	.325	1.750	-1.750	.075	.746E+11						
1.750	-1.750	.325	1.750	-1.750	.125	.754E+11						
1.750	-1.750	.325	1.750	-1.750	.175	.731E+11						
1.750	-1.750	.325	1.750	-1.750	.225	.692E+11						
1.750	-1.750	.325	1.750	-1.750	.275	.646E+11						
1.750	-1.750	.325	1.750	-1.750	.325	.600E+11	.444E+03	.182E-11	-.205E+07	-.118E-16	.600E+11	.381E+05
-1.750	-1.250	.325	-1.750	-1.250	.025	.721E+09						
-1.750	-1.250	.325	-1.750	-1.250	.075	.779E+09						
-1.750	-1.250	.325	-1.750	-1.250	.125	.767E+09						
-1.750	-1.250	.325	-1.750	-1.250	.175	.763E+09						
-1.750	-1.250	.325	-1.750	-1.250	.225	.722E+09						
-1.750	-1.250	.325	-1.750	-1.250	.275	.675E+09						
-1.750	-1.250	.325	-1.750	-1.250	.325	.626E+09	.293E+01	-.284E-13	-.236E+05	.176E-16	.626E+09	.307E+03
-1.250	-1.250	.325	-1.250	-1.250	.025	.275E+10						
-1.250	-1.250	.325	-1.250	-1.250	.075	.297E+10						
-1.250	-1.250	.325	-1.250	-1.250	.125	.300E+10						
-1.250	-1.250	.325	-1.250	-1.250	.175	.291E+10						
-1.250	-1.250	.325	-1.250	-1.250	.225	.275E+10						
-1.250	-1.250	.325	-1.250	-1.250	.275	.257E+10						
-1.250	-1.250	.325	-1.250	-1.250	.325	.239E+10	.812E+01	-.213E-13	-.912E+05	.118E-16	.239E+10	.861E+03
-.750	-1.250	.325	-.750	-1.250	.025	.199E+11						
-.750	-1.250	.325	-.750	-1.250	.075	.215E+11						
-.750	-1.250	.325	-.750	-1.250	.125	.217E+11						
-.750	-1.250	.325	-.750	-1.250	.175	.210E+11						
-.750	-1.250	.325	-.750	-1.250	.225	.199E+11						
-.750	-1.250	.325	-.750	-1.250	.275	.186E+11						
-.750	-1.250	.325	-.750	-1.250	.325	.173E+11	.687E+02	.597E-12	-.782E+06	-.235E-16	.173E+11	.429E+04
-.250	-1.250	.325	-.250	-1.250	.025	.131E+12						
-.250	-1.250	.325	-.250	-1.250	.075	.141E+12						
-.250	-1.250	.325	-.250	-1.250	.125	.143E+12						
-.250	-1.250	.325	-.250	-1.250	.175	.138E+12						
-.250	-1.250	.325	-.250	-1.250	.225	.131E+12						
-.250	-1.250	.325	-.250	-1.250	.275	.122E+12						
-.250	-1.250	.325	-.250	-1.250	.325	.113E+12	.494E+03	-.347E-11	-.575E+07	.941E-16	.113E+12	.153E+05
.250	-1.250	.325	.250	-1.250	.025	.439E+12						
.250	-1.250	.325	.250	-1.250	.075	.474E+12						
.250	-1.250	.325	.250	-1.250	.125	.479E+12						
.250	-1.250	.325	.250	-1.250	.175	.464E+12						
.250	-1.250	.325	.250	-1.250	.225	.439E+12						
.250	-1.250	.325	.250	-1.250	.275	.410E+12						
.250	-1.250	.325	.250	-1.250	.325	.381E+12	.167E+04	-.123E-10	-.191E+08	.471E-16	.381E+12	.506E+05
.750	-1.250	.325	.750	-1.250	.025	.363E+12						
.750	-1.250	.325	.750	-1.250	.075	.392E+12						
.750	-1.250	.325	.750	-1.250	.125	.397E+12						
.750	-1.250	.325	.750	-1.250	.175	.385E+12						
.750	-1.250	.325	.750	-1.250	.225	.364E+12						
.750	-1.250	.325	.750	-1.250	.275	.340E+12						
.750	-1.250	.325	.750	-1.250	.325	.316E+12	.140E+04	.0	-.137E+08	.0	.316E+12	.848E+05
1.250	-1.250	.325	1.250	-1.250	.025	.469E+12						
1.250	-1.250	.325	1.250	-1.250	.075	.506E+12						
1.250	-1.250	.325	1.250	-1.250	.125	.512E+12						
1.250	-1.250	.325	1.250	-1.250	.175	.496E+12						
1.250	-1.250	.325	1.250	-1.250	.225	.469E+12						
1.250	-1.250	.325	1.250	-1.250	.275	.438E+12						
1.250	-1.250	.325	1.250	-1.250	.325	.407E+12	.164E+04	-.127E-10	-.150E+08	.471E-16	.407E+12	.139E+06
1.750	-1.250	.325	1.750	-1.250	.025	.195E+12						
1.750	-1.250	.325	1.750	-1.250	.075	.211E+12						
1.750	-1.250	.325	1.750	-1.250	.125	.213F+12						
1.750	-1.250	.325	1.750	-1.250	.175	.207E+12						
1.750	-1.250	.325	1.750	-1.250	.225	.196E+12						
1.750	-1.250	.325	1.750	-1.250	.275	.183E+12						
1.750	-1.250	.325	1.750	-1.250	.325	.170E+12	.888E+03	-.682E-11	-.647E+07	.235E-16	.170E+12	.645E+05
-1.750	-.750	.325	-1.750	-.750	.025	.948E+09						
-1.750	-.750	.325	-1.750	-.750	.075	.102E+10						
-1.750	-.750	.325	-1.750	-.750	.125	.103E+10						
-1.750	-.750	.325	-1.750	-.750	.175	.100E+10						
-1.750	-.750	.325	-1.750	-.750	.225	.949E+09						
-1.750	-.750	.325	-1.750	-.750	.275	.887E+09						
-1.750	-.750	.325	-1.750	-.750	.325	.823E+09	.412E+01	.124E-13	-.351E+05	.0	.823E+09	.306E+03
-1.250	-.750	.325	-1.250	-.750	.025	.448F+10						
-1.250	-.750	.325	-1.250	-.750	.075	.484E+10						
-1.250	-.750	.325	-1.250	-.750	.125	.489E+10						
-1.250	-.750	.325	-1.250	-.750	.175	.475E+10						
-1.250	-.750	.325	-1.250	-.750	.225	.449E+10						
-1.250	-.750	.325	-1.250	-.750	.275	.420E+10						
-1.250	-.750	.325	-1.250	-.750	.325	.389E+10	.131E+02	.249E-13	-.179E+06	-.118E-16	.390E+10	.652E+03
1.250	-.750	.325	1.250	-.750	.025	.184E+13						
1.250	-.750	.325	1.250	-.750	.075	.199E+13						
1.250	-.750	.325	1.250	-.750	.125	.201E+13						
1.250	-.750	.325	1.250	-.750	.175	.195E+13						
1.250	-.750	.325	1.250	-.750	.225	.185E+13						

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Table V.- Continued.

Y1	Y2	Y3	Z1	Z2	Z3	DP	DP0	DP1	DP3	DP5	DP7	DP8
1.250	-.750	.325	1.250	-.750	.275	.172E+13						
1.250	-.750	.325	1.250	-.750	.325	.160E+13	.581F+04	.0	-.700E+08	.941E-16	.160E+13	.287E+06
1.750	-.750	.325	1.750	-.750	.025	.635E+12						
1.750	-.750	.325	1.750	-.750	.075	.685E+12						
1.750	-.750	.325	1.750	-.750	.125	.693E+12						
1.750	-.750	.325	1.750	-.750	.175	.672E+12						
1.750	-.750	.325	1.750	-.750	.225	.636F+12						
1.750	-.750	.325	1.750	-.750	.275	.594E+12						
1.750	-.750	.325	1.750	-.750	.325	.551E+12	.291E+04	.728E-11	-.235E+08	.0	.551E+12	.180E+06
-1.750	-.250	.325	-1.750	-.250	.025	.111E+10						
-1.750	-.250	.325	-1.750	-.250	.075	.120E+10						
-1.750	-.250	.325	-1.750	-.250	.125	.121E+10						
-1.750	-.250	.325	-1.750	-.250	.175	.117E+10						
-1.750	-.250	.325	-1.750	-.250	.225	.111E+10						
-1.750	-.250	.325	-1.750	-.250	.276	.104E+10						
-1.750	-.250	.325	-1.750	-.250	.326	.963E+09	.338E+01	.320E-13	-.362E+05	.118E-16	.963E+09	.232E+03
-1.250	-.250	.325	-1.250	-.250	.028	.470E+10						
-1.250	-.250	.325	-1.250	-.250	.075	.507E+10						
-1.250	-.250	.325	-1.250	-.250	.125	.513E+10						
-1.250	-.250	.325	-1.250	-.250	.175	.497E+10						
-1.250	-.250	.325	-1.250	-.250	.225	.470E+10						
-1.250	-.250	.325	-1.250	-.250	.275	.439E+10						
-1.250	-.250	.325	-1.250	-.250	.325	.408E+10	.155E+02	.110E-12	-.202E+06	.118E-16	.408F+10	.370E+03
1.250	-.250	.325	1.250	-.250	.025	.116E+14						
1.250	-.250	.325	1.250	-.250	.075	.125E+14						
1.250	-.250	.325	1.250	-.250	.125	.126E+14						
1.250	-.250	.325	1.250	-.250	.175	.123E+14						
1.250	-.250	.325	1.250	-.250	.225	.116E+14						
1.250	-.250	.325	1.250	-.250	.275	.108E+14						
1.250	-.250	.325	1.250	-.250	.325	.101E+14	.391E+05	.146E-09	-.502E+09	.941E-16	.101E+14	.104E+07
1.750	-.250	.325	1.750	-.250	.025	.234E+13						
1.750	-.250	.325	1.750	-.250	.075	.253E+13						
1.750	-.250	.325	1.750	-.250	.125	.255E+13						
1.750	-.250	.325	1.750	-.250	.175	.247E+13						
1.750	-.250	.325	1.750	-.250	.225	.234E+13						
1.750	-.250	.325	1.750	-.250	.275	.219E+13						
1.750	-.250	.325	1.750	-.250	.325	.203E+13	.765E+04	-.218E-10	-.770E+08	.0	.203E+13	.582E+06

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Table V.- Concluded.

ϕ	θ	SPL	I (Newton/M^2)	I0 (N/M^2)	I1 (N/M^2)	I2 (N/M^2)
30.00	.00	.80165E+02	.20334E-00	.15740E-03	.28016E-02	.20038E-00
30.00	90.00	.79970E+02	.19883E-00	.44878E-04	-.15975E-02	.20038E-00
30.00	180.00	.79952E+02	.19843E-00	.79819E-04	-.20351E-02	.20038E-00
60.00	.00	.70879E+02	.69814E-01	.40221E-03	.26012E-02	.66809E-01
60.00	90.00	.70316E+02	.65433E-01	.12517E-03	-.15004E-02	.66809E-01
60.00	180.00	.70472E+02	.66624E-01	.48329E-05	-.19187E-01	.66809E-01
90.00	.00	.18815E+02	.17408E-03	.17368E-03	.39258E-06	.35763E-08
90.00	90.00	.16091E+02	.12722E-03	.12755E-03	-.33000E-06	.35763E-08
90.00	180.00	.18810E+02	.17397E-03	.17357E-03	.39247E-06	.35763E-08

Table VI.- Sound intensity.

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