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on

A Comparison of Methods Used in Lifting Surface Theory

by

D. L. Woodcock

Supplement to the
MANUAL ON AEROELASTICITY
PART VI

NORTH ATLANTIC TREATY ORGANIZATION

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NORTH ATLANTIC TREATY ORGANIZATION

ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT

(ORGANISATION DU TRAITE DE L'ATLANTIQUE NORD)

A COMPARISON OF METHODS USED IN LIFTING SURFACE THEORY

by

D.L.Woodcock

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Supplement to the
MANUAL ON AEROELASTICITY
PART VI

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FOREWORD

This report was originally planned as part of Volume VI of the AGARD loose-leaf Manual on Aeroelasticity, which was started in August 1959 and contains some 47 different articles.

Articles in this series are now published as separate AGARD reports. To ensure that the new reader of each report is aware of the wide scope of work on this subject covered by the Structures and Materials Panel of AGARD, each report will contain a full list of all previously printed articles.

B.P.Mullins
Chairman, Editorial Committee,
AGARD Structures and Materials Panel

SUMMARY

Calculated values, obtained by linearised potential flow theory, of the air forces on oscillating thin wings are presented for a selection of planforms, modes of oscillation, frequencies and airspeeds. Results from a number of different computer programs and methods are compared in the three regimes: subsonic, sonic, and supersonic. No attempt is made, however, to assess which programs are the most accurate. A survey of the different methods is included indicating their main features and how they differ from each other. The range of parameter values covered was

- Aspect ratio $1 \rightarrow 4$, leading edge sweepback $0 \rightarrow 60^\circ$
- Mach number $0 \rightarrow 2$, reduced frequency $0 \rightarrow 4$
- Modes – rigid, parabolic deformation, control surface rotation.

This paper is the outcome of a research project of the AGARD Structures and Materials Panel.

PREFACE

Whereas the first five volumes of the Manual on Aeroelasticity were devoted to the description of the theories used for predicting aeroelastic phenomena and to the basic lessons derived from their comparison with experimental data, the sixth (and last) volume aims at being a practical working tool for the designers faced with these major problems; this is why the most complete numerical tables on two-dimensional aerodynamic forces now existing are to be found in its first part.

As far as the three-dimensional field is concerned, it is beyond present possibilities to give in a Manual the numerical values concerning the potential multiplicity of wing shapes. A description of computation methods and comments upon them are essentially what the reader expects to find. A few standard shapes only are to be kept in mind, as examples, in order to illustrate the application of and comparisons between methods. In this way, the numerical values most likely to be encountered are provided for known cases and enable the designer to test the programme he intends to adopt prior to undertaking studies on a new shape.

Such are the considerations which have guided the AGARD Structures and Materials Panel in the preparation of this second part of Volume VI. After discussing the matter and reaching agreement as to the choice of a number of aerofoils, the countries which were able to devote efforts to this task distributed the work among themselves; each of them, by means of its own methods, calculated the aerodynamic coefficients for the list which had been drawn up. This joint effort is presented by Mr D.L.Woodcock from the Royal Aircraft Establishment, with notable clarity and objectiveness.

It is to be hoped that this very important task will achieve its aim, which is to assist NATO engineers in predicting with greater accuracy the vibratory behaviour in flight of the new aerospace structures, and in contending more efficiently with undesirable vibrations!

Alors que les cinq premiers volumes du Manual d'Aéroélasticité exposaient les théories utilisées pour la prévision des phénomènes aéroélastiques et les enseignements fondamentaux tirés de leur confrontation avec l'expérience, le sixième (et dernier) volume veut être un instrument de travail pratique pour les ingénieurs placés, dans les Bureaux d'Etudes, en face de ces problèmes essentiels. C'est ainsi qu'on a pu trouver, dans sa première partie, les tables numériques les plus complétes existant à l'epoque sur les forces aérodynamiques bidimensionnelles.

Lorsqu'il s'agit de tridimensionnel, il n'est plus possible de faire figurer dans un Manuel les valeurs numériques concernant la multitude de formes d'ailes imaginable. Ce sont essentiellement les méthodes de calcul que le lecteur s'attend à trouver exposées et commentées. Seules, quelques formes-types sont à retenir à titre d'exemples, pour illustrer l'application des méthodes et leur comparaison. Les valeurs numériques les plus probables sont ainsi degagées pour des cas connus et permettent à chacun, avant d'entreprendre l'étude d'une forme nouvelle, de tester le programme qu'il se propose d'utiliser.

Telles sont les idées qui ont guide le Groupe de Travail Structures et Matériaux de l'AGARD dans la conception de cette 2ème partie du Volume VI. Après s'être concertés et mis d'accord sur le choix d'un certain nombre de formes de surfaces portantes, les pays qui pouvaient s'y consacrer se sont répartis la tâche en calculant, chacun avec ses méthodes propres, les coefficients aérodynamiques dont la liste avait été établie. Cette oeuvre commune est présentée par M. D.L.Woodcock du Royal Aircraft Establishment, avec une clarté et une objectivité en tous points dignes d'éloge.

Puisse ce très important travail atteindre son but en aidant les Constructeurs de l'OTAN à prevoir avec plus de précision le comportement vibratoire en vol de nouvelles structures aérospatiales et à mieux combattre les vibrations indésirables!

R.MAZET
Editeur Général

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A COMPARISON OF METHODS USED IN LIFTING SURFACE THEORY

D.L.Woodcock

INTRODUCTION

This chapter is the outcome of a joint research project organised by the AGARD Structures and Materials Panel. The purpose of the project was two-fold:–

(a) to establish the relative merits of different methods of calculating the air forces on oscillating wings, and

(b) to provide a standard which can be used in the future for comparison or test purposes.

To achieve this a scheme of cases to be considered was drawn up by a small working party (comprising Professor H.Bergh, M. R.Dat, Dr B.Laschka and Mr D.L.Woodcock), and approved by the Panel. This scheme covered variation of the parameters:–

Planform geometry
Mach number (M)
Reduced frequency (k)
Mode of oscillation.

The last of these includes rigid body modes, control surface modes, and other modes of deformation – both symmetric and antisymmetric. The members of AGARD were invited to contribute to the project by making calculations for the chosen cases using the methods in use in their country. Contributions came from six countries using nearly thirty different methods and comprising nearly eight hundred calculations*. In general the generalised force coefficients (see Section 7.2) were determined, though one or two calculations of pressure distributions were also made.

When comparing the different calculated values it is important to know the possible causes of any differences in the values. Such differences may be due to differences in:

(a) The method

(b) The method parameter values used (e.g. number of collocation points)

(c) The computer and computer program.

It is hoped, and assumed, that those due to (c) are always negligible. To cover the causes (a), the tabulated results have been preceded in Sections 1 to 6 by comparative descriptions of the various methods. These describe the essentials, and particular features, of each method, and reference is also made to the fullest available published description. The other possible causes are dealt with by a comprehensive system of annotation to the tables which is described in Section 7.

1. SUBSONIC COLLOCATION METHODS

1.1 General

These methods obtain approximate solutions of the integral equation, relating the complex upwash distribution $Vw(x,y)\,e^{i\omega t}$ to the load distribution $\rho V^2 l\, e^{i\omega t}$, by collocation. This equation is considered in the form

$$\overline{w}(x,y) = \frac{1}{4\pi} \iint_S \overline{l}(x_0, y_0)\overline{K}(x - x_0, y - y_0)\, dx_0 dy_0 , \qquad (1.1)$$

* By calculation is meant the computation of the generalised air forces for one planform, at one Mach number and reduced frequency, with one set of modes (either symmetric or antisymmetric).

where

$$\left.\begin{aligned} \overline{w}(x,y) &= w(x,y)E(x) \\ \overline{l}(x,y) &= l(x,y)E(x) \\ \overline{K}(x,y) &= K(x,y)E(x)\ , \end{aligned}\right\} \tag{1.2}$$

and either (A), $E(x) = 1\ ,$ (1.3)

or (B), $E(x) = \exp(i\omega x/V)\ ,$ (1.4)

or (C), $E(x) = \exp(-i\omega M^2 x/\beta^2 V)\ .$ (1.5)

1.2 The Kernel Function

The kernel function $\overline{K}$ is given by

$$\begin{aligned} K(x,y)\, e^{i\omega t/V} &= \lim_{z\to 0} \frac{\partial^2}{\partial z^2} \int_{-\infty}^{x} \exp\left\{\frac{i\omega(x_0 - MR_0)}{\beta^2 V}\right\} \frac{dx_0}{R_0} \\ &= \lim_{z\to 0} \frac{\partial^2}{\partial z^2} \int_{(MR_1 - x)/\beta^2}^{\infty} \frac{\exp\{-i\omega u/V\}}{\sqrt{u^2 + y^2 + z^2}}\, du \\ &= \frac{M(Mx + R)}{R(x^2 + y^2)} \exp\left\{-\frac{i\omega}{V}\frac{(MR - x)}{\beta^2}\right\} + \int_{(MR-x)/\beta^2}^{\infty} \frac{\exp\{-i\omega u/V\}}{(u^2 + y^2)^{3/2}}\, du \end{aligned} \tag{1.6}$$

where

$$\left.\begin{aligned} R_0 &= \sqrt{x_0^2 + \beta^2(y^2 + z^2)} \\ R_1 &= \sqrt{x^2 + \beta^2(y^2 + z^2)} \\ R &= \sqrt{x^2 + \beta^2 y^2} \end{aligned}\right\} \tag{1.7}$$

and the latter integral can be taken in the form

$$\begin{aligned} \int_{(MR-x)/\beta^2}^{\infty} \frac{\exp\{-i\omega u/V\}}{(u^2 + y^2)^{3/2}}\, du &= -\frac{\pi}{y^2}\left(\frac{i\omega|y|}{2V}\right)\left[H_{-1}\left(\frac{i\omega|y|}{V}\right) + \frac{2i}{\pi}K_1\left(\frac{\omega|y|}{V}\right) - \right. \\ &\quad \left. - I_1\left(\frac{\omega|y|}{V}\right)\right] - \int_0^{(MR-x)/\beta^2} \frac{\exp\{-i\omega u/V\}}{(u^2 + y^2)^{3/2}}\, du \end{aligned} \tag{1.8a}$$

$$\begin{aligned} &= -\frac{\pi}{y^2}\left(\frac{i\omega|y|}{V}\right)\left[H_{-1}\left(\frac{i\omega|y|}{V}\right) + \frac{2i}{\pi}K_1\left(\frac{\omega|y|}{V}\right) - \right. \\ &\quad \left. - I_1\left(\frac{\omega|y|}{V}\right)\right] - \frac{1}{y^2}\frac{i\omega}{V}\int_0^{(MR-x)/\beta^2} \frac{\exp\{-i\omega u/V\}\, u}{(u^2 + y^2)^{1/2}}\, du + \\ &\quad + \frac{Rx - My^2}{y^2(x^2 + y^2)} \exp\left\{-\frac{i\omega}{V}\frac{(MR - x)}{\beta^2}\right\} \end{aligned} \tag{1.8b}$$

$$= -\frac{\pi}{y^2}\left(\frac{i\omega|y|}{2V}\right)\left[L_1\left(\frac{i\omega|y|}{V}\right) + \frac{2i}{\pi}K_1\left(\frac{\omega|y|}{V}\right) - I_1\left(\frac{\omega|y|}{V}\right)\right] +$$

$$+\frac{1}{My^2}\left[\frac{R(Mx+R)}{(x^2+y^2)}\exp\left\{-\frac{i\omega}{V\beta^2}(MR-x)\right\}-\right.$$

$$-\left(1+\frac{i\omega|y|}{V}\frac{M}{\beta}\right)\exp\left\{-\frac{i\omega M|y|}{V\beta}\right\}+$$

$$+\frac{1}{y^2}\left(\frac{\omega^2}{V^2}\right)\int_{-M|y|/\beta}^{0} e^{-i\omega u/V}\sqrt{u^2+y^2}\,du-$$

$$-\frac{\beta}{My^2}\left(\frac{i\omega}{V}\right)\int_0^{x/\beta}\exp\left\{\frac{i\omega}{\beta V}\left(u-M\sqrt{u^2+y^2}\right)\right\}du\,. \qquad (1.8c)$$

When the frequency is small we have the approximation (D),

$$K\exp\left(\frac{-i\omega M^2 x}{\beta^2 V}\right) = -\int_{-\infty}^{\infty}\exp\left\{\frac{i\omega}{\beta^2 V}(x_0-x)\right\}\frac{dx_0}{R_2^3}\,, \qquad (1.9)$$

where

$$R_2 = \sqrt{x_0^2+\beta^2 y}\,. \qquad (1.10)$$

These four forms for the kernel function, given by Equations (1.6) and (1.8a), (1.6) and (1.8b), (1.6) and (1.8c) and (1.9), are called (A), (B), (C) and (D) respectively. With the form (B) the approximation

(A) $$\frac{u\,\mathrm{sgn}\,(u)}{\sqrt{u^2+y^2}} \simeq 1-0.101\,e^{-0.329\tau}-0.899\,e^{-1.4067\tau}-0.9480933\,e^{-2.90\tau}\sin\pi\tau \qquad (1.11)$$

where

$$\tau = |u/y| \qquad (1.12)$$

has sometimes been used in the integral in (1.8b).

1.3 Loading Functions

The integral equation is solved by assuming an approximate representation of the loading, $\bar{l}$, containing a finite number of unknowns: and then determining these unknowns by satisfying the equation at a finite number of points. This approximation takes the form

$$\bar{l}(x,y) \quad \text{or} \quad c(y)\bar{l}(x,y) = \sum_{i=1}^{n}\sum_{j=1}^{m} a_{ij}h_i^{(n)}(\xi)g_j^{(m)}(\eta)\,, \qquad (1.13)$$

where

$$\left.\begin{aligned}\xi &= 2\left(\frac{x-x_l(y)}{c(y)}\right)-1 = -\cos\theta\\ \eta &= y/s = -\cos\phi\end{aligned}\right\} \qquad (1.14)$$

and the $h_i^{(n)}$, $g_j^{(m)}$ are chordwise and spanwise loading functions respectively. For the chordwise loading functions the following have been used:

(A) $$\left.\begin{aligned}h_1^{(n)}(\xi) &= \sqrt{\frac{1-\xi}{1+\xi}} = \cot\frac{\theta}{2}\\ h_r^{(n)}(\xi) &= \xi^{r-2}(1+\xi)\sqrt{\frac{1-\xi}{1+\xi}} = (-)^{r-2}\cos^{r-2}\theta\sin\theta \qquad (r>1)\end{aligned}\right\} \qquad (1.15)$$

$$\text{(B)} \qquad \left.\begin{aligned} h_1^{(n)}(\xi) &= \sqrt{\frac{1-\xi}{1+\xi}} = \cot\frac{\theta}{2} \\ h_r^{(n)}(\xi) &= \sin(r-1)\theta = \{\text{polynomial of order } (r-2) \text{ in } \cos\theta\} \times \sin\theta \qquad (r>1) \end{aligned}\right\} \qquad (1.16)$$

$$\text{(C)} \qquad h_r^{(n)}(\xi) = \frac{T_r(-\xi)+T_{r+1}(-\xi)}{1-\xi}\sqrt{\frac{1-\xi}{1+\xi}} = \left\{\cos r\theta + \frac{\sin r\theta}{\sin\theta}(1-\cos\theta)\right\}\cot\frac{\theta}{2}$$

$$= \left\{\frac{\cos r\theta + \cos(r+1)\theta}{\sin\ \theta}\right\} \qquad (1.17)$$

$$\text{(D)} \qquad \left.\begin{aligned} h_r^{(n)}(\xi) &= (-)^r \frac{\sin\frac{\theta_r^{(l)}}{2}\sin\theta_r^{(l)}}{(n+\frac{1}{2})} \; \frac{\cos\{(n+\frac{1}{2})\theta\}}{(\cos\theta_r^{(l)}-\cos\theta)\sin\frac{\theta}{2}}\ , \\ \text{where} \quad \theta_r^{(l)} &= (2r-1)\pi/(2n+1)\ , \end{aligned}\right\} \qquad (1.18)$$

and for the spanwise loading functions:

$$\text{(A)} \qquad \left.\begin{aligned} g_r^{(m)}(\eta) &= \frac{(-)^r \sin\phi_r}{(m+1)} \cdot \frac{\sin\{(m+1)\phi\}}{(\cos\phi_r - \cos\phi)} = \frac{2}{m+1}\sum_{\lambda=1}^{m}\sin\lambda\phi_r \sin\lambda\theta\ , \\ \text{where} \quad \phi_r &= \frac{r\pi}{m+1}\ , \end{aligned}\right\} \qquad (1.19)$$

$$\text{(B)} \qquad g_r^{(m)}(\eta) = \eta^r = (-)^r \cos^r\phi \qquad (1.20)$$

$$\text{(C)} \qquad g_r^{(m)}(\eta) = \sin r\phi\ . \qquad (1.21)$$

1.4 Collocation Points

Particular sets of collocation points $(\xi,\eta) = (\xi_r,\eta_s)$ that have been used include those given below. Other sets which were used only with one method are detailed in the tables. The values of x and y at the (r,s) point are denoted by x_{rs} and y_s.

Multhopp points {(M), or (M_0) for m always odd, or (M_e) for m always even}.

$$\left.\begin{aligned} \xi_r^{(w)} &= -\cos\theta_r^{(w)} \\ \text{where} \qquad \theta_r^{(w)} &= \frac{2r\pi}{2n+1} \end{aligned}\right\} \qquad (1.22)$$

$$\left.\begin{aligned} \eta_r &= -\cos\phi_r \\ \text{where} \qquad \phi_r &= \frac{r\pi}{m+1}\ . \end{aligned}\right\} \qquad (1.23)$$

Inverse location {(I), (I_0) or (I_e)}

$$\left.\begin{aligned} \xi_r^{(w)} &= -\cos\theta_r^{(l)} \\ \text{where} \qquad \theta_r^{(l)} &= \frac{(2r-1)\pi}{2n+1} \end{aligned}\right\} \qquad (1.24)$$

η_r as in Equation (1.23).

Uniform location {(U), (U_0) or (U_e)}

$$\xi_r^{(w)} = \frac{2r}{n+1} - 1 \tag{1.25}$$

η_r as in Equation (1.23).

1.5 Planform Rounding

For a wing with a kink at the centre section (i.e. a swept wing) it is necessary to use an approximate planform with the kink removed by rounding, since the loading functions are not adequate near a kink. Such rounding is either implicitly included in the procedure or done explicitly by one of the following methods.

(A) The planform is rounded between the collocation stations adjacent to the centre section such that the actual values at the centre section ($y = s\eta_{(m+1)/2} = 0$), $x_l(0) = 0$ and $c(0) = c_0$ are replaced by

$$\left.\begin{aligned} x_l(0) &= \tfrac{1}{6}x_l(s\eta_{(m+3)/2}) \\ c(0) &= \frac{5c_0 + c(s\eta_{(m+3)/2})}{6} \ . \end{aligned}\right\} \tag{1.26}$$

That is, the leading and trailing edge at the centre section are each moved chordwise so that the chordwise distances between them and the corresponding points at the adjacent spanwise collocation stations is reduced by 1/6.

(B) The planform is rounded between $y = \pm\tilde{y}(a)$ according to the formulae

$$\left.\begin{aligned} x_l(\tilde{y}_a) - x_l(y) &= x_l(\tilde{y}_a)[\lambda - (\lambda^6/6)] \\ c(y) - c(\tilde{y}_a) &= \{c_0 - c(\tilde{y}_a)\}[\lambda - (\lambda^6/6)] \end{aligned}\right\} \tag{1.27}$$

where

$$\left.\begin{aligned} \tilde{y}_a &= s\sin\left(\frac{\pi}{a+1}\right) \\ \lambda &= 1 - |y|/\tilde{y}_a \ , \end{aligned}\right\} \tag{1.28}$$

a is an integer, and the actual values of $x_l(0)$ and $c(0)$ are 0 and c_0 respectively. This is a generalisation of (A).

(C) The planform is rounded between $y = \pm\tilde{y}$ according to the formulae

$$\left.\begin{aligned} x_l(\tilde{y}) - x_l(y) &= x_l(\tilde{y})[\lambda - \tfrac{1}{3}\lambda^3] \\ c(y) - c(\tilde{y}) &= \{c_0 - c(\tilde{y})\}[\lambda - \tfrac{1}{3}\lambda^3] \end{aligned}\right\} \tag{1.29}$$

where

$$\lambda = 1 - |y|/\tilde{y} \ ,$$

$\tilde{y}$ is arbitrary, and the actual values of $x(0)$ and $c(0)$ are 0 and c_0 respectively.

1.6 Chordwise Integration

The methods of chordwise integration used are as follows:

(A) For sections not too close to the collocation point the integral is evaluated in one piece using the Gaussian formula for the weight function $\sqrt{\{(1-\xi)/(1+\xi)\}}$. Close to the collocation point the range of integration is divided into two parts, one forward and one aft of the collocation point, though one of these parts disappears in some cases. Over each part the integral is evaluated by the Gaussian method with appropriate weight functions. Close to a collocation point is defined by the value of $|\eta - \eta_s|$. The limits used were

$$|\eta - \eta_s| \leqslant 0.3/(\omega_s/V) \qquad \text{Danielli} \tag{1.30}$$

$$\leqslant 0.1 \qquad \text{Rowe .} \tag{1.31}$$

(B) Low-order Gaussian integration formulae for appropriate weight functions are used over a number of intervals, the length of the intervals depending on the value of $|\eta - \eta_s|$ and on the chordwise location of the interval relative to the collocation point, so that the length increases as one leaves the collocation point. At $\eta = \eta_s$ the integral is determined analytically.

(C) Apart from the section $\eta = \eta_s$, where the analytic evaluation is used, the Gaussian integration formula for the weight function $\sqrt{\{(1-\xi)/(1+\xi)\}}$ is used with n ordinates. That is, the number of ordinates is equal to the number of chordwise loading functions.

(D) The first-order expansions in frequency of the chordwise integrals are determined by one of two numerical methods – one in the vicinity of the collocation point and the other farther afield. The integral can be expressed in terms of three complete elliptic integrals which are evaluated in the former case by an iterative method due to Bartky and in the latter by expanding the integrand as a series and integrating term-by-term (see Reference M23).

1.7 Spanwise Integration

The methods of spanwise integration used are as follows:

(M_q) the Multhopp method (Reference 1, Section 6.3.1). This uses $\bar{m}$ integration stations

$$\left.\begin{aligned} \bar{y}_j &= -s\cos\frac{j\pi}{\bar{m}+1}\,, \qquad j = 1 \ldots \bar{m}\,, \\ \text{where} \qquad \bar{m} &= q(m+1) - 1 \end{aligned}\right\} \tag{1.32}$$

and q is unity or a positive even integer. If q is always unity we denote the method by the symbol (M); and the integration and spanwise collocation stations then coincide.

(H_q) the Hsu method (Reference 1, Section 6.4). This uses $\bar{m}$ integration stations

$$\left.\begin{aligned} \bar{y}_j &= -s\cos\frac{(2j-1)\pi}{2\bar{m}}\,, \qquad j = 1 \ldots \bar{m}\,, \\ \text{where} \qquad \bar{m} &= q(m+1) \end{aligned}\right\} \tag{1.33}$$

and q is a positive integer. If q is always unity we denote the method by the symbol (H).

(W) the Watkins method (Ref.2). The spanwise integral is evaluated in four parts over the fields

$$\left.\begin{aligned} &\text{(i)} && -1 \leqslant \eta \leqslant 0 \\ &\text{(ii)} && 0 \leqslant \eta \leqslant \eta_s - \zeta \\ &\text{(iii)} && \eta_s - \zeta \leqslant \eta \leqslant \eta_s + \zeta \\ &\text{(iv)} && \eta_s + \zeta \leqslant \eta \leqslant 1\,. \end{aligned}\right\} \tag{1.34}$$

The integration over each of the regions (i), (ii) and (iv) is performed using the Gaussian formula (with possibly parts of the integrals determined analytically) appropriate to constant weight functions or weight functions conforming with the behaviour of the integrand at the wing tips. In the other region (iii), $(\eta - \eta_s)^2 \times$ the integrand is approximated by a Lagrange polynomial using evenly spaced points and the integral then evaluated analytically. Danielli used a polynomial of order 6 and Berman one of order 9.

The above methods only taken account of the dipole singularity $1/(\eta - \eta_s)^2$. To improve the numerical accuracy it is common practice to separate the lowest order logarithmic singularity – resulting from the term of order $(\eta - \eta_s)^2 \log|\eta - \eta_s|$ in the chordwise integral – and evaluate this from the analytic expression that has been obtained*.

---

* See, for example, Reference 1 (Appendix A, Section 6.3.2). The form of the coefficient of $(\eta - \eta_s)^2 \log|\eta - \eta_s|$ from the chordwise integration will depend on the choice of E(x) (Section 1.1 above).

1.8 Treatment of Control Surfaces

1.8.1 Calculation on the Planform in Reverse Flow

The force in a smooth mode f_i due to a discontinuous downwash distribution w_j, prescribed by a control surface oscillation, is deduced from the loading L_i in reversed flow resulting from a downwash distribution f_i. The reverse-flow theorem then shows that the desired, generalised force is given by the integral of the product $L_i w_j$ over the control surface.

1.8.2 Use of Equivalent Smooth Downwash Functions

Instead of making calculations on the planform in reverse flow one can use the reverse-flow theorem to construct equivalent smooth downwash functions which should give the same generalised force in a smooth mode as the loading produced by the actual discontinuous downwash distribution of the control surface motion. The form of this equivalent downwash depends on the choice of the exponential factor $E(x)$ (Eqn (1.2)). It is simplest when $E(x) = 1$ and the loading approximation of (1.13) refers to $c(y)\bar{l}(x,y)$. The equivalent downwash then is

(A)
$$w_j^{(e)}(\xi_r^{(w)},\eta_s) = \frac{\int_{-1}^{1} g_s^{(m)}(\eta) \int_{-1}^{1} w_j(\xi,\eta)\, h_{n-r+1}^{(n)}(1-\xi)\, d\xi d\eta}{\int_{-1}^{1} g_s^{(m)}(\eta)\, d\eta \int_{-1}^{1} h_{n-r+1}^{(n)}(\xi)\, d\xi}\,, \tag{1.35}$$

where $h_r^{(n)}$, $g_s^{(m)}$, $\xi_r^{(w)}$ and η_s are given by Equations (1.18), (1.19), (1.22) and (1.23) respectively.

An approximation to the expression (1.35) which has been used in some of the work is the following.

With $w_j(\xi,\eta) = \Omega(\eta) w_j^{\star}(\xi,\eta)$, where $\Omega(\eta)$ includes the discontinuities at the side edges of the control surface and $w_j^{\star}(\xi,\eta)$ is chosen to be as nearly as possible independent of η, then

(B)
$$w_j^{(e)}(\xi_r^{(w)},\eta_s) \simeq \frac{\int_{-1}^{1} \Omega(\eta) g_s^{(m)}(\eta)\, d\eta}{\int_{-1}^{1} g_s^{(m)}(\eta)\, d\eta} \; \frac{\int_{-1}^{1} w_j^{\star}(\xi,\eta_s) h_{n-r+1}^{(n)}(1-\xi)\, d\xi}{\int_{-1}^{1} h_{n-r+1}^{(n)}(\xi)\, d\xi}\,. \tag{1.36}$$

The above methods have also been used to obtain the force in a control surface mode due to control surface motion, though they are not strictly valid in these cases. A modification to (B) aimed at improving the estimation of the hinge moment has been used in some of the low frequency calculations. In (B) the discontinuous chordwise downwash is replaced by a smooth downwash of polynomial form such that in two-dimensional flow the same lift, pitching moment, second moment .... are achieved. In the modified form (C) this condition is changed such that the two-dimensional hinge moment is satisfied instead of the $(n-1)$th moment. Also the conditions for the spanwise smoothing, which in (B) are in effect the same lift and first $(m-1)$ moments in roll, according to slender-wing theory, are replaced by the condition that the local lift at each collocation station shall be the same.

1.8.3 Use of Particular Loading Functions

To determine the pressure distribution due to control surface motion without having to take a very large number of loading functions and possibly getting an ill-conditioned problem in the process, it is advisable to use particular loading functions which include appropriate singularities at the edges of the control surface. These loading functions are either used directly along with the wing loading functions in a collocation procedure (as for example in Reference M13), or are used to remove the downwash discontinuities from the problem, leaving a problem which can be solved by the usual methods. Development of appropriate functions is due mainly to Landahl[3], Hewitt[M34], Ashley[M29], and Crespo and Cunningham[M28]. As an indication of the types of functions that have been used, forms appropriate to an outboard trailing edge control surface, reaching to the wing tip, on one wing, are quoted below.

(A) Loading functions based on two-dimensional and slender-body theory:

$$(\cos\theta - \cos\theta_c)^i \log\left\{\frac{1-\cos(\theta-\theta_c)}{|\cos\theta - \cos\theta_c|}\right\} (\eta-\eta_e) \log\left\{\frac{1-\eta\eta_e - \sqrt{(1-\eta^2)(1-\eta_e^2)}}{1-\eta\eta_e + \sqrt{(1-\eta^2)(1-\eta_e^2)}}\right\}\,. \tag{1.37}$$

(B) An approximation to (A):

$$(\cos\theta - \cos\theta_c)^i \log\{|\cos\theta - \cos\theta_c|\}(\eta-\eta_e)\log(\eta-\eta_e) \qquad \text{for } \eta > \eta_e \tag{1.38}$$

and zero elsewhere.

(C) Three-dimensional loading functions for a control surface with unswept leading edge:

A linear combination of

$$X^i \log \left\{ \frac{\sqrt{X^2 + \beta^2(\eta - \eta_e)^2} - \beta(\eta - \eta_e)}{\sqrt{X^2 + \beta^2(1-\eta)^2} + \beta(1-\eta)} \right\} \tag{1.39}$$

and

$$\frac{X_e^i(\eta - \eta_e)}{\sqrt{\left(\frac{c}{2s}\right)^2 \sin^2\theta + (\eta - \eta_e)^2}} \log \left\{ \sqrt{X_e^2 + \beta^2(\eta - \eta_e)^2} - X_e \right\} . \tag{1.40}$$

(D) A loading function appropriate to a control surface with swept leading edge:

$$\log \left\{ \frac{\sqrt{\sqrt{X^2 + \bar\beta^2(\eta - \eta_e)^2} + \bar\beta(1 - \eta_e)} - \sqrt{\bar\beta(1-\eta)}}{\sqrt{\sqrt{X^2 + \bar\beta^2(\eta - \eta_e)^2} + \bar\beta(1 - \eta_e)} + \sqrt{\bar\beta(1-\eta)}} \right\} - $$

$$- \log \left\{ \frac{\sqrt{\sqrt{X^2 + \bar\beta^2(1-\eta)^2} + \bar\beta(1-\eta)} - \sqrt{2\bar\beta(1-\eta)}}{\sqrt{\sqrt{X^2 + \bar\beta^2(1-\eta)^2} + \bar\beta(1-\eta)} + \sqrt{2\bar\beta(1-\eta)}} \right\} . \tag{1.41}$$

Suitably chosen square root factors are applied to these functions, where necessary, to give the correct wing leading- and trailing-edge behaviour. In the formulae

$$X = \frac{c}{2s}(\cos\theta - \cos\theta_c) = \frac{x_c - x}{s} \tag{1.42}$$

$$\eta_e = \eta \quad \text{at control surface inner side edge} \tag{1.43}$$

$$X_e = (X)_{\eta = \eta_e} \tag{1.44}$$

$$\bar\beta^2 = \beta^2 + \left(\frac{dx_c}{dy}\right)^2 \tag{1.45}$$

$$x_c = x \quad \text{at control surface leading edge.} \tag{1.46}$$

1.9 Summary Table of Subsonic Collocation Methods

	Frequency	E(x)	Chordwise loading functions	Spanwise loading functions	Form of kernel	Approximations to kernel	Chordwise integration	Spanwise integration	Logarithmic singularity	Planform rounding	Collocation points	$\bar{l}$ or $c\bar{l}$ in Equation (1.13)	Reference
Acum	G	B	C	A	C			M	G	A	M_0	$c\bar{l}$	M18
Danielli	G	A	A	B	B		A	W	N		M_e	$c\bar{l}$	M8
Davies	G	B	D	A	A		B	M	G		M_e	$\bar{l}$	M14
Garner	L	C	C	A	D		L	M_q	L	B or C	M_0	$c\bar{l}$	M17 and M23
Laschka	G	A	C	A†	B			M	G		M_0*	$\bar{l}$	M11
Long	G	B	D	A	A			M_q	G	B	M_e	$\bar{l}$	M24
Richardson	G	A	D	A	A		C	M	G		M	$\bar{l}$	M21
Rowe	G	A	B	C	B	A	A	H_q	G		M	$c\bar{l}$	M3
Berman	G	A	B	B	B			W	N		M_e**	$c\bar{l}$	M13

The significance of the entries in this table is indicated in the previous sections apart from

G General frequency form
L Low (first-order) frequency form
N Not treated separately.

* The chordwise location is arbitrary and some calculations were made with other arrangements including U_0 and I_0 .

** This is the arrangement used here. The number and position is arbitrary, a least squares solution being employed when the number exceeds the number of loading functions.

† The $g_r^{(m)}(\eta)$ are actually used to approximate to products of the spanwise loading and parts of the chordwise integral.

2. THE ALBANO-RODDEN[M1] SUBSONIC DOUBLET LATTICE METHOD

This is a method of obtaining an approximate solution, by collocation, of the integral Equation (1.1) relating the downwash and loading in subsonic flow. It differs primarily from the more common type of collocation solution (Section 1) in the method of approximating to the loading. The wing (and control surface, if any) is divided into trapezoidal panels, the boundaries of which are lines of constant chord fraction or span fraction, in such a manner that the panels are arranged in columns parallel to the free stream. In each panel a distribution of acceleration potential doublets of uniform but unknown strength is placed along the ¼-chord line. The points at the midspan and ¾-chord of each panel are taken as the collocation points. This choice of location for sending/receiving elements is such that the Kutta condition is satisfied approximately.

The integral equation is taken in the form of Equation (1.1) with $E(x) = 1$. The kernel function is evaluated from Equation (1.6) by integrating by parts and then using the approximation (1.11). The downwash induced by a doublet line segment is then determined by approximating to $y^2 K(x,y)$, along the segment, by a parabola. Improved accuracy is obtained by applying this procedure to $y^2 \{K-(K)_{\omega=0}\}$ and then adding the $\omega = 0$ contribution by evaluation of it as the effect of a horseshoe vortex.

The method is applicable without modification to control surface oscillations provided the panels can be arranged so that the control surface edges do not intersect any panels.

3. SONIC COLLOCATION METHODS

The only values given in this chapter which have been obtained by a sonic collocation method are a few by Davies's method[M4]. This method is fully described in Part II, Chapter 4, Section 3 of the Manual. It is on similar lines to his subsonic method (see Section 1), the integral equation being taken in the form

$$\bar{w}(x,y) = \frac{1}{4\pi}\iint_C \left\{\bar{l}(x_0,y_0) - \frac{i\omega}{2V}\bar{l}^{(1)}(x_0,y_0)\right\}\bar{K}(x-x_0,y-y_0)\,dx_0\,dy_0 \tag{3.1}$$

where

$$\bar{K}(x,y) = -2\exp\left\{\frac{i\omega}{2V}\left(\frac{x^2-y^2}{x}\right)\right\} \tag{3.2}$$

$$\bar{w}(x,y) = w(x,y)\exp\{i\omega x/V\} \tag{3.3}$$

$$\bar{l}(x,y) = l(x,y)\exp\{i\omega x/V\} \tag{3.4}$$

$$\bar{l}^{(1)}(x,y) = \int_{x_L(y)}^{\max\left\{\begin{smallmatrix}x\\ x_L(y)\end{smallmatrix}\right.} \bar{l}(x,y)\,dx\ . \tag{3.5}$$

4. SUPERSONIC BOX INTEGRATION METHODS

4.1 General

These are methods of evaluating the loading or velocity potential at a point from its expression as an integral, over the intersection of the forward Mach cone from the point with the plane of the wing, involving the downwash. The basic equations have the form

$$\bar{l}(x,y) = -\frac{2\rho V}{\pi}\left(\frac{\partial}{\partial x} + \frac{i\omega}{V}\right)\iint_{C+D}\bar{w}(x_0,y_0)\bar{K}(x-x_0,y-y_0)\,dx_0\,dy_0 \tag{4.1}$$

$$\bar{\phi}(x,y) = -\frac{1}{\pi}\iint_{C+D}\bar{w}(x_0,y_0)\bar{K}(x-x_0,y-y_0)\,dx_0\,dy_0\ , \tag{4.2}$$

where the integration is over the entire disturbed region, bounded by the forward Mach lines from (x,y), comprising a region (C) on the wing and a region (D) on the so-called diaphragm.

$$\left.\begin{aligned}\overline{w}(x,y) &= w(x,y)E(x)\\ \overline{l}(x,y) &= l(x,y)E(x)\\ \overline{\phi}(x,y) &= \phi(x,y)E(x)\end{aligned}\right\} \tag{4.3}$$

$$\overline{K}(x,y) = E(x)\exp\left\{\frac{-i\omega M^2 x}{\beta^2 V}\right\}\frac{1}{R}\cos\left\{\frac{\omega MR}{V\beta^2}\right\} \tag{4.4}$$

$$R = \sqrt{x^2 - \beta^2 y^2} \tag{4.5}$$

and either (A) $E(x) = 1$

or (B) $E(x) = \exp\left\{\dfrac{i\omega M^2 x}{\beta^2 V}\right\}$. (4.6)

4.2 Mesh and Influence Coefficients

The integration of Equations (4.1) or (4.2) is performed by placing a mesh over the planform and diaphragm and evaluating the velocity potential or loading as a sum, over the region (C+D), of the integral over each cell of the mesh. In general these elementary contributions, called influence coefficients, are evaluated on the assumption that either

(A) $\overline{w}$ is constant over the cell, or

(B) $\overline{w}\cos\left\{\dfrac{\omega MR}{V\beta^2}\right\}$ is constant over the cell.

When a cell is intersected by the leading or side edge of the planform, certain refinements are often introduced. These are as follows.

(A) At a supersonic leading edge the influence coefficient is taken to be that for a complete cell reduced in proportion to the area of cell on the wing.

(B) At a subsonic leading edge $\overline{w}$ is assumed to be constant over the part of the cell on the wing and to have the appropriate singular behaviour for a wing at incidence in steady flow, over the rest of the cell. That is, over the latter portion, on the diaphragm, $\overline{w}$ is proportional to

$$\frac{\tau^2}{\sqrt{K-\tau}} ,$$

where τ is the ratio of the two characteristic coordinates of a point relative to the wing apex and $\tau = K$ is the leading edge.

(C) At the side edge $\overline{w}$ is assumed to be constant on the portion of a cell on the planform and to be proportional to

$$\frac{\sigma - \sigma_1}{\sqrt{\sigma - l}}$$

over the portion of the cell on the diaphragm, where (ρ,σ) are characteristic coordinates with origin on the side edge, and $\sigma = \sigma_1$ is the Mach line which is the boundary of the diaphragm.

An alternative to the refined treatment of leading edge boxes is the following, which we designate (D). This procedure has been used in one method:

(D) In what is called the "delta wing region" the ratio, in steady flow, of the exact potential to that given by the box method is first determined and these ratios are subsequently applied as correction factors to the unsteady potentials. The "delta wing region" is that portion of the planform in the vicinity of the wing apex which is uninfluenced by any differences of the planform from a pure delta wing.

4.3 Diaphragm

The velocity potentials or loadings at corners of the cells are thus obtained in terms of the values of $\overline{w}$ at the centres of the cell. The downwash on the diaphragm region (D) is however initially unknown and the normal procedure (S) is to determine it step-by-step, starting at the foremost point of the mesh, from the condition that the loading on the diaphragm is zero.

An alternative procedure (F) is used in the method of Fenain which is facilitated by the fact that he takes

$$E(x) = \exp\left\{\frac{i\omega M^2 x}{\beta^2 V}\right\}$$

and consequently the influence coefficients are all real. It depends also on the assumption that the influence coefficients depend only on the position of the sending point relative to the receiving point and not on its position relative to the planform. Then the value of $\bar{\phi}$ at any mesh point can be expressed, in terms of the $\bar{w}$ at the cell centres, as

$$\bar{\phi}_{lm} = \sum_{i=1}^{l} \sum_{j=1}^{m} A_{ij} \bar{w}_{l+1-i,m+1-j} \, . \tag{4.7}$$

Having determined the influence coefficients A_{ij} an inverse relationship of similar form is established:

$$\bar{w}_{lm} = \sum_{i=1}^{l} \sum_{j=1}^{m} D_{ij} \bar{\phi}_{l+1-i,m+1-j} \, , \tag{4.8}$$

where the D_{ij} are obtained from a simple relationship between them and the A_{ij}. These expressions for the $\bar{w}_{lm}$ are then used to determine step-by-step the $\bar{\phi}_{ij}$ at all the mesh points on the planform. This procedure avoids the calculation of the downwash at points on the diaphragm.

4.4 Summary Table of Supersonic Box Integration Methods

	Frequency	E(x)	Velocity potential or pressure	Type of box	Diaphragm procedure	Assumption about downwash				Reference
						General	At subsonic leading edge	At side edge	At supersonic leading edge	
Donato	G	A	V	M	S	A	D	N	D	M16
Fenain	G	B	V	C	F	B	N	N	N	M9
Stark	G	A	V	C	S	A	B	N	A	M19
Zartarian	G	A	P	M	S	A	N	C	N	M22

The significance of the entries in this table is indicated in the previous sections, apart from

G General frequency form
V Velocity potential
P Pressure
N No particular assumption.

5. SUPERSONIC BOX COLLOCATION METHODS

5.1 General

These methods[M10,M27] obtain approximate solutions of the integral equation relating the complex upwash distribution $Vw(x,y)e^{i\omega t}$ to the perturbation velocity potential $Vl\phi(x,y)$. This equation is written in the form

$$w(x,y) = \frac{M}{\pi}\frac{l}{d} \iint_C \phi(x_0,y_0) K(\rho,\sigma) \, d\rho d\sigma \, , \tag{5.1}$$

where ρ,σ are characteristic coordinates of scale length d with origin at (x,y), i.e.

$$\left.\begin{aligned} \rho &= \frac{M}{2\beta d}\{(x-x_0)+\beta(y-y_0)\} \\ \sigma &= \frac{M}{2\beta d}\{(x-x_0)-\beta(y-y_0)\} \end{aligned}\right\} \tag{5.2}$$

$$\begin{aligned} K(\rho,\sigma) &= \exp\left\{\frac{-iM\omega d(\rho+\sigma)}{V\beta}\right\}\left[\frac{\cos\left\{\frac{2\omega d}{\beta V}(\rho\sigma)^{1/2}\right\}}{4(\rho\sigma)^{3/2}} + \left(\frac{\omega d}{\beta V}\right)\frac{\sin\left\{\frac{2\omega d}{\beta V}(\rho\sigma)^{1/2}\right\}}{2\rho\sigma}\right] \\ &= \text{(say)}\ \frac{K_1(\rho,\sigma)}{(\rho\sigma)^{3/2}} + \frac{K_2(\rho,\sigma)}{(\rho\sigma)^{1/2}} , \end{aligned} \tag{5.3}$$

and the integration is over the part of the planform cut off by the forward Mach cone from the point (x,y).

A characteristic mesh of spacing d is placed over the planform. In each cell the potential is written in terms of its values at the cell vertices. Thus the contribution to w(x,y) from any cell is obtained in terms of the values of the potential ϕ at its vertices by the use of Gaussian, modified Gaussian, and/or other integration formulae which take account, where necessary, of the behaviour of ϕ at the planform edges and of the $(\rho\sigma)^{-1/2}$ and $(\rho\sigma)^{-3/2}$ singularities in K . In the latter case the finite part interpretation is used. By collocating the calculated downwash with the prescribed downwash successively at the mesh vertices, starting at the foremost point and working backwards along the Mach lines, the values of the potential ϕ at all the mesh points on the planform are obtained. If a portion of the wake influences the planform, some potentials in the wake will be required for this procedure and these are obtained simply from the values at the trailing edge.

5.2 Irregular Cells

The major difficulty is the accurate treatment of the irregular cells which occur along the leading and side edges of the planform, particularly as errors here will propagate downstream. Allen and Sadler[M10] approximated to ϕK_1 and ϕK_2 by simple polynomials multiplied by a weighting factor to give the right behaviour at the wing edge and then integrated analytically. The calculation of potentials at mesh points just on the planform was avoided by combining two irregular cells into one where necessary. The potentials at a few points near the wing apex were determined from first-order in frequency theory to ensure an accurate start.

Woodcock[M27] used similar approximation, but to ϕ instead of ϕK_1 and ϕK_2 . The integration over a cell is then performed using the Gaussian or modified Gaussian formulae appropriate to the behaviour of the integrand at the cell boundaries. In some cases the cell has to be divided into two parts. The potential is obtained at all mesh points on the planform (no combination of irregular cells, and no starting values) by the procedure of Section 5.1.

6. SUPERSONIC COLLOCATION METHODS

6.1 General

These methods have many similarities to the subsonic collocation methods described in Section 1. Since no exponential factor E(x) was applied to give modified loading and downwash, we will write the integral equation as

$$w(x,y) = \frac{1}{4\pi}\iint\limits_C l(x_0,y_0)K(x-x_0,y-y_0)\,dx_0dy_0 , \tag{6.1}$$

where C is the area of the planform cut off by the forward Mach cone from the point (x,y).

The kernel function K is used in the form

$$\begin{aligned} y^2 e^{i\omega x/V}K(x,y) &= \frac{2x}{R}\cos\left(\frac{\omega MR}{\beta^2 V}\right)\exp\left\{\frac{-i\omega x}{\beta^2 V}\right\} + \frac{i\omega}{V}\int_{(x-MR)/\beta^2}^{(x+MR)/\beta^2}\frac{\exp\left\{\frac{-i\omega u}{V}\right\}u\,du}{(u^2+y^2)^{1/2}} && (x>\beta|y|,\ y\neq 0) \\ &= 2 && (x>\beta|y|,\ y=0) \\ &= 0 && (x\leqslant\beta|y|) \end{aligned} \tag{6.2}$$

where

$$R = \sqrt{x^2 - \beta^2 y^2} \ . \tag{6.3}$$

6.2 Loading Functions

The approximations to the loading $l(x,y)$ used in Equation (6.1) take the form

$$c(y)l(x,y) = \sum_{i=1}^{n} \sum_{j=1}^{m} a_{ij} h_i^{(n)}(\xi) g_j^{(m)}(\eta) \ , \tag{6.4}$$

where ξ,η are defined in Equation (1.14). The chordwise loading functions $h_i^{(n)}(\xi)$ that have been used are

(A)
$$h_r^{(n)}(\xi) = \cos\{(r-1)\theta\} f(\xi,\eta) \tag{6.5}$$

or (B)
$$h_r^{(n)}(\xi) = \left\{ \prod_{i=1}^{n}{}' \frac{\xi - \xi_i^{(l)}(\eta)}{\xi_r^{(l)}(\eta) - \xi_i^{(l)}(\eta)} \right\} f(\xi,\eta) \ , \tag{6.6}$$

where
$$f(\xi,\eta) = \sqrt{\frac{1-\xi}{1+\xi}}\ , \qquad \sqrt{1-\xi}\ , \qquad \frac{1}{\sqrt{1+\xi}} \qquad \text{or } 1$$

according as the leading-trailing edge conditions at the station η are subsonic-subsonic, supersonic-subsonic, subsonic-supersonic, or supersonic-supersonic respectively.

$\xi_r^{(l)}(\eta)$ are the abscissae for Jacobi-Gauss quadrature over the interval $(-1,1)$, with the weighting function $f(\xi,\eta)$, using n ordinates; the prime to the product symbol signifies that the factor for $i = r$ is omitted. Thus for leading-trailing edge conditions:

(i) subsonic-subsonic
$$\xi_r^{(l)}(\eta) = -\cos\left\{\frac{(2r-1)\pi}{2n+1}\right\} \tag{6.7}$$

(ii) supersonic-subsonic
$$\xi_r^{(l)}(\eta) = 1 - 2\left(\alpha_{n+1-r}^{(2n+1)}\right)^2 \tag{6;8}$$

(iii) subsonic-supersonic
$$\xi_r^{(l)}(\eta) = 2\left(\alpha_r^{(2n)}\right)^2 - 1 \tag{6.9}$$

(iv) supersonic-supersonic
$$\xi_r^{(l)}(\eta) = \beta_r^{(n)} \ , \tag{6.10}$$

where $\alpha_r^{(N)}$ are the positive zeros, and $\beta_r^{(N)}$ are the zeros, of the Legendre polynomial $P_N(x)$.

The spanwise loading functions $g_j^{(m)}(\eta)$ that have been taken are

(A)
$$g_r^{(m)}(\eta) = \frac{(-)^r \sin\phi_r}{(m+1)} \frac{\sin\{(m+1)\phi\}}{(\cos\phi_r - \cos\phi)} = \frac{z}{m+1} \sum_{\lambda=1}^{m} \sin\lambda\phi_r \sin\lambda\phi \ , \tag{6.11}$$

where
$$\phi_r = \frac{r\pi}{m+1} \tag{6.12}$$

or (B)
$$g_r^{(m)}(\eta) = \cos\{(r-1)\phi\} \sin\phi \ . \tag{6.13}$$

6.3 Collocation Points

The spanwise collocation stations are the same set as used in the subsonic methods, i.e.

$$\eta_r = -\cos\phi_r = -\cos\left(\frac{r\pi}{m+1}\right) . \tag{6.14}$$

The chordwise locations $\xi_r^{(w)}$ are given in the following table.

Leading-trailing edge	$\xi_r^{(w)}$	
	(R) *Richardson-Harris*	(C) *Curtis*
Subsonic-subsonic	$-\cos\{2r\pi/(2n+1)\}$	
Supersonic-subsonic	$2\left(\alpha_r^{(2n+1)}\right)^2 - 1$	$2\left(\alpha_r^{(2n)}\right)^2 - 1$
Subsonic-supersonic	$1 - 2\left(\alpha_{n+1-r}^{(2n)}\right)^2$	$1 - 2\left(\alpha_{n+1-r}^{(2n+1)}\right)^2$
Supersonic-supersonic	$\beta_r^{(n)}$	

6.4 Chordwise and Spanwise Integration

In each method Gaussian integration formulae have been used for the chordwise integration. There is however, a variation in the treatment of the singularity at the edge of the Mach cone. One approach (A) is to use Gaussian formulae appropriate to the singularity. The other (B) is to separate out the singularity by subtracting

$$l(x - \beta|y - y_0|, y_0)K_0(x - x_0, y - y_0) ,$$

where

$$y^2 K_0(x,y) = \frac{2x}{R} \exp\left\{\frac{-i\omega M^2 |y|}{\beta V}\right\} \qquad (6.15)$$

from

$$l(x_0, y_0)K(x - x_0, y - y_0) ,$$

integrate the singular part analytically, and apply a numerical formula to the remainder.

For the spanwise integration Curtis[M20] used an adaptation (W) of the Watkins[2] method (see Section 1.7), though the extreme limits were not in general $(-1,1)$. In the region straddling the collocation point a 12th order Lagrange polynomial was used as an approximation to $(\eta - \eta_s)^2 \times$ the integrand.

(H) a similar type of approximation was used by Harris[M25], though over the whole range of integration. A polynomial was fitted to $(\eta - \eta_s)^2 \times$ the integrand at the zeros of the Chebyshev polynomial of the first kind $T_q(x)$, and the integral was then evaluated analytically. Correction to take account of the lowest order logarithmic singularity was included, as in the subsonic methods.

6.5 Summary Table for Supersonic Collocation Methods

	Frequency	Chordwise loading functions	Spanwise loading functions	Chordwise integration	Spanwise integration	Logarithmic singularity	Collocation points	Reference
Curtis	G	A*	B	B	W	N	C	M20
Harris	G	B	A	A	H	G	R	M25

The significance of the entries in this table is indicated in the previous sections, apart from

G General frequency form

N Not treated separately.

* To overcome the failure of the loading functions to account for a discontinuity in the loading of the Mach line from the tip leading edge, Curtis divided the wing into a "delta wing region" and two "tip regions" (for the case of non-interacting tips). The delta wing region was treated as an isolated wing. From this solution an induced downwash over the tip region was obtained and the tip region was then solved as an isolated wing with a modified downwash condition.

7. PREFACE TO TABLES AND FIGURES

7.1 Scope

The five planforms considered are shown in Figures 1 to 5 and details of their geometry are given in Table 1. For reference the planforms have been numbered 1 to 5, though planform 3 has also been designated 6 to distinguish the sonic and supersonic cases from the subsonic cases. Tables 2 and 3 give details of the cases for which calculations were made. They also provide an index to the calculated results. Figures 6 to 8 show, for the three supersonic planforms, the relative size of the wing diaphragm and wake regions over a range of Mach numbers covering those used in the calculations.

The basic presentation of the results is through tables of the calculated values of the generalised force coefficients (see Sections 7.2 and 7.3). It would be impossible to show on graphs all the calculated coefficients, particularly since there is often little difference between values calculated by different methods. A selection of such graphs (Figs.9 to 54) is therefore included here, with the intention of giving a general picture of the results and high-lighting any noticable differences.

7.2 Definition of Generalised Force Coefficients

The wing semi-span s has been taken as the reference length in all cases. The vertical displacement of the wing at the point (x,y) is expressed as

$$Z(x,y) = s\sum_i f_i(x,y)q_i(t) , \qquad (7.1)$$

where the $f_i(x,y)$ are the modal functions given in Tables 2 and 3 and the $q_i(t)$ are the generalised coordinates. The results are presented as generalised aerodynamic force coefficients Q_{ij} defined by*

$$Q_i = -\rho V^2 s^3 \sum Q_{ij} q_j(t) , \qquad (7.2)$$

where Q_i is the generalised force in the i th degree of freedom. These coefficients Q_{ij} are given by

$$Q_{ij} = -\int_{-1}^{1} \int_{x_{1_e}}^{x_{t_e}} f_i(x,y)\lambda_j(x,y)\,dxdy , \qquad (7.3)$$

where $\rho V^2 \lambda_j(x,y)q_j(t)$ is the contribution to the vertical force per unit area resulting from harmonic oscillation in the j th degree of freedom (i.e. with $q_j(t) = q_{j0}e^{i\omega t}$). They are complex and so are written as

$$Q_{ij} = Q'_{ij} + ik\,Q''_{ij} , \qquad (7.4)$$

where $k = \omega s/V$ is the reduced frequency.

7.3 Layout of Tables

Each of the Tables 4 to 184 gives the matrices, $[Q'_{ij}]$ and $[Q''_{ij}]$, of the generalised force coefficients for one particular planform, at one Mach number and reduced frequency, for one set of modes. The matrices are printed row by row in one vertical column. Thus each table contains comparative results obtained by a number of different methods. In general the quoted values are exactly as submitted by the various contributors and thus there is variation in the number of significant figures. In exceptional circumstances a value has been rounded so as not to occupy more than eight character spaces. Where a particular coefficient has not been determined a question mark has been inserted in the corresponding position in the tables.

In order to show up the differences between the different calculations, a number of other details have been given along with each pair of matrices of general force coefficients:

(i) Method – Number in list of references to methods

(ii) $[Q'_{ij}]$

(iii) $[Q''_{ij}]$

---

* Coefficients C_{ij} defined by $Q_i = -\rho V^2 sS\, \Sigma C_{ij} q_j(t)$, where S is the wing area, are related to the Q_{ij} by the formula $C_{ij} = (A/4)Q_{ij}$.

(iv) Type of method – Number indicating type:

1 Analytical
2 Collocation – Multhopp type (cf. Sections 1, 3 and 6)
3 Supersonic box integration (cf. Section 4)
4 Supersonic box collocation (cf. Section 5)
5 Subsonic lattice (cf. Section 2)

(v) Minor details – Number indicating minor details about the calculation (see list in Section 7.4)

(vi) Number of spanwise collocation points or boxes m (tip-to-tip)

(vii) Number of chordwise collocation points or boxes n

(viii) Number of spanwise integration stations $\bar{m}$

(ix) Number of chordwise integration stations $\bar{n}$

(x) Number in file of calculated results*

(xi) Mach number used in calculation
(xii) Reduced frequency used in calculation
} May be slightly different from specified values

(xiii) Semi-width (spanwise) of integration region covering collocation point when integration procedure W (see Section 1.7) is used.

The numbers of boxes in a chordwise or spanwise direction ((vi) or (vii)) are the numbers between the extreme chordwise or spanwise points on the wing planform respectively. With characteristic boxes these numbers are counted along chordwise and spanwise lines through the box vertices. If these numbers are n and m , then the ratio of nm to the number of boxes on the planform itself (excluding diaphragm, make etc.) is a constant, for a given planform, whose value depends only on the type of box used. Thus:

$$\frac{nm}{\text{Number of boxes on planform}} =$$

	Characteristic Box	*Mach Box*
4 Rectangular	0.5	1.0
5 Arrowhead	0.7086	1.4172
6 A = 1.45 wing	1.5	3.0

In methods where a diaphragm region was used the number of boxes on the diaphragm can be estimated from the relative areas shown in Figures 6, 7 or 8.

7.4 Index to Minor Details of Calculations

It will be necessary in some cases to refer to the report on the particular method of calculation in order to understand the significance of some of the following notes:

1 Instantaneous part of solution
2 First approximation N = 0
} (see Reference M15)

3 Forces due to control surface motion obtained from reverse flow solution (see Section 1.8.1)

4 Two-dimensional quasi-steady equivalent upwash
5 Two-dimensional and slender-body equivalent upwash (B) {see, e.g., Equation (1.36)}
6 Three-dimensional equivalent upwash (A) {see Equation (1.35)}
7 Frequency-dependent three-dimensional equivalent upwash (see Reference C16)
} Equivalent upwash used to represent control surface motion

8 NPL rounding appropriate to m {(A), Section 1.5}
9 NPL rounding appropriate to $\left\{\frac{m-1}{2}\right.$ (B), Section 1.5 with $\left. a = \frac{m-1}{2}\right\}$
32 Rounding type (C) (Section 1.5)
} Rounding of central kink

* The source reference can be found from Table 186.

10 Truncated expansion in frequency

11 n approximate mean – chordwise number varies

20 $\bar{n}$ is maximum number – number varies according to region

22 $\bar{n}$ is maximum number – distribution of $\bar{m}$ between different regions varies with spanwise position of collocation point

30 Characteristic boxes (i.e. rhombuses bounded by Mach lines) }

33 Mach boxes (i.e. rectangles with diagonal along Mach lines) } Type of box used

40 Square boxes }

44 Inverse location (I) {see Equation (1.24)} }

50 0.1, 0.25, 0.5, 0.75 } Chordwise position of collocation points*

55 1/(n+1) , 2/(n+1) , ..., n/(n+1) {U (see Equation (1.25))} }

51 Solution for small $A\sqrt{k}$ }

52 Solution for large $A\sqrt{k}$ } (see Reference M7)

99 Extrapolated from high subsonic values (M = 0.96) by transonic similarity law.

Combined notes:

21 20 + rounding {(B) (see Section 1.5)} with a = 15

31 3 + 4 (for hinge moment) + rounding {(C) (see Section 1.5)} – hinge line also rounded

41 4 + rounding {(C) (see Section 1.5)} – hinge line also rounded

80 8 + first-order frequency-dependent equivalent upwash {see Reference C16}

88 8 + exact upwash smoothed at collocation points near control surface edges {see Reference C16}

Two single figure notes are represented by the two-figure number formed from the single figures with the smallest first. That is 48 represents 4 + 8.

7.5 Pressure Distribution

In addition to the generalised force coefficients, the pressure distribution was calculated for one case:

Planform	No. 1, elliptic
Mach number	0.8
Reduced frequency	1.0
Mode	No.2 – pitch about mid-chord axis
Method	M11 – collocation (Type 2)
Source	C7 (NLR)
Collocation points	m = 15 (spanwise) n = 3 (chordwise).

The chordwise pressure distribution was obtained at eight stations and the results are tabulated in Table 185.

* If no note, the chordwise location is the standard one for the method (see Sections 1.9 and 6.5).

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TABLE 1

Planform Details of Figures 1 to 5

	1	2	3,6	4	5
Planform	*Circular and Elliptic*	*Tapered Swept Back*	*Tapered Swept Back*	*Rectangular*	*Arrowhead*
Aspect ratio	$4/\pi\sqrt{(1-M^2)}$	2	1.45	2	4
Taper ratio	0	$\frac{5-2\sqrt{3}}{3+2\sqrt{3}} \simeq 0.238$	0.71	1	0
Leading edge sweepback	–	60°	39°	0°	$\tan^{-1} 1.5 \simeq 56.31°$
Trailing edge sweepback	–	$\tan^{-1} 0.5 \simeq 26.57°$	18.88°	0°	$\tan^{-1} 0.5 \simeq 26.57°$
Origin	Mid-root-chord	Mid-root-chord	Mid-root-chord	Mid-root-chord	Mid-root-chord
Equation of leading edge	$x = -\sqrt{\{(1-M^2)(1-y^2)\}}$	$x = \sqrt{3}y - \frac{1.5+\sqrt{3}}{4}$ $\simeq 1.73y - 0.808$	$x = -0.807 + 0.810y$	$x = -0.5$	$x = \frac{3y-1}{2}$
Equation of trailing edge	$x = \sqrt{\{(1-M^2)(1-y^2)\}}$	$x = (1.5 + \sqrt{3} + 2y)/4$ $\simeq 0.808 + 0.5y$	$x = 0.807 + 0.342y$	$x = 0.5$	$x = \frac{y+1}{2}$
Control surface leading edge	–	$x = \frac{\sqrt{3}+3y}{4}$ $\simeq 0.433 + 0.75y$	$x = 0.468 + 0.440y$	–	$x = \frac{2y+1}{4}$
Control surface inboard edge	–	y = 0.25 (Flap 1) 0.5 (Flap 2) 0.75 (Flap 3) 0 (Flap 4)	y = 0.51	–	y = 0
Control surface outboard edge	–	y = 1 (all flaps)	y = 1	–	y = 0.375
$\frac{\text{Control surface chord}}{\text{Total chord}}$	–	0.25 at y = 0.5	0.21	–	0.25 at y = 0
Sweepback of control surface leading edge	–	$\tan^{-1} 0.75 \simeq 36.87°$	23.76°	–	$\tan^{-1} 0.5 \simeq 26.57°$

The non-dimensional coordinates x,y are based on the semi-span s so that in each case the wing tips are given by $y = \pm 1$.

TABLE 2

Subsonic Cases

Planform	*Mach Numbers*	*Reduced Frequencies* $k = \omega s/V$	*Modes* $f_i(x,y)$	*Set No.*	*Results in Tables*
1. Circular and elliptic $A = 4/\pi\sqrt{(1-M^2)}$	0, 0.8, 0,95	0, 0.1, 1, 2	1, x, x^2, y^2	2	4 – 15
			y, xy	5	16 – 27
2. Tapered swept back A = 2	(a) 0, 0.7806, 0.9270	0, 0.5, 1	{1, x, flap rotation	2	28 – 36
			y, xy	5	37 – 45
	(b) 0.7806	0.5	{1, x, flap rotation	1	182
	(c) 0.7806	0.5	{1, x, flap rotation	3	183
	(d) 0.7806	0.5	{1, x, flap rotation	4	184
3. Tapered swept back A = 1.45	0, 0.8, 0.95	0, 0.5, 1, 4	{1, x, x^2, y^2 flap rotation	2	46 – 57
			y, xy	5	58 – 69

A mode of flap rotation indicates a modal function

$$f_i(x,y) = (x - z_h) \text{ for a point } (x,y) \text{ on the flap}$$
$$= 0 \text{ elsewhere,}$$

where $x = x_R(y)$ is the flap leading edge.

TABLE 3

Sonic and Supersonic Cases

Planform	*Mach Numbers*	*Reduced Frequencies* $k = \omega s/V$	*Modes* $f_i(x,y)$	*Set No.*	*Results in Tables*
4. Rectangular A = 2	1, 1.05, 1.2, 2	0, 0.3, 0.6, 1, 2	1, x, x^2, y^2, x^2y^2	2	70 – 89
			y, xy	5	90 – 109
5. Arrowhead A = 4	1.1, 1.25, 1.5621, 2	0, 0.5, 1, 2, 4	{1, x, x^2, y^2 flap rotation	2	110 – 129
			y, xy	5	130 – 149
6. Tapered swept back A = 1.45	1, 1.04, 1.2, 2	0, 0.5, 1, 4	{1, x, x^2, y^2 flap rotation	2	150 – 165
			y, xy	5	166 – 181

The definition of flap rotation has been given in Table 2. The wing and control surface edges are sonic at the following Mach numbers.

	Wing Leading Edge	*Wing Trailing Edge*	*Control Surface Leading Edge*
Rectangular A = 2	1	1	–
Arrowhead A = 4	1.803	1.118	1.118
Tapered swept back A = 1.45	1.287	1.057	1.093

NOTE TO TABLES 4 TO 184

The Table below is a much reduced version of Table 4, and is intended only as a sample. Alongside this Table on the right-hand side are given notes or symbols which indicate the contents of similar or corresponding rows in each of the Tables 4 to 184.

PLANFORM 1 MODE SET 2 M=0.0000 K=0.0

1	3	8	11	11	12	13	14	14	14	Method
0	0.00000	-0.00023	-.000000	-0.00000	0	0	-0.0000	-0.0000	-0	
2.873	2.81241	2.82485	2.816931	2.81416	2.812	2.8166	2.8291	2.8271	2.8151	
3.009	2.93681	3.2106	2.961501	2.95731	2.931	3.0566	3.0266	2.8935	2.8986	
0	0.00000	-0.00006	-.000000	-0.00000	0	?	-0.0000	-0.0000	-0	
0	0.00000	-0.00003	0.000000	-0.00000	0	0	-0.0000	-0.0000	-0	
-1.509	-1.66683	-1.37769	-1.46127	-1.46035	-1.465	-1.4766	-1.5182	-1.5097	-1.4514	
1.376	1.37665	1.39977	1.376930	1.38260	1.379	1.2889	1.4033	1.3565	1.2591	
0	0.00000	-0.00000	0.000000	-0.00000	0	?	0.0000	-0.0000	-0	Q'_{ij}
0	0.00000	-0.00003	-.000000	-0.00000	?	0	-0.0000	-0.0000	-0	
1.222	1.17983	1.0875	1.177623	1.17787	?	1.1705	1.1956	1.1991	1.1299	
-0.05593	-0.07262	-0.0868	-.068470	-0.06826	?	-0.0982	-0.04162	-0.1069	-0.06817	
0	0.00000	-0.00000	-.000000	-0.00000	?	?	-0.0000	-0.0000	-0	
0	0.00000	-0.00004	-.000000	-0.00000	?	?	-0.0000	-0.0000	-0	
0.7330	0.69530	0.69760	0.696528	0.69629	?	?	0.7023	0.7029	0.6998	
0.6477	0.60709	0.66136	0.616513	0.61526	?	?	0.6560	0.6294	0.6156	
0	0.00000	-0.00001	-.000000	-0.00000	?	?	-0.0000	-0.0000	-0	
?	2.81241	2.8268	?	2.81416	2.812	2.8166	2.8291	2.8271	2.8151	
?	3.75865	3.8980	?	3.78939	3.766	3.9267	3.9365	3.7777	3.6471	
?	0.82076	1.138	?	0.83979	0.8091	1.0269	0.7192	0.7007	0.6888	
?	0.69516	0.6910	?	0.69567	0.6951	?	0.7006	0.7025	0.6996	
?	-1.66683	-1.3776	?	-1.46035	-1.465	-1.4766	-1.5182	-1.5097	-1.4514	
?	0.87016	0.9848	?	0.87964	0.8470	0.7766	0.8932	0.8623	0.8011	
?	0.93761	1.0096	?	0.94357	0.9350	0.9325	0.9098	0.8550	0.7979	
?	-0.30210	-0.2806	?	-0.29970	-0.3022	?	-0.3287	-0.3281	-0.3160	Q''_{ij}
?	1.17983	1.0876	?	1.17787	?	1.1705	1.1956	1.1991	1.1299	
?	0.34713	0.2680	?	0.35550	?	0.3601	0.3787	0.3170	0.3029	
?	0.40903	0.5272	?	0.41882	?	0.4486	-0.2732	0.3682	0.3297	
?	0.22663	0.2040	?	0.22550	?	?	0.2469	0.2407	0.2279	
?	0.69530	0.6976	?	0.69629	?	?	0.7023	0.7029	0.6998	
?	0.73866	0.7076	?	0.76855	?	?	0.8223	0.7944	0.7665	
?	0.13171	0.1848	?	0.13856	?	?	0.1520	0.1215	0.1188	
?	0.23676	0.236	?	0.23715	?	?	0.2380	0.2403	0.2396	

5	2	2	2	2	1	2	2	2	2	←		Type of method
11	0	20	0	0	0	22	0	0	0	←		Minor details
18	12	14	15	15	0	10	4	4	4	←	m	Spanwise coll. pts or boxes
8	4	3	3	3	0	3	2	4	6	←	n	Chordwise coll. pts or boxes
0	26	36	0	15	0	30	4	4	4	←	$\bar{m}$	Spanwise integration stations
0	0	18	0	24	0	21	0	0	0	←	$\bar{n}$	Chordwise integration stations
198	126	235	390	466	1	619	4	5	6	←		File No.
0.0000	0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	←		M
0.0000	0.0010	0.0100	0.0000	0.0001	0.0010	0.0001	0.0010	0.0010	0.0010	←		k
0.0000	0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	←		Integration region width around coll. pt.

TABLE 4 - 1

TABLE 4-1

PLANFORM 1 MODE SET 2 M=0.0000 K=0.0

1	3	8	11	11	12	13	14	14	14
0	0.00000	-0.00023	-.000000	-0.00000	0	0	-0.0000	-0.0000	-0
2.873	2.81241	2.82485	2.814931	2.81414	2.812	2.8164	2.8291	2.8271	2.8151
3.009	2.93681	3.2106	2.961501	2.95731	2.931	3.0564	3.0264	2.8935	2.8286
0	0.00000	-0.00004	-.000000	-0.00000	0	?	-0.0000	-0.0000	-0
0	0.00000	-0.00003	0.000000	-0.00000	0	0	-0.0000	-0.0000	-0
-1.509	-1.46483	-1.37749	-1.46127	-1.46035	-1.465	-1.4764	-1.5182	-1.5097	-1.4514
1.374	1.37665	1.39977	1.376930	1.38260	1.379	1.2889	1.4033	1.3565	1.2591
0	0.00000	-0.00000	0.000000	-0.00000	0	?	0.0000	-0.0000	-0
0	0.00000	-0.00003	-.000000	-0.00000	?	0	-0.0000	-0.0000	-0
1.222	1.17983	1.0875	1.177623	1.17787	?	1.1705	1.1956	1.1991	1.1299
-0.05593	-0.07262	-0.0868	-.068470	-0.06826	?	-0.0982	-0.04162	-0.1069	-0.06817
0	0.00000	-0.00000	-.000000	-0.00000	?	?	-0.0000	-0.0000	-0
0	0.00000	-0.00004	-.000000	-0.00000	?	?	-0.0000	-0.0000	-0
0.7330	0.69530	0.69740	0.696528	0.69629	?	?	0.7023	0.7029	0.6998
0.6477	0.60709	0.66136	0.616513	0.61526	?	?	0.6560	0.6296	0.6156
0	0.00000	-0.00001	-.000000	-0.00000	?	?	-0.0000	-0.0000	-0
?	2.81241	2.8248	?	2.81414	2.812	2.8164	2.8291	2.8271	2.8151
?	3.75845	3.8980	?	3.78939	3.766	3.9247	3.9365	3.7777	3.6471
?	0.82074	1.138	?	0.83979	0.8091	1.0249	0.7192	0.7007	0.6888
?	0.69514	0.6910	?	0.69567	0.6951	?	0.7006	0.7025	0.6996
?	-1.46483	-1.3774	?	-1.46035	-1.465	-1.4764	-1.5182	-1.5097	-1.4514
?	0.87014	0.9848	?	0.87964	0.8470	0.7766	0.8932	0.8423	0.8011
?	0.93761	1.0094	?	0.94357	0.9350	0.9325	0.9098	0.8550	0.7979
?	-0.30210	-0.2806	?	-0.29970	-0.3022	?	-0.3287	-0.3281	-0.3160
?	1.17983	1.0876	?	1.17787	?	1.1705	1.1956	1.1991	1.1299
?	0.34713	0.2680	?	0.35559	?	0.3401	0.3787	0.3179	0.3029
?	0.40903	0.5272	?	0.41882	?	0.4484	-0.2732	0.3682	0.3297
?	0.22663	0.2040	?	0.22550	?	?	0.2469	0.2407	0.2279
?	0.69530	0.6974	?	0.69629	?	?	0.7023	0.7029	0.6998
?	0.73864	0.7674	?	0.74855	?	?	0.8223	0.7944	0.7665
?	0.13171	0.1848	?	0.13856	?	?	0.1529	0.1215	0.1188
?	0.23676	0.236	?	0.23715	?	?	0.2380	0.2403	0.2396

5	2	2	2	2	1	2	2	2	2
11	0	20	0	0	0	22	0	0	0
18	12	14	15	15	0	10	4	4	4
8	4	3	3	3	0	3	2	4	6
0	26	36	0	15	0	30	4	4	4
0	0	18	0	24	0	21	0	0	0
198	126	235	390	466	1	619	4	5	6
0.0000	0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0010	0.0100	0.0000	0.0001	0.0010	0.0001	0.0010	0.0010	0.0010
0.0000	0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 4 - 1

TABLE 4-2

14	14	14	14	14	14	14	15	15	23
-0	-0	-0	-0	-0	-0	-0	0	0	0
2.8126	2.8169	2.8125	2.8200	2.8100	2.8172	2.8150	2.5465	?	2.8098
2.9718	2.9019	2.8782	2.9630	2.9322	2.9275	2.9535	?	?	?
-0	-0	-0	-0	-0	-0	-0	?	?	?
-0	-0	-0	-0	-0	-0	-0	0	0	0
-1.4813	-1.4828	-1.4603	-1.4853	-1.4797	-1.4881	-1.4663	-1.3333	?	-1.4789
1.3806	1.3590	1.3229	1.3980	1.3767	1.3861	1.3843	?	?	?
-0	-0	-0	-0	-0	-0	-0	?	?	?
-0	-0	-0	-0	-0	-0	-0	?	?	?
1.1813	1.1859	1.1572	1.1940	1.1810	1.1984	1.1801	?	?	?
-0.03974	-0.09573	-0.07892	-0.07738	-0.04435	-0.09504	-0.06832	?	?	?
-0	-0	-0	-0	-0	-0	-0	?	?	?
-0	-0	-0	-0	-0	-0	-0	?	?	?
0.6958	0.6980	0.6968	0.6981	0.6948	0.6974	0.6964	?	?	?
0.6213	0.6117	0.6068	0.6193	0.6052	0.6121	0.6135	?	?	?
-0	-0	-0	-0	-0	-0	-0	?	?	?
2.8216	2.8169	2.8125	2.8200	2.8100	2.8172	2.8150	2.5465	2.8598	2.8098
3.8335	3.7567	3.7071	3.8224	3.7889	3.7890	3.7923	4	?	3.7829
0.7849	0.7494	0.7453	0.8215	0.7926	0.7774	0.8302	?	?	?
0.6942	0.6978	0.6967	0.6981	0.6935	0.6972	0.6963	?	?	?
-1.4813	1.4828	-1.4603	-1.4853	-1.4797	-1.4881	-1.4663	-1.3333	-1.4973	-1.4789
0.8813	0.8515	0.8379	0.8846	0.8767	0.8683	0.8801	0.7565	?	0.8748
0.8492	0.8948	0.8723	0.9449	0.8393	0.9239	0.9430	?	?	?
-0.3138	-0.3125	-0.3080	-0.3095	-0.3136	-0.3111	-0.3028	?	?	?
1.1813	1.1859	1.1572	1.1940	1.1810	1.1984	1.1801	?	?	?
0.3706	0.3270	0.3212	0.3527	0.3659	0.3387	0.3543	?	?	?
-0.2353	0.3802	0.3668	0.4161	-0.2294	0.3986	0.4163	?	?	?
0.2423	0.2323	0.2270	0.2305	0.2425	0.2332	0.2264	?	?	?
0.6958	0.6980	0.6969	0.6981	0.6948	0.6974	0.6964	?	?	?
0.7644	0.7583	0.7479	0.7637	0.7446	0.7570	0.7498	?	?	?
0.1696	0.1237	0.1228	0.1351	0.1703	0.1269	0.1358	?	?	?
0.2362	0.2380	0.2378	0.2379	0.2360	0.2376	0.2372	?	?	?

2	2	2	2	2	2	2	1	1	2
0	0	0	0	0	0	0	1	2	0
8	8	8	12	16	12	20	0	0	11
2	6	8	4	2	6	4	0	0	2
8	8	8	12	16	12	20	0	0	47
0	0	0	0	0	0	0	0	0	0
7	8	9	10	11	12	13	24	28	681
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 4 - 2

TABLE 4-3

23	23	23
0	0	0
2.8126	2.8122	2.8151
?	?	?
?	?	?
0	0	0
-1.4641	-1.4651	-1.4663
?	?	?
?	?	?
?	?	?
?	?	?
?	?	?
?	?	?
?	?	?
?	?	?
?	?	?
?	?	?
2.8126	2.8122	2.8151
3.7670	3.7685	3.7952
?	?	?
?	?	?
-1.4641	-1.4651	-1.4663
0.8732	0.8738	0.8726
?	?	?
?	?	?
?	?	?
?	?	?
?	?	?
?	?	?
?	?	?
?	?	?
?	?	?
?	?	?

2	2	2
0	0	0
11	11	5
3	4	4
71	95	95
0	0	0
682	683	692
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000

TABLE 4 - 3

TABLE 5-1

PLANFORM 1 MODE SET 2 M=0.0000 K=0.1

1	3	8	11	11	11	11	11	11	12
-0.02358	-0.02334	-0.02333	-.023583	-0.02355	-0.0234	-0.0236	-0.0263	-0.0232	-0.023
2.865	2.80685	2.81868	2.809224	2.80850	2.8993	2.8098	2.5912	2.8614	2.785
2.996	2.92544	3.19717	2.949938	2.94576	2.8379	2.9438	2.9460	2.9097	2.894
-.004559	-0.00446	-0.00434	-.004510	-0.00450	-0.0047	-0.0045	-0.0067	-0.0044	-0.0044
-.001155	-0.00159	-0.00266	-.001628	-0.00166	-0.0016	-0.0017	-0.0015	-0.0016	-0.0016
-1.509	-1.46556	-1.37945	-1.46206	-1.46112	-1.4989	-1.4680	-1.5021	-1.4451	-1.454
1.377	1.37967	1.40220	1.379972	1.38564	1.3867	1.3889	1.3875	1.3784	1.394
-.000323	-0.00042	-0.00061	-.000432	-0.00044	-0.0005	-0.0004	-0.0003	-0.0006	-0.0003
-.004302	-0.00402	-0.00327	-.004080	-0.00408	-0.0039	-0.0041	-0.0063	-0.0040	?
1.219	1.17758	1.08542	1.175311	1.17557	1.2243	1.1785	1.1402	1.1851	?
-0.06023	-0.07674	-0.09093	-.072639	-0.07245	-0.1245	-0.0728	-0.0767	-0.0810	?
-.000575	-0.00052	-0.00039	-.000544	-0.00054	-0.0006	-0.0005	-0.0006	-0.0005	?
-.004701	-0.00446	-0.00447	-.004530	-0.00452	-0.0045	-0.0045	-0.0068	-0.0046	?
0.7310	0.69388	0.69589	0.695064	0.69485	0.7368	0.6951	0.5979	0.7149	?
0.6449	0.60468	0.65859	0.614052	0.61280	0.5742	0.6119	0.6169	0.6002	?
-.001565	-0.00145	-0.00142	-.001464	-0.00146	-0.0015	-0.0015	-0.0016	-0.0014	?
2.863	2.80527	2.8179	2.807720	2.80696	2.8977	2.8083	2.5881	2.8597	2.783
3.858	3.79894	3.93376	3.835282	3.82970	3.7554	3.8351	3.9034	3.7742	3.782
0.9987	0.86357	1.18008	0.889756	0.88271	0.8935	0.8760	0.5131	0.8503	0.826
0.7141	0.69330	0.68930	0.694059	0.69382	0.7201	0.6946	0.5872	0.7248	0.688
-1.504	-1.46118	-1.37472	-1.45765	-1.45673	-1.4945	-1.4636	-1.4982	-1.4408	-1.451
0.8044	0.84918	0.96720	0.853155	0.85877	0.8487	0.8617	0.8435	0.8537	0.867
0.8741	0.91547	0.98880	0.922895	0.92135	0.9269	0.9212	0.8260	0.9110	0.927
-0.3168	-0.30116	-0.27976	-.299092	-0.29876	-0.3221	-0.3022	-0.3168	-0.2897	-0.298
1.218	1.17692	1.0851	1.174691	1.17495	1.2236	1.1778	1.1389	1.1845	?
0.4006	0.36399	0.28190	0.372229	0.37233	0.3258	0.3704	0.3883	0.3571	?
0.4354	0.42685	0.54308	0.437544	0.43650	0.4611	0.6364	0.2960	0.4284	?
0.2384	0.22588	0.20342	0.224735	0.22476	0.2358	0.2258	0.2077	0.2306	?
0.7307	0.69346	0.69560	0.694667	0.69444	0.7364	0.6947	0.5973	0.7145	?
0.7929	0.74879	0.77628	0.760302	0.75867	0.7323	0.7611	0.7890	0.7387	?
0.1811	0.14245	0.19540	0.150953	0.14935	0.1505	0.1475	0.0791	0.1392	?
0.2519	0.23628	0.23554	0.236746	0.23667	0.2534	0.2368	0.1875	0.2483	?

5	2	2	2	2	2	2	2	2	1
11	0	20	0	0	44	0	50	55	0
18	12	14	15	15	15	19	19	19	0
8	4	3	3	3	3	4	4	4	0
0	26	36	0	15	15	19	19	19	0
0	0	18	0	24	24	24	24	24	0
199	127	236	391	467	733	734	735	736	2
0.0000	0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000
0.0000	0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 5 - 1

TABLE 5-2

13	15	15
=0.0244	=0.03713	=0.0267
2.8092	?	2.5465
3.0439	?	?
?	?	?
=0.0011	0.00547	0
=1.6773	?	=1.3369
1.2921	?	?
?	?	?
=0.0040	?	?
1.1481	?	?
=0.0071	?	?
?	?	?
?	?	?
?	?	?
?	?	?
?	?	?
2.8085	2.8356	2.5465
3.9631	?	4
1.0682	?	?
?	?	?
=1.6729	=1.6847	=1.3333
0.7561	?	0.7565
0.9097	?	?
?	?	?
1.1676	?	?
0.3562	?	?
0.4660	?	?
?	?	?
?	?	?
?	?	?
?	?	?
?	?	?
2	1	1
22	2	1
10	0	0
3	0	0
30	0	0
21	0	0
620	29	25
0.0000	0.0000	0.0000
0.1000	0.1000	0.1000
0.0000	0.0000	0.0000

TABLE 5 = 2

TABLE 6-1

PLANFORM 1 MODE SET 2 M=0.0000 K=1.0

1	1	3	8	11	11	12	13	14	14
-2.570	-2.563	-2.54205	-2.55936	-2.56252	-2.55898	-2.550	-2.6338	-2.5487	-2.5794
2.669	2.630	2.73102	2.64710	2.717567	2.72462	2.733	2.5651	2.5467	2.8000
2.276	2.276	2.31118	2.38962	2.321152	2.31761	2.306	2.3320	2.1385	2.2728
-0.5199	-0.5116	-0.50035	-0.49178	-.504264	-0.50344	-0.5017	?	-0.5415	-0.5433
-0.01519	-.009369	-0.05401	-0.15282	-.058956	-0.06176	-0.0578	-0.0077	0.08446	-0.03524
-1.761	-1.759	-1.78139	-1.78342	-1.78170	-1.77926	-1.780	-1.8100	-1.5751	-1.8062
1.606	1.607	1.61710	1.38859	1.413566	1.41948	1.424	1.3372	0.9028	1.4488
-.005934	-.003881	-0.01489	-0.03288	-.015860	-0.01631	-0.0116	?	0.01211	-0.01196
-0.5178	-0.52001	-0.48600	-0.41562	-.490515	-0.49053	?	-0.4856	-0.5436	-0.4732
1.155	1.168	1.15062	1.04020	1.141472	1.14293	?	1.1155	1.1693	1.1871
-0.2674	-0.2649	-0.27458	-0.30153	-.272433	-0.27232	?	-0.3027	0.01087	-0.3181
-0.08176	-0.08137	-0.07352	-0.06117	-.076137	-0.07609	?	?	-0.09426	-0.07633
-0.5318	-0.5266	-0.50038	-0.50413	-.506570	-0.50558	?	?	-0.5376	-0.5435
0.6897	0.6729	0.67401	0.66107	0.670777	0.67231	?	?	0.6316	0.6914
0.5134	0.5094	0.49663	0.52000	0.501854	0.50082	?	?	0.4811	0.5137
-0.1767	-0.1715	-0.15887	-0.15684	-.160418	-0.16018	?	?	-0.1886	-0.1896
2.657	2.625	2.67863	2.70247	2.672463	2.67577	2.676	2.6007	2.5958	2.6992
3.968	3.961	3.94112	4.04551	3.971232	3.96546	3.947	4.0705	3.8824	3.9595
1.106	1.119	1.02465	1.38525	1.047389	1.03976	1.009	1.2134	1.1638	0.8836
0.6737	0.6547	0.65933	0.65869	0.658238	0.65870	0.6591	?	0.6534	0.6690
-1.400	-1.398	-1.39632	-1.37612	-1.39462	-1.39295	-1.396	-1.4210	-1.3291	-1.4375
0.7296	0.7233	0.77463	0.84597	0.780576	0.78633	0.7813	0.6869	0.4131	0.7567
0.7805	0.7810	0.83382	0.86424	0.839001	0.83809	0.8329	0.8208	0.4560	0.7565
-0.2948	-0.2903	-0.28394	-0.27334	-.281594	-0.28117	-0.284	?	-0.2919	-0.3096
1.135	1.129	1.12732	1.05820	1.121833	1.12268	?	1.1083	1.0669	1.1473
0.4604	0.4645	0.42300	0.34262	0.428137	0.42819	?	0.4100	0.5821	0.3882
0.4890	0.4935	0.49282	0.61012	0.486708	0.48549	?	0.5161	0.02226	0.4411
0.2213	0.2170	0.21248	0.19603	0.211972	0.21209	?	?	0.2219	0.2270
0.6849	0.6700	0.65943	0.66412	0.658640	0.65934	?	?	0.6442	0.6686
0.8306	0.8235	0.78557	0.80862	0.795905	0.79428	?	?	0.8252	0.8406
0.2138	0.2161	0.18388	0.24686	0.192905	0.19120	?	?	0.2426	0.1712
0.2436	0.2357	0.22718	0.22722	0.226998	0.22712	?	?	0.2275	0.2314
5	5	2	2	2	2	1	2	2	2
11	11	0	20	0	0	0	22	0	0
18	22	12	14	15	15	0	10	4	4
8	8	4	3	3	3	0	3	2	4
0	0	26	36	0	15	0	30	4	4
0	0	0	18	0	24	0	21	0	0
192	193	128	237	392	468	3	621	14	15
0.0000	0.0000	0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.0000	0.0000	0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 6 - 1

TABLE 6-2

14	14	14	14	14	14	14	14	15
-2.4838	-2.4832	-2.5543	-2.5181	-2.5892	-2.5736	-2.4633	-2.5644	-2.6667
2.7591	2.5212	2.7584	2.7462	2.7438	2.7546	2.5114	2.7305	2.5465
2.2511	2.0761	2.2876	2.2788	2.3273	2.3016	2.0451	2.3239	?
-0.5232	-0.5091	-0.5166	-0.5093	-0.5170	-0.5153	-0.5019	-0.5067	?
-0.04427	0.06591	-0.04355	-0.04906	-0.05741	-0.04676	0.06620	0.06106	0
-1.7199	-1.5364	-1.7881	-1.754	-1.8067	-1.8036	-1.5336	-1.7852	-1.6889
1.3170	0.9196	1.4152	1.3751	1.4465	1.4394	0.9211	1.4258	?
-0.01269	0.01015	-0.01292	-0.01394	-0.01615	-0.01357	0.01092	-0.01669	?
-0.4353	-0.5282	-0.4768	-0.4609	-0.4942	-0.4889	-0.5257	-0.4906	?
1.1069	1.1542	1.1624	1.1309	1.1652	1.1729	1.1522	1.1495	?
-0.2430	-.006077	-0.2928	-0.2679	-0.2837	-0.2988	-0.01160	-0.2706	?
-0.07094	-0.09130	-0.07507	-0.07237	-0.07591	-0.07604	-0.09098	-0.07456	?
-0.5232	-0.4986	-0.5169	-0.5092	-0.5183	-0.5153	-0.4880	-0.5075	?
0.6836	0.6177	0.6811	0.6785	0.6776	0.6798	0.6145	0.6738	?
0.5081	0.4456	0.5005	0.4981	0.5047	0.4999	0.4323	0.5010	?
-0.1833	-0.1641	-0.1688	-0.1666	-0.1667	-0.1661	-0.1591	-0.1616	?
2.6807	2.5789	2.6826	2.6768	2.6851	2.6831	2.5709	2.6785	2.5465
3.8297	3.7837	3.9378	3.8891	4.0024	3.9698	3.7472	3.9726	4
0.8859	1.1672	0.9484	0.9435	1.0264	0.9769	1.1628	1.0344	?
0.6665	0.6461	0.6622	0.6609	0.6621	0.6616	0.6440	0.6598	?
-1.3821	-1.2974	-1.6129	-1.3914	-1.4167	-1.4184	-1.2955	-1.3986	-1.3333
0.7099	0.4405	0.7584	0.7454	0.7916	0.7748	0.4408	0.7869	0.7545
0.7005	0.4688	0.7932	0.7717	0.8414	0.8210	0.4476	0.8400	?
-0.2978	-0.2775	-0.2940	-0.2898	-0.2915	-0.2927	-0.02770	-0.2849	?
1.0772	1.0534	1.1314	1.1034	1.1399	1.1437	1.0540	1.1263	?
0.3735	0.5579	0.4014	0.3941	0.4281	0.4138	0.5526	0.4295	?
0.4041	0.02382	0.4609	0.4458	0.4946	0.4811	0.02363	0.4920	?
0.2139	0.2176	0.2179	0.2128	0.2162	0.2187	0.2175	0.2122	?
0.6645	0.6348	0.6624	0.6610	0.6623	0.6618	0.6320	0.6600	?
0.8131	0.7673	0.8047	0.7946	0.8097	0.8035	0.7498	0.7958	?
0.1693	0.2446	0.1749	0.1737	0.1883	0.1782	0.2425	0.1888	?
0.2304	0.2234	0.2286	0.2283	0.2283	0.2219	0.2226	0.2274	?

2	2	2	2	2	2	2	2	1
0	0	0	0	0	0	0	0	1
4	8	8	8	12	12	16	20	0
6	2	6	8	4	6	2	4	0
4	8	8	8	12	12	16	20	0
0	0	0	0	0	0	0	0	0
16	17	18	19	20	21	22	23	26
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 6 - 2

TABLE 7-1

PLANFORM 1 MODE SET 2 M=0.0000 K=2.0

3	8	8	8	8	8	8	8	8	11
-10.4553	-10.7403	-10.7217	-10.7050	-10.6222	-10.6820	-10.7057	-10.6832	-10.6373	-10.4924
2.68206	2.03270	2.13224	2.11945	1.74457	1.96289	2.27058	2.42956	2.57813	2.644753
0.65924	-0.03477	0.06487	0.05886	-0.37647	-0.11738	0.21783	0.37422	0.51362	0.624542
-2.07680	-2.10367	-2.11479	-2.12138	-2.10827	-2.11680	-2.12177	-2.11803	-2.11037	-2.08203
-0.72690	-0.32949	-0.27607	-0.27153	-0.55489	-0.37860	-0.18638	-0.10478	-0.03550	-.105874
-2.82814	-2.92761	-2.89837	-2.89385	-2.95943	-2.92143	-2.86615	-2.83552	-2.80431	-2.83396
1.42640	1.33224	1.34174	1.33955	1.29664	1.32357	1.35338	1.36718	1.38046	1.362982
-0.02219	-0.05805	-0.04845	-0.04815	-0.10327	-0.06891	-0.03124	-0.01585	-0.00278	-.024585
-2.05933	-1.89078	-1.93666	-1.93230	-1.7180	-1.84521	-2.00605	-2.07171	-2.12128	-2.06397
1.14030	0.85206	0.89341	0.89107	0.69197	0.81269	0.96052	1.02736	1.09265	1.119366
-0.79112	-0.93783	-0.91038	-0.91039	-1.02033	-0.95494	-0.86935	-0.82775	-0.78926	-.763424
-0.32402	-0.30296	-0.31336	-0.31435	-0.27427	-0.29846	-0.32747	-0.33888	-0.34727	-.333989
-2.07701	-2.14904	-2.14634	-2.14002	-2.13616	-2.14082	-2.13582	-2.12774	-2.11622	-2.09338
0.66271	0.54343	0.56265	0.56058	0.48660	0.52994	0.58919	0.61787	0.64279	0.650387
0.22572	0.10356	0.12913	0.12828	0.05969	0.10097	0.15219	0.17485	0.19399	0.217011
-0.65566	-0.66387	-0.66476	-0.66564	-0.66468	-0.66587	-0.66482	-0.66328	-0.66096	-.659465
2.61672	2.57896	2.59736	2.58885	2.54526	2.56852	2.61155	2.63661	2.65710	2.591655
3.97524	3.94598	3.95838	3.95126	3.83408	3.90720	3.98372	4.00670	4.01672	3.985045
1.07503	1.47672	1.42765	1.42577	1.62982	1.50803	1.34947	1.26976	1.19118	1.091805
0.64198	0.63608	0.64278	0.64383	0.63740	0.64097	0.64677	0.64952	0.65093	0.635223
-1.36045	-1.47150	-1.45022	-1.44895	-1.50565	-1.47444	-1.42327	-1.39564	-1.36886	-1.36090
0.75055	0.82186	0.80619	0.80306	0.88460	0.83330	0.77920	0.75800	0.73974	0.762183
0.80890	0.75136	0.75436	0.75210	0.73413	0.74299	0.76097	0.76937	0.77561	0.800808
-0.27454	-0.28375	-0.28281	-0.28398	-0.29163	-0.28759	-0.28021	-0.27617	-0.27223	-.269960
1.10550	1.04396	1.05630	1.05420	0.98597	1.02843	1.07576	1.09564	1.11190	1.091607
0.43989	0.34990	0.37165	0.37008	0.27584	0.33175	0.40312	0.43325	0.45677	0.438377
0.51426	0.60534	0.58765	0.58657	0.66162	0.61693	0.55861	0.52961	0.50128	0.460928
0.20609	0.19634	0.20037	0.20099	0.18721	0.19564	0.20516	0.20880	0.21159	0.207122
0.64202	0.63563	0.64037	0.63903	0.62893	0.63443	0.64368	0.64829	0.65162	0.636574
0.79466	0.80244	0.80294	0.80174	0.78843	0.79723	0.80635	0.80519	0.80042	0.801008
0.19631	0.27563	0.26609	0.26585	0.30637	0.28209	0.25105	0.23602	0.22185	0.206624
0.22340	0.22173	0.22321	0.22346	0.22174	0.22269	0.22418	0.22488	0.22066	0.220339

2	2	2	2	2	2	2	2	2	2
0	20	20	20	20	20	20	20	20	0
12	7	7	7	7	7	7	7	7	15
4	3	3	3	3	3	3	3	3	3
26	36	42	66	66	66	66	66	66	0
0	18	19	20	20	20	20	20	20	0
129	217	218	219	220	221	222	223	224	393
0.0000	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0000
2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
0.0000	0.0100	0.0100	0.0100	0.0060	0.0081	0.0120	0.0150	0.0200	0.0000

TABLE 7 - 1

11	13	15
-10,4861	-10,7280	-10,2667
2,66072	2,0098	2.5465
0,62696	0,3980	?
-2,08061	?	?
-0,11077	0,0905	0
-2,83198	-2,8970	-2,7555
1,36740	1,3173	?
-0,02540	?	?
-2,06607	-2,0542	?
1,12161	1,0188	?
-0,76359	-0,8190	?
-0,33391	?	?
-2,09163	?	?
0,65393	?	?
0,21739	?	?
-0,65906	?	?
2,59888	2,2849	2.5465
3,98321	4,0180	4
1,08782	1,2123	?
0,63640	?	?
-1,35935	-1,4162	-1.3333
0,76544	0,6733	0,7545
0,80147	0,7776	?
-0,26968	?	?
1,09269	1,0684	?
0,63835	0,4193	?
0,46037	0,4892	?
0,20729	?	?
0,63824	?	?
0,80042	?	?
0,20580	?	?
0,22066	?	?

2	2	1
0	22	1
15	10	0
3	3	0
15	30	0
24	21	0
469	622	27
0,0000	0,0000	0.0000
2,0000	2,0000	2.0000
0,0000	0,0000	0.0000

TABLE 7 - 2

TABLE 8

PLANFORM 1 MODE SET 2 M=0,8000 K=0,0

1	3	8	11	11	13	23
0	0,00000	-0,00000	-,000000	-0,00000	0	0
2,872	2,81242	2,82495	2,814931	2,81414	2,8164	2,8122
1,805	1,76210	1,92645	1,776900	1,77439	1,8343	?
0	0,00000	-0,0000	-,000000	-0,00000	?	?
0	0,00000	-0,00000	-,000000	-0,00000	0	0
-0,9052	-0,87891	-0,82648	-,876764	-0,87621	-0,8858	-0,8791
0,4948	0,49558	0,50386	,495695	0,49773	0,4621	?
0	0,00000	-0,00000	-,000000	-0,00000	?	?
0	0,00000	0,00000	-,000000	0,00000	0	?
0,4398	0,42474	0,39152	0,423944	0,42403	0,4214	?
-0,01212	-0,01568	-0,01874	-,014790	-0,01474	-0,0191	?
0	0,00000	0,00000	-,000000	0,00000	?	?
0	0,00000	-0,00000	-,000000	-0,00000	?	?
0,7330	0,69530	0,69742	0,696528	0,69629	?	?
0,3886	0,36426	0,39693	0,369908	0,36915	?	?
0	0,00000	-0,00000	-,000000	-0,00000	?	?
?	2,81242	2,824	?	2,81414	2,8164	2,8122
?	1,59663	1,664	?	1,60325	1,7062	1,5920
?	-0,57261	-0,488	?	-0,56616	-0,4792	?
?	0,69514	0,692	?	0,69567	?	?
?	-0,87891	-0,826	?	-0,87621	-0,8858	-0,8791
?	0,74668	0,784	?	0,74834	0,7001	0,7466
?	0,49777	0,532	?	0,49363	0,5032	?
?	-0,18126	-0,168	?	-0,17982	?	?
?	0,42474	0,392	?	0,42403	0,4214	?
?	-0,09876	-0,108	?	-0,09691	-0,0968	?
?	-0,03866	-0,014	?	-0,03515	-0,0322	?
?	0,08159	0,074	?	0,08118	?	?
?	0,69530	0,698	?	0,69629	?	?
?	0,27378	0,286	?	0,27725	?	?
?	-0,16450	-0,156	?	-0,16223	?	?
?	0,23676	0,236	?	0,23715	?	?

5	2	2	2	2	2	2
11	0	20	0	0	22	0
22	12	14	15	15	10	11
8	4	3	3	3	3	4
0	26	36	0	15	30	95
0	0	18	0	24	21	0
194	130	242	398	470	623	684
0,8000	0,8000	0,8000	0,8000	0,8000	0,8000	0,8000
0,0000	0,0001	0,0010	0,0000	0,0001	0,0001	0,0000
0,0000	0,0000	0,0100	0,0000	0,0000	0,0000	0,0000

TABLE 8

TABLE 9

PLANFORM 1 MODE SET 2 M=0,8000 K=0,1

1	3	8	11	11	13
=,007655	=0,00764	=0,00749	=,007671	=0,00765	=0,0084
2,872	2,81329	2,82542	2,815739	2,81495	2,8166
1,800	1,75759	1,92178	1,772294	1,76976	1,8299
=,001050	=0,00104	=0,00096	=,001038	=0,00103	?
=,004771	=0,00484	=0,00519	=,004839	=0,00485	=0,0045
0,9048	=0,87863	=0,82652	=,876436	=0,87587	=0,8858
0,4986	0,50009	0,50844	0,500185	0,50223	0,4664
=,001180	=0,00119	=0,00124	=,001191	=0,00119	?
,0007880	0,00084	0,00092	0,000822	0,00082	0,0008
0,4391	0,42387	0,39052	0,423039	0,42313	0,4205
=0,01354	=0,01734	=0,02042	=,016427	=0,01638	=0,0207
,0002867	0,00029	0,00029	0,000280	0,00028	?
=,001093	=0,00104	=0,00099	=,001054	=0,00105	?
0,7326	0,69522	0,69730	0,696426	0,69619	?
0,3871	0,36288	0,39541	0,368501	0,36774	?
=,000491	=0,00044	=0,00042	=,000448	=0,00045	?
2,867	2,80845	2,82072	2,810921	2,81013	2,8122
1,665	1,64243	1,70946	1,652786	1,64902	1,7512
=0,5135	=0,54456	=0,45686	=,535239	=0,53787	=0,4503
0,7148	0,69386	0,68974	0,694627	0,69437	?
=0,9023	=0,87624	=0,82396	=,874061	=0,87350	=0,8834
0,7267	0,73450	0,77364	0,734216	0,73635	0,6879
0,5043	0,48729	0,52104	0,484447	0,48307	0,4929
=0,1898	=0,18042	=0,16752	=0,17917	=0,17897	?
0,4384	0,42334	0,39008	0,422525	0,42261	0,4200
=0,08571	=0,09228	=0,10260	=,090467	=0,09041	=0,0906
=0,05484	=0,03356	=0,00976	=,030143	=0,03008	=0,0272
0,08575	0,08118	0,07306	0,080766	0,08077	?
0,7314	0,69402	0,69610	0,695240	0,69500	?
0,3027	0,28499	0,29714	0,289552	0,28867	?
=0,1549	=0,15731	=0,14780	=,154427	=0,15496	?
0,2520	0,23638	0,23560	0,236845	0,23677	?

5	2	2	2	2	2
11	0	20	0	0	22
22	12	14	15	15	10
3	4	3	3	3	3
0	26	36	0	15	30
0	0	18	0	24	21
195	131	243	399	471	624
0,8000	0,8000	0,8000	0,8000	0,8000	0,8000
0,1000	0,1000	0,1000	0,1000	0,1000	0,1000
0,0000	0,0000	0,0100	0,0000	0,0000	0,0000

TABLE 9

TABLE 10

PLANFORM 1 MODE SET 2 M=0,8000 K=1,0

1	3	8	11	11	13	37
-0,9422	-0,87680	-0,88682	-,884440	-0,87958	-0,9820	-0,8731
3,623	3,72469	3,71863	3,704396	3,70549	3,6527	3,7071
1,641	1,59197	1,79581	1,607256	1,60135	1,7053	1,5810
-0,1489	-0,13115	-0,12863	-,132347	-0,13134	?	-0,1308
-0,4417	-0,50826	-0,55254	-,500383	-0,50144	-0,4759	-0,5013
-0,9463	-0,90318	-0,87064	-,900715	-0,89693	-0,9562	-0,8969
0,7343	0,83433	0,84837	0,818690	0,82167	0,7679	0,8256
-0,1002	-0,11264	-0,11773	-,110331	-0,11042	?	-0,1111
0,03414	0,05505	0,06084	0,052260	0,05231	0,0518	0,0531
0,4281	0,38800	0,33631	0,391344	0,39118	0,3899	0,3883
-0,07324	-0,10603	-0,10866	-,101487	-0,10170	-0,1042	-0,1035
0,01530	0,01843	0,01773	0,017448	0,01746	?	0,0180
-0,1541	-0,13120	-0,13092	-,134411	-0,13323	?	-0,1308
0,8328	0,87136	0,87453	0,866851	0,86681	?	0,8675
0,3313	0,30275	0,34297	0,308924	0,30741	?	0,3008
-0,06221	-0,05326	-0,05196	-,053925	-0,05368	?	-0,0532
3,182	3,21642	3,22968	3,206784	3,20661	3,1930	3,2056
1,745	1,64514	1,75501	1,661101	1,65315	1,8139	1,6371
-0,4786	-0,64013	-0,53936	-,611295	-0,61431	-0,5208	-0,6271
0,7606	0,75836	0,75184	0,755769	0,75547	?	0,7563
-0,8042	-0,76621	-0,71695	-,764137	-0,76165	-0,8026	-0,7656
0,8205	0,93170	0,98881	0,917715	0,92015	0,8701	0,9203
0,3220	0,32564	0,36570	0,324609	0,32227	0,3527	0,3167
-0,1543	-0,14129	-0,12791	-,139917	-0,13935	?	-0,1412
0,4048	0,37558	0,33353	0,377153	0,37707	0,3761	0,3759
-0,07119	-0,10649	-0,11338	-,101849	-0,10200	-0,1028	-0,1033
0,02069	0,03874	0,06061	0,032825	0,03292	0,0346	0,0384
0,07346	0,06571	0,05661	0,066302	0,06628	?	0,0660
0,7797	0,75860	0,76212	0,756971	0,75675	?	0,7563
0,3119	0,27332	0,29199	0,279873	0,27791	?	0,2722
-0,1311	-0,15960	-0,14758	-,151115	-0,15161	?	-0,1563
0,2573	0,24547	0,24436	0,244998	0,24490	?	0,2450

5	2	2	2	2	2	2
11	0	20	0	0	22	0
22	12	14	15	15	10	11
5	4	3	3	3	3	4
0	26	36	0	15	30	71
0	0	18	0	24	21	0
196	132	244	400	472	625	998
0,8000	0,8000	0,8000	0,8000	0,8000	0,8000	0,8000
1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000
0,0000	0,0000	0,0100	0,0000	0,0000	0,0000	0,0000

TABLE 10

TABLE 11

PLANFORM 1 MODE SET 2 M=0,8000 K=2,0

1	3	8	11	11	13
-2,592	-1,44792	-1,35977	-2,20260	-1,42873	-1,8163
4,587	4,87460	5,22489	2,381464	5,12284	5,2196
0,5718	0,19875	0,54281	0,823274	0,35295	0,5136
-0,4140	-0,18485	-0,17410	-,478445	-0,18831	?
-1,004	-1,22910	-1,47939	-,575259	-1,35625	-1,4263
-0,3459	0,03905	0,09491	-,706440	-0,03614	-0,1586
0,7974	0,96759	1,05885	0,384593	1,01168	1,0054
-0,1885	-0,21380	-0,24243	-,120115	-0,23603	?
-0,1587	-0,10000	-0,07724	-,043260	-0,02202	-0,0251
0,3361	0,23317	0,15783	0,240228	0,23638	0,2263
-0,04561	-0,06453	-0,09406	-,042916	-0,12331	-0,1228
-0,01183	-0,00735	-0,00750	-,001124	0,00718	?
-0,4277	-0,18487	-0,16213	-,437289	-0,19141	?
1,001	0,97996	1,05855	0,602171	1,03015	?
0,1070	0,01533	0,08293	0,183169	0,05223	?
-0,2379	-0,17862	-0,17510	-,250371	-0,18136	?
3,580	3,64677	3,88454	1,939847	3,76199	3,8579
1,014	0,51106	0,60236	0,974587	0,53447	0,7174
-0,1371	-0,30501	-0,31320	0,035091	-0,38192	-0,3567
0,7824	0,76632	0,80409	0,477694	0,78758	?
-0,3672	-0,14712	-0,06398	-,509054	-0,16406	-0,2268
0,6330	0,75361	0,87031	0,350288	0,81507	0,8385
0,002340	-0,07020	-0,01844	0,103117	-0,01150	0,0182
-0,05918	-0,01064	0,00349	-,092145	-0,01496	?
0,3682	0,30824	0,26050	0,244098	0,29800	0,2930
0,02677	0,00254	-0,01074	-,006489	-0,04137	-0,0408
0,09880	0,11978	0,12416	0,047982	0,09414	0,0976
0,06240	0,04836	0,04205	0,040326	0,04736	?
0,8049	0,76636	0,81717	0,497666	0,79182	?
0,1670	0,05754	0,07286	0,195003	0,06799	?
-0,03444	-0,05827	-0,06351	-,006159	-0,07046	?
0,2534	0,23781	0,24641	0,194291	0,24216	?

5	2	2	2	2	2
11	0	20	0	0	22
22	12	14	15	15	10
5	4	3	3	3	3
0	26	36	0	15	30
0	0	18	0	24	21
197	133	245	401	473	626
0,8000	0,8000	0,8000	0,8000	0,8000	0,8000
2,0000	2,0000	2,0000	2,0000	2,0000	2,0000
0,0000	0,0000	0,0100	0,0000	0,0000	0,0000

TABLE 11

TABLE 12

PLANFORM 1 MODE SET 2 M-0,9500 K-0,0

3	8	11	11	13	23
0,00000	0,00000	-,000000	0,00000	0	0
2,81242	2,82495	2,814931	2,81414	2,8161	2,8122
0,91704	1,00317	0,924728	0,92343	0,9534	?
0,00000	0,00000	-,000000	0,00000	?	?
0,00000	-0,00000	-,000000	-0,00000	0	0
-0,45740	-0,42987	-,456283	-0,45599	-0,4606	-0,4575
0,13422	0,13650	0,134251	0,13480	0,1254	?
0,00000	-0,00000	-,000000	-0,00000	?	?
0,00000	0,00000	-,000000	0,00000	0	?
0,11504	0,10596	0,114818	0,11484	0,1139	?
-0,00221	-0,00264	-,002085	-0,00208	-0,0028	?
0,00000	0,00000	-,000000	0,00000	?	?
0,00000	0,00000	-,000000	0,00000	?	?
0,69530	0,69741	0,696528	0,69629	?	?
0,18957	0,20666	0,192506	0,19211	?	?
0,00000	0,00000	-,000000	0,00000	?	?
2,81242	2,804	?	2,81415	2,8161	2,8122
-0,63640	-0,596	?	-0,63327	-0,5348	-0,6362
-1,14306	-1,142	?	-1,14282	-1,0983	?
0,69514	0,686	?	0,69567	?	?
-0,45740	0,426	?	-0,45599	-0,4606	-0,4575
0,69540	0,696	?	0,69477	0,6693	0,6965
0,24354	0,256	?	0,24141	0,2496	?
-0,09433	-0,086	?	-0,09358	?	?
0,11504	0,106	?	0,11484	0,1139	?
-0,11730	-0,112	?	-0,11666	-0,1148	?
-0,03085	-0,026	?	-0,03017	-0,0301	?
0,02210	0,020	?	0,02199	?	?
0,69530	0,692	?	0,69629	?	?
-0,23394	-0,228	?	-0,23202	?	?
-0,28567	-0,292	?	-0,28560	?	?
0,23670	0,234	?	0,23715	?	?

2	2	2	2	2	2
0	20	0	0	22	0
12	14	15	15	10	11
4	3	3	3	3	4
26	36	0	15	30	95
0	18	0	24	21	0
134	250	406	474	627	685
0,9500	0,9500	0,9500	0,9500	0,9500	0,9500
0,0001	0,0001	0,0000	0,0001	0,0001	0,0000
0,0000	0,0100	0,0000	0,0000	0,0000	0,0000

TABLE 12

TABLE 13

PLANFORM 1 MODE SET 2 M=0,9500 K=0,1

3	8	11	11	13
0,010474	0,01053	0,010649	0,01047	0,0096
2,80850	2,82079	2,810955	2,81013	2,8125
0,90469	0,99159	0,912372	0,91102	0,9420
0,00317	0,00313	0,003169	0,00317	?
-0,00618	-0,00622	-,006164	-0,00617	-0,0060
-0,45182	-0,42419	-,450678	-0,45036	-0,4554
0,14058	0,14310	0,140584	0,14114	0,1314
-0,00151	-0,00149	-,001502	-0,00150	?
0,00113	0,00109	0,001125	0,00112	0,0011
0,11357	0,10439	0,113347	0,11337	0,1125
-0,00335	-0,00378	-,003213	-0,00321	-0,0039
0,00028	0,00026	0,000275	0,00027	?
0,00317	0,00321	0,003153	0,00316	?
0,69350	0,69566	0,694790	0,69454	?
0,18595	0,20311	0,188878	0,18848	?
0,00074	0,00073	0,000723	0,00072	?
2,80231	2,81404	2,804768	2,80394	2,8065
-0,59543	-0,55794	-,589271	-0,59216	-0,4938
-1,12376	-1,13164	-1,12256	-1,12331	-1,0797
0,69189	0,68772	0,692646	0,69239	?
-0,45060	-0,42290	-,449528	-0,44922	-0,4542
0,68824	0,69380	0,686807	0,68749	0,6624
0,23315	0,24650	0,231792	0,23094	0,2399
-0,09238	-0,08556	-,091723	-0,09162	?
0,11340	0,10424	0,113182	0,11321	0,1123
-0,11478	-0,11062	-,114127	-0,11410	-0,1124
-0,02833	-0,02332	-,027756	-0,02769	-0,0277
0,02164	0,01942	0,021532	0,02153	?
0,69205	0,69398	0,693281	0,69303	?
-0,22373	-0,22006	-,220968	-0,22176	?
-0,28001	-0,28864	-,279775	-0,27985	?
0,23579	0,23498	0,236248	0,23617	?

2	2	2	2	2
0	20	0	0	22
12	14	15	15	10
4	3	3	3	3
26	36	0	15	30
0	18	0	24	21
135	251	407	475	628
0,9500	0,9500	0,9500	0,9500	0,9500
0,1000	0,1000	0,1000	0,1000	0,1000
0,0000	0,0100	0,0000	0,0000	0,0000

TABLE 13

TABLE 14

PLANFORM 1 MODE SET 2 M=0,9500 K=1,0

3	8	11	11	13
0,59984	0,63242	0,617512	0,61703	0,5891
2,29895	2,33014	2,310139	2,30791	2,3542
0,28049	0,31229	0,265874	0,26522	0,3020
0,14996	0,15569	0,153716	0,15351	?
-0,18436	-0,17232	-,190371	-0,18976	-0,1937
-0,08684	-0,04104	-,071107	-0,07085	-0,0860
0,17549	0,19431	0,191866	0,19155	0,1944
-0,02831	-0,02450	-,029463	-0,02933	?
0,02256	0,01626	0,023064	0,02303	0,0219
0,06110	0,05291	0,055692	0,05582	0,0551
0,00171	0,00268	-,001897	-0,00182	-0,0026
0,00349	0,00218	0,003649	0,00365	?
0,14995	0,15573	0,153152	0,15302	?
0,51300	0,51461	0,517266	0,51672	?
0,04079	0,04365	0,039667	0,03953	?
0,01553	0,01662	0,016217	0,01618	?
2,11407	2,11716	2,118245	2,11660	2,1557
-0,47096	-0,49100	-,496237	-0,49607	-0,4500
-0,30550	-0,36054	-,323627	-0,32246	-0,3339
0,48440	0,48082	0,485529	0,48518	?
-0,12830	-0,09035	-,116649	-0,11660	-0,1268
0,27065	0,26650	0,283559	0,28278	0,2885
-0,08295	-0,09688	-,089277	-0,08971	-0,0794
-0,01834	-0,01159	-,015744	-0,01576	?
0,06414	0,05781	0,060458	0,06057	0,0601
-0,02255	-0,01548	-,024410	-0,02434	-0,0236
0,01124	0,01539	0,014523	0,01450	0,0151
0,01069	0,00963	0,009822	0,00984	?
0,48459	0,48133	0,487073	0,48668	?
-0,13134	-0,13623	-,135204	-0,13514	?
-0,04606	-0,05595	-,050273	-0,04997	?
0,18186	0,18059	0,182482	0,18241	?

2	2	2	2	2
0	20	0	0	22
12	14	15	15	10
4	3	3	3	3
26	36	0	15	30
0	18	0	24	21
136	252	408	476	629
0,9500	0,9500	0,9500	0,9500	0,9500
1,0000	1,0000	1,0000	1,0000	1,0000
0,0000	0,0100	0,0000	0,0000	0,0000

TABLE 14

TABLE 15

PLANFORM 1 MODE SET 2 M=0,9500 K=2,0

3	8	11	11	11	11	11	11	13
0,64414	0,67905	0,624076	0,62152	0,64384	0,63764	0,73925	0,64306	0,5394
2,09431	2,10801	2,067447	2,05649	2,11438	2,08451	2,09973	2,10535	2,0929
0,17550	0,19920	0,162003	0,16142	0,18152	0,16704	0,12573	0,18043	0,1890
0,14134	0,13928	0,128130	0,12760	0,13784	0,13269	0,11784	0,14030	?
-0,28170	-0,23913	-,258204	-0,25506	-0,28799	-0,28187	-0,25182	-0,28422	-0,2587
-0,00541	0,02026	0,011013	0,01028	-0,00476	-0,00212	0,00768	-0,00377	-0,0025
0,12142	0,11980	0,121476	0,12035	0,12281	0,12129	0,11358	0,12188	0,1237
-0,04574	-0,03759	-,040783	-0,04046	-0,04734	-0,04631	-0,04793	-0,04622	?
0,03659	0,02278	0,027252	0,02687	0,03714	0,03379	0,04196	0,03675	0,0242
0,05403	0,05019	0,048901	0,04896	0,05453	0,05119	0,05197	0,05445	0,0488
0,00098	0,00431	0,001570	0,00167	0,00120	0,00109	-0,00250	0,00115	0,0014
0,00711	0,00464	0,005060	0,00503	0,00716	0,00667	0,00664	0,00709	?
0,14125	0,14371	0,131016	0,13077	0,13741	0,13339	0,12511	0,14029	?
0,47577	0,48708	0,475086	0,47339	0,48222	0,47809	0,48101	0,47828	?
0,03980	0,04723	0,041129	0,04100	0,04185	0,03995	0,03965	0,04127	?
-0,02196	-0,02533	-,030956	-0,03010	-0,02691	-0,02974	-0,04424	-0,02359	?
1,81267	1,81823	1,801125	1,79308	1,82805	1,81217	1,79507	1,82058	1,8260
-0,09125	-0,08810	-,088582	-0,08819	-0,08888	-0,09224	-0,14182	-0,08894	-0,0543
-0,08620	-0,08747	-,079854	-0,07835	-0,08760	-0,08150	-0,10813	-0,08725	-0,0787
0,43062	0,43505	0,428979	0,42778	0,43530	0,43276	0,43315	0,43230	?
-0,06872	-0,05494	-,063483	-0,06375	-0,06848	-0,06908	-0,06711	-0,06884	-0,0719
0,13069	0,11723	0,122600	0,12138	0,13299	0,13037	0,11759	0,13155	0,1244
-0,03032	-0,03755	-,037151	-0,03696	-0,03036	-0,03250	-0,03841	-0,03013	-0,0339
-0,01641	-0,01662	-,016388	-0,01647	-0,01644	-0,01725	-0,01552	-0,01627	?
0,05459	0,05333	0,053195	0,05317	0,05504	0,05391	0,05244	0,05488	0,0534
-0,01049	-0,00493	-,007110	-0,00698	-0,01054	-0,00946	-0,01346	-0,01045	-0,0065
0,00358	0,00564	0,005961	0,00591	0,00359	0,00484	0,00294	0,00353	0,0061
0,00941	0,00982	0,009498	0,00950	0,00952	0,00961	0,00969	0,00944	?
0,43005	0,43920	0,431090	0,42976	0,43516	0,43296	0,42981	0,43196	?
-0,01888	-0,01595	-,015110	-0,01512	-0,01709	-0,01667	-0,01549	-0,01804	?
-0,01349	-0,01376	-,012502	-0,01233	-0,01385	-0,01292	-0,01689	-0,01365	?
0,19376	0,19859	0,195565	0,19525	0,19594	0,19516	0,19158	0,19437	?

2	2	2	2	2	2	2	2	2
0	20	0	0	0	0	55	0	22
12	14	15	15	15	15	15	23	10
4	3	3	3	4	6	6	4	3
26	36	0	15	15	15	15	23	30
0	18	0	24	24	24	24	24	21
137	253	409	477	737	738	739	740	630
0,9500	0,9500	0,9500	0,9500	0,9500	0,9500	0,9500	0,9500	0,9500
2,0000	2,0000	2,0000	2,0000	2,0000	2,0000	2,0000	2,0000	2,0000
0,0000	0,0100	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000

TABLE 15

TABLE 16

PLANFORM 1 MODE SET 5 M=0.0000 K=0.0

3	8	11	11	12	14	14	14	16	14
0.00000	-0.00003	-.000000	-0.00000	0	-0	-0	-0	-0	-0
0.38481	0.38230	0.385229	0.38519	0.3849	0.3870	0.3888	0.3886	0.3841	0.3861
0.00000	-0.00000	-.000000	-0.00000	0	-0	0	0	-0	0
-0.18054	-0.17362	-.179506	-0.17943	-0.1807	-0.2016	-0.2037	-0.1968	-0.1859	-0.1889
0.38481	0.3824	?	0.38519	0.3849	0.3870	0.3888	0.3886	0.3841	0.3861
0.53365	0.5364	?	0.53825	0.5272	0.6020	0.5919	0.5760	0.5518	0.5519
-0.18054	-0.1736	?	-0.17943	-0.1807	-0.2016	-0.2037	-0.1968	-0.1859	-0.1889
0.09619	0.1032	?	0.09797	0.1019	0.1091	0.1056	0.1002	0.1001	0.09851
2	2	2	2	1	2	2	2	2	2
0	20	0	0	0	0	0	0	0	0
12	14	15	15	0	4	4	4	8	8
4	3	3	3	0	2	4	6	2	6
26	36	0	15	0	4	4	4	8	8
0	18	0	24	0	0	0	0	0	0
138	238	394	478	56	30	31	32	33	34
0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0001	0.0100	0.0000	0.0001	0.0000	0.0010	0.0010	0.0010	0.0010	0.0010
0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 16

14	14	14	14	14	15	15
-0	-0	-0	-0	-0	0	0
0.3860	0.3858	0.3856	0.3840	0.3853	0.3773	?
-0	-0	0	-0	-0	0	0
-0.1865	-0.1863	-0.1870	-0.1845	-0.1814	-0.1778	?
0.3860	0.3858	0.3856	0.3840	0.3853	0.3773	0.3885
0.5463	0.5500	0.5474	0.5385	0.5398	0.5333	?
-0.1865	-0.1863	-0.1870	-0.1845	-0.1814	-0.1778	-0.1831
0.09688	0.1004	0.09877	0.09792	0.09840	0.09658	?
2	2	2	2	2	1	1
0	0	0	0	0	1	2
8	12	12	16	20	0	0
8	4	6	2	4	0	0
8	12	12	16	20	0	0
0	0	0	0	0	0	0
35	36	37	38	39	50	54
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0010	0.0010	0.0010	0.0010	0.0010	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 16

TABLE 17

PLANFORM 1 MODE SET 5 M=0.0000 K=0.1

3	8	11	11	15	15
-0.00352	-0.00349	-.003546	-0.00354	-0.0036	-0.00376
0.38480	0.38226	0.385193	0.38517	0.3773	?
-0.00001	-0.00008	-.000020	-0.00002	0	0.00010
-0.18095	-0.17408	-.179915	-0.17983	-0.1782	?
0.38479	0.38232	0.385202	0.38517	0.3773	0.3882
0.53366	0.53644	0.538657	0.53825	0.5333	?
-0.18054	-0.17364	-.179490	-0.17942	-0.1778	-0.1830
0.09618	0.10326	0.097456	0.09796	0.09658	?
2	2	2	2	1	1
0	20	0	0	1	2
12	14	15	15	0	0
4	3	3	3	0	0
26	36	0	15	0	0
0	18	0	24	0	0
139	239	395	479	51	55
0.0000	0.0100	0.0000	0.0000	0.0000	0.0000
0.1000	0.1000	0.1000	0.1000	0.1000	0.1000
0.0000	0.0100	0.0000	0.0000	0.0000	0.0000

TABLE 17

TABLE 18

PLANFORM 1 MODE SET 5 M=0.0000 K=1.0

3	8	11	11	14	14	14	14	14	14
-0,35295	-0,35031	-,355208	-0.35495	-0.3908	-0.3954	-0.3839	-0.3567	-0.3669	-0.3628
0,38397	0,37607	0,381944	0.38255	0.3820	0.3939	0.3912	0.3754	0.3880	0.3872
-0,00060	-0,00688	-,001711	-0.00199	0.006183	0.002467	0.001166	0.005212	0.000777	0.000133
-0,22114	-0,21933	-,220446	-0.22028	-0.2200	-0.2476	-0.2370	-0.2022	-0.2305	-0.2267
0,38363	0,38234	0,383173	0.38347	0.3849	0.3885	0.3880	0.3802	0.3851	0.3849
0,53389	0,53483	0,538527	0.53811	0.5830	0.5923	0.5760	0.5329	0.5521	0.5465
-0,18002	-0,17685	-,179002	-0.17889	-0.1907	-0.2031	-0.1964	-0.1756	-0.1883	0.1860
0,09589	0,101878	0,097197	0.09773	0.07907	0.1060	0.1004	0.07395	0.09845	0.09685
2	2	2	2	2	2	2	2	2	2
0	20	0	0	0	0	0	0	0	0
12	14	15	15	4	4	4	8	8	8
4	3	3	3	2	4	6	2	6	8
26	36	0	15	4	40	4	8	8	8
0	18	0	24	0	0	0	0	0	0
160	240	396	480	40	41	42	43	44	45
0,0000	0,0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1,0000	1,0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0,0000	0,0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 18

14	14	14	14	15
0,3646	-0,3636	-0.3494	-0.3568	-0.3556
0,3852	0,3870	0.3745	0.3835	0.3773
-,001276	0,000345	0,006063	-.001918	0
0,2284	-0,2288	-0,2007	0.2224	-0.2184
0,3845	0,3845	0,3792	0.3838	0.3773
0,5502	0,5477	0,5204	0.3599	0.5333
-0,1859	-0,1864	-0,1740	-0.1810	-0.1778
0,1003	0,09867	0,07203	0.09823	0.09658
2	2	2	2	1
0	0	0	0	1
12	12	16	20	0
4	6	2	4	0
12	12	16	20	0
0	0	0	0	0
46	47	48	49	52
0,0000	0,0000	0.0000	0.0000	0.0000
1,0000	1,0000	1.0000	1.0000	1.0000
0,0000	0,0000	0.0000	0.0000	0.0000

TABLE 18

PLANFORM 1 MODE SET 5 M=0.0000 K=2.0

3	8	11	11	15
-1.41638	-1.39866	-1.42273	-1.42185	-1.4222
0,38121	0,35604	0,374039	0,37533	0.3773
-0,00041	-0,02584	-,005848	-0.00638	0
-0,34268	-0,35376	-,342730	-0.34263	-0.3402
0,38189	0,38328	0,379593	0,38018	0.3773
0,53396	0,52527	0,537184	0.53708	0.5333
-0,17916	-0,18642	-,178067	-0.17799	-0.1778
0,09529	0,10024	0,096935	0.09726	0.09658
2	2	2	2	1
0	20	0	0	1
12	14	15	15	0
4	3	3	3	0
26	36	0	15	0
0	18	0	24	0
161	241	397	481	53
0,0000	0,0100	0.0000	0.0000	0.0000
2,0000	2,0000	2.0000	2,0000	2.0000
0,0000	0,0100	0.0000	0,0000	0,0000

TABLE 19

PLANFORM 1 MODE SET 5 M=0.8000 K=0.0

3	8	11	11
0.00000	-0.0000	-.000000	-0.00000
0.38481	0.3823	0.385229	0.38519
0.00000	-0.0000	-.000000	-0.00000
-0.10833	-0.10416	-.107703	-0.10766
0.38481	0.3823	?	0.38519
0.31130	0.312	?	0.31324
-0.10833	-0.104	?	-0.10765
0.04873	0.052	?	0.04927
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
142	246	402	482
0.8000	0.8000	0.8000	0.8000
0.0001	0.0001	0.0000	0.0001
0.0000	0.0100	0.0000	0.0000

TABLE 20

PLANFORM 1 MODE SET 5 M=0.8000 K=0.1

3	8	11	11
-0.00202	-.001996	-.002032	-0.00203
0.38513	0.38260	0.385544	0.38551
-0.00014	-0.00017	-.000147	-0.00015
-0.10854	-0.10439	-.107913	-0.10786
0.38499	0.38248	0.385407	0.38537
0.31150	0.31228	0.313695	0.31342
-0.10840	-0.10426	-.107776	-0.10773
0.04878	0.05124	0.049114	0.04931
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
143	247	403	483
0.8000	0.8000	0.8000	0.8000
0.1000	0.1000	0.1000	0.1000
0.0000	0.0100	0.0000	0.0000

TABLE 21

PLANFORM 1 MODE SET 5 M=0.8000 K=1.0

3	8	11	11	37
-0.21284	-0.21002	-.213249	-0.21303	-0.2123
0.42601	0.41939	0.425083	0.42543	0.4261
-0.01775	-0.02022	-.017872	-0.01803	-0.0177
-0.13133	-0.12866	-.130212	-0.13010	-0.1309
0.40833	0.40493	0.408266	0.40844	0.4084
0.33013	0.33079	0.331854	0.33152	0.3291
-0.11668	-0.11330	-.115706	-0.11562	-0.1166
0.05532	0.05775	0.055359	0.05564	0.0553
2	2	2	2	2
0	20	0	0	0
12	14	15	15	11
4	3	3	3	4
26	36	0	15	71
0	18	0	24	0
144	248	404	484	997
0.8000	0.8000	0.8000	0.8000	0.8000
1.0000	1.0000	1.0000	1.0000	1.0000
0.0000	0.0100	0.0000	0.0000	0.0000

TABLE 22

PLANFORM 1 MODE SET 5 M=0.8000 K=2.0

3	8	11	11
-0.89401	-0.87674	-.581366	-0.89734
0.71265	0.67572	0.419606	0.69287
-0.14836	-0.15962	-.056934	-0.14096
-0.18600	-0.19053	-.132488	-0.18518
0.56445	0.54708	0.373203	0.55621
0.35590	0.35607	0.238257	0.35890
-0.13173	-0.13048	-.099303	-0.13050
0.09504	0.09673	0.041381	0.09071
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
145	249	405	485
0.8000	0.8000	0.8000	0.8000
2.0000	2.0000	2.0000	2.0000
0.0000	0.0100	0.0000	0.0000

TABLE 23

PLANFORM 1 MODE SET 5 M=0.9500 K=0.0

3	8	11	11
0.00000	-0.00000	-.000000	-0.00000
0.38481	0.38229	0.385229	0.38519
0.00000	-0.00000	-.000000	-0.00000
-0.05638	-0.05412	-.056051	-0.05603
0.38481	0.38	?	0.38519
0.14074	0.14	?	0.14176
-0.05638	-0.054	?	-0.05603
0.02921	0.03	?	0.02929
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
146	254	410	486
0.9500	0.9500	0.9500	0.9500
0.0001	0.0001	0.0000	0.0001
0.0000	0.0100	0.0000	0.0000

TABLE 24

PLANFORM 1 MODE SET 5 M=0.9500 K=0.1

3	8	11	11
-0.00084	-0.00083	-.000845	-0.00084
0.38552	0.38298	0.385937	0.38590
-0.00020	-0.00021	-.000201	-0.00020
-0.05650	-0.05432	-.056176	-0.05615
0.38532	0.38274	0.385738	0.38570
0.14084	0.14142	0.142053	0.14186
-0.05646	-0.05426	-.056129	-0.05610
0.02939	0.03	0.029406	0.02948
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
147	255	411	487
0.9500	0.9500	0.9500	0.9500
0.1000	0.1000	0.1000	0.1000
0.0000	0.0100	0.0000	0.0000

TABLE 25

PLANFORM 1 MODE SET 5 M=0.9500 K=1.0

3	8	11	11
-0.05106	-0.05383	-.053626	-0.05324
0.48955	0.48273	0.486982	0.48696
-0.03415	-0.03418	-.033234	-0.03326
-0.05094	0.04968	-.052068	-0.05187
0.45528	0.44969	0.453580	0.45352
0.10128	0.10874	0.105920	0.10537
-0.04990	-0.04783	-.050479	-0.05034
0.04992	0.05004	0.048702	0.04876
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
148	256	412	488
0.9500	0.9500	0.9500	0.9500
1.0000	1.0000	1.0000	1.0000
0.0000	0.0100	0.0000	0.0000

TABLE 26

PLANFORM 1 MODE SET 5 M=0.9500 K=2.0

3	8	11	11
-0.01771	-0.00364	-.002184	-0.00148
0.50415	0.49385	0.509735	0.50697
-0.06125	-0.06023	-.063327	-0.06243
-0.01367	-0.00404	-.007661	-0.00759
0.44276	0.42938	0.445107	0.44315
0.02652	0.02147	0.020330	0.02001
-0.02181	-0.01482	-.018087	-0.01802
0.02659	0.02721	0.027988	0.02765
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
149	257	413	489
0.9500	0.9500	0.9500	0.9500
2.0000	2.0000	2.0000	2.0000
0.0000	0.0100	0.0000	0.0000

TABLE 27

PLANFORM 2 MODE SET 2 M=0.0000 K=0.0

3	8	11	11
0.00000	-0.0008	-.000000	-0.00000
2.29625	2.33129	2.300235	2.30016
?	?	?	?
0.00000	-0.00004	-.000000	-0.00000
0.56411	0.56595	0.556563	0.55654
?	?	?	?
?	?	?	-0.00000
?	?	?	0.00465
?	?	?	?
2.29625	2.32677	?	2.30016
2.38355	2.41564	?	2.47217
?	?	?	?
0.56411	0.56480	?	0.55654
1.15749	1.1737	?	1.20506
?	?	?	?
?	?	?	0.00465
?	?	?	0.01540
?	?	?	?
2	2	2	2
0	20	0	0
12	8	15	15
4	4	3	3
26	36	0	15
0	18	0	24
150	258	414	490
0.0000	0.0100	0.0000	0.0000
0.0001	0.0125	0.0000	0.0001
0.0000	0.0100	0.0000	0.0000

TABLE 28

TABLE 29

PLANFORM 2 MODE SET 2 M=0.0000 K=0.5

1	3	8	11	11	14	21
-0,1807	-0,17378	-0,17069	-.198775	-0.19871	-0.2085	-0.1968
2,202	2,15043	2,17874	2.162019	2,16209	2.1683	2.1184
0,5322	?	?	?	?	0.5141	?
-0,07550	-0,07661	-0,07777	-.085107	-0.08510	-0.08537	-0.07120
0,5396	0,47926	0,47592	0.471047	0,47110	0.4383	0.4360
0,4197	?	?	?	?	0.3952	?
-.001086	?	?	?	-0,00150	-.001124	?
0.002946	?	?	?	0.00303	0,001749	?
0.009822	?	?	?	?	0.000624	?
2,251	2,19991	2.22722	2.217272	2.21726	2.2239	2.1726
2,537	2,48062	2,51771	2.560777	2.56039	2.6050	2.4789
0,07067	?	?	?	?	0.07808	?
0,5881	0,53049	0,52890	0.527114	0,52712	0.4945	0.4835
1,230	1,18526	1,20257	1.229491	1.22943	1.2258	1.1265
0,08451	?	?	?	?	0.09025	?
0.003928	?	?	?	0.00442	0.002764	?
0,01211	?	?	?	0.01559	0.01114	?
0.005087	?	?	?	?	0.00690	?
5	2	2	2	2	2	2
0	0	20	0	0	5	0
16	12	8	15	15	12	12
11	4	4	3	3	4	4
0	26	36	0	15	12	12
0	0	18	0	24	0	4
202	151	259	415	491	119	118
0,0000	0,0000	0.0100	0.0000	0.0000	0.0000	0.0000
0,5000	0,5000	0.5000	0.5000	0.5000	0.5000	0.5000
0,0000	0,0000	0.0100	0.0000	0.0000	0.0000	0.0000

TABLE 29

TABLE 30

PLANFORM 2 MODE SET 2 M=0.0000 K=1.0

1	3	8	11	11
-0,8431	-0,81920	-0.81837	-.899312	-0.89909
1,832	1,78944	1,80471	1.812947	1.81345
0,5097	?	?	?	?
-0,3494	-0,35081	-0,35750	-.377921	-0.37792
0,3123	0,24804	0,23202	0.234210	0.23446
0,4085	?	?	?	?
-.004626	?	?	?	-0.00627
-.000460	?	?	?	-0.00167
0.009575	?	?	?	?
2,118	2,07769	2,09818	2.116377	2.11458
2,558	2,51681	2,55825	2.584745	2.58449
0,08945	?	?	?	?
0,5419	0,48558	0,47850	0.487388	0.48749
1,239	1,19587	1.21122	1.235265	1.23531
0,09168	?	?	?	?
0.003687	?	?	?	0.00409
0,01221	?	?	?	0.01562
0,00513	?	?	?	?
5	2	2	2	2
0	0	20	0	0
16	12	8	15	15
11	4	4	3	3
0	26	36	0	15
0	0	18	0	24
206	152	260	416	492
0,0000	0,0000	0.0100	0.0000	0.0000
1,0000	1,0000	1.0000	1.0000	1.0000
0,0000	0,0000	0.0100	0.0000	0.0000

TABLE 30

TABLE 31-1

PLANFORM 2 MODE SET 2 M=0.7806 K=0.0

3	8	11	11	14	14	14	14	14	14
0.00000	-0.00005	-.000000	-0.00000	-.000071	-.000067	-.000059	-.000042	-.000055	-.000053
2.56219	2.61435	2.556101	2.55600	2.6452	2.6071	2.5803	2.5713	2.5823	2.5756
?	?	?	?	0.6415	0.6316	0.6270	0.6176	0.5937	0.5873
0.00000	-0.00006	-.000000	-0.00000	0.000061	-.000055	-.000051	-.000036	-.000046	-.000044
0.67638	0.68867	0.686590	0.68742	0.5630	0.5443	0.5776	0.7240	0.6149	0.6220
?	?	?	?	0.4994	0.4955	0.4981	0.4765	0.4852	0.4808
?	?	?	-0.00000	-.000001	-.000001	-.000001	-.000001	-.000001	-.000001
?	?	?	0.00432	0.000167	0.002593	0.002321	0.003504	0.002496	0.002594
?	?	?	?	0.009649	0.01070	0.009332	0.008952	0.01013	0.009254
2.56219	2.61436	?	2.55600	2.6452	2.6071	2.5803	2.5712	2.5823	2.5756
2.49520	2.58510	?	2.55174	2.9422	2.8286	2.7048	2.5597	2.6793	2.6471
?	?	?	?	-0.1077	-0.09315	-0.1068	-0.07566	-0.1135	-0.1154
0.67638	0.68873	?	0.68742	0.5630	0.5443	0.5776	0.7240	0.6149	0.6220
1.47970	1.53988	?	1.52612	1.7204	1.6418	1.5730	1.4971	1.5730	1.5530
?	?	?	?	0.07452	0.06083	0.04958	0.05609	0.03689	0.0346
?	?	?	0.00432	0.000167	0.002593	0.002321	0.003504	0.002496	0.002594
?	?	?	0.02040	0.01744	0.01681	0.01457	0.01406	0.01353	0.01314
?	?	?	?	0.003096	0.006133	0.005724	0.002461	0.006901	0.006651
2	2	2	2	2	2	2	2	2	2
0	20	0	0	5	5	5	5	5	5
12	8	15	15	4	4	4	8	8	8
4	4	3	3	2	4	8	2	6	8
26	36	0	15	4	4	4	8	8	8
0	18	0	24	0	0	0	0	0	0
153	261	420	493	85	86	87	88	89	90
0.7806	0.7800	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806
0.0001	0.0125	0.0000	0.0001	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100
0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 31 - 1

TABLE 31-2

14	14	14	17	17	23	23	23	23	23
-.000057	-.000041	-.000050	0	0	0	0	0	0	0
2.5823	2.5266	2.5733	2.5611	2.5594	2.5219	2.5597	2.5112	2.5450	2.5411
0.6094	0.6050	0.6034	0.6062	0.5900	?	?	?	?	?
-.000046	-.000033	-.000044	0	0	0	0	0	0	0
0.6165	0.7058	0.6627	0.6928	0.6504	0.7168	0.6665	0.7259	0.6954	0.6959
0.4911	0.4805	0.4917	0.5003	0.4815	?	?	?	?	?
-.000001	-.000001	-.000001	0	?	?	?	?	?	?
0.002449	0.004602	0.002851	0.003055	?	?	?	?	?	?
0.01275	0.009058	0.01275	0.01057	?	?	?	?	?	?
2.5823	2.5266	2.5732	2.5611	2.5594	2.5219	2.5597	2.5112	2.5450	2.5411
2.7153	2.4936	2.6341	2.5766	2.5966	2.6564	2.4983	2.8732	2.5733	2.5471
-0.1054	-0.08379	-0.1102	-0.1160	-0.1102	?	?	?	?	?
0.6166	0.7058	0.6627	0.6928	0.6504	0.7168	0.6665	0.7259	0.6954	0.6959
1.5965	1.4460	1.5660	1.5408	1.5261	1.5542	1.5150	1.6387	1.5312	1.4911
0.04541	0.07305	0.03832	0.03419	0.03564	?	?	?	?	?
0.002449	0.004602	0.02851	0.003055	?	?	?	?	?	?
0.01521	0.01409	0.01471	0.01464	?	?	?	?	?	?
0.007128	0.002460	0.006935	0.007427	?	?	?	?	?	?
2	2	2	2	2	2	2	2	2	2
5	5	5	48	38	8	38	8	9	9
12	16	20	15	15	15	15	7	31	31
4	2	4	3	3	3	3	3	3	2
12	16	20	15	15	31	127	95	63	63
0	0	0	0	0	0	0	0	0	0
91	92	93	70	78	686	691	693	694	695
0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806
0.0100	0.0100	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 31 - 2

TABLE 31-3

23	23	23	23	23	23	23	23	23	23
0	0	0	0	0	0	0	0	0	0
2.5744	2.5466	2.5439	2.54682	2.55004	2.55196	2.52772	2.54514	2.54888	2.54930
?	?	?	0.60262	0.59796	0.59676	?	0.59612	0.59700	0.59678
0	0	0	0	0	0	0	0	0	0
0.6315	0.6953	0.6967	0.69766	0.69746	0.69729	0.71227	0.70090	0.69955	0.70042
?	?	?	0.48208	0.48946	0.48753	?	0.47395	0.48798	0.48811
?	?	?	0	0	0	0	?	?	?
?	?	?	0.00408	0.00311	0.00305	0.00310	?	?	?
?	?	?	0.00890	0.01042	0.01067	?	0.00888	0.00964	0.01166
2.5744	2.5466	2.5439	2.54682	2.55004	2.55196	2.52772	2.54514	2.54888	2.54930
2.4577	2.5380	2.5022	2.54096	2.56626	2.57085	2.70043	2.52360	2.56003	2.56416
?	?	?	-0.10880	-0.11362	-0.11306	?	-0.11222	-0.11202	-0.11276
0.6315	0.6953	0.6967	0.69766	0.69746	0.69729	0.71227	0.70090	0.69955	0.70042
1.5257	1.5211	1.4892	1.49694	1.53530	1.53902	1.57069	1.50145	1.53393	1.53719
?	?	?	0.03667	0.03239	0.03233	?	0.01432	0.03235	0.03191
?	?	?	0.00408	0.00311	0.00305	0.00310	?	?	?
?	?	?	0.01448	0.01448	0.01443	0.01463	?	?	?
?	?	?	0.00427	0.00622	0.00699	?	0.00367	0.00596	0.00719
2	2	2	2	2	2	2	2	2	2
38	39	39	41	41	41	8	31	31	31
7	31	31	15	15	15	15	15	15	15
3	3	2	2	3	4	3	2	3	4
95	63	63	95	95	95	95	95	95	95
0	0	0	0	0	0	0	0	0	0
696	697	698	700	701	702	703	704	705	706
0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 31 - 3

23	23	23	23	23	23	23
0	0	0	0	0	0	0
2.55864	2.55814	2.53006	2.5290	2.5275	2.5610	2.5577
?	?	?	?	?	?	?
0	0	0	0	0	0	0
0.66891	0.66905	0.71226	0.7112	0.7126	0.6654	0.6725
?	?	?	?	?	?	?
?	?	?	?	?	?	?
?	?	?	?	?	?	?
?	?	?	?	?	?	?
2.55864	2.55814	2.53006	2.5290	2.5275	2.5610	2.5577
2.49581	2.50305	2.70632	2.6966	2.7021	2.5198	2.4940
?	?	?	?	?	?	?
0.66891	0.66905	0.71226	0.7112	0.7126	0.6654	0.6725
1.51406	1.51859	1.57589	1.5694	1.5713	1.5192	1.5134
?	?	?	?	?	?	?
?	?	?	?	?	?	?
?	?	?	?	?	?	?
?	?	?	?	?	?	?
2	2	2	2	2	2	2
38	38	8	8	8	38	38
15	15	15	15	15	15	15
3	4	4	3	3	3	3
95	95	95	63	127	31	63
0	0	0	0	0	0	0
707	708	709	687	688	689	690
0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 31 - 4

TABLE 32

PLANFORM 2 MODE SET 2 M=0.7806 K=0.5

1	3	8	11	11	14	18	18	18	18	21
-0.1410	-0.14042	-0.14699	-.158961	-0.15860	-0.1876	-0.1622	-0.17040	-0.1622	-0.1622	-0.1676
2.599	2.53945	2.57195	2.552842	2.55324	2.5910	2.5531	2.5529	2.5531	2.5531	2.5174
0.5937	?	?	?	?	0.5879	0.5838	0.5674	0.5842	0.5772	?
-0.1034	-0.10980	-0.11754	-.117722	-0.11778	-0.1305	-0.1179	-0.1177	-0.1179	-0.1179	-0.1028
0.6869	0.60769	0.60149	0.624859	0.62597	0.5526	0.6304	0.5846	0.6304	0.6304	0.5476
0.5085	?	?	?	?	0.4944	0.4981	0.4821	0.4988	0.4884	?
-.001690	?	?	?	-0.00239	-.001885	-.001787	?	-0.00179	-0.00179	?
0.002713	?	?	?	0.00199	0.000703	0.001424	?	0.001424	0.001424	?
0.01232	?	?	?	?	0.01284	0.01418	?	0.01422	0.01456	?
2.558	2.50228	2.54354	2.518243	2.51834	2.5563	2.5204	2.5198	2.5204	2.5204	2.4884
2.671	2.64582	2.77146	2.685781	2.68434	2.8489	2.7110	2.7302	2.7110	2.7110	2.6546
-0.07248	?	?	?	?	-0.06966	-0.0778	-0.06940	-0.0784	-0.0696	?
0.7348	0.66403	0.65484	0.681924	0.68290	0.6177	0.6869	0.6428	0.6869	0.6869	0.5966
1.578	1.55220	1.61393	1.591499	1.59252	1.6692	1.5963	1.5821	1.5963	1.5963	1.4753
0.03808	?	?	?	?	0.04778	0.0489	0.04547	0.0495	0.0530	?
0.004271	?	?	?	0.00424	0.002478	0.003077	?	0.003077	0.003077	?
0.01631	?	?	?	0.02100	0.01567	0.01557	?	0.01557	0.01557	?
0.006910	?	?	?	?	0.007120	0.004296	?	0.004711	0.004549	?
5	2	2	2	2	2	2	2	2	2	2
0	0	20	0	0	5	78	38	68	88	0
16	12	8	15	15	12	15	15	15	15	12
11	4	4	3	3	4	3	3	3	3	4
0	26	36	0	15	12	15	15	15	15	12
0	0	18	0	24	0	0	0	0	0	4
210	154	262	421	494	121	71	79	672	673	120
0.7806	0.7806	0.7800	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806
0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
0.0000	0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 33-1

PLANFORM 2 MODE SET 2 M=0.7806 K=1.0

3	8	11	11	14	14	14	14	14	14
-0.68707	-0.74113	-.728495	-0.72645	-0.9344	-0.9166	-0.8480	-0.7070	-0.8094	-0.7912
2.63463	2.61860	2.676879	2.67915	2.6313	2.8316	2.7673	2.4517	2.7828	2.7665
?	?	?	?	0.5821	0.5630	0.5591	0.5474	0.5192	0.5139
-0.49413	-0.53688	-.511504	-0.51164	-0.5763	-0.6447	-0.6080	-0.3971	-0.5518	-0.5410
0.48031	0.41462	0.512189	0.51465	0.3628	0.3865	0.4178	0.5240	0.4599	0.4697
?	?	?	?	0.4731	0.5078	0.5063	0.4444	0.4892	0.4833
?	?	?	-0.01015	-.008559	-.008611	-.007524	-.005432	-.006865	-.006590
?	?	?	-0.00464	-.003482	-.004238	-.004060	0.000876	-.004194	-.003843
?	?	?	?	0.009323	0.01110	0.009453	0.008612	0.01030	0.009342
2.55431	2.59044	2.598930	2.59964	2.6843	2.7391	2.6845	2.4723	2.6698	2.6549
2.74374	2.91147	2.750461	2.74796	3.0268	3.0338	2.9061	2.6179	2.8720	2.8366
?	?	?	?	-0.01777	-0.04376	-0.05124	0.009398	-0.05939	-0.05981
0.71011	0.69926	0.739339	0.74100	0.6199	0.6341	0.6494	0.6996	0.6932	0.6966
1.66795	1.74386	1.684886	1.68613	1.6279	1.8564	1.7705	1.4253	1.7671	1.7424
?	?	?	?	0.07260	0.04183	0.	0.06954	0.02410	0.02353
?	?	?	0.00446	0.001679	0.002897	0.002320	0.004226	0.002332	0.002428
?	?	?	0.02242	0.01679	0.01872	0.01603	0.01397	0.01456	0.01411
?	?	?	?	0.002676	0.005843	0.005610	0.002354	0.006894	0.006665
2	2	2	2	2	2	2	2	2	2
0	20	0	0	5	5	5	5	5	5
12	8	15	15	4	4	4	8	8	8
4	4	3	3	2	4	8	2	6	8
26	36	0	15	4	4	4	8	8	8
0	18	0	24	0	0	0	0	0	0
155	263	422	495	94	95	96	97	98	99
0.7806	0.7800	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 33 - 1

TABLE 33-2

14	14	14	18	18	18	18	18	21	24
-0.8299	-0.7027	-0.7717	-0.7411	-0.7762	-0.7411	-0.7411	-0.7411	-0.7012	-0.8117
2.7785	2.3845	2.7396	2.6390	2.6576	2.6390	2.6390	2.6390	2.5856	2.4739
0.5424	0.5543	0.5347	0.5534	0.5330	0.5536	0.5540	0.5490	?	?
-0.5630	-0.3710	-0.5395	-0.4976	-0.5050	-0.4976	-0.4976	-0.4976	-0.4142	-0.3765
0.4539	0.4839	0.4994	0.5126	0.4561	0.5126	0.5126	0.5126	0.4795	0.4822
0.4980	0.4431	0.4985	0.4964	0.4833	0.4975	0.4988	0.4888	?	?
-.007874	-.005120	-.007444	-.007586	?	-0.00759	-0.00759	-0.00759	?	?
-.004537	0.002056	-.004105	0.002869	?	0.002869	0.002869	0.002869	?	?
0.01306	0.008669	0.01300	0.01442	?	0.01448	0.01458	0.01484	?	?
2.6754	2.4249	2.6426	2.5878	2.5970	2.5878	2.5878	2.5878	2.4988	2.5599
2.9137	2.5813	2.8313	2.7660	2.7910	2.7660	2.7660	2.7660	2.5936	2.8185
-0.05004	0.005968	-0.05574	-0.0488	-0.04520	-0.0498	-0.0504	-0.0424	?	?
0.6960	0.6668	0.7306	0.7350	0.6874	0.7350	0.7350	0.7350	0.6504	0.6609
1.7932	1.3635	1.7505	1.6499	1.6701	1.6499	1.6499	1.6499	1.5077	1.3734
0.03396	0.08363	0.03109	0.0468	0.04392	0.0468	0.0471	0.0511	?	?
0.002609	0.005125	0.002805	0.003589	?	0.003589	0.003589	0.003589	?	?
0.01655	0.01400	0.01603	0.01708	?	0.01708	0.01708	0.01708	?	?
0.007009	0.002416	0.006867	0.004155	?	0.004141	0.004542	0.004402	?	?
2	2	2	2	2	2	2	2	2	2
5	5	5	78	38	80	68	88	0	21
12	16	20	15	15	15	15	15	12	8
4	2	4	3	3	3	3	3	4	2
12	16	20	15	15	15	15	15	12	62
0	0	0	0	0	0	0	0	4	120
100	101	102	72	80	665	666	667	124	710
0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7806	0.7810
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 33 - 2

24	24	24	24	24	24	24	24	24	37	37
-0.8595	-0.8555	-0.7500	-0.8061	-0.7563	-0.7681	-0.7659	-0.7466	-0.7281	-0.7291	-0.7312
2.7033	2.7032	2.4155	2.7677	2.7008	2.7130	2.7111	2.7063	2.3954	2.6551	2.6507
?	?	?	?	?	?	?	?	?	?	?
-0.5033	-0.5037	-0.3735	-0.5571	-0.4988	-0.5081	-0.5068	-0.5064	-0.3753	-0.4956	-0.4933
0.4458	0.4495	0.4684	0.4723	0.5112	0.5009	0.5031	0.5166	0.4630	0.5215	0.5194
?	?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?	?
2.6943	2.6927	2.4731	2.6677	2.6210	2.6325	2.6309	2.6161	2.4442	2.5821	2.5802
3.0562	3.0530	2.6698	2.8819	2.8315	2.8478	2.8455	2.8018	2.6207	2.7492	2.7532
?	?	?	?	?	?	?	?	?	?	?
0.7069	0.7113	0.6541	0.7115	0.7388	0.7322	0.7340	0.7401	0.6527	0.7389	0.7374
1.6796	1.6846	1.3623	1.7785	1.6937	1.7045	1.7033	1.7037	1.3620	1.6660	1.6609
?	?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?	?
2	2	2	2	2	2	2	2	2	2	2
21	21	21	21	21	21	21	21	21	32	32
8	8	16	16	16	16	16	20	32	15	14
4	6	2	4	4	4	4	4	4	3	3
62	80	118	16	50	84	118	104	98	47	44
120	120	120	120	120	120	120	120	120	0	0
711	712	713	714	715	716	717	718	719	995	996
0.7810	0.7810	0.7810	0.7810	0.7810	0.7810	0.7810	0.7810	0.7810	0.7806	0.7806
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 33 - 3

TABLE 33 - 4

TABLE 34-1

PLANFORM 2 MODE SET 2 M=0.9270 K=0.0

3	8	11	11	14	14	14	14	14	14
0.00000	-0.00000	-.000000	-0.00000	-.000050	-.000056	-.000046	-.000004	-.000036	-.000035
2.76376	2.83037	2.736351	2.73972	2.8686	2.8460	2.8300	2.7507	2.7963	2.7958
?	?	?	?	0.6784	0.7129	0.6985	0.6679	0.6494	0.6446
0.00000	-0.00009	-.000000	-0.00000	-.000080	-.000084	-.000076	-.000034	-.000066	-.000065
0.77377	0.79505	0.797926	0.80384	0.6312	0.5875	0.6207	0.8628	0.6943	0.6965
?	?	?	?	0.5489	0.5920	0.5850	0.5215	0.5588	0.5556
?	?	?	-0.00000	-.000001	-.000001	-.000001	-.000001	-.000001	-.000001
?	?	?	0.00393	-.000461	0.003332	0.003219	0.004634	0.001981	0.002122
?	?	?	?	0.01062	0.01362	0.01019	0.009694	0.01140	0.01062
2.76376	2.83202	?	2.73972	2.8685	2.8459	2.8299	2.7506	2.7962	2.7958
2.45718	2.64879	?	2.43885	3.0144	3.0642	2.9172	2.3856	2.7766	2.7537
?	?	?	?	-0.3475	-0.3399	-0.3304	-0.2607	-0.3809	-0.3873
0.77377	0.79507	?	0.80383	0.6312	0.5875	0.6207	0.8628	0.6943	0.6965
1.79135	1.91884	?	1.78869	2.1186	2.1866	2.0903	1.6456	2.0135	1.9931
?	?	?	?	-.003271	-0.01875	-0.01139	-0.02471	-0.07870	-0.08577
?	?	?	0.00393	-.000460	0.003334	0.003220	0.004634	0.001982	0.002123
?	?	?	0.02634	0.02187	0.02706	0.02344	0.01649	0.01848	0.01802
?	?	?	?	0.003277	0.009675	0.01060	0.002173	0.01104	0.01008
2	2	2	2	2	2	2	2	2	2
0	20	0	0	5	5	5	5	5	5
12	8	15	15	4	4	4	8	8	8
4	4	3	3	2	4	8	2	6	8
26	36	0	15	4	4	4	8	8	8
0	18	0	24	0	0	0	0	0	0
156	264	426	496	103	104	105	106	107	108
0.9270	0.9300	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270
0.0001	0.0125	0.0000	0.0001	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100
0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 34 - 1

14	14	14	17
-.000035	-.000009	-.000023	0
2.7860	2.7212	2.7710	2.7483
0.6655	0.6519	0.6493	0.6496
-.000065	-.000039	-.000057	0
0.6930	0.7981	0.7657	0.8106
0.5636	0.5387	0.5597	0.5666
-.000001	-.000001	-.000001	0
0.001928	0.005001	0.002366	0.002762
0.01531	0.01002	0.01501	0.01215
2.7839	2.7211	2.7709	2.7483
2.7526	2.3904	2.5996	2.4907
-0.3681	-0.2930	-0.3709	-0.3827
0.6930	0.7982	0.7657	0.8106
1.9827	1.6643	1.8945	1.8377
-0.06666	0.009030	-0.08273	-0.1199
0.001929	0.005001	0.002367	0.002762
0.01931	0.01709	0.01846	0.01753
0.009488	0.002394	0.009130	0.01254
2	2	2	2
5	5	5	48
12	16	20	15
4	2	4	3
12	16	20	15
0	0	0	0
109	110	111	73
0.9270	0.9270	0.9270	0.9270
0.0100	0.0100	0.0100	0.0000
0.0000	0.0000	0.0000	0.0000

TABLE 34 - 2

TABLE 35

PLANFORM 2 MODE SET 2 M=0.9270 K=0.5

1	3	8	11	11	14	21
-0.06407	-0.06105	-0.07214	-.073259	-0.07169	-0.1136	-0.0984
2.925	2.87416	2.95420	2.842253	2.84847	2.9616	2.7619
0.5648	?	?	?	?	0.5513	?
-0.1070	-0.10997	-0.12788	-.111059	-0.11135	-0.1384	-0.09689
0.8737	0.82805	0.83965	0.846329	0.85428	0.7815	0.6973
0.5444	?	?	?	?	0.5310	?
-.002468	?	?	?	-0.00350	-.002800	?
0.002317	?	?	?	0.00160	-.000515	?
0.01493	?	?	?	?	0.01606	?
2.750	2.69607	2.77644	2.679219	2.68348	2.7747	2.6168
2.514	2.47514	2.69169	2.435574	2.43525	2.7013	2.4352
-0.2253	?	?	?	?	-0.2351	?
0.8830	0.83159	0.86104	0.850005	0.85715	0.7842	0.6980
1.804	1.79681	1.95183	1.759647	1.76795	1.9671	1.6021
-0.08124	?	?	?	?	-0.1129	?
0.004676	?	?	?	0.00479	0.002305	?
0.02138	?	?	?	0.02817	0.02097	?
0.008585	?	?	?	?	0.008727	?
5	2	2	2	2	2	2
0	0	20	0	0	5	0
16	12	8	15	15	12	12
11	4	4	3	3	4	4
0	26	36	0	15	12	12
0	0	18	0	24	0	4
214	157	265	427	497	123	122
0.9270	0.9270	0.9300	0.9270	0.9270	0.9270	0.9270
0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
0.0000	0.0000	0.0100	0.0000	0.0000	0.0000	0.0000

TABLE 35

TABLE 36-1

PLANFORM 2 MODE SET 2 M=0.9270 K=1.0

3	8	11	11	14	14	14	14	14	14
-0.38271	-0.40094	-.414432	-0.40694	-0.6969	-0.6429	-0.5817	-0.5148	-0.5120	-0.5109
3.08846	3.23468	3.066088	3.07635	3.09692	3.3887	3.3545	2.6250	3.2500	3.2435
?	?	?	?	0.05070	0.4847	0.4920	0.5122	0.4298	0.4281
-0.39190	-0.44513	-.412226	-0.41201	-0.5551	-0.5618	-0.5654	-0.3132	-0.4327	-0.4379
0.94072	0.96734	0.917718	0.92923	0.5830	0.8711	0.8907	0.7287	0.9459	0.9402
?	?	?	?	0.4556	0.4707	0.4727	0.4386	0.4313	0.4299
?	?	?	-0.01330	-.009372	-.009983	-0.01036	-.004812	-0.01101	-0.01084
?	?	?	-0.00318	-.002716	0.001938	0.000475	0.003383	-.007060	-.006796
?	?	?	?	0.009703	0.01230	0.008299	0.008980	0.01330	0.01215
2.65451	2.75803	2.679674	2.68420	2.8718	2.9288	2.8989	2.4812	2.7898	2.7902
2.29379	2.48129	2.309967	2.30444	3.7635	2.5686	2.4714	2.3635	2.4081	2.4032
?	?	?	?	-0.0492	0.01382	0.01914	-.002822	-0.02461	-0.03216
0.90378	0.95282	0.930078	0.93814	0.7190	0.7737	0.8011	0.7973	0.8860	0.8865
1.68701	1.84666	1.684901	1.69009	1.6790	1.8631	1.8504	1.3897	1.7595	1.7553
?	?	?	?	0.04933	0.04496	0.06265	0.04114	0.000595	-.003005
?	?	?	0.00707	0.002043	0.007831	0.007230	0.005707	0.00312	0.003188
?	?	?	0.03022	0.01847	0.02632	0.02594	0.01461	0.02273	0.02215
?	?	?	?	0.002649	0.008114	0.009687	0.001960	0.008997	0.008273
2	2	2	2	2	2	2	2	2	2
0	20	0	0	5	5	5	5	5	5
12	8	15	15	4	4	4	8	8	8
4	4	3	3	2	4	8	2	6	8
26	36	0	15	4	4	4	8	8	8
0	18	0	24	0	0	0	0	0	0
158	266	428	498	112	113	114	115	116	117
0.9270	0.9300	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 36 - 1

TABLE 36-2

18	18	21
-0.4560 2.9975 ?	-0.4892 3.1173 0.4560	-0.4724 2.9191 ?
-0.4078 0.8707 ?	-0.4465 0.8448 0.4762	-0.3301 0.7777 ?
-.009503 -.001018 ?	? ? ?	? ? ?
2.6661 2.3905 ?	2.7352 2.4258 0.07560	2.5708 2.2358 ?
0.9096 1.6558 ?	0.8830 1.7260 -0.01732	0.7634 1.4859 ?
0.005753 0.02234 ?	? ? ?	? ? ?
2	2	2
8	38	0
15	15	12
3	3	4
15	15	12
0	0	4
74	81	125
0.9270	0.9270	0.9270
1.0000	1.0000	1.0000
0.0000	0.0000	0.0000

TABLE 36 - 2

PLANFORM 2 MODE SET 5 M=0.0000 K=0.0

3	8	11	11
0.00000	-0.00002	-.000000	-0.00000
0.35045	0.34909	0.352739	0.35273
0.00000	-0.00001	-.000000	-0.00000
0.20202	0.21146	0.198599	0.19858
0.35045	0.34906	?	0.35273
0.48858	0.48771	?	0.49664
0.20202	0.21153	?	0.19858
0.34836	0.36005	?	0.35158
2	2	2	2
0	20	0	0
12	8	15	15
4	4	3	3
26	36	0	15
0	18	0	24
159	267	417	502
0.0000	0.0100	0.0000	0.0000
0.0001	0.0125	0.0000	0.0001
0.0000	0.0100	0.0000	0.0000

TABLE 37

PLANFORM 2 MODE SET 5 M=0.0000 K=0.5

3	8	11	11
-0.03311	-0.03300	-.034805	-0.03480
0.32579	0.32477	0.327228	0.32724
-0.02419	-0.02504	-.025244	-0.02524
0.18142	0.19057	0.177317	0.17731
0.34922	0.34807	0.351559	0.35156
0.48800	0.48742	0.496086	0.49604
0.20118	0.21065	0.197788	0.19777
0.34795	0.35966	0.351204	0.35115
2	2	2	2
0	20	0	0
12	8	15	15
4	4	3	3
26	36	0	15
0	18	0	24
160	268	418	503
0.0000	0.0100	0.0000	0.0000
0.5000	0.5000	0.5000	0.5000
0.0000	0.0100	0.0000	0.0000

TABLE 38

PLANFORM 2 MODE SET 5 M=0.0000 K=1.0

3	8	11	11
-0.13455	-0.13328	-.140473	-0.14046
0.25126	0.25056	0.250190	0.25023
-0.09767	-0.10106	-.101806	-0.10179
0.11924	0.12711	0.113131	0.11315
0.34627	0.34498	0.348745	0.34876
0.48644	0.48567	0.494441	0.49441
0.19915	0.20829	0.195831	0.19582
0.34686	0.35827	0.350011	0.34997
2	2	2	2
0	20	0	0
12	8	15	15
4	4	3	3
26	36	0	15
0	18	0	24
161	269	419	504
0.0000	0.0100	0.0000	0.0000
1.0000	1.0000	1.0000	1.0000
0.0000	0.0100	0.0000	0.0000

TABLE 39

PLANFORM 2 MODE SET 5 M=0.7806 K=0.0

3	8	11	11
-0.00000	-0.00002	-.000000	-0.00000
0.37047	0.36899	0.371708	0.37172
-0.00000	-0.00002	-.000000	-0.00000
0.21460	0.22464	0.211530	0.21149
0.37047	0.36893	?	0.37172
0.53083	0.53570	?	0.53773
0.21460	0.22462	?	0.21149
0.39378	0.40998	?	0.39673
2	2	2	2
0	20	0	0
12	8	15	15
4	4	3	3
26	36	0	15
0	18	0	24
162	270	423	505
0.7806	0.7800	0.7806	0.7806
0.0001	0.0125	0.0000	0.0001
0.0000	0.0100	0.0000	0.0000

TABLE 40

TABLES 41, 42, 43, 44

PLANFORM 2 MODE SET 5 M=0.7806 K=0.5

3	8	11	11
-0.03693	-0.03748	-.038237	-0.03825
0.34946	0.34669	0.349903	0.34991
-0.02953	-0.03099	-.030458	-0.03[illegible]46
0.19286	0.20134	0.189097	0.18905
0.37332	0.37164	0.374572	0.37459
0.53527	0.54045	0.542207	0.54226
0.21598	0.22572	0.212857	0.21281
0.39722	0.41340	0.400180	0.40[illegible]11
2	2	2	2
0	20	0	0
12	8	15	15
4	4	3	3
26	36	0	15
0	18	0	24
163	271	424	506
0.7806	0.7800	0.7806	0.7806
0.5000	0.5000	0.5000	0.5000
0.0000	0.0100	0.0000	0.0000

TABLE 41

PLANFORM 2 MODE SET 5 M=0.7806 K=1.0

3	8	11	11
-0.15087	-0.15373	-.156311	-0.15637
0.28751	0.27921	0.285344	0.28531
-0.12154	-0.12786	-.125293	-0.12530
0.12736	0.12988	0.121395	0.12132
0.38400	0.38081	0.385284	0.38530
0.54958	0.55484	0.556770	0.55685
0.22174	0.22994	0.218397	0.21835
0.40870	0.42453	0.411395	0.41135
2	2	2	2
0	20	0	0
12	8	15	15
4	4	3	3
26	36	0	15
0	18	0	24
164	272	425	507
0.7806	0.7800	0.7806	0.7806
1.0000	1.0000	1.0000	1.0000
0.0000	0.0100	0.0000	0.0000

TABLE 42

PLANFORM 2 MODE SET 5 M=0.9270 K=0.0

3	8	11	11
-0.00000	-0.00002	-.000000	-0.00000
0.38229	0.38035	0.382231	0.38243
-0.00000	-0.00002	-.000000	-0.00000
0.22166	0.23221	0.219985	0.21973
0.38229	0.38041	?	0.38243
0.56224	0.57223	?	0.56450
0.22166	0.23221	?	0.21973
0.42983	0.45086	?	0.42921
2	2	2	2
0	20	0	0
12	8	15	15
4	4	3	3
26	36	0	15
0	18	0	24
165	273	429	508
0.9270	0.9300	0.9270	0.9270
0.0001	0.0125	0.0000	0.0001
0.0000	0.0100	0.0000	0.0000

TABLE 43

PLANFORM 2 MODE SET 5 M=0.9270 K=0.5

3	8	11	11
-0.03983	-0.04147	-.040145	-0.04035
0.36778	0.36310	.367264	0.36711
-0.03457	-0.03698	-.034567	-0.03464
0.20152	0.20891	0.199652	0.19914
0.39123	0.38906	0.390778	0.39089
0.57245	0.58482	0.573119	0.57429
0.22750	0.23757	0.225438	0.22508
0.44053	0.46336	0.439143	0.43904
2	2	2	2
0	20	0	0
12	8	15	15
4	4	3	3
26	36	0	15
0	18	0	24
166	274	430	509
0.9270	0.9300	0.9270	0.9270
0.5000	0.5000	0.5000	0.5000
0.0000	0.0100	0.0000	0.0000

TABLE 44

PLANFORM 2 MODE SET 5 M=0.9270 K=1.0

3	8	11	11
-0.15348	-0.16204	-.156314	-0.15739
0.34278	0.33205	0.337068	0.33570
-0.13774	-0.14954	-.138239	-0.13869
0.15780	0.15758	0.151717	0.15022
0.42274	0.42157	0.419934	0.41981
0.59471	0.61356	0.594915	0.59638
0.25264	0.26316	0.247598	0.24693
0.46830	0.49720	0.463895	0.46385
2	2	2	2
0	20	0	0
12	8	15	15
4	4	3	3
26	36	0	15
0	18	0	24
167	275	431	510
0.9270	0.9300	0.9270	0.9270
1.0000	1.0000	1.0000	1.0000
0.0000	0.0100	0.0000	0.0000

TABLE 45

PLANFORM 3 MODE SET 2 M=0.0000 K=0.0

3	8	11	11	23
0.00000	-0.00000	-.000000	-0.00000	0
2.71154	2.73068	2.69 052	2.69720	2.6894
3.71363	3.90038	3.657085	3.65562	?
0.00000	0.00000	-.000000	-0.00000	?
?	?	?	?	?
0.00000	-0.00000	-.000000	-0.00000	0
-0.45284	-0.41628	-.429894	-0.43109	-0.4161
1.15419	1.2125	1.188862	1.18667	?
0.00000	-0.00000	-.000000	-0.00000	?
?	?	?	?	?
0.00000	-0.00000	-.000000	-0.00000	?
0.39600	0.38595	0.391459	0.39175	?
0.70818	0.71837	0.695991	0.69396	?
0.00000	-0.00000	-.000000	-0.00000	?
?	?	?	?	?
0.00000	-0.00000	-.000000	-0.00000	?
0.68720	0.69216	0.684777	0.68481	?
1.01779	1.05869	1.008718	1.00828	?
0.00000	-0.00000	-.000000	-0.00000	?
?	?	?	?	?
?	?	?	-0.00000	?
?	?	?	0.00214	?
?	?	?	0.02306	?
?	?	?	-0.00000	?
?	?	?	?	?
2.71154	2.706	?	2.69720	2.6894
3.39004	3.438	?	3.40810	3.4194
1.98095	2.116	?	1.96750	?
0.66890	0.658	?	0.66536	?
?	?	?	?	?
-0.45284	-0.412	?	-0.43109	-0.4161
1.13067	1.190	?	1.14700	1.1612
1.22414	1.304	?	1.22087	?
-0.04981	-0.040	?	-0.04458	?
?	?	?	?	?
0.39600	0.382	?	0.39175	?
0.69657	0.690	?	0.70193	?
0.75820	0.798	?	0.75851	?
0.06887	0.066	?	0.06786	?
?	?	?	?	?
0.68720	0.686	?	0.68481	?
0.86566	0.874	?	0.87088	?
0.62895	0.656	?	0.63183	?
0.23510	0.232	?	0.23453	?
?	?	?	?	?
?	?	?	0.00214	?
?	?	?	0.02271	?
?	?	?	0.03390	?
?	?	?	0.00061	?
?	?	?	?	?
2	2	2	2	2
0	20	0	0	8
12	14	15	15	15
4	3	3	3	4
26	36	0	15	95
0	18	0	24	0
168	276	432	511	679
0.0000	0.0100	0.0000	0.0000	0.0000
0.0001	0.0001	0.0000	0.0001	0.0000
0.0000	0.0100	0.0000	0.0000	0.0000

TABLE 46

PLANFORM 3 MODE SET 2 M=0.0000 K=0.5

3	8	11	11	11
-0.42863	-0.42753	-.437995	-0.43808	-.439355
2.54179	2.54983	2.533326	2.53349	2.54 120
3.53526	3.69908	3.480309	3.47878	3.441833
-0.10522	-0.10339	-.106152	-0.10615	-.106691
?	?	?	?	?
-0.13133	-0.14159	-.132271	-0.13199	-.129704
-0.52451	-0.50149	-.503348	-0.50450	-.527089
1.11855	1.16373	1.150789	1.14877	1.139029
-0.04361	-0.04539	-.043757	-0.04371	-.043340
?	?	?	?	?
-0.09201	-0.09088	-.094882	-0.09470	-.093069
0.34349	0.32930	0.339538	0.33990	0.350752
0.66058	0.66554	0.647832	0.64589	0.629609
-0.02777	-0.02765	-.028245	-0.02819	-.027808
?	?	?	?	?
-0.10113	-0.10051	-.103071	-0.10306	-.103448
0.63384	0.63544	0.632407	0.63245	0.633553
0.96755	1.00339	0.959057	0.95864	0.951422
-0.04254	-0.04189	-.042733	-0.04272	-.042995
?	?	?	?	?
?	?	?	-0.00283	?
?	?	?	-0.00004	?
?	?	?	0.02128	?
?	?	?	-0.00126	?
?	?	?	?	?
2.62694	2.64255	2.618262	2.61833	2.620874
3.51587	3.59302	3.527722	3.52730	3.513296
2.17801	2.34586	2.157447	2.15525	2.097988
0.64997	0.64614	0.647238	0.64727	0.647946
?	?	?	?	?
-0.44012	-0.40933	-.419023	-0.42026	-.444351
1.11056	1.17785	1.130320	1.12815	1.113186
1.19305	1.28186	1.194024	1.19199	1.162854
-0.04697	-0.03844	-.041874	-0.04212	-.048162
?	?	?	?	?
0.38461	0.37355	0.380623	0.38088	0.390217
0.71447	0.71383	0.720110	0.71838	0.703110
0.78612	0.83222	0.785488	0.78353	0.766533
0.06628	0.06297	0.065346	0.06535	0.066532
?	?	?	?	?
0.66451	0.66740	0.663539	0.66355	0.663974
0.89850	0.91461	0.902309	0.90214	0.899952
0.68058	0.71618	0.681864	0.68122	0.670718
0.23002	0.22784	0.229634	0.22964	0.229776
?	?	?	?	?
?	?	?	0.00206	?
?	?	?	0.02280	?
?	?	?	0.03401	?
?	?	?	0.00059	?
?	?	?	?	?
2	2	2	2	2
0	20	0	0	0
12	14	15	15	15
4	3	3	3	6
26	36	0	15	0
0	18	0	24	0
169	277	433	512	456
0.0000	0.0100	0.0000	0.0000	0.0000
0.5000	0.5000	0.5000	0.5000	0.5000
0.0000	0.0100	0.0000	0.0000	0.0000

TABLE 47

PLANFORM 3 MODE SET 2 M=0.0000 K=1.0

3	8	11	11
-1.81917	-1.82239	-1.84671	-1.84726
2.12771	2.10291	2.131192	2.13139
3.16041	3.27003	3.101454	3.10037
-0.44407	-0.43914	-.446054	-0.44610
?	?	?	?
-0.50988	-0.54999	-.515362	-0.51428
-0.75427	-0.76952	-.736591	-0.73767
0.98699	0.99343	1.013917	1.01234
-0.17100	-0.17808	-.171910	-0.17172
?	?	?	?
-0.38245	-0.37927	-.392110	-0.39145
0.19933	0.17203	0.196255	0.19684
0.54019	0.53031	0.524356	0.52270
-0.11428	-0.11398	-.115839	-0.11564
?	?	?	?
-0.43280	-0.43299	-.438187	-0.43819
0.49886	0.49385	0.498931	0.49901
0.85934	0.88612	0.850455	0.85011
-0.17643	-0.17449	-.176782	-0.17674
?	?	?	?
?	?	?	-0.01140
?	?	?	-0.00651
?	?	?	0.01607
?	?	?	-0.00504
?	?	?	?
2.53651	2.55344	2.534279	2.53413
3.56236	3.64078	3.565802	3.56572
2.26671	2.45139	2.238852	2.23676
0.63054	0.62578	0.628309	0.62835
?	?	?	?
-0.42678	-0.41206	-.408345	-0.40970
1.10304	1.16080	1.122335	1.12024
1.17963	1.25903	1.180328	1.17834
-0.04415	-0.03819	-.039573	-0.03984
?	?	?	?
0.37239	0.35956	0.368939	0.36910
0.72095	0.71907	0.724356	0.72270
0.79837	0.84223	0.792769	0.79086
0.06371	0.05975	0.062696	0.06268
?	?	?	?
0.64000	0.64334	0.640722	0.64069
0.91092	0.92776	0.912876	0.91268
0.70448	0.74421	0.703957	0.70334
0.22474	0.22291	0.224426	0.22445
?	?	?	?
?	?	?	0.00194
?	?	?	0.02279
?	?	?	0.03394
?	?	?	0.00054
?	?	?	?
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
170	278	438	513
0.0000	0.0100	0.0000	0.0000
1.0000	1.0000	1.0000	1.0000
0.0000	0.0100	0.0000	0.0000

TABLE 48

TABLE 49

PLANFORM 3 MODE SET 2 M=0.0000 K=4.0

3	8	8	8	11	11	11
-31.4305	-30.1799	-30.5126	-30.3543	-31.2192	-31.2274	-31.1935
-5.64571	-6.12602	-5.7084	-5.0476	-5.41446	-5.37936	-5.02974
-3.17481	-4.30180	-3.6999	-2.9754	-3.45910	-3.43530	-3.20556
-7.60513	-6.97827	-7.0978	-7.0463	-7.51019	-7.51034	-7.53270
?	?	?	?	?	?	?
-7.82370	-8.51989	-8.3223	-8.0450	-7.85227	-7.84138	-7.66801
-5.42708	-6.07715	-5.8827	-5.5980	-5.40463	-5.39833	-5.25932
-1.81460	-2.71037	-2.506	-2.2486	-2.07275	-2.06037	-1.66305
-2.66667	-2.78589	-2.7824	-2.7233	-2.66281	-2.66018	-2.62898
?	?	?	?	?	?	?
-6.44239	-6.27107	-7.9520	-7.9102	-6.46142	-6.45709	-6.36303
-2.61629	-2.83688	-3.0131	-2.7778	-2.55847	-2.54857	-2.44073
-1.71154	-1.98286	-1.9813	-1.7509	-1.76282	-1.75592	-1.66972
-1.89770	-1.82787	-2.191	-2.1696	-1.89795	-1.89582	-1.87040
?	?	?	?	?	?	?
-7.55227	-7.28816	-7.4676	-7.4312	-7.50876	-7.50936	-7.51400
-2.06575	-2.24079	-2.1539	-2.0167	-2.03052	-2.02426	-1.96081
-0.98949	-1.35220	-1.21856	-1.0602	-1.04095	-1.03655	-.973541
-2.96115	-2.77960	-2.8199	-2.8063	-2.93730	-2.93691	-2.94850
?	?	?	?	?	?	?
?	?	?	?	?	-0.18279	?
?	?	?	?	?	-0.13383	?
?	?	?	?	?	-0.08776	?
?	?	?	?	?	-0.08050	?
?	?	?	?	?	?	?
2.37091	1.84934	1.9327	2.0821	2.332370	2.33750	2.396573
3.59643	2.99678	3.1582	3.2986	3.519436	3.52281	3.497722
2.36753	2.08108	2.1182	2.1389	2.349731	2.34586	2.239676
0.59472	0.46414	0.5075	0.5405	0.578536	0.57952	0.593557
?	?	?	?	?	?	?
-0.39819	-0.59446	-0.48710	-0.3731	-.390699	-0.38968	-.392628
1.08868	1.02089	1.05627	1.0861	1.075300	1.07644	1.083334
1.16128	1.10495	1.1308	1.1423	1.112773	1.11259	1.111247
-0.03904	-0.09110	-0.06514	-0.04197	-.037086	-0.03695	-.038900
?	?	?	?	?	?	?
0.35601	0.23899	0.35906	0.4318	0.335065	0.33628	0.365650
0.72604	0.62566	0.8474	0.8930	0.701765	0.70164	0.702762
0.81237	0.72661	0.8466	0.8550	0.736633	0.73531	0.778630
0.06047	0.03259	0.06763	0.08504	0.053607	0.05374	0.060604
?	?	?	?	?	?	?
0.59654	0.38905	0.4225	0.4532	0.594466	0.59512	0.605847
0.91961	0.72806	0.7738	0.8017	0.906230	0.90644	0.904722
0.73150	0.60273	0.6198	0.6261	0.729574	0.72851	0.710111
0.21685	0.15504	0.1691	0.1776	0.212121	0.21232	0.216154
?	?	?	?	?	?	?
?	?	?	?	?	0.00096	?
?	?	?	?	?	0.02200	?
?	?	?	?	?	0.03118	?
?	?	?	?	?	-0.00013	?
?	?	?	?	?	?	?
2	2	2	2	2	2	2
0	20	20	20	0	0	0
12	7	7	7	15	15	15
4	3	3	3	3	3	6
26	36	66	66	0	15	0
0	18	20	20	0	24	0
171	225	226	227	434	514	457
0.0000	0.0100	0.0100	0.0100	0.0000	0.0000	0.0000
4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
0.0000	0.0100	0.0120	0.0200	0.0000	0.0000	0.0000

TABLE 49

TABLE 50

PLANFORM 3 MODE SeT 2 M=0.8000 K=0.0

3	8	11	11	23	23	23	23
0.00000	-0.00000	-.000000	-0.00000	0	0	0	0
2.95952	2.96865	2.945200	2.94717	2.9331	2.9393	2.9421	2.9486
4.33583	4.64734	4.246659	4.25266	?	?	?	?
0.00000	-0.00000	-.000000	-0.00000	?	?	?	?
?	?	?	?	?	?	?	?
0.00000	-0.00000	-.000000	-0.00000	0	0	0	0
-0.58473	-0.51352	-.539072	-0.54395	-0.5036	-0.5185	-0.5268	-0.5625
1.58293	1.69781	1.640658	1.62444	?	?	?	?
0.00000	-0.00000	-.000000	-0.00000	?	?	?	?
?	?	?	?	?	?	?	?
0.00000	-0.00000	-.000000	-0.00000	?	?	?	?
0.40723	0.37623	0.397104	0.39682	?	?	?	?
0.83878	0.84313	0.832266	0.82281	?	?	?	?
0.00000	-0.00000	-.000000	-0.00000	?	?	?	?
?	?	?	?	?	?	?	?
0.00000	-0.00000	-.000000	-0.00000	?	?	?	?
0.74415	0.74603	0.741603	0.74202	?	?	?	?
1.16912	1.23733	1.153337	1.15454	?	?	?	?
0.00000	-0.00000	-.000000	-0.00000	?	?	?	?
?	?	?	?	?	?	?	?
?	?	?	-0.00000	?	?	?	?
?	?	?	0.00149	?	?	?	?
?	?	?	0.02796	?	?	?	?
?	?	?	-0.00000	?	?	?	?
?	?	?	?	?	?	?	?
2.95952	2.942	?	2.94717	2.9331	2.9393	2.9421	2.9486
3.95656	4.106	?	3.92586	4.2020	4.1128	4.0703	4.0014
1.39125	1.770	?	1.31010	?	?	?	?
0.73337	0.718	?	0.73036	?	?	?	?
?	?	?	?	?	?	?	?
-0.58473	-0.510	?	-0.54395	-0.5036	-0.5185	-0.5268	-0.5625
1.91643	2.042	?	1.93315	1.9660	1.9578	1.9547	1.9613
2.18164	2.402	?	2.10021	?	?	?	?
-0.07231	-0.054	?	-0.06331	?	?	?	?
?	?	?	?	?	?	?	?
0.40723	0.372	?	0.39682	?	?	?	?
0.83658	0.842	?	0.84904	?	?	?	?
1.02545	1.180	?	1.01346	?	?	?	?
0.06593	0.058	?	0.06437	?	?	?	?
?	?	?	?	?	?	?	?
0.74415	0.740	?	0.74202	?	?	?	?
1.00437	1.034	?	0.99971	?	?	?	?
0.52303	0.636	?	0.51461	?	?	?	?
0.25005	0.244	?	0.24950	?	?	?	?
?	?	?	?	?	?	?	?
?	?	?	0.00149	?	?	?	?
?	?	?	0.02974	?	?	?	?
?	?	?	0.05106	?	?	?	?
?	?	?	0.00039	?	?	?	?
?	?	?	?	?	?	?	?
2	2	2	2	2	2	2	2
0	20	0	0	8	8	8	9
12	14	15	15	7	11	15	15
4	3	3	3	4	4	4	4
26	36	0	15	95	95	95	95
0	18	0	24	0	0	0	0
172	283	440	515	676	677	678	699
0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000
0.0001	0.0001	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000
0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 50

PLANFORM 3 MODE SET 2 M=0.8000 K=0.5

3	8	11	11	13
-0.49950	-0.51165	-.492648	-0.49618	-0.4933
3.13373	3.10709	3.141943	3.13894	3.1822
4.48576	4.79773	4.376492	4.38551	4.5858
-0.11459	-0.11675	-.111596	-0.11243	-0.1121
?	?	?	?	?
-0.29355	-0.31794	-.293142	-0.29160	-0.2912
-0.72553	-0.68830	-.653376	-0.66359	-0.7116
1.74280	1.84066	1.802380	1.78333	1.7146
-0.08595	-0.09048	-.084608	-0.08448	-0.0853
?	?	?	?	?
-0.11656	-0.12051	-.122254	-0.12103	-0.1134
0.33666	0.27922	0.335945	0.33442	0.3422
0.82070	0.81115	0.821844	0.81087	0.7921
-0.03550	-0.03749	-.036621	-0.03631	-0.0351
?	?	?	?	?
-0.11904	-0.12155	-.117904	-0.11848	-0.1163
0.76147	0.75477	0.762889	0.76211	0.7688
1.19129	1.25901	1.172574	1.17394	1.2060
-0.04664	-0.04682	-.046009	-0.04613	-0.0457
?	?	?	?	?
?	?	?	-0.00427	?
?	?	?	-0.00291	?
?	?	?	0.02688	?
?	?	?	-0.00172	?
?	?	?	?	?
3.09583	2.99697	3.094541	3.09439	3.1512
4.21393	4.42677	4.132941	4.15221	4.2429
1.50501	1.94527	1.381104	1.40548	1.6030
0.77146	0.76121	0.768909	0.76929	0.7795
?	?	?	?	?
-0.55674	-0.49536	-.497804	-0.50601	-0.5437
2.08752	2.24495	2.111618	2.09657	2.0652
2.16816	2.42850	2.058954	2.06981	2.1436
-0.05840	-0.04105	-.044954	-0.04688	-0.0503
?	?	?	?	?
0.39809	0.35627	0.394854	0.39347	0.4032
0.89704	0.91419	0.919625	0.90931	0.8698
1.09395	1.26348	1.066640	1.06329	1.0777
0.06435	0.05435	0.064942	0.06445	0.0636
?	?	?	?	?
0.76755	0.76711	0.767775	0.76763	0.7758
1.06892	1.11869	1.055188	1.05836	1.0661
0.56425	0.66426	0.546862	0.55211	0.5773
0.25729	0.25394	0.256862	0.25690	0.2584
?	?	?	?	?
?	?	?	0.00081	?
?	?	?	0.03184	?
?	?	?	0.05238	?
?	?	?	0.00024	?
?	?	?	?	?
2	2	2	2	2
0	20	0	0	22
12	14	15	15	10
4	3	3	3	3
26	36	0	15	30
0	18	0	24	21
173	284	441	516	631
0.8000	0.8000	0.8000	0.8000	0.8000
0.5000	0.5000	0.5000	0.5000	0.5000
0.0000	0.0100	0.0000	0.0000	0.0000

TABLE 51

PLANFORM 3 MODE SET 2 M=0.8000 K=1.0

3	8	11	11
-1.87907	-1.99057	-1.80941	-1.83274
4.27974	4.16835	4.232554	4.22844
5.00803	5.42394	4.763688	4.79393
-0.39698	-0.41906	-.380055	-0.38487
?	?	?	?
-1.54600	-1.46909	-1.28169	-1.28442
-0.73897	-0.81159	-.607921	-0.63723
2.45090	2.50112	2.303193	2.37712
-0.36999	-0.39221	-.347754	-0.34965
?	?	?	?
-0.55594	-0.59436	-.553922	-0.55128
0.19131	0.06262	0.250126	0.24140
0.89148	0.86187	0.885624	0.87238
-0.16260	-0.17516	-.159257	-0.15872
?	?	?	?
-0.46452	-0.48949	-.451456	-0.45579
0.95398	0.92700	0.942646	0.94076
1.29526	1.38482	1.250825	1.25543
-0.17791	-0.18187	-.174303	-0.17515
?	?	?	?
?	?	?	-0.02086
?	?	?	-0.01329
?	?	?	0.02759
?	?	?	-0.00774
?	?	?	?
3.87529	3.88958	3.832875	3.83576
4.21310	4.56283	4.042029	4.08101
0.93569	1.48284	0.899609	0.92024
0.95688	0.95115	0.936489	0.93885
?	?	?	?
-0.25478	-0.21506	-.178540	-0.19579
2.63839	2.83952	2.544808	2.54260
2.01709	2.33530	1.863044	1.88558
0.04265	0.05765	0.055425	0.05193
?	?	?	?
0.44199	0.38327	0.467088	0.46125
1.07552	1.12522	1.063878	1.05559
1.17813	1.35424	1.078966	1.08055
0.07945	0.06741	0.086338	0.08483
?	?	?	?
0.93007	0.93201	0.922384	0.92238
1.08835	1.16578	1.057245	1.06433
0.45957	0.58466	0.460278	0.46514
0.29784	0.29541	0.293889	0.29420
?	?	?	?
?	?	?	0.00126
?	?	?	0.03953
?	?	?	0.05489
?	?	?	0.00051
?	?	?	?
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
174	285	442	517
0.8000	0.8000	0.8000	0.8000
1.0000	1.0000	1.0000	1.0000
0.0000	0.0100	0.0000	0.0000

TABLE 52

TABLES 53, 54

PLANFORM 3 MODE SET 2 M=0.8000 K=4.0

3	8	11	11
-7.56934	-7.39406	-6.38841	-6.41641
6.12372	5.05506	6.810089	6.70837
1.71955	1.44080	2.015263	1.92720
-3.38844	-3.19297	-3.20868	-3.22112
?	?	?	?
-4.00608	-5.92276	-4.60612	-4.58494
0.46037	-0.27176	0.162491	0.16355
2.21327	1.69886	2.129528	2.11373
-2.13128	-2.48108	-2.21219	-2.20783
?	?	?	?
-2.91618	-3.92636	-3.25745	-3.24584
0.28837	-0.37825	-.356856	-0.36507
0.87992	-0.28442	-.154703	-0.16151
-1.61125	-1.88224	-1.75811	-1.75398
?	?	?	?
-2.46583	-2.80217	-2.28336	-2.30032
0.66713	0.27460	0.747364	0.72350
0.68365	0.43694	0.860811	0.83359
-2.42783	-2.45882	-2.46434	-2.45620
?	?	?	?
?	?	?	-0.16843
?	?	?	-0.08717
?	?	?	-0.03110
?	?	?	-0.11662
?	?	?	?
6.34634	5.83736	6.141935	6.10738
1.74154	1.46884	1.394593	1.37778
1.56889	1.31354	1.175414	1.17266
1.35660	1.13653	1.233043	1.22840
?	?	?	?
1.83472	2.21661	1.997082	1.97749
1.49018	1.82158	1.652321	1.63904
1.03401	1.42096	1.275901	1.26238
0.45686	0.45281	0.497095	0.49197
?	?	?	?
1.71436	1.48952	1.466280	1.45419
0.93259	0.88720	0.754410	0.74794
1.00148	1.01416	0.883999	0.87853
0.35480	0.25797	0.280353	0.27820
?	?	?	?
1.55199	1.36944	1.543844	1.53495
0.65907	0.57832	0.638395	0.63325
0.60276	0.53500	0.592646	0.58854
0.56002	0.46657	0.538581	0.53747
?	?	?	?
?	?	?	0.04328
?	?	?	0.04160
?	?	?	0.05037
?	?	?	0.00794
?	?	?	?
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
175	286	443	518
0.8000	0.8000	0.8000	0.8000
4.0000	4.0000	4.0000	4.0000
0.0000	0.0100	0.0000	0.0000

TABLE 53

PLANFORM 3 MODE SET 2 M=0.9500 K=0.0

3	8	11	11	23
0.00000	-0.00000	-.000000	-0.00000	0
3.09435	3.08440	3.083820	3.08939	3.0870
4.92181	5.29026	4.781205	4.79605	?
0.00000	-0.00000	-.000000	-0.00000	?
?	?	?	?	?
0.00000	-0.00000	-.000000	-0.00000	0
-0.72965	-0.66222	-.649135	-0.68238	-0.6497
2.05786	2.22385	2.242195	2.12810	?
0.00000	-0.00000	-.000000	-0.00000	?
?	?	?	?	?
0.00000	-0.00000	-.000000	-0.00000	?
0.39346	0.35020	0.382113	0.37987	?
0.97506	0.99966	1.023933	0.96280	?
0.00000	-0.00000	-.000000	-0.00000	?
?	?	?	?	?
0.00000	-0.00000	-.000000	-0.00000	?
0.77497	0.77214	0.772571	0.77372	?
1.30926	1.39006	1.284836	1.28751	?
0.00000	-0.00000	-.000000	-0.00000	?
?	?	?	?	?
?	?	?	-0.00000	?
?	?	?	0.00051	?
?	?	?	0.03314	?
?	?	?	-0.00000	?
?	?	?	?	?
3.09435	3.058	?	3.08939	3.0870
4.66266	4.948	?	4.58582	5.3408
0.42167	1.066	?	0.09974	?
0.77093	0.750	?	0.77068	?
?	?	?	?	?
-0.72965	-0.656	?	-0.68238	-0.6497
3.03618	3.276	?	3.11790	3.0523
3.82663	4.274	?	3.49995	?
-0.10071	-0.080	?	-0.08828	?
?	?	?	?	?
0.39346	0.348	?	0.37987	?
0.95538	1.054	?	1.02786	?
1.67021	2.030	?	1.59931	?
0.05557	0.042	?	0.05393	?
?	?	?	?	?
0.77497	0.766	?	0.77372	?
1.17206	1.232	?	1.16034	?
0.34026	0.496	?	0.29309	?
0.25868	0.252	?	0.25836	?
?	?	?	?	?
?	?	?	0.00051	?
?	?	?	0.03740	?
?	?	?	0.08398	?
?	?	?	0.00005	?
?	?	?	?	?
2	2	2	2	2
0	20	0	0	8
12	14	15	15	15
4	3	3	3	4
26	36	0	15	95
0	18	0	24	0
176	291	448	519	680
0.9500	0.9500	0.9500	0.9500	0.9500
0.0001	0.0001	0.0000	0.0001	0.0000
0.0000	0.0100	0.0000	0.0000	0.0000

TABLE 54

PLANFORM 3 MODE SET 2 M=0.9500 K=0.5

3	8	11	11	11
-0.43913	-0.47947	-.384869	-0.41340	-.420855
3.99844	4.05165	3.924386	3.93378	3.961006
4.96514	5.60692	4.624510	4.72163	4.683037
-0.08178	-0.09071	-.069125	-0.07565	-.074440
?	?	?	?	?
-0.52686	-0.56281	-.476811	-0.48662	-.492608
-0.30542	-0.24424	-.162039	-0.25733	-.221477
3.15107	3.43585	3.090018	3.02814	3.064937
-0.13824	-0.14254	-.119496	-0.12431	-.126313
?	?	?	?	?
-0.21037	-0.23543	-.201172	-0.19582	-.212653
0.33403	0.30307	0.413106	0.38080	0.401279
1.40185	1.47034	1.344542	1.27571	1.425814
-0.06315	-0.07975	-.057804	-0.05713	-.062919
?	?	?	?	?
-0.11093	-0.12111	-.101121	-0.10686	-.107187
0.95267	0.96234	0.940353	0.93941	0.944568
1.32616	1.47552	1.269960	1.28799	1.269510
-0.04164	-0.04369	-.039235	-0.04056	-.040330
?	?	?	?	?
?	?	?	-0.00804	?
?	?	?	-0.00360	?
?	?	?	0.04743	?
?	?	?	-0.00276	?
?	?	?	?	?
3.66853	3.71940	3.596742	3.61661	3.637158
4.10050	4.56016	3.726854	3.88973	3.906073
-0.88889	-0.57651	-.943838	-0.84550	-.915848
0.91323	0.91651	0.882923	0.89211	0.896966
?	?	?	?	?
-0.25808	-0.16048	-.149191	-0.21623	-.211067
3.62747	3.92566	3.402973	3.41733	3.446629
1.54374	2.02130	1.232381	1.45700	1.140480
0.05456	0.08224	0.071679	0.05685	0.066988
?	?	?	?	?
0.41503	0.40521	0.465320	0.44199	0.455216
1.53833	1.68074	1.473363	1.42056	1.546547
1.53956	1.77587	1.247975	1.29995	1.300746
0.07243	0.07368	0.086755	0.08024	0.080792
?	?	?	?	?
0.89584	0.90633	0.883698	0.88608	0.889870
1.07853	1.18885	1.012854	1.04546	1.039512
0.06370	0.13410	0.054810	0.08473	0.066388
0.28998	0.29966	0.284402	0.28582	0.286926
?	?	?	?	?
?	?	?	0.00145	?
?	?	?	0.05684	?
?	?	?	0.07393	?
?	?	?	0.00072	?
?	?	?	?	?
2	2	2	2	2
0	20	0	0	0
12	14	15	15	15
4	3	3	3	6
26	36	0	15	0
0	18	0	24	0
177	292	449	520	460
0.9500	0.9500	0.9500	0.9500	0.9500
0.5000	0.5000	0.5000	0.5000	0.5000
0.0000	0.0100	0.0000	0.0000	0.0000

TABLE 55

PLANFORM 3 MODE SET 2 M=0.9500 K=1.0

3	8	11	11
-0.92962	-0.88013	-.824172	-0.89015
4.79631	5.18264	4.740899	4.81293
3.76472	4.36616	3.523332	3.63017
-0.14903	-0.12713	-.138982	-0.14689
?	?	?	?
-1.08957	-1.20166	-1.02926	-1.08133
0.63721	0.91028	0.759425	0.67874
2.88175	3.44574	2.981800	3.00172
-0.24515	-0.25570	-.230226	-0.24497
?	?	?	?
-0.58554	-0.64312	-.556060	-0.55897
0.78127	0.73682	0.738266	0.69623
1.52412	1.61938	1.356727	1.32155
-0.15671	-0.16836	-.149278	-0.15032
?	?	?	?
-0.26332	-0.25382	-.241881	-0.25688
1.09885	1.08943	1.100062	1.10879
1.06399	1.21221	1.038348	1.05681
-0.12814	-0.12217	-.125387	-0.12723
?	?	?	?
?	?	?	-0.02522
?	?	?	0.00602
?	?	?	0.05438
?	?	?	-0.00821
?	?	?	?
4.02984	4.23012	3.946364	4.00777
2.63652	2.78138	2.395434	2.51142
-0.19380	-0.43100	-.338875	-0.35955
0.91275	0.94664	0.886198	0.90495
?	?	?	?
0.46151	0.67488	0.533917	0.49169
2.40658	2.74756	2.373339	2.43936
0.47821	0.57544	0.426689	0.50956
0.20811	0.25868	0.210113	0.20613
?	?	?	?
0.78332	0.78621	0.755857	0.73071
1.29076	1.41194	1.207627	1.19674
0.76269	0.93763	0.766401	0.78728
0.16374	0.16675	0.153095	0.14806
?	?	?	?
0.98400	1.03207	0.974709	0.98478
0.76360	0.80303	0.721045	0.74653
0.19805	0.14873	0.162168	0.16543
0.29503	0.30236	0.291494	0.29456
?	?	?	?
?	?	?	0.01376
?	?	?	0.05344
?	?	?	0.04756
?	?	?	0.00368
?	?	?	?
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
178	293	450	521
0.9500	0.9500	0.9500	0.9500
1.0000	1.0000	1.0000	1.0000
0.0000	0.0100	0.0000	0.0000

TABLE 56

TABLE 57-1

PLANFORM 3 MODE SET 2 M=0.9500 K=4.0

3	8	8	8	8	8	8	8	11	11
-4.30290	-4.94363	-5.3679	-4.7272	-4.7093	-5.1631	-5.1926	-5.2129	-4.30824	-5.40498
5.40544	3.60222	4.1232	4.1828	4.2408	4.2478	4.4385	4.3551	5.869001	4.60547
2.34796	1.14276	1.1760	1.0598	1.0634	1.2538	1.2147	1.1565	2.139707	1.21444
-2.51402	-2.37015	-2.4096	-2.1967	-2.1871	-2.3818	2.3911	-2.3558	-2.65379	-2.68591
?	?	?	?	?	?	?	?	?	?
-2.68212	-2.80161	-3.2957	-2.6282	-2.6016	-3.1908	-3.1613	-3.1607	-2.00230	-2.60362
0.60242	0.73020	0.4763	0.7513	0.7393	0.4667	0.4755	0.4588	1.073306	0.69907
2.20497	2.47121	2.3431	2.4640	2.4550	2.3131	2.3134	2.2974	3.059084	2.63729
-1.78442	-1.93608	-1.9235	-1.7689	-1.7636	-1.8991	-1.8631	-1.8580	-1.65726	-1 66512
?	?	?	?	?	?	?	?	?	?
-1.50484	-2.31884	-2.6633	-2.0682	-2.0451	-2.5593	-2.5050	-2.4991	-2.18609	-2.23218
0.62813	0.21466	0.1013	0.3779	0.3900	0.1309	0.1995	0.1852	0.152155	-0.10436
1.29948	0.83681	0.6314	0.8014	0.7982	0.6379	0.6365	0.6266	0.633168	0.42855
-1.27766	-1.60247	-1.6214	-1.4778	-1.4704	-1.5831	-1.5599	-1.5564	-1.56800	-1.46530
?	?	?	?	?	?	?	?	?	?
-1.68010	-1.74586	-2.0330	-1.4807	-1.4736	-2.0901	-1.9652	-1.9693	-1.32929	-1.66269
0.59774	0.44463	0.4176	0.5084	0.5188	0.4739	0.4909	0.4708	1.051737	0.71366
0.84175	0.53501	0.5472	0.5431	0.5468	0.6026	0.5861	0.5689	1.267920	0.93859
-1.93855	-1.63016	-1.7831	-1.6485	-1.6457	-1.7885	-1.7595	-1.7584	-1.84642	-1.81049
?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	-0.11745
?	?	?	?	?	?	?	?	?	-0.04685
?	?	?	?	?	?	?	?	?	0.08329
?	?	?	?	?	?	?	?	?	-0.10722
?	?	?	?	?	?	?	?	?	?
5.64061	4.72490	4.97572	4.8549	4.8625	4.8838	4.9546	4.9268	5.405877	5.16117
1.45923	1.09813	1.0782	0.9495	0.9316	1.0198	0.9906	0.9828	1.184459	1.12691
1.43467	1.05562	1.0342	0.9320	0.9126	0.9698	0.9410	0.9424	1.060505	1.09340
1.35037	1.15962	1.1623	1.1542	1.1573	1.1525	1.1508	1.1460	1.293091	1.28478
?	?	?	?	?	?	?	?	?	?
1.61696	1.81067	1.8785	1.7873	1.7778	1.7974	1.8099	1.7961	1.927109	1.63754
1.29294	1.43489	1.5696	1.3982	1.3916	1.4639	1.4621	1.4560	1.480872	1.39870
0.87210	1.02329	1.1029	0.9893	0.9839	1.0615	1.0616	1.0567	1.082772	0.98419
0.52547	0.53833	0.5356	0.5351	0.5357	0.5269	0.5259	0.5233	0.604053	0.54512
?	?	?	?	?	?	?	?	?	?
1.54002	1.64957	1.6880	1.6670	1.6660	1.6370	1.6612	1.6509	1.539973	1.39150
0.79468	0.87958	0.8706	0.8083	0.8012	0.8395	0.8259	0.8226	0.786990	0.72934
0.82919	0.90304	0.9177	0.8512	0.8444	0.8859	0.8758	0.8760	0.865829	0.82197
0.41256	0.44248	0.4391	0.4409	0.4422	0.4310	0.4332	0.4317	0.426340	0.39498
?	?	?	?	?	?	?	?	?	?
1.41448	1.16321	1.2102	1.1480	1.1486	1.2073	1.2092	1.2008	1.438494	1.35602
0.61236	0.41600	0.4522	0.3594	0.3541	0.4519	0.4298	0.4263	0.570461	0.53372
0.55546	0.32694	0.3656	0.2920	0.2861	0.3536	0.3435	0.3423	0.453021	0.45051
0.62292	0.55124	0.5496	0.5496	0.5522	0.5491	0.5483	0.5465	0.662332	0.61521
?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	0.04838
?	?	?	?	?	?	?	?	?	0.04465
?	?	?	?	?	?	?	?	?	0.04785
?	?	?	?	?	?	?	?	?	0.01876
?	?	?	?	?	?	?	?	?	?
2	2	2	2	2	2	2	2	2	2
0	20	20	20	20	20	20	22	0	0
12	7	7	7	7	7	7	7	15	15
4	3	3	3	3	3	3	3	3	3
26	36	66	36	36	36	66	54	0	15
0	18	20	18	19	20	20	20	0	24
179	228	229	230	231	232	233	234	451	522
0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
0.0000	0.0100	0.0120	0.0210	0.0210	0.0210	0.0210	0.0210	0.0000	0.0000

TABLE 57 - 1

TABLE 57-2

11	11	11	11	11	11	11	11	11	11
-5.31114	-4.66559	-5.105	-4.625	-5.363	-3.628	-4.211	-4.590	-4.421	-4.565
6.172089	5.811393	5.262	5.608	5.357	5.701	5.268	5.029	5.034	4.970
1.841766	1.858327	?	?	?	?	?	?	?	?
-2.92286	-2.74048	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
-2.76149	-2.85402	-2.572	-2.723	-2.141	-2.261	-2.276	-2.618	-2.528	-2.536
0.584720	0.737016	0.593	0.572	0.674	0.607	0.578	0.799	0.840	0.818
2.429390	2.404201	?	?	?	?	?	?	?	?
-1.92646	-1.88057	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
-1.76553	-1.62877	?	?	?	?	?	?	?	?
0.632066	0.548092	?	?	?	?	?	?	?	?
1.157807	1.195259	?	?	?	?	?	?	?	?
-1.45249	-1.39440	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
-1.57965	-1.69774	?	?	?	?	?	?	?	?
0.656239	0.683160	?	?	?	?	?	?	?	?
0.934180	0.867708	?	?	?	?	?	?	?	?
-2.11138	-2.04125	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
6.350384	6.000462	5.654	5.851	5.545	5.536	5.682	5.410	5.386	5.362
1.390765	1.332770	1.519	1.458	1.583	1.293	1.314	1.125	1.134	1.133
1.507738	1.397866	?	?	?	?	?	?	?	?
1.432503	1.407355	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
1.765123	1.735710	1.654	1.651	1.619	1.766	1.637	1.783	1.792	1.793
1.365650	1.353542	1.277	1.295	1.266	1.327	1.310	1.436	1.431	1.427
0.940096	0.914127	?	?	?	?	?	?	?	?
0.549282	0.552144	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
1.702607	1.566768	?	?	?	?	?	?	?	?
0.798985	0.788739	?	?	?	?	?	?	?	?
0.893169	0.852424	?	?	?	?	?	?	?	?
0.429247	0.422664	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
1.499031	1.484568	?	?	?	?	?	?	?	?
0.593100	0.589117	?	?	?	?	?	?	?	?
0.566478	0.539312	?	?	?	?	?	?	?	?
0.637282	0.643594	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
?	?	?	?	?	?	?	?	?	?
2	2	2	2	2	2	2	2	2	2
0	0	0	0	0	0	0	0	0	0
15	31	15	23	15	15	15	15	15	15
6	6	4	4	4	5	6	3	3	3
0	0	15	23	15	15	15	15	15	15
0	0	32	32	24	24	24	32	44	48
461	464	721	722	723	724	725	726	727	728
0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 57 - 2

PLANFORM 3 MODE SET 5 M=0.0000 K=0.0

3	8	11	11
0.00000	-0.00000	-.000000	-0.00000
0.38564	0.38333	0.385688	0.38569
0.00000	-0.00000	-.000000	-0.00000
-0.02751	-.023184	-.026575	-0.02665
0.38564	0.380	?	0.38568
0.68854	0.686	?	0.68884
-0.02751	-0.022	?	-0.02665
0.28945	0.294	?	0.28982
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
180	279	435	523
0.0000	0.0100	0.0000	0.0000
0.0001	0.0001	0.0000	0.0001
0.0000	0.0100	0.0000	0.0000

TABLE 58

PLANFORM 3 MODE SET 5 M=0.0000 K=0.5

3	8	11	11	11
-0.08832	-0.08792	-.088382	-0.08836	-.088754
0.35056	0.34733	0.350262	0.35029	0.350935
-0.03523	-0.03624	-.035392	-0.03535	-.035111
-0.04980	-0.04718	-.049043	-0.04910	-.052035
0.38530	0.38327	0.385194	0.38519	0.385346
0.68850	0.69246	0.688888	0.68865	0.688612
-0.02747	-0.02372	-.026620	-0.02670	-.029912
0.28944	0.29690	0.290060	0.28972	0.288099
2	2	2	2	2
0	20	0	0	0
12	14	15	15	15
4	3	3	3	6
26	36	0	15	0
0	18	0	24	0
181	280	436	524	458
0.0000	0.0100	0.0000	0.0000	0.0000
0.5000	0.5000	0.5000	0.5000	0.5000
0.0000	0.0100	0.0000	0.0000	0.0000

TABLE 59

PLANFORM 3 MODE SET 5 M=0.0000 K=1.0

3	8	11	11
-0.35379	-0.35240	-.353915	-0.35385
0.24520	0.23815	0.243956	0.24408
-0.14089	-0.14489	-.141543	-0.14138
-0.11668	-0.11905	-.116445	-0.11646
0.38459	0.38258	0.384051	0.38405
0.68831	0.69142	0.688218	0.68800
-0.02736	-0.02528	-.026774	-0.02689
0.28939	0.29348	0.289749	0.28942
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
182	281	437	525
0.0000	0.0100	0.0000	0.0000
1.0000	1.0000	1.0000	1.0000
0.0000	0.0100	0.0000	0.0000

TABLE 60

PLANFORM 3 MODE SET 5 M=0.0000 K=4.0

3	8	11	11	11
-5.70217	-5.84972	-5.66918	-5.66927	-5.67572
-1.88465	-2.16366	-1.88798	-1.88417	-1.83863
-2.25306	-2.27612	-2.26407	-2.26195	-2.23084
-1.45353	-1.52005	-1.46536	-1.46368	-1.43065
0.38123	0.38042	0.375585	0.37581	0.382096
0.68601	0.68132	0.679092	0.67912	0.678778
-0.02570	-0.05032	-.030554	-0.03072	-.028083
0.28848	0.26960	0.282744	0.28265	0.285500
2	2	2	2	2
0	20	0	0	0
12	14	15	15	15
4	3	3	3	6
26	36	0	15	0
0	18	0	24	0
183	282	439	526	459
0.0000	0.0100	0.0000	0.0000	0.0000
4.0000	4.0000	4.0000	4.0000	4.0000
0.0000	0.0100	0.0000	0.0000	0.0000

TABLE 61

PLANFORM 3 MODE SET 5 M=0.8000 K=0.0

3	8	11	11
0.00000	-0.00000	-.000000	-0.00000
0.39145	0.38832	0.391327	0.39135
0.00000	-0.00000	-.000000	-0.00000
-0.04322	-0.03615	-.042140	-0.04207
0.39145	0.384	?	0.39135
0.75820	0.758	?	0.75611
-0.04322	-0.036	?	-0.04207
0.34880	0.358	?	0.34706
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
184	287	444	527
0.8000	0.8000	0.8000	0.8000
0.0001	0.0001	0.0000	0.0001
0.0000	0.0100	0.0000	0.0000

TABLE 62

PLANFORM 3 MODE SET 5 M=0.8000 K=0.5

3	8	11	11
-0.10110	-0.10065	-.100678	-0.10067
0.36142	0.35487	0.361508	0.36123
-0.04518	-0.04686	-.045139	-0.04497
-0.07640	-0.07302	-.074496	-0.07467
0.39703	0.39339	0.397017	0.39683
0.77194	0.77800	0.769439	0.76933
-0.04646	-0.04073	-.044968	-0.04508
0.35539	0.36689	0.354923	0.35339
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
185	288	445	528
0.8000	0.8000	0.8000	0.8000
0.5000	0.5000	0.5000	0.5000
0.0000	0.0100	0.0000	0.0000

TABLE 63

PLANFORM 3 MODE SET 5 M=0.8000 K=1.0

3	8	11	11
-0.42326	-0.42193	-.420722	-0.42087
0.27690	0.25709	0.277918	0.27626
-0.19423	-0.20147	-.193701	-0.19300
-0.18088	-0.18959	-.175993	-0.17708
0.42074	0.41421	0.420913	0.42006
0.81867	0.82259	0.814456	0.81435
-0.05539	-0.05389	-.052510	-0.05326
0.38098	0.39009	0.379564	0.37785
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
186	289	446	529
0.8000	0.8000	0.8000	0.8000
1.0000	1.0000	1.0000	1.0000
0.0000	0.0100	0.0000	0.0000

TABLE 64

PLANFORM 3 MODE SET 5 M=0.8000 K=4.0

3	8	11	11
-4.08178	-4.10464	-3.59382	-3.58321
0.72380	0.91204	1.380424	1.35267
-2.45762	-3.03820	-2.65530	-2.64137
-0.20401	-0.40886	-.208765	-0.21130
1.49738	1.72018	1.600216	1.58732
0.81249	0.94746	0.806057	0.79576
0.59917	0.68471	0.642261	0.63552
0.56077	0.68353	0.618137	0.61203
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
187	290	447	530
0.8000	0.8000	0.8000	0.8000
4.0000	4.0000	4.0000	4.0000
0.0000	0.0100	0.0000	0.0000

TABLE 65

PLANFORM 3 MODE SET 5 M=0.9500 K=0.0

3	8	11	11
0.00000	-0.00000	-.000000	-0.00000
0.39273	0.38881	0.392016	0.39211
0.00000	-0.00000	-.000000	-0.00000
-0.05463	-0.04836	-.054418	-0.05462
0.39273	0.386	?	0.39211
0.80706	0.804	?	0.80414
-0.05463	-0.048	?	-0.05462
0.39118	0.400	?	0.38827
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
188	294	452	531
0.9500	0.9500	0.9500	0.9500
0.0001	0.0001	0.0000	0.0001
0.0000	0.0100	0.0000	0.0000

TABLE 66

PLANFORM 3 MODE SET 5 M=0.9500 K=0.5

3	8	11	11	11
-0.11148	-0.11120	-.111186	-0.11123	-.112146
-0.36749	0.35910	0.370435	0.36760	0.368117
-0.05444	-0.05684	-.055615	-0.05435	-.054679
-0.10085	-0.09879	0.097408	-0.09913	-.101068
0.40343	0.39854	0.404558	0.40304	0.403863
0.84143	0.84797	0.838869	0.83828	0.845016
-0.06350	-0.05854	-.061380	-0.06271	-.064081
0.41907	0.43384	0.426116	0.41649	0.421947
2	2	2	2	2
0	20	0	0	0
12	14	15	15	15
4	3	3	3	6
26	36	0	15	0
0	18	0	24	0
189	295	453	532	462
0.9500	0.9500	0.9500	0.9500	0.9500
0.5000	0.5000	0.5000	0.5000	0.5000
0.0000	0.0100	0.0000	0.0000	0.0000

TABLE 67

PLANFORM 3 MODE SET 5 M=0.9500 K=1.0

3	8	11	11
-0.48226	-0.48242	-.474252	-0.47671
0.35948	0.33187	0.372988	0.35725
-0.27115	-0.27938	-.269118	-0.26369
-0.20140	-0.21409	-.185731	-0.19640
0.47672	0.46792	0.483563	0.47534
0.93978	0.94863	0.927806	0.92858
-0.06077	-0.05762	-.049920	-0.05714
0.52757	0.53704	0.523334	0.51081
2	2	2	2
0	20	0	0
12	14	15	15
4	3	3	3
26	36	0	15
0	18	0	24
190	296	454	533
0.9500	0.9500	0.9500	0.9500
1.0000	1.0000	1.0000	1.0000
0.0000	0.0100	0.0000	0.0000

TABLE 68

PLANFORM 3 MODE SET 5 M=0.9500 K=4.0

3	8	11	11	11	11
-2.93792	-2.52232	-2.49680	-2.76392	-3.38450	-3.14047
0.87678	0.69479	1.118674	0.78439	0.982198	0.951864
-1.79792	-1.68969	-1.70731	-1.78335	-2.02170	-1.97321
-0.04037	0.01496	0.086047	-0.06915	-.032955	-.042294
1.46435	1.43450	1.389164	1.29378	1.547939	1.503749
0.71305	0.68287	0.609525	0.57802	0.737257	0.703138
0.58432	0.64298	0.647807	0.56342	0.620442	0.596137
0.49146	0.52769	0.51[illegible]3	0.48327	0.521507	0.511732
2	2	2	2	2	2
0	20	0	0	0	0
12	14	15	15	15	31
4	3	3	3	6	6
26	36	0	15	0	0
0	18	0	24	0	0
191	297	455	534	463	465
0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
0.0000	0.0100	0.0000	0.0000	0.0000	0.0000

TABLE 69

PLANFORM 4 MODE SET 2 M=1.0000 K=0.0

6
0
3.142
?
?
?
0
-1.571
?
?
?
?
?
?
?
?
?
?
?
?
?
?
?
?
?
?
3.142
3.927
?
?
?
-1.571
x
?
?
?
?
?
?
?
?
?
?
?
?
?
?
?
?
?
?
1
0
0
0
0
0
62
1.0000
0.0000
0.0000

TABLE 70

PLANFORM 4 MODE SET 2 M=1.0000 K=0.3

4	7	7	11
-0.0674	-0.012	-0.04	-0.07920
3.8425	4.154	3.88	3.44319
?	?	?	2.11418
?	?	?	-0.02070
?	?	?	0.53185
-0.2231	-0.220	-0.22	-0.14924
-0.8352	-0.728	-0.82	-1.04688
?	?	?	1.24910
?	?	?	-0.03583
?	?	?	0.31495
?	?	?	0.03623
?	?	?	0.44220
?	?	?	-0.13408
?	?	?	0.00843
?	?	?	-0.03392
?	?	?	-0.02077
?	?	?	0.85667
?	?	?	0.53437
?	?	?	-0.01077
?	?	?	0.19452
?	?	?	0.00838
?	?	?	0.11255
?	?	?	-0.03361
?	?	?	0.00168
?	?	?	-0.01244
3.6293	3.936	3.62	3.29366
1.7370	0.954	1.73	1.91844
?	?	?	-2.87185
?	?	?	0.82103
?	?	?	-0.68168
-0.9113	-0.814	-0.89	-1.03499
3.1840	3.096	2.90	2.27878
?	?	?	0.33553
?	?	?	-0.26126
?	?	?	0.07387
?	?	?	0.44969
?	?	?	-0.46934
?	?	?	0.25171
?	?	?	0.11448
?	?	?	0.06343
?	?	?	0.82086
?	?	?	0.49356
?	?	?	-0.68034
?	?	?	0.27046
?	?	?	-0.15075
?	?	?	0.11439
?	?	?	-0.10983
?	?	?	0.06300
?	?	?	0.04276
?	?	?	0.01910
2	1	1	2
0	52	0	99
13	0	0	15
3	0	0	3
0	0	0	15
0	0	0	24
58	64	720	741
1.0000	1.0000	1.0000	1.0000
0.3000	0.3000	0.3000	0.3000
0.0000	0.0000	0.0000	0.0000

TABLE 71

PLANFORM 4 MODE SET 2 M=1.0000 K=0.6

4	7	11
0.0845	0.1302	-0.00191
3.9883	3.8983	3.85389
?	?	1.13696
?	?	-0.00768
?	?	0.29632
-0.3869	-0.3679	-0.39111
-0.2852	-0.2979	-0.40418
?	?	1.14057
?	?	-0.09000
?	?	0.27896
?	?	0.05796
?	?	0.32432
?	?	-0.02368
?	?	0.01231
?	?	-0.00717
?	?	-0.00807
?	?	0.94220
?	?	0.29732
?	?	-0.02562
?	?	0.13871
?	?	0.01225
?	?	0.08590
?	?	-0.00741
?	?	0.00153
?	?	-0.00650
3.5942	3.5303	3.46196
0.2737	0.1002	0.54560
?	?	-1.83275
?	?	0.85153
?	?	-0.40563
-0.4538	-0.4620	-0.53550
1.5740	1.5045	1.64056
?	?	-0.71526
?	?	-0.14038
?	?	-0.16564
?	?	0.35068
?	?	-0.17717
?	?	0.23517
?	?	0.09106
?	?	0.05547
?	?	0.85190
?	?	0.16505
?	?	-0.41137
?	?	0.27598
?	?	-0.08019
?	?	0.09162
?	?	-0.03876
?	?	0.05427
?	?	0.03751
?	?	0.01620
2	1	2
0	52	99
13	0	15
3	0	3
0	0	15
0	0	24
59	65	742
1.0000	1.0000	1.0000
0.6000	0.6000	0.6000
0.0000	0.0000	0.0000

TABLE 72

PLANFORM 4 MODE SET 2 M=1.0000 K=1.0

11
0.07294
3.74387
0.60897
-0.01883
0.18702
-0.49535
-0.05228
0.78869
-0.10661
0.19574
0.05742
0.29765
0.00961
0.00995
-0.00192
-0.01913
0.89326
0.18448
-0.07696
0.11950
0.01050
0.08068
-0.00267
-0.00099
-0.00681
3.23586
0.20417
-0.69592
0.78214
-0.13375
-0.27420
0.87556
-0.44408
-0.08577
-0.08658
0.32156
-0.06199
0.12122
0.08532
0.02842
0.78318
0.10640
-0.13461
0.25784
-0.01599
0.08553
-0.01373
0.02844
0.03658
0.01052
2
99
15
3
15
24
743
1.0000
1.0000
0.0000

TABLE 73

PLANFORM 4 MODE SET 2 M=1.0000 K=2.0

7	11
-0.5207	-0.65357
3.8923	3.74331
?	0.21254
?	-0.43054
?	0.12953
-0.7416	-0.67024
0.1579	0.14932
?	0.59926
?	-0.17370
?	0.18425
?	0.02093
?	0.25751
?	-0.00356
?	-0.00368
?	-0.00785
?	-0.42870
?	0.92971
?	0.13160
?	-0.45378
?	0.11676
?	-0.00404
?	0.06618
?	-0.00766
?	-0.01298
?	-0.00863
3.1508	3.05563
0.2355	0.26549
?	-0.04675
?	0.75069
?	-0.01171
-0.1053	-0.11491
0.4769	0.44586
?	-0.12607
?	-0.07078
?	-0.01352
?	0.29825
?	-0.01621
?	0.07814
?	0.07904
?	0.02189
?	0.75083
?	0.17557
?	-0.01009
?	0.28945
?	-0.01172
?	0.07876
?	-0.00389
?	0.02201
?	0.03375
?	0.01086
1	2
52	99
0	15
0	3
0	15
0	24
67	744
1.0000	1.0000
2.0000	2.0000
0.0000	0.0000

TABLE 74

PLANFORM 4 MODE SET 2 M=1.0500 K=0.0

6	9	19
0	0	0.00000
3.550	3.787	3.54252
?	2.714	2.58791
?	0	0.00000
?	0.712	0.63376
0	0	-0.00000
-1.307	-1.363	-1.29291
?	1.952	1.82663
?	0	-0.00000
?	0.506	0.44260
?	0	-0.00000
?	0.382	0.35175
?	0.069	0.06648
?	0	-0.00000
?	0.015	0.01259
?	0	0.00000
?	0.997	0.88111
?	0.712	0.63843
?	0	0.00000
?	0.265	0.22148
?	0	-0.00000
?	0.389	0.09256
?	-0.267	0.01299
?	0	-0.00000
?	-0.003	-0.00285
3.550	?	3.54249
-0.641	?	-0.66522
?	?	-6.47354
?	?	0.87322
?	?	-1.44117
-1.307	?	-1.29291
4.389	?	4.32505
?	?	-4.24375
?	?	-0.31653
?	?	-0.97263
?	?	0.35174
?	?	0.34074
?	?	-0.64997
?	?	0.09212
?	?	-0.15368
?	?	0.88111
?	?	-0.19488
?	?	-1.45776
?	?	0.28191
?	?	-0.32183
?	?	0.09256
?	?	0.08100
?	?	-0.15601
?	?	0.03950
?	?	-0.02964
1	3	3
0	30	30
0	34	14
0	54	22
0	0	0
0	0	0
63	298	535
1.0500	1.0500	1.0500
0.0000	0.0000	0.0001
0.0000	0.0000	0.0000

TABLE 75

PLANFORM 4 MODE SET 2 M=1.0500 K=0.3

9	10	19
0.034	0.00902	0.01883
4.000	3.70	3.80145
1.359	?	1.32414
0.007	?	0.00252
0.378	?	0.34384
-0.185	-0.1727	-0.17473
-0.590	-0.57	-0.57155
1.158	?	1.10526
-0.045	?	-0.03982
0.3[illegible]6	?	0.27308
0.011	?	0.00938
0.494	?	0.45760
-0.081	?	-0.06783
0.0[illegible]3	?	0.00160
-0.025	?	-0.02039
0.007	?	0.00284
1.036	?	0.92822
0.378	?	0.34504
-0.006	?	-0.00566
0.183	?	0.15426
0.0[illegible]3	?	0.00163
0.135	?	0.11840
-0.025	?	-0.02043
0.0[illegible]1	?	0.00014
-0.015	?	-0.01086
3.814	3.54	3.62677
0.294	0.55	0.44812
-3.615	?	-3.42604
0.991	?	0.88027
-0.868	?	-0.76743
-0.681	-0.66	-0.65658
2.633	2.47	2.49527
-1.997	?	-1.84978
-0.189	?	-0.17083
-0.485	?	-0.42009
0.491	?	0.45546
-0.174	?	-0.14362
0.068	?	0.05881
0.136	?	0.11690
0.014	?	0.01112
0.991	?	0.88797
0.113	?	0.14022
-0.867	?	-0.77651
0.337	?	0.28213
-0.204	?	-0.17077
0.135	?	0.11766
-0.039	?	-0.02945
0.014	?	0.01086
0.056	?	0.04543
0.011	?	0.00807
3	4	3
30	0	30
34	14	14
54	22	22
0	0	0
0	0	0
301	68	536
1.0500	1.0500	1.0500
0.3000	0.3000	0.3000
0.0000	0.0000	0.0000

TABLE 76

PLANFORM 4 MODE SET 2 M=1.0500 K=0.6

9	10	19
0.146	0.0920	0.12456
3.806	3.53	3.64766
0.860	?	0.84758
0.024	?	0.01705
0.260	?	0.23797
-0.335	-0.314	-0.32001
-0.250	-0.26	-0.24751
0.884	?	0.85037
-0.079	?	-0.07041
0.237	?	0.21364
0.036	?	0.03152
0.415	?	0.38831
-0.044	?	-0.03438
0.009	?	0.00652
-0.018	?	-0.01506
0.024	?	0.01827
0.978	?	0.88277
0.260	?	0.23802
-0.024	?	-0.02106
0.155	?	0.13032
0.009	?	0.00660
0.117	?	0.10350
-0.018	?	-0.01505
0.002	?	0.00124
-0.013	?	-0.01079
3.471	3.22	3.32787
0.066	0.17	0.06200
-1.452	?	-1.39320
0.899	?	0.80523
-0.321	?	-0.28887
-0.419	-0.40	-0.40730
1.376	1.29	1.31693
-0.911	?	-0.86124
-0.127	?	-0.11545
-0.203	?	-0.17974
0.411	?	0.38273
-0.134	?	-0.11365
0.059	?	0.04901
0.117	?	0.10163
0.020	?	0.01489
0.899	?	0.81173
0.060	?	0.06497
-0.321	?	-0.29220
0.316	?	0.26672
-0.063	?	-0.05402
0.117	?	0.10220
-0.036	?	-0.02773
0.020	?	0.01473
0.053	?	0.04276
0.016	?	0.01172

3	4	3
30	0	30
34	14	14
54	22	22
0	0	0
0	0	0
304	69	537
1.0500	1.0500	1.0500
0.6000	0.6000	0.6000
0.0000	0.0000	0.0000

TABLE 77

PLANFORM 4 MODE SET 2 M=1.0500 K=1.0

9	19
0.246	0.20418
3.662	3.52044
0.580	0.56453
0.017	0.00154
0.212	0.19136
-0.417	-0.40832
-0.055	-0.05172
0.725	0.68951
-0.095	-0.08800
0.210	0.18640
0.085	0.07378
0.350	0.33254
-0.017	-0.01352
0.022	0.01741
-0.011	-0.00904
0.017	0.00427
0.929	0.84145
0.212	0.19082
-0.082	-0.07397
0.157	0.13070
0.022	0.01767
0.098	0.08739
-0.011	-0.00904
0.006	0.00410
-0.008	-0.00682
3.246	3.11282
0.043	0.04109
-0.472	-0.47527
0.833	0.74752
-0.088	-0.08482
-0.254	-0.24441
0.774	0.74973
-0.373	-0.36257
-0.096	-0.08663
-0.069	-0.06259
0.361	0.33938
-0.110	-0.09614
0.089	0.07890
0.102	0.09047
0.032	0.02605
0.833	0.75308
0.078	0.08227
-0.088	-0.08556
0.299	0.25417
-0.014	-0.01332
0.102	0.09095
-0.031	-0.02585
0.032	0.02607
0.046	0.03828
0.020	0.01604

3	3
30	30
34	14
54	22
0	0
0	0
307	538
1.0500	1.0500
1.0000	1.0000
0.0000	0.0000

TABLE 78

PLANFORM 4 MODE SET 2 M=1.0500 K=

9	19
-0.478	-0.44837
3.826	3.66098
0.272	0.27190
-0.412	-0.37484
0.125	0.12207
-0.716	-0.67463
0.157	0.14641
0.599	0.56950
-0.218	-0.19230
0.194	0.17600
0.066	0.06768
0.297	0.27760
0.015	0.01758
0.001	0.00293
0.004	0.00454
-0.412	-0.36953
1.062	0.94641
0.125	0.12191
-0.479	-0.41019
0.093	0.08841
0.001	0.00346
0.081	0.07073
0.004	0.00463
-0.019	-0.01456
0.001	0.00186
3.110	2.98884
0.223	0.21390
-0.049	-0.04350
0.843	0.75079
-0.022	-0.01908
-0.110	-0.10069
0.474	0.44641
-0.122	-0.11049
-0.063	-0.05903
-0.025	-0.02090
0.308	0.29208
-0.031	-0.02947
0.058	0.05686
0.087	0.07650
0.018	0.01730
0.843	0.75457
0.165	0.15149
-0.022	-0.01894
0.379	0.31083
-0.022	-0.01890
0.087	0.07680
-0.004	-0.00366
0.018	0.01734
0.043	0.03370
0.010	0.00905
3	3
30	30
34	14
54	22
0	0
0	0
310	539
1.0500	1.0500
2.0000	2.0000
0.0000	0.0000

TABLE 79

PLANFORM 4 MODE SET 2 M=1.2000 K=0.0

5	9	10
0	0	0.00000
3.758	3.951	3.75058
?	0.757	0.73682
?	0	0.00000
?	0.240	0.21748
0	0	0.00000
-0.379	-0.398	-0.36779
?	1.075	0.99806
?	0	0.00000
?	0.287	0.24991
?	0	0.00000
?	0.338	0.30750
?	0.035	0.04085
?	0	0.00000
?	0	0.00203
?	0	0.00000
?	1.010	0.90757
?	0.240	0.21724
?	0	0.00000
?	0.162	0.13517
?	0	0.00000
?	0.097	0.08453
?	0	0.00211
?	0	0.00000
?	-0.008	-0.00546
3.758	?	3.75057
-2.273	?	-2.28517
?	?	0.49339
?	?	0.90268
?	?	0.14203
-0.379	?	-0.36779
0.411	?	0.40729
?	?	-0.44077
?	?	-0.10852
?	?	-0.07030
?	?	0.30749
?	?	-0.13090
?	?	-0.00206
?	?	0.08422
?	?	0.01492
?	?	0.90757
?	?	-0.44879
?	?	0.14383
?	?	0.27525
?	?	0.01594
?	?	0.08453
?	?	-0.03935
?	?	0.01492
?	?	0.03542
?	?	0.01571
1	3	3
10	30	30
0	34	22
0	26	17
0	0	0
0	0	0
60	299	540
1.2000	1.2000	1.2000
0.0000	0.0000	0.0001
0.0000	0.0000	0.0000

TABLE 80

PLANFORM 4 MODE SET 2 M=1.2000 K=0.3

5	9	19
0.188	0.205	0.18860
3.374	3.531	3.36873
?	0.915	0.87595
?	0.044	0.03813
?	0.283	0.25304
-0.004	-0.005	-0.00455
-0.424	-0.446	-0.41139
?	1.068	0.09112
?	-0.001	-0.00048
?	0.289	0.25129
?	0.010	0.00871
?	0.309	0.28292
?	0.040	0.04342
?	0.003	0.00241
?	0.002	0.00391
?	0.044	0.03858
?	0.907	0.81876
?	0.283	0.25312
?	-0.001	-0.00049
?	0.170	0.14224
?	0.003	0.00244
?	0.090	0.07750
?	0.003	0.00402
?	0.001	-0.00553
?	-0.005	-0.00578
3.370	3.527	3.36423
-1.647	-1.822	-1.66198
?	0.214	0.17980
?	0.907	0.81420
?	0.077	0.06682
-0.445	-0.470	-0.43288
0.554	0.591	0.54804
?	-0.550	-0.49920
?	-0.144	-0.12507
?	-0.104	-0.08620
?	0.306	0.27922
?	-0.093	-0.07545
?	-0.023	-0.02502
?	0.090	0.07688
?	0.011	0.00847
?	0.907	0.81833
?	-0.349	-0.30330
?	0.077	0.06805
?	0.305	0.25923
?	-0.007	-0.00019
?	0.090	0.07712
?	-0.032	-0.02522
?	0.011	0.00838
?	0.041	0.03358
?	0.017	0.01374

1	3	3
10	30	30
0	34	22
0	26	17
0	0	0
0	0	0
61	302	541
1.2000	1.2000	1.2000
0.3000	0.3000	0.3000
0.0000	0.0000	0.0000

TABLE 81

PLANFORM 4 MODE SET 2 M=1.2000 K=0.6

9	19
0.749	0.34836
3.058	2.83781
0.810	0.95527
0.155	0.05879
0.395	0.28028
-0.026	-0.10714
-0.427	-0.37977
0.948	0.88841
-0.007	-0.02375
0.268	0.23499
-0.183	0.00117
0.289	0.27049
0.068	0.02093
-0.041	0.00117
-0.039	0.00181
0.155	0.05987
0.795	0.69496
0.265	0.28075
-0.005	-0.02065
0.200	0.14661
0.075	0.00121
0.092	0.07148
-0.027	0.00190
0.015	-0.00015
0.017	-0.00276
3.036	2.73083
-1.577	-0.49058
0.620	-0.34224
0.769	0.66842
-0.177	-0.06295
-0.517	-0.47633
0.582	0.75123
-0.371	-0.54657
-0.160	-0.13927
-0.158	-0.10408
0.229	0.25176
0.493	0.00790
-0.527	-0.04555
0.068	0.06839
0.060	0.00058
0.769	0.67128
-0.273	-0.02652
0.154	-0.06281
0.296	0.23568
-0.064	-0.02855
0.104	0.06857
-0.200	-0.00269
0.189	0.00045
0.047	0.03095
-0.010	0.01039

3	3
30	30
34	22
26	17
0	0
0	0
305	542
1.2000	1.2000
0.6000	0.6000
0.0000	0.0000

TABLE 82

PLANFORM 4 MODE SET 2 M=1.2000 K=1.0

0	19
1.132	0.07561
2.407	2.93568
0.956	0.54091
0.194	-0.04869
0.314	0.19301
-0.237	-0.35023
-0.290	-0.08542
0.810	0.60624
-0.069	-0.08601
0.213	0.17858
-0.419	-0.01954
0.722	0.31944
-0.327	-0.04200
-0.097	-0.00589
-0.052	-0.00950
0.194	-0.04752
0.666	0.72587
0.291	0.19308
-0.053	-0.09771
0.189	0.12304
0.161	-0.00588
-0.040	0.08009
0.078	-0.00953
0.033	-0.00401
0.255	-0.00248
2.177	2.58600
-0.606	0.20456
0.305	-0.40581
0.599	0.03748
-0.304	-0.09600
-0.536	-0.27971
0.664	0.66674
-0.286	-0.36277
-0.167	-0.09920
-0.148	-0.07356
0.694	0.29293
0.232	-0.00598
-0.324	0.01142
0.173	0.07541
0.123	0.00867
0.599	0.63978
-0.029	0.14697
0.108	-0.09634
0.288	0.24354
-0.098	-0.03837
-0.042	0.07563
-0.112	-0.00014
0.153	0.00861
0.026	0.03131
-0.031	0.00898
3	3
30	30
34	22
26	17
0	0
0	0
308	543
1.2000	1.2000
1.0000	1.0000
0.0000	0.0000

TABLE 83

PLANFORM 4 MODE SET 2 M=1.2000 K=2.0

9	19
0.467	-0.45877
2.690	3.19723
0.639	0.21294
-0.071	-0.34845
0.131	0.08608
-0.721	-0.56951
0.254	0.12150
0.432	0.49222
-0.217	-0.17032
0.158	0.15150
-0.111	-0.00001
0.338	0.27014
-0.023	-0.00106
-0.060	-0.01316
0.061	-0.00085
-0.070	-0.34618
0.851	0.87064
0.136	0.08603
-0.192	-0.35792
0.159	0.05664
0.141	-0.01301
0.066	0.07244
-0.024	-0.00084
0.108	-0.01833
0.068	-0.00115
1.972	2.63039
-0.011	0.22090
0.430	-0.02276
0.633	0.69913
-0.181	-0.01313
-0.115	-0.10563
0.350	0.39382
-0.041	-0.10150
-0.047	-0.04927
-0.048	0.02083
0.480	0.26026
0.109	-0.01173
-0.130	0.04015
0.111	0.07142
0.080	0.01282
0.633	0.70100
0.061	0.13597
0.105	-0.01309
0.370	0.31742
-0.076	-0.01348
0.020	0.07157
-0.078	0.00018
0.107	0.01282
0.050	0.03409
-0.036	0.00732
3	3
30	30
34	22
26	17
0	0
0	0
311	544
1.2000	1.2000
2.0000	2.0000
0.0000	0.0000

TABLE 84

PLANFORM 4 MODE SET 2 M=2.0000 K=0.0

2	9	19
0	0	0.00000
1.9761	2.067	1.96812
?	0.032	0.09158
0	0	0.00000
0.06994	0.053	0.06387
0	0	0.00000
-0.05556	-0.081	-0.04568
?	0.412	0.37775
0	0	-0.00000
0.1206	0.136	0.11813
?	0	0.00000
?	0.176	0.16028
?	-0.010	0.00788
?	0	-0.00000
?	-0.003	0.00313
0	0	0.00000
0.5211	0.576	0.51820
?	0.053	0.06366
0	0	-0.00000
0.06532	0.065	0.06154
0	0	-0.00000
0.04464	0.051	0.04306
?	-0.003	0.00314
0	0	-0.00000
0.001916	0	0.00247
?	?	1.96812
?	?	-0.16188
?	?	0.19550
?	?	0.51718
?	?	0.02942
?	?	-0.04569
?	?	0.17264
?	?	-0.02513
?	?	-0.03177
?	?	-0.01106
?	?	0.16028
?	?	-0.01017
?	?	0.02428
?	?	0.04299
?	?	0.00588
?	?	0.51820
?	?	0.02376
?	?	0.02964
?	?	0.22141
?	?	-0.00726
?	?	0.04306
?	?	0.00210
?	?	0.00589
?	?	0.01894
?	?	0.00184

1	3	3
0	30	30
0	34	30
0	10	9
0	0	0
0	0	0
57	300	545
2.0000	2.0000	2.0000
0.0000	0.0000	0.0001
0.0000	0.0000	0.0000

TABLE 85

PLANFORM 4 MODE SET 2 M=2.0000 K=0.3

9	19
0.021	0.01799
2.048	1.95162
-1.696	0.09956
0.001	0.00054
0.479	0.06473
0	0.00126
-0.084	-0.04802
0.153	0.37860
-0.001	-0.00068
0.096	0.11806
-0.002	0.00120
-0.293	0.15899
0.321	0.00840
0.002	-0.00007
-0.198	0.00317
0.001	0.00058
0.573	0.51628
-0.452	0.06453
-0.004	-0.00335
0.236	0.06079
-0.002	-0.00095
0.225	0.04293
-0.215	0.00317
-0.005	-0.00037
0.168	0.00239
2.050	1.95300
-0.208	-0.15070
-0.268	0.18965
0.573	0.51463
0.309	0.02832
-0.085	-0.04903
0.195	0.17535
-0.164	-0.02649
-0.045	-0.03222
0.027	-0.01125
-0.292	0.15892
-0.163	-0.00911
0.241	0.02375
-0.054	0.04279
-0.102	0.00575
0.573	0.51563
0.014	0.02582
-0.145	0.02858
0.261	0.22157
0.176	-0.00731
0.223	0.04288
0.096	0.00227
-0.150	0.00580
0.074	0.01899
0.118	0.00187

3	3
30	30
34	30
10	9
0	0
0	0
303	540
2.0000	2.0000
0.3000	0.3000
0.0000	0.0000

TABLE 86

PLANFORM 4 MODE SET 2 M=2.0000 K=0.6

9	19
0.073	0.06385
2.000	1.90761
0.066	0.12047
0.003	0.00053
0.057	0.06671
0.001	0.00278
-0.068	-0.05342
0.414	0.38027
-0.004	-0.00317
0.136	0.11768
0.005	0.00389
0.171	0.15574
-0.008	0.00969
0	-0.00043
-0.002	0.00322
0.003	0.00067
0.569	0.51162
0.057	0.06655
-0.015	-0.01367
0.060	0.05846
0	-0.00041
0.051	0.04271
-0.003	0.00321
-0.002	-0.00148
-0.001	0.00210
2.005	1.91082
-0.173	-0.11917
0.189	0.17315
0.565	0.50763
0.027	0.02537
-0.094	-0.05799
0.204	0.18273
-0.046	-0.03019
-0.046	-0.03335
-0.018	-0.01185
0.170	0.15525
-0.018	-0.00614
0.027	0.02224
0.049	0.04227
0.006	0.00555
0.565	0.50860
0.021	0.03160
0.027	0.02557
0.262	0.22220
-0.011	-0.00733
0.050	0.04235
0	0.00278
0.006	0.00556
0.024	0.01920
0.003	0.00190
3	3
30	30
34	30
10	9
0	0
0	0
306	547
2.0000	2.0000
0.6000	0.6000
0.0000	0.0000

TABLE 87

PLANFORM 4 MODE SET 2 M=2.0000 K=1.0

9	19
0.151	0.12996
1.920	1.83263
0.106	0.15423
-0.004	-0.00807
0.059	0.06815
-0.008	-0.00524
-0.092	-0.05780
0.414	0.37979
-0.013	-0.01124
0.134	0.11593
0.008	0.00586
0.166	0.15124
-0.006	0.01103
-0.002	-0.00213
-0.002	0.00296
-0.004	-0.00772
0.564	0.50667
0.058	0.06805
-0.044	-0.03945
0.052	0.05238
-0.002	-0.00210
0.050	0.04277
-0.003	0.00293
-0.004	-0.00415
-0.001	0.00143
1.916	1.82845
-0.102	-0.05597
0.150	0.14037
0.550	0.49493
0.019	0.01969
-0.110	-0.07363
0.218	0.19653
-0.053	-0.03695
-0.048	-0.03487
-0.019	-0.01277
0.163	0.14870
-0.011	-0.00055
0.023	0.01952
0.049	0.04151
0.007	0.00515
0.550	0.49579
0.035	0.04274
0.019	0.01986
0.265	0.22462
-0.011	-0.00710
0.049	0.04157
0	0.00363
0.007	0.00516
0.025	0.01975
0.003	0.00201
3	3
30	30
34	30
10	9
0	0
0	0
309	548
2.0000	2.0000
1.0000	1.0000
0.0000	0.0000

TABLE 88

PLANFURM 4 MODE SET 2 M=2.0000 K=2.0

9	19
0.005	-0.02923
1.927	1.82061
0.077	0.13191
-0.134	-0.13498
0.024	0.04019
-0.169	-0.14946
-0.010	0.00551
0.359	0.33391
-0.075	-0.06546
0.114	0.10031
-0.019	-0.02514
0.179	0.16206
-0.018	0.00096
-0.014	-0.01630
-0.006	-0.00093
-0.134	-0.13413
0.619	0.54955
0.024	0.04022
-0.182	-0.16463
0.011	0.02064
-0.014	-0.01625
0.057	0.04865
-0.0[illegible]7	-0.00091
-0.016	-0.01536
-0.005	-0.00147
1.759	1.67462
0.051	0.08547
0.071	0.07119
0.541	0.48468
0.010	0.01111
-0.1[illegible]9	-0.07775
0.233	0.21373
-0.059	-0.04283
-0.038	-0.02793
-0.018	-0.01178
0.160	0.14435
-0.003	0.00742
0.021	0.01657
0.050	0.04326
0.006	0.00527
0.541	0.48527
0.055	0.06163
0.010	0.01118
0.293	0.24670
-0.005	-0.00197
0.050	0.04330
0.001	0.00395
0.006	0.00528
0.029	0.02314
0.003	0.00295
3	3
30	30
34	30
10	9
0	0
0	0
312	549
2.0000	2.0000
2.0000	2.0000
0.0000	0.0000

TABLE 89

PLANFORM 4 MODE SET 5 M=1.0000 K=0.0

NO CALCULATIONS MADE FOR THIS CASE

PLANFORM 4 MODE SET 5 M=1.0000 K=0.3

11

-0.03135
0.39999

-0.00307
-0.18116

0.39869
0.52654

-0.17724
0.11406

2

99

15

3

15

24

745

1.0000

0.3000

0.0000

TABLE 91

PLANFORM 4 MODE SET 5 M=1.0000 K=0.6

11

-0.13393
0.43566

-0.01921
-0.20580

0.41617
0.56528

-0.19184
0.14783

2

99

15

3

15

24

746

1.0000

0.6000

0.0000

TABLE 92

PLANFORM 4 MODE SET 5 M=1.0000 K=1.0

11

-0.38560
0.62421

-0.09810
-0.20159

0.52462
0.57823

-0.19094
0.22033

2

99

15

3

15

24

747

1.0000

1.0000

0.0000

TABLE 93

PLANFORM 4 MODE SET 5 M=1.0000 K=2.0

11

-0.79035
1.07324

-0.26154
-0.00145

0.80473
0.25352

-0.05778
0.15928

2

99

15

3

15

24

748

1.0000

2.0000

0.0000

TABLE 94

PLANFORM 4 MODE SET 5 M=1,0500 K=0.0

9	19
0	-0.00000
0.457	0.40976
0	0.00000
-0.210	-0.18448
?	0.40976
?	0.37392
?	-0.18448
?	0.06401
3	3
30	30
34	14
54	22
0	0
0	0
344	550
1.0500	1.0500
0.0000	0.0001
0.0000	0.0000

TABLE 95

PLANFORM 4 MODE SET 5 M=1,0500 K=0.3

9	19
-0.042	-0.03619
0.437	0.39100
-0.010	-0.00832
-0.243	-0.21246
0.427	0.38270
0.703	0.61285
-0.241	-0.21035
0.246	0.20674
3	3
30	30
34	14
54	22
0	0
0	0
347	551
1.0500	1.0500
0.3000	0.3000
0.0000	0.0000

TABLE 96

PLANFORM 4 MODE SET 5 M=1,0500 K=0.6

9	19
-0.165	-0.14834
0.576	0.50772
-0.055	-0.04694
-0.214	-0.19292
0.521	0.46085
0.676	0.60839
-0.219	-0.19599
0.292	0.25225
3	3
30	30
34	14
54	22
0	0
0	0
350	552
1.0500	1.0500
0.6000	0.6000
0.0000	0.0000

TABLE 97

PLANFORM 4 MODE SET 5 M=1,0500 K=1.0

9	19
-0.370	-0.32951
0.800	0.71183
-0.140	-0.12176
-0.134	-0.12401
0.660	0.59026
0.532	0.47707
-0.163	-0.14721
0.266	0.23538
3	3
30	30
34	14
54	22
0	0
0	0
353	553
1.0500	1.0500
1.0000	1.0000
0.0000	0.0000

TABLE 98

TABLES 99, 100, 101, 102

PLANFORM 4 MODE SET 5 M=1.0500 K=2.0

9	19
-0.747	-0.67285
1.127	1.02181
-0.262	-0.23629
-0.012	-0.00814
0.863	0.78631
0.249	0.22304
-0.063	-0.05444
0.163	0.14441
3	3
30	30
34	14
54	22
0	0
0	0
356	554
1.0500	1.0500
2.0000	2.0000
0.0000	0.0000

TABLE 99

PLANFORM 4 MODE SET 5 M=1.2000 K=0.0

9	19
0	-0.00000
0.472	0.41799
0	-0.00000
-0.227	-0.20003
?	0.41799
?	0.58818
?	-0.20003
?	0.33299
3	3
30	30
34	22
26	17
0	0
0	0
345	555
1.2000	1.2000
0.0000	0.0001
0.0000	0.0000

TABLE 100

PLANFORM 4 MODE SET 5 M=1.2000 K=0.3

9	19
-0.037	-0.03399
0.517	0.45835
-0.020	-0.01735
-0.202	-0.17811
0.497	0.44100
0.617	0.56257
-0.209	-0.18453
0.359	0.31483
3	3
30	30
34	22
26	17
0	0
0	0
348	556
1.2000	1.2000
0.3000	0.3000
0.0000	0.0000

TABLE 101

PLANFORM 4 MODE SET 5 M=1.2000 K=0.6

9	19
-0.131	-0.12100
0.638	0.56633
-0.065	-0.05759
-0.140	-0.12466
0.573	0.50878
0.524	0.48054
-0.162	-0.14414
0.301	0.26447
3	3
30	30
34	22
26	17
0	0
0	0
351	557
1.2000	1.2000
0.6000	0.6000
0.0000	0.0000

TABLE 102

PLANFORM 4 MODE SET 5 M=1.2000 K=1.0

9	19
-0.251 0.801	-0.23565 0.71459
-0.111 -0.069	-0.09996 -0.06330
0.689 0.349	0.61484 0.32629
-0.101 0.209	-0.09039 0.18537
3	3
30	30
34	22
26	17
0	0
0	0
354	558
1.2000	1.2000
1.0000	1.0000
0.0000	0.0000

TABLE 103

PLANFORM 4 MODE SET 5 M=1.2000 K=2.0

9	19
-0.613 1.026	-0.56544 0.91469
-0.226 0.006	-0.20030 0.00074
0.798 0.197	0.71525 0.18558
-0.048 0.140	-0.04398 0.12472
3	3
30	30
34	22
26	17
0	0
0	0
357	559
1.2000	1.2000
2.0000	2.0000
0.0000	0.0000

TABLE 104

PLANFORM 4 MODE SET 5 M=2.0000 K=0.0

9	19
0 0.523	-0.00000 0.46935
0 -0.059	-0.00000 -0.04334
? ?	0.46934 0.07095
? ?	-0.04334 0.07854
3	3
30	30
34	30
10	9
0	0
0	0
346	560
2.0000	2.0000
0.0000	0.0001
0.0000	0.0000

TABLE 105

PLANFORM 4 MODE SET 5 M=2.0000 K=0.3

9	19
-0.002 0.523	-0.00255 0.46986
-0.002 -0.056	-0.00158 -0.04263
0.522 0.066	0.46830 0.07195
-0.057 0.090	-0.04332 0.07861
3	3
30	30
34	30
10	9
0	0
0	0
349	561
2.0000	2.0000
0.3000	0.3000
0.0000	0.0000

TABLE 106

PLANFORM 4 MODE SET 5 M=2.0000 K=0.6

9	19
-0.011 0.526	-0.01125 0.47212
-0.007 -0.053	-0.00654 -0.04034
0.519 0.069	0.46567 0.07455
-0.056 0.091	-0.04305 0.07877
3	3
30	30
34	30
10	9
0	0
0	0
352	562
2.0000	2.0000
0.6000	0.6000
0.0000	0.0000

TABLE 107

PLANFORM 4 MODE SET 5 M=2.0000 K=1.0

9	19
-0.363 0.700	-0.03707 0.48121
-0.217 0.052	-0.01932 -0.03406
0.515 0.074	0.46212 0.07898
-0.055 0.090	-0.04166 0.07860
3	3
30	30
34	30
10	9
0	0
0	0
355	563
2.0000	2.0000
1.0000	1.0000
0.0000	0.0000

TABLE 108

PLANFORM 4 MODE SET 5 M=2.0000 K=2.0

9	19
-0.206 0.632	-0.20085 0.55885
-0.090 -0.004	-0.08111 -0.00045
0.536 0.072	0.47874 0.07725
-0.037 0.081	-0.02686 0.07186
3	3
30	30
34	30
10	9
0	0
0	0
358	564
2.0000	2.0000
2.0000	2.0000
0.0000	0.0000

TABLE 109

PLANFORM 5 MODE SET 2 φ M=1.1000 K=0.0	PLANFORM 5 MODE SET 2 φ M=1.1000 K=0.5	PLANFORM 5 MODE SET 2 φ M=1.1000 K=1.0
0	0.156	0.262
2.170	2.016	1.967
2.392	2.067	1.774
0	0.027	0.054
1.052	0.857	0.620
0	0.072	0.118
0.816	0.745	0.730
1.342	1.153	1.010
0	0.015	0.030
0.555	0.427	0.294
0	0.050	0.088
0.541	0.494	0.483
0.830	0.708	0.621
0	0.010	0.019
0.314	0.228	0.150
0	0.060	0.131
0.562	0.513	0.489
1.017	0.645	0.549
0	0.010	0.022
0.207	0.137	0.075
0	0	-0.005
0.029	0.027	0.028
0.081	0.056	0.050
0	0	0.001
0.056	0.049	0.036
?	1.870	1.657
?	0.373	0.538
?	-0.568	-0.123
?	0.328	0.290
?	-0.599	-0.290
?	0.665	0.572
?	0.261	0.332
?	-0.260	-0.011
?	0.194	0.173
?	-0.355	-0.154
?	0.444	0.383
?	0.140	0.185
?	-0.144	0.013
?	0.135	0.122
?	-0.222	-0.087
?	0.467	0.394
?	0.059	0.111
?	-0.150	-0.011
?	0.141	0.128
?	-0.189	-0.081
?	0.023	0.022
?	0.025	0.027
?	-0.012	0.001
?	0.003	0.002
?	-0.019	-0.007
3	3	3
30	30	30
34	34	34
56	56	56
0	0	0
0	0	0
313	317	321
1.1000	1.1000	1.1000
0.0000	0.5000	1.0000
0.0000	0.0000	0.0000
TABLE 110	TABLE 111	TABLE 112

PLANFORM 5 MODE SET 2 M=1.1000 K=2.0

9

0.216
2.033
1.548
0.071
0.471

0.122
0.764
0.914
0.040
0.224

0.127
0.493
0.569
0.030
0.115

0.252
0.476
0.495
0.040
0.039

-0.028
0.035
0.045
0.001
0.032

1.532
0.578
0.148
0.259
-0.081

0.521
0.334
0.123
0.156
-0.044

0.338
0.190
0.093
0.110
-0.026

0.317
0.127
0.064
0.135
-0.033

0.028
0.026
0.007
0.002
0.006

3

30

34

56

0

0

325

1.1000

2.0000

0.0000

TABLE 113

PLANFORM 5 MODE SET 2 M=1.1000 K=4.0

9

-0.319
2.105
1.383
0.018
0.376

-0.051
0.744
0.864
0.013
0.168

0.059
0.466
0.540
0.018
0.077

0.294
0.430
0.477
0.054
0.000

-0.063
0.045
0.042
0
0.037

1.560
0.547
0.273
0.250
0

0.521
0.322
0.178
0.151
-0.001

0.319
0.189
0.124
0.105
-0.002

0.249
0.141
0.094
0.106
-0.008

0.042
0.022
0.009
0.002
0.007

3

30

34

56

0

0

329

1.1000

4.0000

0.0000

TABLE 114

PLANFORM 5 MODE SET 2 M=1.2500 K=0.0

9	16	19	20	22
0	0	0.00000	0.0	0.0
2.002	1.9510	1.93615	1.98607	1.98990
1.834	1.8235	1.79066	1.90636	1.82537
0	0	0.00000	0.0	0.0
0.693	?	0.69819	?	?
0	0	0.00000	0.0	0.0
0.758	0.7545	0.74804	0.74668	0.75111
1.081	1.0735	1.05332	1.09576	1.06699
0	0	0.00000	0.0	0.0
0.380	?	0.38773	?	?
0	0	0.00000	0.0	0.0
0.509	0.5060	0.49673	0.50889	0.49940
0.674	0.6770	0.65846	0.68691	0.66006
0	0	0.00000	0.0	0.0
0.225	?	0.23303	?	?
0	0	0.00000	0.0	0.0
0.532	0.5135	0.49755	0.51589	0.51414
0.856	0.5805	0.55621	0.59053	0.56855
0	0	0.00000	0.0	0.0
0.123	?	0.12709	?	?
0	?	0.00000	?	?
0.025	?	0.02744	?	?
0.067	?	0.05390	?	?
0	?	0.00000	?	?
0.046	?	0.04791	?	?
?	1.9510	1.93615	1.98607	1.98990
?	0.1583	0.18647	0.95318	0.91269
?	-0.2229	-0.19909	0.51959	0.50231
?	0.3116	0.30166	0.31184	0.31223
?	?	-0.25253	?	?
?	0.7545	0.74803	0.74668	0.75111
?	0.1217	0.14284	0.54788	0.53350
?	-0.1299	-0.10907	0.32915	0.31550
?	0.1902	0.18352	0.18903	0.18633
?	?	-0.18315	?	?
?	0.5060	0.49673	0.50889	0.49940
?	0.0476	0.06574	0.34345	0.33003
?	-0.0807	-0.06375	0.23008	0.21992
?	0.1357	0.12021	0.13423	0.12981
?	?	-0.13840	?	?
?	0.5135	0.49755	0.51589	0.51414
?	-0.0153	-0.00299	0.29526	0.28427
?	-0.0664	-0.05520	0.19052	0.18353
?	0.1382	0.13056	0.13644	0.13437
?	?	-0.10987	?	?
?	?	0.02744	?	?
?	?	0.02265	?	?
?	?	-0.00544	?	?
?	?	0.00332	?	?
?	?	-0.00303	?	?
3	3	3	2	3
30	33	30	0	33
34	25	26	18	35
35	25	26	9	35
0	0	0	80	0
0	0	0	80	0
314	632	565	637	637
1.2500	1.2500	1.2500	1.2500	1.2500
0.0000	0.0001	0.0001	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 115

PLANFORM 5 MODE SET 2 M=1.2500 K=0.5

9	16	19	20
0.146	0.1443	0.13636	0.14375
1.911	1.8600	1.85220	1.89593
1.745	1.7350	1.70829	1.80533
0.016	0.0159	0.01432	0.01527
0.654	?	0.65887	?
0.075	0.0773	0.07171	0.07244
0.710	0.7064	0.70461	0.70194
1.025	1.0159	1.00059	1.03359
0.010	0.0101	0.00883	0.00930
0.352	?	0.35849	?
0.052	0.0545	0.04948	0.05142
0.479	0.4729	0.46746	0.47805
0.635	0.6371	0.62263	0.64481
0.007	0.0073	0.00618	0.00662
0.203	?	0.21047	?
0.062	0.0603	0.05589	0.05887
0.496	0.4785	0.46627	0.48227
0.559	0.5491	0.52796	0.55574
0.007	0.0071	0.00611	0.00650
0.106	?	0.10950	?
0	?	0.00027	?
0.025	?	0.02671	?
0.051	?	0.05312	?
0	?	0.00036	?
0.045	?	0.04663	?
1.827	1.7775	1.77398	1.80869
0.276	0.2753	0.29463	0.31148
-0.182	-0.1703	-0.15025	-0.19703
0.310	0.2983	0.28979	0.29850
-0.233	?	-0.23384	?
0.661	0.6563	0.65777	0.65121
0.201	0.1881	0.20360	0.21586
-0.093	-0.0919	-0.07437	-0.09004
0.187	0.1815	0.17602	0.18074
-0.164	?	-0.16864	?
0.445	0.4390	0.43636	0.44427
0.100	0.0929	0.10631	0.10870
-0.051	-0.0532	-0.03887	-0.05003
0.131	0.1295	0.12397	0.12842
-0.121	?	-0.12681	?
0.467	0.4500	0.44011	0.45307
0.026	0.0269	0.03456	0.03586
-0.047	-0.0453	-0.03601	-0.05089
0.139	0.1328	0.12601	0.13136
-0.095	?	-0.10063	?
0.023	?	0.02438	?
0.025	?	0.02501	?
-0.005	?	-0.00369	?
0.003	?	0.00299	?
-0.003	?	-0.00259	?
3	3	3	2
30	33	30	0
34	25	26	18
35	25	26	9
0	0	0	80
0	0	0	80
318	633	566	638
1.2500	1.2500	1.2500	1.2500
0.5000	0.5000	0.5000	0.5000
0.0000	0.0000	0.0000	0.0000

TABLE 116

PLANFORM 5 MODE SET 2 M=1.2500 K=1.0

9	16	19	20
0.302	0.3005	0.28498	0.29466
1.835	1.7800	1.77946	1.82329
1.555	1.5425	1.52938	1.60535
0.045	0.0434	0.03947	0.04087
0.558	?	0.56112	?
0.146	0.1538	0.14195	0.13969
0.683	0.6725	0.67527	0.67528
0.910	0.8990	0.89360	0.91880
0.027	0.0272	0.02390	0.02453
0.282	?	0.28688	?
0.107	0.1131	0.10251	0.10598
0.456	0.4472	0.44622	0.45693
0.562	0.5600	0.55288	0.57008
0.020	0.0199	0.01674	0.01763
0.151	?	0.15595	?
0.148	0.1441	0.13539	0.14050
0.459	0.4411	0.43270	0.44803
0.498	0.4875	0.47203	0.49236
0.022	0.0204	0.01773	0.01844
0.066	?	0.06734	?
-0.005	?	-0.00474	?
0.028	?	0.02886	?
0.046	?	0.04728	?
0	?	0.00091	?
0.042	?	0.04367	?
1.590	1.5390	1.54873	1.57574
0.425	0.4205	0.43243	0.45510
-0.043	-0.0328	-0.02314	-0.03942
0.284	0.2724	0.26687	0.27380
-0.186	?	-0.18495	?
0.543	0.5330	0.54389	0.53850
0.274	0.2611	0.27206	0.28371
-0.001	0.0014	0.01082	0.01060
0.171	0.1653	0.16191	0.16584
-0.128	?	-0.13098	?
0.366	0.3555	0.36119	0.36783
0.148	0.1415	0.15054	0.15353
0.013	0.0121	0.02017	0.01896
0.121	0.1180	0.11427	0.11809
-0.093	?	-0.09694	?
0.378	0.3617	0.35896	0.36853
0.080	0.0783	0.08119	0.08463
0.004	0.0057	0.01013	0.00536
0.129	0.1225	0.11729	0.12199
-0.073	?	-0.07690	?
0.022	?	0.02250	?
0.026	?	0.02674	?
0.001	?	0.00090	?
0.002	?	0.00236	?
-0.002	?	-0.00140	?
3	3	3	2
30	33	30	0
34	25	26	18
35	25	26	9
0	0	0	80
0	0	0	80
322	634	567	639
1.2500	1.2500	1.2500	1.2500
1.0000	1.0000	1.0000	1.0000
0.0000	0.0000	0.0000	0.0000

TABLE 117

PLANFORM 5 MODE SET 2 M=1.2500 K=2.0

9	16	19	20
0.320	0.3008	0.29527	0.30062
1.852	1.7642	1.78755	1.83096
1.346	1.3226	1.32596	1.38681
0.074	0.0652	0.06120	0.06064
0.369	?	0.37055	?
0.163	0.1629	0.15954	0.14963
0.690	0.6600	0.67595	0.67722
0.814	0.7890	0.79589	0.81694
0.046	0.0415	0.03713	0.03714
0.156	?	0.15716	?
0.151	0.1450	0.14064	0.14438
0.448	0.4270	0.43449	0.44410
0.505	0.4940	0.49583	0.50936
0.035	0.0324	0.02727	0.02880
0.063	?	0.06355	?
0.258	0.2420	0.23823	0.24355
0.426	0.4028	0.39858	0.41181
0.448	0.4320	0.42369	0.43733
0.046	0.0400	0.03572	0.03629
0.002	?	-0.00084	?
-0.021	?	-0.02276	?
0.035	?	0.03602	?
0.041	?	0.04279	?
0.001	?	0.00098	?
0.034	?	0.03626	?
1.428	1.3620	1.38923	1.40886
0.483	0.4806	0.48668	0.50974
0.155	0.1632	0.16286	0.16172
0.253	0.2407	0.23901	0.24498
-0.069	?	-0.06713	?
0.472	0.4485	0.47053	0.46526
0.291	0.2820	0.28901	0.29882
0.114	0.1168	0.11917	0.12333
0.152	0.1460	0.14565	0.14922
-0.043	?	-0.04309	?
0.310	0.2898	0.30443	0.30796
0.163	0.1598	0.16488	0.16830
0.087	0.0862	0.08898	0.09099
0.109	0.1041	0.10311	0.10640
-0.027	?	-0.02915	?
0.290	0.2726	0.27533	0.28137
0.113	0.1103	0.11007	0.11393
0.065	0.0667	0.06669	0.06844
0.115	0.1086	0.10568	0.10990
-0.023	?	-0.02408	?
0.027	?	0.02790	?
0.022	?	0.02384	?
0.006	?	0.00664	?
0.002	?	0.00181	?
0.001	?	0.00209	?
3	3	3	2
30	33	30	0
34	25	26	18
35	25	26	9
0	0	0	80
0	0	0	80
326	635	568	640
1.2500	1.2500	1.2500	1.2500
2.0000	2.0000	2.0000	2.0000
0.0000	0.0000	0.0000	0.0000

TABLE 118

PLANFORM 5 MODE SET 2 M=1.2500 K=4.0

9	16	19	20	22
-0.094	-0.3317	-0.16080	-0.18412	-0.18802
1.918	1.7344	1.82661	1.85555	1.89010
1.234	1.1616	1.20308	1.24095	1.23350
0.059	0.0082	0.03324	0.02242	0.02032
0.327	?	0.32770	?	?
0.004	-0.1270	-0.01451	-0.04356	-0.03778
0.685	0.5962	0.65472	0.64894	0.66200
0.285	0.7208	0.75622	0.76905	0.77218
0.043	0.0092	0.02439	0.02091	0.01505
0.148	?	0.14996	?	?
0.076	-0.0212	0.05806	0.05643	0.04000
0.432	0.3722	0.40820	0.41214	0.41351
0.495	0.4514	0.47400	0.48345	0.47878
0.040	0.0150	0.02304	0.02468	0.01690
0.070	?	0.07107	?	?
0.266	0.1985	0.23920	0.23387	0.22659
0.400	0.3492	0.36443	0.36886	0.37613
0.444	0.4060	0.41162	0.42124	0.42310
0.073	0.0468	0.05260	0.05137	0.04735
0.011	?	0.01139	?	?
-0.046	?	-0.04882	?	?
0.043	?	0.04395	?	?
0.037	?	0.03953	?	?
0	?	0.00017	?	?
0.033	?	0.03423	?	?
1.431	1.3730	1.39215	1.40846	1.46995
0.475	0.4886	0.48101	0.50149	0.50282
0.251	0.2654	0.25518	0.26216	0.27265
0.238	0.2284	0.22721	0.23276	0.24034
0.009	?	0.01242	?	?
0.464	0.4450	0.46411	0.46069	0.48210
0.290	0.2904	0.28946	0.29723	0.30211
0.158	0.1683	0.16295	0.16960	0.17128
0.143	0.1375	0.13814	0.14121	0.14351
0.005	?	0.00689	?	?
0.287	0.2748	0.28497	0.28735	0.29796
0.169	0.1724	0.17190	0.17507	0.17732
0.112	0.1173	0.11441	0.11833	0.11929
0.100	0.0966	0.09699	0.09940	0.09959
0.002	?	0.00362	?	?
0.228	0.2174	0.21841	0.22332	0.23470
0.133	0.1327	0.12968	0.13418	0.13745
0.087	0.0910	0.08705	0.09200	0.09247
0.102	0.0973	0.09565	0.09932	0.10076
-0.002	?	-0.00131	?	?
0.039	?	0.04033	?	?
0.018	?	0.01964	?	?
0.008	?	0.00902	?	?
0.002	?	0.00187	?	?
0.006	?	0.00606	?	?
3	3	3	2	3
30	33	30	0	33
34	25	26	18	35
35	25	26	9	35
0	0	0	80	0
0	0	0	80	0
330	636	569	641	658
1.2500	1.2500	1.2500	1.2500	1.2500
4.0000	4.0000	4.0000	4.0000	4.0000
0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 119

PLANFORM 5 MODE SET 2 M=1.5621 K=0.0

9	19	20	22
0	0.00000	0.0	0.0
1.682	1.64623	1.70797	1.66222
1.191	1.16509	1.24543	1.17880
0	0.00000	0.0	0.0
0.350	0.35252	?	?
0	0.00000	0.0	0.0
0.650	0.63288	0.64059	0.62573
0.745	0.72062	0.76022	0.72331
0	0.00000	0.0	0.0
0.173	0.17616	?	?
0	0.00000	0.0	0.0
0.437	0.41657	0.43695	0.41338
0.467	0.44369	0.47101	0.44389
0	0.00000	0.0	0.0
0.089	0.09233	?	?
0	0.00000	0.0	0.0
0.441	0.42114	0.44318	0.42463
0.613	0.36982	0.39495	0.37281
0	0.00000	0.0	0.0
0.026	0.02691	?	?
0	0.00000	?	?
0.025	0.02339	?	?
0.053	0.03972	?	?
0	0.00000	?	?
0.036	0.03613	?	?
?	1.64623	1.70797	1.66222
?	0.13726	0.62272	0.58940
?	0.15978	0.35267	0.34225
?	0.24912	0.25023	0.25393
?	-0.00818	?	?
?	0.63288	0.64059	0.62573
?	0.11246	0.38011	0.36166
?	0.09283	0.22148	0.21096
?	0.15278	0.16014	0.15381
?	-0.00714	?	?
?	0.41657	0.43695	0.41338
?	0.05149	0.23550	0.22193
?	0.07044	0.15761	0.14865
?	0.10717	0.11480	0.10825
?	-0.00575	?	?
?	0.42114	0.44318	0.42463
?	-0.00684	0.19747	0.18641
?	0.06903	0.13289	0.12260
?	0.11196	0.11886	0.11383
?	-0.00424	?	?
?	0.02338	?	?
?	0.01890	?	?
?	0.00236	?	?
?	0.00211	?	?
?	0.00216	?	?
3	3	2	3
30	30	0	33
34	34	18	45
22	21	9	28
0	0	80	0
0	0	80	0
315	570	642	659
1.5621	1.5620	1.5620	1.5620
0.0000	0.0001	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000

TABLE 120

PLANFORM 5 MODE SET 2 M=1.5621 K=0.5

9	19	20
0.108	0.10031	0.11364
1.628	1.59394	1.64447
1.188	1.16296	1.23955
0.009	0.00750	0.00830
0.348	0.35035	?
0.060	0.05523	0.05995
0.619	0.60395	0.60712
0.742	0.71796	0.75490
0.006	0.00485	0.00555
0.172	0.17481	?
0.043	0.03790	0.04302
0.416	0.39665	0.41308
0.466	0.35201	0.46786
0.005	0.00344	0.00421
0.089	0.09146	?
0.048	0.04370	0.04915
0.417	0.39871	0.41614
0.393	0.37098	0.39501
0.005	0.00393	0.00453
0.025	0.02655	?
0	0.00001	?
0.025	0.02320	?
0.039	0.03915	?
0	0.00012	?
0.036	0.03577	?
1.602	1.57156	1.61810
0.156	0.17563	0.16041
0.141	0.15443	0.13814
0.259	0.24544	0.25501
-0.010	-0.00774	?
0.602	0.58937	0.58980
0.127	0.13489	0.13428
0.080	0.09035	0.08057
0.161	0.15035	0.15733
-0.007	-0.00686	?
0.404	0.38703	0.40156
0.058	0.06675	0.05927
0.062	0.06886	0.06367
0.117	0.10545	0.11282
-0.006	-0.00557	?
0.408	0.39157	0.40751
0.001	0.00846	-0.00144
0.061	0.06645	0.06219
0.120	0.11028	0.11688
-0.004	-0.00417	?
0.024	0.02237	?
0.018	0.01945	?
0.002	0.00244	?
0.002	0.00202	?
0.002	0.00220	?
3	3	2
30	30	0
34	34	18
22	21	0
0	0	80
0	0	30
319	571	643
1.5621	1.5620	1.5620
0.5000	0.5000	0.5000
0.0000	0.0000	0.0000

TABLE 121

PLANFORM 5 MODE SET 2 M=1.5621 K=1.0

9	19	20
0.318	0.29450	0.32169
1.523	1.49235	1.52749
1.169	1.14453	1.20928
0.033	0.02593	0.02840
0.342	0.34406	?
0.170	0.15679	0.16219
0.564	0.55055	0.54988
0.727	0.70341	0.73268
0.022	0.01670	0.01900
0.168	0.17088	?
0.122	0.10839	0.11832
0.377	0.35961	0.37147
0.455	0.43267	0.45421
0.017	0.01184	0.01448
0.066	0.08894	?
0.146	0.13385	0.14526
0.369	0.35286	0.36382
0.390	0.36958	0.38999
0.019	0.01396	0.01601
0.024	0.02551	?
0	-0.00207	?
0.024	0.02409	?
0.039	0.03733	?
0	0.00040	?
0.035	0.03525	?
1.424	1.40360	1.42492
0.248	0.26126	0.26548
0.133	0.14711	0.13515
0.248	0.23591	0.24422
-0.009	-0.00645	?
0.499	0.49408	0.48435
0.179	0.18358	0.19177
0.079	0.08819	0.08198
0.154	0.14412	0.15019
-0.007	-0.00693	?
0.333	0.32268	0.32821
0.095	0.09970	0.09932
0.060	0.06757	0.06452
0.111	0.10104	0.10754
-0.005	-0.00503	?
0.334	0.32426	0.32992
0.039	0.04302	0.04119
0.056	0.06209	0.05914
0.115	0.10587	0.11175
-0.004	-0.00394	?
0.021	0.02074	?
0.019	0.02036	?
0.002	0.00289	?
0.002	0.00184	?
0.002	0.00231	?
3	3	2
30	30	0
34	34	18
22	21	0
0	0	80
0	0	80
323	572	644
1.5621	1.5620	1.5620
1.0000	1.0000	1.0000
0.0000	0.0000	0.0000

TABLE 122

PLANFORM 5 MODE SET 2 M=1.5621 K=2.0

9	19	20
0.429	0.38259	0.40108
1.472	1.43460	1.46575
1.068	1.04157	1.08702
0.081	0.06133	0.06560
0.320	0.32194	?
0.199	0.17864	0.17053
0.553	0.53163	0.53704
0.665	0.63959	0.65977
0.055	0.03901	0.04433
0.154	0.15717	?
0.159	0.13475	0.14531
0.363	0.34100	0.35331
0.418	0.39358	0.41149
0.044	0.02772	0.03479
0.079	0.08018	?
0.246	0.22609	0.23273
0.327	0.30712	0.31730
0.369	0.34827	0.36350
0.052	0.03727	0.04245
0.021	0.02188	?
-0.016	-0.01773	?
0.032	0.03113	?
0.032	0.03208	?
0.001	0.00064	?
0.033	0.03340	?
1.183	1.17291	1.18725
0.365	0.37407	0.38745
0.162	0.17131	0.17565
0.221	0.21350	0.21966
-0.004	-0.00176	?
0.377	0.37848	0.37374
0.238	0.23956	0.24738
0.102	0.10857	0.11279
0.135	0.12970	0.13406
-0.004	-0.00304	?
0.248	0.24469	0.24862
0.135	0.13749	0.13939
0.077	0.08116	0.08419
0.098	0.09085	0.09553
-0.003	-0.00307	?
0.225	0.22172	0.22367
0.092	0.09349	0.09659
0.061	0.06531	0.06764
0.101	0.09480	0.09915
-0.003	-0.00314	?
0.023	0.02363	?
0.018	0.01907	?
0.005	0.00531	?
0.001	0.00147	?
0.002	0.00272	?
3	3	2
30	30	0
34	34	18
22	21	0
0	0	80
0	0	80
327	573	645
1.5621	1.5620	1.5620
2.0000	2.0000	2.0000
0.0000	0.0000	0.0000

TABLE 123

PLANFORM 5 MODE SET 2 M=1.5621 K=4.0

9	19	20	22
0.188	0.06501	0.05560	0.03498
1.555	1.46744	1.47642	1.46571
1.010	0.95867	0.99797	0.97356
0.108	0.06142	0.06320	0.05856
0.269	0.26973	?	?
0.074	0.02016	-0.00361	0.01024
0.590	0.53551	0.53926	0.52970
0.649	0.60590	0.62436	0.60838
0.077	0.03892	0.04752	0.04123
0.123	0.12576	?	?
0.103	0.05123	0.06295	0.05129
0.381	0.33295	0.34489	0.33437
0.413	0.37360	0.39414	0.37777
0.065	0.02835	0.04223	0.03538
0.059	0.06063	?	?
0.232	0.19111	0.18876	0.18543
0.342	0.30302	0.31325	0.30628
0.365	0.33093	0.34805	0.33590
0.089	0.05743	0.06607	0.06072
0.013	0.01373	?	?
-0.028	-0.02969	?	?
0.037	0.03496	?	?
0.032	0.03070	?	?
0	-0.00002	?	?
0.029	0.02924	?	?
1.177	1.16184	1.16750	1.18102
0.376	0.38490	0.40197	0.39766
0.211	0.22098	0.22935	0.22821
0.199	0.19561	0.19983	0.19936
0.010	0.01124	?	?
0.383	0.38080	0.37767	0.37995
0.238	0.24165	0.24758	0.24454
0.130	0.13597	0.14154	0.13780
0.120	0.11826	0.12053	0.11825
0.004	0.00514	?	?
0.239	0.23654	0.23846	0.23476
0.141	0.14366	0.14552	0.14331
0.092	0.09629	0.09944	0.09576
0.085	0.08245	0.08454	0.08171
0.002	0.00222	?	?
0.184	0.18192	0.18511	0.18376
0.110	0.11170	0.11494	0.11341
0.070	0.07386	0.07709	0.07413
0.084	0.08210	0.08447	0.08255
-0.001	-0.00097	?	?
0.034	0.03325	?	?
0.015	0.01530	?	?
0.007	0.00754	?	?
0.001	0.00151	?	?
0.004	0.00385	?	?
3	3	2	3
30	30	0	33
34	34	18	45
22	21	0	28
0	0	80	0
0	0	80	0
331	574	646	660
1.5621	1.5620	1.5620	1.5620
4.0000	4.0000	4.0000	4.0000
0.0000	0.0000	0.0000	0.0000

TABLE 124

PLANFORM 5 MODE SET 2 M=2.0000 K=0.0

9	19
0	0.00000
1.248	1.25553
0.774	0.78230
0	0.00000
0.217	0.21896
0	0.00000
0.471	0.46701
0.490	0.49426
0	0.00000
0.106	0.10589
0	0.00000
0.304	0.29943
0.303	0.29720
0	0.00000
0.053	0.05324
0	0.00000
0.283	0.28594
0.387	0.25021
0	0.00000
0.012	0.01207
0	-0.00000
0.019	0.01928
0.038	0.02873
0	0.00000
0.026	0.02601
?	1.20948
?	0.13246
?	0.20465
?	0.15158
?	0.01130
?	0.42197
?	0.09917
?	0.11409
?	0.07474
?	0.00547
?	0.25536
?	0.04359
?	0.07915
?	0.03795
?	0.00265
?	0.24439
?	0.01767
?	0.07123
?	0.04614
?	-0.00003
?	0.01928
?	0.01481
?	0.00354
?	0.00140
?	0.00296
3	3
30	30
34	40
15	17
0	0
0	0
316	575
2.0000	2.0000
0.0000	0.0001
0.0000	0.0000

TABLE 125

PLANFORM 5 MODE SET 2 M=2.0000 K=0.5

9	19
0.059	0.05554
1.222	1.22858
0.782	0.78952
0.005	0.00420
0.217	0.21862
0.031	0.02936
0.457	0.45254
0.494	0.49775
0.003	0.00253
0.105	0.10570
0.022	0.01941
0.295	0.28954
0.305	0.29953
0.003	0.00158
0.053	0.05312
0.022	0.02058
0.274	0.27658
0.248	0.25322
0.003	0.00211
0.012	0.01204
0	-0.00017
0.019	0.01938
0.028	0.02852
0	0.00004
0.026	0.02574
1.217	1.22435
0.153	0.17025
0.180	0.21100
0.194	0.19602
0.009	0.01135
0.452	0.44934
0.119	0.13009
0.109	0.12246
0.119	0.11876
0.005	0.00550
0.292	0.28778
0.064	0.07124
0.078	0.08824
0.083	0.08132
0.002	0.00266
0.272	0.27543
0.036	0.04331
0.068	0.07974
0.084	0.08697
0	-0.00002
0.019	0.01897
0.013	0.01494
0.004	0.00355
0.001	0.00138
0.002	0.00298
3	3
30	30
34	40
15	17
0	0
0	0
320	576
2.0000	2.0000
0.5000	0.5000
0.0000	0.0000

TABLE 126

PLANFORM 5 MODE SET 2 M=2.0000 K=1.0

9	19
0.198	0.18584
1.164	1.16498
0.797	0.80445
0.019	0.01530
0.216	0.21762
0.105	0.09608
0.426	0.41927
0.502	0.50427
0.013	0.00920
0.105	0.10511
0.072	0.06352
0.274	0.26663
0.311	0.30382
0.010	0.00560
0.053	0.05277
0.075	0.07064
0.253	0.25401
0.256	0.25994
0.010	0.00785
0.012	0.01192
0	-0.00136
0.020	0.01998
0.027	0.02780
0	0.00015
0.026	0.02562
1.136	1.14417
0.190	0.20810
0.178	0.19818
0.189	0.19156
0.010	0.01150
0.406	0.40445
0.140	0.15134
0.111	0.11543
0.115	0.11591
0.005	0.00559
0.261	0.25822
0.077	0.08541
0.075	0.08354
0.081	0.07941
0.002	0.00272
0.244	0.24803
0.048	0.05589
0.063	0.07497
0.082	0.08491
0	-0.00001
0.018	0.01839
0.014	0.01519
0.003	0.00361
0.001	0.00131
0.002	0.00390
3	3
30	30
34	40
15	17
0	0
0	0
324	577
2.0000	2.0000
1.0000	1.0000
0.0000	0.0000

TABLE 127

PLANFORM 5 MODE SET 2 M=2.0000 K=2.0

9	19
0.404	0.35775
1.085	1.07495
0.806	0.80433
0.058	0.04369
0.213	0.21385
0.192	0.16352
0.395	0.38023
0.501	0.49664
0.039	0.02515
0.103	0.10292
0.136	0.10901
0.253	0.23738
0.311	0.29855
0.029	0.01479
0.051	0.05146
0.170	0.15555
0.223	0.21744
0.263	0.26549
0.033	0.02364
0.012	0.01151
-0.009	-0.01023
0.023	0.02418
0.025	0.02487
0	0.00029
0.025	0.02522
0.956	0.96775
0.271	0.29032
0.156	0.17493
0.174	0.17847
0.010	0.01207
0.308	0.31137
0.182	0.19474
0.090	0.10415
0.105	0.10765
0.005	0.00593
0.194	0.19744
0.106	0.11433
0.067	0.07601
0.073	0.07392
0.002	0.00292
0.178	0.18392
0.075	0.08439
0.054	0.06520
0.074	0.07863
0	0.00006
0.019	0.01930
0.013	0.01470
0.005	0.00438
0.001	0.00116
0.002	0.00306
3	3
30	30
34	40
15	17
0	0
0	0
328	578
2.0000	2.0000
2.0000	2.0000
0.0000	0.0000

TABLE 128

PLANFORM 5 MODE SET 2 M=2.0000 K=4.0

9	19
0.252	0.11025
1.192	1.12370
0.767	0.73398
0.097	0.05283
0.204	0.20238
0.070	0.00196
0.465	0.40824
0.480	0.45071
0.063	0.02341
0.098	0.09620
0.077	0.01682
0.290	0.24086
0.302	0.26736
0.048	0.00747
0.048	0.04753
0.159	0.12112
0.252	0.22592
0.258	0.24373
0.063	0.03645
0.011	0.01023
-0.015	-0.01635
0.028	0.02648
0.024	0.02395
0	-0.00013
0.024	0.02404
0.925	0.93460
0.287	0.30772
0.167	0.18884
0.155	0.16206
0.012	0.01396
0.307	0.31156
0.182	0.19587
0.102	0.11629
0.092	0.09804
0.006	0.00704
0.189	0.19568
0.108	0.11696
0.070	0.08356
0.064	0.06801
0.003	0.00360
0.146	0.15310
0.084	0.09456
0.054	0.06592
0.062	0.06902
0	0.00026
0.027	0.02707
0.010	0.01137
0.006	0.00639
0.001	0.00119
0.003	0.00328
3	3
30	30
34	40
15	17
0	0
0	0
332	579
2.0000	2.0000
4.0000	4.0000
0.0000	0.0000

TABLE 129

PLANFORM 5 MODE SET 5 M=1.1000 K=0.0

9

0
0.304

0
0.192

?
?

?
?

3

30

34

56

0

0

359

1.1000

0.0000

0.0000

TABLE 130

PLANFORM 5 MODE SET 5 M=1.1000 K=0.5

9

0.006
0.312

0.004
0.198

0.301
0.208

0.189
0.144

3

30

34

56

0

0

363

1.1000

0.5000

0.0000

TABLE 131

PLANFORM 5 MODE SET 5 M=1.1000 K=1.0

9

0.020
0.330

0.015
0.210

0.293
0.196

0.184
0.134

3

30

34

56

0

0

367

1.1000

1.0000

0.0000

TABLE 132

PLANFORM 5 MODE SET 5 M=1.1000 K=2.0

9

0.040
0.360

0.034
0.232

0.277
0.179

0.173
0.123

3

30

34

56

0

0

371

1.1000

2.0000

0.0000

TABLE 133

PLANFORM 5 MODE SET 5 M=1.1000 K=4.0

9

0.040
0.387

0.052
0.249

0.264
0.161

0.160
0.110

3

30

34

56

0

0

375

1.1000

4.0000

0.0000

TABLE 134

TABLES 135, 136, 137, 138

PUANFORM 5 MODE SET 5 M=1,2500 K=0.0

9	19	20	22
0	0.00000	0.0	0.0
0.307	0.28756	0.29275	0.29513
0	0.00000	0.0	0.0
0.195	0.18370	0.18801	0.18501
?	0.28756	0.29275	0.29513
?	0.17460	0.21363	0.21264
?	0.18370	0.18801	0.18501
?	0.12158	0.15176	0.14821
3	3	2	3
30	30	0	33
34	26	18	35
35	26	9	35
0	0	80	0
0	0	80	0
360	580	647	661
1.2500	1.2500	1.2500	1.2500
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000

TABLE 135

PUANFORM 5 MODE SET 5 M=1,2500 K=0.5

9	19	20
0.009	0.00753	0.00714
0.312	0.29204	0.29736
0.007	0.00581	0.00576
0.199	0.18693	0.19142
0.302	0.28307	0.28845
0.180	0.17252	0.18031
0.191	0.18035	0.18471
0.124	0.11962	0.12506
3	3	2
30	30	0
34	26	18
35	26	9
0	0	80
0	0	80
364	581	648
1.2500	1.2500	1.2500
0.5000	0.5000	0.5000
0.0000	0.0000	0.0000

TABLE 136

PUANFORM 5 MODE SET 5 M=1,2500 K=1.0

9	19	20
0.030	0.02433	0.02302
0.325	0.30319	0.30878
0.023	0.01895	0.01888
0.209	0.19488	0.19977
0.290	0.27325	0.27903
0.173	0.16707	0.17460
0.183	0.17302	0.17748
0.119	0.11557	0.12075
3	3	2
30	30	0
34	26	18
35	26	9
0	0	80
0	0	80
368	582	649
1.2500	1.2500	1.2500
1.0000	1.0000	1.0000
0.0000	0.0000	0.0000

TABLE 137

PUANFORM 5 MODE SET 5 M=1,2500 K=2.0

9	19	20
0.070	0.05694	0.05384
0.352	0.32642	0.33223
0.056	0.04603	0.04663
0.228	0.21069	0.21631
0.267	0.25430	0.26053
0.159	0.15435	0.16125
0.165	0.15860	0.16285
0.109	0.10638	0.11091
3	3	2
30	30	0
34	26	18
35	26	9
0	0	80
0	0	80
372	583	650
1.2500	1.2500	1.2500
2.0000	2.0000	2.0000
0.0000	0.0000	0.0000

TABLE 138

PLANFORM 5 MODE SET 5 M=1.2500 K=4.0

9	19	20	22
0.097 0.375	0.06763 0.33849	0.05601 0.34036	0.05772 0.34634
0.084 0.243	0.06225 0.21661	0.06040 0.22057	0.05527 0.21780
0.245 0.145	0.23430 0.14162	0.23972 0.14759	0.24734 0.14934
0.147 0.099	0.14202 0.09774	0.14488 0.10141	0.14713 0.10174
3	3	2	3
30	30	0	33
34	26	18	35
35	26	9	35
0	0	80	0
0	0	80	0
376	584	651	662
1.2500	1.2500	1.2500	1.2500
4.0000	4.0000	4.0000	4.0000
0.0000	0.0000	0.0000	0.0000

TABLE 139

PLANFORM 5 MODE SET 5 M=1.5621 K=0.0

9	19	20	22
0 0.281	0.00000 0.26632	0.0 0.27410	0.0 0.26920
0 0.181	0.00000 0.16857	0.0 0.17602	0.0 0.16878
? ?	0.26632 0.12582	0.27410 0.17341	0.26920 0.16755
? ?	0.16857 0.08763	0.17602 0.12389	0.16378 0.11752
3	3	2	3
30	30	0	33
34	34	18	45
22	21	9	28
0	0	80	0
0	0	80	0
361	585	652	663
1.5621	1.5620	1.5620	1.5620
0.0000	0.0001	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000

TABLE 140

PLANFORM 5 MODE SET 5 M=1.5621 K=0.5

9	19	20
0.012 0.282	0.00942 0.26718	0.00989 0.27509
0.009 0.183	0.00685 0.16916	0.00759 0.17677
0.275 0.126	0.26188 0.12562	0.26939 0.13164
0.177 0.088	0.16530 0.08754	0.17240 0.09181
3	3	2
30	30	0
34	34	18
22	21	9
0	0	80
0	0	80
365	586	653
1.5621	1.5620	1.5620
0.5000	0.5000	0.5000
0.0000	0.0000	0.0000

TABLE 141

PLANFORM 5 MODE SET 5 M=1.5621 K=1.0

9	19	20
0.041 0.286	0.03285 0.26975	0.03442 0.27800
0.031 0.185	0.02379 0.17090	0.02639 0.17900
0.261 0.125	0.25042 0.12492	0.25722 0.13084
0.166 0.089	0.15690 0.08702	0.16308 0.09120
3	3	2
30	30	0
34	34	18
22	21	9
0	0	80
0	0	80
369	587	654
1.5621	1.5620	1.5620
1.0000	1.0000	1.0000
0.0000	0.0000	0.0000

TABLE 142

PUANFORM 5 MODE SET 5 M=1,5621 K=2.0

9	19	20
0.102 0.299	0.08166 0.27774	0.08502 0.28710
0.077 0.195	0.05861 0.17608	0.06518 0.18592
0.229 0.122	0.22290 0.12189	0.22814 0.12733
0.141 0.086	0.13697 0.08481	0.14097 0.08854
3	3	2
30	30	0
34	34	18
22	21	9
0	0	80
0	0	80
373	588	655
1.5621	1.5620	1.5620
2.0000	2.0000	2.0000
0.0000	0.0000	0.0000

TABLE 143

PUANFORM 5 MODE SET 5 M=1,5621 K=4.0

9	19	20	22
0.141 0.322	0.09716 0.28200	0.09657 0.29185	0.09277 0.28555
0.104 0.214	0.06822 0.17700	0.07644 0.19011	0.06963 0.18130
0.199 0.115	0.19686 0.11688	0.19998 0.12116	0.19088 0.11853
0.119 0.081	0.11878 0.08143	0.11973 0.08398	0.11790 0.08118
3	3	2	3
30	30	0	33
34	34	18	45
22	21	9	28
0	0	80	0
0	0	80	0
377	589	656	664
1.5621	1.5620	1.5620	1.5620
4.0000	4.0000	4.0000	4.0000
0.0000	0.0000	0.0000	0.0000

TABLE 144

PLANFORM 5 MODE SET 5 M=2,0000 K=0.0

9	19
0 0.212	0.00000 0.21324
0 0.133	0.00000 0.13177
? ?	0.16949 0.07316
? ?	0.08893 0.04522
3	3
30	30
34	40
15	17
0	0
0	0
362	590
2.0000	2.0000
0.0000	0.0001
0.0000	0.0000

TABLE 145

PLANFORM 5 MODE SET 5 M=2,0000 K=0.5

9	19
0.008 0.211	0.00657 0.21256
0.006 0.133	0.00436 0.13119
0.209 0.086	0.21055 0.09541
0.130 0.061	0.12990 0.06690
3	3
30	30
34	40
15	17
0	0
0	0
366	591
2.0000	2.0000
0.5000	0.5000
0.0000	0.0000

TABLE 146

PLANFORM 5 MODE SET 5 M=2.0000 K=1.0

9	19
0.029	0.02378
0.211	0.21096
0.020	0.01564
0.133	0.12976
0.200	0.20322
0.088	0.09639
0.125	0.12483
0.062	0.06762
3	3
30	30
34	40
15	17
0	0
0	0
370	592
2.0000	2.0000
1.0000	1.0000
0.0000	0.0000

TABLE 147

PLANFORM 5 MODE SET 5 M=2.0000 K=2.0

9	19
0.080	0.06452
0.215	0.20897
0.056	0.04103
0.135	0.12728
0.177	0.18271
0.090	0.09845
0.107	0.11086
0.063	0.06919
3	3
30	30
34	40
15	17
0	0
0	0
374	593
2.0000	2.0000
2.0000	2.0000
0.0000	0.0000

TABLE 148

PLANFORM 5 MODE SET 5 M=2.0000 K=4.0

9	19
0.115	0.07381
0.239	0.21095
0.077	0.03894
0.154	0.12452
0.154	0.16075
0.087	0.09774
0.091	0.09712
0.060	0.06892
3	3
30	30
34	40
15	17
0	0
0	0
378	594
2.0000	2.0000
4.0000	4.0000
0.0000	0.0000

TABLE 149

PLANFORM 6 MODE SET 2 M=1.0000 K=0.0

NO CALCULATIONS MADE FOR THIS CASE

TABLES 151, 152, 153

PLANFORM 6 MODE SET 2

11 M=1.0000 K=0.5

-0.3457
3.9939
4.5346
-0.0571
,

-0.4612
-0.1043
3.0788
-0.1188
,

-0.1975
0.4360
1.3353
-0.0569
,

-0.0922
0.9562
1.2514
-0.0365
,

-0.0085
-0.0013
0.0513
-0.0028
,

3.6343
3.5170
-1.2735
0.8891
,

-0.1136
3.4033
1.0191
0.0827
,

0.4779
1.4470
1.1462
0.0906
,

0.8921
0.9658
-0.0206
0.2859
,

0.0031
0.0600
0.0691
0.0012
,

2

99

15

3

13

24

749

1.0000

0.5000

0.0000

TABLE 151

PLANFORM 6 MODE SET 2

11 M=1.0000 K=1.0

-0.7334
4.6653
3.3514
-0.1193
,

-0.9805
0.7599
2.8635
-0.2172
,

-0.5109
0.7390
1.2927
-0.1381
,

-0.2205
1.0799
0.9964
-0.1211
,

-0.0237
0.0088
0.0544
-0.0077
,

3.8799
2.2297
-0.3809
0.8639
,

0.5213
2.2643
0.3455
0.2035
,

0.7447
1.1258
0.7067
0.1486
,

0.9575
0.6819
0.1544
0.2860
,

0.0151
0.0514
0.0439
0.0038
,

2

99

15

3

13

24

750

1.0000

1.0000

0.0000

TABLE 152

PLANFORM 6 MODE SET 2

11 M=1.0000 K=4.0

-5.6583
3.8626
0.8385
-2.5085
,

-2.9121
0.5490
2.3281
-1.5779
,

-2.1721
-0.1733
0.3786
-1.3305
,

-1.6372
0.5916
0.7622
-1.6822
,

-0.1091
-0.0420
0.0227
-0.0962
,

4.9857
1.1579
1.1532
1.2297
,

1.5143
1.3312
0.9151
0.5078
,

1.2982
0.7005
0.7813
0.3748
,

1.2928
0.5188
0.4209
0.3811
,

0.0444
0.0417
0.0438
0.0182
,

2

99

15

3

13

24

751

1.0000

4.0000

0.0000

TABLE 153

PLANFORM 6 MODE SET 2 M=1.0400 K=0.0

9	19
0	-0.00000
3.612	3.14105
6.491	5.93445
0	-0.00000
0.827	?
0	-0.00000
-0.927	-0.97911
4.074	3.68875
0	-0.00000
0.713	?
0	-0.00000
0.114	0.08345
2.055	1.83860
0	-0.00000
0.618	?
0	-0.00000
0.980	0.76804
1.938	1.56277
0	-0.00000
0.431	?
0	-0.00000
-0.007	-0.00688
0.082	0.08693
0	-0.00000
0.043	?
?	3.14104
?	6.66155
?	-7.69069
?	0.76844
?	?
?	-0.97910
?	8.46362
?	-2.74152
?	-0.13226
?	?
?	0.08342
?	4.78018
?	-0.30038
?	-0.04142
?	?
?	0.76803
?	1.73162
?	-1.58234
?	0.25088
?	?
?	-0.00688
?	0.19198
?	0.11424
?	-0.00285
?	?
3	3
30	30
18	10
62	35
0	0
0	0
333	595
1.0400	1.0400
0.0000	0.0001
0.0000	0.0000

TABLE 154

PLANFORM 6 MODE SET 2 M=1.0400 K=0.5

9	19
-0.172	-0.22386
4.444	4.16842
4.438	4.28592
-0.011	-0.02281
0.692	?
-0.436	-0.43274
0.434	0.35294
3.255	3.11388
-0.096	-0.08604
0.597	?
-0.210	-0.21106
0.832	0.76453
1.790	1.72987
-0.064	-0.05377
0.518	?
-0.058	-0.06025
1.205	1.00812
1.425	1.18694
-0.032	-0.02663
0.376	?
-0.013	-0.01250
0.014	0.01696
0.095	0.09832
-0.004	-0.00374
0.036	?
3.988	3.73991
2.768	2.89913
-1.976	-1.84628
1.030	0.85868
-0.240	?
0.233	0.16255
3.269	3.20072
-0.558	-0.52943
0.188	0.13723
-0.176	?
0.746	0.67709
1.665	1.63196
0.235	0.16314
0.176	0.13718
-0.119	?
1.100	0.91672
0.905	0.79803
-0.252	-0.25940
0.382	0.27914
-0.070	?
0.014	0.01496
0.096	0.09527
0.062	0.03798
0.005	0.00382
0.016	?
3	3
30	30
18	10
62	35
0	0
0	0
336	596
1.0400	1.0400
0.5000	0.5000
0.0000	0.0000

TABLE 155

PLANFORM 6 MODE SET 2 M=1.0400 K=1.0

9	19
-0.503	-0.61001
4.935	4.68146
3.502	3.34573
-0.057	-0.09726
0.600	?
-0.833	-0.86042
1.036	0.96454
2.831	2.69740
-0.173	-0.17291
0.529	?
-0.403	-0.41718
1.111	1.05375
1.612	1.51916
-0.110	-0.10762
0.471	?
-0.135	-0.15583
1.311	1.10647
1.188	0.97615
-0.109	-0.09855
0.350	?
-0.026	-0.02544
0.035	0.03497
0.093	0.08947
-0.009	-0.00889
0.042	?
4.130	3.91237
2.051	2.08728
-0.218	-0.23849
0.982	0.84200
-0.078	?
0.674	0.61805
2.102	2.06287
0.129	0.09323
0.247	0.20404
-0.043	?
0.954	0.90056
1.095	1.06347
0.456	0.39519
0.213	0.18026
-0.014	?
1.141	0.96407
0.667	0.59287
0.164	0.11463
0.372	0.28623
-0.016	?
0.033	0.03184
0.068	0.06503
0.048	0.03925
0.010	0.00825
0.018	?
3	3
30	30
18	10
62	35
0	0
0	0
339	597
1.0400	1.0400
1.0000	1.0000
0.0000	0.0000

TABLE 156

PLANFORM 6 MODE SET 2 M=1.0400 K=4.0

19
-2.82685
4.85011
2.35126
-1.70560
?
-1.82929
0.91603
2.32687
-1.18907
?
-0.91485
0.73066
1.37681
6.89579
?
-0.97934
0.72026
0.92836
-1.23259
?
-0.08038
-0.00696
0.07927
-0.08833
?
5.00216
1.19390
1.19326
1.17039
?
1.52989
1.16624
0.75563
0.48095
?
1.36718
0.68982
0.69032
0.36702
?
1.19651
0.48814
0.40513
0.33219
?
0.05872
0.05281
0.05265
0.02749
?
3
30
10
35
0
0
598
1.0400
4.0000
0.0000

TABLE 157

PLANFORM 6 MODE SET 2 M=1.2000 K=0.0

9	19
0	0.00000
4.139	3.92623
4.273	4.09113
0	0.00000
0.603	0.58358
0	-0.00000
0.059	-0.01167
3.554	3.42041
0	0.00000
0.543	0.52077
0	-0.00000
0.575	0.52395
1.935	1.82804
0	0.00000
0.494	0.46833
0	0.00000
1.078	0.96796
1.330	1.19051
0	0.00000
0.343	0.31212
0	-0.00000
0.011	0.01095
0.109	0.10339
0	0.00000
0.054	0.05300
?	3.92621
?	0.31852
?	-1.62815
?	0.96367
?	-0.03474
?	-0.01167
?	2.10214
?	-1.79300
?	0.17768
?	-0.02679
?	0.52394
?	1.09300
?	-0.83335
?	0.15166
?	-0.01956
?	0.96795
?	0.22436
?	-0.26217
?	0.30410
?	-0.01469
?	0.01095
?	0.06625
?	-0.01976
?	0.00699
?	0.00236

3	3
30	30
34	20
51	30
0	0
0	0
334	599
1.2000	1.2000
0.0000	0.0001
0.0000	0.0000

TABLE 158

PLANFORM 6 MODE SET 2 M=1.2000 K=0.5

9	19
0.011	-0.02277
3.811	3.67138
3.522	3.35324
0.040	0.03188
0.590	0.57226
-0.278	-0.28318
0.287	0.24423
2.813	2.70261
-0.022	-0.02157
0.532	0.51013
-0.162	-0.16427
0.716	0.68241
1.444	1.35680
-0.018	-0.01810
0.483	0.45820
-0.018	-0.02220
1.000	0.90658
1.111	0.99248
-0.021	-0.01800
0.336	0.30601
-0.010	-0.00896
0.020	0.01856
0.085	0.08030
-0.002	-0.00120
0.053	0.05136
3.479	3.35062
1.677	1.73246
-1.209	-1.19538
0.827	0.74786
-0.041	-0.02984
0.041	0.00838
2.491	2.45892
-1.074	-1.05066
0.092	0.07645
-0.032	-0.02197
0.561	0.55324
1.335	1.30545
-0.256	-0.24891
0.095	0.08270
-0.026	-0.01486
0.924	0.83801
0.615	0.57376
-0.108	-0.10591
0.297	0.25288
-0.020	-0.01185
0.016	0.01450
0.078	0.07378
0.022	0.01978
0.002	0.00211
0.002	0.00318

3	3
30	30
34	20
51	30
0	0
0	0
337	600
1.2000	1.2000
0.5000	0.5000
0.0000	0.0000

TABLE 159

PLANFORM 6 MODE SET 2 M=1.2000 K=1.0

9	19
-0.369	-0.40418
4.191	4.07341
2.714	2.56717
-0.137	-0.13087
0.560	0.54368
-0.722	-0.70852
0.858	0.80165
2.298	2.21076
-0.195	-0.17584
0.502	0.48342
-0.350	-0.33974
0.952	0.91061
1.266	1.19235
-0.137	-0.12188
0.455	0.43325
-0.147	-0.14510
1.074	0.97682
0.929	0.82489
-0.155	-0.13382
0.318	0.29080
-0.023	-0.02223
0.026	0.02355
0.083	0.07842
-0.010	-0.00934
0.049	0.04781
3.646	3.54738
1.610	1.58320
0.175	0.15633
0.801	0.72916
-0.027	-0.01677
0.544	0.50164
1.788	1.73847
0.118	0.09960
0.156	0.13608
-0.018	-0.00927
0.842	0.80848
0.904	0.86320
0.457	0.43602
0.146	0.12950
-0.012	-0.00238
0.964	0.89538
0.578	0.52965
0.263	0.23027
0.317	0.26630
-0.012	-0.00438
0.025	0.02267
0.061	0.05896
0.044	0.04117
0.004	0.00311
-0.004	0.00523
3	3
30	30
34	20
51	30
0	0
0	0
340	601
1.2000	1.2000
1.0000	1.0000
0.0000	0.0000

TABLE 160

PLANFORM 6 MODE SET 2 M=1.2000 K=4.0

9	19
-1.928	-1.98103
4.256	4.06582
2.313	2.16186
-1.564	-1.53422
0.466	0.45926
-1.439	-1.44726
0.803	0.72497
2.235	2.11743
-1.167	-1.10456
0.429	0.41806
-0.713	-0.70605
0.648	0.58758
1.344	1.25283
-0.858	-0.80230
0.460	0.38496
-0.947	-0.89902
0.720	0.62294
1.050	0.93245
-1.322	-1.20477
0.276	0.25710
-0.071	-0.06976
0.001	-0.00246
0.087	0.08106
-0.084	-0.07934
0.051	0.05019
4.590	4.48071
1.136	1.06843
1.144	1.11350
1.294	1.18422
0.041	0.04473
1.391	1.32840
1.135	1.08830
0.720	0.68156
0.567	0.50616
0.043	0.04634
1.276	1.22676
0.069	0.64390
0.676	0.64537
0.441	0.39429
0.046	0.04782
1.233	1.13969
0.575	0.51087
0.435	0.39720
0.682	0.58777
0.024	0.02554
0.058	0.05604
0.056	0.05378
0.053	0.05132
0.034	0.03096
0.011	0.01124
3	3
30	30
34	20
51	30
0	0
0	0
342	602
1.2000	1.2000
4.0000	4.0000
0.0000	0.0000

TABLE 161

PLANFORM 6 MODE SET 2 M=2.0000 K=0.0

9	19
0	0.00000
2.716	2.62424
1.541	1.48011
0	-0.00000
0.285	0.28176
0	0.00000
0.533	0.48959
1.530	1.48050
0	-0.00000
0.267	0.26050
0	0.00000
0.567	0.53462
0.885	0.84671
0	-0.00000
0.252	0.24313
0	0.00000
0.778	0.70633
0.566	0.51220
0	-0.00000
0.168	0.15725
0	-0.00000
0.017	0.01482
0.062	0.05943
0	-0.00000
0.036	0.03543
?	2.62424
?	0.41614
?	0.71049
?	0.57882
?	0.02416
?	0.48959
?	0.70223
?	0.29872
?	0.14188
?	0.02373
?	0.53461
?	0.41428
?	0.31696
?	0.09905
?	0.02344
?	0.70633
?	0.15992
?	0.34424
?	0.23483
?	0.01325
?	0.01482
?	0.03831
?	0.02432
?	0.00179
?	0.00508
3	3
30	30
34	30
20	17
0	0
0	0
335	603
2.0000	2.0000
0.0000	0.0001
0.0000	0.0000

TABLE 162

PLANFORM 6 MODE SET 2 M=2.0000 K=0.5

9	19
0.072	0.05990
2.617	2.53299
1.588	1.51857
-0.013	-0.01374
0.285	0.28147
0.003	-0.00307
0.499	0.46181
1.537	1.48154
-0.020	-0.01853
0.267	0.26023
-0.003	-0.00676
0.545	0.51692
0.887	0.84474
-0.018	-0.01730
0.251	0.24286
0.023	0.01719
0.730	0.66558
0.598	0.53698
-0.021	-0.01956
0.168	0.15709
-0.002	-0.00259
0.017	0.01508
0.061	0.05823
-0.003	-0.00259
0.036	0.03509
2.610	2.52563
0.498	0.51324
0.684	0.65485
0.629	0.57410
0.020	0.02422
0.482	0.44491
0.756	0.75181
0.297	0.27395
0.165	0.14258
0.020	0.02378
0.535	0.50594
0.449	0.44825
0.326	0.30134
0.116	0.10143
0.020	0.02347
0.740	0.67412
0.201	0.19623
0.357	0.32057
0.280	0.23862
0.011	0.01327
0.016	-0.01450
0.040	0.06293
0.024	0.00528
0.003	0.00274
0.004	0.00508
3	3
30	30
34	30
20	17
0	0
0	0
338	604
2.0000	2.0000
0.5000	0.5000
0.0000	0.0000

TABLE 163

PLANFORM 6 MODE SET 2 M=2.0000 K=1.0

0	19
0.092	0.05753
2.498	2.42334
1.615	1.53169
-0.067	-0.07017
0.284	0.28064
-0.100	-0.11323
0.505	0.47387
1.494	1.42893
-0.085	-0.08105
0.266	0.25941
-0.087	-0.09637
0.554	0.53147
0.852	0.80105
-0.078	-0.07266
0.251	0.24205
0.024	0.00934
0.656	0.60126
0.644	0.57210
-0.084	-0.07840
0.167	0.15660
-0.012	-0.01286
0.021	0.01900
0.056	0.05343
-0.010	-0.00972
0.036	0.03495
2.426	2.35076
0.698	0.69640
0.578	0.56087
0.626	0.57108
0.020	0.02434
0.422	0.39447
0.845	0.82809
0.260	0.24737
0.175	0.15194
0.021	0.02391
0.502	0.48224
0.508	0.49556
0.308	0.28980
0.129	0.11363
0.019	0.02362
0.674	0.61908
0.287	0.26820
0.302	0.27538
0.295	0.25233
0.011	0.01336
0.018	0.01700
0.040	0.03991
0.026	0.02568
0.007	0.00566
0.004	0.00512
3	3
30	30
34	30
20	17
0	0
0	0
341	605
2.0000	2.0000
1.0000	1.0000
0.0000	0.0000

TABLE 164

PLANFORM 6 MODE SET 2 M=2.0000 K=4.0

0	19
-0.377	-0.70608
2.785	2.57200
1.474	1.31184
-0.479	-0.56294
0.275	0.26846
-0.475	-0.57127
0.737	0.59835
1.409	1.28312
-0.396	-0.42072
0.257	0.24753
-0.210	-0.29537
0.619	0.52189
0.861	0.75843
-0.286	-0.30311
0.242	0.23041
-0.431	-0.51404
0.716	0.60140
0.641	0.53429
-0.485	-0.50061
0.161	0.14941
-0.024	-0.02917
0.031	0.02406
0.057	0.04983
-0.017	-0.01998
0.035	0.03322
2.842	2.73790
0.692	0.67852
0.698	0.68285
0.863	0.78683
0.022	0.02653
0.858	0.80641
0.711	0.68377
0.424	0.41306
0.394	0.34837
0.022	0.02608
0.796	0.75563
0.433	0.41306
0.408	0.39237
0.307	0.27310
0.022	0.02579
0.833	0.75893
0.362	0.33090
0.267	0.24616
0.489	0.42069
0.013	0.01468
0.040	0.03827
0.034	0.03344
0.033	0.03184
0.024	0.02215
0.005	0.00549
3	3
30	30
34	30
20	17
0	0
0	0
343	606
2.0000	2.0000
4.0000	4.0000
0.0000	0.0000

TABLE 165

PLANFORM 6 MODE SET 5 M=1.0000 K=0.0

NO CALCULATIONS MADE FOR THIS CASE

PLANFORM 6 MODE SET 5 M=1.0000 K=0.5

11
-0.11256
0.37120
-0.05675
-0.10151
0.40531
0.84783
-0.06432
0.43070
2
99
15
3
15
24
752
1.0000
0.5000
0.0000

TABLE 167

PLANFORM 6 MODE SET 5 M=1.0000 K=1.0

11
-0.47956
0.39540
-0.27989
-0.17997
0.49707
0.94013
-0.04646
0.54093
2
99
15
3
15
24
753
1.0000
1.0000
0.0000

TABLE 168

PLANFORM 6 MODE SET 5 M=1.0000 K=4.0

11
-2.75409
0.60106
-1.77129
-0.12191
1.25308
0.56105
0.52822
0.46342
2
99
15
3
15
24
754
1.0000
4.0000
0.0000

TABLE 169

PLANFORM 6 MODE SET 5 M=1.0400 K=0.0

9	19
0	-0.00000
0.487	0.39064
0	-0.00000
-0.066	-0.06899
?	0.39064
?	0.88687
?	-0.06899
?	0.51299
3	3
30	30
18	10
62	35
0	0
0	0
379	607
1.0400	1.0400
0.0000	0.0001
0.0000	0.0000

TABLE 170

PLANFORM 6 MODE SET 5 M=1.0400 K=0.5

9	19
-0.138	-0.11421
0.503	0.40259
-0.094	-0.06970
-0.069	-0.09739
0.524	0.42205
1.083	0.88142
-0.067	-0.06790
0.559	0.52368
3	3
30	30
18	10
62	35
0	0
0	0
382	608
1.0400	1.0400
0.5000	0.5000
0.0000	0.0000

TABLE 171

PLANFORM 6 MODE SET 5 M=1.0400 K=1.0

9	19
-0.552	-0.43665
0.626	0.51518
-0.395	-0.29979
0.083	-0.06106
0.678	0.54916
1.114	0.88786
0.046	0.01031
0.595	0.58684
3	3
30	30
18	10
62	35
0	0
0	0
385	609
1.0400	1.0400
1.0000	1.0000
0.0000	0.0000

TABLE 172

PLANFORM 6 MODE SET 5 M=1.0400 K=4.0

19
-1.95841
0.92880
-1.28284
0.15231
1.25388
0.54213
0.52250
0.40076
3
30
10
35
0
0
610
1.0400
4.0000
0.0000

TABLE 173

PLANFORM 6 MODE SET 5 M=1.2000 K=0.0

9	19
0	-0.00000
0.410	0.35786
0	-0.00000
-0.139	-0.13578
?	0.35786
?	1.12332
?	-0.13577
?	0.82126
3	3
30	30
34	20
51	30
0	0
0	0
380	611
1.2000	1.2000
0.0000	0.0001
0.0000	0.0000

TABLE 174

PLANFORM 6 MODE SET 5 M=1.2000 K=0.5

9	19
-0.152	-0.14194
0.549	0.48271
-0.121	-0.10947
0.006	-0.04327
0.546	0.48224
1.079	0.98780
-0.020	-0.03095
0.655	0.70876
3	3
30	30
34	20
51	30
0	0
0	0
383	612
1.2000	1.2000
0.5000	0.5000
0.0000	0.0000

TABLE 175

PLANFORM 6 MODE SET 5 M=1.2000 K=1.0

9	19
-0.410	-0.39068
0.726	0.64582
-0.317	-0.29050
0.186	0.05896
0.724	0.64645
0.877	0.80901
0.120	0.09354
0.459	0.57860
3	3
30	30
34	20
51	30
0	0
0	0
387	613
1.2000	1.2000
1.0000	1.0000
0.0000	0.0000

TABLE 176

PLANFORM 6 MODE SET 5 M=1.2000 K=4.0

9	19
-1.632	-1.59275
0.902	0.82711
-1.161	-1.09903
0.557	0.12830
1.343	1.23831
0.577	0.51765
0.594	0.53237
0.110	0.39676
3	3
30	30
34	20
51	30
0	0
0	0
388	614
1.2000	1.2000
4.0000	4.0000
0.0000	0.0000

TABLE 177

PLANFORM 6 MODE SET 5 M=2.0000 K=0.0

9	19
0	-0.00000
0.563	0.50667
0	-0.00000
0.117	0.09445
?	0.50667
?	0.41527
?	0.09445
?	0.34472
3	3
30	30
34	30
20	17
0	0
0	0
381	615
2.0000	2.0000
0.0000	0.0001
0.0000	0.0000

TABLE 178

PLANFORM 6 MODE SET 5 M=2.0000 K=0.5

9	19
-0.030	-0.03117
0.574	0.51760
-0.032	-0.03117
0.137	0.10738
0.569	0.51393
0.438	0.41205
0.127	0.10448
0.225	0.33953
3	3
30	30
34	30
20	17
0	0
0	0
384	616
2.0000	2.0000
0.5000	0.5000
0.0000	0.0000

TABLE 179

PLANFORM 6 MODE SET 5 M=2.0000 K=1.0

9	19
-0.120	-0.12382
0.606	0.54946
-0.122	-0.11872
0.197	0.14218
0.595	0.54019
0.428	0.40040
0.159	0.13626
0.203	0.32352
3	3
30	30
34	30
20	17
0	0
0	0
386	617
2.0000	2.0000
1.0000	1.0000
0.0000	0.0000

TABLE 180

PLANFORM 6 MODE SET 5 M=2.0000 K=4.0

9	19
-0.510	-0.59136
0.706	0.59307
-0.409	-0.43134
0.358	0.16306
0.865	0.79036
0.361	0.33009
0.393	0.34871
0.070	0.25611
3	3
30	30
34	30
20	17
0	0
0	0
389	618
2.0000	2.0000
4.0000	4.0000
0.0000	0.0000

TABLE 181

TABLE 182

PLANFORM 2 MODE SET 1 M=0.7806 K=0.5

1	11	18	18	18	18
-0.1410	-0.15860	-0.1622	-0.1704	-0.1622	-0.1622
2.599	2.55324	2.5531	2.5529	2.5531	2.5531
1.130	?	1.1392	1.1124	1.1402	1.1292
-0.1034	-0.11778	-0.1179	-0.1177	-0.1179	-0.1179
0.6869	0.62597	0.6304	0.5846	0.6304	0.6304
0.8487	?	0.8455	0.8216	0.8467	0.8332
-.004453	-0.00606	-.004818	?	-0.00482	-0.00482
0.007056	0.00674	0.005688	?	0.005688	0.005688
0.02947	?	0.03376	?	0.03389	0.03460
2.558	2.51834	2.5204	2.5198	2.5204	2.5204
2.671	2.68434	2.7110	2.7302	2.7110	2.7110
-0.1073	?	-0.1040	-0.09240	-0.1040	-0.0890
0.7348	0.68290	0.6869	0.6428	0.6869	0.6869
1.578	1.59252	1.5963	1.5821	1.5963	1.5963
0.09728	?	0.1264	0.1207	0.1288	0.1331
0.01060	0.01155	0.009240	?	0.009240	0.009240
0.04197	0.05379	0.04274	?	0.04274	0.04274
0.01785	?	0.01052	?	0.01143	0.01079
5	2	2	2	2	2
0	0	78	38	68	88
16	15	15	15	15	15
11	3	3	3	3	3
0	15	15	15	15	15
0	24	0	0	0	0
209	499	76	83	670	671
0.7806	0.7806	0.7806	0.7806	0.7806	0.7806
0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 182

PLANFORM 2 MODE SET 3 M=0.7806 K=0.5

1	11	18	18	18	18
-0.1410	-0.15860	-0.1622	-0.1704	-0.1622	-0.1622
2.599	2.55324	2.5531	2.5529	2.5531	2.5531
0.2134	?	0.1922	0.1864	0.1922	0.1918
-0.1034	-0.11778	-0.1179	-0.1177	-0.1179	-0.1179
0.6869	0.62597	0.6304	0.5846	0.6304	0.6304
0.2072	?	0.1877	0.1816	0.1879	0.1844
-.000419	-0.00059	-.000402	?	-0.00040	-0.00040
.0005347	0.00007	-.000038	?	-0.00004	-0.00004
0.003363	?	0.003722	?	0.00373	0.003778
2.558	2.51834	2.5204	2.5198	2.5204	2.5204
2.671	2.68434	2.7110	2.7302	2.7110	2.7110
-0.02728	?	-0.0286	-0.02540	-0.0288	-0.0262
0.7348	0.68290	0.6869	0.6428	0.6869	0.6869
1.578	1.59252	1.5963	1.5821	1.5963	1.5963
0.009872	?	0.0107	0.009923	0.0107	0.0128
.0009719	0.00070	0.000399	?	0.000399	0.000399
0.004004	0.00490	0.003234	?	0.003234	0.003234
0.001764	?	0.001075	?	0.001205	0.001149
5	2	2	2	2	2
0	0	78	38	68	88
16	15	15	15	15	15
11	3	3	3	3	3
0	15	15	15	15	15
0	24	0	0	0	0
211	500	77	84	674	675
0.7806	0.7806	0.7806	0.7806	0.7806	0.7806
0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 183

PLANFORM 2 MODE SET 4 M=0.7806 K=0.5

1	11	18	18	18	18
-0.1410	-0.15860	-0.1622	-0.1704	-0.1622	-0.1622
2.599	2.55324	2.5531	2.5529	2.5531	2.5531
1.812	?	1.8368	1.8044	1.8396	1.8258
-0.1034	-0.11778	-0.1179	-0.1177	-0.1179	-0.1179
0.6869	0.62597	0.6304	0.5846	0.6304	0.6304
1.193	?	1.1843	1.1584	1.1878	1.1756
-.009572	-0.01268	0.01042	?	0.01042	0.01042
0.01559	0.01814	0.01587	?	0.01587	0.01587
0.06655	?	0.07758	?	0.07799	0.07995
2.558	2.51834	2.5204	2.5198	2.5204	2.5204
2.671	2.68434	2.7110	2.7302	2.7110	2.7110
-0.07377	?	-0.0546	-0.04220	-0.0548	-0.0286
0.7348	0.68290	0.6869	0.6428	0.6869	0.6869
1.578	1.59252	1.5963	1.5821	1.5963	1.5963
0.2047	?	0.2433	0.2397	0.2493	0.2525
0.02204	0.02603	0.02164	?	0.02164	0.02164
0.08888	0.11402	0.09362	?	0.09362	0.09362
0.04567	?	0.02593	?	0.02796	0.02685
5	2	2	2	2	2
0	0	78	38	68	88
16	15	15	15	15	15
11	3	3	3	3	3
0	15	15	15	15	15
0	24	0	0	0	0
212	501	75	82	668	669
0.7806	0.7806	0.7806	0.7806	0.7806	0.7806
0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 184

TABLE 185

Pressure Distribution on Elliptic Wing

Load distribution = $\rho V^2 (l' + ikl'') e^{i\omega t}$.

Values for M = 0.8 , k = 1.0 .

η \ ξ	−0.98	−0.90	−0.8	−0.6	−0.4	−0.2	0	0.2	0.4	0.6	0.8	0.9	
0	13.64	8.51	7.76	7.12	6.31	5.27	4.08	2.82	1.59	0.50	−0.28	−0.43	$2l'$
0.195	13.91	8.53	7.70	7.01	6.20	5.17	4.01	2.78	1.59	0.53	−0.23	−0.39	
0.383	14.68	8.59	7.54	6.69	5.86	4.88	3.80	2.67	1.58	0.60	−0.11	−0.28	
0.556	15.85	8.68	7.29	6.20	5.34	4.44	3.48	2.50	1.55	0.71	0.06	−0.12	
0.707	17.24	8.80	6.99	5.62	4.72	3.89	3.07	2.26	1.49	0.79	0.23	0.04	
0.831	18.69	8.92	6.69	5.01	4.07	3.31	2.62	1.97	1.37	0.82	0,36	0.17	
0.924	21.06	9.33	6.49	4.37	3.31	2.59	2.03	1.55	1.14	0.78	0.44	0.27	
0.981	31.06	11.95	6.93	3.18	1.63	0.90	0.59	0.52	0.58	0.66	0.65	0.54	
0	−22.74	−7.59	−3.12	0.84	3.01	4.42	5.33	5.82	5.91	5.50	4.35	3.24	$2l''$
0.195	−22.42	−7.49	−3.09	0.81	2.94	4.32	5.21	5.69	5.77	5.37	4.25	3.16	
0.383	−21.51	−7.21	−3.01	0.71	2.72	4.02	4.85	5.30	5.37	4.99	3.95	2.94	
0.556	−20.07	−6.77	−2.88	0.53	2.37	3.54	4.28	4.68	4.74	4.40	3.47	2.58	
0.707	−18.21	−6.22	−2.75	0.28	1.88	2.90	3.54	3.88	3.93	3.65	2.88	2.14	
0.831	−16.07	−5.62	−2.63	−0.06	1.29	2.13	2.66	2.95	3.00	2.80	2.21	1.64	
0.924	−14.34	−5.16	−2.58	−0.41	0.69	1.36	1.77	2.00	2.04	1.90	1.49	1.10	
0.981	−16.09	−5.71	−2.83	−0.53	0.50	1.03	1.28	1.33	1.25	1.05	0.74	0.52	

TABLE 186

Cross References of File Numbers and Source References

File Number	*Source Reference*
1	12
2 – 3	11
4 – 23	13
24 – 29	15
30 – 49	13
50 – 55	15
56	12
57	1
58 – 64	3
65 – 67	8
68 – 69	9
70 – 84	16
85 – 117	13
118	20
119	22
120	20
121	22
122	20
123	22
124 – 125	20
126 – 191	2
192 – 216	4
217 – 297	5
298 – 389	6
390 – 465	7
466 – 618	10
619 – 636	14(24)
637 – 664	17
665 – 675	16
676 – 691	21
692 – 698	19
699 – 709	23
710 – 719	18
720	3
721 – 728	Unpublished additions to 10
729 – 732	Not used
733 – 754	10
755 – 994	Not used
995 – 998	Unpublished additions to 23

Source Reference	*File Number*
1	57
2	126 – 191
3	58 – 64
	720
4	192 – 216
5	217 – 297
6	298 – 389
7	390 – 465
8	65, 67
9	68 – 69
10	466 – 618
	733 – 754
11	2 – 3
12	1, 56
13	4 – 23
	30 – 49
	85 – 117
14(24)	619 – 636
15	24 – 29
	50 – 55
16	70 – 84
	665 – 675
17	637 – 664
18	710 – 719
19	692 – 698
20	118, 120, 122
	124 – 125
21	676 – 691
22	119, 121, 123
23	699 – 709
24	see 14

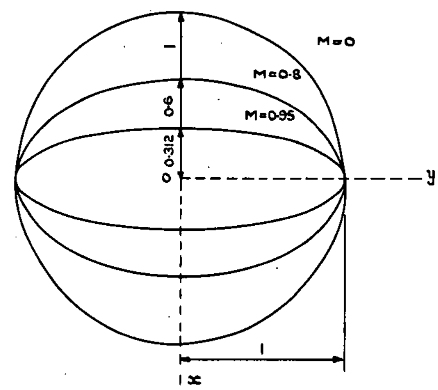

Fig.1 Circular and elliptic planform (Planform No.1)

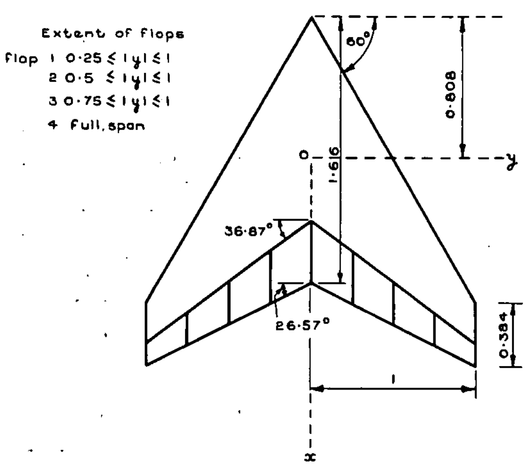

Fig.2 A = 2 tapered swept-back wing
(Planform No.2)

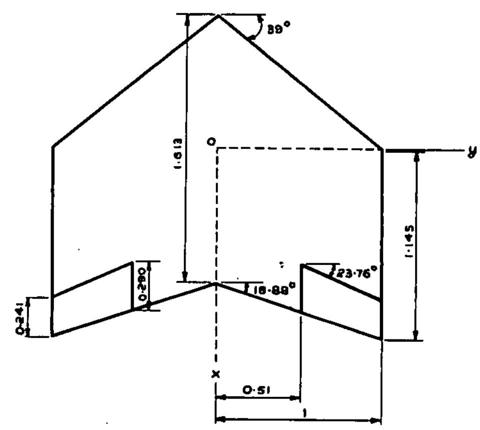

Fig.3 A = 1.45 tapered swept-back wing
(Planform Nos.3 & 6)

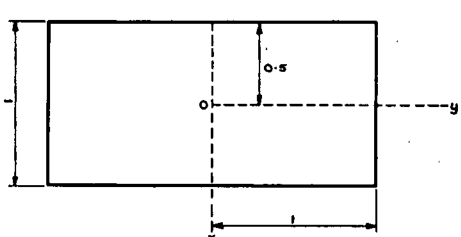

Fig.4 A = 2 rectangular wing (Planform No.4)

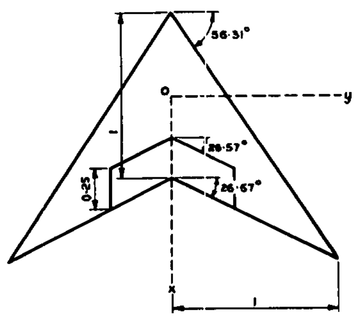

Fig.5 A = 4 arrowhead wing (Planform No.5)

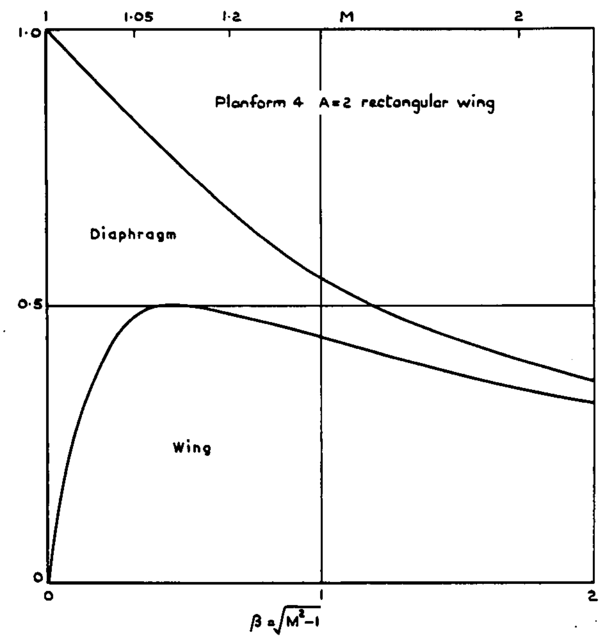

Fig.6 Areas relative to area of Mach line rhombus which just encloses planform for Planform 4

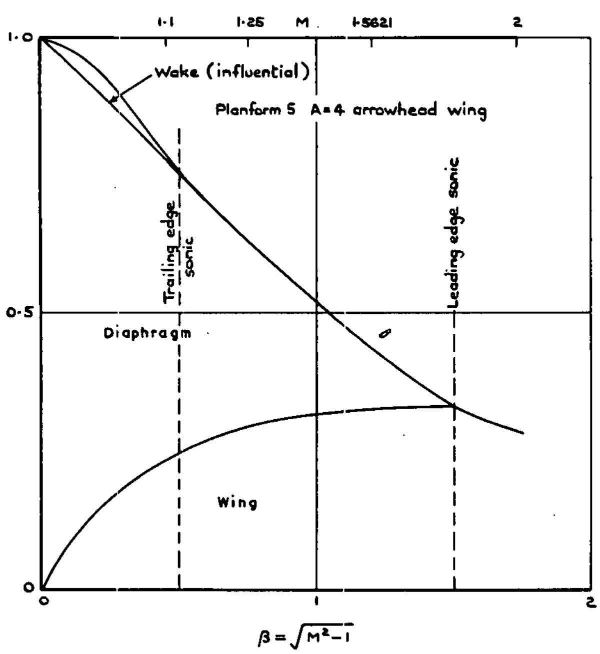

Fig.7 Areas relative to area of Mach line rhombus which just encloses planform for Planform 5

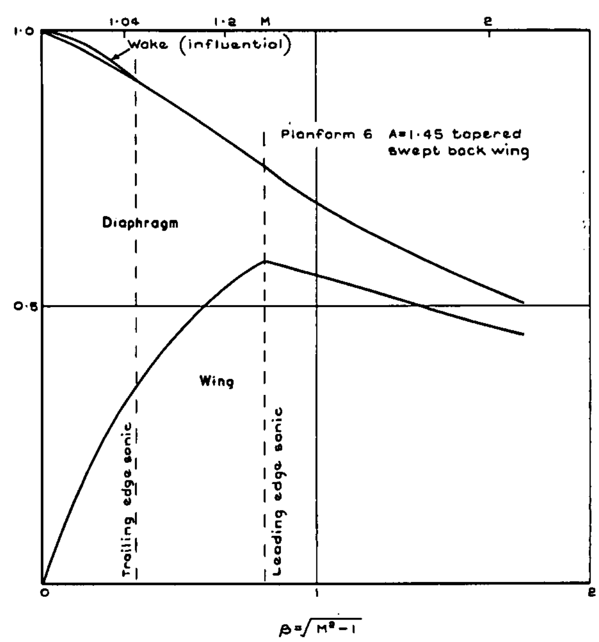

Fig.8 Areas relative to area of Mach line rhombus which just encloses planform for Planform 6

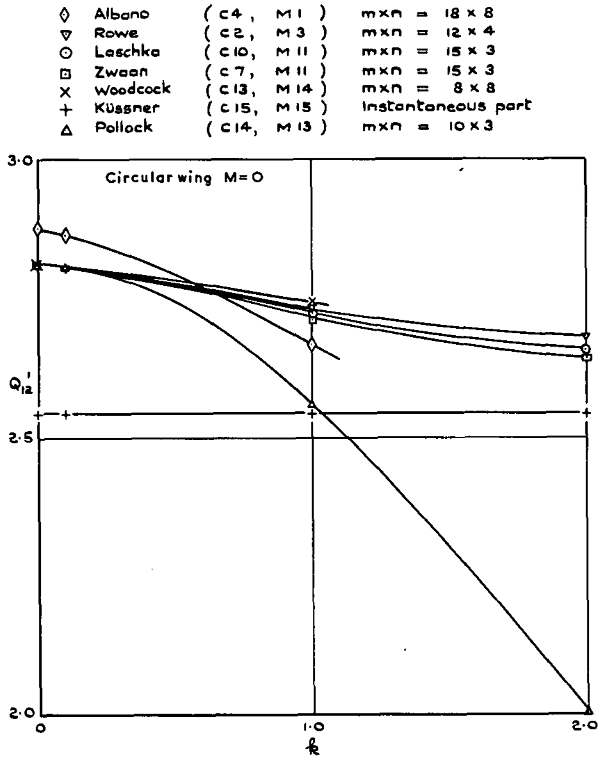

Fig.9 In-phase lift due to pitch. Planform 1. M = 0

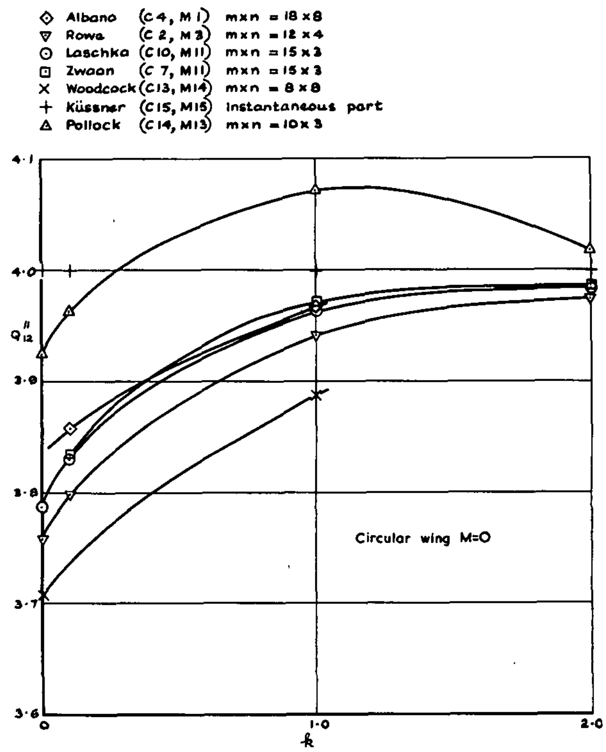

Fig.10 Out-of-phase lift due to pitch. Planform 1. M = 0

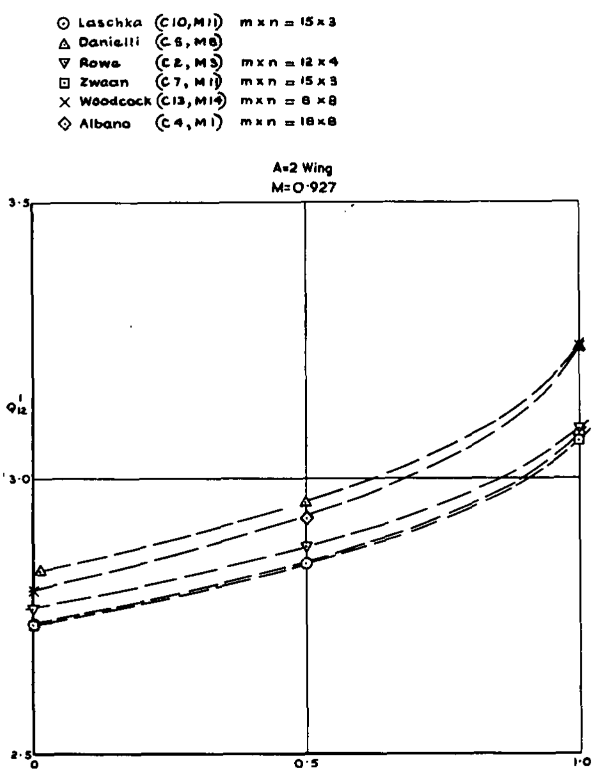

Fig.11 In-phase lift due to pitch. Planform 2. M = 0.927

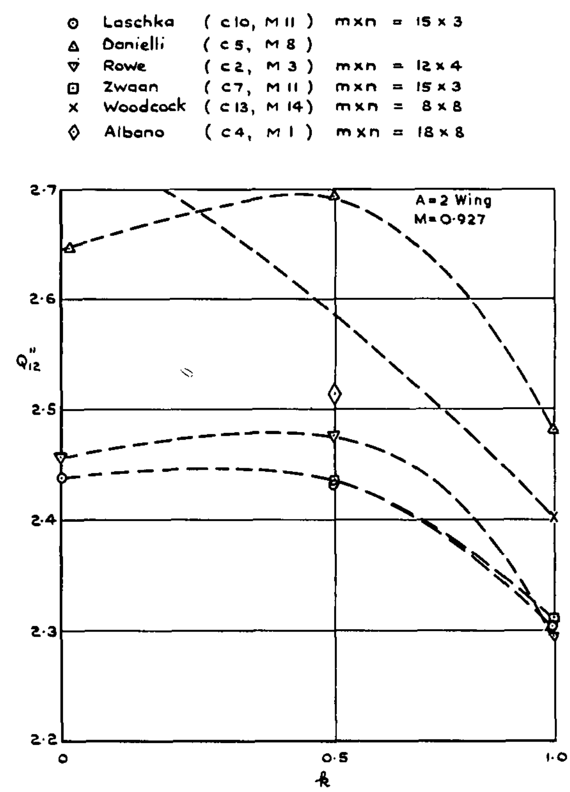

Fig.12 Out-of-phase lift due to pitch. Planform 2. M = 0.927

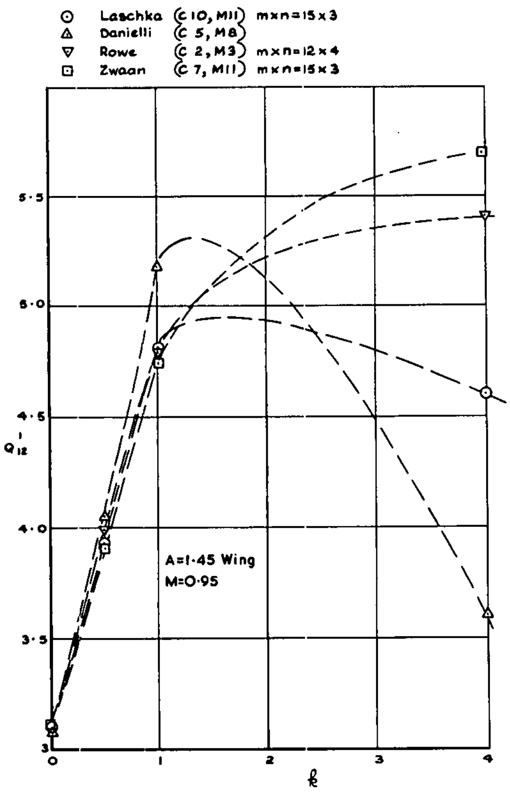

Fig.13 In-phase lift due to pitch. Planform 3. M = 0.95

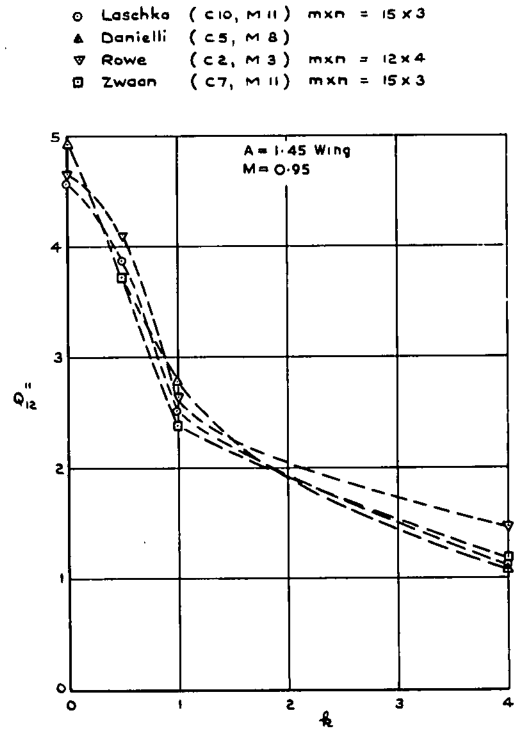

Fig.14 Out-of-phase lift due to pitch. Planform 3. M = 0.95

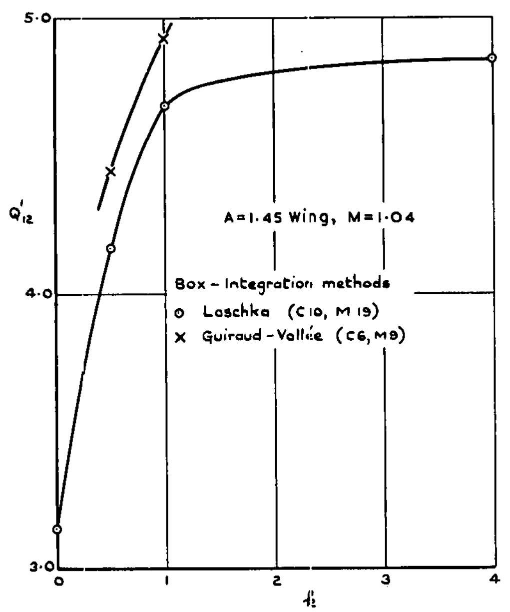

Fig.15 In-phase lift due to pitch. Planform 6. M = 1.04

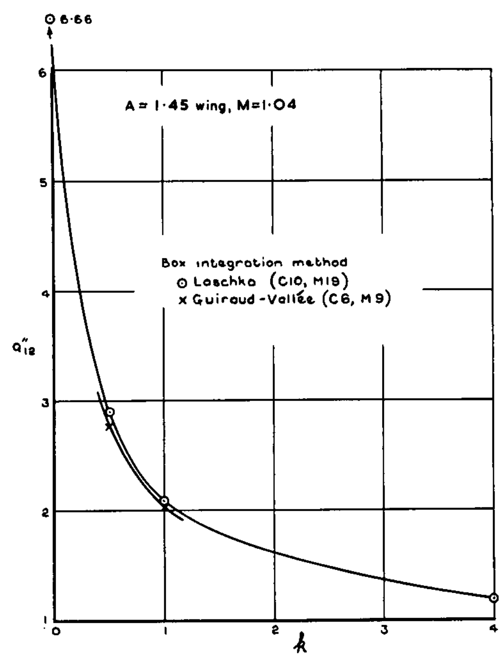

Fig.16 Out-of-phase lift due to pitch. Planform 6. M = 1.04

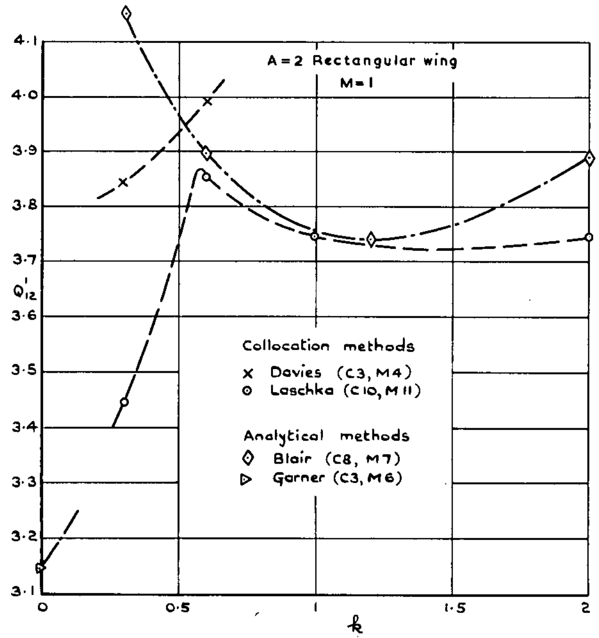

Fig.17 In-phase lift due to pitch. Planform 4. M = 1

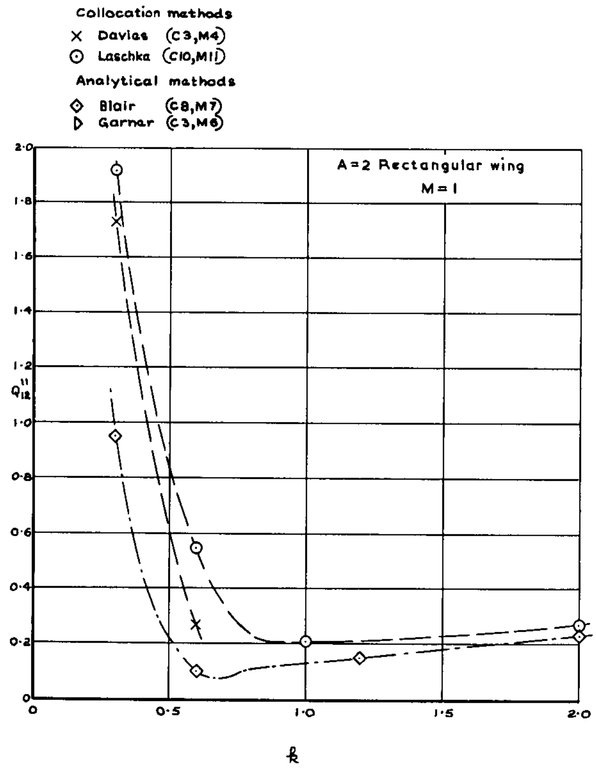

Fig.18 Out-of-phase lift due to pitch. Planform 4. M = 1

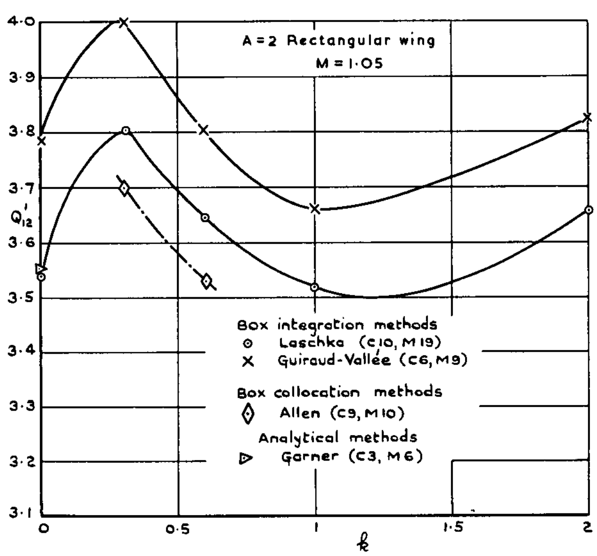

Fig.19 In-phase lift due to pitch. Planform 4. M = 1.05

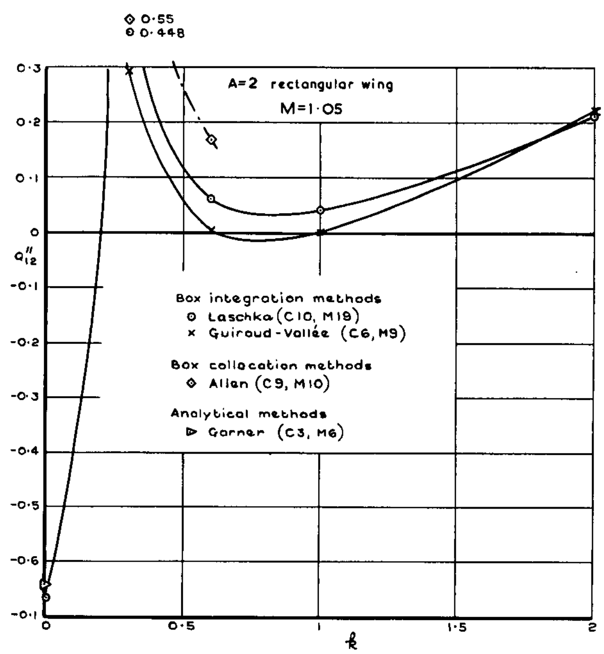

Fig.20 Out-of-phase lift due to pitch. Planform 4. M = 1.05

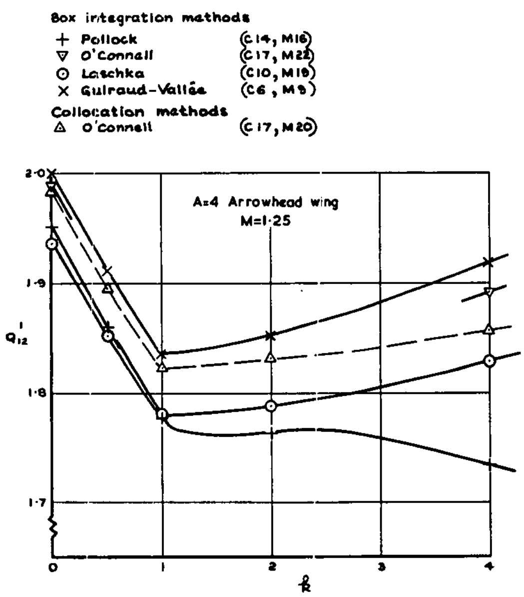

Fig.21 In-phase lift due to pitch. Planform 5. M = 1.25

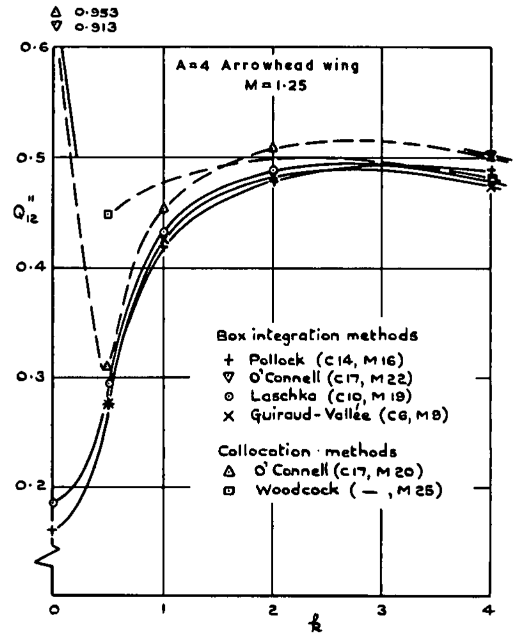

Fig.22 Out-of-phase lift due to pitch. Planform 5. M = 1.25

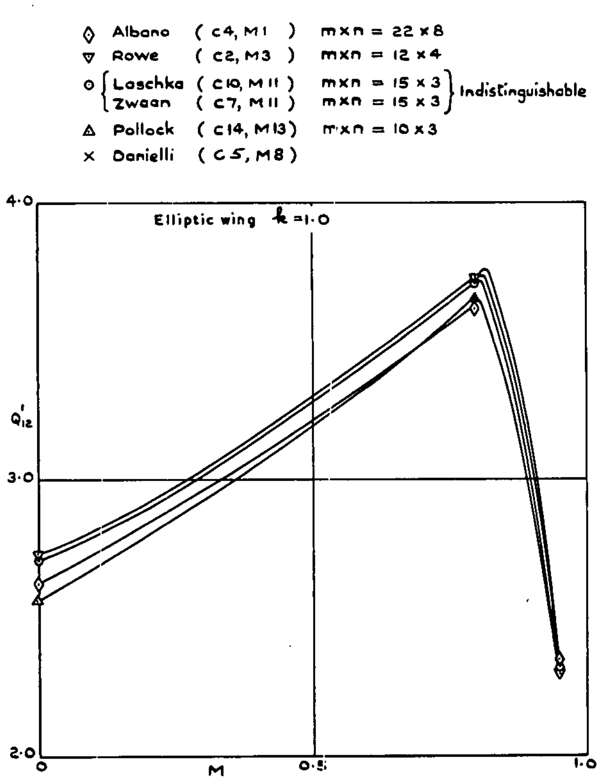

Fig.23 In-phase lift due to pitch. Planform 1. k = 1.0

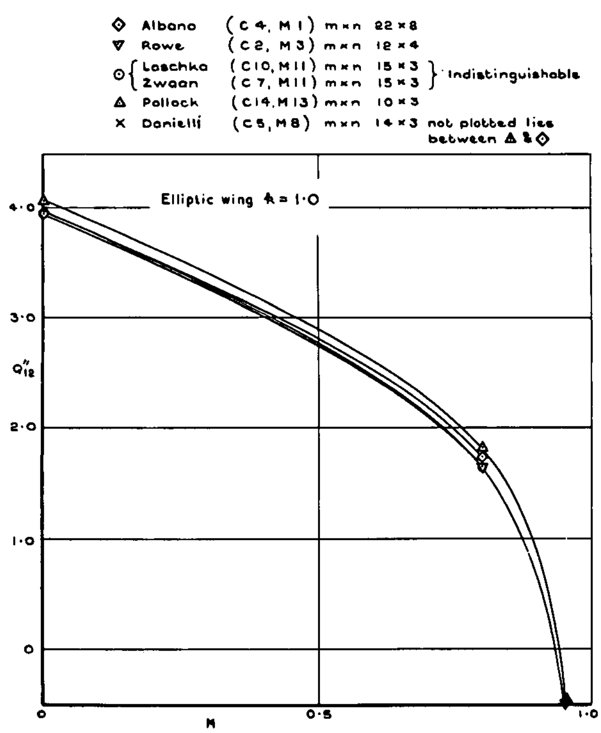

Fig.24 Out-of-phase lift due to pitch. Planform 1. k = 1.0

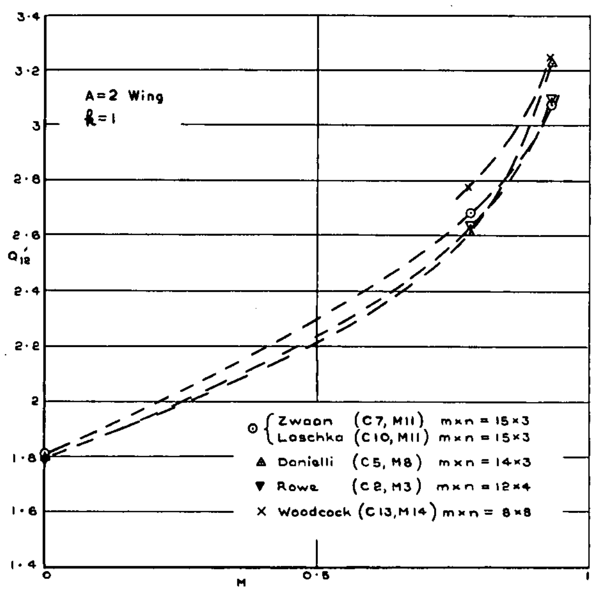

Fig.25 In-phase lift due to pitch. Planform 2.
k = 1.0

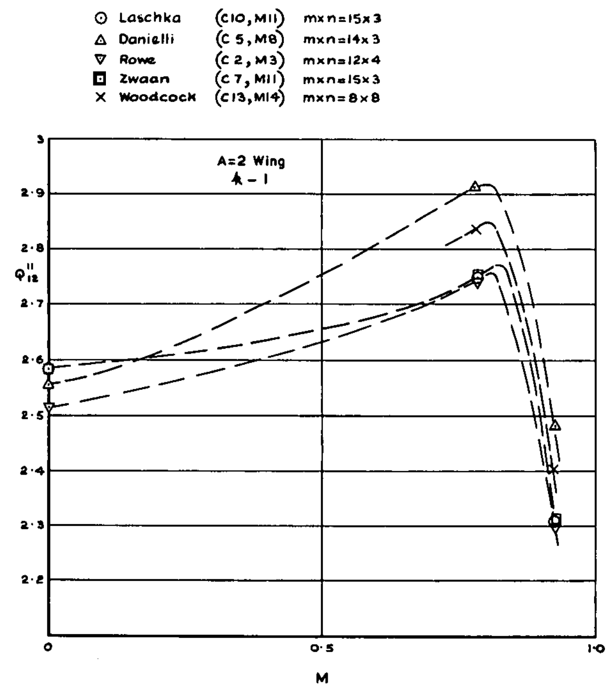

Fig.26 Out-of-phase lift due to pitch. Planform 2.
k = 1.0

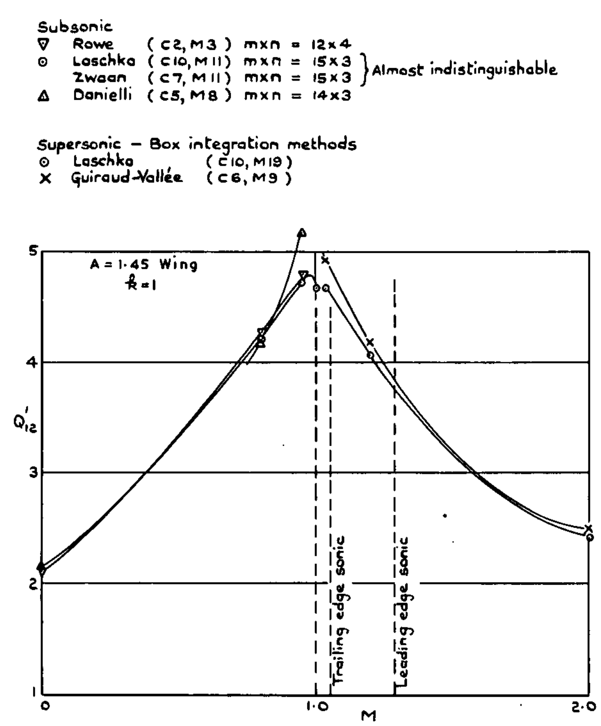

Fig.27 In-phase lift due to pitch. Planform 3 (6).
k = 1.0

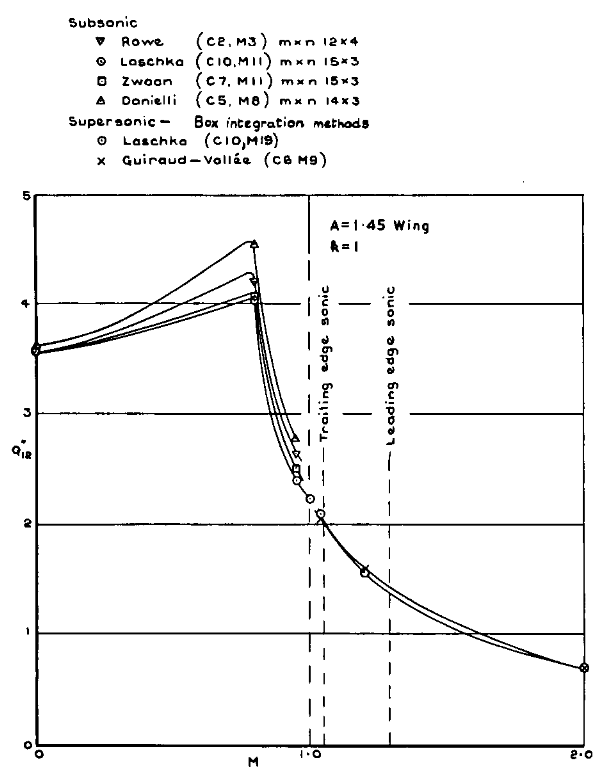

Fig.28 Out-of-phase lift due to pitch.
Planform 3 (6). k = 1.0

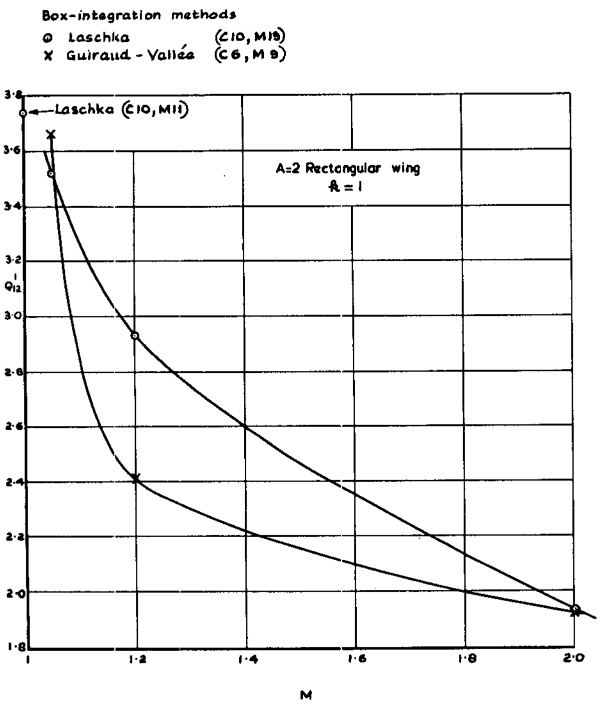

Fig.29 In-phase lift due to pitch. Planform 4.
k = 1.0

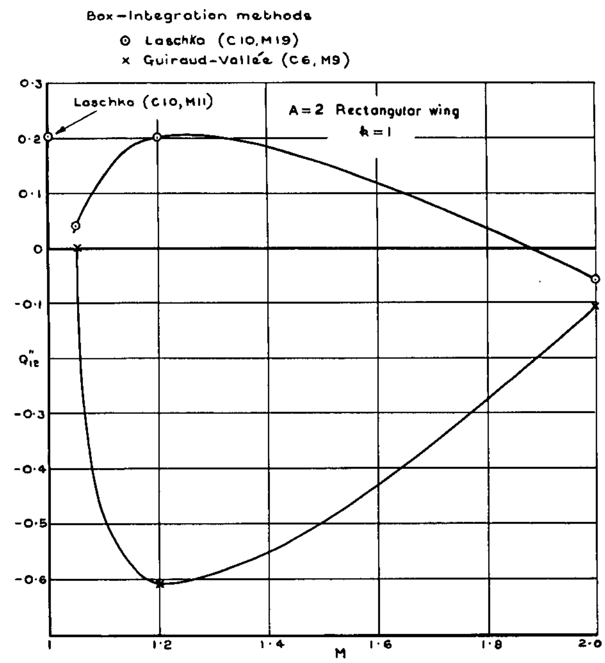

Fig.30 Out-of-phase lift due to pitch. Planform 4.
k = 1.0

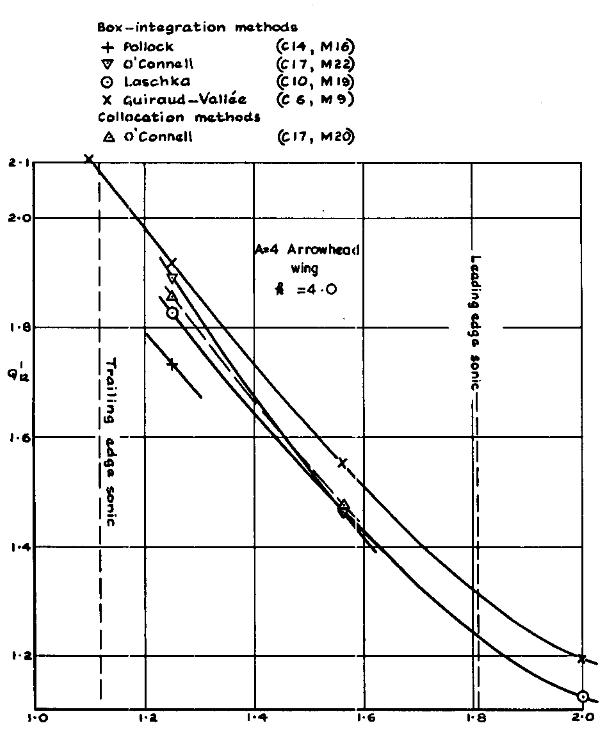

Fig.31 In-phase lift due to pitch. Planform 5.
k = 4.0

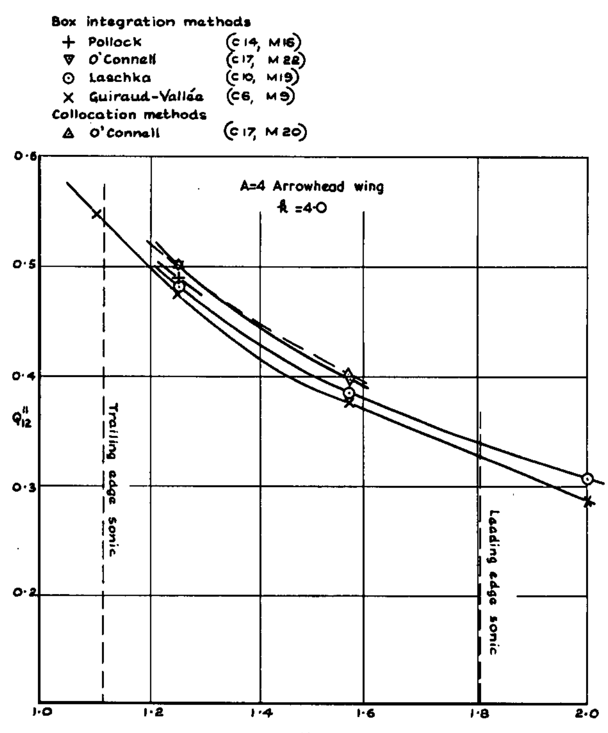

Fig.32 Out-of-phase lift due to pitch. Planform 5.
k = 4.0

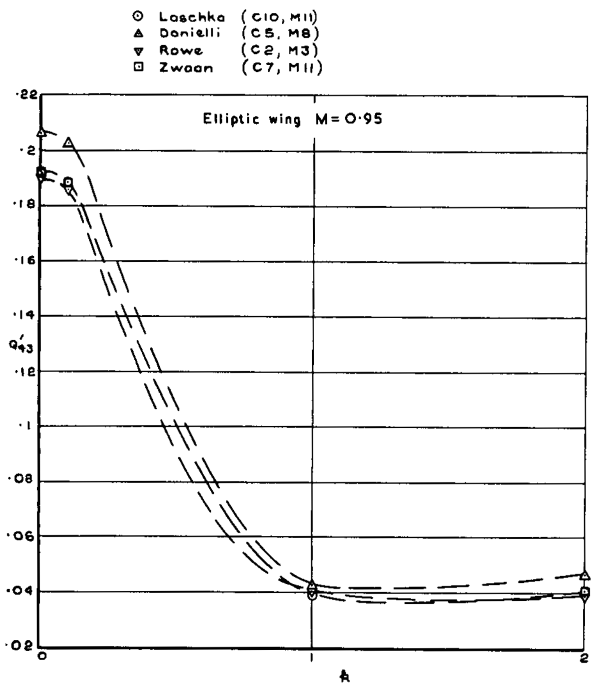

Fig.33 In-phase force in spanwise distortion mode due to chordwise distortion. Planform 1. M = 0.95

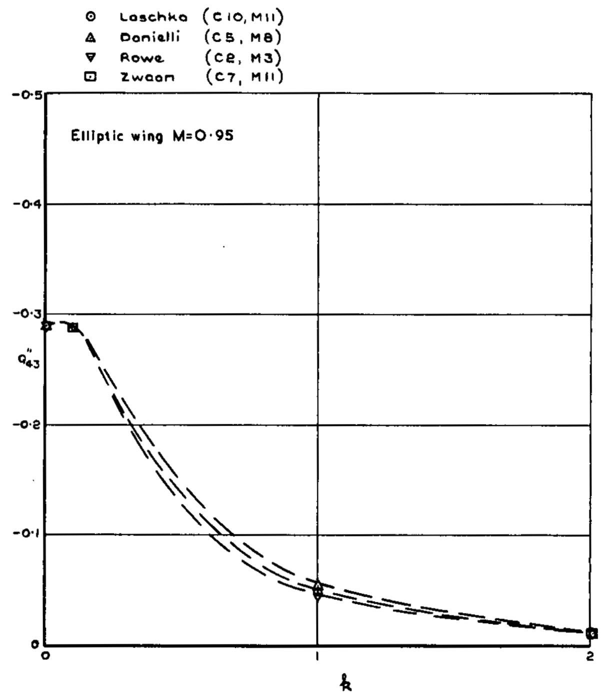

Fig.34 Out-of-phase force in spanwise distortion mode due to chordwise distortion. Planform 1. M = 0.95

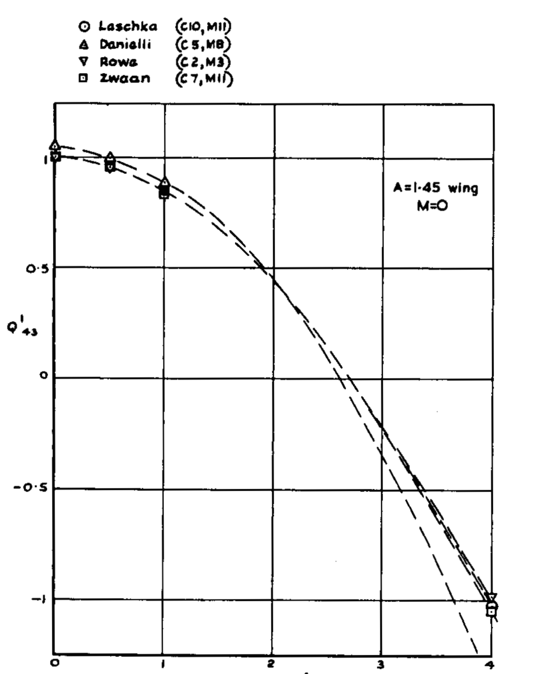

Fig.35 In-phase force in spanwise distortion mode due to chordwise distortion. Planform 3. M = 0

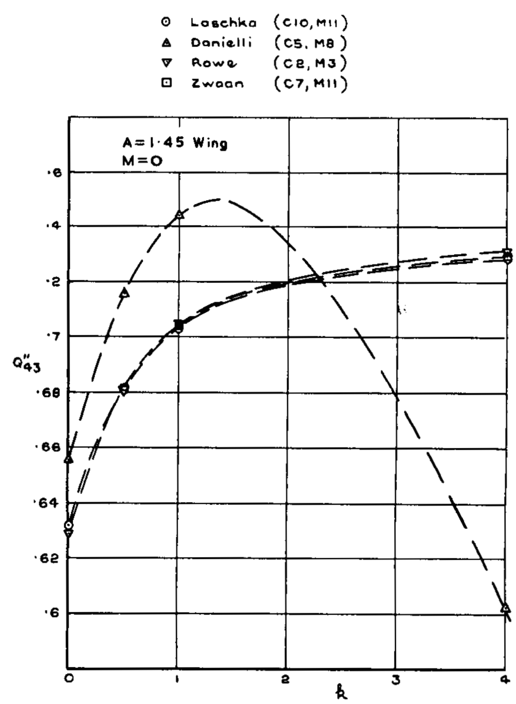

Fig.36 Out-of-phase force in spanwise distortion mode due to chordwise distortion. Planform 1. M = 0

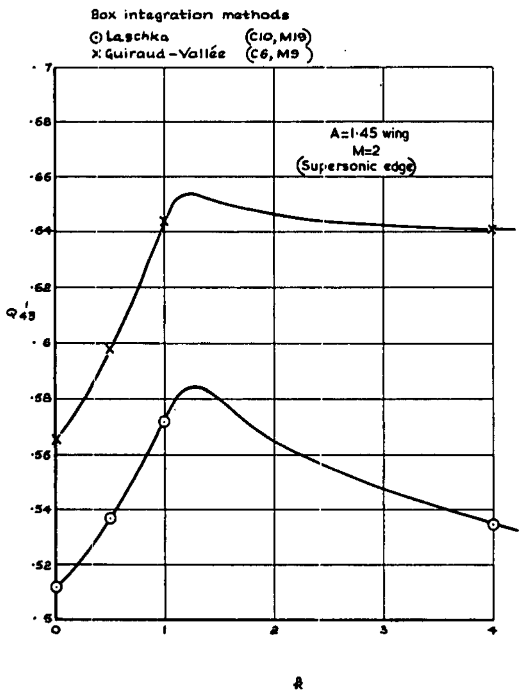

Fig.37 In-phase force in spanwise distortion mode due to chordwise distortion. Planform 6. M = 2

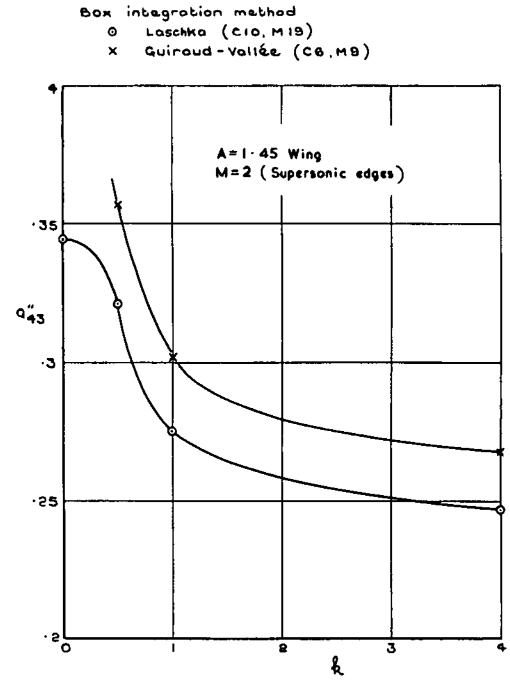

Fig.38 Out-of-phase force in spanwise distortion mode due to chordwise distortion. Planform 6. M = 2

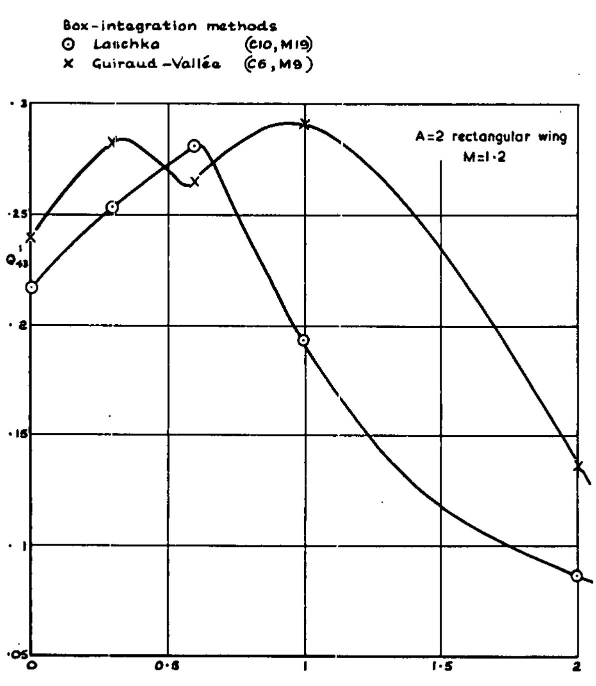

Fig.39 In-phase force in spanwise distortion mode due to chordwise distortion. Planform 4. M = 1.2

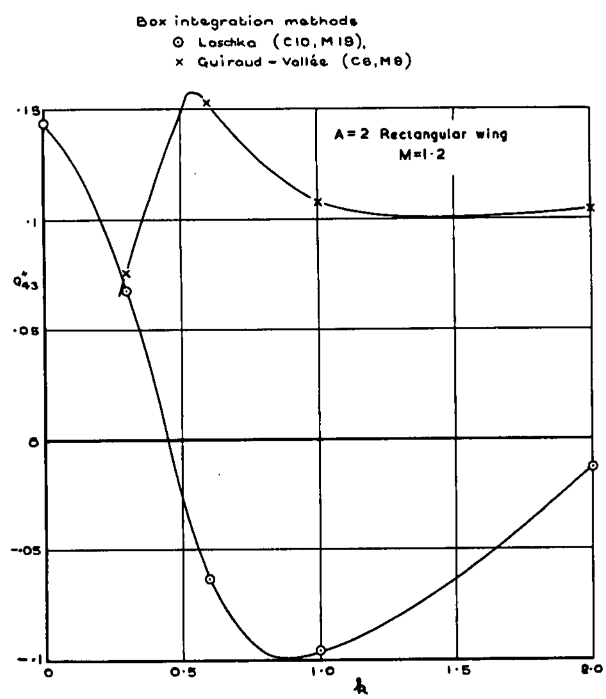

Fig.40 Out-of-phase force in spanwise distortion mode due to chordwise distortion. Planform 4. M = 1.2

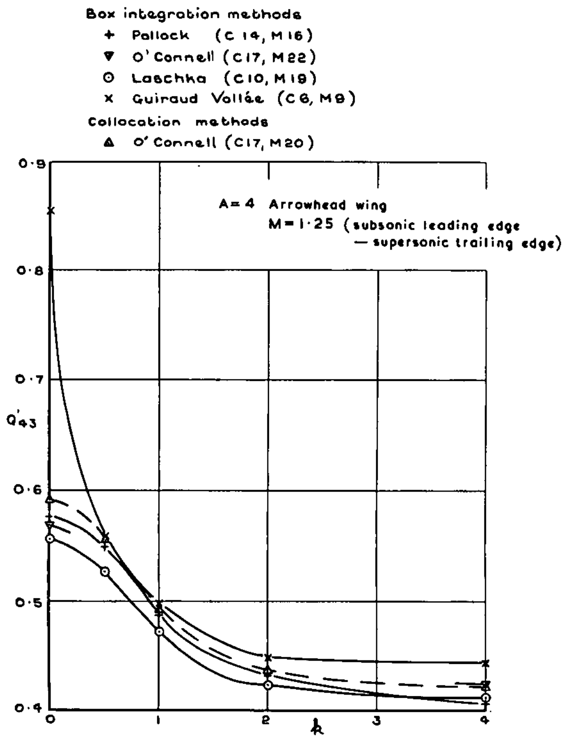

Fig.41 In-phase force in spanwise distortion mode due to chordwise distortion. Planform 5. M = 1.25

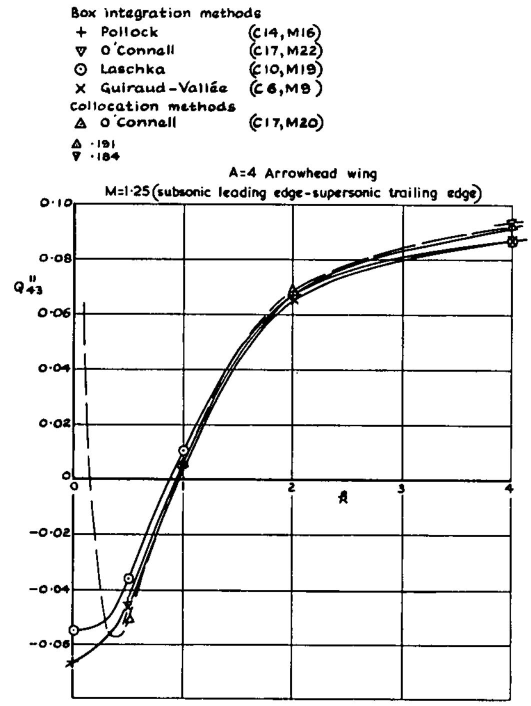

Fig.42 Out-of-phase force in spanwise distortion mode due to chordwise distortion. Planform 5. M = 1.25

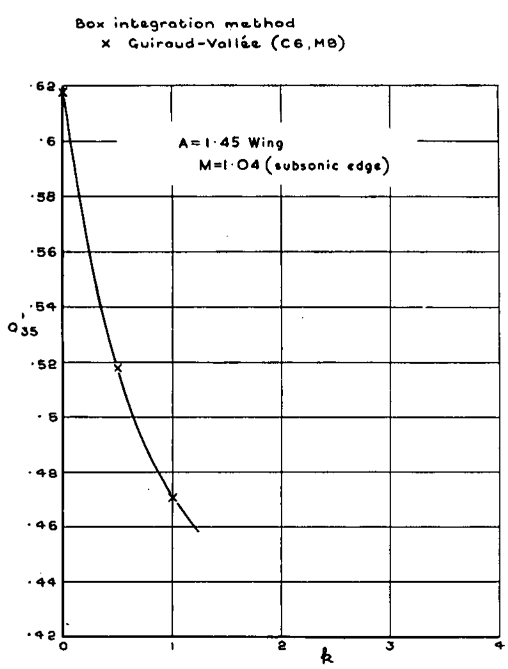

Fig.43 In-phase force in wing mode due to flap rotation. Planform 6. M = 1.04

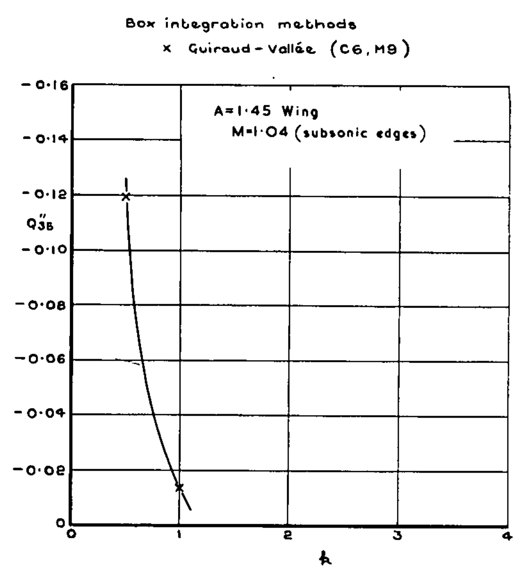

Fig.44 Out-of-phase force in wing mode due to flap rotation. Planform 6. M = 1.04

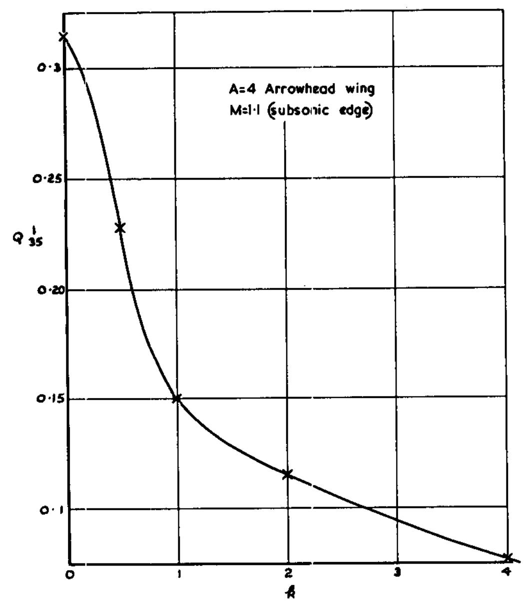

Fig.45 In-phase force in wing mode due to flap rotation. Planform 5. M = 1.1

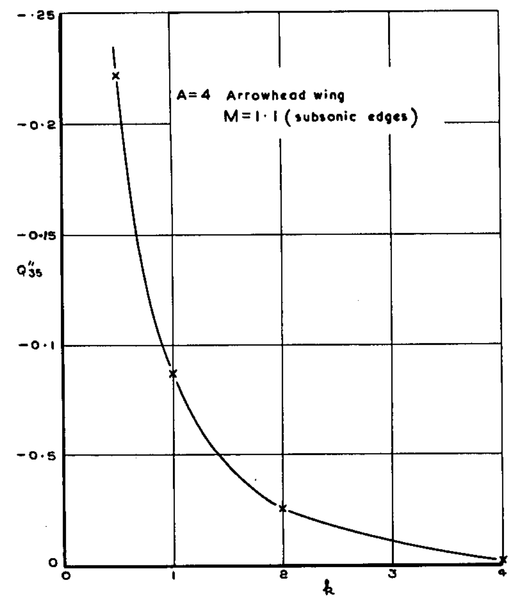

Fig.46 Out-in-phase force in wing mode due to flap rotation. Planform 6. M = 1.1

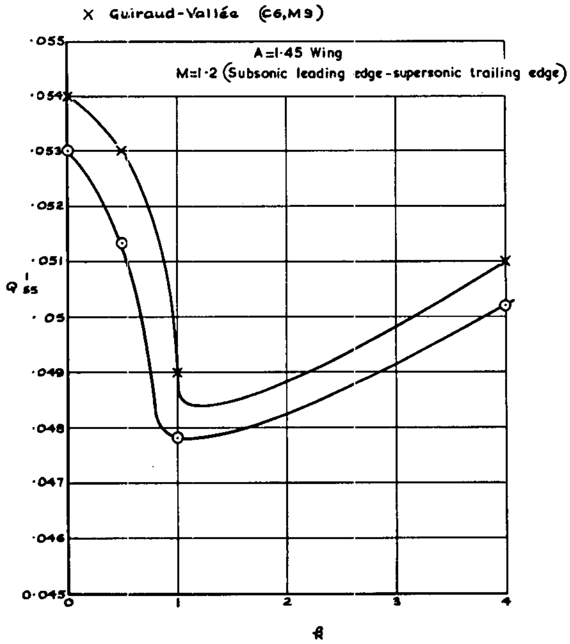

Fig.47 In-phase hinge moment. Planform 6. M = 1.2

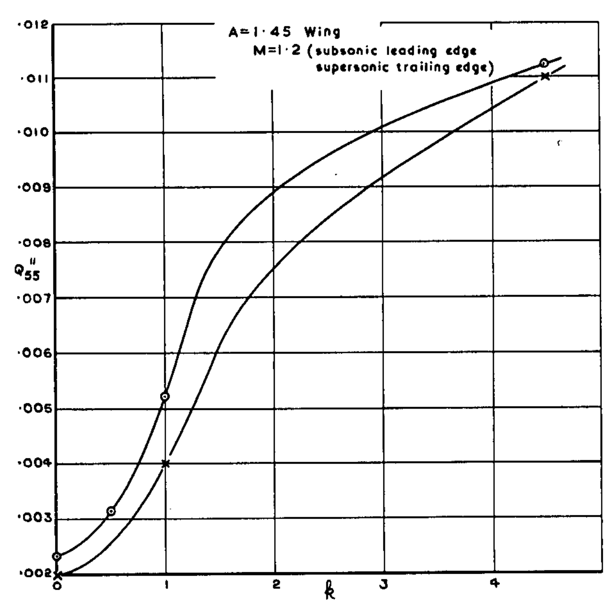

Fig.48 Out-of-phase hinge moment. Planform 6. M = 1.2

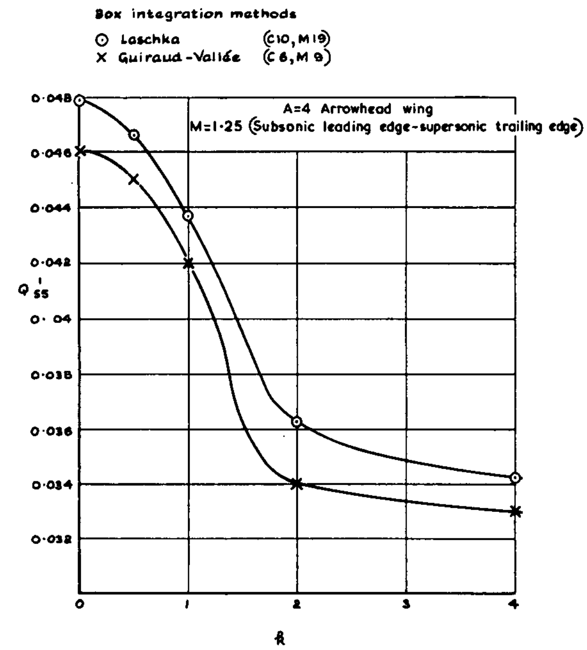

Fig.49 In-phase hinge moment. Planform 5. M = 1.25

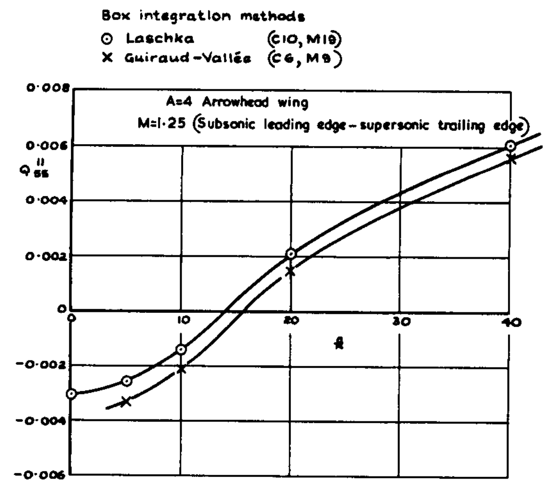

Fig.50 Out-of-phase hinge moment. Planform 5. M = 1.25

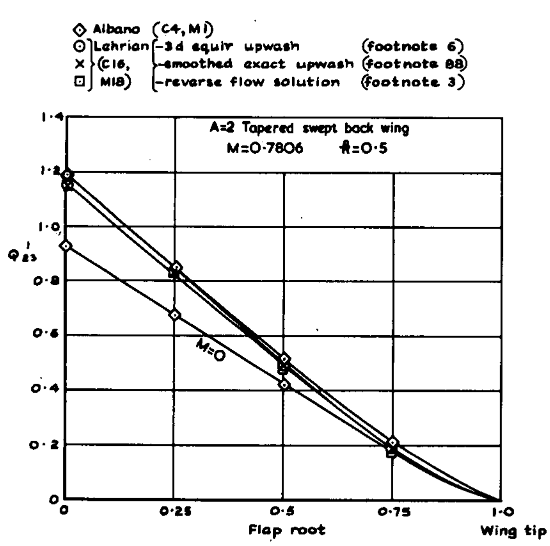

Fig.51 In-phase pitching moment due to flap rotation. Planform 2. M = 0.7806, k = 0.5

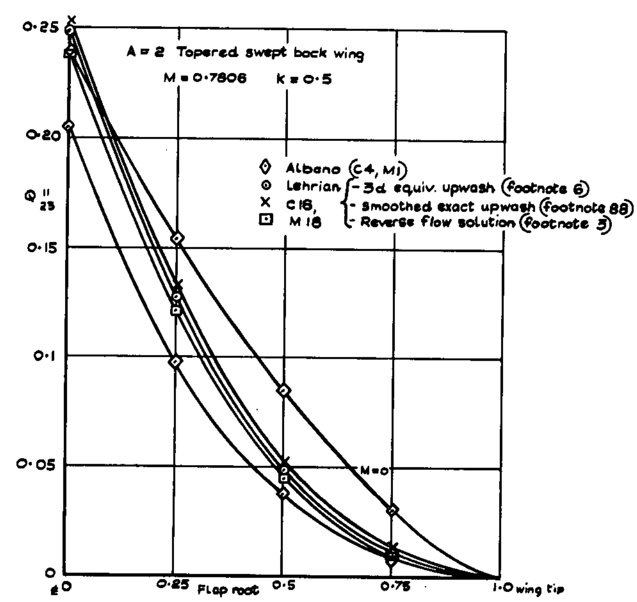

Fig.52 Out-of-phase pitching moment due to flap rotation. Planform 2. M = 0.7806, k = 0.5

(The "footnotes" quoted in these figures refer to the notes of Section 7.4 of the text.)

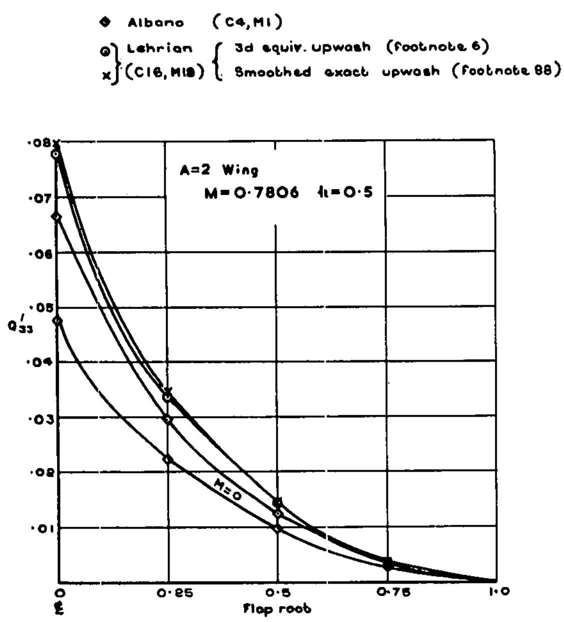

Fig.53 In-phase hinge moment. Planform 2. M = 0.7806, k = 0.5

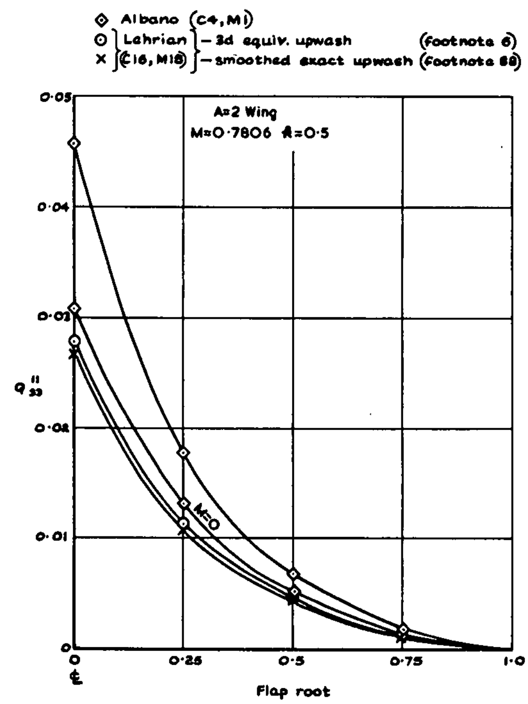

Fig.54 Out-of-phase hinge moment. Planform 2. M = 0.7806, k = 0.5

(The "footnotes" quoted in these figures refer to the notes of Section 7.4 of the text.)

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D.L.Woodcock
Published June 1971
150 pages, incl. figs.

533.69:533.6.013.13

This report is the outcome of a joint research project organised by the AGARD Structures and Materials Panel. The purpose of the project is twofold: (a) to establish the relative merits of different methods of calculating the air forces on oscillating wings, and (b) to provide a standard which can be used in the future for comparison or test purposes.

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Contributions came from six countries using nearly thirty different methods and comprising nearly eight hundred calculations. The tabulated results are preceded by descriptions of the various methods used and by a comprehensive system of annotation.

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