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An Approximate Solution to Improve Computational Efficiency of Impedance-Type Payload Load Prediction

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SUMMARY

The purpose of this study was to improve the computational efficiency of the impedance-type payload/launch vehicle interface loads prediction method (Reference 1) developed under tasks 1 and 5 of Contract NAS1-14370 and to evaluate its use as a practical design tool. Three goals were defined:

1) Devise a method of selectively removing from the calculation process those components of transfer function coefficients which do not appreciably affect the interface environment in order to make the impedance method operate more efficiently in the computer.

2) Assess the accuracy and convenience of the method for determining the effect of design changes (design interactions as opposed to completely new designs) in either the payload or the support structure.

3) Investigate the possibility of using the method to identify beneficial design changes which may reduce loads on the payload.

In pursuit of these goals, the interface acceleration expressions of Equation 28 in Reference 1 were derived by direct inversion of the coupled system impedance as expressed in terms of booster and payload component modes. From this exercise it was concluded that the method will operate more efficiently in the computer by expressing the system impedance in terms of orthogonal coordinates. Consequently, an approximate ortnogonalization approach was taken whereby eigenvectors determined for a baseline design are used to develop uncoupled equations of motion, without a new coupled system eigensolution. The formulation is suitable for calculation of dynamic response in either the frequency or time domain. Thus, computational efficiency was improved while uncertainties involved in component mode selection were avoided.

To assess accuracy, modes of the Shuttle Transportation System (STS) landing configuration with two simple payloads were used to exercise the method. Modal characteristics of the coupled orbiter with baseline payloads were calculated by conventional methods. The payload models were perturbated and new coupled orbiter and payload modal characteristics were calculated by both a conventional method and by using the baseline eigensolution to transform from component to approximate coupled system modes. Structural transfer functions defining frequency response of payload loads to unit landing gear

sinusoidal input and payload loads time response to unit step landing gear input were calculated using both the conventional and approximate mode coordinates. Approximate mode results compared well with conventional results.

The approximate modal characteristics were used to calculate payload model kinetic and potential energy distributions as defined in Reference 2. These energy distributions were used to identify payload changes which shift system frequencies away from those regions identified by transfer function data as bad for payload loads.

It was concluded that:

1) Analyses integration, manpower, and schedule devoted to modal coupling is identical to that required to implement the impedance technique equations. Computer costs for the additional step of generating coupled system modes will be recovered by decreasing impedance technique cost due to operating with diagonal matrices. Even coupled system costs can be avoided for model perturbations such as those which occur during design.

2) The accuracy of the approximate mode impedance technique is adequate for determining the effect of design changes. It is very convenient to use and works for both statically determinate and statically indeterminate payload attachments.

3) Beneficial design changes to reduce loads on payloads can be identified by the combined application of impedance techniques and energy distribution review techniques.

INTRODUCTION

Payload loads analyses are lengthy and expensive tasks. Part of the expense can be attributed to intercompany integration efforts during a payload design cycle. Customarily, the payload contractor generates a dynamic model of his current design and transmits that model to the booster contractor. This transmittal generally involves at least one working group meeting to identify payload nodes, degrees of freedom (dof's), load transformations, etc. and to agree on data formats, coupling techniques, computer interfacing, etc. This integration effort continues by phone and/or mail throughout each load cycle and is repeated for each cycle.

Another part of the expense can be attributed to the number of load cycles. Whenever a payload change evolves in the course of design activity the effect of the change on payload loads usually cannot be assessed without repeating the entire loads cycle effort.

Tasks 1 and 5 of this contract were initiated to develop an approach whereby the payload contractor could proceed through some portion of his design effort independent of the booster contractor and assess the dynamic impact of evolutionary payload changes to determine if a repeat of the load cycle is necessary. The result of these tasks was the development of an impedance expression relating interface accelerations to booster forces which can be implemented repeatedly by the payload contractor as he sees fit. A method of scaling results from one payload model to another on the same booster also was described. Only one transmittal of data from the booster contractor to the payload contractor is required with this approach. This impedance technique is reported in Reference 1.

As in any frequency domain analysis, the impedance technique requires the solution of simultaneous linear equations at each frequency of interest. For large systems (many dof's) and broad frequency ranges, these calculations become expensive. One objective of the investigation described here was to make the impedance method operate more efficiently in the computer.

An additional objective of this task was to evaluate the use of the impedance method as a practical design tool.

The approach to both objectives is based on the fact that computations are less expensive using orthogonal coordinate systems

(i. e., diagonal coefficient matrices), and on the assumption that a single coupled booster/baseline payload system eigensolution will provide mode shape data adequate for generating approximate orthogonal coordinates for all coupled booster/perturbed payloads resulting from evolutionary payload design changes.

SYMBOLS AND ABBREVIATIONS

dof	degree of freedom
STS	Shuttle Transportation System
$\{\ddot{h}\},\{\dot{h}\},\{h\}$	absolute discrete coordinates
$\{\ddot{\bar{h}}\},\{\dot{\bar{h}}\},\{\bar{h}\}$	discrete coordinates relative to a fixed interface
$\{\ddot{q}\},\{\dot{q}\},\{q\}$	absolute modal coordinates
$\{\ddot{\bar{q}}\},\{\dot{\bar{q}}\},\{\bar{q}\}$	modal coordinates of system constrained at the interface
$[\phi]$	matrix of unrestrained component normal modes of vibration
$[\bar{\phi}]$	matrix of restrained component normal modes of vibration
$[T]$	static deflection shapes associated with unit interface discrete motion
$[I]$	unity matrix (a diagonal of ones)
$[\hat{I}]$	unit matrix with zeros diagonals at interface dof
$[Z]$	Impedance matrix
$[\psi]$	Matrix of coupled booster/payload system modes
$[\omega^2]$	diagonal matrix of unrestrained component eigenvalues
$[\bar{\omega}^2]$	diagonal matrix of restrained component eigenvalues
$[\Omega^2]$	diagonal matrix of coupled booster/payload system eigenvalues
$[\hat{\psi}]$	a subset of $[\psi]$ which couples the booster/revised payload component modes

$[\overset{v}{\psi}]$	A subset of $[\psi]$ which does not couple the booster/revised payload component modes.
PIC	Payload Integration Contract
MMC	Martin Marietta Corporation
[DD]	Transformation relating payload loads to absolute discrete displacements.
$\triangleq$	defined to be
$\simeq$	approximately equal to
S	Laplace operator
$\therefore$	Therefore

Subscripts:

B	booster
I	interface
P	payload

CHOICE OF COORDINATES

One approach to forming coupled booster/payload system, homogenous, conservative equations of motion starts by defining the absolute discrete motion, $\{h\}$, of all dofs as a linear combination of payload/booster interface coordinates, $\{h_I\}$, plus elastic motion relative to that interface, $\{\bar{h}\}$. That is:

$$\{h\} = [T]\{h_I\} + \{\bar{h}\} \tag{1}$$

where $[T]$ defines the static deflection shapes associated with unit interface displacements (e. g. a Guyan reduction transformation). Equation (1) may be partitioned into booster, B, and payload, P, subsets,

$$\begin{Bmatrix} h_B \\ h_P \end{Bmatrix} = \begin{bmatrix} T_B \\ T_P \end{bmatrix} \{h_I\} + \begin{bmatrix} \tilde{I}_B & \\ & I_P \end{bmatrix} \begin{Bmatrix} \bar{h}_B \\ \bar{h}_P \end{Bmatrix} \tag{2}$$

Equation (2) is then used, along with the respective mass, $[M]$, and stiffness, $[K]$, matrices to form the equations of motion by classical energy methods. The results appear as,

$$\begin{bmatrix} T_B^T M_B T_B + T_P^T M_P T_P & T_B^T M_B I_B & T_P^T M_P \tilde{I}_P \\ \tilde{I}_B^T M_B T_B & \tilde{I}_B^T M_B \tilde{I}_B & \\ \tilde{I}_P^T M_P T_P & & \tilde{I}_P^T M_P \tilde{I}_P \end{bmatrix} \begin{Bmatrix} \ddot{h}_I \\ \ddot{\bar{h}}_B \\ \ddot{\bar{h}}_P \end{Bmatrix} + \begin{bmatrix} \bar{T}_B^T K_B T_B + \bar{T}_P^T K_P T_P & & \\ & \tilde{I}_B^T K_B \tilde{I}_B & \\ & & \tilde{I}_P^T K_P \tilde{I}_P \end{bmatrix} \times$$

$$\begin{Bmatrix} h_I \\ \bar{h}_B \\ \bar{h}_P \end{Bmatrix} = \begin{Bmatrix} 0 \end{Bmatrix} \tag{3}$$

At this point, several options exist for the choice of normal mode generation. Frequently, the following choice is made:

1) Constrain $\{h_I\}$ and $\{\ddot{h}_B\}$ and solve the resulting eigenproblem described by the (3,3) partition of Equation (3) to obtain eigenvalues $[\bar{\omega}_P^2]$, and eigenvectors, $[\bar{\Phi}_P]$, of the payload constrained at the interface.

2) Delete $T_P^T M_P T_P$ and $T_P^T K_P T_P$. Then, constrain $\{\bar{h}_B\}$ and solve the resulting eigenproblem described by the (1,1), (1,2), (2,1), and (2,2) partitions of Equation (3) to obtain eigenvalues, $[\omega_B^2]$, and eigenvectors, $[\phi_B]$, of the unrestrained booster without payload effects.

3) From the results of steps 1 and 2 form

$$\begin{Bmatrix} h_I \\ \bar{h}_B \\ \bar{h}_P \end{Bmatrix} = \left[\begin{array}{c|c} \phi_{IB} & \\ \phi_B & \bar{\phi}_P \\ & \end{array}\right] \begin{Bmatrix} q_B \\ \bar{q}_P \end{Bmatrix} \tag{4}$$

4) With proper normalization, use Equation (4) to transform Equation (3) into

$$\left[\begin{array}{c|c} I+\phi_B^T T_P^T M_P T_P \phi_{IB} & \phi_{IB}^T T_P^T M_P \tilde{I}_P \bar{\phi}_P \\ \bar{\phi}_B^T I_P M_P T_P \phi_{IB} & I \end{array}\right] \begin{Bmatrix} \ddot{q}_B \\ \ddot{\bar{q}}_P \end{Bmatrix} + \left[\begin{array}{c|c} \omega_B^2+\phi_{IB}^T T_P^T K_P T_P \phi_{IB} & \\ & \bar{\omega}^2_P \end{array}\right] \begin{Bmatrix} q_B \\ \bar{q}_P \end{Bmatrix} = 0 \tag{5}$$

In practice, step 1 above is performed by the payload contractor who transmits his results to the booster contractor each time a payload design is perturbed. The booster contractor then performs steps 3 and 4. If booster design does not change, some savings in intercompany communication and data transmittal can be made by transmitting booster data (step 2) from booster to payload contractor one time only. However, the effort required to accomplish steps 3 and 4 is unchanged.

Now component damping and booster forces can be added to Equation (5) and Laplace transformation into the frequency domain (with zero initial conditions) yields,

$$\frac{1}{S^2}\left[\begin{array}{cc} S^2 I+S2\zeta_B \omega_B+\omega_B^2+\phi_{IB}^T T_P^T (S^2 M_P+K_P) T_P \phi_{IB} & S^2 \phi_{IB}^T T_P^T M_P \tilde{I}_P \bar{\phi}_P \\ S^2 \bar{\phi}_P^T I_P M_P T_P \phi_{IB} & S^2 I+S2\bar{\zeta}\bar{\omega}^2+\bar{\omega}_P^2 \end{array}\right] \begin{Bmatrix} \ddot{q}_B(S) \\ \ddot{q}_P(S) \end{Bmatrix} = \left[\begin{array}{c} \phi_B^T \\ \hline 0 \end{array}\right] \{F(S)\} \tag{6}$$

where S is the Laplace operator.

A solution for the modal accelerations can be obtained by direct inversion of the acceleration coefficient matrix. Inversion by parts (Reference 4) allows the result,

$$\{\ddot{q}_B(S)\} = S^2[(S^2 I+S2\zeta_B\omega_B+\omega_B^2)+\phi_{IB}^T T_P^T(S^2 M_P+K_P)T_P\phi_{IB}$$

$$-S^4\phi_{IB}^T T_P^T M_P\tilde{I}_P\phi_P(S^2 I+S2\zeta_P\bar{\omega}_P+\bar{\omega}_P^2)^{-1}\bar{\phi}_P^T\tilde{I}_P M_P T_P\phi_{IB}]^{-1}[\phi_B^T]\{F_B(S)\} \quad (7)$$

By defining,

$$[IMP(S)] = [T_P]^T(S^2[M_P]+[K_P])[T_P]+[T_P^T M_P\tilde{I}_P\bar{\phi}_P]$$

$$(S^2[S^2 I+S2\zeta\bar{\omega}_P+\bar{\omega}_P^2]^{-1})[\bar{\phi}_P^T\tilde{I}_P M_P T_P] \quad (8)$$

and manipulating Equation (7), the form

$$[I-S^2(S^2 I+S2\zeta_B\omega_B+\omega_B^2)^{-1}\phi_{IB}^T[IMP(S)]\phi_{IB}]\{\ddot{q}_B(S)\}$$

$$= S^2[S^2 I+S2\zeta\omega_B+\omega_B^2]^{-1}[\phi_B^T]\{F_B(S)\} \quad (9)$$

can be obtained. If Equation (9) is premultiplied by $[\phi_{IB}]$ and definitions

$$\{\ddot{h}_I(S)\} = [\phi_{IB}]\{\ddot{q}_B(S)\} \quad (10)$$

$$[PADM(S)] = [\phi_{IB}](S^2[S^2 I+S2\zeta_B\omega_B+\omega_B^2]^{-1})[\phi_{IB}^T] \quad (11)$$

$$[TADM(S)] = [\phi_{IB}](S^2[S^2 I+S2\zeta_B\omega_B+\omega_B^2]^{-1})[\phi_{BE}^T] \quad (12)$$

are made, Equation (9) becomes identical to the impedance expression given by Equation (28) of Reference 1 which was developed in Task 1 and 5. That is,

$$[I\text{-}PADM(S)IMP(S)]\{\ddot{h}_I(S)\} = [TADM(S)]\{F(S)\} \quad (13)$$

Thus, the effort required to develop the coupled equations of motion is no more than that required to set up the impedance technique. The form of Equation (9), and its equivalent in Reference 1, is due to the choice of coordinates. That is, component normal mode coordinates were used, rather than coupled system normal mode coordinates, in order to save the costs of the coupled system eigenproblem, as defined by Equation (5).

If the eigenproblem of Equation (5) is solved and the resulting eigenvectors are denoted by $[\psi]$, corresponding eigenvalues are denoted by $[\Omega^2]$, and coupled system normal mode coordinates are denoted by $\{\xi\}$. Transformation of Equation (5) to system mode coordinates with proper normalization of $[\psi]$, and adding damping and booster forces and performing the Laplace Transformation, as was done to form Equation (6), yields,

$$\frac{1}{S^2}[(S^2 I+S2\zeta\Omega+\Omega^2)]\{\ddot{\xi}(S)\} = [\psi^T]\begin{bmatrix}\phi_B^T\\ 0\end{bmatrix}\{F_B(S)\} \quad (14)$$

The expression for discrete interface accelerations is obtained from Equation (14) by inverting a diagonal matrix. That is,

$$\{\ddot{h}_I(S)\} = S^2[\phi_{BI}0][\psi][(S^2+S2\zeta\Omega+\Omega^2)^{-1}][\psi^T]\begin{bmatrix}\phi_B^T\\ 0\end{bmatrix}\{F_B(S)\} \quad (15)$$

The comparable solution in component normal mode coordinates is obtained by multiplying Equation (7) by $[\phi_{BI}]$.

$$\{\ddot{h}_I(S)\} = S^2[\phi_{BI}][(S^2 I+S2\zeta_B\omega_B+\omega_B^2)+\phi_{IB}^T T_P^T(S^2 M_P+K_P)T_P\phi_{IB}$$
$$-S^4\phi_{IB}^T T_P^T M_P\tilde{I}_P\bar{\phi}_P(S^2 I+S2\zeta_P\bar{\omega}_P+\bar{\omega}_P^2)^{-1}\bar{\phi}_P^T\tilde{I}_P M_P T_P\phi_{IB}]^{-1}[\phi_B^T]\{F_B(S)\} \quad (16)$$

The advantages of Equation (15) over Equation (16) with respect to computation cost is obvious. Cost avoidance associated with not solving the coupled sysetm eigenproblem is rapidly overshadowed by repeated inversions of a coupled impedance matrix. Because of this, the original task approach for improvement of computational efficiency was to identify component modes which

do not contribute significantly to the results and delete them, thereby allowing cheaper inversions of a smaller matrix. The approach was abandoned for the following reasons:

1) Frequency truncation of component modes above some cutoff value (e.g., 50 Hz), as is customarily done, usually does not decrease the problem to an economical size.

2) Although some booster component modes within the range of interest can be deleted due to their negligible amplitude at the point of excitation, (i.e., $[\phi^T_{B_{17}}]\{F_B\} \simeq 0$ in the n^{th} mode) significant size reduction by this approach is not likely.

3) Since payload changes are causing payload component frequency changes throughout the design period a payload component mode judged insignificant in one design could become a dominant contribution if a change caused a frequency shift which greatly coupled that mode to a retained booster component mode.

Consequently, the approach was revised to that of identifying an economical approximate eigensolution suitable for estimating gross effects of evolutionary design changes.

APPROXIMATE COORDINATES

If one assumes that Equation (5), in the previous section, was developed for the baseline payload model at the beginning of a design effort, and that $[\psi]$ and $[\Omega^2]$ are the eigenvectors and eigenvalues respectively calculated for that baseline system by conventional methods, then transformation of the equations of motion into these coupled system normal mode coordinates gives

$$[I]\{\xi\} + [\Omega^2]\{\xi\} = [\psi^T]\begin{bmatrix}\phi_B^T \\ 0\end{bmatrix}\{F_B\} \tag{17}$$

The computational advantages of this diagonal system have been discussed in the previous section.

If, in the course of design, the payload changes somehow, the payload model will change and new matrices to describe payload mass, stiffness, constrained component modes and frequencies, and static deflection shapes associated with interface motion will be formed. If these new matrices are denoted by subscript 2, the coupled system equations appear as

$$\begin{bmatrix} I+\phi_{IB}^T T_{P_2}^T M_{P_2} T_{P_2} \phi_{IB} & \phi_{IB}^T T_{P_2}^T M_{P_2} \tilde{I}_{P_2} \bar{\phi}_{P_2} \\ \bar{\phi}_{P_2}^T \tilde{I}_{P_2} M_{P_2} T_{P_2} \phi_{IB} & I \end{bmatrix} \begin{Bmatrix} \ddot{q}_B \\ \ddot{\bar{q}}_{P_2} \end{Bmatrix} +$$

$$\begin{bmatrix} \omega_B^2 + \phi_{IB}^T T_{P_2}^T K_{P_2} T_{P_2} \phi_{IB} & 0 \\ 0 & \bar{\omega}_{P_2}^2 \end{bmatrix} \begin{Bmatrix} q_B \\ \bar{q}_{P_2} \end{Bmatrix} = \begin{bmatrix} \phi_B^T \\ 0 \end{bmatrix} \{F_B\} \tag{18}$$

A conventional eigensolution from the homogeneous form of Equation (18) can be calculated and an immediate transformation to the diagonal form of Equation (17) made. (This will be done to obtain comparative results).

Or, if the same number of booster and payload component modes are used to define the revised coupled system as were used in the baseline coupled system the substitution of

$$\begin{Bmatrix} q_B \\ \bar{q}_{P_2} \end{Bmatrix} = [\psi]\{\xi\} = \begin{bmatrix} \psi_B \\ \psi_P \end{bmatrix}\{\xi\} \tag{19}$$

into Equation (18) can be made. If all modes of the baseline system were calculated and included in Equation (19), the resulting equations of motion

$$\begin{bmatrix}\psi^T\end{bmatrix}\begin{bmatrix} I+\phi_{IB}^T T_{P_2}^T M_{P_2} T_{P_2} \phi_{IB} & \vdots & \phi_{IB}^T T_{P_2}^T M_{P_2} \tilde{I}_{P_2} \bar{\phi}_{P_2} \\ \cdots & \cdots & \cdots \\ \bar{\phi}_{P_2}^T \tilde{I}_{P_2} M_{P_2} T_{P_2} \phi_{IB} & \vdots & I \end{bmatrix}\begin{bmatrix}\psi\end{bmatrix}\begin{Bmatrix}\ddot{\xi}\end{Bmatrix}$$

$$+\begin{bmatrix}\psi^T\end{bmatrix}\begin{bmatrix} \omega_B^2+\phi_{IB}^T T_{P_2}^T K_{P_2} \phi_{IB} & \vdots & 0 \\ \cdots & \cdots & \cdots \\ 0 & \vdots & \bar{\omega}_{P_2}^2 \end{bmatrix}\begin{bmatrix}\psi\end{bmatrix}\begin{Bmatrix}\xi\end{Bmatrix} \overset{\Delta}{=} \begin{bmatrix}\psi_B^T\end{bmatrix}\begin{bmatrix}\phi_B^T\end{bmatrix}\begin{Bmatrix}F_B\end{Bmatrix}, \quad (20)$$

would have no loss of generality. Adding a damping matrix

$$\begin{bmatrix}\psi^T C_{C_2} \psi\end{bmatrix} \overset{\Delta}{=} \begin{bmatrix}\psi^T\end{bmatrix}\begin{bmatrix} 2\zeta_B \omega_B^2 & \\ & 2\zeta_{P_2} \bar{\omega}_{P_2}^2 \end{bmatrix}\begin{bmatrix}\psi\end{bmatrix}$$

to Equation (20) and defining the coupled mass and stiffness matrices as $[M_{C_2}]$ and $[K_{C_2}]$ respectively, Equation (20) can be written in the form

$$\begin{bmatrix}I\end{bmatrix}\begin{Bmatrix}\ddot{\xi}\end{Bmatrix}+\begin{bmatrix}\psi^T M_{C_2} \psi\end{bmatrix}^{-1}\begin{bmatrix}\psi^T C_{C_2} \psi\end{bmatrix}\begin{Bmatrix}\dot{\xi}\end{Bmatrix}+\begin{bmatrix}\psi^T M_{C_2} \psi\end{bmatrix}^{-1}\begin{bmatrix}\psi^T K_{C_2} \psi\end{bmatrix}\begin{Bmatrix}\xi\end{Bmatrix}$$

$$=\begin{bmatrix}\psi^T M_{C_2} \psi\end{bmatrix}^{-1}\begin{bmatrix}\psi_B^T\end{bmatrix}\begin{bmatrix}\phi_B^T\end{bmatrix}\begin{Bmatrix}F_B\end{Bmatrix} \quad (21)$$

Equation (21) can be used to develop a set of approximately orthogonal coordinates to use in lieu of solving the revised system eigenproblem. This is possible because, although $[\psi]$ are not the true eigenvectors of the perturbed system, they are not far from it. If $[\psi]$ are "in the neighborhood" of the eigenvectors of the perturbed system, a good estimate of the eigenvalues, $\begin{bmatrix}\omega_{P_2}^2\end{bmatrix}$, can be obtained from the Rayleigh quotients (Reference 3) given by the ratios of the diagonal terms in the stiffness matrix divided by the corresponding diagonal terms in the mass matrix as indicated in Equation (21). If the coupling produced by $[\ ]$ in Equation (21) is sufficiently small, a good

estimate of that system of equations is given by

$$[I]\{\ddot{\xi}\} + [Meq]^{-1}[2\zeta_{C_2} Meq\Omega_{C_2}]\{\dot{\xi}\} + [Meq]^{-1}[Meq\Omega^2_{C_2}]\{\xi\}$$

$$= [Meq]^{-1}[\psi_B{}^T][\phi_B{}^T]\{F_B\} \qquad (22)$$

where $[Meq]$ represents the diagonals of $[\psi^T M_{C_2} \psi]$, $[Meq\Omega^2_{C_2}]$ represents the diagonals of $[\psi^T K_{C_2} \psi]$ and $[2\xi_{C_2} Meq\Omega_{C_2}]$ represents the diagonals of $[\psi^T C_{C_2} \psi]$.

There is no criteria for determining what is sufficiently small or whether or not the vectors of the baseline system are in the neighborhood of the eigenvectors of the revised system. But, when one considers that successful engineering decisions are often based on imperfect orthogonality (in both analysis and test) one might expect that use of the baseline system coupled modes as if they were orthogonal with respect to the revised system mass and stiffness will produce useful intermediate payload design information. The remainder of this report generates an example problem to illustrate that this expectation can be satisfied even when payload revisions are fairly large.

DYNAMIC MODEL

Many theories have been demonstrated by using very simple dynamic models. Frequently, the examples are trivial, failing to provide a valid test. To avoid such a trap, an existing landing configuration STS set of modal characteristics will be used as the booster model and two payloads will be indeterminately connected to the cargo bay. Although the payloads are fictitious and lacking great detail, they interface with the STS in the same way as true payloads and are representative of their mass and frequency content.

All STS lander model data was obtained from Martin Marietta Corporation (MMC) Denver Division in-house computer files which were established under the Payload Integration Contract (PIC) for the United States Air Force. The data was handled in a manner similar to that used on PIC. That is, all modes in the frequency range 20 Hz and below were included as normal modes. All modes above 20 Hz were included as 14 residual flexibility modes (Reference 5) associated with 14 interface dof to which the two payloads attach. On the PIC Project, modes up to and including 50 Hz were included as normal modes and the remainder as residual flexibility modes. Budget restrictions here would not allow use of the large size coupled system that results from this frequency cutoff, but the 20 Hz cutoff that was used serves well to illustrate the point. Table A-1 lists 84 STS lander model frequencies, the last 14 of which represent residual flexibility modes. Table A-2 identifies cargo bay and landing gear degrees of freedom in the STS lander model.

Figures 1 and 2 describe the geometry and physical properties used to generate the two baseline payload models. These models were attached to the orbiter by inertial coupling with elastic properties described in terms of constrained (at the STS interface) modes. Equations (2) and (4) define this coupling. Standard MMC methodology and computer codes were used to generate the payload models and to calculate their modal characteristics. Tables B-1 and B-2 define the payload dof tables. Tables B-3 and B-4 record the modal characteristics of the baseline payload models. Tables B-5 and B-6 define the constraint modes ([T] in the equations) for the two payloads as obtained from the respective payload stiffness matrices by static reduction techniques.

The STS lander and baseline payload models were coupled by the method previously described and modal characteristics of the coupled system were calculated. Table 1 lists the resulting

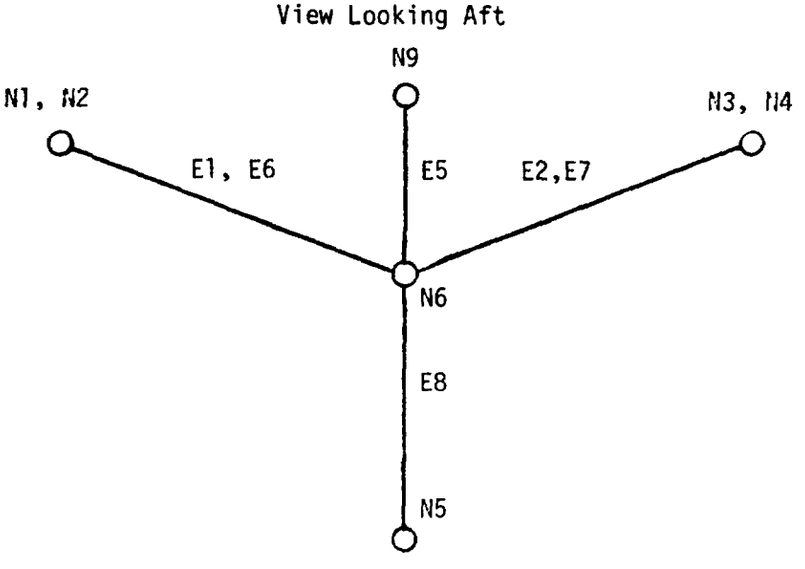
ELEMENT PROPERTIES

ELEMENT NUMBER	JOINT 1	JOINT 2	REF POINT	AREA	POLAR INERTIA	TORSION CONST	Z BENDING INERTIA	Y BENDING INERTIA
1	1	6	5	.100E+02	.100E+03	.100E+04	.200E+03	.200E+03
2	6	3	5	.100E+02	.100E+03	.100E+04	.200E+03	.200E+03
3	5	7	5	.100E+02	.100E+03	.100E+04	.200E+03	.200E+03
4	7	8	5	.100E+02	.100E+03	.100E+04	.200E+03	.200E+03
5	7	9	5	.100E+02	.100E+03	.100E+04	.200E+03	.200E+03
6	8	2	5	.100E+02	.100E+03	.100E+04	.200E+03	.200E+03
7	4	4	5	.100E+02	.100E+03	.100E+04	.200E+03	.200E+03
8	6	5	1	.100E+02	.100E+03	.100E+04	.200E+03	.200E+03

35.7 Kg-sec^2/m (2.0 lb-sec^2/in) at each joint

E = 6.89 X 10^{10} N/m^2 (10^7 psi)

G = 2.69 X 10^{10} N/m^2 (3.9 X 10^6 psi)



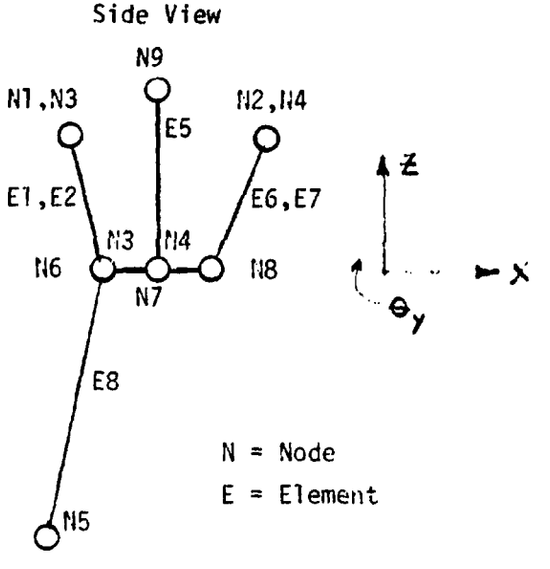


FIGURE 1: Description of Baseline Payload Model A

ELEMENT PROPERTIES

ELEMENT NUMBER	JOINT 1	JOINT 2	REF POINT	AREA	POLAR INERTIA	TORSION CONST	Z BENDING INERTIA	Y BENDING INERTIA
1	1	6	5	.100E+02	.100E+03	.100E+03	.400E+02	.400E+02
2	6	3	5	.100E+02	.100E+03	.100E+03	.400E+02	.400E+02
3	6	7	5	.100E+02	.100E+03	.100E+03	.400E+02	.400E+02
4	7	8	5	.100E+02	.100E+03	.100E+03	.400E+02	.400E+02
5	7	9	5	.100E+02	.100E+03	.100E+03	.400E+02	.400E+02
6	8	2	5	.100E+02	.100E+03	.100E+03	.400E+02	.400E+02
7	8	4	5	.100E+02	.100E+03	.100E+03	.400E+02	.400E+02
8	8	5	1	.100E+03	.100E+04	.100E+04	.400E+02	.400E+02

35.7 Kg-sec^2/m (2.0 lb-sec^2/in) at joints 1 through 5

53.57 Kg-sec^2/m (3.0 lb-sec^2/in) at joints 6 through 9

E = 6.89 X 10^{10} N/m^2(10^7 psi)

G = 2.69 X 10^{10} N/m^2(3.9 X 10^6 psi)

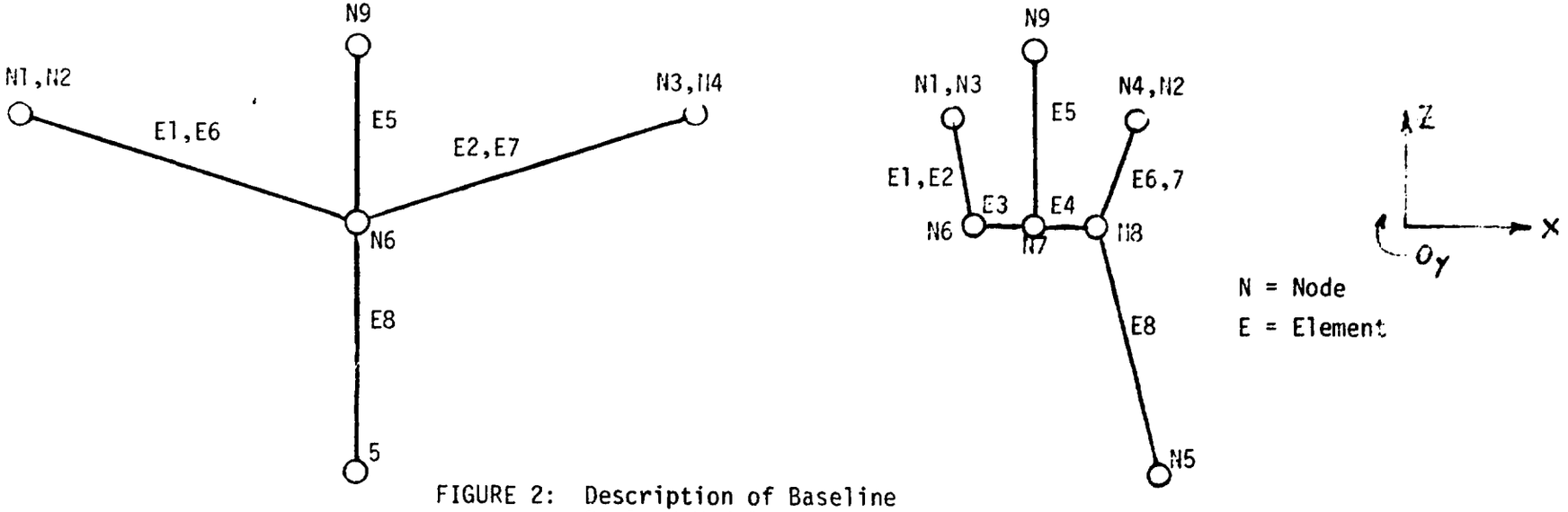


FIGURE 2: Description of Baseline Payload Model B

RUN NO. ORBIT

Table 1. Baseline coupled system frequencies

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.39.11 CLOCK TIME
190.547 SEC. CPTIME
65043 SEC. PPTIME

COUPLED MODES		MAJOR CONTRIBUTING COMPONENT MODES		
NO.	FREQ (HZ)	IDENTIFICATION	CONTRIB	FREQ (HZ)
1	.000	ORB3	51.569	0.000
		ORB1	43.638	0.000
2	.000	ORB1	53.702	0.000
		ORB3	30.647	0.000
		ORB5	15.651	0.000
3	.000	ORB6	68.226	0.000
		ORB2	29.455	0.000
4	.000	ORB2	66.833	0.000
		ORB6	31.338	0.000
5	.000	ORB5	79.115	0.000
		ORB3	17.730	0.000
6	.000	ORB4	96.365	0.000
7	1.247	BMOD1	99.965	1.232
8	1.644	BMOD2	99.631	1.618
9	2.633	BMOD3	98.874	2.613
10	3.041	BMOD4	59.570	3.041
		AMOD1	38.378	3.027
11	3.075	AMOD1	61.076	3.027
		BMOD4	38.391	3.041
12	3.345	AMOD2	95.025	3.316
13	3.714	ORB7	96.904	3.703
14	4.694	AMOD3	98.990	4.684
15	5.207	ORB8	80.126	5.317
		AMOD4	13.583	5.310
16	5.309	AMOD4	85.327	5.310
		ORB8	13.256	5.317
17	6.693	ORB9	98.616	6.693
18	6.898	ORB10	72.888	6.939
		ORB11	13.461	7.206
		AMOD5	9.180	7.596
19	7.020	ORB11	52.622	7.206
		ORB10	26.042	6.939
		AMOD5	12.998	7.596
20	7.111	BMOD5	98.405	7.105
21	7.322	BMOD6	99.897	7.321
22	7.402	ORB12	71.219	7.470
		ORB11	19.119	7.206
		AMOD5	5.239	7.596
23	7.625	ORB13	76.283	7.682
		ORB12	13.318	7.470
		AMOD5	5.243	7.596
24	8.038	AMOD5	50.894	7.596
		ORB13	18.112	7.682
		ORB11	9.647	7.206
		ORB12	9.267	7.470
		ORB16	5.824	9.196
25	8.744	ORB14	99.830	8.742
26	9.167	ORB15	96.193	9.150
27	9.290	ORB16	89.032	9.196
		AMOD5	5.792	7.596

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.39.11 CLOCK TIME
190.863 SEC. CPTIME
65087 SEC. PPTIME

COUPLED MODES		MAJOR CONTRIBUTING COMPONENT MODES		
NO.	FREQ (HZ)	IDENTIFICATION	CONTRIB	FREQ (HZ)
28	9.394	BMOD7	94.530	9.390
29	9.656	ORB17	96.708	9.609
30	10.383	ORB18	99.588	10.373
31	10.701	ORB19	99.870	10.698
32	10.871	ORB20	94.236	10.864
		ORB21	5.592	10.939
33	11.006	ORB21	64.841	10.939
		ORB22	16.779	11.017
		AMOD6	11.556	11.157
34	11.032	ORB22	82.885	11.017
		ORB21	12.678	10.939
35	11.185	AMOD6	85.128	11.157
		ORB21	12.957	10.939
36	11.637	ORB23	99.316	11.632
37	11.843	ORB24	99.970	11.842
38	11.907	ORB25	99.982	11.907
39	12.048	ORB26	99.992	12.048
40	12.379	ORB27	99.890	12.375
41	12.525	ORB28	99.977	12.524
42	12.749	ORB29	99.975	12.749
43	13.379	ORB30	99.986	13.379
44	13.662	ORB31	99.624	13.649
45	14.149	ORB32	99.934	14.149
46	14.320	ORB33	99.821	14.316
47	14.518	ORB34	99.921	14.516
48	14.833	ORB35	99.991	14.833
49	15.084	ORB36	100.000	15.084
50	15.297	ORB37	99.853	15.292
51	16.602	ORB38	99.866	16.606
52	16.853	ORB39	99.482	16.843
53	17.232	BMOD8	98.131	17.237
54	17.332	ORB40	99.157	17.330
55	17.394	ORB41	99.874	17.394
56	17.488	ORB42	99.634	17.497
57	18.053	ORB43	98.839	18.039
58	18.386	ORB44	98.601	18.369
59	18.840	ORB45	99.774	18.840
60	19.382	ORB46	99.240	19.388
61	19.592	AMOD7	99.772	19.590
62	19.645	ORB47	99.243	19.649
63	19.704	ORB48	99.976	19.704
64	19.820	ORB49	99.878	19.820
65	19.970	AMOD8	98.469	19.955
66	20.089	ORB50	99.967	20.089
67	21.197	BMOD9	99.756	21.186
68	21.771	BMOD10	99.983	21.770
69	25.165	ITERF1	99.689	25.184
70	27.349	ITERF2	99.972	27.352
71	28.233	ITERF3	99.994	28.233
72	30.693	ITERF4	99.928	30.701

Table 1. (Continued)

11.39.23 CLOCK TIME
191.244 SEC. CPTIME
65087 SEC. PPTIME

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

COUPLED MODES		MAJOR CONTRIBUTING COMPONENT MODES		
NO.	FREQ (HZ)	IDENTIFICATION	CONTRIB	FREQ (HZ)
73	31.523	ITERF5	99.983	31.525
74	33.832	AMOD9	97.160	33.833
75	34.173	ITERF6	97.206	34.164
76	34.823	ITERF7	99.998	34.823
77	37.162	ITERF8	99.987	37.165
78	38.131	ITERF9	99.998	38.132
79	42.765	ITERF10	99.998	42.765
80	46.078	ITERF11	99.999	46.079
81	48.454	ITERF12	99.999	48.455
82	51.279	AMOD10	99.999	51.277
83	51.585	ITERF13	100.000	51.585
84	52.754	ITERF14	99.999	52.754

frequencies under the column headed "COUPLED MODES." Table 1 also identifies the component modes which contribute more than 5% of the kinetic energy of each coupled mode, under columns headed "MAJOR CONTRIBUTING COMPONENT MODES." Subheadings under this identify contributing component modes as "IDENTIFICATION," % of contribution as "CONTRIB," and uncoupled component frequency as "FREQ." STS lander normal modes are identified as "ORBXX," where XX = 1,50. STS lander residual flexibility modes are identified as "ITERFYY" where YY = 1,14. Payload constrained modes are identified as "AMODZZ" or "BMODZZ" where ZZ = 1,10. Thus, the total number of component modes and coupled system eigenproblem size was 84. The result of interest from the baseline coupled system are the eigenvectors, $[\psi]$, which transform component mode coordinates to coupled system mode coordinates. The matrix is often referred to as "modal modes." This 84 x 84 matrix is presented as Table C-1. The product $[\psi]^T[M_C][\psi]$ where $[M_C]$ denotes the coupled baseline system mass results in 1.0 on all diagonals with the largest off diagonal element being 10^{-13}. The product $[\psi]^T[K_C][\psi]$, where $[K_C]$ denotes the coupled baseline system stiffness, results in eigenvalues on all diagonals with the largest off diagonal element being 10^{-8}. These results will be compared later to orthogonality checks of $[\psi]$ with respect to the coupled perturbed system mass and stiffness matrices. Note for now the relationship between the energy contribution in Table 1 and the relative magnitude of terms in $[\psi]$ as shown in Table C-1. Where a coupled mode is shown in Table 1 to consist primarily of a single component, the column in $[\psi]$ corresponding to that mode has a value near 1. in the row corresponding to the component mode. For example, element 7,12 of ψ is 0.9941 while the 12th coupled mode is shown to be 99.093% orbiter mode 7 (ORB7) which is the 7th component mode. Even when coupling does occur, as in coupled mode 15, only those rows of $[\psi]$ corresponding to the participating component modes contain significant numbers.

To obtain the perturbed payload models, arbitrary changes of mass and stiffness were made. Figures 3 and 4 describe the perturbed models. Degree of freedom tables are unchanged from the baseline descriptions given by Tables B-1 and B-2. Modal characteristics of the perturbed payloads are presented in Tables D-1 and D-2, and constraint modes in Tables D-3 and D-4. Note that perturbed model constraint modes differ from the baseline due to stiffness changes in the indeterminate load path to the interface.

The STS lander and perturbed payload models were coupled by the same method used for the baseline payload. This coupled perturbed system was handled in two ways.

ELEMENT PROPERTIES

ELEMENT NUMBER	JOINT 1	JOINT 2	REF POINT	AREA	POLAR INERTIA	TORSION CONST	Z BENDING INERTIA	Y BENDING INERTIA
1	1	6	5	.100E+02	.100E+03	.100E+04	.200E+03	.200E+03
2	6	3	5	.100E+02	.100E+03	.100E+04	.200E+03	.200E+03
3	3	7	5	.100E+02	.100E+03	.100E+04	.200E+03	.200E+03
4	7	8	5	.100E+02	.100E+03	.100E+04	.200E+03	.200E+03
5	7	4	5	.100E+02	.100E+03	.100E+04	.200E+03	.200E+03
6	8	2	5	.100E+02	.100E+03	.100E+04	.200E+03	.200E+03
7	8	4	5	.100E+02	.100E+03	.100E+04	.200E+03	.200E+03
8	8	5	1	.100E+02	.100E+03	.100E+04	.200E+03	.200E+03

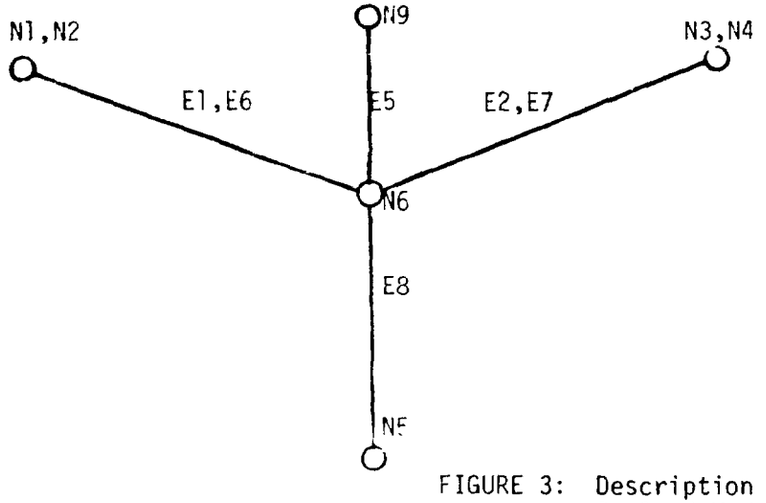
35.7 Kg-sec^2/m (2.0 lb-sec^2/in) at joints 1 through 5

53.57 Kg-sec^2/m (3.0 lb-sec^2/in) at joints 6 through 9

E = 6.89 X 10^{10} N/m^2(10^7 psi)

G = 2.69 X 10^{10} N/m^2(3.9 X 10^6 psi)

View Looking Aft



Side View

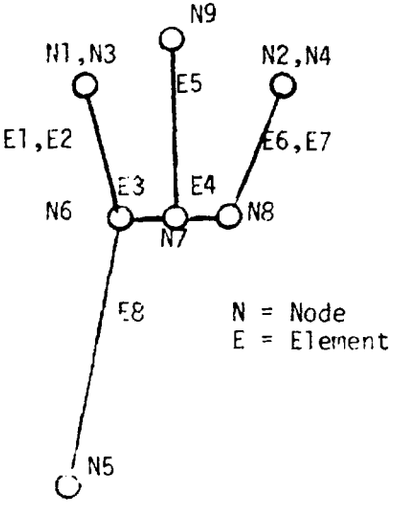


FIGURE 3: Description of Perturbed Payload Model A

ELEMENT PROPERTIES

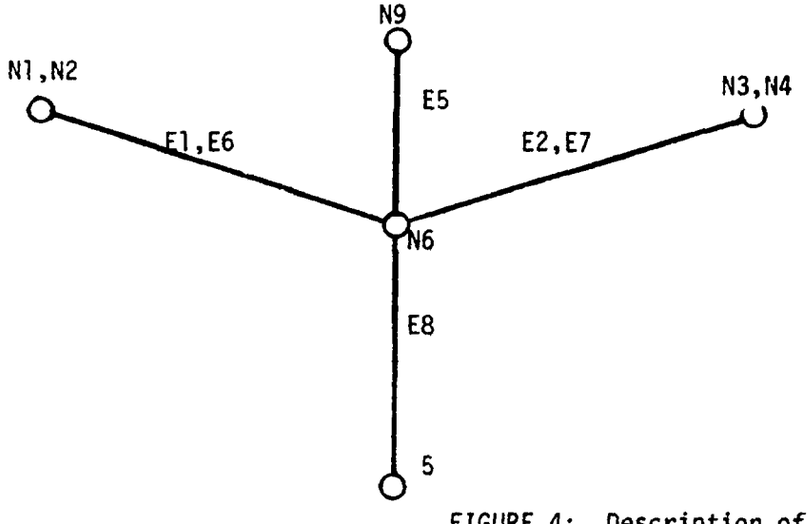
ELEMENT NUMBER	JOINT 1	JOINT 2	REF POINT	AREA	POLAR INERTIA	TORSION CONST	Z BENDING INERTIA	Y BENDING INERTIA
1	1	6	5	.100E+02	.100E+03	.200E+03	.800E+02	.800E+02
2	6	3	5	.100E+02	.100E+03	.200E+03	.800E+02	.800E+02
3	6	7	5	.100E+02	.100E+03	.200E+03	.800E+02	.800E+02
4	7	8	5	.100E+02	.100E+03	.200E+03	.800E+02	.800E+02
5	7	9	5	.100E+02	.100E+03	.200E+03	.800E+02	.800E+02
6	8	2	5	.100E+02	.100E+03	.200E+03	.800E+02	.800E+02
7	8	4	5	.100E+02	.100E+03	.200E+03	.800E+02	.800E+02
8	8	5	1	.100E+03	.100E+04	.200E+04	.800E+02	.800E+02

35.7 Kg-sec^2/m (2.0 lb-sec^2/in) at joints 1 through 5

53.57 Kg-sec^2/m (3.0 lb-sec^2/in) at joints 6 through 9

E = 6.89 X 10^{10} N/m^2(10^7 psi)

G = 2.69 X 10^{10} N/m^2(3.9 X 10^6 psi)



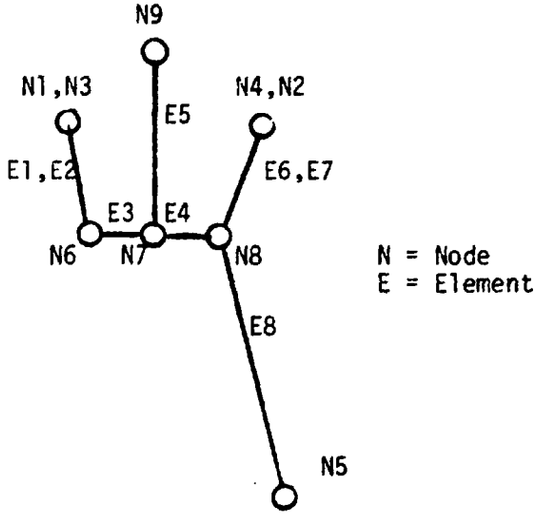


FIGURE 4: Description of Perturbed Payload Model B

1) Modal characteristics were calculated by the same method as that used on the baseline system. Resulting frequencies are listed in Table 2, and "modal modes" are recorded as Table E-1. These results provide the true orthogonal coordinate system for the response analyses comparison which will be discussed in the dynamic model excitation section. Many of the coupled modes are seen to be primarily booster modes. This result is consistent with our PIC results where approximately half the coupled system modes are predominantly booster modes.

2) Orthogonality checks, $[\psi^T][M_{C_2}][\psi]$ and $[\psi^T][K_{C_2}][\psi]$ where $[M_{C_2}]$ and $[K_{C_2}]$ are the coupled perturbed system mass and stiffness matrices respectively, were formed. They are presented as Tables F-1 and F-2. Rayleigh Quotients were formed from the diagonals of these matrices (i.e., $K_{C_{2jj}}/M_{C_{2jj}}$, $j = 1,84$). They were converted to frequency (i.e., $f_j = 1/2\pi \sqrt{K_{C_{2jj}}/M_{C_{2jj}}}$) and correlated by mode shape with the true eigensolution results from step 1. The correlation is presented in Table 3, where the Rayleigh Quotients are superimposed on the table of Perturbed Coupled System Frequencies. This good correlation verifies that the coupled system "modal modes" obtained from the baseline payloads eigensolution provides a very good estimate of the coupled system "modal modes" for the perturbed system.

Table 2. Perturbed Coupled System Frequencies

MODEL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.49.30 CLOCK TIME
202.646 SEC. CPTIME
64889 SEC. PPTIME

COUPLED MODES		MAJOR CONTRIBUTING COMPONENT MODES		
NO.	FREQ (HZ)	IDENTIFICATION	CONTRIB	FREQ (HZ)
1	.000	ORB1	99.896	0.000
2	.000	ORB2	66.870	0.000
		ORB6	29.015	0.000
3	.000	ORB5	85.473	0.000
		ORB3	14.411	0.000
4	.000	ORB6	70.529	0.000
		ORB2	29.062	0.000
5	.000	ORB3	85.561	0.000
		ORB5	14.375	0.000
6	.000	ORB4	95.615	0.000
7	1.722	BMOD1	99.916	1.702
8	2.294	BMOD2	99.087	2.263
9	2.986	AMOD1	99.503	2.948
10	3.180	AMOD2	96.152	3.139
11	3.638	BMOD3	95.909	3.630
12	3.712	ORB7	97.960	3.703
13	4.150	BMOD4	90.314	4.190
		ORB8	7.294	5.317
14	4.634	AMOD3	99.210	4.625
15	5.078	AMOD4	91.619	5.068
		ORB8	5.844	5.317
16	5.269	ORB8	75.601	5.317
		BMOD4	7.618	4.190
		AMOD4	7.376	5.068
		AMOD5	7.097	6.997
17	6.696	ORB9	99.492	6.693
18	6.741	AMOD5	40.246	6.997
		ORB11	28.211	7.206
		ORB10	14.963	6.939
		ORB8	5.567	5.317
		ORB12	5.182	7.470
19	6.965	ORB10	83.626	6.939
		ORB11	10.312	7.206
20	7.366	ORB12	44.910	7.470
		ORB11	42.793	7.206
		AMOD5	6.684	6.997
21	7.589	ORB13	46.258	7.682
		ORB12	36.493	7.470
		ORB11	8.036	7.206
		AMOD5	7.382	6.997
22	7.850	ORB13	46.960	7.682
		AMOD5	25.017	6.997
		ORB12	11.944	7.470
		ORB11	9.464	7.206
23	8.744	ORB14	99.852	8.742
24	9.159	ORB15	95.023	9.150
25	9.273	ORB16	93.531	9.196
26	9.476	BMOD5	85.732	9.481
		ORB17	10.763	9.609
27	9.674	ORB17	87.480	9.609

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.49.30 CLOCK TIME
202.982 SEC. CPTIME
64941 SEC. PPTIME

COUPLED MODES		MAJOR CONTRIBUTING COMPONENT MODES		
NO.	FREQ (HZ)	IDENTIFICATION	CONTRIB	FREQ (HZ)
		BMOD5	10.258	9.481
28	10.042	BMOD6	99.935	10.042
29	10.157	AMOD6	99.627	10.155
30	10.384	ORB18	99.539	10.373
31	10.700	ORB19	99.867	10.698
32	10.871	ORB20	95.265	10.864
33	11.020	ORB22	55.868	11.017
		ORB21	40.673	10.939
34	11.036	ORB21	51.232	10.939
		ORB22	43.759	11.017
35	11.637	ORB23	99.773	11.632
36	11.843	ORB24	99.980	11.842
37	11.907	ORB25	99.960	11.907
38	12.048	ORB26	99.980	12.048
39	12.379	ORB27	99.829	12.375
40	12.524	ORB28	99.829	12.524
41	12.746	ORB29	99.962	12.749
42	12.865	BMOD7	95.928	12.864
43	13.380	ORB30	99.721	13.379
44	13.661	ORB31	99.656	13.649
45	14.154	ORB32	99.567	14.149
46	14.326	ORB33	99.611	14.316
47	14.520	ORB34	99.810	14.516
48	14.830	ORB35	99.987	14.833
49	15.084	ORB36	99.999	15.084
50	15.299	ORB37	99.820	15.292
51	16.595	ORB38	95.863	16.606
52	16.855	ORB39	99.509	16.843
53	16.886	AMOD7	95.476	16.866
54	17.332	ORB40	99.912	17.330
55	17.394	ORB41	99.985	17.394
56	17.492	ORB42	99.554	17.497
57	17.801	AMOD8	99.271	17.801
58	18.059	ORB43	98.771	18.039
59	18.394	ORB44	98.212	18.369
60	18.842	ORB45	99.823	18.840
61	19.387	ORB46	99.877	19.388
62	19.648	ORB47	99.970	19.649
63	19.704	ORB48	99.985	19.704
64	19.820	ORB49	99.980	19.820
65	20.089	ORB50	99.984	20.089
66	21.222	BMOD8	99.879	21.216
67	25.164	ITERF1	99.701	25.184
68	26.406	BMOD9	99.952	26.398
69	27.349	ITERF2	99.955	27.352
70	28.233	ITERF3	99.994	28.233
71	28.965	BMOD10	99.999	28.964
72	30.693	ITERF4	99.927	30.701
73	31.523	ITERF5	99.981	31.525
74	32.848	AMOD9	99.705	32.841

Table 2. (Continued)

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.48.30 CLOCK TIME
203.360 SEC. CPTIME
84941 SEC. PPTIME

COUPLED MODES		MAJOR CONTRIBUTING COMPONENT MODES		
NO.	FREQ (HZ)	IDENTIFICATION	CONTRIB	FREQ (HZ)
75	34.167	ITERF6	99.767	34.164
76	34.823	ITERF7	99.999	34.823
77	37.162	ITERF8	99.985	37.165
78	38.131	ITERF9	99.998	38.132
79	42.765	ITERF10	99.998	42.765
80	46.078	ITERF11	99.999	46.079
81	47.077	AMOD10	99.999	47.076
82	48.454	ITERF12	99.999	48.455
83	51.585	ITERF13	100.000	51.585
84	52.754	ITERF14	99.999	52.754

RUN NO. ORBITP

Table 3. Correlation of Perturbed System Rayleigh Quotients and Coupled System Frequencies

19.49.30 CLOCK TIME
202.646 SEC. CPTIME
64889 SEC. PPTIME

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

COUPLED MODES		MAJOR CONTRIBUTING COMPONENT MODES			
NO.	FREQ (HZ)	IDENTIFICATION		CONTRIB	FREQ (HZ)
1	.000	ORB1		99.896	0.000
2	.000	ORB2		66.870	0.000
		ORB6		29.015	0.000
3	.000	ORB5		85.473	0.000
		ORB3		14.411	0.000
4	.000	ORB6		70.529	0.000
		ORB2		29.062	0.000
5	.000	ORB3	Rayleigh	85.561	0.000
		ORB5	Quotient	14.375	0.000
6	.000	ORB4		95.815	0.000
7	1.722	BMOD1	1.722	99.916	1.702
8	2.294	BMOD2	2.297	99.087	2.263
9	2.986	AMOD1	3.531	99.503	2.948
10	3.180	AMOD2	3.181	96.152	3.139
11	3.638	BMOD3	3.648	95.909	3.630
12	3.712	ORB7	3.711	97.960	3.703
13	4.150	BMOD4	3.774	90.314	4.190
		ORB8		7.294	5.317
14	4.634	AMOD3	4.634	99.210	4.625
15	5.078	AMOD4	5.147	91.619	5.068
		ORB8	5.182	5.844	5.317
16	5.269	ORB8		75.601	5.317
		BMOD4		7.618	4.190
		AMOD4		7.376	5.068
		AMOD5		7.097	6.997
17	6.696	ORB9	6.720	99.492	6.693
18	6.741	AMOD5	6.839	40.246	6.997
		ORB11		28.211	7.206
		ORB10		14.963	6.939
		ORB8		5.567	5.317
		ORB12		5.182	7.470
19	6.965	ORB10	6.947	83.626	6.939
		ORB11		10.312	7.206
20	7.366	ORB12	7.371	44.910	7.470
		ORB11		42.793	7.206
		AMOD5		6.684	6.997
21	7.589	ORB13	7.596	46.258	7.682
		ORB12		36.493	7.470
		ORB11		8.036	7.206
		AMOD5		7.382	6.997
22	7.850	ORB13	7.781	46.960	7.682
		AMOD5		25.017	6.997
		ORB12		11.944	7.470
		ORB11		9.464	7.206
23	8.744	ORB14	8.745	99.852	8.742
24	9.159	ORB15	9.231	95.023	9.150
25	9.273	ORB16	9.370	93.531	9.196
26	9.476	BMOD5	9.455	85.732	9.491
		ORB17		10.763	9.609
27	9.674	ORB17	9.712	87.480	9.609

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.49.30 CLOCK TIME
202.982 SEC. CPTIME
64941 SEC. PPTIME

COUPLED MODES		MAJOR CONTRIBUTING COMPONENT MODES		
NO.	FREQ (HZ)	IDENTIFICATION	CONTRIB	FREQ (HZ)
		BMOD5	10.258	9.481
28	10.042	BMOD6 10.039	99.935	10.042
29	10.157	AMOD6 10.32	99.627	10.155
30	10.384	ORB18 10.03	99.539	10.373
31	10.700	ORB19 10.70	99.867	10.698
32	10.871	ORB20 10.87	95.265	10.864
33	11.020	ORB22 11.01	55.868	11.017
		ORB21	40.673	10.939
34	11.036	ORB21 10.90	51.232	10.939
		ORB22	43.759	11.017
35	11.637	ORB23 11.63	99.773	11.632
36	11.843	ORB24 11.84	99.980	11.842
37	11.907	ORB25 11.91	99.966	11.907
38	12.048	ORB26 12.05	99.980	12.048
39	12.379	ORB27 12.38	99.829	12.375
40	12.524	ORB28 12.52	99.829	12.524
41	12.746	ORB29 12.75	96.962	12.749
42	12.865	BMOD7 12.70	95.928	12.864
43	13.380	ORB30 13.38	99.721	13.379
44	13.661	ORB31 13.66	99.656	13.649
45	14.154	ORB32 14.15	99.567	14.149
46	14.326	ORB33 14.33	99.611	14.316
47	14.520	ORB34 14.52	99.810	14.516
48	14.833	ORB35 14.83	99.987	14.833
49	15.084	ORB36 15.08	99.999	15.084
50	15.299	ORB37 15.30	99.820	15.292
51	16.595	ORB38 16.61	95.863	16.606
52	16.855	ORB39 16.86	99.509	16.843
53	16.886	AMOD7 16.87	95.476	16.868
54	17.332	ORB40 17.37	99.912	17.330
55	17.394	ORB41 17.40	99.985	17.394
56	17.492	ORB42 17.50	99.554	17.497
57	17.801	AMOD8 17.82	99.271	17.801
58	18.059	ORB43 18.07	98.771	18.039
59	18.394	ORB44 18.41	98.212	18.369
60	18.842	ORB45 18.84	99.823	18.840
61	19.387	ORB46 19.38	99.877	19.388
62	19.648	ORB47 19.60	99.970	19.649
63	19.704	ORB48 19.70	99.985	19.704
64	19.820	ORB49 19.82	99.980	19.820
65	20.089	ORB50 20.09	99.984	20.089
66	21.222	BMOD8 21.14	99.879	21.216
67	25.164	ITERF1 25.14	99.701	25.184
68	26.406	BMOD9 26.40	99.952	26.398
69	27.349	ITERF2 27.35	99.955	27.352
70	28.233	ITERF3 28.23	99.994	28.233
71	28.965	BMOD10 28.96	99.999	28.964
72	30.693	ITERF4 30.69	99.927	30.701
73	31.523	ITERF5 31.52	99.981	31.525
74	32.848	AMOD9 32.87	99.705	32.841

Table 3. (continued)

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.49.30 CLOCK TIME
203.360 SEC. CPTIME
64941 SEC. PPTIME

COUPLED MODES		MAJOR CONTRIBUTING COMPONENT MODES			
NO.	FREQ (HZ)	IDENTIFICATION		CONTRIB	FREQ (HZ)
75	34.167	ITERF6	34.15	99.767	34.164
76	34.823	ITERF7	34.82	99.999	34.823
77	37.162	ITERF8	37.16	99.985	37.165
78	38.131	ITERF9	38.13	99.998	38.132
79	42.765	ITERF10	42.76	99.998	42.765
80	46.078	ITERF11	46.08	99.999	46.079
81	47.077	AMOD10	47.08	99.999	47.076
82	48.454	ITERF12	48.45	99.999	48.455
83	51.585	ITERF13	51.59	100.000	51.585
84	52.754	ITERF14	52.75	99.999	52.754

DYNAMIC MODEL EXCITATION

With feasibility of the aproximate coordinates approach established by the preceeding review of the perturbed dynamic model, both time and frequency responses were calculated using first the true orthogonal coordinates (step 1 above) and then repeated with the proposed approximate coordinates (step 2 above).

Interface loads were selected as the variable to be calculated and landing gear forces were selected as the excitation source. Since only comparative results were desired, a unit force was applied at all frequencies in frequency response calculations. Forces were applied in the vertical direction at all three struts. No attempt was made to represent any realistic landing gear forces. In general, the equations of motion were set up in the form,

$$[I]\{\ddot{\xi}\}+[2\zeta\Omega]\{\dot{\xi}\}+[\Omega^2]\{\xi\}=[\Psi^T]\begin{bmatrix}\phi_{BL}\\ 0\end{bmatrix}\{F_{BL}\} \qquad (23)$$

and the loads equation were set up as

$$\{L\} = [DD][T\phi_{BI}\,|\,\bar{\phi}_p][\psi]\{\xi\} \qquad (24)$$

where [DD] is a transformation relating payload loads to absolute discrete displacement.

Loads in Element 3 of both perturbed payloads (see Figures 3 and 4) were selected for presentation because their major axes coincide with the model axes, making it easier to correlate load magnitudes with the excitation forces. Figures 5 through 16 present frequency responses of these loads. Figures 17 through 28 present time responses of these loads. The "a" subscript on these figures denotes that the true orthogonal coordinates were used. The "b" subscript denotes that the approximate coordinate were used. Table 4 decodes the six load names used in Figures 5 through 28.

Since input forces were arbitrary only relative magnitude of loads can be considered when reviewing results. In general, loads obtained using orthogonal coordinates agree fairly well with corresponding loads obtained using approximate coordinates, particularly in the direction of excitation where loads are the largest. Further improvement of frequency response results may be possible by using a smaller frequency increment in the analysis (.127 HZ was used in the interest of economy).

Table 4. Notation for Response Data Figures

LOAD NAME CODES

PX = Axial Load in X direction

MTX = Moment about X axis

VY = Shear in y direction

MTZ = Moment about Z axis

VZ = Shear in Z direction

MTY = Moment about Y axis

(See Figures 1 and 2 for description of axes)

COORDINATE SYSTEM DESIGNATIONS

"a" denotes true orthogonal coordinates

"b" denotes approximate coordinates

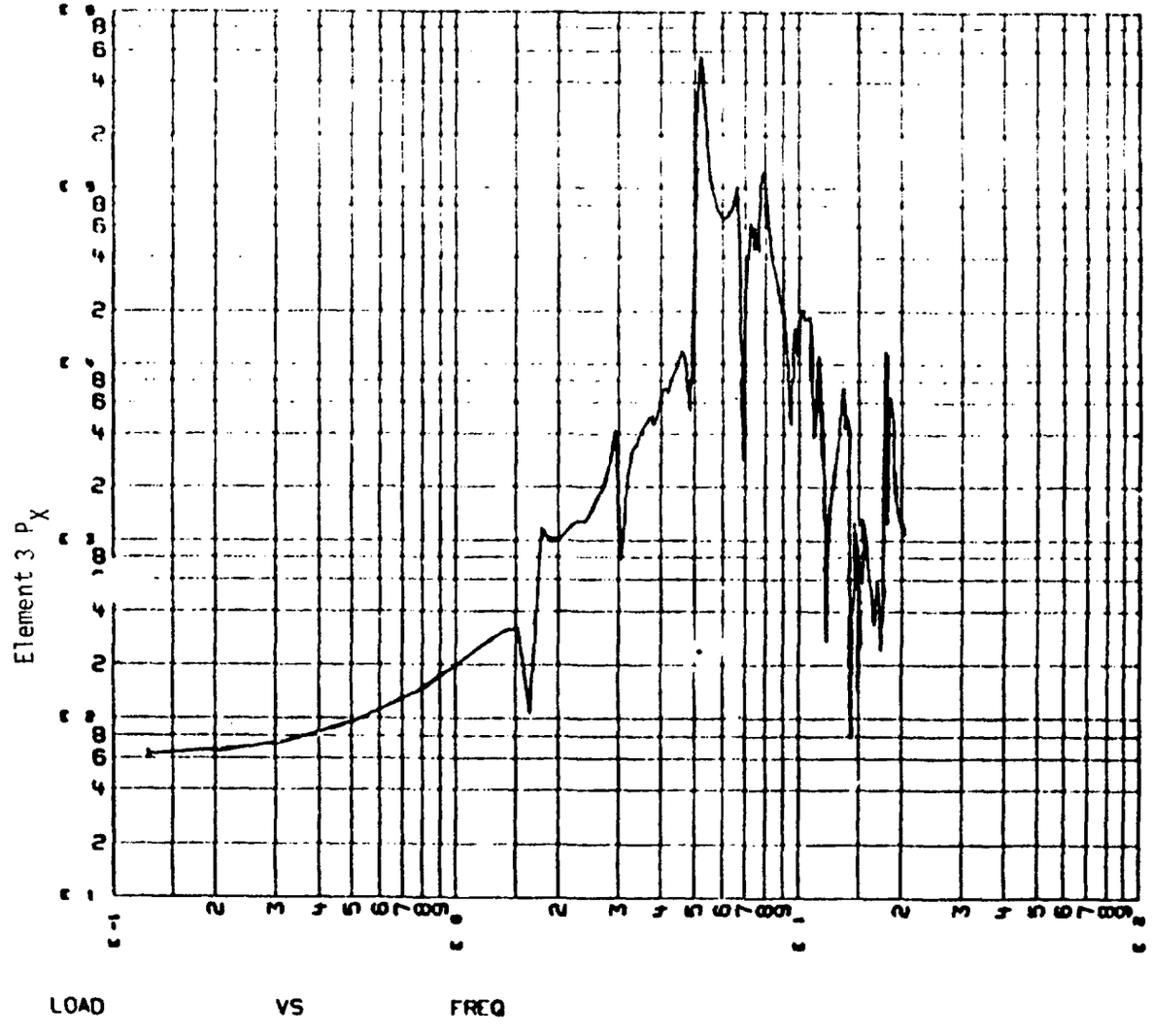


Figure 5a. P/L A, PX, Frequency Response

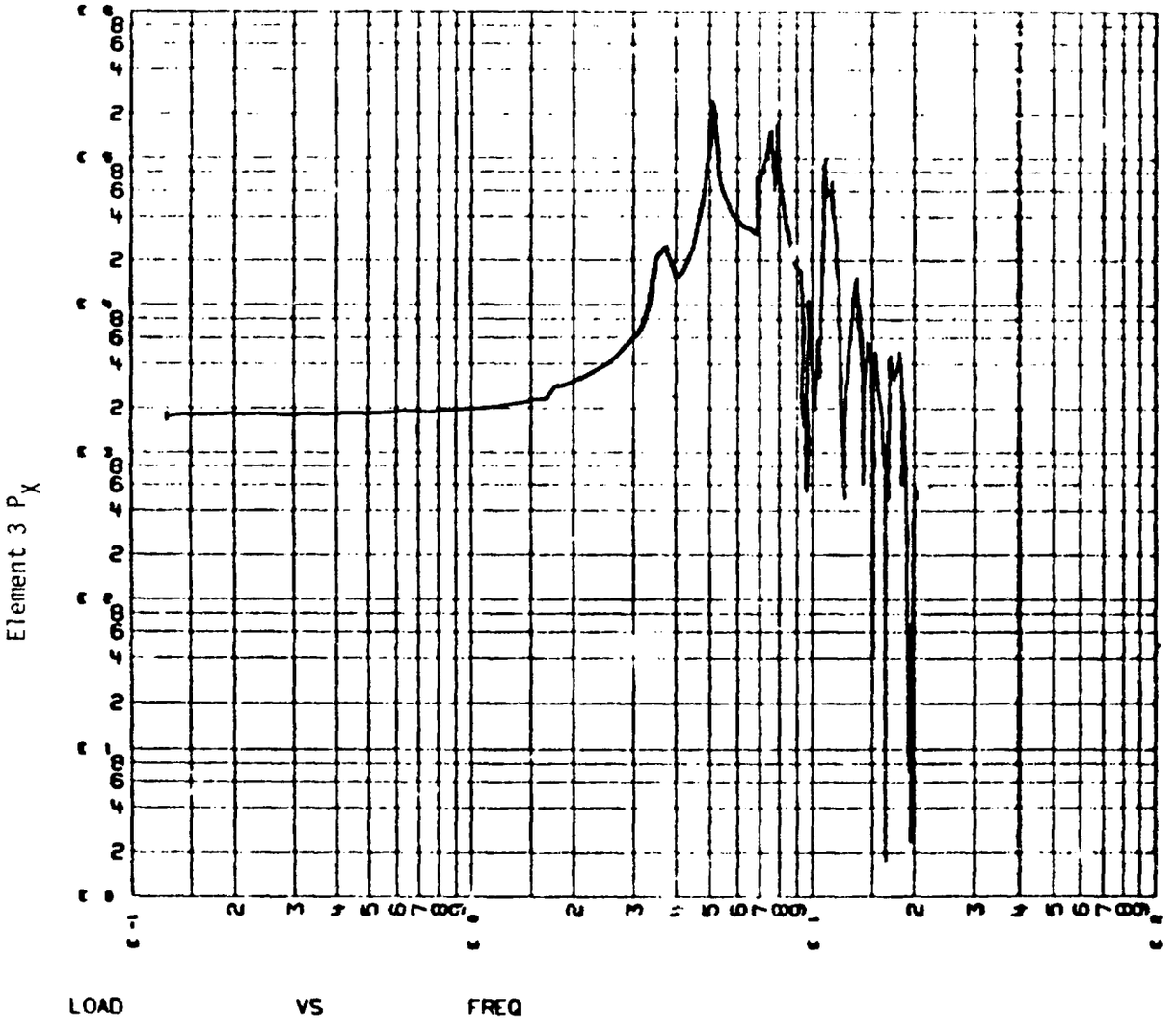


Figure 5b. P/L A, PX, Frequency Response

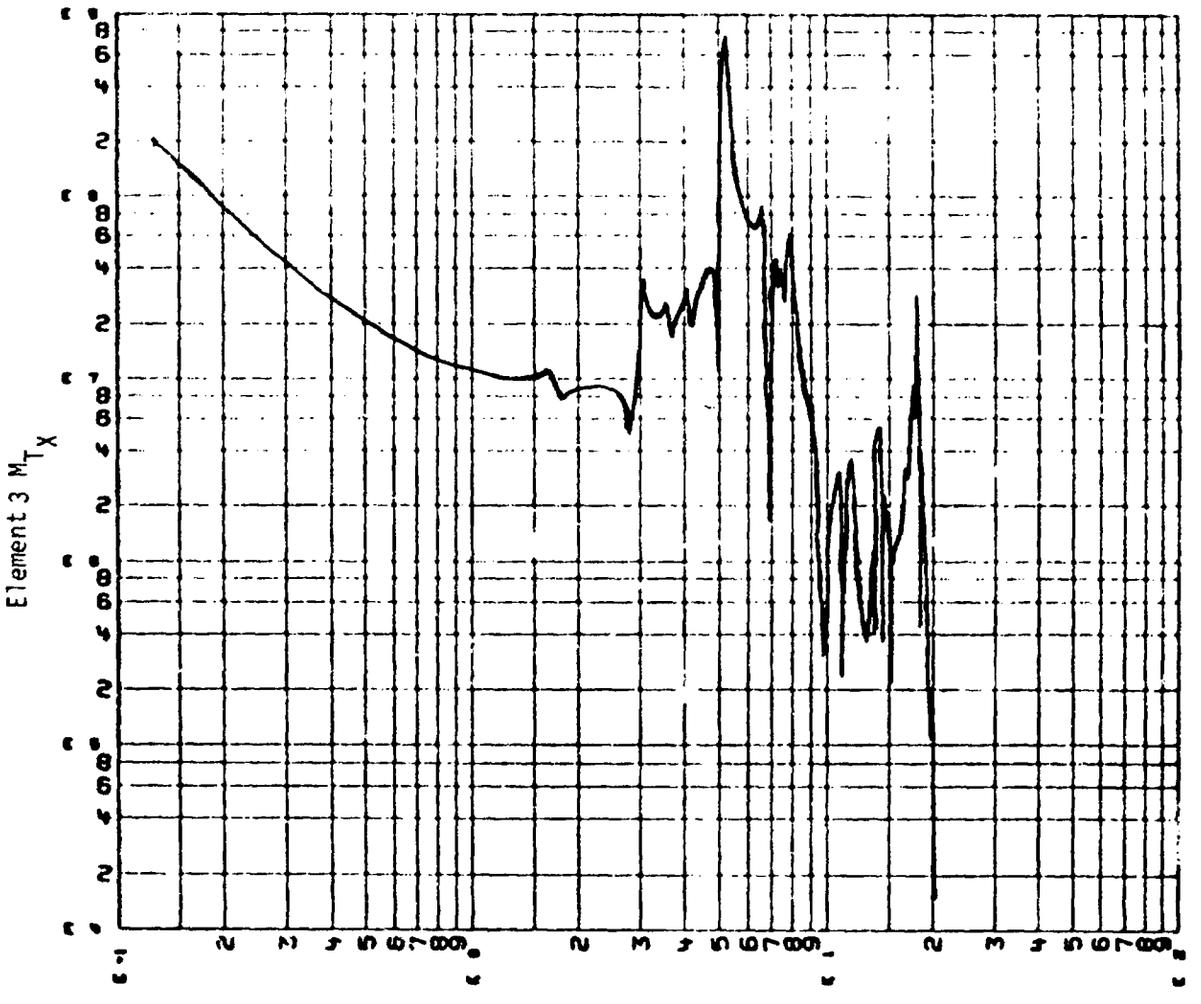


Figure 61. P/L A, MTX, Frequency Response

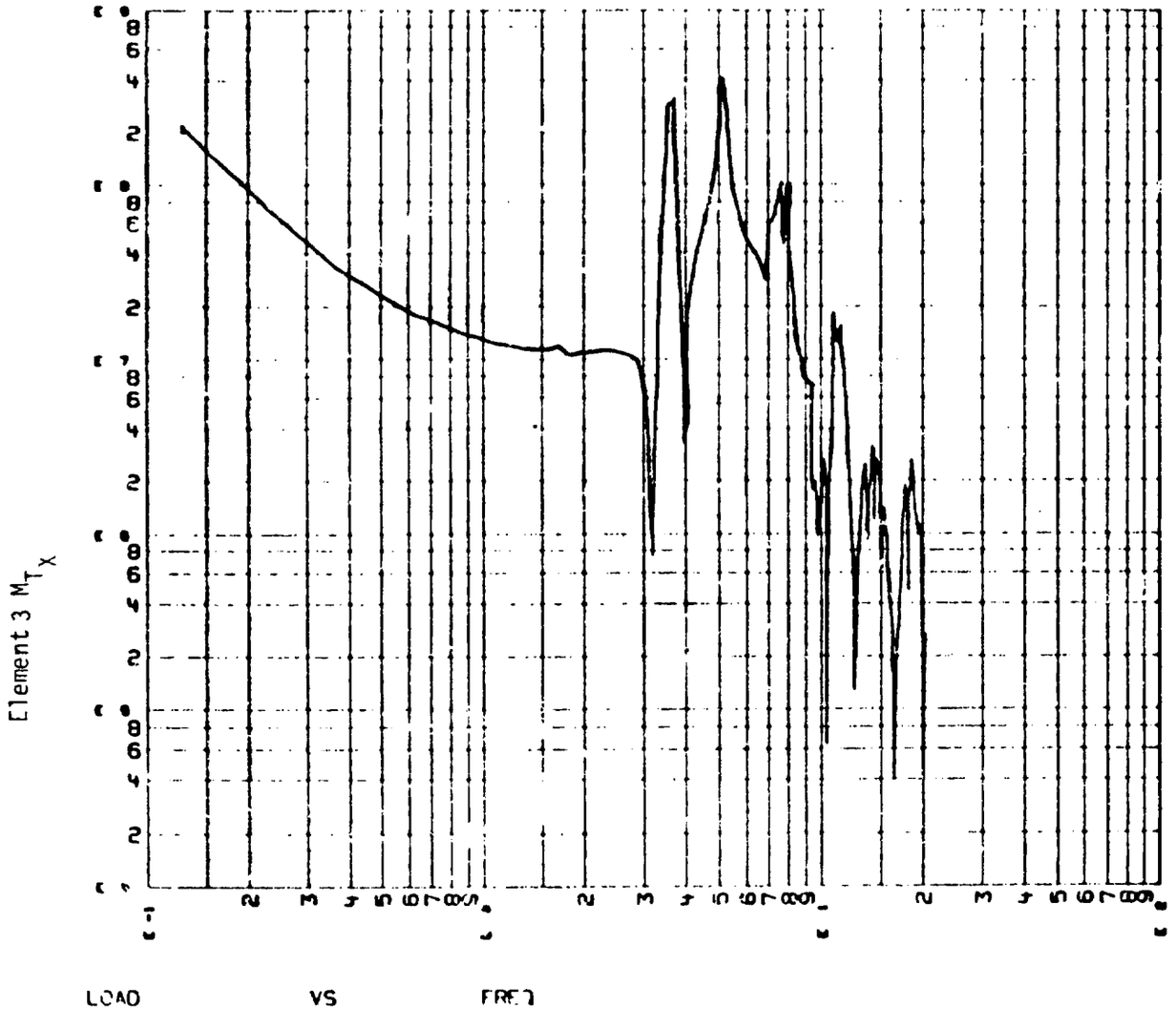


Figure 6b. P/L A, MTX, Frequency Response

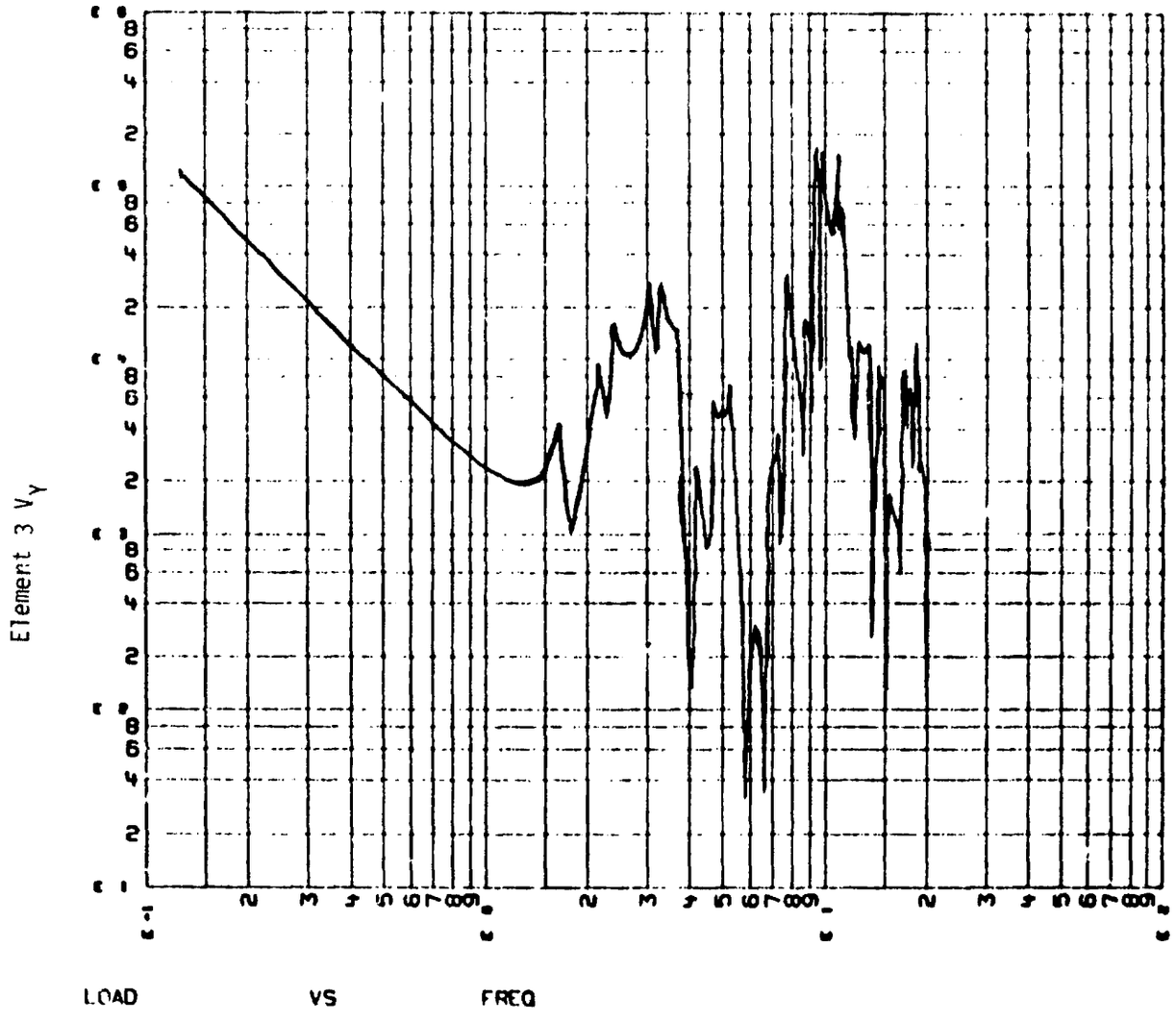


Figure 7a. P/L A, VY, Frequency Response

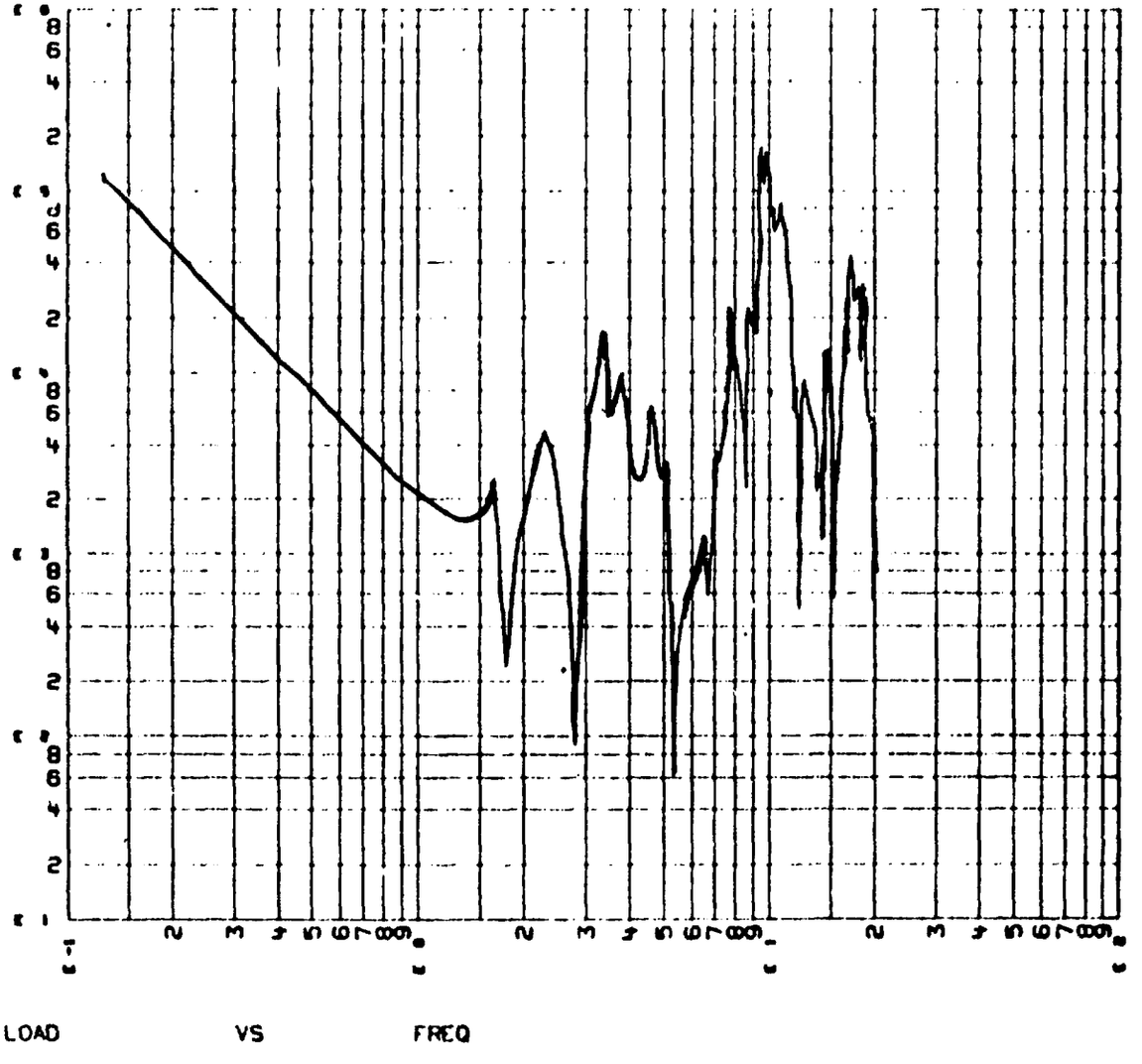


Figure 7b. P/L A, VY, Frequency Response

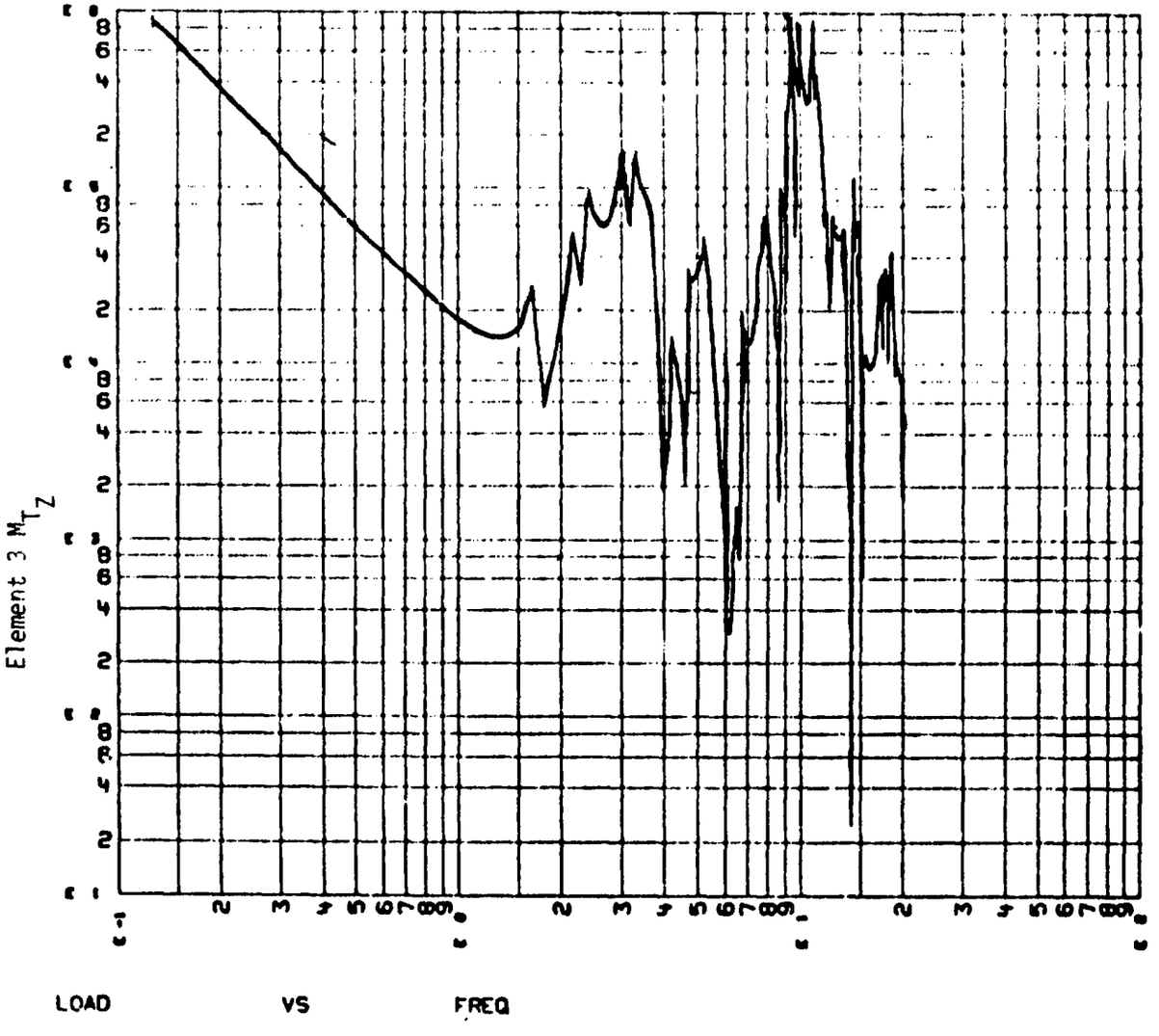


Figure 8a. P/L A, MTZ, Frequency Response

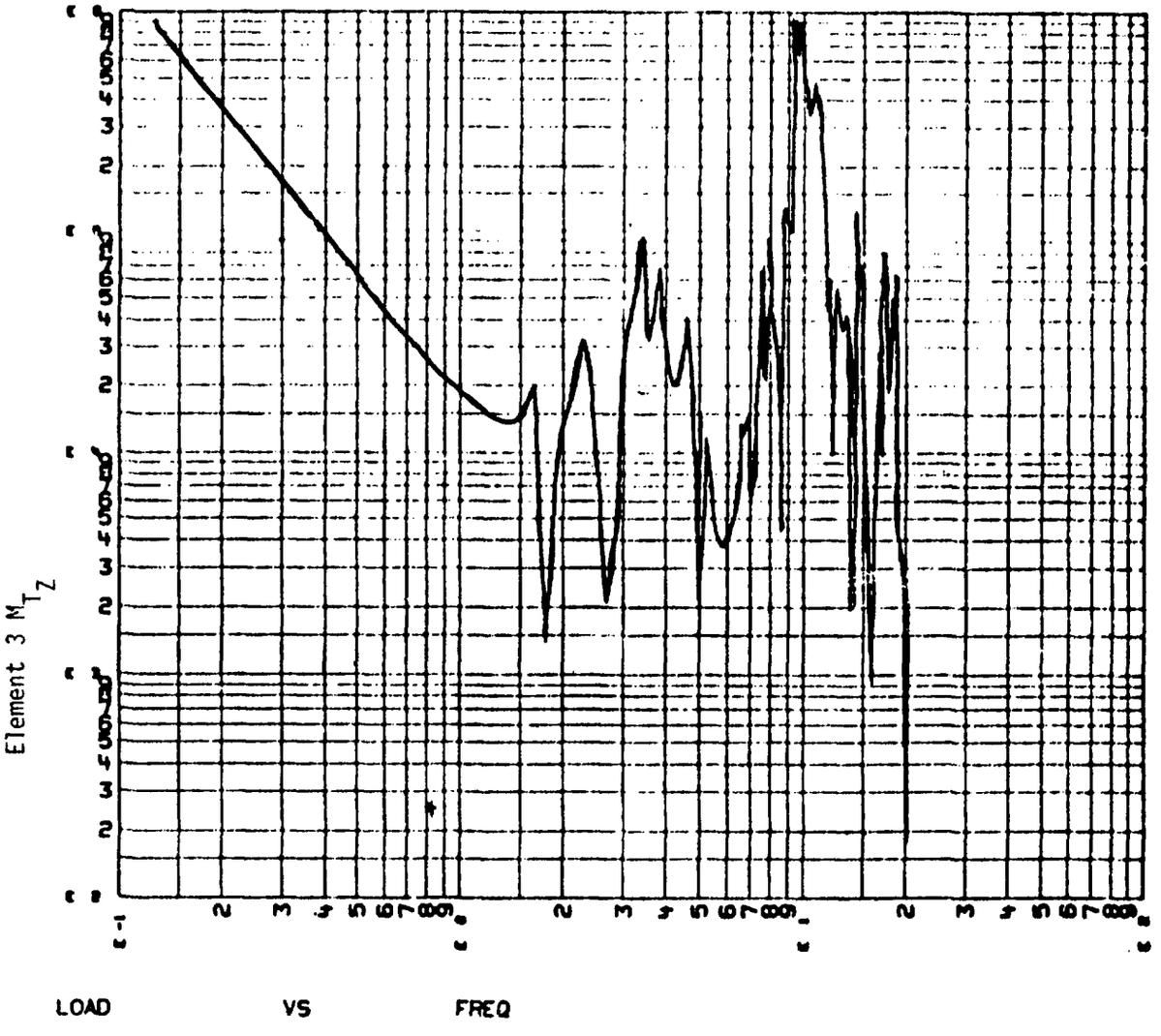


Figure 8b. P/L A, MTZ, Frequency Response

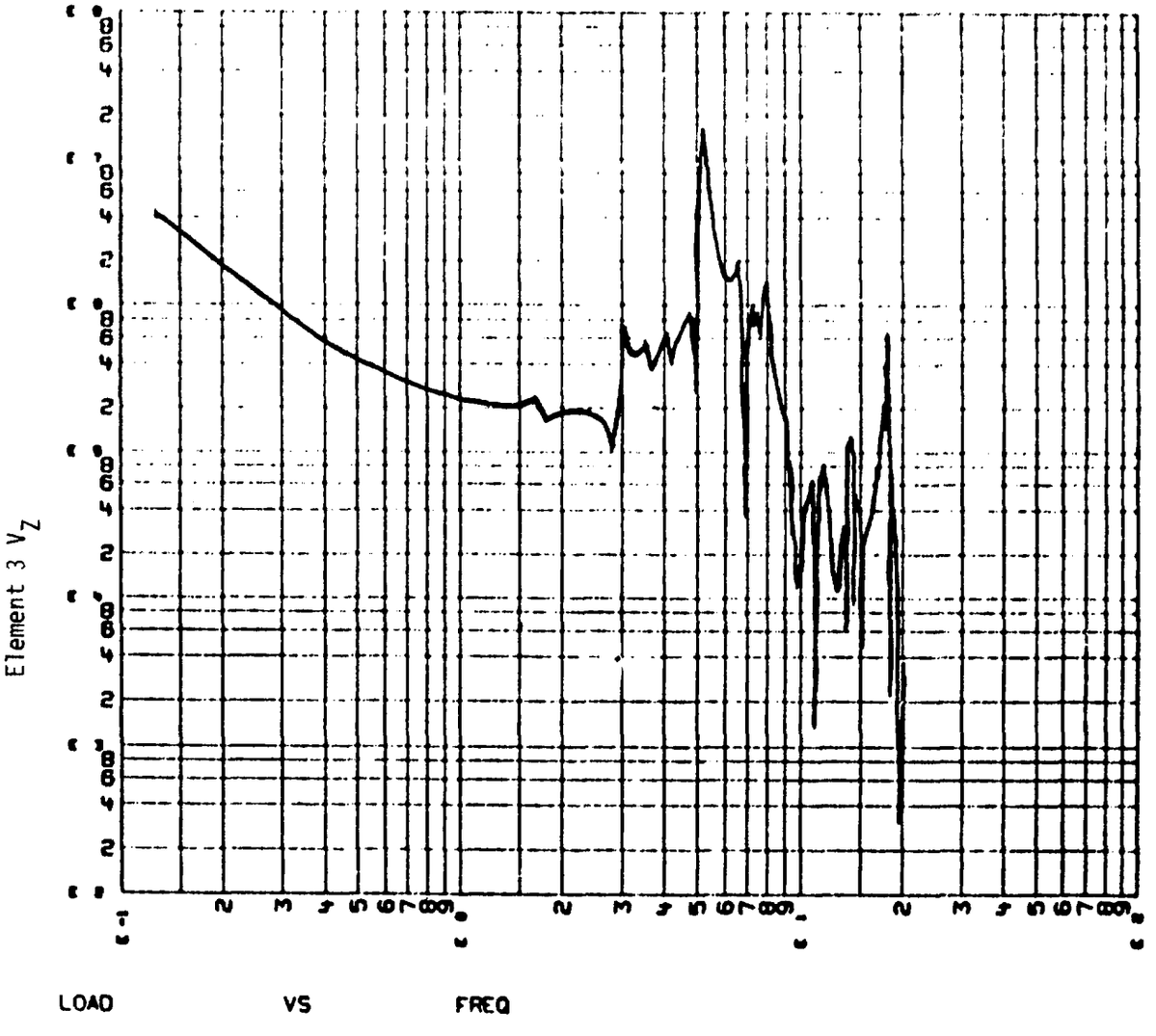


Figure 9a. P/L A, VZ, Frequency Response

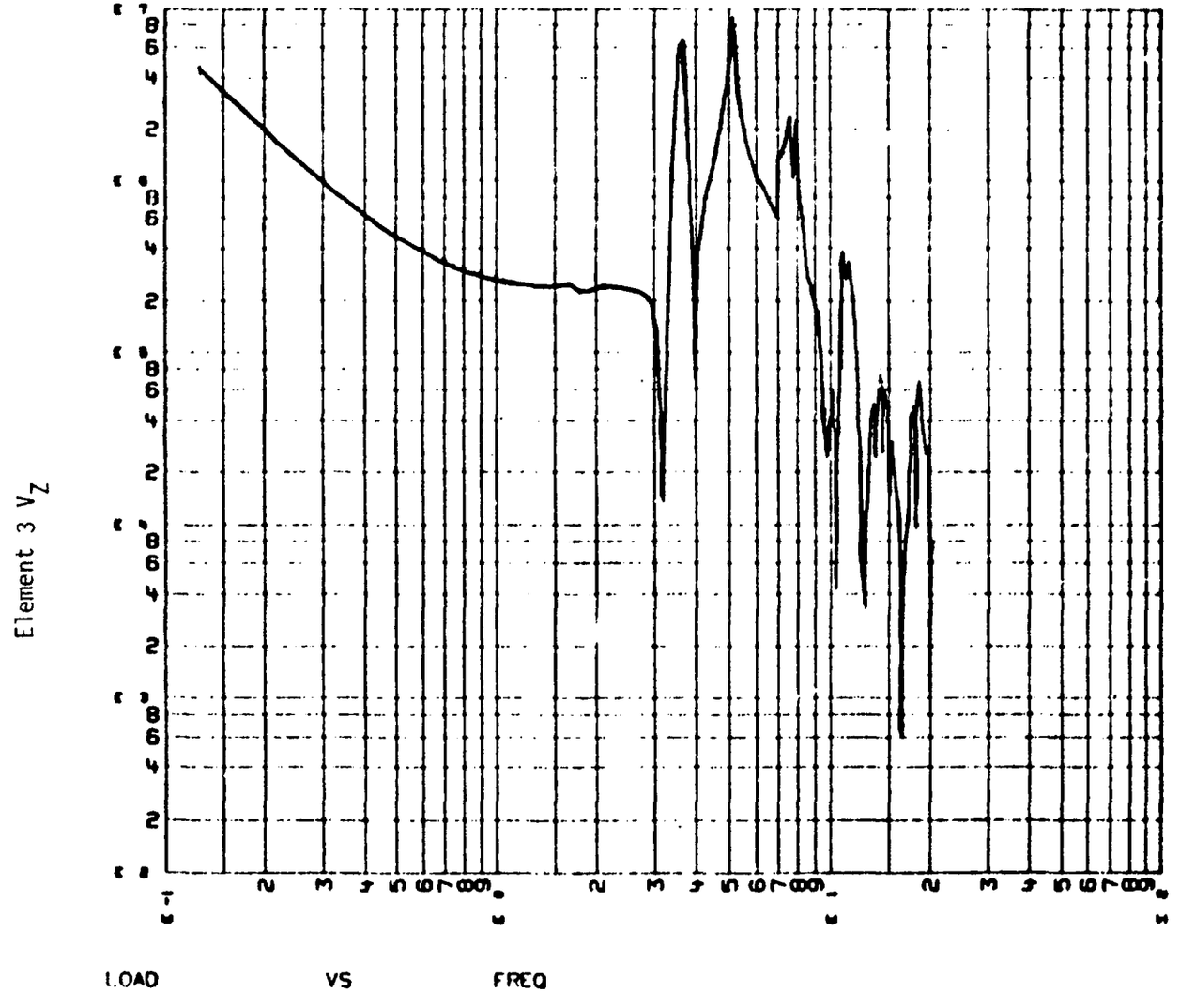


Figure 9b. P/L A, VZ, Frequency Response

Figure 10a. P/L A. I/F. Frequency Response

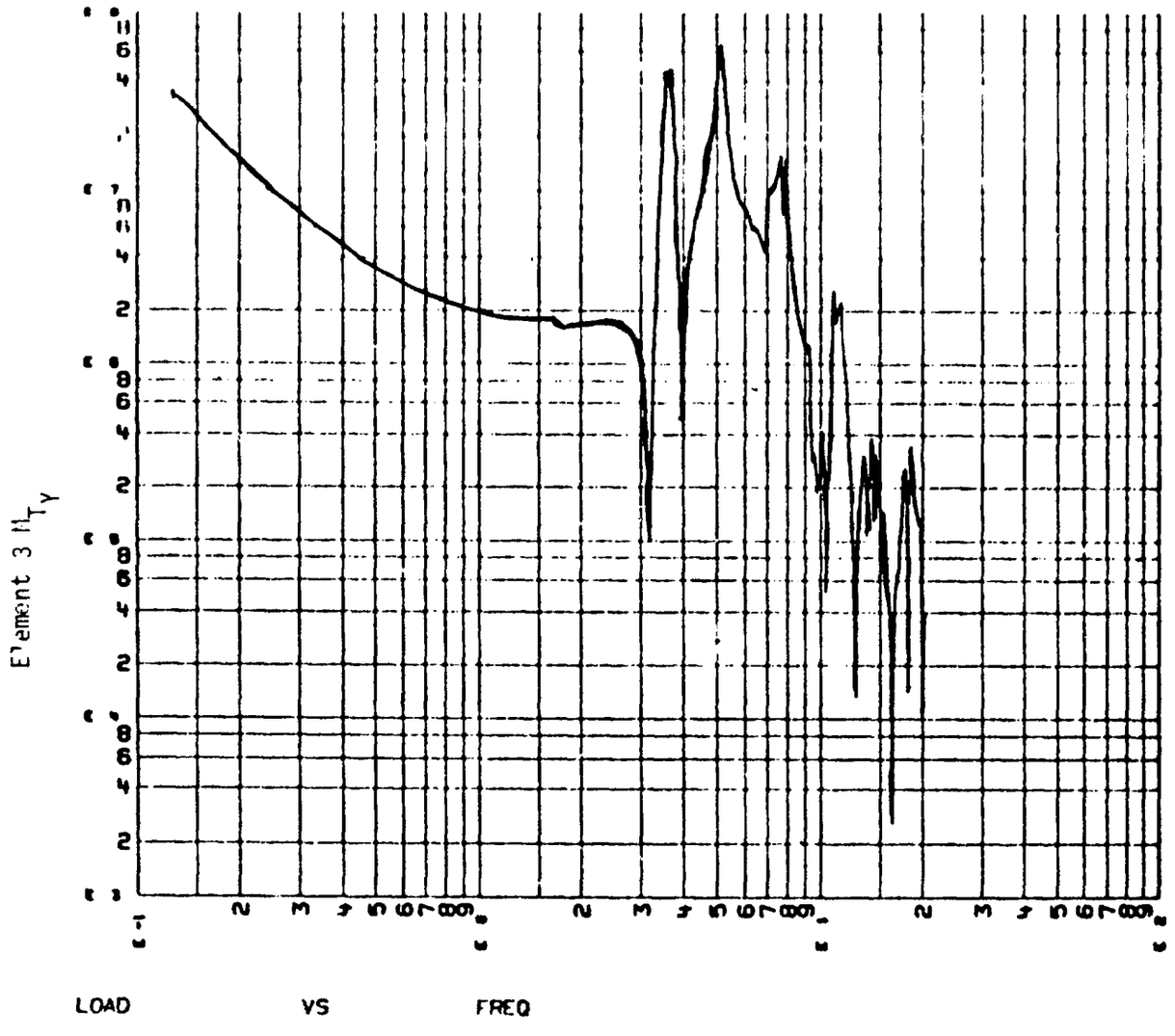


Figure 10b. P/L A, MTY, Frequency Response

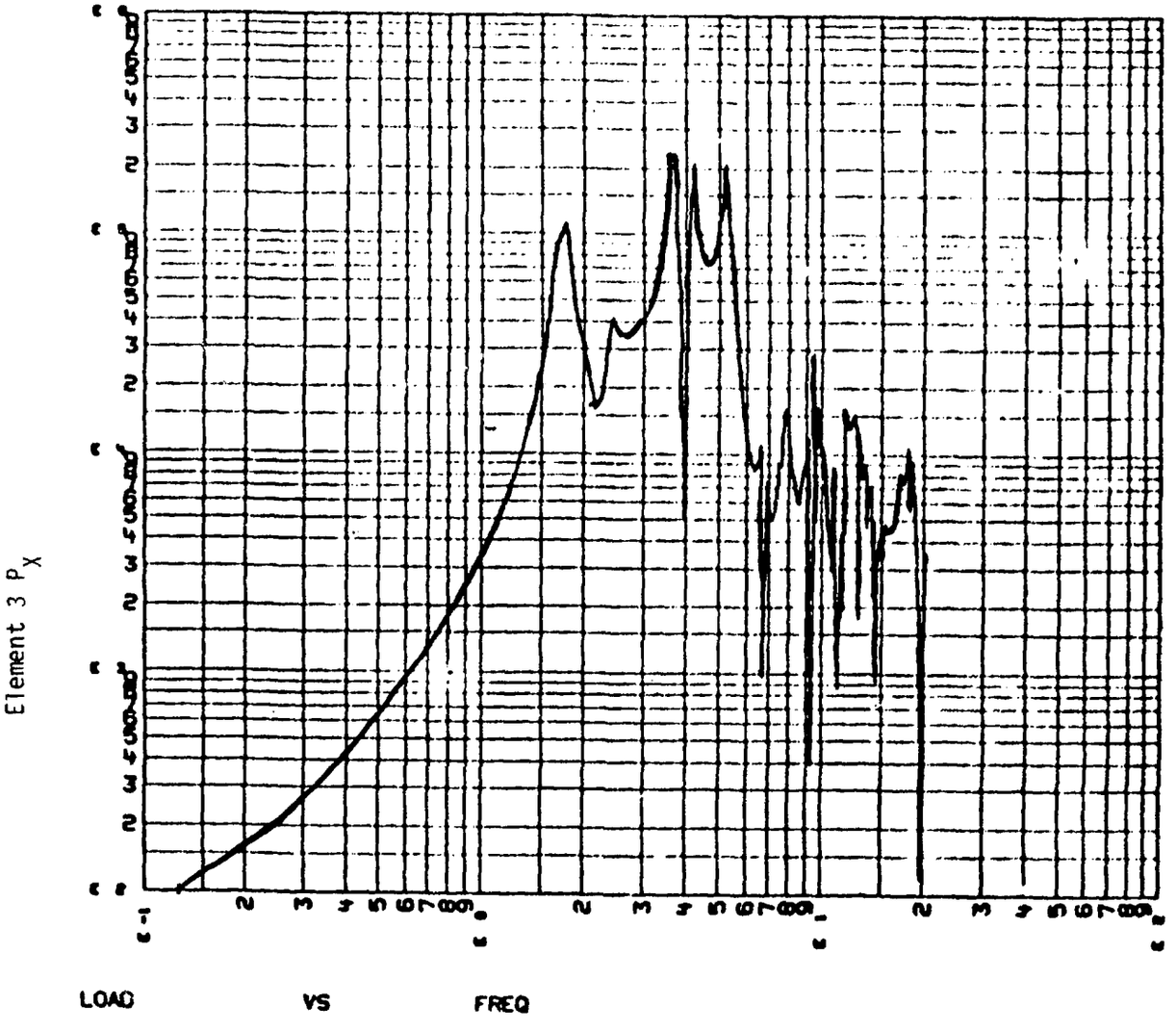


Figure 11a. P/L B, PX, Frequency Response

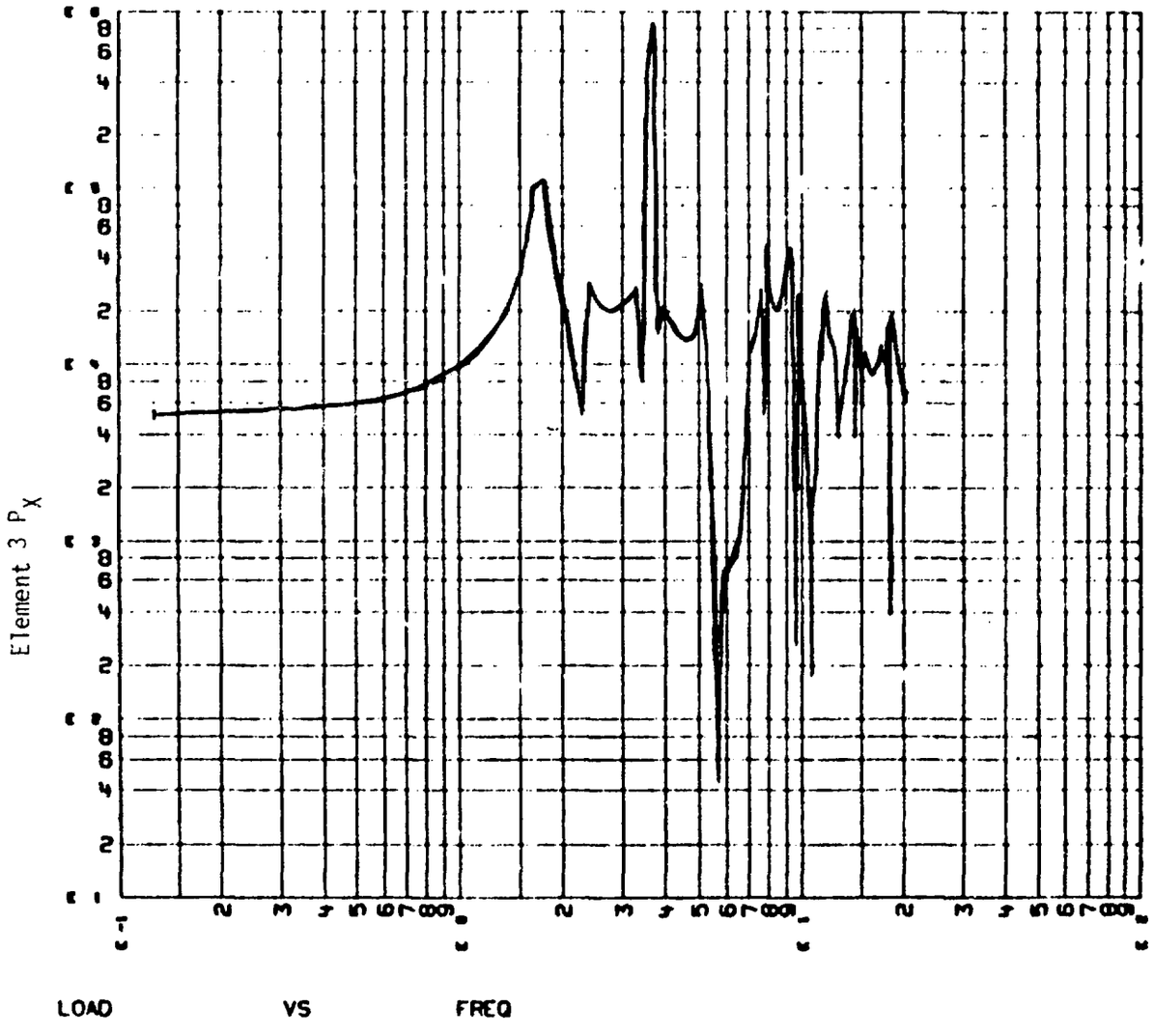


Figure 11b. P/L B, PX, Frequency Response

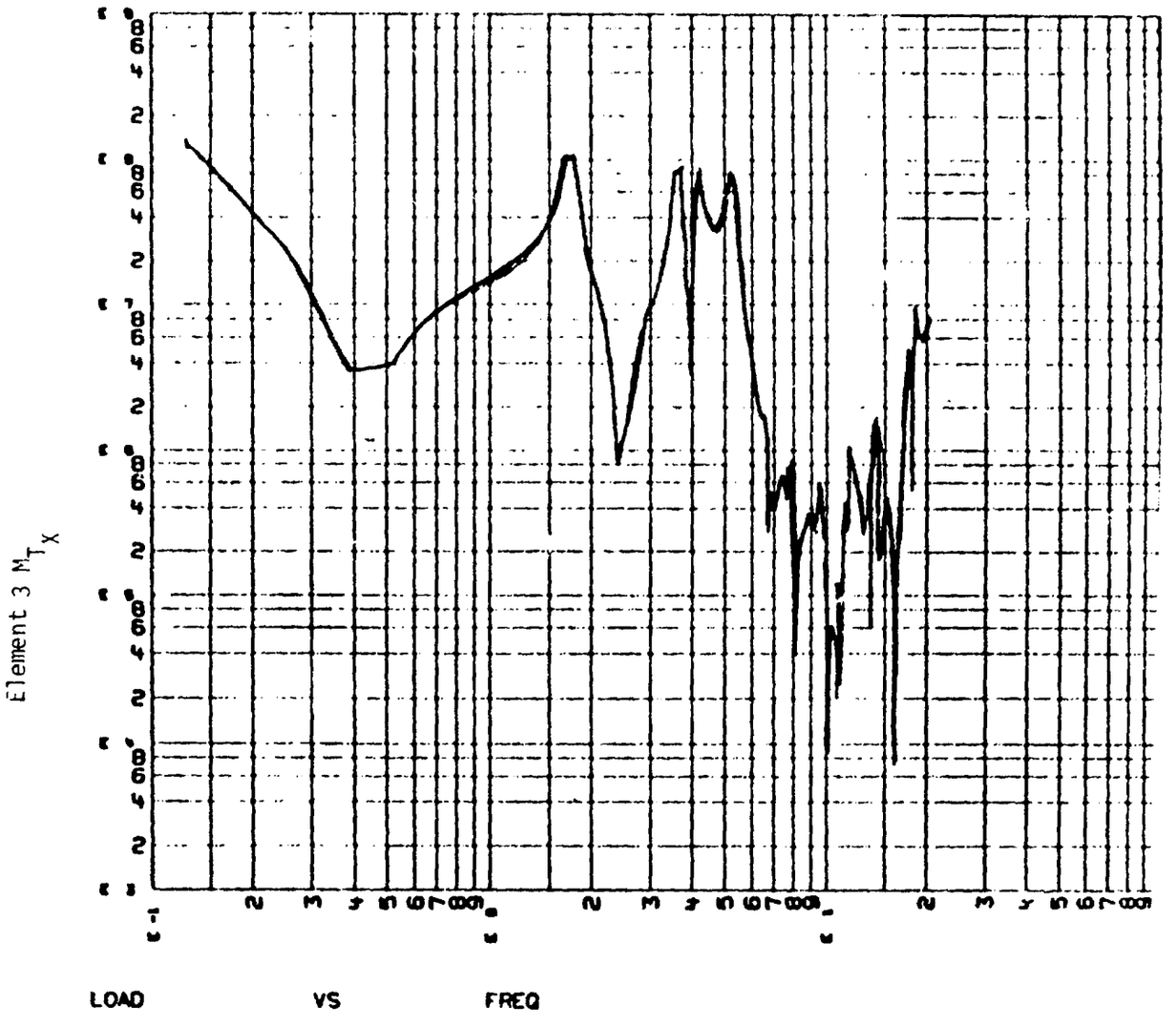


Figure 12a. P/L B, MTX, Frequency Response

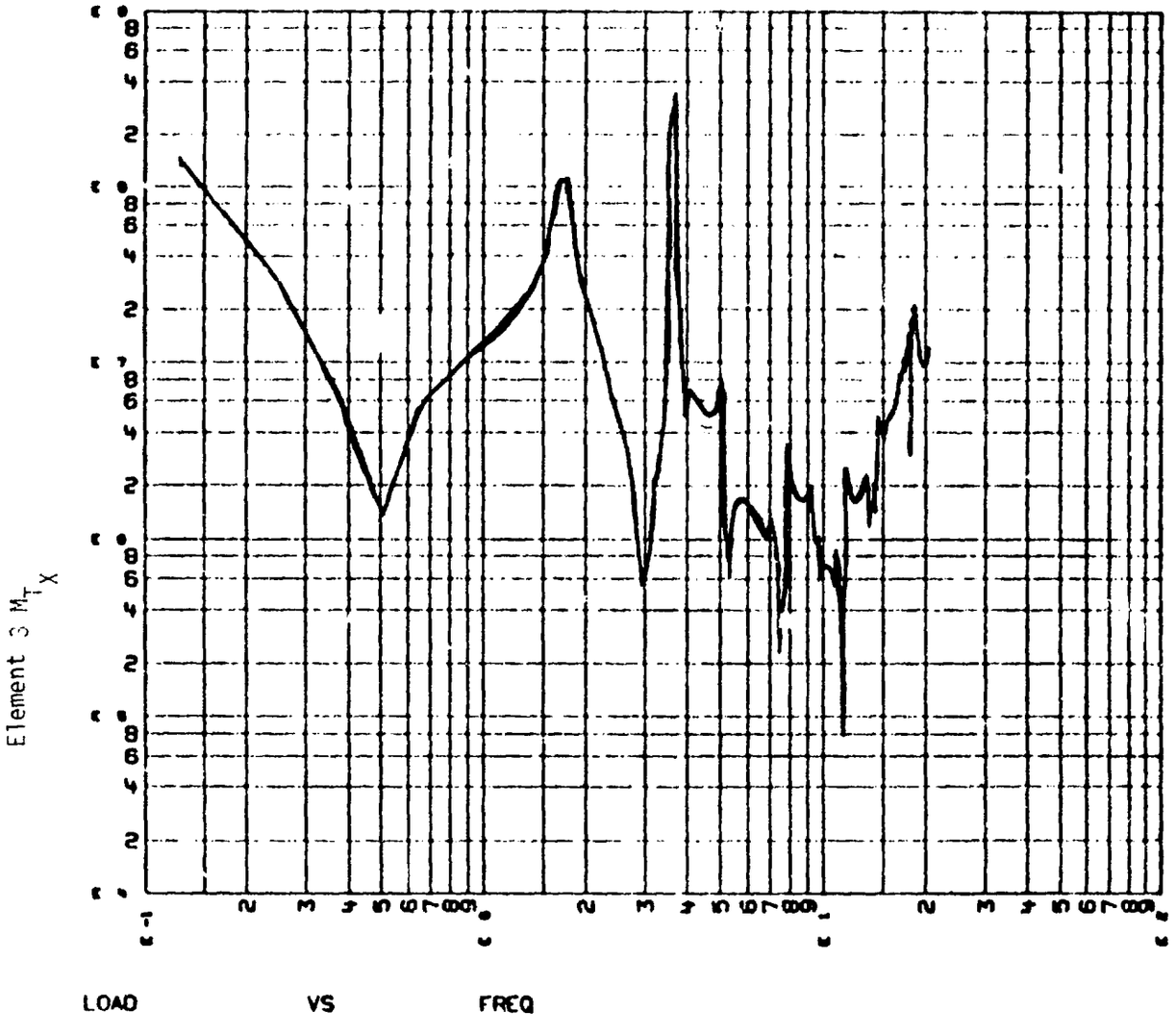


Figure 12b. P/L B, M_{TX}, Frequency Response

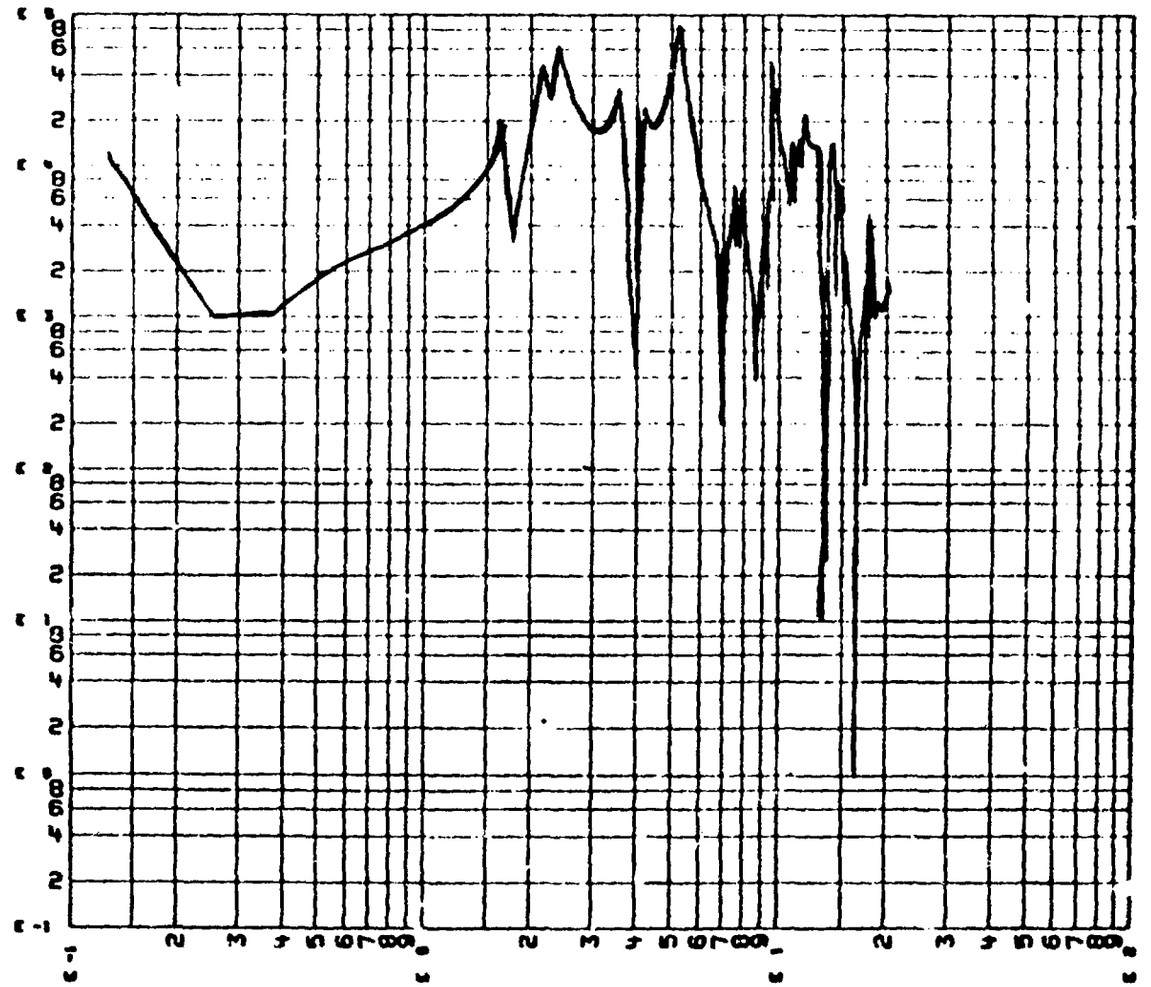


Figure 13a. P/L B, VY, Frequency Response

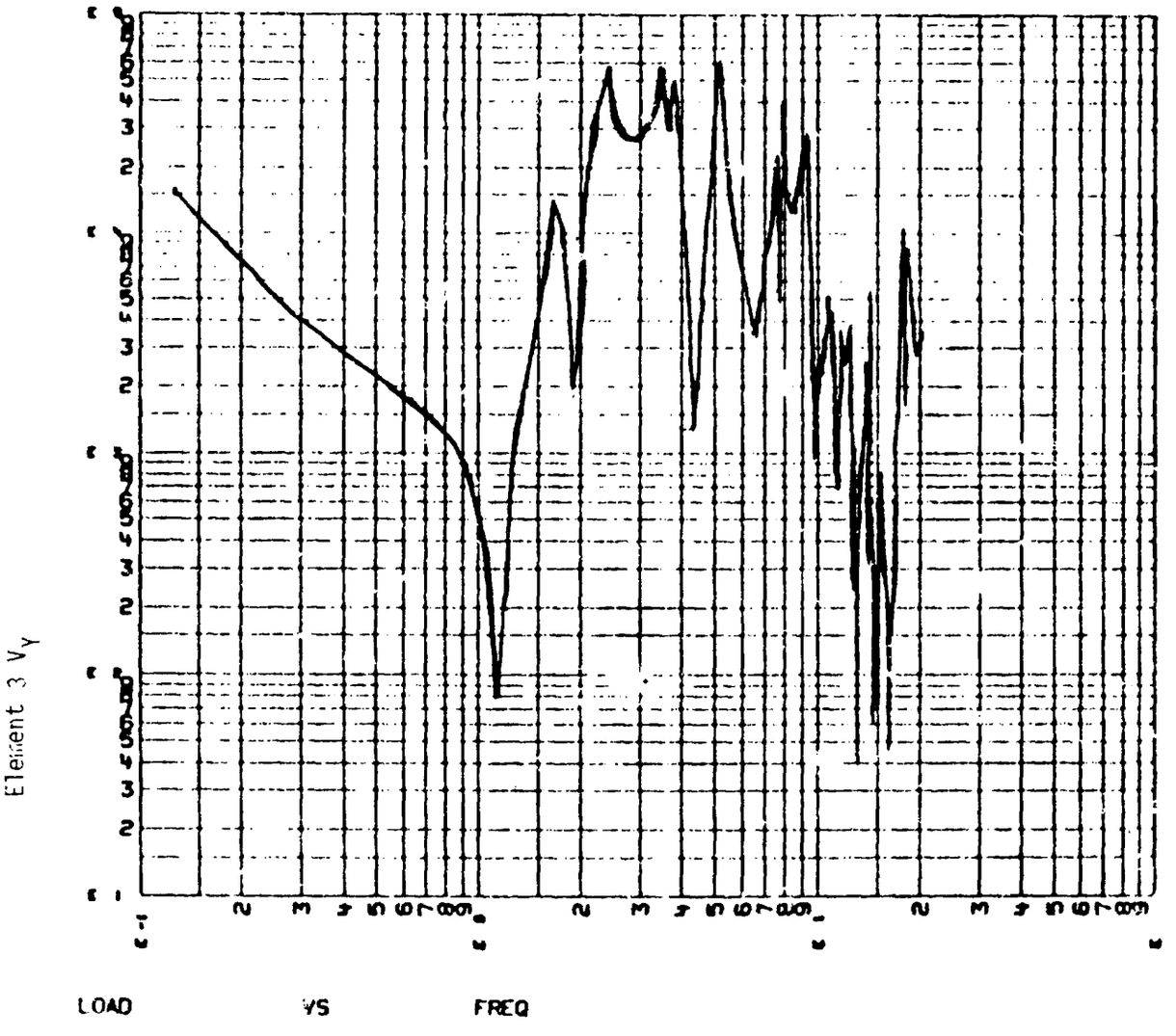


Figure 13b. P/L B, VY, Frequency Response

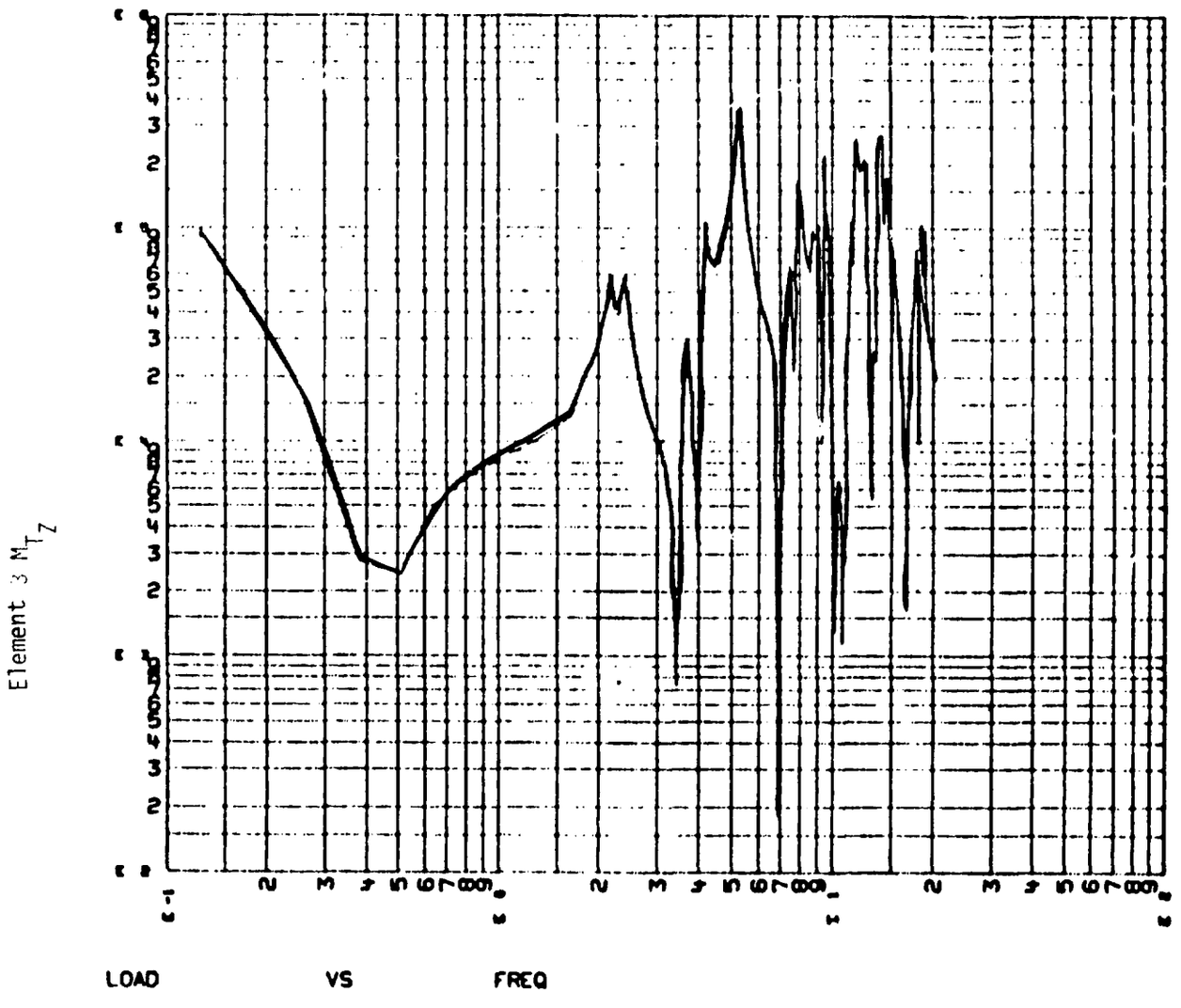


Figure 14a. P/L B, MTZ, Frequency Response

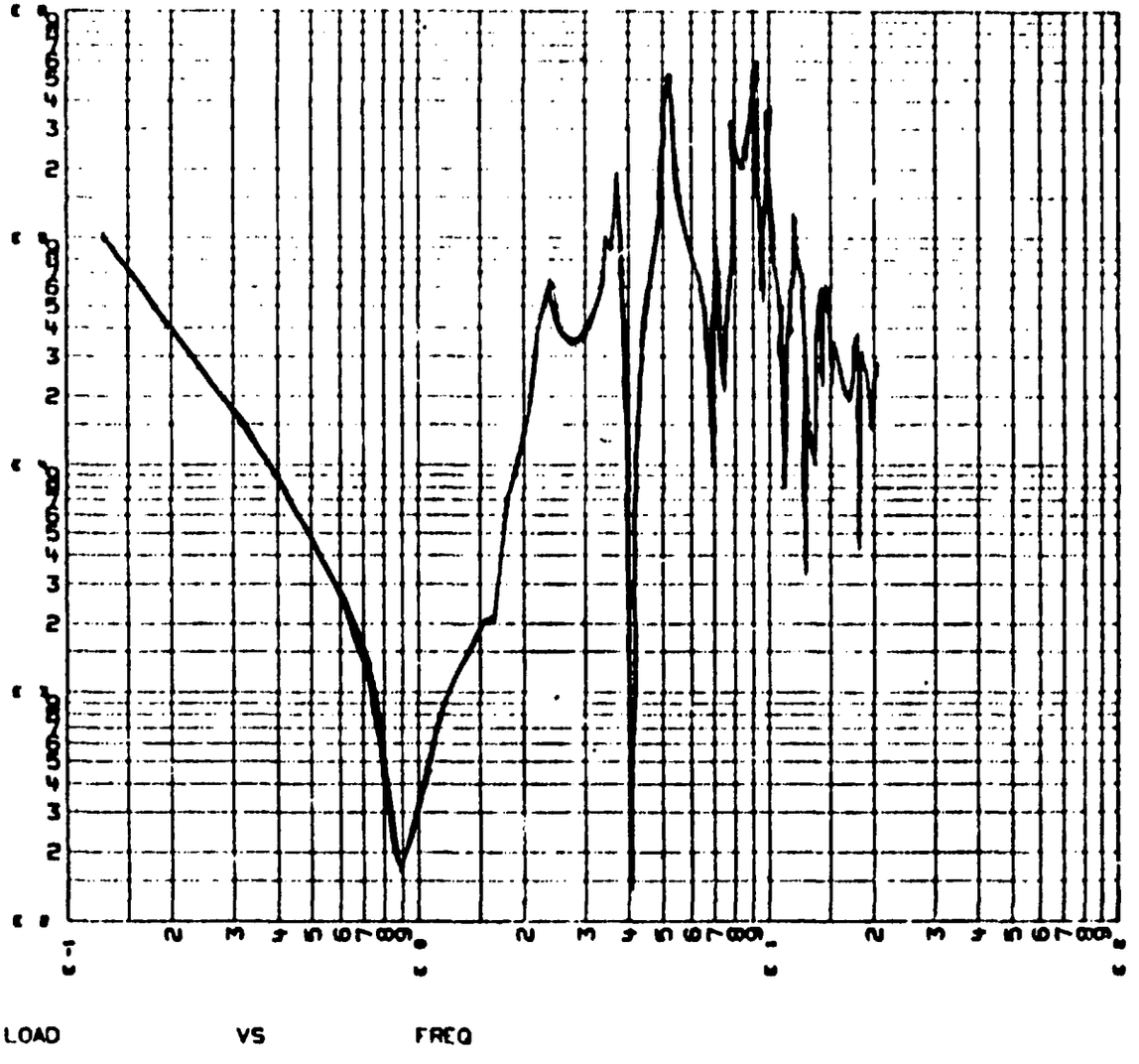


Figure 14b. P/L B,MTZ, Frequency Response

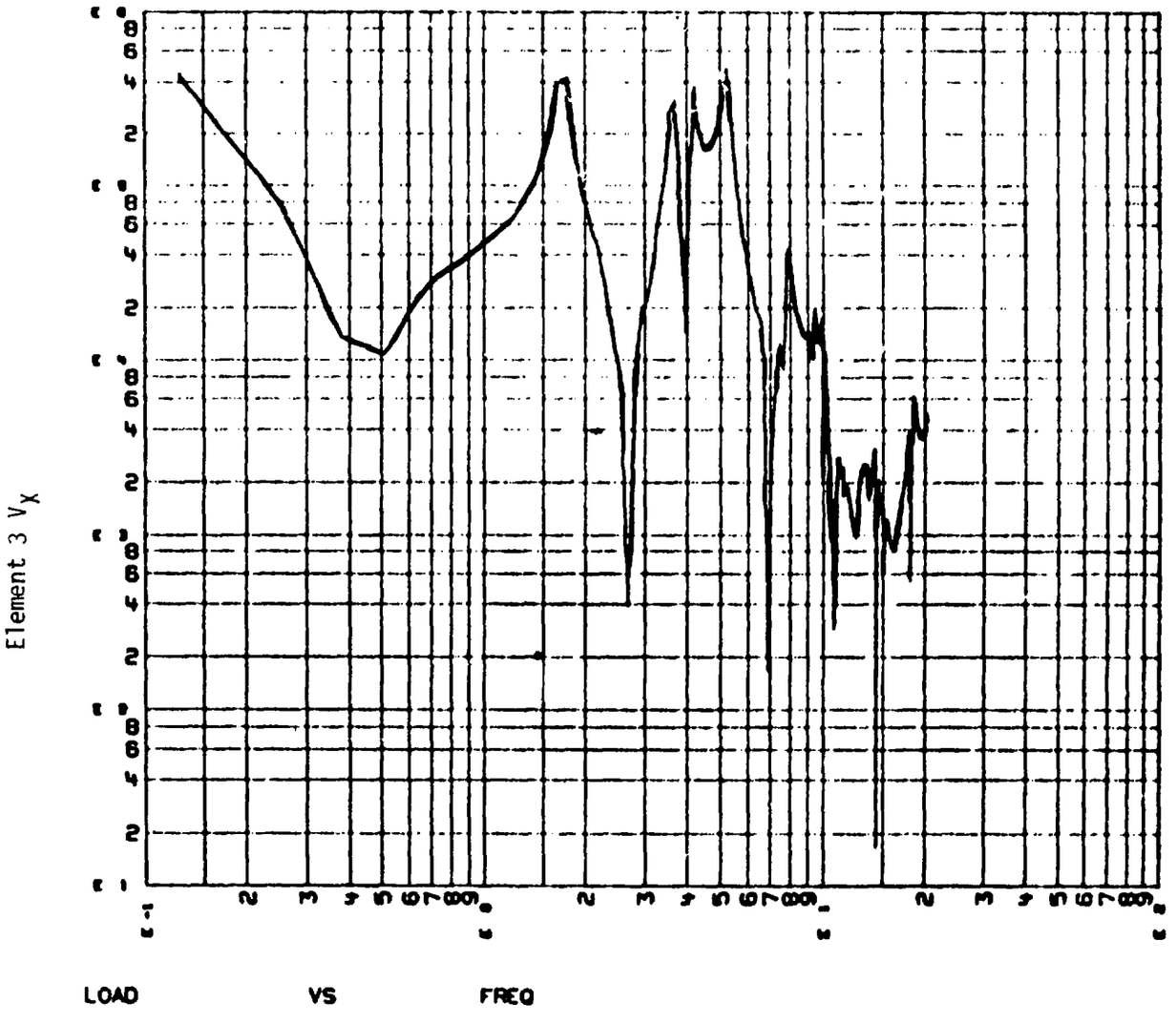


Figure 15a. P/L B, VX, Frequency Response

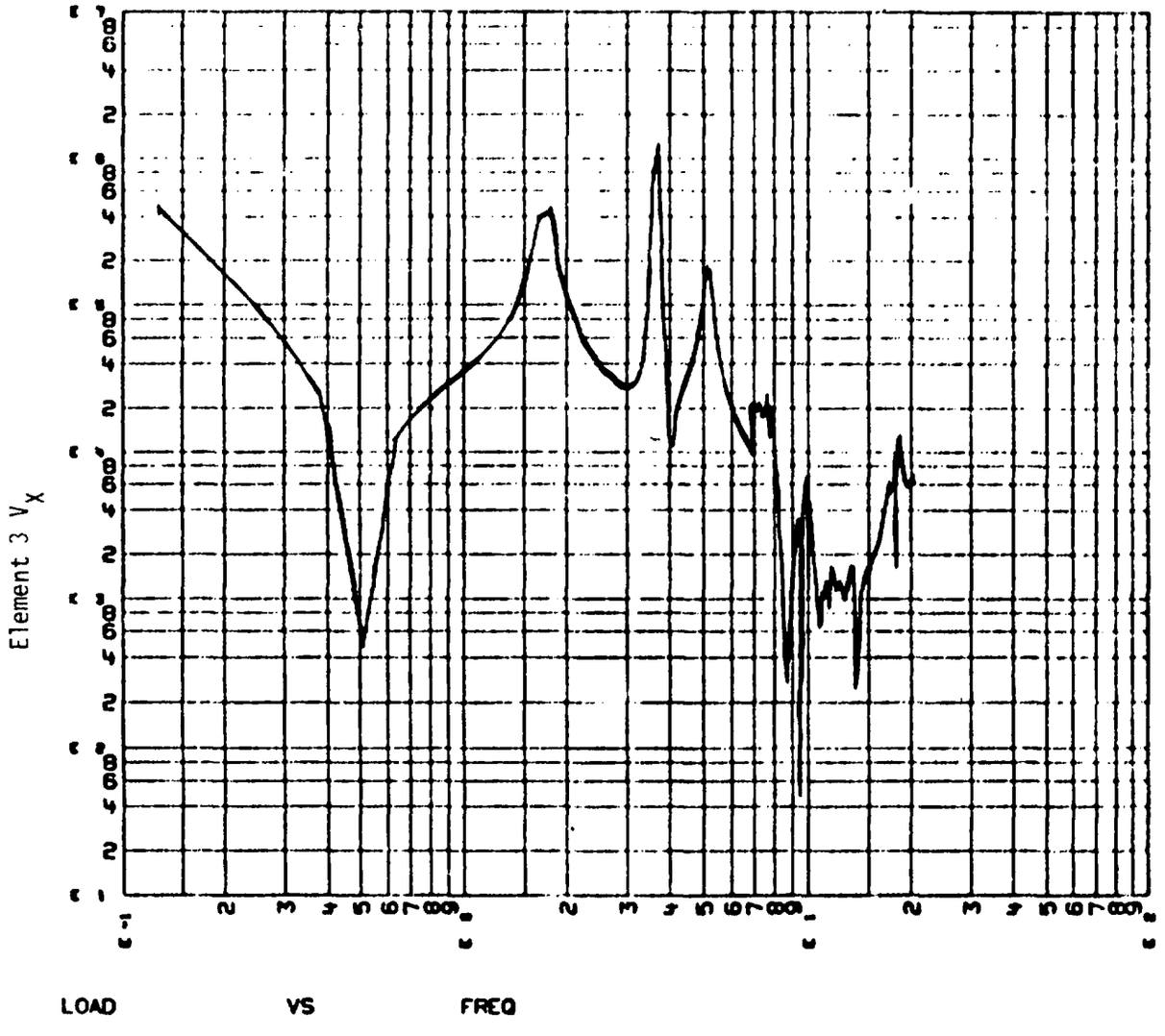


Figure 15b. P/L B, VX, Frequency Response

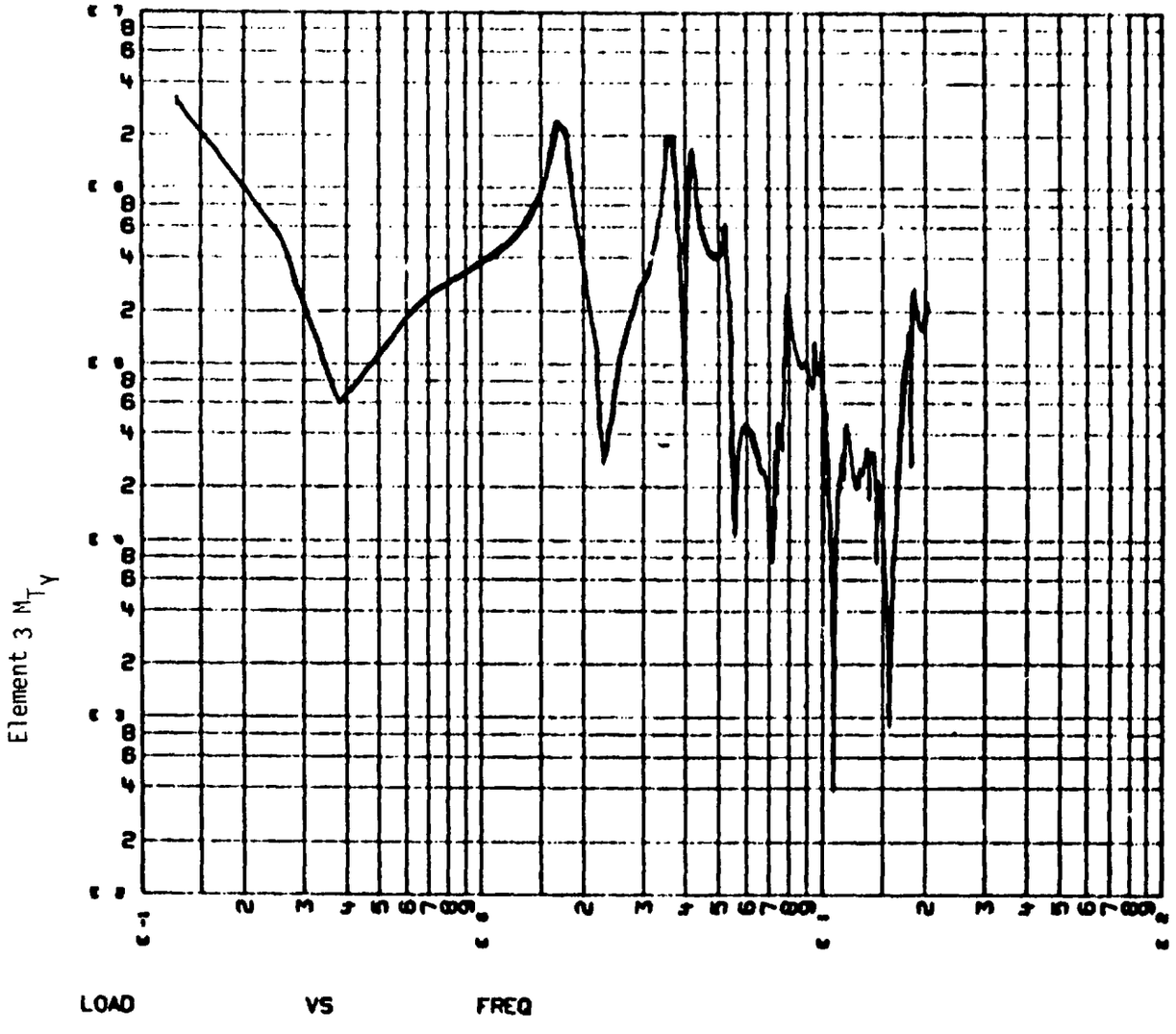


Figure 16a. P/L B, MTY, Frequency Response

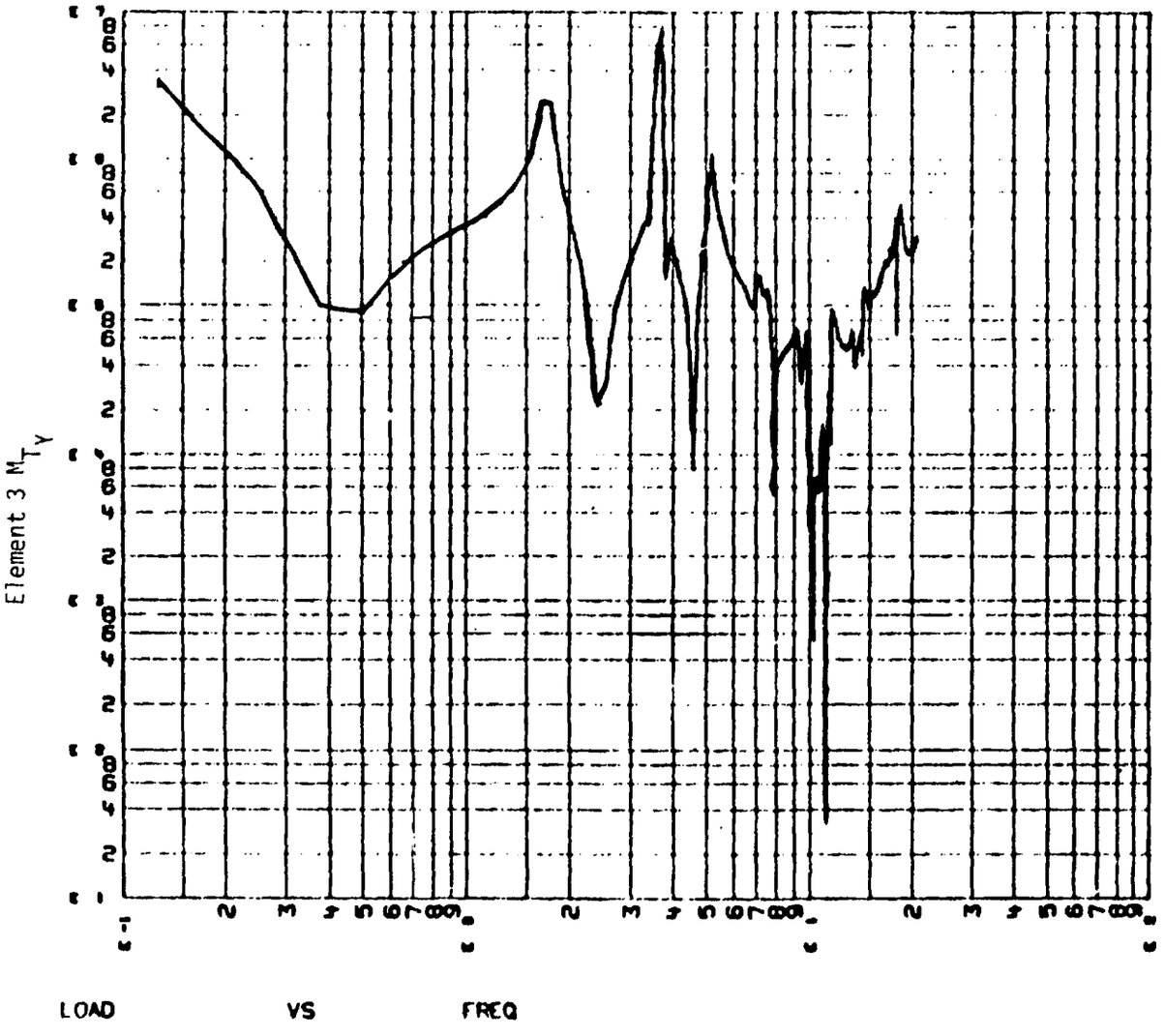


Figure 16b. P/L B, ITY, Frequency Response

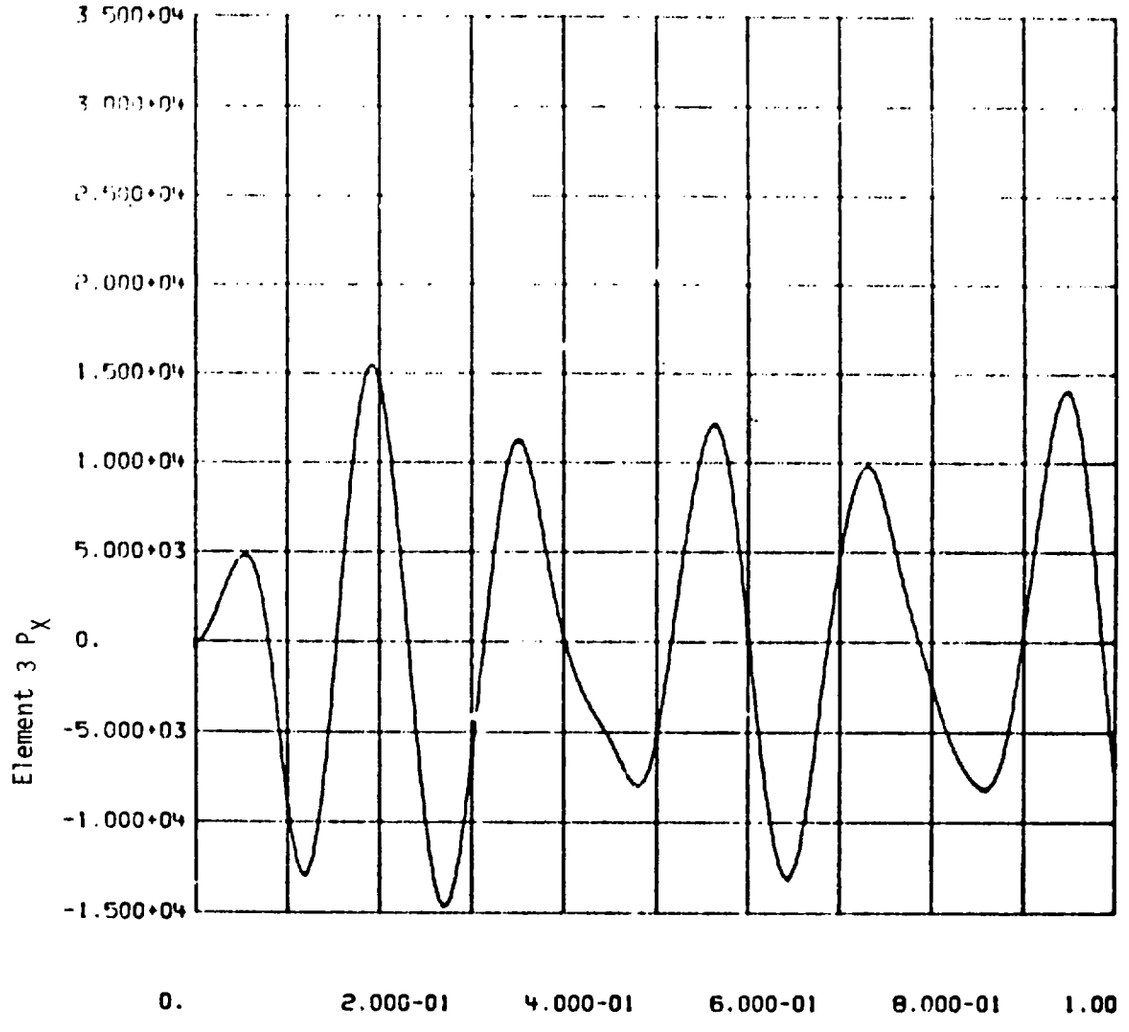


Figure 17a. P/L A, PX, Time Response

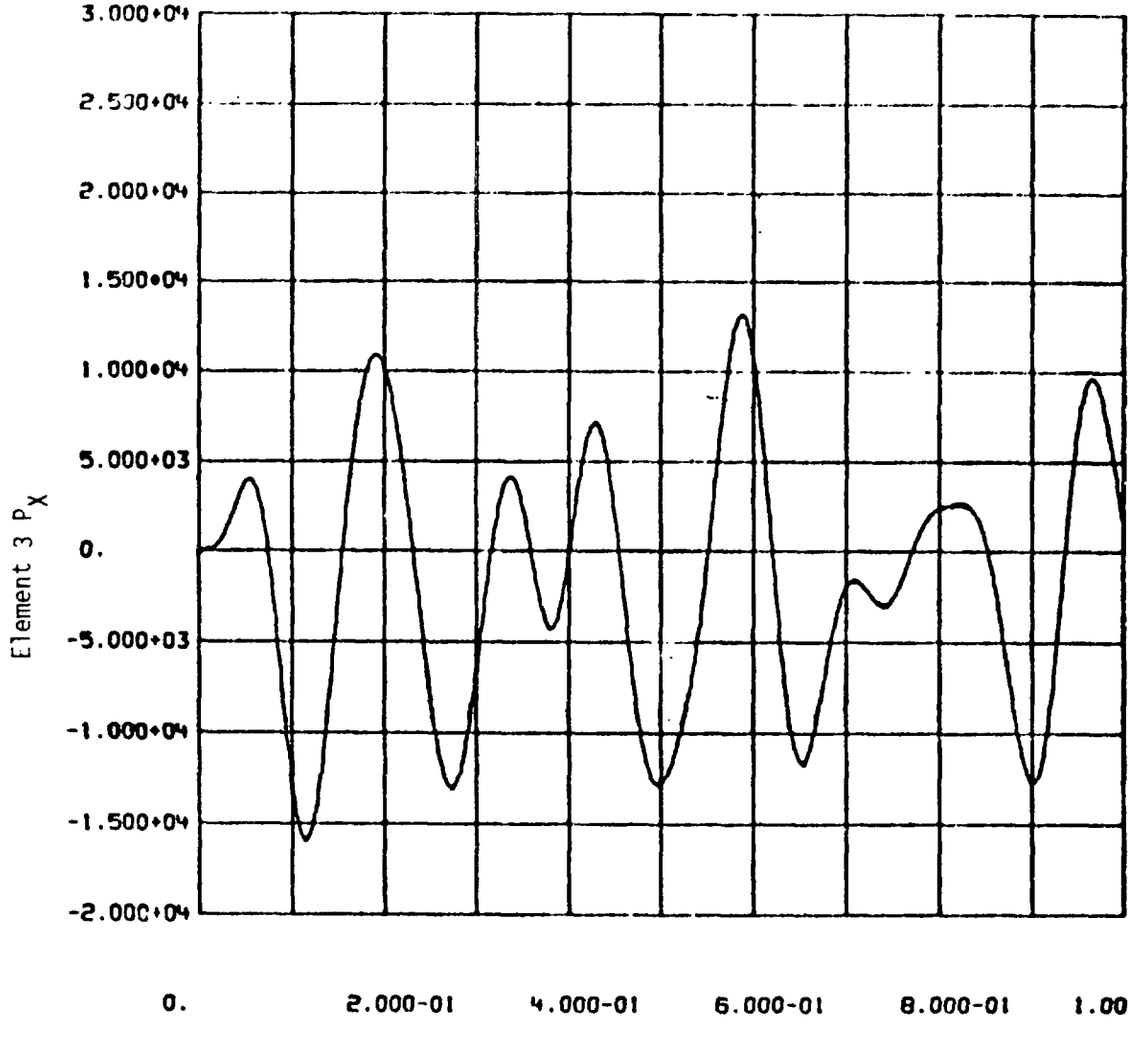


Figure 17b. P/L A, PX, Time Response

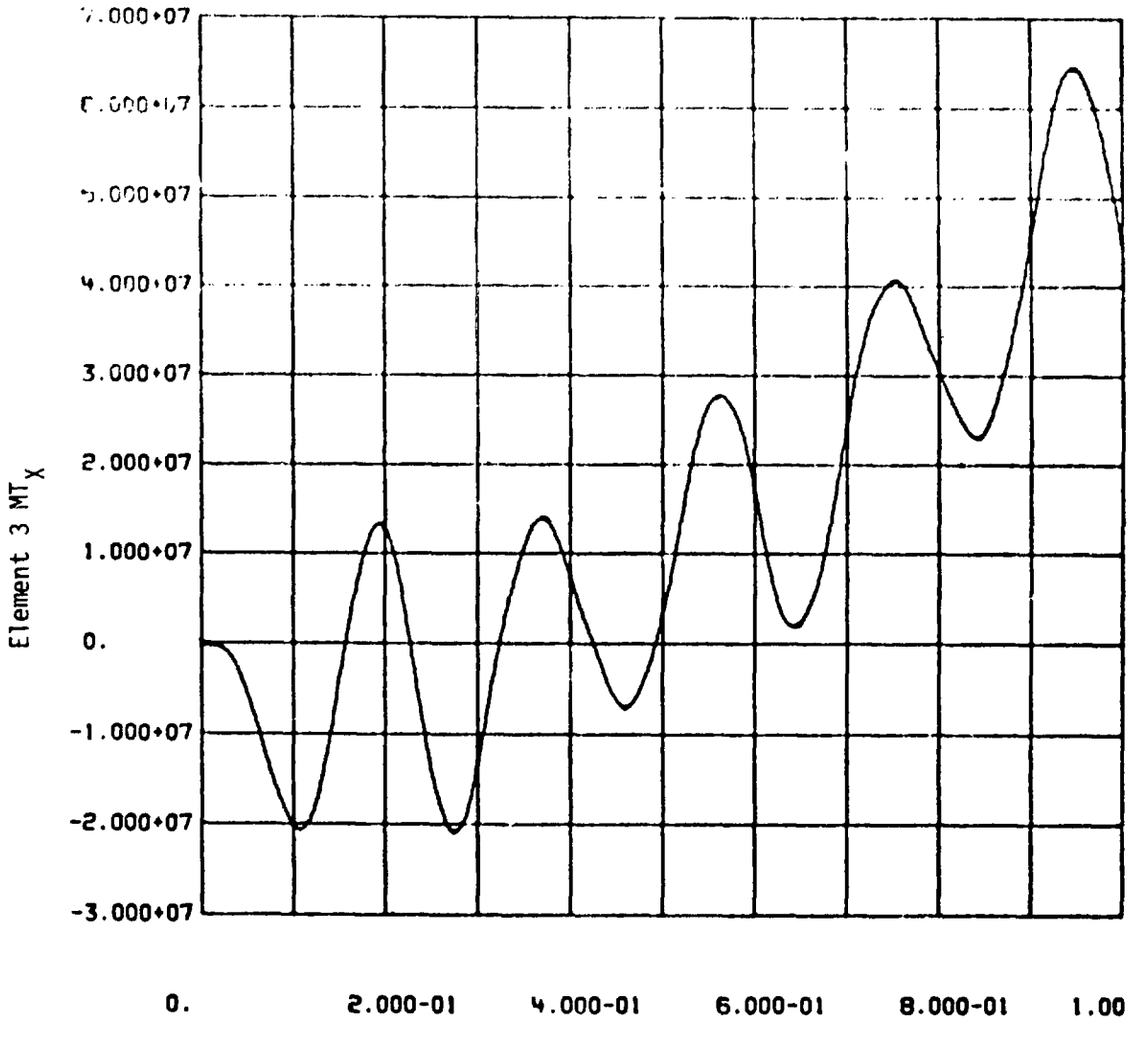


Figure 18a. P/L A, MTX, Time Response

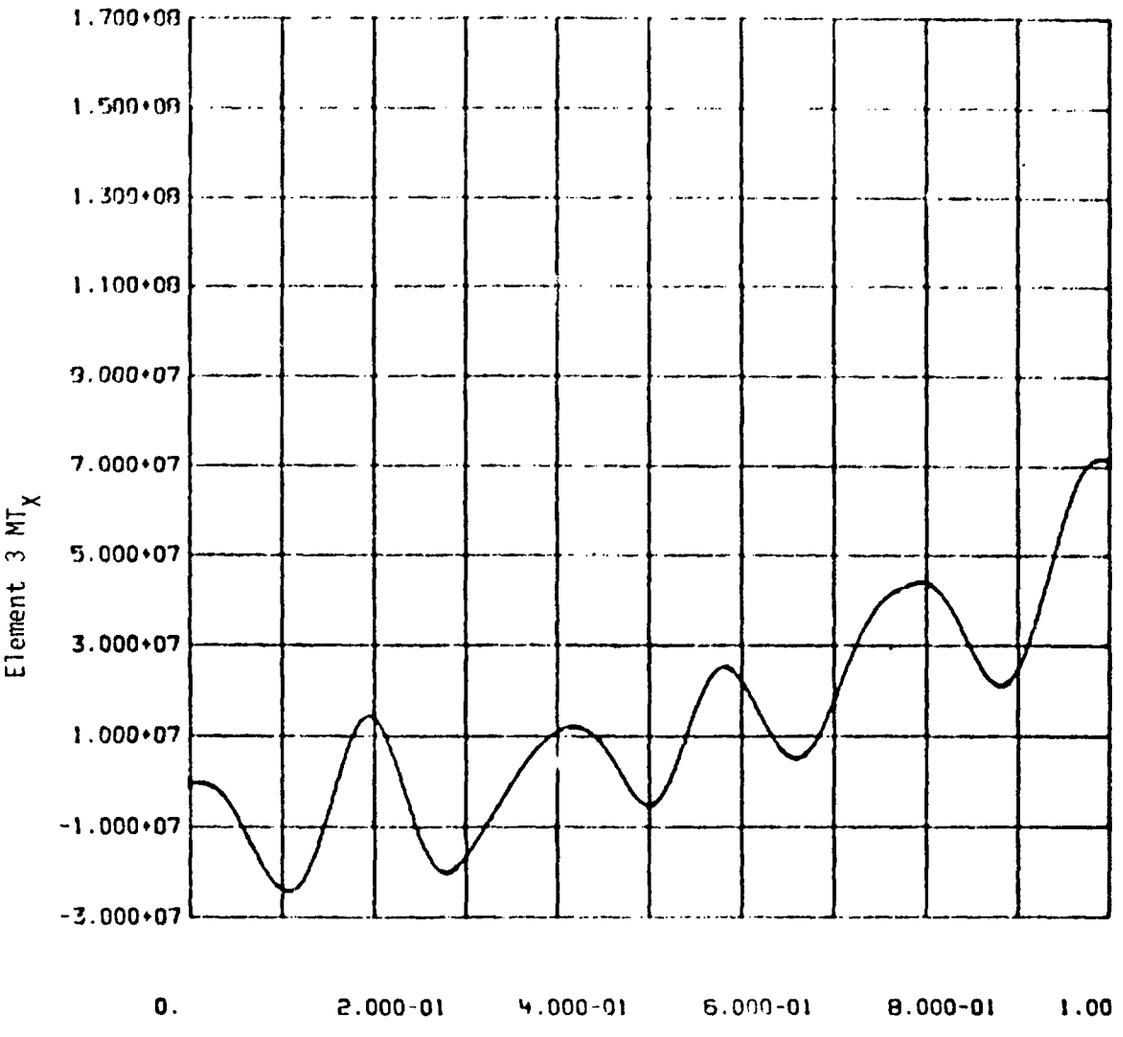


Figure 18b. P/L A, MTX, Time Response

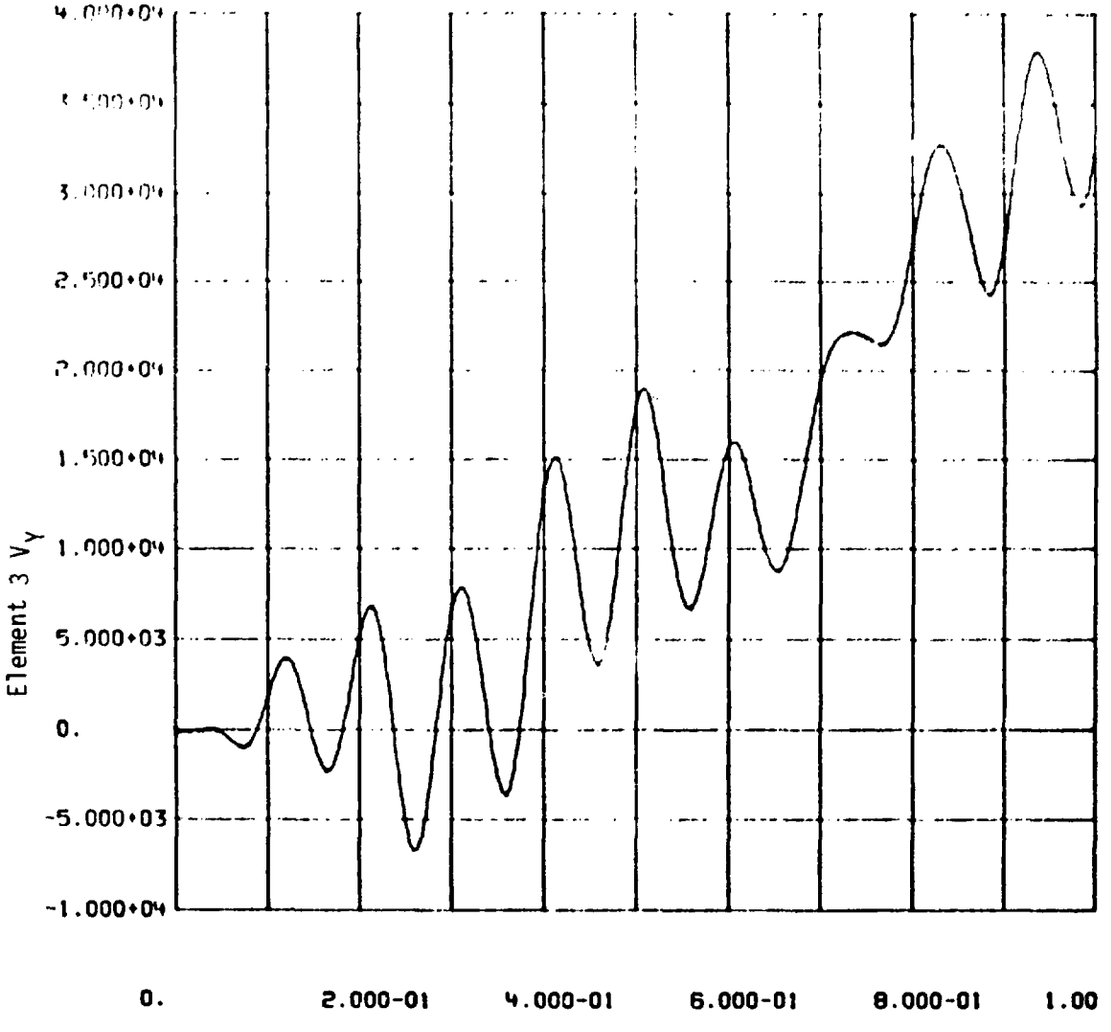


Figure 19a. P/L A, VY, Time Response

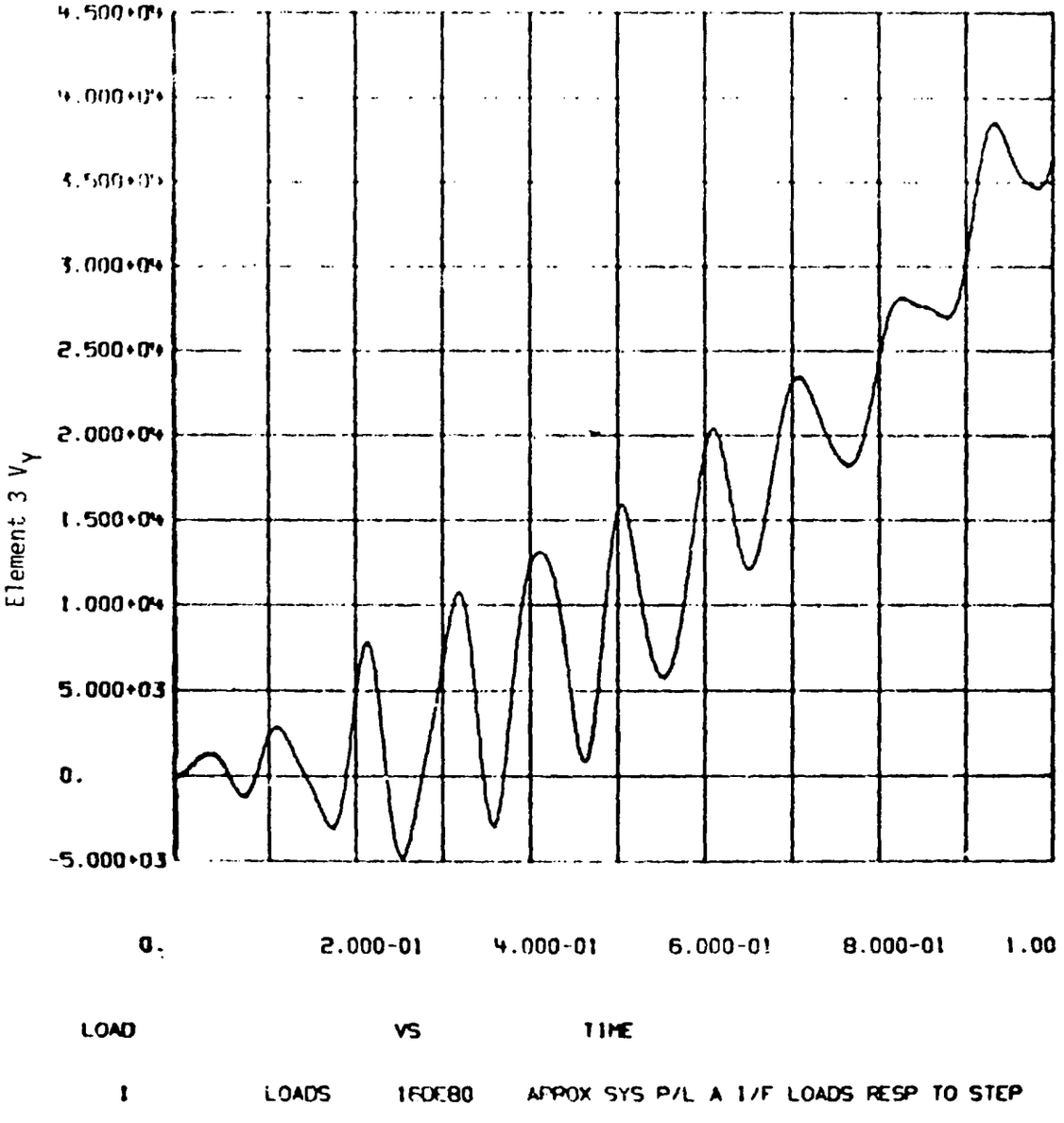


Figure 19b. P/L A, VY, Time Response

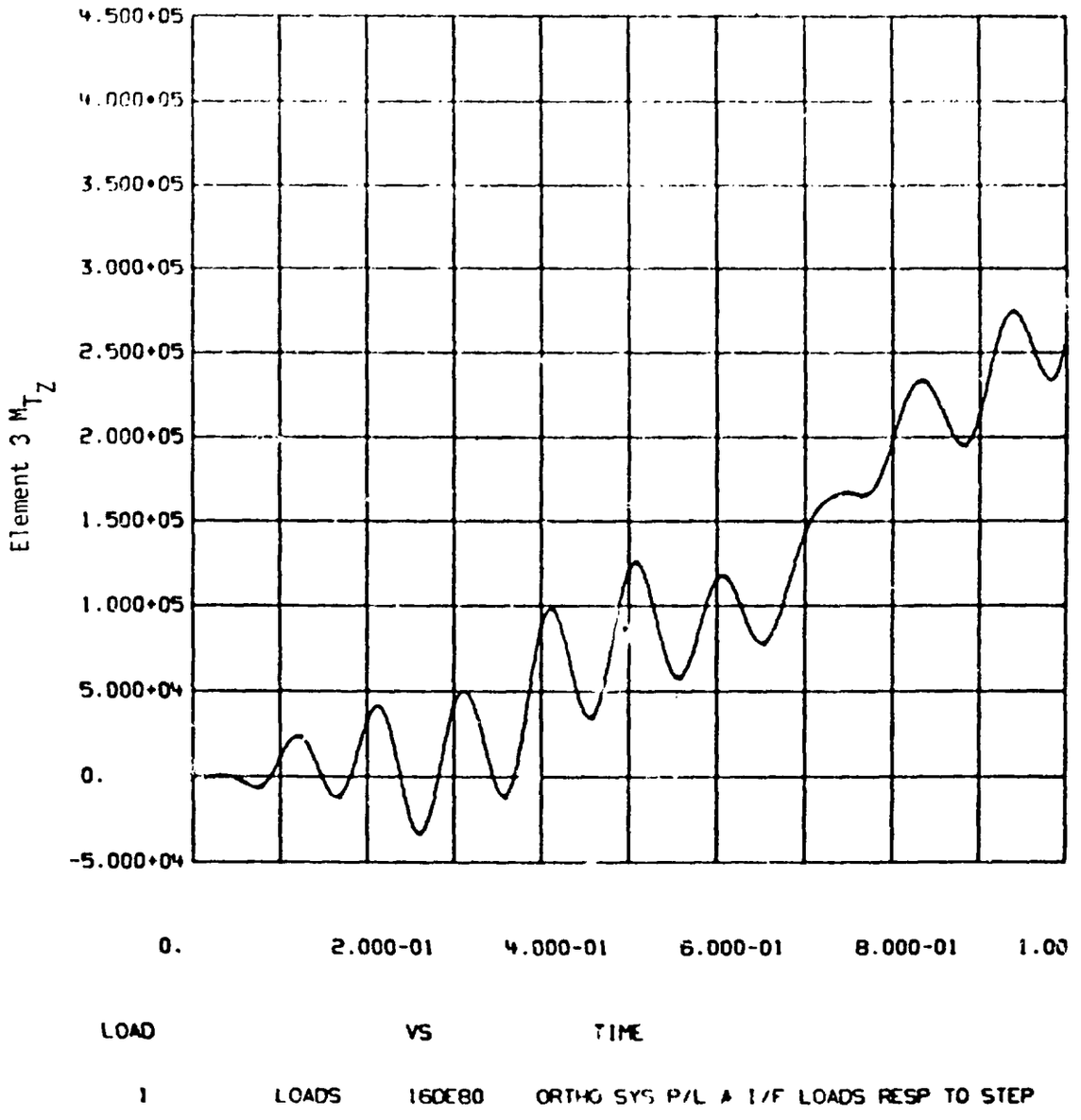


Figure 20a. P/L A, MTZ, Time Response

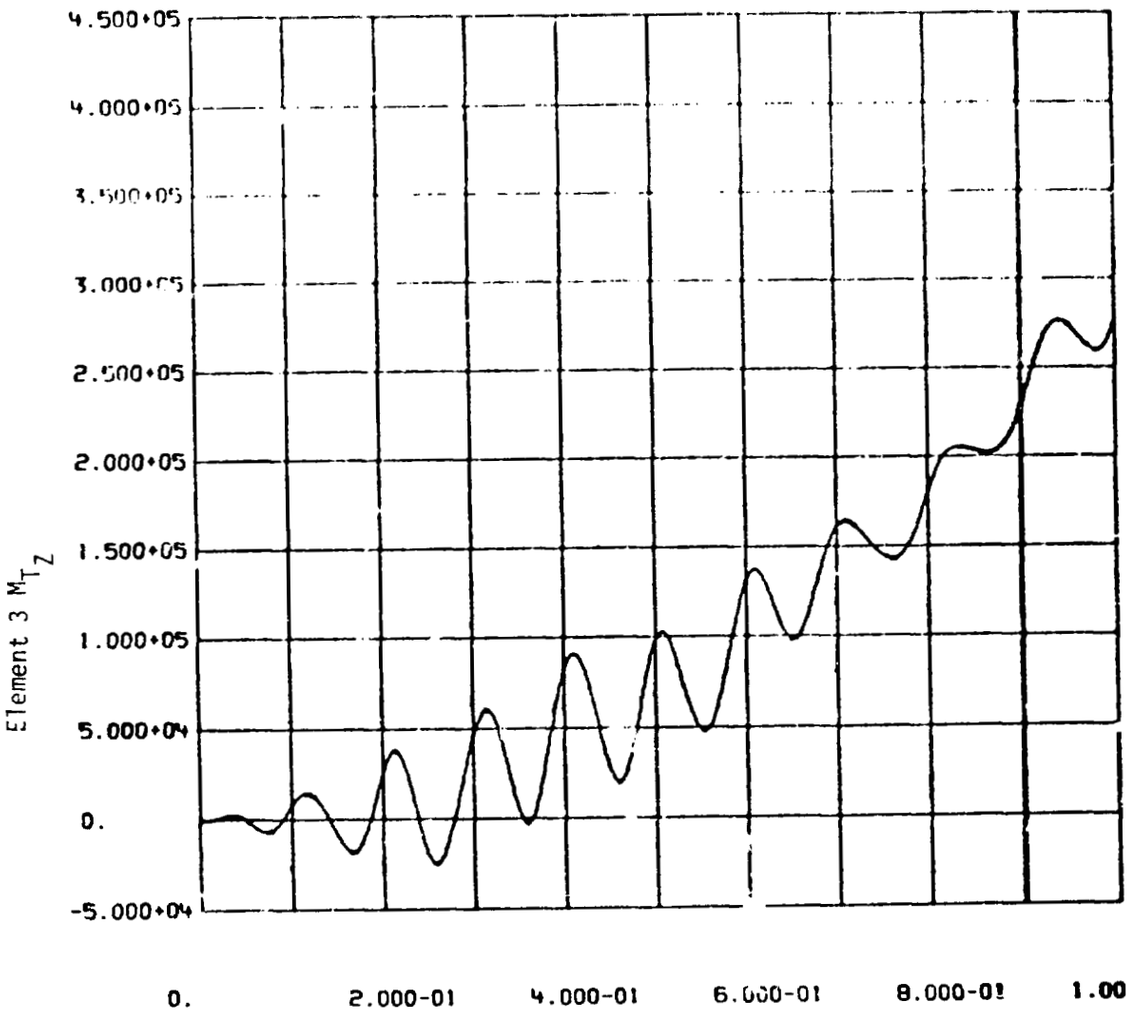


Figure 20b. P/L A, MTZ, Time Response

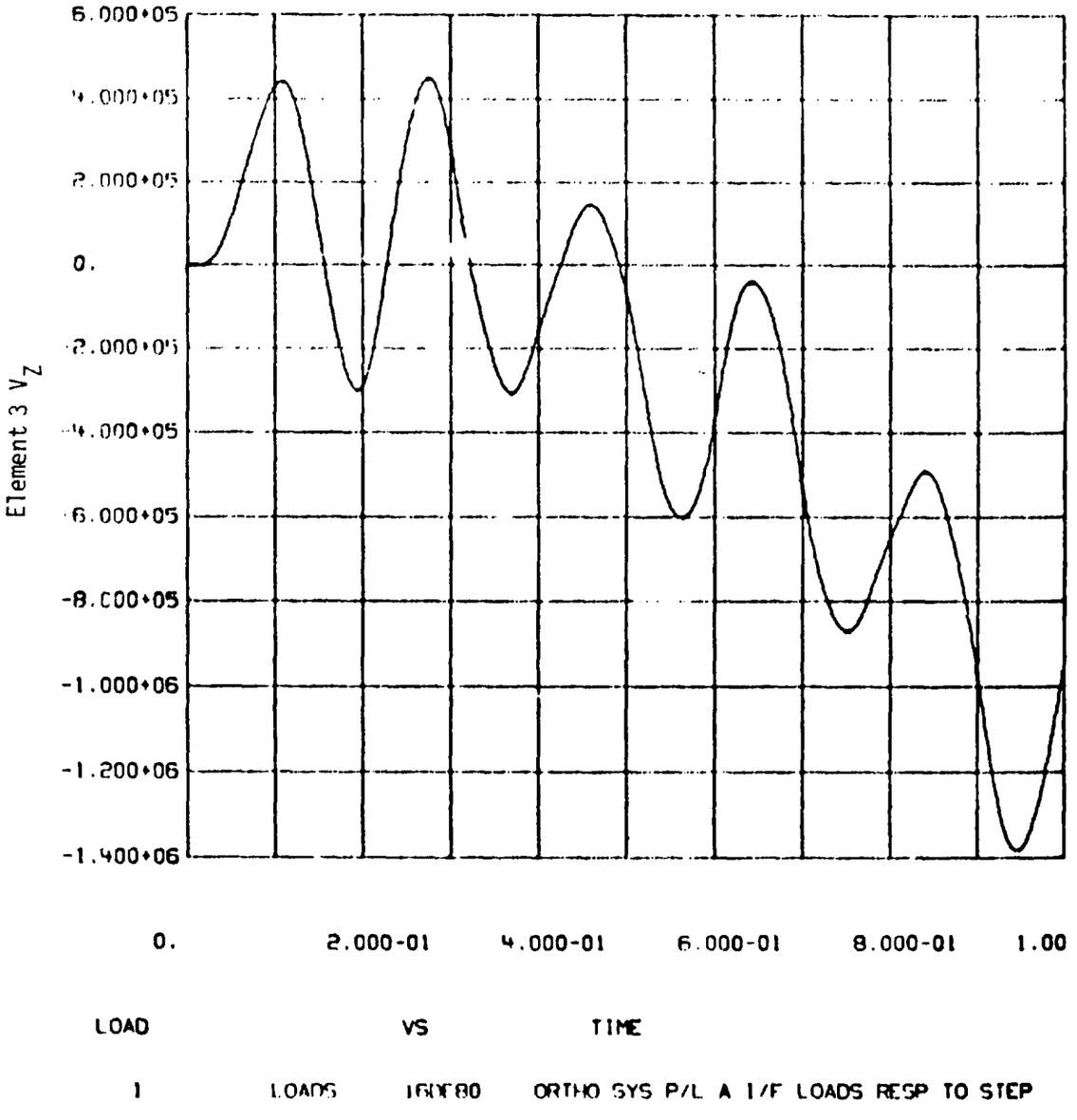


Figure 21a. P/L A, VZ, Time Response

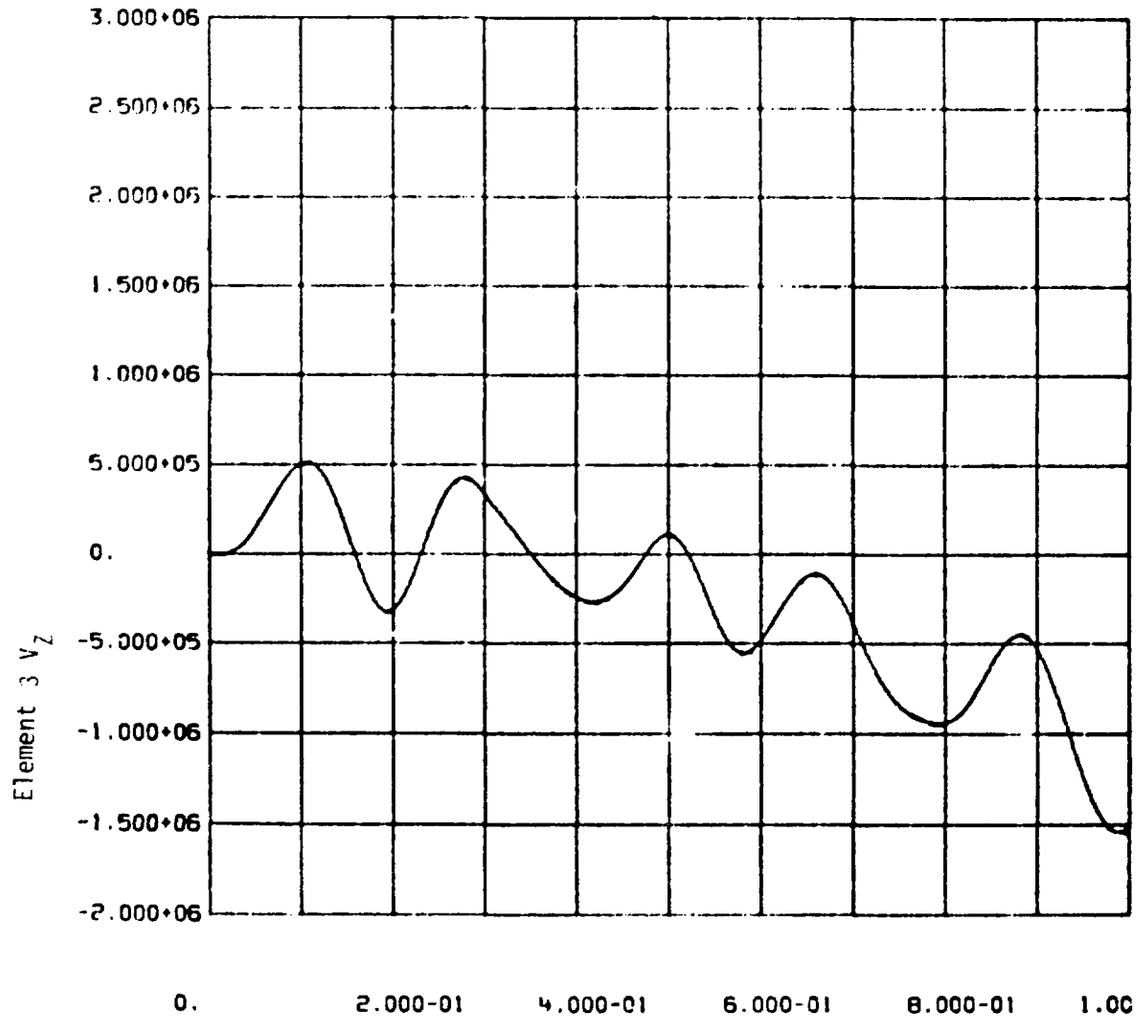


Figure 21b. P/L A, VZ, Time Response

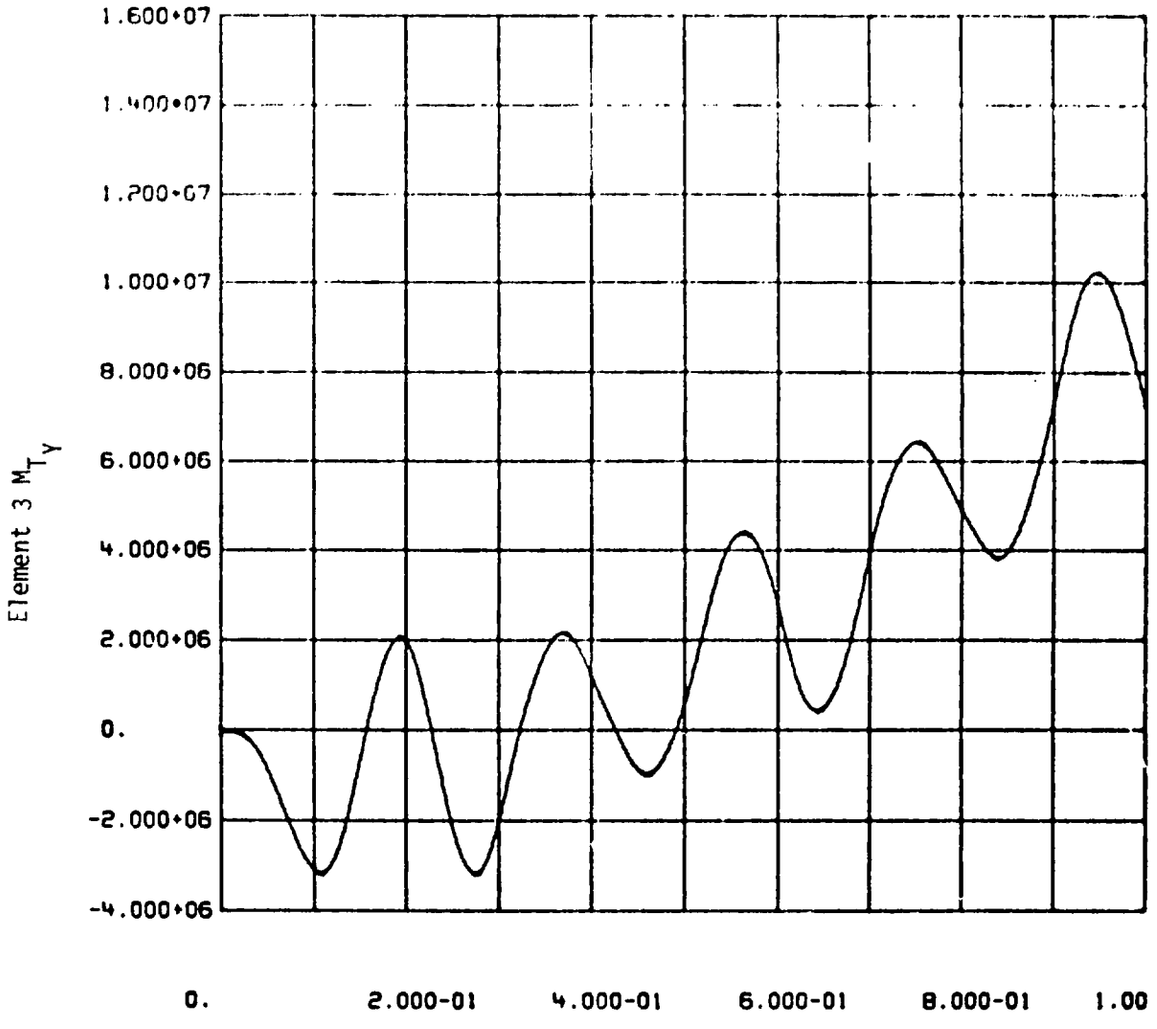


Figure 22a. P/L A, ITY, Time Response

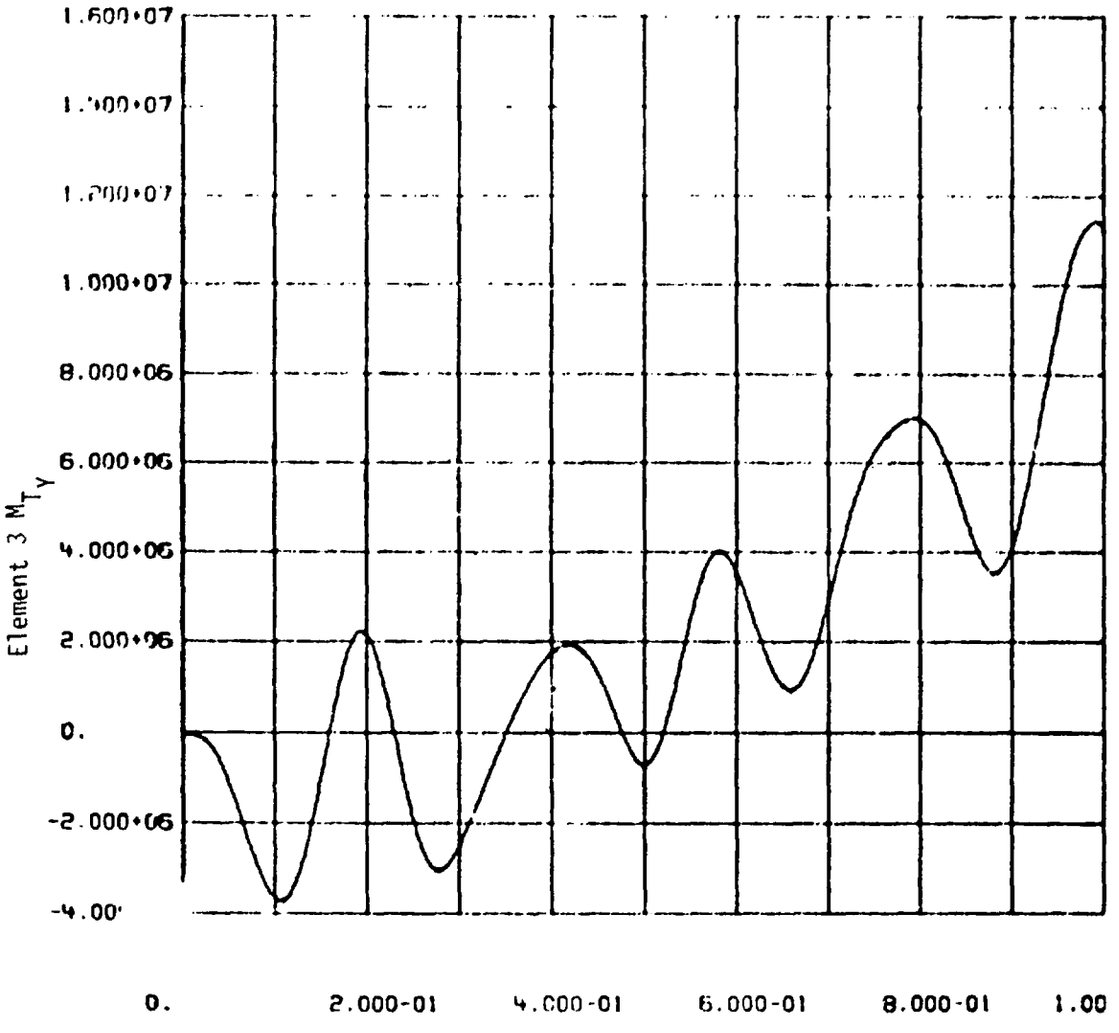


Figure 22b. P/L A, MTY, Time Response

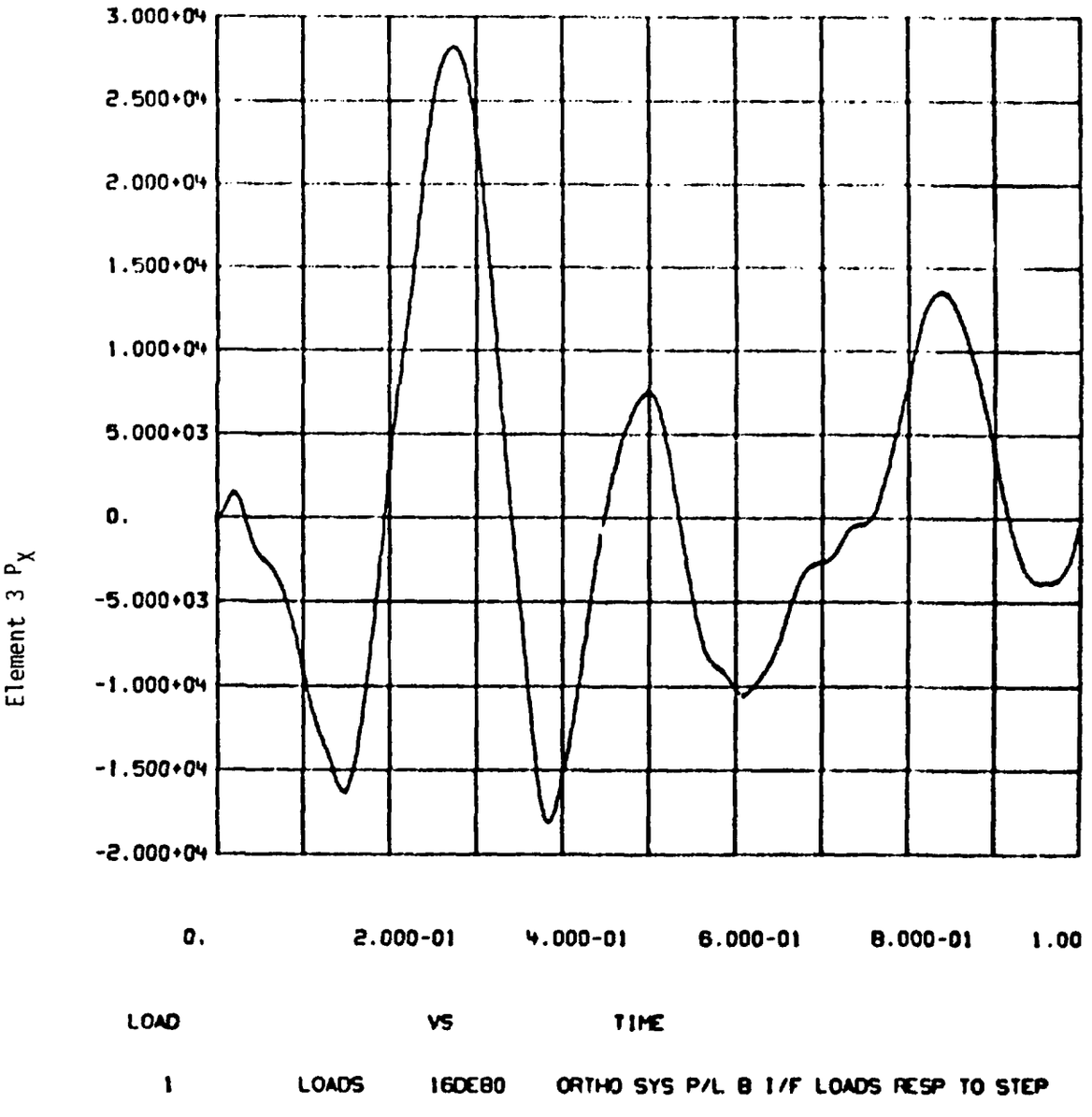


Figure 23a. P/L B, PX, Time Response

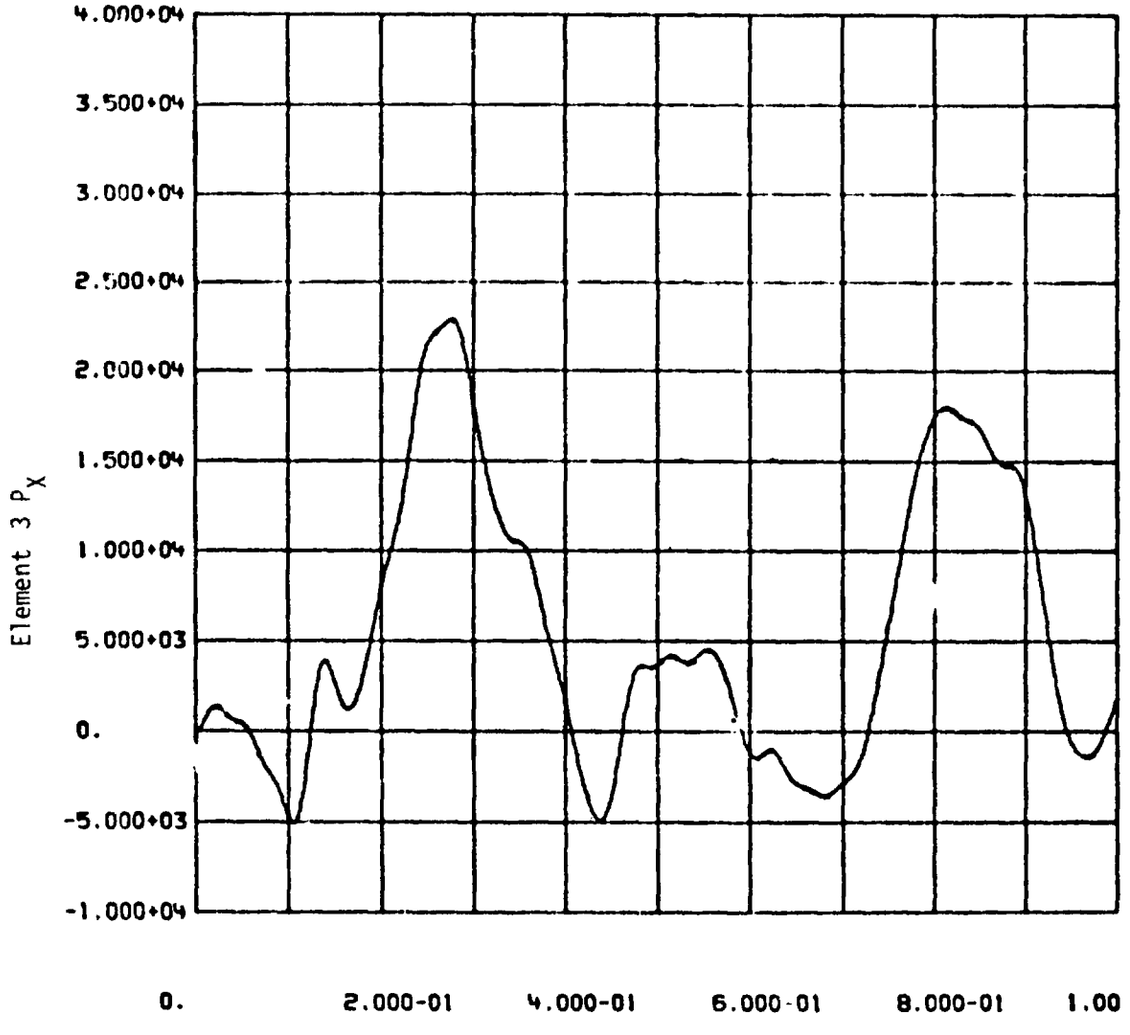


Figure 23b. P/L B, PX, Time Response

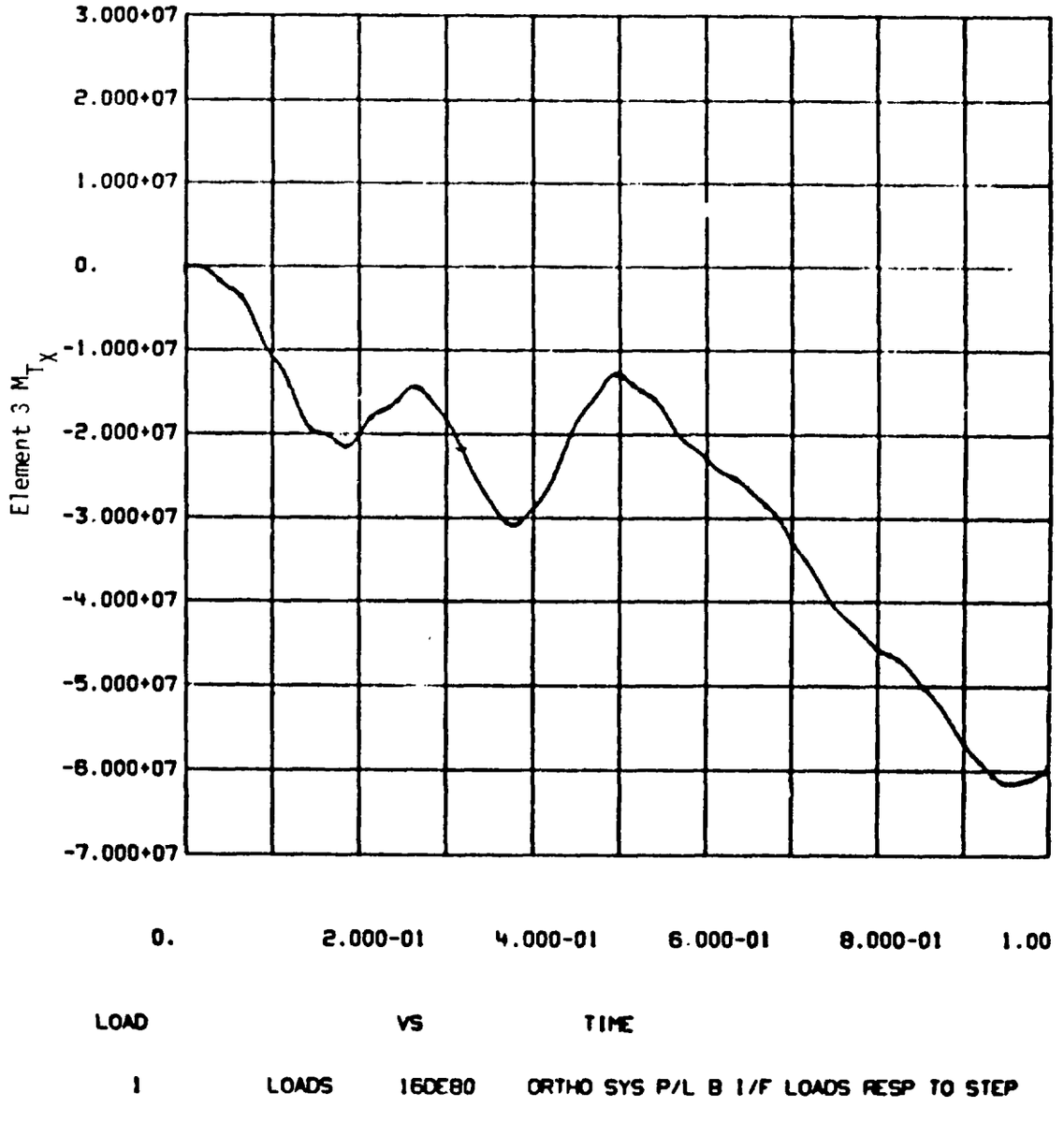


Figure 24a. P/L B, MTX, Time Response

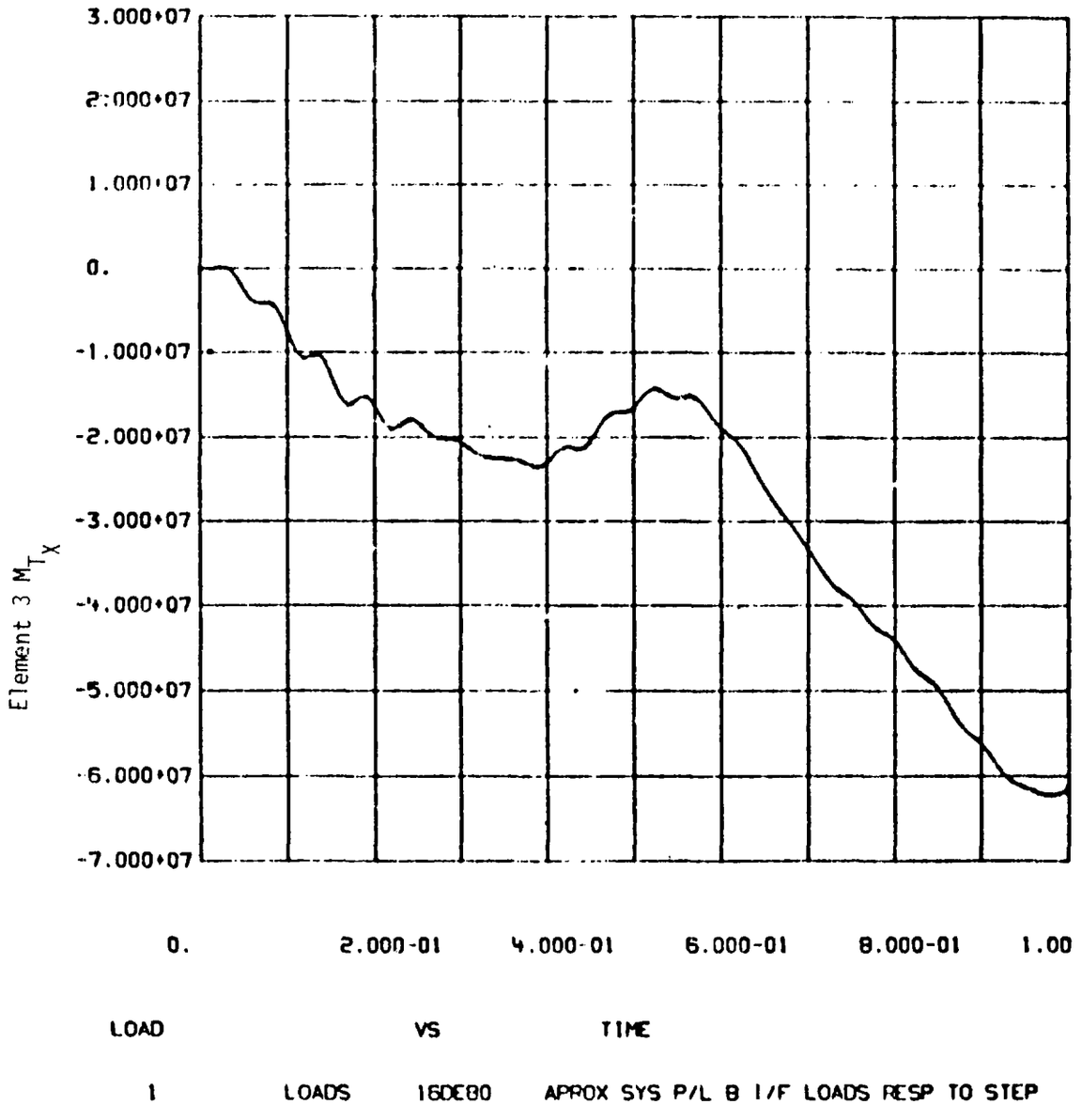


Figure 24b. P/L B, MTX Time Response

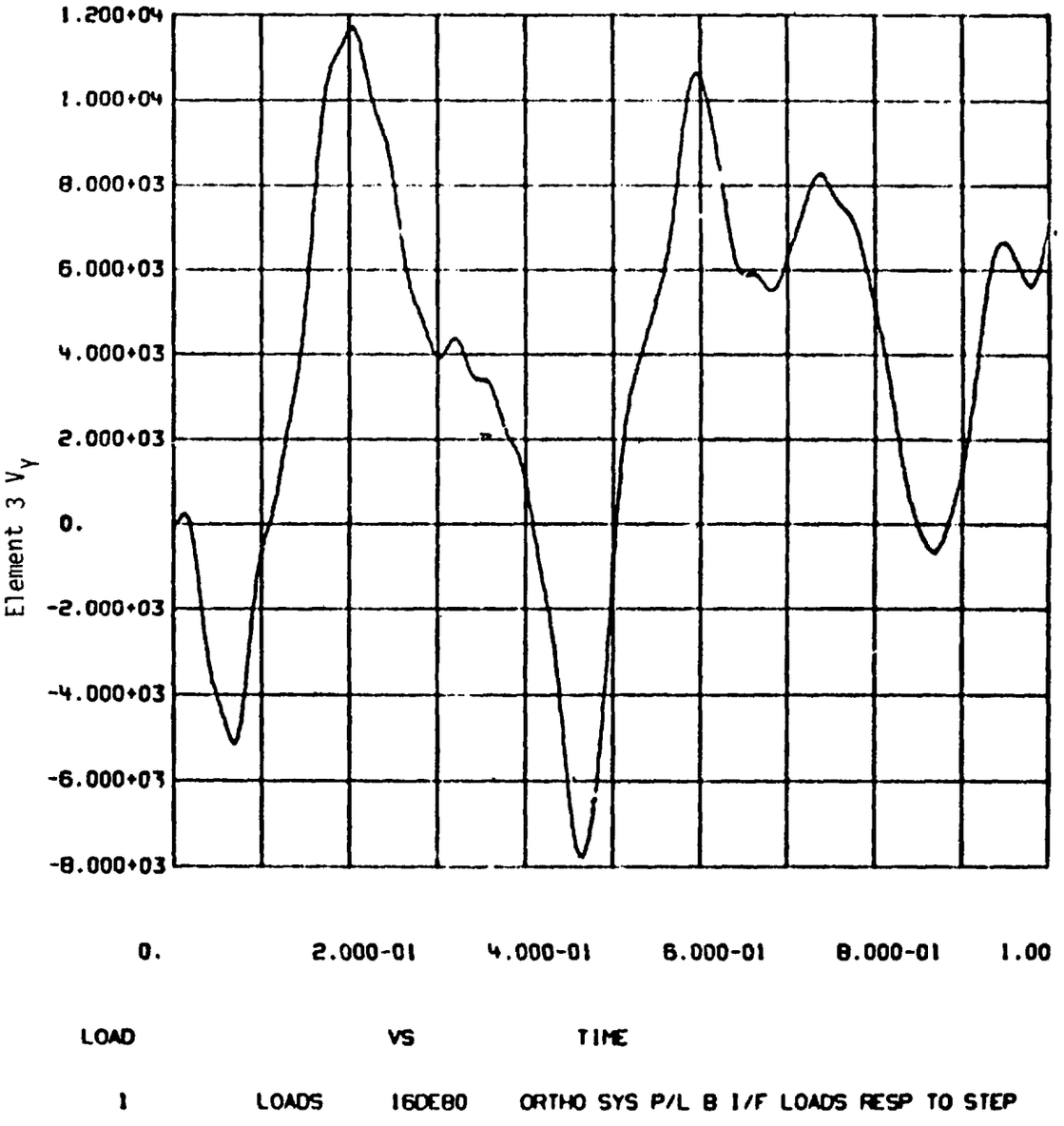


Figure 25a. P/L B, VY, Time Response

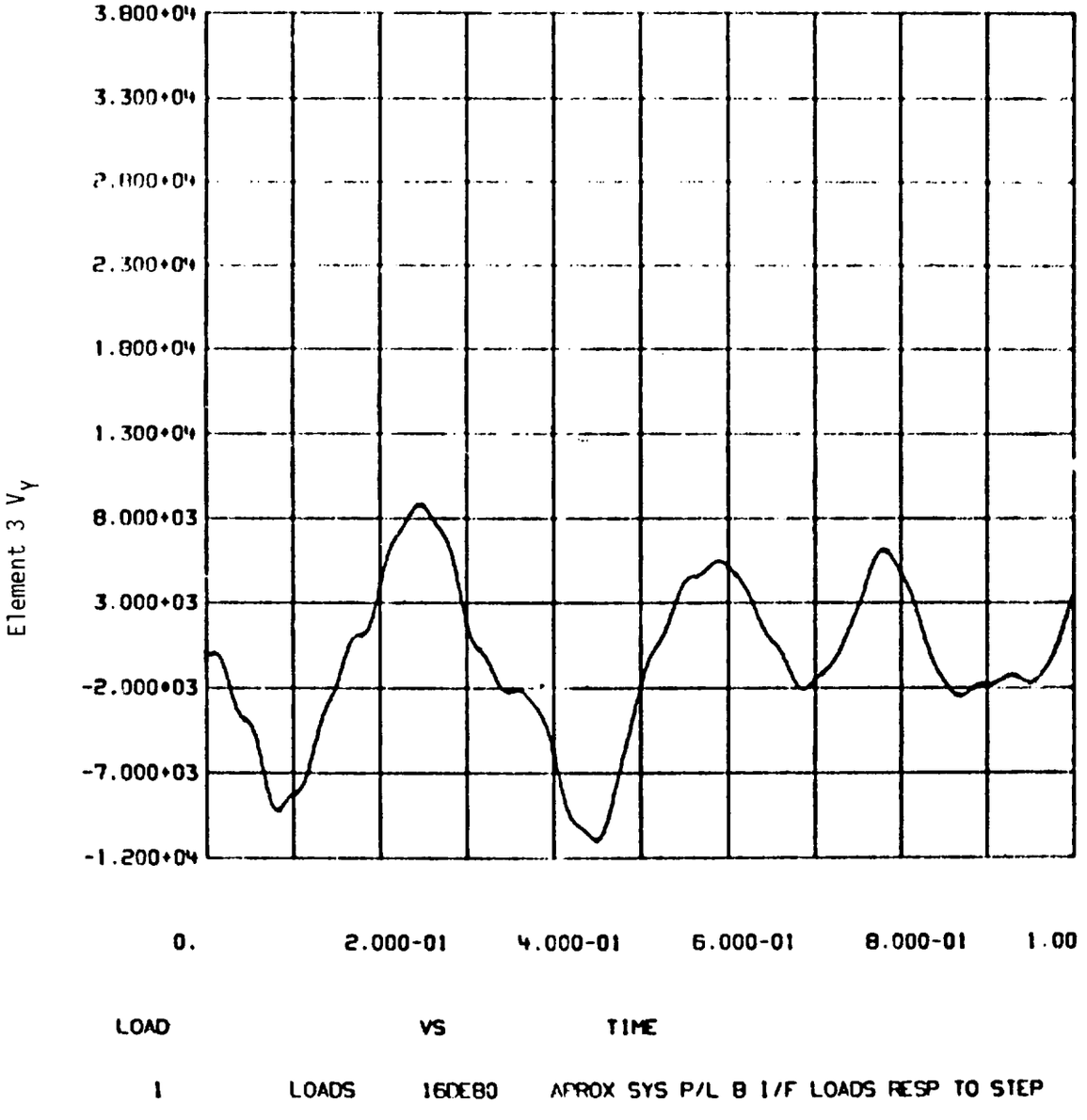


Figure 25b. P/L B, VY, Time Response

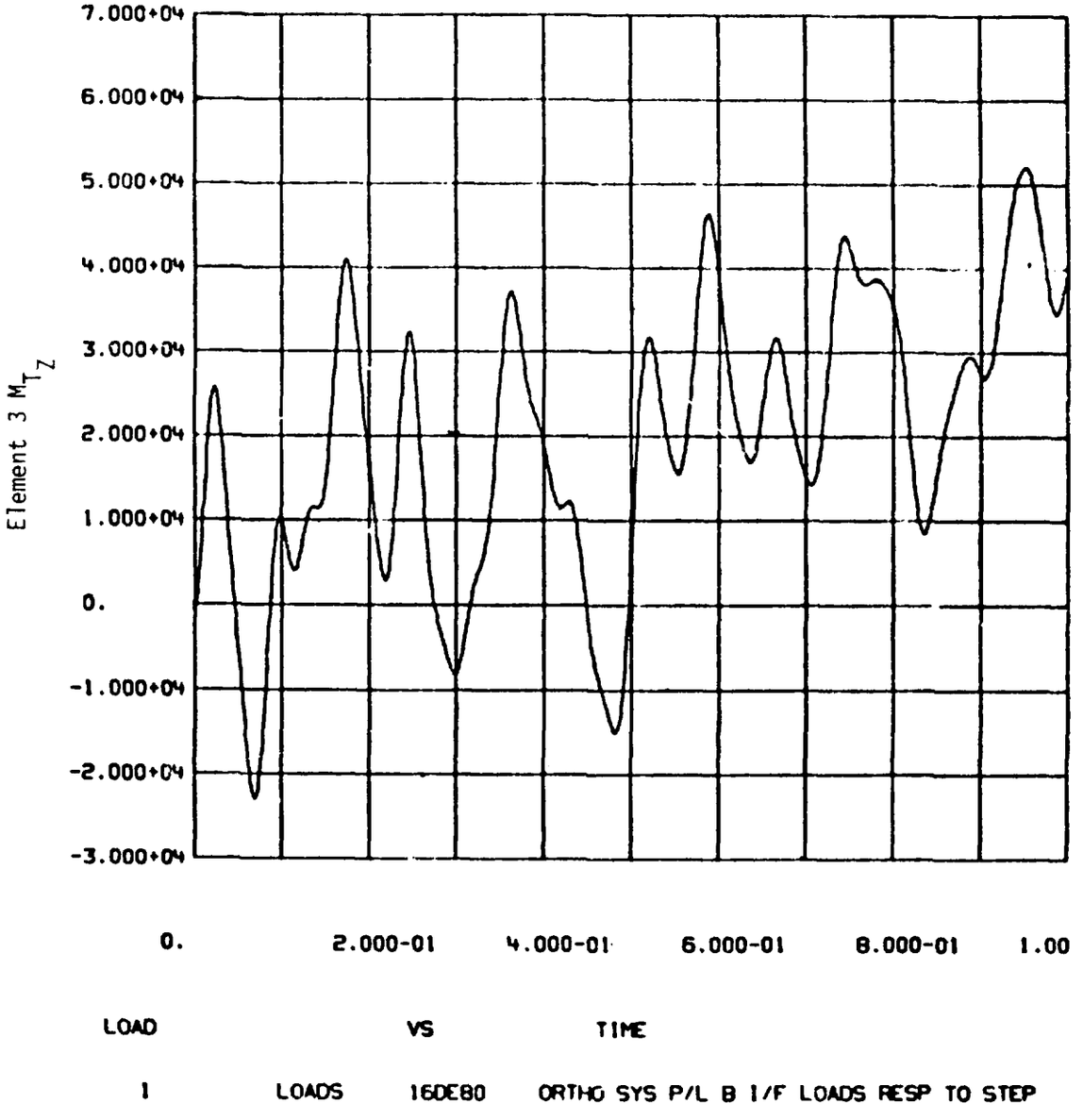


Figure 26a. P/L B, M_{T_Z}, Time Response

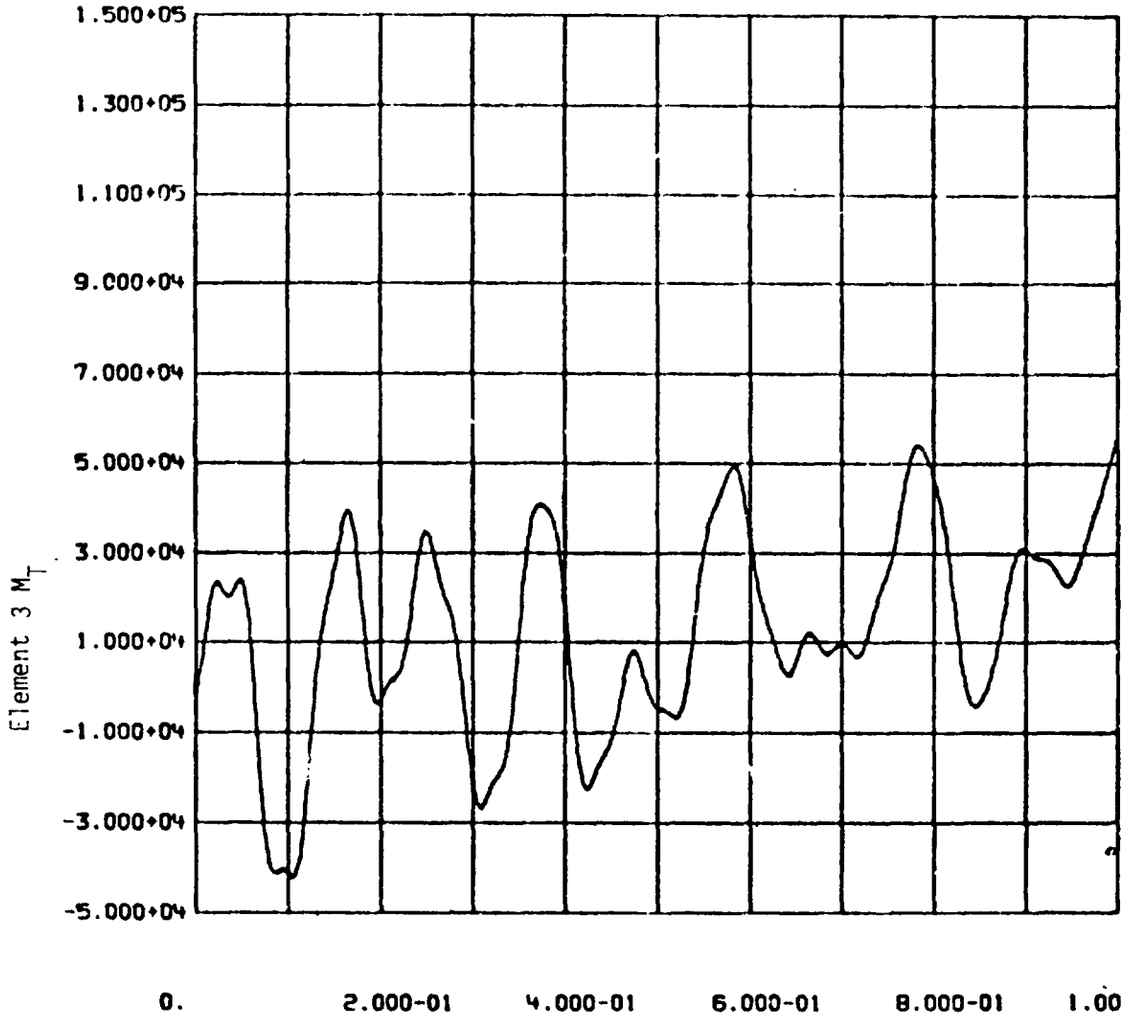


Figure 26b. P/L B, MTZ, Time Response

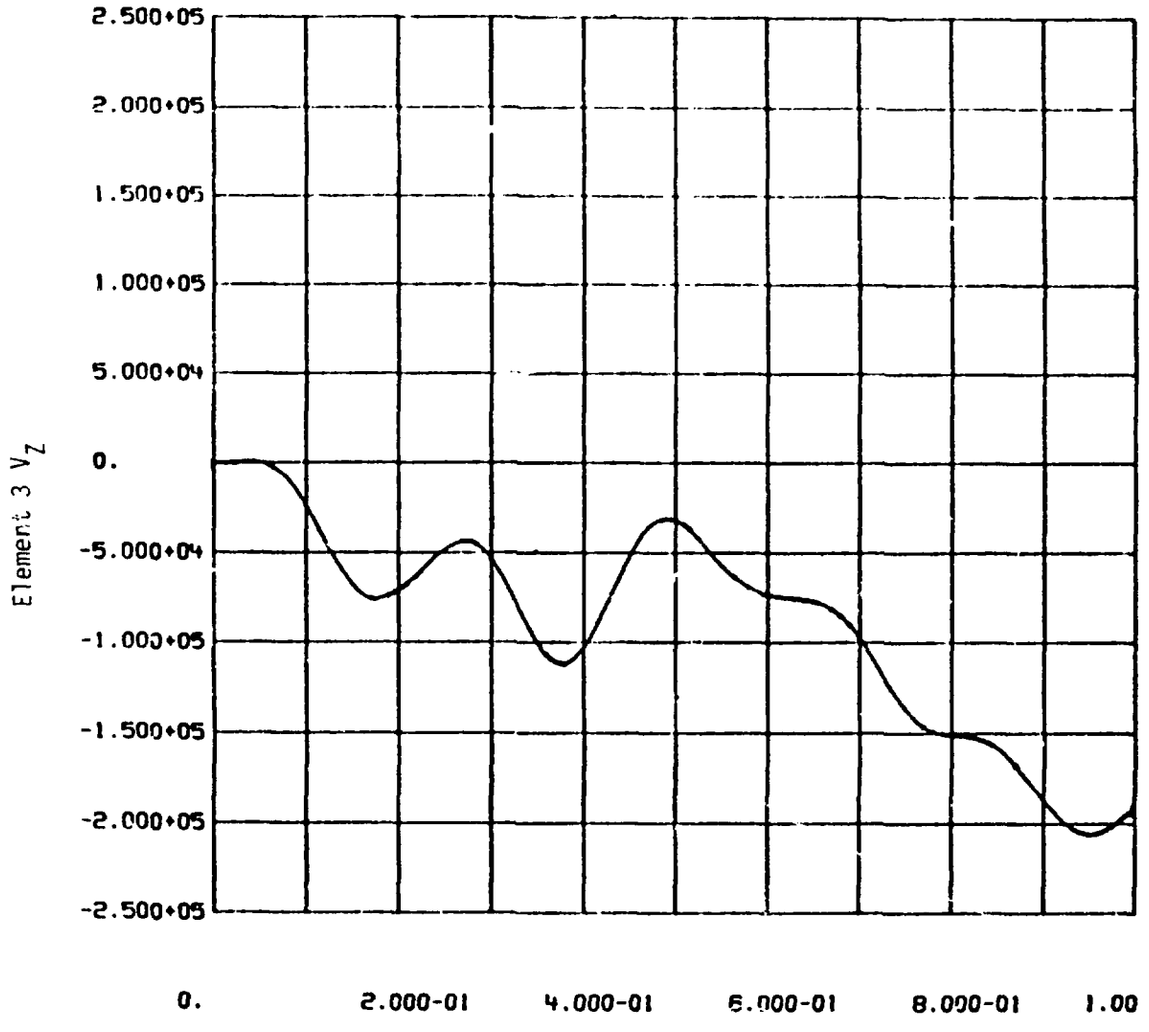


Figure 27a. P/L B, VZ, Time Response

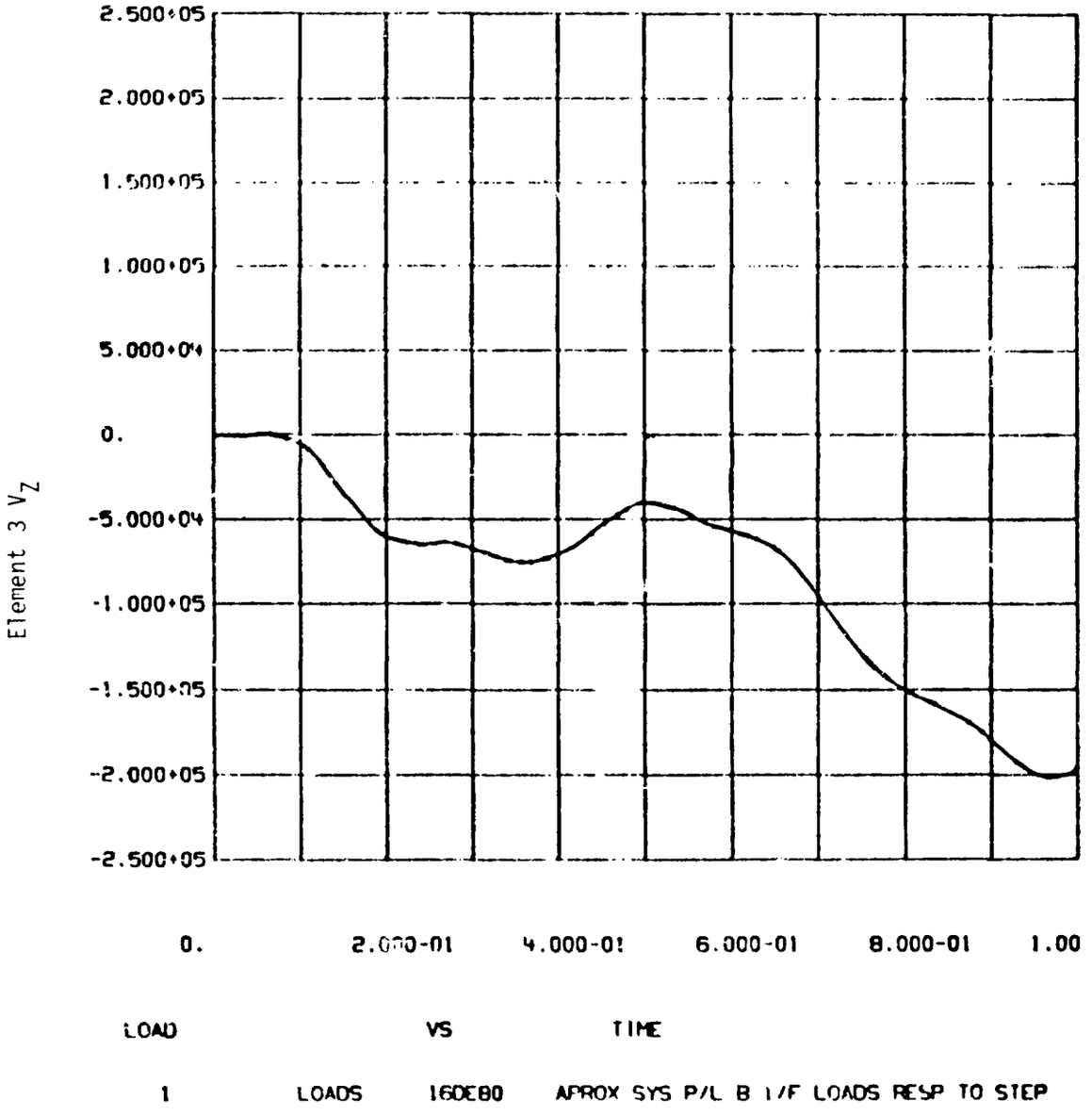


Figure 27b. P/L B, VZ, Time Response

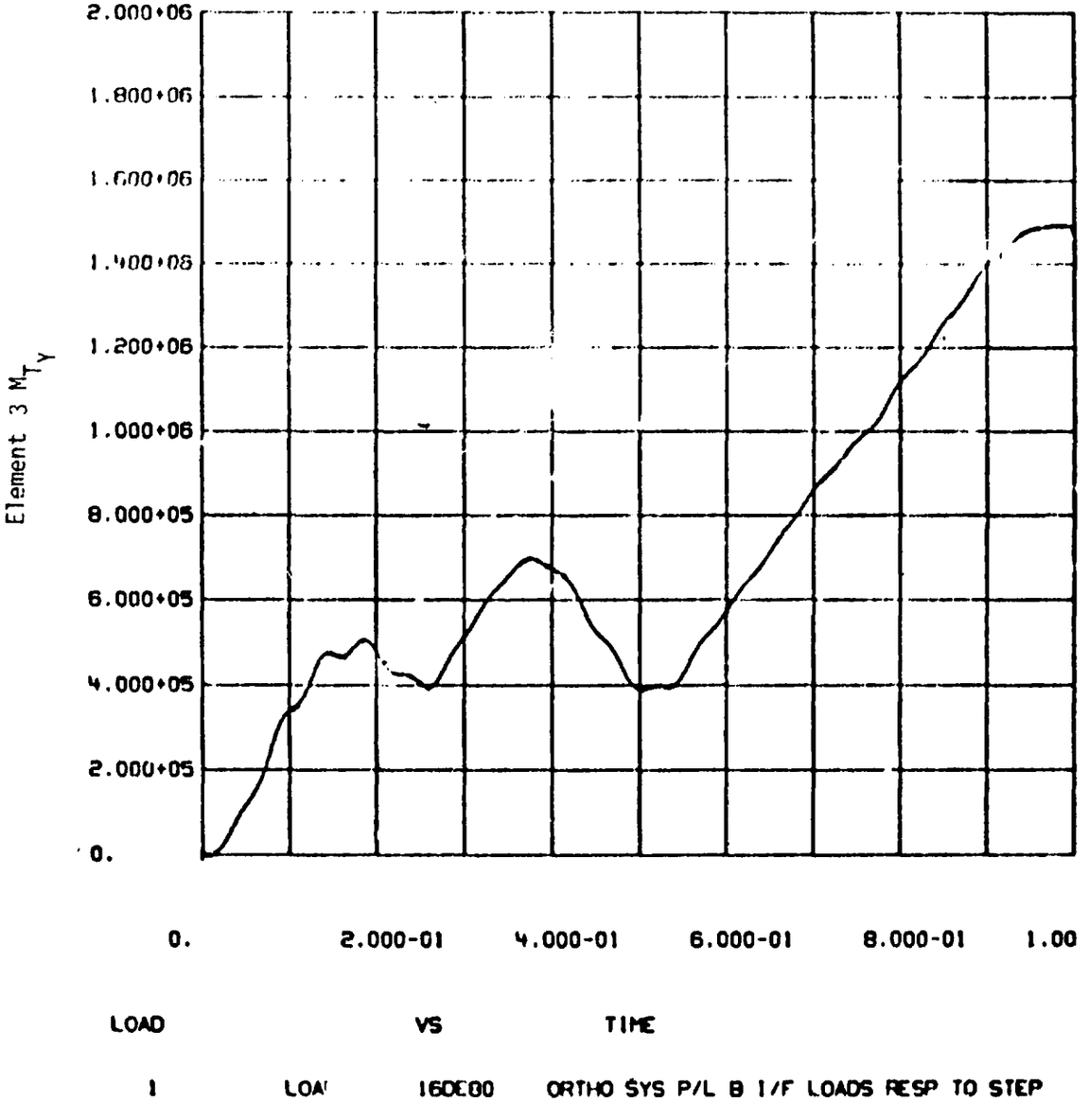


Figure 28a. P/L B, MTY, Time Response

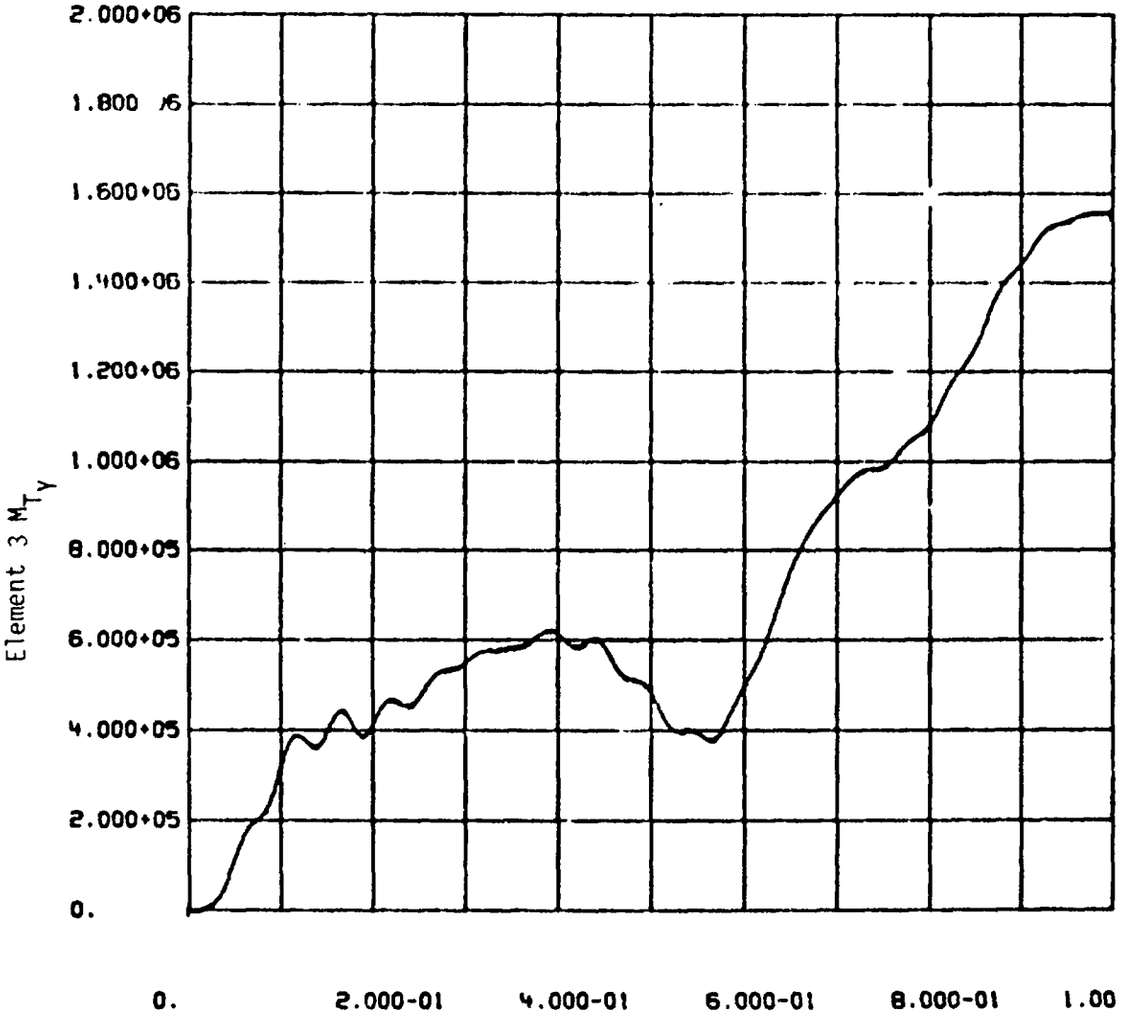


Figure 28b. P/L B, MTY, Time Response

IDENTIFICATION OF BENEFICIAL MODEL CHANGES

If the frequency content of the excitation source is known and transfer functions from a critical load to the point of excitation is calculated, it is easy to determine what frequency changes in the model would be beneficial to load reduction. The problem then, is to identify what model changes will produce the beneficial frequency shift. A solution to this problem has been suggested in Reference 2. The approach is conveniently applicable during payload design activity.

Frequency shifts are produced by mass and/or stiffness changes. In aerospace designs, minimum mass is almost always a goal for performance purposes. Therefore, adding mass to produce a frequency shift probably would not be allowed. Removing mass probably would not be possible. Therefore, further discussion will concentrate on the identification of beneficial stiffness changes. (A similar discussion of mass changes is possible, however.)

The homogeneous form of equation (17) provides a convenient place to start this discussion. $[\Omega^2]$ in this case was formed by

$$[\Omega^2] = [\psi]^T \begin{bmatrix} \omega_B^2 + \phi_{IB}^T T_p^T K_p T_p \phi_{IB} & \\ & \bar{\omega}_p^2 \end{bmatrix} \begin{bmatrix} \psi \end{bmatrix}$$

$$\stackrel{\Delta}{=} [\psi_B^T][\omega_B^2 + \phi_{IB}^T T_p^T K_p T_p \phi_{IB}][\psi_B]$$

$$+ [\psi_p^T][\bar{\omega}_p^2][\psi_p] \qquad (25)$$

The explanation is easier if a statically determinate interface is assumed for the moment. With this assumption, the jth diagonal term of Equation (25) can be written as

$$\Omega_j^2 - \{\psi_B\}_j [\omega_B^2] \{\psi_B\}_j = \{\psi_p\}_j [\bar{\omega}_p^2] \{\psi_p\}_j \qquad (26)$$

If the jth coupled mode is primarily a booster mode, the right hand side of Equation (26) will be small. Where payload participation in the jth coupled mode is important the right hand side of Equation (26) approaches Ω_j^2. In some cases

$$\Omega_j^2 \tilde{=} \bar{\omega}_{pi}^2 \qquad (27)$$

In this case, if examination of excitation source and payload transfer functions indicate a shift of the jth coupled mode is beneficial, a shift in the ith payload mode frequency is obviously in order. However, $\bar{\omega}^2_{pi}$ also affects the frequency of other coupled system modes. An estimate of the overall affect of changing payload frequencies can be obtained as follows.

Define $[\hat{\Omega}^2]$ and $[\hat{\psi}]$ as the new coupled system modal characteristics obtained as the result of perturbing each of the n payload components frequencies by $\delta_i\omega^2_{pi}$, where i = 1,n. Then the new form of Equation (26) is

$$[\hat{\Omega}^2]-[\hat{\psi}_B][\omega_B^2][\hat{\psi}_B]=[\hat{\psi}_P^T]([\bar{\omega}_P^2]+[\delta_P\bar{\omega}_P^2])[\hat{\psi}_P] \qquad (28)$$

As was shown in the discussion of the Dynamic Model, the unperturbed coupled system eigenvectors provide a good estimate for the perturbed system. Therefore, Equation (28) can be written as,

$$[\psi_P^T][\delta_P\bar{\omega}_P^2][\psi_P]\tilde{=}[\hat{\Omega}^2]-[\psi_B^T][\omega_B^2][\psi_B]-[\psi_P^T][\bar{\omega}_P^2][\psi_P]\overset{\Delta}{=}[\Delta\Omega^2] \qquad (29)$$

where $[\Delta\Omega^2]$ are the difference between the desired coupled eigenvalues and those given by the current model. Since the diagonal terms of the left hand side of Equation (29) can be written as

$$\lfloor\psi_P\rfloor_j[\delta_P\bar{\omega}_P^2]\{\psi_P\}_j = \sum_{i=1}^{\hat{}}\delta_{Pi}\bar{\omega}^2_{Pi}\psi^2_{Pij} \overset{\Delta}{=} \lfloor\psi^2_{Pi}\rfloor_j[\omega_P^2]\{\delta_P\}, \qquad (30)$$

an approximate solution for the component mode frequency scaling can be obtained from

$$[\psi^2_{Pi}][\bar{\omega}_P^2]\{\delta_P\}\tilde{=}\{\Delta\Omega^2\} \qquad (31)$$

$[\psi^2_{Pi}]$ is of size j x i where j is the number of coupled modes and i is the number of payload component modes and j>i. A subset of rows can be selected from $[\psi_{Pi}]$ to obtain a square nonsingular matrix, allowing a solution of $\{\delta_P\}$. A least squares solution, involving all data in $[\psi^2_{Pi}]$ also is possible. This possibility is discussed in Reference 2.

A similar approach to determine the payload modifications required to achieve the approximate payload frequency changes also is described in detail in Reference 2.

The matrix $[\psi^2_{p_j}]$ is presented as Table 5. It was formed using the baseline coupled system modes, $[\psi]$. ($[\psi]$ has been presented previously as Table C-1). The circled row numbers in Table 5 were selected to form the non-singular matrix required in Equation 31. The corresponding $[\bar{\omega}^2_B]$ matrix of Equation 31 was assembled from the baseline payload data. These baseline model frequencies are summarized as column 2 of Table 6. The $\{\Delta\Omega^2\}$ required for Equation 31 were calculated from the difference between the baseline and perturbed coupled system eigenvalues. Column 5 of Table 6 presents the baseline payload mode scaling factors, $\{\delta\}$, as predicted by Equation 31 to produce the perturbed coupled system frequencies. Column 4 of Table 6 presents the actual baseline payload frequency perturbation factors that resulted from changing from the baseline to perturbed component models. The small differences between the predicted factor (column 5) and the actual factor (column 4) shows that the approach quite accurately identifies component model changes required to produce a desired coupled system frequency shift.

Table 5. Coefficients for payload component frequency scaling

FCOEFF (84 X 20)		/OUTPUT/ (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1	4.927E-28	1.075E-31	4.629E-33	4.737E-29	9.447E-30	7.358E-32	7.830E-34	3.175E-37	2.498E-39	1.284E-35
1	11	2.841E-26	1.319E-30	1.259E-28	1.053E-27	3.598E-32	6.680E-33	3.599E-32	1.777E-33	1.071E-33	3.194E-35
2	1	1.023E-28	1.032E-33	5.125E-35	3.057E-30	7.256E-31	3.390E-32	3.801E-35	7.909E-39	5.120E-40	4.856E-37
2	11	2.869E-27	1.044E-29	2.635E-28	5.594E-30	2.989E-33	1.621E-32	3.244E-34	4.196E-37	1.268E-35	8.031E-36
3	1	1.086E-35	6.417E-33	1.419E-35	8.749E-40	2.416E-37	1.765E-39	4.815E-43	1.037E-39	2.855E-39	4.541E-44
3	11	4.119E-33	6.987E-31	3.896E-35	2.968E-36	1.287E-35	9.162E-38	6.676E-36	2.195E-39	9.022E-39	1.271E-39
4	1	3.621E-32	8.296E-29	5.930E-30	1.654E-33	4.568E-33	6.489E-36	6.771E-39	2.294E-34	9.865E-36	1.519E-42
4	11	4.696E-30	9.886E-28	7.504E-33	7.126E-33	8.744E-33	2.617E-34	4.560E-34	7.340E-39	2.577E-37	2.246E-38
5	1	1.200E-29	9.377E-31	5.943E-32	1.020E-30	2.295E-30	2.384E-33	8.339E-36	2.254E-36	8.124E-38	1.555E-38
5	11	1.723E-28	6.413E-30	3.872E-29	2.334E-29	2.460E-33	2.007E-33	7.463E-34	3.224E-35	1.787E-35	1.458E-36
6	1	1.546E-32	6.763E-29	4.402E-30	1.332E-33	4.034E-33	5.230E-36	1.863E-38	8.748E-32	3.604E-36	8.374E-41
6	11	1.863E-30	1.214E-28	1.781E-30	1.000E-30	1.684E-29	6.180E-31	1.087E-32	2.845E-33	1.080E-32	7.600E-34
7	1	2.324E-05	9.141E-08	3.971E-09	8.220E-07	2.342E-11	3.830E-09	1.141E-11	1.416E-12	2.890E-15	1.815E-13

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Table 5. (Continued)

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.30 CLOCK TIME
37.011 SEC. CPTIME
9088 SEC. PPTIME

FCOEFF	(84 X 20)	(1)	/OUTPUT/ (2)	CONTINUED (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(7)	11	1.024E+00	2.805E-07	1.140E-05	5.411E-06	1.342E-13	1.205E-09	9.042E-11	1.081E-11	2.945E-12	2.841E-14
8	1	4.403E-07	1.062E-04	4.050E-06	6.536E-09	1.128E-09	6.098E-11	8.309E-14	1.579E-10	2.827E-12	1.398E-15
(8)	11	5.898E-07	1.029E+00	9.249E-08	2.457E-08	1.481E-08	4.487E-10	2.398E-09	1.263E-13	1.977E-12	1.976E-13
9	1	1.533E-03	2.769E-06	3.547E-08	1.710E-06	1.705E-06	2.802E-08	1.695E-11	4.647E-13	5.557E-15	3.449E-13
(9)	11	1.940E-04	3.180E-07	1.004E+00	1.266E-04	5.451E-09	1.948E-08	6.363E-10	1.978E-15	1.679E-11	8.285E-12
(10)	1	3.8 E-01	6.108E-06	1.547E-08	4.129E-07	4.448E-07	7.106E-09	5.974E-12	2.241E-15	3.043E-17	1.951E-13
10	11	6.047E-05	2.443E-07	8.634E-04	5.955E-01	1.157E-09	1.042E-08	2.785E-11	9.365E-12	1.106E-12	3.152E-12
(11)	1	6.304E-01	4.187E-06	7.712E-09	8.236E-05	1.863E-07	1.884E-07	5.555E-10	2.590E-15	1.728E-16	7.779E-12
11	11	1.025E-03	5.769E-06	1.430E-03	3.925E-01	1.844E-09	6.873E-08	8.638E-09	5.495E-10	1.902E-10	9.133E-14
(12)	1	3.446E-08	9.665E-01	1.398E-04	4.310E-11	4.436E-12	2.640E-13	5.676E-16	4.209E-09	9.141E-11	1.842E-17
12	11	1.624E-06	5.192E-04	5.938E-06	1.649E-05	4.022E-07	1.108E-08	1.571E-12	7.672E-12	4.304E-11	3.767E-12
13	1	1.040E-07	3.635E-02	4.997E-04	1.871E-09	1.479E-09	1.617E-11	3.833E-15	5.010E-09	7.774E-12	1.729E-17
13	11	9.653E-06	3.080E-03	6.670E-06	1.324E-06	1.051E-06	8.403E-08	4.131E-07	6.218E-10	3.520E-09	3.118E-10
(14)	1	1.743E-09	1.391E-04	9.942E-01	2.714E-09	5.107E-10	4.188E-12	4.807E-16	1.265E-09	6.451E-11	7.941E-19
14	11	1.738E-07	2.845E-05	4.818E-07	5.333E-07	7.098E-08	1.102E-09	9.403E-10	3.543E-13	1.477E-12	3.365E-13
15	1	6.321E-03	1.681E-07	1.477E-07	1.306E-01	1.579E-02	2.407E-05	6.448E-09	1.070E-11	1.527E-14	1.066E-10
15	11	9.089E-05	4.598E-05	2.442E-02	3.542E-02	4.371E-05	2.820E-05	8.586E-06	1.988E-07	1.424E-07	1.198E-08
(16)	1	6.361E-05	1.334E-07	7.926E-08	2.660E-01	2.672E-03	1.295E-06	4.859E-09	3.994E-12	2.783E-15	7.916E-11
16	11	2.332E-04	2.703E-06	3.011E-03	7.360E-03	1.021E-05	2.264E-06	2.334E-06	5.414E-08	3.636E-08	2.302E-09
17	1	1.676E-08	1.193E-02	2.270E-04	7.464E-07	8.675E-06	4.648E-10	4.411E-12	1.728E-06	8.829E-10	3.540E-14
17	11	9.105E-07	8.714E-04	1.298E-06	1.008E-07	9.043E-03	1.956E-04	3.614E-05	2.724E-08	1.448E-07	1.373E-08
18	1	1.790E-05	3.886E-07	1.841E-08	3.320E-03	7.569E-02	1.741E-06	2.895E-08	1.057E-10	4.799E-16	2.617E-10
18	11	3.652E-05	1.171E-06	7.875E-04	2.957E-03	6.351E-04	5.733E-05	6.456E-06	1.173E-07	5.010E-08	2.133E-09
19	1	6.191E-06	6.651E-06	7.542E-07	4.280E-03	1.110E-01	1.304E-07	4.217E-08	1.491E-11	1.331E-17	3.564E-10
19	11	9.030E-05	5.966E-07	3.343E-04	2.544E-03	3.317E-03	3.578E-05	6.916E-06	1.233E-07	4.416E-08	1.257E-09
20	1	3.235E-07	2.519E-04	1.532E-05	3.179E-05	1.784E-03	1.834E-08	3.452E-10	2.907E-08	4.607E-13	2.647E-12
(20)	11	5.303E-07	3.890E-08	6.245E-06	2.541E-05	9.856E-01	1.596E-05	5.130E-07	1.052E-10	1.108E-09	1.546E-10
21	1	4.408E-06	7.716E-06	4.295E-07	1.632E-07	4.696E-04	6.929E-08	9.070E-12	9.783E-10	1.373E-14	3.555E-13
(21)	11	1.430E-06	7.994E-10	1.308E-06	1.283E-07	1.125E-05	9.991E-01	4.349E-08	3.029E-11	1.243E-10	1.736E-11
22	1	5.107E-08	6.575E-06	3.324E-07	3.384E-04	4.974E-02	2.414E-07	3.513E-09	7.225E-10	1.294E-11	9.816E-12
22	11	5.751E-07	1.928E-06	1.473E-04	7.383E-07	8.019E-07	2.865E-04	1.073E-07	7.178E-10	1.091E-09	4.488E-10
23	1	3.891E-06	3.286E-04	1.689E-06	3.223E-05	5.284E-02	8.025E-07	1.919E-10	1.068E-08	1.341E-10	2.170E-13
23	11	5.500E-06	2.527E-05	1.731E-04	1.269E-04	1.059E-04	1.367E-05	1.923E-05	4.411E-09	1.265E-08	1.760E-09
(24)	1	5.364E-04	5.199E-05	1.667E-06	7.498E-04	5.698E-01	7.044E-05	3.829E-08	2.936E-10	3.894E-12	4.679E-10
24	11	1.720E-04	3.151E-05	7.214E-03	1.042E-02	2.666E-04	2.692E-04	1.525E-04	7.649E-07	5.290E-07	4.028E-08

Table 5. (Continued)

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.30 CLOCK TIME
37.296 SEC. CPTIME
9136 SEC. PPTIME

FCOEFF	(84 X 20)	(1)	/OUTPUT/ (2)	CONTINUED (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
25	1	8.872E-06	3.709E-08	6.163E-04	5.367E-06	8.513E-04	1.276E-06	3.085E-10	2.185E-07	1.055E-08	1.415E-12
25	11	3.047E-06	1.665E-03	1.945E-05	3.439E-05	1.019E-04	1.752E-06	1.160E-04	6.135E-09	2.153E-08	5.839E-10
26	1	8.842E-07	2.656E-02	4.881E-03	2.888E-06	9.699E-06	1.514E-07	2.361E-10	3.940E-06	2.228E-08	1.690E-12
26	11	2.734E-05	1.365E-02	1.217E-05	7.473E-06	8.308E-04	2.605E-05	1.477E-02	5.241E-09	1.095E-10	6.042E-10
27	1	1.332E-04	2.753E-03	8.112E-04	6.117E-03	8.663E-02	1.221E-06	4.128E-07	5.124E-07	7.037E-09	1.276E-09
27	11	7.983E-05	2.060E-03	3.020E-07	3.306E-03	7.641E-05	8.254E-07	2.459E-02	1.088E-06	2.058E-07	8.571E-10
28	1	6.2[illegible]E-05	2.430E-06	6.998E-06	3.128E-04	4.114E-03	5.039E-08	2.298E-08	1.734E-09	3.621E-10	7.180E-11
(28)	11	1.[illegible]E-05	3.071E-06	1.068E-06	1.880E-04	4.405E-06	5.119E-08	9.460E-01	5.064E-08	6.118E-09	2.057E-12
29	1	1.321E-06	5.391E-02	1.446E-02	5.396E-04	4.055E-03	4.469E-06	4.389E-08	1.337E-05	1.459E-07	1.031E-10
29	11	1.837E-04	3.457E-02	1.503E-04	6.742E-05	6.468E-04	1.234E-05	1.342E-02	4.501E-08	3.474E-08	1.092E-08
30	1	9.392E-10	1.390E-02	4.874E-03	1.991E-06	2.812E-06	9.735E-07	1.766E-10	5.260E-06	9.686E-08	1.697E-14
30	11	3.531E-05	1.001E-02	2.022E-06	8.928E-08	1.968E-05	2.414E-07	1.581E-04	3.261E-08	1.156E-07	7.747E-09
31	1	2.315E-06	3.228E-03	1.023E-03	1.882E-06	1.538E-05	4.346E-05	1.328E-10	1.155E-06	1.658E-08	6.461E-14
31	11	4.682E-06	2.420E-03	4.349E-06	3.573E-06	3.547E-06	7.771E-08	1.345E-04	7.931E-09	7.105E-08	6.439E-09
32	1	2.020E-05	4.134E-04	9.348E-05	5.213E-04	1.991E-03	3.757E-04	7.091E-08	3.177E-07	1.729E-09	2.045E-11
32	11	4.652E-05	1.159E-04	1.492E-04	2.713E-05	7.214E-06	1.336E-08	1.144E-05	1.302E-11	2.598E-08	5.300E-09
33	1	1.972E-03	3.182E-03	7.740E-04	2.192E-03	5.424E-02	1.125E-01	4.951E-07	2.373E-06	1.490E-08	9.852E-10
33	11	6.967E-04	1.275E-03	1.398E-03	2.155E-03	1.788E-06	2.851E-05	3.351E-06	1.466E-06	2.776E-07	1.480E-08
34	1	5.435E-04	1.246E-02	3.049E-03	1.263E-03	1.763E-02	2.433E-02	2.448E-07	9.336E-06	5.909E-08	2.782E-10
34	11	4.930E-04	3.969E-03	1.432E-04	3.138E-04	8.391E-05	4.933E-07	1.120E-04	2.501E-07	4.238E-08	2.045E-09
(35)	1	8.574E-04	2.211E-06	5.725E-07	6.215E-04	1.363E-02	8.556E-01	1.324E-07	1.805E-09	1.179E-11	1.173E-10
35	11	5.109E-04	8.512E-06	3.496E-04	2.702E-04	1.111E-06	7.319E-06	2.093E-06	1.913E-07	2.473E-08	2.480E-09
36	1	1.137E-06	3.517E-06	8.789E-07	6.147E-04	4.345E-04	6.247E-03	2.925E-08	1.399E-09	6.407E-12	9.145E-10
36	11	1.770E-03	2.708E-06	1.398E-03	4.843E-03	1.555E-05	9.330E-08	1.292E-04	4.384E-06	2.180E-06	1.114E-07
37	1	3.209E-05	1.214E-05	1.304E-06	6.228E-06	3.202E-04	1.049E-04	1.687E-09	4.308E-08	1.729E-11	1.724E-14
37	11	7.554E-05	6.305E-07	1.538E-06	9.558E-05	1.207E-07	9.548E-08	1.884E-06	1.770E-07	5.139E-08	6.194E-1[illegible]
38	1	3.595E-07	1.150E-03	4.375E-05	3.405E-07	7.077E-06	9.721E-07	1.264E-10	5.880E-06	5.514E-10	1.655E-13
38	11	5.198E-06	2.433E-04	5.681E-07	2.136E-06	6.949E-05	3.465E-06	1.165E-07	1.422E-07	3.755E-07	2.566E-08
39	1	1.085E-07	1.244E-05	8.505E-05	1.247E-07	8.896E-06	1.620E-06	1.942E-10	2.075E-06	1.558E-08	2.232E-12
39	11	7.572E-06	1.058E-03	3.564E-07	4.598E-06	4.466E-05	2.046E-06	1.082E-06	1.430E-07	3.840E-07	2.473E-08
40	1	1.010E-08	6.792E-03	2.509E-03	3.830E-06	2.214E-05	1.971E-09	2.494E-09	5.122E-06	1.368E-07	8.864E-12
40	11	2.425E-06	3.761E-03	4.167E-07	8.456E-06	2.048E-06	1.908E-07	1.333E-05	2.839E-07	4.493E-07	2.591E-08
41	1	3.605E-07	3.969E-04	2.515E-04	2.527E-05	1.274E-04	2.110E-07	1.816E-08	1.279E-07	1.771E-08	6.479E-11
41	11	6.011E-06	1.150E-03	1.469E-06	3.387E-05	9.723E-06	3.779E-07	1.688E-05	5.023E-07	5.572E-07	2.970E-08
42	1	1.171E-06	8.660E-04	5.514E-04	1.130E-10	1.386E-07	134E-07	1.629E-10	7.606E-07	4.239E-08	5.665E-12

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.64.31 CLOCK TIME
37.594 SEC. CPTIME
9136 SEC. PPTIME

FCOEFF (84 X 20) /OUTPUT/ CONTINUED

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
42	11	2.996E-05	2.880E-03	3.143E-06	2.357E-06	2.797E-05	2.516E-06	3.915E-05	3.864E-07	1.235E-06	1.010E-07
43	1	9.322E-07	5.056E-04	2.597E-04	1.241E-06	1.213E-06	3.292E-07	1.848E-09	1.698E-06	2.178E-08	8.610E-12
43	11	8.195E-06	2.545E-03	3.091E-06	2.011E-08	8.377E-06	1.072E-06	5.399E-05	5.040E-07	1.479E-06	1.280E-07
44	1	1.067E-02	1.529E-05	5.178E-06	4.063E-03	4.926E-03	1.205E-03	1.309E-05	1.119E-10	3.528E-10	1.080E-07
44	11	7.771E-04	5.355E-05	5.324E-04	1.665E-03	3.971E-08	8.238E-06	3.166E-06	8.224E-06	4.371E-07	5.728E-09
45	1	7.166E-05	2.740E-03	8.299E-04	1.231E-05	1.421E-05	3.350E-06	1.968E-08	7.140E-06	6.728E-08	1.325E-09
45	11	1.927E-04	1.344E-02	4.275E-04	1.463E-04	3.332E-06	4.272E-06	3.524E-04	4.489E-06	9.349E-06	9.699E-07
46	1	2.213E-03	2.369E-05	2.750E-06	7.060E-04	1.053E-03	2.690E-04	6.129E-07	1.961E-08	3.221E-11	5.429E-08
46	11	1.550E-03	1.371E-04	1.405E-02	7.109E-03	3.141E-05	6.345E-05	4.517E-05	2.953E-05	1.090E-05	1.407E-06
47	1	7.064E-04	1.784E-06	1.152E-06	2.927E-04	6.057E-04	1.324E-04	2.412E-07	1.017E-06	3.787E-09	2.193E-08
47	11	1.173E-03	4.175E-04	4.922E-03	2.069E-03	8.099E-06	2.729E-05	6.743E-06	9.325E-06	2.675E-06	4.172E-07
48	1	1.378E-04	2.045E-05	3.427E-07	2.887E-06	1.979E-04	7.311E-06	1.902E-07	4.122E-07	2.258E-09	4.439E-09
48	11	4.320E-04	7.714E-06	3.007E-04	7.099E-05	6.390E-07	3.123E-06	5.284E-09	4.972E-07	3.383E-08	1.192E-08
49	1	4.927E-08	2.027E-05	3.922E-06	2.553E-08	4.999E-08	2.466E-09	1.946E-10	2.274E-07	1.810E-08	9.763E-13
49	11	2.466E-08	2.391E-06	1.779E-08	9.482E-09	6.129E-10	1.296E-09	4.062E-07	1.152E-09	6.640E-09	9.289E-10
50	1	2.089E-03	3.381E-06	2.966E-07	3.736E-03	2.443E-04	8.509E-04	1.239E-05	1.573E-08	3.641E-11	1.409E-08
50	11	1.444E-05	1.522E-05	7.159E-03	2.557E-03	1.539E-05	1.456E-05	2.853E-05	1.784E-05	1.205E-05	1.731E-06
51	1	1.102E-07	5.230E-03	3.886E-03	5.237E-07	2.577E-06	1.697E-10	9.003E-09	1.530E-04	5.729E-06	1.485E-11
51	11	7.807E-05	2.747E-02	2.807E-05	3.119E-06	1.366E-05	1.582E-07	2.862E-04	1.089E-04	3.487E-05	3.093E-06
52	1	2.405E-04	1.144E-05	2.437E-06	3.190E-03	1.331E-02	3.489E-06	5.549E-05	3.364E-09	9.167E-11	5.783E-08
52	11	3.034E-03	5.919E-07	4.981E-03	3.732E-03	1.976E-05	5.605E-07	3.867E-05	1.160E-03	4.712E-05	4.434E-06
53	1	3.386E-07	2.505E-06	1.654E-06	5.024E-05	5.241E-04	2.044E-06	1.777E-06	5.643E-07	2.857E-08	2.090E-09
(53)	11	8.899E-07	8.210E-05	2.683E-05	1.443E-04	8.771E-07	4.794E-07	9.294E-07	9.807E-01	1.581E-06	5.624E-08
54	1	1.158E-06	2.645E-06	1.538E-06	1.736E-04	2.238E-03	1.232E-05	7.788E-06	2.207E-07	2.362E-08	9.625E-09
54	11	6.863E-06	1.326E-05	6.647E-05	5.364E-04	3.081E-06	1.923E-07	5.225E-07	7.556E-03	1.177E-06	1.787E-09
55	1	7.597E-12	3.797E-04	3.133E-06	3.819E-07	3.861E-05	7.891E-07	8.053E-08	1.155E-06	2.013E-07	2.064E-10
55	11	4.898E-07	6.820E-07	3.537E-05	5.726E-05	9.281E-06	1.438E-06	1.902E-05	1.125E-03	1.152E-05	8.685E-07
56	1	12.522E-07	5.322E-04	5.985E-04	9.484E-08	2.487E-05	1.100E-06	1.879E-08	1.224E-04	1.018E-05	1.129E-10
56	11	6.563E-05	2.136E-02	4.368E-06	2.924E-05	6.479E-04	3.261E-05	4.597E-05	2.883E-03	1.015E-04	7.453E-06
57	1	2.916E-04	1.841E-07	2.631E-07	3.998E-04	2.544E-03	4.816E-04	9.572E-05	3.802E-07	1.449E-08	9.260E-08
57	11	9.517E-05	2.512E-05	1.465E-02	1.965E-02	7.615E-03	3.719E-05	1.008E-04	3.176E-03	2.638E-04	1.547E-05
58	1	8.446E-04	2.293E-04	8.003E-05	5.475E-03	3.639E-02	2.069E-05	9.220E-04	1.582E-06	5.362E-08	3.198E-07
58	11	8.938E-04	2.071E-06	5.569E-03	2.771E-02	1.911E-05	1.319E-05	1.132E-04	3.310E-03	4.747E-04	1.243E-05
59	1	2.568E-05	1.848E-02	4.632E-03	2.109E-04	1.009E-03	3.513E-11	8.275E-05	4.958E-04	2.395E-06	9.376E-09
59	11	6.943E-05	5.019E-03	3.317E-05	4.844E-04	1.857E-04	8.627E-06	7.592E-05	5.701E-06	2.195E-04	1.63[illegible]

Table 5. (Continued)

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.31 CLOCK TIME
37.905 SEC. CPTIME
9200 SEC. PPTIME

FCOEFF	(84 X 20)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
60	1	1.821E-05	9.523E-03	3.110E-03	1.771E-05	1.603E-05	1.109E-06	9.943E-05	5.862E-03	4.074E-06	9.862E-10
60	11	2.420E-05	1.067E-02	5.370E-06	1.292E-05	2.462E-05	2.556E-06	7.706E-05	2.619E-05	3.269E-04	1.693E-05
(61)	1	7.159E-06	2.903E-08	3.974E-09	2.578E-05	1.234E-04	2.419E-09	9.980E-01	2.124E-07	1.487E-10	1.914E-09
61	11	1.241E-06	1.254E-08	9.445E-06	8.938E-05	1.109E-07	1.957E-08	2.047E-07	2.431E-06	3.294E-06	4.298E-08
62	1	6.379E-07	1.894E-03	7.332E-04	1.383E-06	4.500E-06	1.872E-10	3.156E-05	6.609E-03	7.589E-07	1.189E-12
62	11	5.391E-06	1.890E-03	1.124E-07	1.961E-06	2.801E-05	1.199E-06	1.650E-06	3.846E-06	8.365E-05	3.362E-06
63	1	3.719E-04	5.782E-06	3.692E-06	2.352E-05	8.154E-04	1.958E-05	6.261E-06	6.551E-05	5.952E-09	2.071E-09
63	11	1.411E-05	9.680E-06	5.074E-05	1.954E-06	3.970E-07	2.799E-09	2.036E-07	1.418E-07	1.370E-06	3.148E-07
64	1	4.462E-06	3.228E-06	7.669E-07	1.219E-04	1.086E-03	2.561E-06	7.404E-04	2.732E-04	8.699E-09	1.070E-08
64	11	8.780E-05	5.808E-06	2.228E-04	8.638E-05	7.815E-07	1.095E-06	2.252E-06	1.344E-06	1.350E-05	1.262E-06
(65)	1	5.611E-12	1.469E-08	9.255E-06	2.382E-09	8.173E-08	9.436E-10	1.165E-08	9.862E-01	1.394E-07	7.971E-13
65	11	1.465E-06	8.481E-05	2.322E-06	2.599E-06	2.295E-08	2.300E-07	1.145E-06	7.585E-07	2.395E-05	9.705E-07
66	1	1.391E-07	1.536E-05	9.914E-07	9.624E-07	2.722E-04	8.847E-06	1.133E-05	2.199E-05	4.079E-10	4.392E-09
66	11	9.874E-06	4.112E-07	8.528E-04	5.607E-04	1.733E-06	1.511E-06	6.734E-06	7.732E-06	1.801E-04	9.785E-06
67	1	1.400E-07	6.290E-05	1.501E-05	5.762E-06	1.353E-04	1.116E-06	1.632E-06	6.118E-06	1.171E-08	2.056E-09
(67)	11	1.321E-06	2.795E-05	1.082E-04	1.819E-04	9.483E-08	4.675E-07	2.858E-06	3.176E-06	9.986E-01	2.827E-05
68	1	3.880E-08	5.074E-06	1.128E-06	2.622E-08	6.474E-06	1.293E-07	2.129E-08	2.190E-07	8.480E-10	8.857E-11
(68)	11	1.857E-10	2.326E-06	9.117E-06	1.072E-05	7.445E-09	4.022E-08	2.051E-07	1.496E-07	2.520E-05	9.999E-01
69	1	3.368E-08	9.735E-02	1.075E-02	1.604E-06	5.154E-07	2.130E-07	1.551E-09	1.146E-03	3.837E-05	1.792E-10
69	11	1.235E-03	1.289E-02	5.551E-03	6.703E-03	2.981E-04	5.027E-06	1.643E-06	1.243E-05	3.467E-06	1.764E-07
70	1	1.800E-07	1.364E-03	1.252E-03	1.086E-05	1.018E-05	1.914E-07	4.263E-08	2.035E-05	1.299E-04	8.191E-13
70	11	4.148E-04	8.766E-05	5.459E-06	1.940E-04	3.998E-08	1.296E-06	6.872E-06	1.729E-07	1.379E-06	5.607E-07
71	1	1.775E-06	9.565E-05	2.676E-08	4.677E-04	4.249E-04	8.786E-06	1.757E-06	2.961E-07	2.911E-06	8.728E-10
71	11	3.489E-05	1.937E-04	1.407E-04	1.451E-05	1.613E-06	3.443E-07	1.832E-06	7.028E-09	8.788E-08	1.511E-07
72	1	5.205E-07	1.397E-03	5.484E-05	3.787E-03	8.995E-03	1.047E-05	1.726E-05	4.823E-06	8.399E-06	4.014E-07
72	11	2.332E-05	4.257E-06	6.371E-05	1.488E-04	2.362E-06	6.464E-07	7.773E-06	7.288E-07	8.178E-07	6.420E-07
73	1	1.162E-07	2.777E-03	1.882E-04	4.674E-04	1.602E-03	2.921E-08	2.311E-06	9.993E-06	7.434E-07	1.105E-07
73	11	2.976E-05	7.979E-06	1.346E-05	2.063E-04	3.947E-06	5.044E-07	6.277E-06	5.661E-07	6.480E-07	4.599E-07
(74)	1	1.154E-08	3.203E-06	1.313E-06	4.632E-08	3.967E-07	6.194E-10	4.031E-10	4.119E-07	9.715E-01	1.376E-10
74	11	2.996E-06	3.314E-05	2.343E-06	9.867E-07	3.134E-07	1.223E-09	1.299E-07	1.977E-09	1.133E-08	2.227E-09
75	1	3.022E-07	5.235E-04	5.418E-04	2.019E-07	5.949E-06	3.654E-08	5.595E-09	4.317E-05	2.847E-02	3.162E-09
75	11	1.174E-05	1.918E-05	6.699E-06	1.074E-06	7.428E-08	5.050E-08	1.252E-07	7.671E-10	3.961E-09	3.544E-09
76	1	2.665E-05	1.352E-04	7.585E-06	1.142E-04	8.528E-05	1.602E-06	1.275E-07	3.957E-07	1.510E-05	2.034E-06
76	11	7.377E-08	1.325E-04	6.137E-05	6.237E-05	2.545E-06	9.693E-09	4.768E-10	3.057E-08	1.242E-08	1.224E-10
77	1	2.399E-06	3.419E-03	7.923E-04	2.890E-07	1.791E-05	2.760E-07	1.975E-09	1.355E-05	9.665E-05	7.749E-10

17.54.31 CLOCK TIME
38.211 SEC. CPTIME
9236 SEC. FPTIME

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

FCOEFF (84 X 20) /OUTPUT/ CONTINUED

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
77	11	1.093E-05	4.106E-04	1.415E-04	3.173E-04	1.061E-05	2.151E-08	7.517E-07	2.366E-07	1.729E-07	4.045E-08
78	1	8.086E-05	2.147E-05	1.231E-05	1.985E-12	3.203E-04	8.791E-06	1.242E-09	1.239E-07	2.588E-06	7.242E-10
78	11	4.614E-05	4.243E-05	3.411E-05	8.607E-08	2.194E-07	2.218E-07	1.020E-06	3.525E-09	3.002E-08	2.838E-08
79	1	1.425E-06	1.198E-03	5.592E-06	2.933E-06	3.271E-07	9.008E-08	7.216E-10	1.906E-06	2.645E-05	2.021E-08
79	11	7.861E-06	1.687E-05	2.773E-06	3.048E-05	8.978E-07	2.203E-09	8.202E-08	6.274E-08	9.968E-09	7.838E-09
80	1	1.862E-07	1.090E-05	1.107E-06	7.686E-05	2.148E-04	5.133E-08	2.010E-07	2.842E-08	3.974E-08	5.919E-07
80	11	1.410E-06	1.197E-06	2.581E-06	7.244E-07	3.551E-09	1.676E-08	1.319E-07	3.812E-09	6.220E-09	4.352E-09
81	1	7.254E-06	1.073E-05	7.028E-07	8.501E-06	4.806E-05	3.474E-09	5.992E-08	2.096E-08	3.148E-09	3.501E-06
81	11	4.281E-07	1.848E-05	4.668E-06	1.912E-05	5.946E-07	3.415E-09	8.745E-08	1.627E-08	1.077E-08	3.556E-0
82	1	1.948E-06	1.993E-10	1.032E-12	2.593E-06	7.931E-06	9.674E-09	1.342E-08	4.647E-13	7.105E-14	1.000E+00
82	11	2.054E-07	6.108E-09	1.262E-06	6.336E-06	8.742E-09	1.645E-09	1.278E-08	1.408E-08	1.462E-08	5.172E-10
83	1	4.610E-07	1.236E-04	7.991E-06	4.478E-06	4.302E-06	4.863E-08	4.817E-09	1.931E-07	2.837E-07	1.150E-06
83	11	1.202E-05	7.855E-06	8.224E-06	3.762E-07	1.117E-08	5.374E-08	3.371E-07	3.206E-09	9.461E-09	7.578E-09
84	1	6.578E-08	2.849E-04	1.602E-05	1.343E-07	1.266E-07	3.305E-09	4.251E-10	2.427E-07	2.446E-08	5.484E-08
84	11	4.337E-05	1.042E-04	5.232E-05	3.548E-05	1.801E-06	1.431E-07	2.538E-07	2.541E-08	5.322E-10	1.783E-09

END OF WRITE.

IVEC (1 X 84) /INPUT/ 0

1	7	1	2	3	4	5	6	0	7	0	8	0	0	0	0
1	20	9	0	0	0	0	0	0	0	0	0	0	0	0	0
1	21	10	0	0	11	0	0	0	12	0	0	0	0	0	0
1	35	13	0	0	0	0	0	0	0	0	0	0	0	0	0
1	53	14	0	0	0	0	0	0	0	15	0	0	0	0	0
1	65	16	0	0	0	0	0	0	0	0	0	0	0	0	0
1	67	17	18	0	0	0	0	0	19	0	0	0	0	0	0
1	82	20	0	0											

END OF READIM.

DELOMG (1 X 84) /OUTPUT/

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1	5.570E+01	-1.016E+02	-2.517E+02	-1.885E+02	-1.189E+02	4.215E+01	2.227E+01	8.366E+01	-1.533E+03	-1.863E+03
1	11	1.606E+02	-2.888E+03	7.352E+02	-5.922E+03	3.918E+03	3.202E+03	-9.776E+03	-1.440E+04	2.541E+03	1.632E+04

END OF WRITE.

NEW W2 (1 X 84) /OUTPUT/

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1	0.	0.	0.	0.	0.	0.	1.171E+02	2.083E+02	5.254E+02	5.535E+02
1	11	4.922E+02	3.995E+02	5.437E+02	8.478E+02	1.060E+03	1.046E+03	1.783E+03	1.846E+03	1.905E+03	3.529E+03
1	21	3.979E+03	2.145E+03	2.278E+03	2.390E+03	3.019E+03	3.364E+03	3.466E+03	6.371E+03	3.724E+03	4.257E+03

Table 6. Payload Component Frequency Scaling Comparison

Payload	Baseline Component f_{BL} ~HZ	Perturbed Component f_{P2} ~HZ	$(f_{P2}/f_{BL})^2-1$ (1)	Scaling Factor δ (2)
A	3.027	2.948	-.0515	-.04136
	3.316	3.139	-.1039	-.1006
	4.684	4.625	-.0250	-.0259
	5.310	5.068	-.0891	-.0893
	7.596	6.997	-.1515	-.1287
	11.157	10.155	-.1716	-.1739
	19.590	16.866	-.2588	-.2591
	19.955	17.801	-.2042	-.2066
	33.833	32.841	-.0578	-.0579
	51.277	47.076	-.1571	-.1572
B	1.232	1.702	.9085	.9077
	1.618	2.263	.9562	.9560
	2.613	3.630	.9299	.9295
	3.041	4.190	.8984	.8927
	7.105	9.481	.7807	.7806
	7.321	10.042	.8815	.8813
	9.390	12.864	.8768	.8773
	17.237	21.216	.5150	.5147
	21.186	26.398	.5525	.5525
	21.770	28.964	.7701	.7699

(1) $\bar{\omega}^2_{P2} \triangleq (1+\delta)\bar{\omega}^2_{BL} \therefore \delta=(f_{P2}/f_{BL})^2-1 \triangleq$ actual perturbation

(2) obtained by solving Equation (31) for $\{\delta_p\}$

CONCLUSIONS

1. The choice of an orthogonal coordinate system will allow the impedance method to operate more efficiently in the computer.

2. The eigenproblem required to determine an orthogonal coordinate system can be formed as a by-product of the impedance method set up effort.

3. If one solution for the coupled booster/payload system is obtained, the resulting "modal modes" can be used to form approximate orthogonal coordinate systems very economically for each payload perturbation that occurs during the design process.

4. The "modal modes" can be used to determine payload component mode frequency changes that are beneficial to payload loads.

5. The method works for statically indeterminate payload attachments as well as determinate ones.

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APPENDIX A

STS LANDER MODEL DATA

C-2

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.49.29 CLOCK TIME
202.213 SEC. CPTIME
64188 SEC. PPTIME

COMPONENT MODES AND FREQUENCIES
USED IN MODAL ANALYSIS

NO	MODE	FREQ (HZ)
1	ORB1	0.000
2	ORB2	0.000
3	ORB3	0.000
4	ORB4	0.000
5	ORB5	0.000
6	ORB6	0.000
7	ORB7	3.703
8	ORB8	5.317
9	ORB9	6.693
10	ORB10	6.939
11	ORB11	7.208
12	ORB12	7.470
13	ORB13	7.682
14	ORB14	8.742
15	ORB15	9.150
16	ORB16	9.196
17	ORB17	9.609
18	ORB18	10.373
19	ORB19	10.698
20	ORB20	10.864
21	ORB21	10.939
22	ORB22	11.017
23	ORB23	11.632
24	ORB24	11.842
25	ORB25	11.907
26	ORB26	12.048
27	ORB27	12.375
28	ORB28	12.524
29	ORB29	12.749
30	ORB30	13.379
31	ORB31	13.649
32	ORB32	14.149
33	ORB33	14.316
34	ORB34	14.516
35	ORB35	14.833
36	ORB36	15.084
37	ORB37	15.292
38	ORB38	16.606
39	ORB39	16.843
40	ORB40	17.330
41	ORB41	17.394
42	ORB42	17.497
43	ORB43	18.039
44	ORB44	18.369
45	ORB45	18.840
46	ORB46	19.388
47	ORB47	19.649
48	ORB48	19.704
49	ORB49	19.820
50	ORB50	20.089

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.49.29 CLOCK TIME
202.430 SEC. CPTIME
84240 SEC. PPTIME

COMPONENT MODES AND FREQUENCIES
USED IN MODAL ANALYSIS

NO.	MODE	FREQ (HZ)
51	ITERF1	25.184
52	ITERF2	27.352
53	ITERF3	28.233
54	ITERF4	30.701
55	ITERF5	31.525
56	ITERF6	34.164
57	ITERF7	34.823
58	ITERF8	37.165
59	ITERF9	38.132
60	ITERF10	42.765
61	ITERF11	45.079
62	ITERF12	48.455
63	ITERF13	51.585
64	ITERF14	52.754
65	AMOD1	2.948
66	AMOD2	3.139
67	AMOD3	4.625
68	AMOD4	5.068
69	AMOD5	6.997
70	AMOD6	10.155
71	AMOD7	16.866
72	AMOD8	17.801
73	AMOD9	32.841
74	AMOD10	47.076
75	BMOD1	1.702
76	BMOD2	2.263
77	BMOD3	3.630
78	BMOD4	4.190
79	BMOD5	9.481
80	BMOD6	10.042
81	BMOD7	12.864
82	BMOD8	21.216
83	BMOD9	26.398
84	BMOD10	28.964

Table A-2. STS Lander model degree of freedom table

	DESCRIPTION	X	Y	Z	X	Y	Z	TX	TY	TZ
	PART-0, (21 DOFS) RSA ABC INTERFACE									
364	RSA-A FWD-RT. (X,Z)	892.000	94.000	414.000	1	0	2	0	0	0
365	RSA-A AFT-RT. (Z)	947.070	94.000	414.000	0	0	3	0	0	0
367	RSA-C FWD-RT. (X,Z)	1025.730	94.000	414.000	4	0	5	0	0	0
368	RSA-B FWD-RT. (Z)	1065.070	94.000	414.000	0	0	6	0	0	0
369	RSA-C AFT-RT. (Z)	1080.800	94.000	414.000	0	0	7	0	0	0
370	RSA-B AFT-RT. (X,Z)	1120.130	94.000	414.000	8	0	9	0	0	0
864	RSA-A FWD-LF. (X,Z)	892.000	-94.000	414.000	10	0	11	0	0	0
865	RSA-A AFT-LF. (Z)	947.070	-94.000	414.000	0	0	12	0	0	0
867	RSA-C FWD-LF. (X,Z)	1025.730	-94.000	414.000	13	0	14	0	0	0
868	RSA-B FWD-LF. (Z)	1065.070	-94.000	414.000	0	0	15	0	0	0
869	RSA-C AFT-LF. (Z)	1080.800	-94.000	414.000	0	0	16	0	0	0
870	RSA-B AFT-LF. (X,Z)	1120.130	-94.000	414.000	17	0	18	0	0	0
377	RSA-A KEEL (Y)	888.070	0.0	305.000	0	19	0	0	0	0
380	RSA-C KEEL (Y)	1021.800	0.0	305.000	0	20	0	0	0	0
382	RSA-B KEEL (Y)	1124.070	0.0	305.000	0	21	0	0	0	0
	PART-1, 001 THRU 102 (102 DOFS)									
1	FUSELAGE ORB STA X=270	270.000	0.0	346.000	1	2	3	4	5	6
2	FWD LANDING GEAR - DRAG	327.840	21.000	329.340	7	8	9	0	0	0
502	FWD LANDING GEAR - DRAG	327.840	-21.000	329.340	10	11	12	0	0	0
3	FWD RCS MODULE	317.700	24.200	365.300	13	14	15	0	0	0
503	FOWARD RCS MODULE	317.700	-24.200	365.300	16	17	18	0	0	0
4	FWD LANDING GEAR - MAIN	375.500	21.000	298.000	19	20	21	0	0	0
504	FWD LANDING GEAR - MAIN	375.500	-21.000	298.000	22	23	24	0	0	0
5	FUSELAGE ORB STA X=378	378.090	0.0	353.200	25	26	27	28	29	30
6	FUSELAGE ORB STA X=497.0	497.000	0.0	395.000	31	32	33	34	35	36
7	FUSELAGE ORB STA X=447.3	447.390	0.0	363.740	37	38	39	40	41	42
8	FUSELAGE ORB STA X=582	582.000	0.0	340.000	43	44	45	46	47	48
9	FUSELAGE ORB STA X=750	750.000	0.0	310.000	49	50	51	52	53	54
10	FUSELAGE ORB STA X=979.5	979.500	0.0	310.000	55	56	57	58	59	60
13	FUSELAGE ORB STA X=1140	1140.000	0.0	310.000	61	62	63	64	65	66
16	WING TIE X=807	807.000	105.000	308.549	0	0	67	0	0	0
516	WING TIE X=807	807.000	-105.000	308.549	0	0	68	0	0	0
17	WING	835.000	141.160	305.891	0	0	69	0	0	0
517	WING	835.000	-141.160	305.891	0	0	70	0	0	0
18	WING	949.250	159.649	303.386	0	71	72	0	0	0
518	WING	949.250	-159.649	303.386	0	73	74	0	0	0
19	WING	1050.346	201.590	300.029	0	0	75	0	0	0
519	WING	1050.346	-201.590	300.029	0	0	76	0	0	0
20	WING	1040.000	157.000	303.965	0	0	77	0	0	0
520	WING	1040.000	-157.200	303.965	0	0	78	0	0	0
21	WING TIE X=1040	1040.000	105.000	306.909	0	0	79	0	0	0
521	WING TIE X=1040	1040.000	-105.000	306.909	0	0	80	0	0	0
223	MAIN LANDING GEAR-DRAG	1097.500	136.000	321.700	81	0	82	0	0	0
723	MAIN LANDING GEAR-DRAG	1097.500	-136.000	321.700	83	0	84	0	0	0
24	WING	1103.450	247.420	299.078	0	0	85	0	0	0
524	WING	1103.450	-247.420	299.078	0	0	86	0	0	0
25	WING	1127.272	251.321	302.225	0	0	87	0	0	0
525	WING	1127.272	-251.321	302.225	0	0	88	0	0	0
26	WING	1139.330	194.951	303.713	0	0	89	0	0	0
526	WING	1139.330	-194.951	303.713	0	0	90	0	0	0

Table A-2. (Continued)

27	WING	1163.299	307.295	301.827	0	0	91	0	0	0
527	WING	1163.299	-307.295	301.827	0	0	92	0	0	0
28	LANDING GEAR MAIN	1180.000	136.000	283.000	93	94	95	96	0	97
528	LANDING GEAR MAIN	1180.000	-136.000	283.000	98	99	100	101	0	102
	PART-2, 103 THRU 208 (106 DOFS)									
29	WING	1191.000	315.099	304.914	0	0	103	0	0	0
529	WING	1191.000	-315.099	304.914	0	0	104	0	0	0
30	WING	1191.000	251.093	304.711	105	106	107	0	0	0
530	WING	1191.000	-251.093	304.711	108	109	110	0	0	0
31	WING	1191.000	167.000	300.782	111	0	112	0	0	0
531	WING	1191.000	-167.000	300.782	113	0	114	0	0	0
32	WING TIE X=1191	1191.000	105.000	297.614	115	0	116	0	0	0
532	WING TIE X=1191	1191.000	-105.000	297.614	117	0	118	0	0	0
33	WING	1222.532	366.560	304.500	0	0	119	0	0	0
533	WING	1222.532	-366.560	304.500	0	0	120	0	0	0
34	WING	1252.517	396.564	305.824	0	0	121	0	0	0
534	WING	1252.517	-396.564	305.824	0	0	122	0	0	0
36	WING	1249.000	309.728	305.913	0	0	123	0	0	0
536	WING	1249.000	-309.728	305.913	0	0	124	0	0	0
37	WING	1249.000	251.267	302.815	0	125	126	0	0	0
537	WING	1249.000	-251.267	302.815	0	127	128	0	0	0
39	WING	1249.000	144.980	295.253	0	0	129	0	0	0
539	WING	1249.000	-144.980	295.253	0	0	130	0	0	0
40	WING TIE X=1249	1249.000	105.000	292.859	0	0	131	0	0	0
540	WING TIE X=1249	1249.000	-105.000	292.859	0	0	132	0	0	0
41	WING	1275.702	399.890	308.253	0	0	133	0	0	0
541	WING	1275.702	-399.890	308.253	0	0	134	0	0	0
42	WING	1282.198	423.500	307.166	0	0	135	0	0	0
542	WING	1282.198	-423.500	307.166	0	0	136	0	0	0
52	WING	1365.000	432.671	306.668	137	0	138	0	0	0
552	WING	1365.000	-432.671	306.668	139	0	140	0	0	0
54	WING	1365.000	370.317	302.215	141	0	142	0	0	0
554	WING	1365.000	-370.317	302.215	143	0	144	0	0	0
56	WING	1365.000	252.087	293.848	145	146	147	0	0	0
556	WING	1365.000	-252.087	293.848	148	149	150	0	0	0
58	WING	1365.000	145.806	286.597	151	0	152	0	0	0
558	WING	1365.000	-145.806	286.597	153	0	154	0	0	0
90	ORBITER/ET FWD ATTACH PT	388.142	0.0	283.143	155	156	157	0	0	0
407	ELEVON	1425.550	146.009	284.380	158	0	159	0	0	0
907	ELEVON	1425.550	-146.009	284.380	160	0	161	0	0	0
408	ELEVON	1421.906	210.387	288.662	0	162	163	0	0	0
908	ELEVON	1421.906	-210.387	288.662	0	164	165	0	0	0
409	ELEVON	1417.950	280.252	293.331	166	0	167	0	0	0
909	ELEVON	1417.950	-280.252	293.331	168	0	169	0	0	0
410	ELEVON	1414.530	340.633	297.392	170	0	171	0	0	0
910	ELEVON	1414.530	-340.633	297.392	172	0	173	0	0	0
411	ELEVON	1411.986	385.542	300.438	0	174	175	0	0	0
911	ELEVON	1411.986	-385.542	300.438	0	176	177	0	0	0
412	ELEVON	1409.300	432.943	303.689	178	0	179	0	0	0
912	ELEVON	1409.300	-432.943	303.689	180	0	181	0	0	0
413	ELEVON	1489.200	145.910	285.465	0	0	182	0	0	0
913	ELEVON	1489.200	-145.910	285.465	0	0	183	0	0	0
414	ELEVON	1477.499	210.308	289.521	0	184	185	0	0	0
914	ELEVON	1477.499	-210.308	289.521	0	186	187	0	0	0
415	ELEVON	1464.800	280.212	293.761	0	0	188	0	0	0
915	ELEVON	1464.800	-280.212	293.761	0	0	189	0	0	0
416	ELEVON	1453.650	340.623	297.506	0	0	190	0	0	0
916	ELEVON	1453.650	-340.623	297.506	0	0	191	0	0	0
417	ELEVON	1444.979	385.556	300.291	0	192	193	0	0	0
917	ELEVON	1444.979	-385.556	300.291	0	194	195	0	0	0
418	ELEVON	1435.825	432.982	303.268	0	0	196	0	0	0

APPENDIX B

BASELINE PAYLOAD MODEL DATA

Table B-1. Payload Model A degree of freedom table

JOINT	DEGREES OF FREEDOM TRANSLATION U	V	W	ROTATION P	Q	R	GLOBAL CARTESIAN COORDINATES X	Y	Z
1	0	1	0	2	3	4	892.0000	94.0000	414.0000
2	5	6	0	7	8	9	947.0700	94.0000	414.0000
3	0	10	0	11	12	13	892.0000	-94.0000	414.0000
4	14	15	0	16	17	18	947.0700	-94.0000	414.0000
5	19	0	20	21	22	23	888.0700	0.0000	305.0000
6	24	25	26	27	28	29	900.0000	0.0000	380.0000
7	30	31	32	33	34	35	915.0000	0.0000	380.0000
8	36	37	38	39	40	41	930.0000	0.0000	380.0000
9	42	43	44	45	46	47	915.0000	0.0000	430.0000

Table B-2. Payload Model B degree of freedom table

JOINT	DEGREES OF FREEDOM TRANSLATION U	V	W	ROTATION P	Q	R	GLOBAL CARTESIAN COORDINATES X	Y	Z
1	1	2	0	3	4	5	1065.0700	94.0000	414.0000
2	0	6	0	7	8	9	1120.1300	94.0000	414.0000
3	10	11	0	12	13	14	1065.0700	-94.0000	414.0000
4	0	15	0	16	17	18	1120.1300	-94.0000	414.0000
5	19	0	20	21	22	23	1124.0700	0.0000	305.0000
6	24	25	26	27	28	29	1080.0000	0.0000	380.0000
7	30	31	32	33	34	35	1095.0000	0.0000	380.0000
8	36	37	38	39	40	41	1110.0000	0.0000	380.0000
9	42	43	44	45	46	47	1095.0000	0.0000	430.0000

RUN NO. ORBIT

Table B-3. Baseline payload model A modal characteristics

PAGE NO. 16

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

09.35.37 CLOCK TIME
34.156 SEC. CPTIME
29332 SEC. PPTIME

MODES 0 16 AMODEL /INPUT/ 0

SIZE OF MATRIX READ IS (54 X 47)

MODES		54 X 47) (1)	/OUTPUT/ (2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2	1	4.063E-02	1.907E-01	1.474E-01	3.944E-02	9.763E-02	1.409E-02	5.013E-02	9.827E-02	2.932E-01	1.131E-01
2	11	2.256E-01	3.980E-01	8.734E-03	1.840E-01	1.680E-01	2.583E-02	1.098E-01	7.678E-02	7.543E-03	2.415E-03
2	21	7.990E-02	2.604E-04	1.220E-02	8.077E-03	9.240E-02	1.155E-02	1.108E-02	4.155E-03	6.168E-03	1.219E-02
2	31	3.402E-03	9.020E-03	1.423E-04	1.225E-03	1.083E-03	1.274E-05	5.198E-05	1.877E-05	5.004E-07	8.013E-07
2	41	6.397E-06	5.738E-06	2.580E-05	1.342E-05	3.049E-06	1.268E-05	2.417E-06			
4	1	-1.431E-03	3.023E-04	3.255E-04	-2.310E-03	-4.029E-03	3.219E-04	-1.568E-03	-1.305E-03	8.098E-04	-5.711E-03
4	11	-3.225E-03	-2.272E-04	-1.580E-05	1.818E-03	-1.702E-02	-4.930E-02	2.356E-03	3.495E-02	8.010E-02	9.432E-03
4	21	2.168E-02	1.613E-03	2.137E-02	-9.998E-02	4.416E-03	-4.645E-03	4.355E-02	5.963E-04	-6.139E-03	1.112E-02
4	31	-3.402E-03	-2.449E-04	1.183E-02	-1.948E-03	-1.337E-02	2.315E-03	7.324E-04	1.928E-04	9.037E-06	-7.959E-02
4	41	7.742E-02	-1.001E-02	-4.395E-03	-4.307E-05	2.974E-04	2.289E-05	3.193E-05			
5	1	4.025E-03	4.845E-04	-4.389E-04	2.514E-03	-1.396E-03	-1.428E-03	3.006E-03	-1.270E-04	-4.884E-03	9.785E-03
5	11	6.677E-03	-4.659E-03	-2.232E-04	-8.262E-03	1.741E-02	-2.905E-03	2.896E-02	-8.328E-03	1.950E-02	4.785E-03
5	21	-2.139E-02	-2.154E-04	-2.504E-02	-1.388E-02	-1.207E-02	-2.975E-02	-1.045E-03	2.707E-03	-1.169E-02	-1.257E-02
5	31	4.531E-02	-1.972E-02	-6.696E-03	2.525E-02	1.696E-01	-2.883E-02	-8.959E-03	-3.619E-04	-9.513E-05	9.353E-01
5	41	-9.093E-01	1.176E-01	5.147E-02	1.224E-03	-3.418E-03	-2.657E-04	-3.690E-05			
6	1	-1.349E-03	-2.210E-04	3.413E-04	2.611E-03	-6.810E-04	-3.927E-03	-2.302E-03	-2.297E-04	3.220E-03	6.980E-03
6	11	3.023E-03	-2.679E-03	8.152E-04	8.167E-03	-2.855E-02	-7.302E-03	-4.994E-02	-1.981E-02	-2.250E-02	-2.594E-02
6	21	5.662E-02	-4.422E-03	9.997E-02	9.909E-03	4.612E-02	-1.036E-03	7.671E-05	-7.808E-03	-2.104E-02	-1.725E-02
6	31	1.116E-02	-2.688E-02	-4.523E-03	7.332E-03	5.599E-02	-9.847E-03	-3.149E-03	-1.242E-04	-3.425E-05	3.382E-01
6	41	-3.290E-01	4.255E-02	1.866E-02	4.427E-04	-1.187E-03	-9.022E-05	-1.225E-05			
7	1	-1.402E-01	-1.970E-01	4.324E-01	3.606E-01	-9.719E-02	2.742E-01	-1.447E-02	3.552E-02	-1.136E-01	-4.573E-02
7	11	5.347E-02	-2.194E-02	-5.397E-02	3.687E-02	-3.773E-02	1.088E-02	2.646E-02	-5.408E-04	-2.756E-03	2.824E-02
7	21	-7.348E-05	-7.093E-03	6.943E-03	3.642E-03	1.033E-03	-1.769E-03	5.425E-04	4.902E-03	-1.293E-02	-4.792E-03
7	31	-1.051E-04	9.575E-03	-6.249E-04	-8.167E-04	-6.754E-04	-3.267E-03	1.918E-04	1.936E-06	-3.005E-05	1.512E-08
7	41	-1.556E-05	-1.638E-04	6.805E-05	2.910E-06	-2.027E-09	1.178E-06	2.171E-07			
8	1	-2.742E-02	2.669E-01	5.218E-03	-4.953E-02	1.258E-01	-5.955E-02	-8.157E-02	1.172E-01	-2.642E-01	-1.620E-01
8	11	2.816E-01	-1.196E-01	-3.071E-01	1.861E-01	-1.737E-01	4.401E-02	7.261E-02	8.595E-03	3.788E-03	-9.654E-03
8	21	-9.759E-02	6.646E-03	2.837E-04	2.471E-05	8.454E-07	8.031E-03	1.107E-02	1.263E-02	-9.620E-03	-7.709E-03
8	31	7.163E-04	8.517E-03	-2.076E-03	-2.288E-03	-1.197E-04	-8.967E-04	-3.773E-05	2.844E-05	-1.539E-06	-3.637E-07
8	41	-4.004E-06	-1.305E-05	-2.330E-05	1.550E-05	3.131E-07	-1.270E-05	-2.423E-06			
10	1	1.301E-03	1.464E-04	2.527E-04	1.117E-03	-4.728E-03	-9.245E-04	3.384E-03	-1.469E-03	-5.500E-04	1.042E-02
10	11	-6.482E-03	1.171E-03	-1.341E-02	2.973E-03	4.794E-03	-7.046E-02	1.777E-02	-7.567E-04	-5.780E-02	1.873E-02
10	21	-1.587E-02	-1.029E-01	8.339E-03	4.705E-03	1.184E-03	-1.970E-03	4.281E-02	1.943E-04	5.655E-03	-1.873E-02
10	31	1.028E-03	7.896E-03	-7.788E-03	5.925E-04	6.461E-03	4.666E-02	-5.552E-03	3.988E-04	1.670E-01	1.764E-05
10	41	-1.910E-02	-1.566E-01	2.408E-02	-5.154E-04	-1.744E-06	-4.564E-05	-6.425E-06			
11	1	2.702E-03	-2.960E-04	5.573E-04	4.836E-03	-2.566E-04	1.374E-03	6.409E-03	1.339E-03	-5.469E-03	1.196E-02
11	11	-9.349E-03	8.324E-04	-1.786E-02	7.493E-03	2.329E-02	1.152E-02	-3.292E-02	-2.694E-03	1.738E-02	-2.582E-02
11	21	-1.782E-02	-8.706E-03	-7.894E-03	-7.507E-03	8.813E-03	2.826E-02	3.129E-03	-1.089E-03	-1.442E-02	-1.411E-02
11	31	7.521E-03	1.937E-02	-8.258E-03	3.813E-03	3.858E-02	2.709E-01	-3.153E-02	1.180E-03	9.195E-01	9.918E-05
11	41	-1.051E-01	-8.615E-01	1.323E-01	-3.227E-03	-1.223E-05	-2.518E-04	-3.546E-05			

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

09.50.59 CLOCK TIME
34.595 SEC. CPTIME
29767 SEC. PPTIME

MODES	(54 X 47)	/OUTPUT/ CONTINUED								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
12	1	2.385E-04	2.187E-03	-5.038E-03	-2.019E-03	1.344E-03	-6.914E-03	-1.005E-04	-3.951E-04	4.648E-03	9.151E-03
12	11	-6.869E-03	1.967E-03	-1.343E-02	-8.907E-03	-3.542E-02	1.750E-02	5.103E-02	-9.793E-03	-1.082E-02	9.749E-02
12	21	5.532E-02	-2.476E-02	2.133E-02	9.478E-03	-3.990E-02	2.063E-03	3.694E-04	7.319E-03	-2.685E-02	-1.279E-02
12	31	2.355E-03	2.271E-02	-3.145E-03	3.821E-04	1.283E-02	9.264E-02	-1.107E-02	4.334E-04	3.326E-01	3.598E-05
12	41	-3.804E-02	-3.119E-01	4.796E-02	-1.163E-03	-4.487E-06	-8.552E-05	-1.178E-05			
14	1	-4.063E-02	1.907E-01	1.474E-01	-3.944E-02	-9.763E-02	-1.409E-02	-5.013E-02	9.827E-02	2.932E-01	-1.131E-01
14	11	-2.256E-01	-3.980E-01	-8.734E-03	1.840E-01	1.680E-01	2.583E-02	1.098E-01	-7.678E-02	7.543E-03	-2.415E-03
14	21	7.990E-02	-2.604E-04	-1.220E-02	-8.077E-03	9.240E-02	-1.155E-02	1.108E-02	-4.155E-03	6.168E-03	1.219E-02
14	31	-3.402E-03	9.020E-03	1.423E-04	-1.225E-03	-1.083E-03	-1.274E-05	-5.198E-05	1.877E-05	5.004E-07	8.013E-07
14	41	-6.397E-06	-5.738E-06	-2.580E-05	1.342E-05	3.049E-06	1.268E-05	2.417E-06			
16	1	1.431E-03	3.023E-04	3.255E-04	2.310E-03	4.029E-03	-3.219E-04	1.568E-03	-1.305E-03	8.098E-04	5.711E-03
16	11	3.225E-03	2.272E-04	1.580E-05	1.818E-03	-1.702E-02	-4.930E-02	2.356E-03	-3.495E-02	8.010E-02	-9.432E-03
16	21	2.168E-02	-1.613E-03	-2.137E-02	9.998E-02	4.416E-03	4.645E-03	4.355E-02	-5.963E-04	-6.139E-03	1.112E-02
16	31	3.402E-03	-2.449E-04	1.183E-02	1.948E-03	1.337E-02	-2.315E-03	-7.324E-04	1.928E-04	9.037E-06	-7.959E-02
16	41	-7.742E-02	1.001E-02	4.395E-03	-4.307E-05	2.974E-04	2.289E-05	3.193E-06			
17	1	4.025E-03	-4.845E-04	4.389E-04	2.514E-03	-1.396E-03	-1.428E-03	3.006E-03	1.270E-04	4.884E-03	9.785E-03
17	11	6.677E-03	-4.659E-03	-2.232E-04	8.262E-03	-1.741E-02	2.905E-03	-2.898E-02	-8.329E-03	-1.950E-02	4.785E-03
17	21	2.139E-02	-2.154E-04	-2.504E-02	-1.388E-02	1.207E-02	-2.975E-02	1.045E-03	2.707E-03	1.169E-02	1.257E-02
17	31	4.531E-02	1.972E-02	6.696E-03	2.525E-02	1.696E-01	-2.883E-02	-8.959E-03	3.619E-04	9.513E-05	-9.353E-01
17	41	-9.093E-01	1.176E-01	5.147E-02	-1.224E-03	3.418E-03	2.657E-04	3.690E-05			
18	1	1.349E-03	-2.210E-04	3.413E-04	-2.611E-03	6.810E-04	3.927E-03	2.302E-03	-2.297E-04	3.220E-03	-6.980E-03
18	11	-3.023E-03	2.679E-03	-8.152E-04	8.167E-03	-2.855E-02	-7.302E-03	-4.994E-02	1.981E-02	-2.250E-02	2.594E-02
18	21	5.662E-02	4.422E-03	-9.997E-02	-9.909E-03	4.612E-02	1.036E-03	7.671E-05	7.808E-03	-2.104E-02	-1.725E-02
18	31	1.116E-02	-2.688E-02	-4.523E-03	-7.332E-03	-5.599E-02	9.847E-03	3.149E-03	-1.242E-04	-3.425E-05	3.382E-01
18	41	3.290E-01	-4.255E-02	-1.866E-02	4.427E-04	-1.187E-03	-9.022E-05	-1.225E-05			
19	1	-1.402E-01	1.970E-01	-4.324E-01	3.606E-01	-9.719E-02	2.742E-01	-1.447E-02	-3.552E-02	1.136E-01	-4.573E-02
19	11	5.347E-02	-2.194E-02	-5.397E-02	-3.687E-02	3.773E-02	-1.088E-02	-2.646E-02	-5.408E-04	2.756E-03	2.824E-02
19	21	7.348E-05	-7.093E-03	6.943E-03	3.642E-03	-1.033E-03	-1.769E-03	-5.425E-04	4.902E-03	1.293E-02	4.792E-03
19	31	-1.051E-04	-9.575E-03	6.249E-04	-8.167E-04	-6.754E-04	-3.267E-03	1.918E-04	-1.936E-06	3.005E-05	-1.512E-08
19	41	-1.556E-05	-1.638E-04	6.805E-05	-2.910E-06	2.027E-09	-1.178E-06	-2.171E-07			
20	1	2.742E-02	2.669E-01	5.218E-03	4.953E-02	-1.258E-01	5.955E-02	8.157E-02	1.172E-01	-2.642E-01	1.620E-01
20	11	-2.816E-01	1.196E-01	3.071E-01	1.861E-01	-1.737E-01	4.401E-02	7.261E-02	-8.595E-03	3.788E-03	9.654E-03
20	21	-9.759E-02	-6.646E-03	-2.837E-04	2.471E-05	8.454E-02	-8.031E-03	1.107E-02	-1.263E-02	-9.620E-03	-7.709E-03
20	31	-7.163E-04	8.517E-03	-2.076E-03	2.288E-03	1.197E-04	8.967E-04	3.773E-05	2.844E-05	-1.539E-06	-3.637E-07
20	41	4.004E-06	1.305E-05	2.330E-05	1.550E-05	3.131E-07	-1.270E-05	-2.423E-06			
22	1	-1.301E-03	1.464E-04	2.527E-04	-1.117E-03	4.728E-03	9.245E-04	-3.384E-03	-1.439E-03	-5.500E-04	-1.042E-02
22	11	6.482E-03	-1.171E-03	1.341E-02	2.973E-03	4.794E-03	-7.046E-02	1.777E-02	7.567E-04	-5.780E-02	-1.873E-02
22	21	-1.587E-02	-1.029E-01	-8.339E-03	-4.705E-03	1.184E-03	1.970E-03	4.281E-02	-1.943E-04	5.655E-03	-1.873E-02
22	31	-1.028E-03	7.896E-03	-7.788E-03	-5.925E-04	-6.461E-03	-4.666E-02	5.552E-03	3.988E-04	1.670E-01	1.764E-05
22	41	1.910E-02	1.566E-01	-2.408E-02	-5.154E-04	-1.744E-06	-4.564E-05	-6.425E-06			
23	1	2.702E-03	2.960E-04	-5.573E-04	4.836E-03	-2.566E-04	1.374E-03	6.409E-03	-1.339E-03	5.469E-03	1.196E-02
23	11	-9.349E-03	8.324E-04	-1.786E-02	-7.493E-03	-2.329E-02	-1.152E-02	3.292E-02	-2.604E-03	-1.738E-02	-2.582E-02
23	21	1.782E-02	-8.706E-03	-7.894E-03	-7.507E-03	-8.813E-03	2.826E-02	-3.129E-03	-1.089E-03	1.442E-02	1.411E-02
23	31	7.521E-03	-1.937E-02	6.258E-03	3.813E-03	3.858E-02	2.709E-01	-3.153E-02	-1.180E-03	-9.195E-01	-9.918E-05

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

09.50.53 CLOCK TIME
34.943 SEC. CPTIME
29815 SEC. PPTIME

MODES	(50 X 47)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
23	41	-1.051E-01	-8.615E-01	1.323E-01	3.227E-03	1.223E-05	2.518E-04	3.546E-05			
24	1	-2.385E-04	2.187E-03	-5.038E-03	2.019E-03	-1.344E-03	6.914E-03	1.005E-04	-3.951E-04	4.648E-03	-9.151E-03
24	11	6.869E-03	-1.967E-03	1.343E-02	-8.907E-03	-3.542E-02	1.750E-02	5.103E-02	9.793E-03	-1.082E-02	-9.749E-02
24	21	5.532E-02	2.476E-02	-2.133E-02	-9.478E-03	-3.990E-02	-2.063E-03	3.694E-04	-7.319E-03	-2.685E-02	-1.279E-02
24	31	-2.355E-03	2.271E-02	-3.145E-03	-3.821E-04	-1.283E-02	-9.264E-02	1.107E-02	4.334E-04	3.326E-01	3.598E-05
24	41	3.804E-02	3.119E-01	-4.796E-02	-1.163E-03	-4.487E-06	-8.552E-05	-1.178E-05			
25	1	-5.244E-01	-1.405E-12	-1.241E-13	-2.507E-01	1.323E-01	1.373E-01	3.090E-01	4.010E-14	-1.285E-15	1.090E-01
25	11	2.630E-02	-5.562E-02	2.257E-02	7.901E-16	-1.674E-16	-4.282E-18	-1.464E-15	5.632E-02	3.619E-17	2.503E-03
25	21	7.352E-16	-6.053E-04	6.188E-03	1.611E-02	-4.401E-17	7.061E-03	3.319E-17	-1.297E-03	7.786E-17	-1.442E-16
25	31	-2.999E-02	1.106E-17	-2.915E-17	1.667E-03	1.979E-02	-1.828E-03	-2.856E-04	-9.458E-20	1.658E-19	-9.171E-19
25	41	3.696E-04	-6.991E-05	-1.049E-04	-4.610E-20	1.080E-18	-7.338E-20	-2.380E-20			
27	1	1.096E-01	2.459E-13	-5.021E-14	1.776E-01	2.511E-01	-5.790E-02	-8.874E-03	1.157E-15	2.812E-15	3.016E-01
27	11	1.009E-01	-3.115E-01	1.431E-01	5.508E-15	-5.107E-16	-1.688E-18	-9.217E-15	3.825E-01	1.043E-15	2.234E-02
27	21	4.997E-15	-1.682E-03	2.876E-02	1.028E-01	2.277E-16	5.188E-02	1.082E-16	-2.775E-02	-7.956E-17	-2.837E-16
27	31	1.638E-02	-1.893E-16	-7.927E-17	-2.493E-03	2.944E-03	3.011E-04	1.896E-04	-1.134E-17	3.203E-18	3.733E-18
27	41	-3.058E-05	3.579E-05	1.277E-04	-4.939E-19	2.307E-20	-1.542E-19	-7.293E-20			
28	1	8.792E-15	-3.040E-03	-2.716E-03	-4.776E-16	-9.365E-16	3.227E-17	3.848E-16	-2.788E-03	-6.799E-03	-3.869E-17
28	11	-8.433E-17	-8.280E-17	-4.699E-17	4.260E-04	9.520E-03	-1.475E-02	1.637E-02	3.559E-16	1.362E-02	-1.636E-15
28	21	7.047E-03	-4.756E-15	-1.294E-17	-6.524E-17	1.468E-02	-1.902E-16	-4.905E-02	-3.583E-17	4.641E-02	-1.390E-01
28	31	4.413E-16	6.502E-01	1.696E-01	6.508E-19	-2.210E-17	1.491E-18	-2.153E-19	6.635E-04	1.249E-05	-1.620E-03
28	41	-2.669E-17	-3.739E-18	-5.653E-18	2.533E-03	-2.542E-01	-3.532E-04	-3.432E-05			
29	1	4.228E-03	1.103E-14	1.276E-15	4.559E-03	-1.912E-03	-4.982E-03	-1.146E-02	-1.573E-15	3.044E-17	-6.037E-03
29	11	-4.829E-03	3.961E-03	7.641E-04	5.158E-17	3.813E-18	5.298E-18	-2.229E-16	1.271E-02	4.612E-16	2.119E-03
29	21	2.055E-16	1.533E-03	-5.508E-03	2.000E-03	7.091E-17	2.668E-02	-1.186E-16	2.397E-02	3.743E-16	-5.006E-16
29	31	-2.201E-01	-1.937E-16	-1.502E-16	5.847E-05	6.715E-02	-5.834E-03	-9.189E-04	-7.598E-19	-2.900E-19	-1.864E-17
29	41	9.688E-04	-1.957E-04	-3.230E-04	-2.062E-18	2.040E-16	2.553E-19	-6.170E-22			
30	1	-3.274E-15	1.232E-03	-7.682E-04	3.197E-16	-9.947E-17	3.579E-17	-1.455E-16	1.286E-03	-9.857E-03	-3.622E-17
30	11	-2.027E-16	-6.066E-17	9.518E-16	1.693E-02	2.457E-02	1.170E-02	2.432E-02	5.370E-16	2.038E-03	9.509E-16
30	21	-1.092E-02	2.460E-15	1.449E-15	2.765E-16	7.788E-03	9.688E-17	1.738E-02	-7.606E-17	-8.781E-02	-1.762E-02
30	31	-6.980E-17	-8.375E-02	-2.850E-02	-1.174E-17	-4.186E-17	2.553E-18	3.290E-19	9.272E-04	6.292E-05	-1.046E-02
30	41	-2.390E-16	8.579E-18	-1.941E-17	1.487E-02	-1.598E+00	-2.188E-03	-2.097E-04			
31	1	-2.200E-01	-6.171E-13	-3.262E-14	7.097E-02	2.446E-03	-1.890E-01	-2.414E-01	-3.517E-14	-7.551E-16	7.503E-02
31	11	-3.936E-02	4.501E-02	3.706E-02	2.242E-15	3.028E-16	1.094E-17	-2.663E-16	9.608E-04	-1.150E-16	-4.945E-02
31	21	-2.635E-15	1.105E-02	6.324E-03	-3.671E-04	-2.090E-16	2.928E-02	-1.644E-16	4.752E-01	-2.962E-16	-1.232E-17
31	31	6.001E-02	-1.159E-17	3.661E-17	2.692E-01	-5.127E-02	2.484E-03	6.894E-03	-1.709E-18	-1.288E-18	4.997E-18
31	41	-2.510E-04	2.772E-05	-2.157E-04	-6.785E-19	-1.167E-18	-2.002E-20	-4.225E-21			
32	1	-5.465E-13	1.904E-01	1.469E-01	3.154E-14	5.365E-14	-1.146E-15	-1.156E-14	9.501E-02	2.614E-01	2.380E-15
32	11	2.207E-15	3.020E-15	5.566E-15	-9.771E-02	-2.880E-01	-5.377E-02	-2.444E-01	-4.502E-15	3.316E-03	2.180E-14
32	21	-2.154E-01	4.463E-14	5.232E-15	-2.200E-15	-3.169E-01	-9.816E-17	-1.967E-02	-2.420E-16	-7.562E-02	-1.023E-01
32	31	2.126E-16	-1.076E-01	2.499E-02	-7.731E-19	-2.674E-17	5.610E-18	-2.974E-19	8.654E-04	-5.056E-05	-2.714E-04
32	41	-5.949E-18	3.168E-18	1.242E-17	1.488E-05	2.945E-04	-6.932E-03	-5.246E-03			
33	1	6.120E-02	1.211E-13	-6.401E-14	1.262E-01	2.708E-01	-5.723E-03	7.774E-02	1.317E-14	3.138E-15	2.557E-01
33	11	4.823E-02	-9.523E-02	-2.856E-03	-5.923E-18	1.666E-15	2.382E-16	1.155E-14	-4.603E-01	-1.593E-15	-2.710E-02

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

10.14.32 CLOCK TIME
35.291 SEC. CPTIME
29815 SEC. PPTIME

MODES	(54 X 47)	/OUTPUT/ (1)	CONTINUED (2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
33	21	-7.749E-15	1.102E-03	-5.038E-02	-1.861E-01	7.351E-16	-1.589E-01	4.616E-16	3.452E-02	4.799E-17	3.710E-18
33	31	-8.067E-02	-2.796E-16	8.577E-17	-1.171E-02	-8.314E-02	-6.204E-04	-5.974E-03	5.670E-17	-6.636E-17	5.566E-17
33	41	-3.430E-03	-3.088E-03	-1.630E-02	1.911E-18	5.545E-19	4.211E-19	1.970E-19			
34	1	2.161E-15	-7.576E-04	-6.377E-04	-1.308E-16	-2.396E-16	1.261E-17	-4.052E-16	2.831E-03	-1.186E-03	-1.258E-17
34	11	-7.330E-18	3.388E-17	3.115E-16	-4.577E-03	6.650E-03	3.282E-02	-6.102E-03	-2.917E-16	-2.067E-02	1.881E-15
34	21	-5.669E-03	6.143E-15	3.444E-16	5.475E-16	-3.644E-03	2.733E-16	5.569E-02	-2.841E-18	-2.400E-02	3.313E-02
34	31	-1.508E-16	-8.859E-03	5.693E-02	-1.972E-18	-1.418E-17	8.843E-19	1.852E-18	4.279E-03	8.740E-05	7.970E-04
34	41	1.604E-17	-3.973E-18	3.436E-18	9.294E-03	1.093E-03	9.809E-06	6.702E-06			
35	1	3.659E-03	9.311E-15	1.085E-15	3.655E-03	-1.299E-03	-2.876E-03	2.306E-03	3.233E-16	-3.704E-17	1.278E-02
35	11	8.005E-03	-5.575E-03	7.239E-05	-1.125E-17	1.407E-17	-1.397E-17	3.152E-16	-1.814E-02	-7.267E-16	-5.287E-03
35	21	-4.221E-16	-1.9[illegible]E-03	9.091E-03	-1.746E-03	-1.430E-16	-2.876E-02	1.008E-16	-1.608E-04	-1.318E-16	8.201E-17
35	31	4.669E-02	-1.562E-17	-9.051E-18	2.457E-02	1.656E-01	-2.641E-02	-7.211E-03	-2.972E-18	-9.629E-18	-7.064E-16
35	41	3.425E-02	-7.036E-03	-1.367E-02	-4.421E-18	1.843E-18	242E-19	1.614E-19			
36	1	-2.236E-15	8.690E-04	-1.099E-03	3.338E-16	-2.004E-16	7.710E-17	-1.147E-17	3.923E-04	-1.075E-02	2.143E-19
36	11	-1.160E-16	7.165E-17	8.861E-16	-1.605E-02	2.481E-02	4.047E-03	2.762E-02	6.322E-16	7.445E-03	3.417E-16
36	21	-8.780E-03	6.814E-16	1.513E-15	2.086E-16	1.056E-02	3.977E-17	5.081E-04	-9.060E-17	-5.468E-02	-4.369E-02
36	31	5.994E-17	-7.832E-02	-1.051E-02	-1.175E-17	-5.192E-17	3.437E-18	2.283E-19	1.789E-04	1.453E-05	-4.690E-03
36	41	-1.663E-16	1.624E-17	2.441E-17	-3.430E-05	8.317E-03	1.748E-03	1.300E-03			
37	1	-2.201E-01	-6.174E-13	-3.267E-14	7.136E-02	2.277E-03	-1.894E-01	-2.419E-01	-3.513E-14	-7.333E-16	7.049E-02
37	11	-3.265E-02	5.573E-02	2.540E-02	1.609E-15	2.880E-16	6.164E-17	7.354E-16	-1.528E-02	4.503E-16	-1.704E-02
37	21	-2.438E-15	6.548E-03	-3.132E-02	-1.196E-02	5.337E-16	-4.249E-03	3.950E-17	-5.176E-03	2.072E-18	4.479E-17
37	31	2.110E-02	-6.539E-19	1.841E-17	-5.680E-01	7.649E-02	-4.059E-03	-4.179E-02	-9.484E-19	3.355E-17	-1.437E-17
37	41	9.350E-04	1.701E-03	8.131E-03	-7.778E-19	-1.728E-19	-1.845E-19	-4.424E-20			
38	1	-5.903E-13	2.078E-01	1.233E-01	3.838E-14	4.978E-14	2.161E-16	-1.131E-14	9.856E-02	9.082E-04	2.115E-15
38	11	-1.001E-15	4.356E-15	3.015E-14	-5.447E-01	-7.336E-03	-2.980E-03	6.518E-02	4.843E-16	2.127E-03	1.785E-15
38	21	-2.167E-02	5.292E-15	7.105E-15	1.460E-15	2.898E-01	2.544E-16	-1.963E-02	7.043E-17	-3.474E-02	2.969E-02
38	31	-2.604E-16	1.824E-01	-8.759E-04	-2.700E-18	1.841E-17	-1.036E-17	-2.462E-19	-2.984E-02	-2.004E-04	2.293E-04
38	41	9.965E-18	3.163E-18	2.187E-18	6.006E-03	-2.057E-04	-8.094E-07	-1.681E-07			
39	1	1.017E-02	-6.449E-15	-7.960E-14	6.949E-02	2.883E-01	3.778E-02	4.640E-03	3.260E-15	4.202E-15	-6.708E-02
39	11	-2.295E-01	7.069E-02	-9.495E-02	-4.270E-15	-2.020E-16	3.423E-17	1.878E-15	-7.453E-02	9.097E-15	4.380E-02
39	21	9.578E-15	2.966E-02	-2.725E-02	-6.767E-02	8.658E-17	5.418[illegible]-01	-2.321E-15	-3.658E-02	-1.917E-16	3.820E-16
39	31	8.709E-02	-2.287E-[illegible]	5.132E-17	1.180E-02	6.686E-02	-9.302E-02	3.749E-03	2.590E-17	-1.216E-16	-3.527E-17
39	41	1.424E-03	-4.273E-03	1.151E-03	-1.169E-18	5.393E-19	1.097E-19	1.363E-19			
40	1	1.753E-15	-6.204E-04	-5.122E-04	-1.229E-16	-2.161E-16	6.843E-18	-7.392E-16	5.211E-03	-6.505E-04	8.259E-19
40	11	-8.969E-18	3.373E-17	3.328E-16	-5.974E-03	4.747E-03	3.167E-02	-7.349E-03	-2.416E-16	-4.553E-03	2.018E-16
40	21	-6.280E-04	3.583E-16	-1.311E-16	2.359E-16	-2.334E-03	2.735E-18	4.936E-02	2.163E-18	2.555E-03	-1.089E-02
40	31	1.573E-17	4.237E-03	9.465E-03	-1.205E-18	-8.239E-18	-5.210E-18	4.859E-19	-2.958E-02	-2.425E-03	8.641E-04
40	41	3.065E-17	7.846E-17	-1.061E-17	-4.265E-01	-3.582E-03	-4.387E-05	-4.647E-06			
41	1	3.274E-03	8.078E-15	9.993E-16	4.046E-03	-9.664E-04	-2.892E-03	7.187E-03	1.013E-15	-1.[illegible]E-17	1.398E-02
41	11	-1.175E-03	-2.436E-03	-1.071E-02	-5.514E-16	1.406E-17	-6.730E-18	3.032E-16	-1.057E-02	-4.46[illegible]4	-1.267E-04
41	21	-3.601E-16	-1.390E-03	3.906E-04	-3.997E-03	-2.045E-17	-1.099E-03	-1.418E-17	8.229E-04	-2.844E	2.535E-17
41	31	6.807E-03	3.245E-17	4.268E-18	6.086E-03	3.167E-02	3.940E-02	3.947E-02	-2.482E-18	1.321E	-5.532E-16
41	41	3.786E-02	7.185E-02	4.133E-01	-4.857E-18	-1.612E-17	-6.159E-18	-1.125E-18			

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

10.16.41 CLOCK TIME
35.643 SEC. CPTIME
29867 SEC. PPTIME

MODES	(54 X 47)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
42	1	-3.323E-15	1.317E-03	-2.127E-03	5.515E-16	-4.387E-16	1.251E-16	-6.490E-17	7.235E-04	-1.478E-02	-4.245E-17
42	11	-9.276E-17	-8.025E-17	-1.348E-17	-1.379E-04	2.240E-02	-1.562E-03	2.244E-03	6.605E-17	1.257E-03	-9.307E-16
42	21	8.014E-03	-1.977E-15	-3.612E-16	4.672E-18	4.315E-05	9.880E-18	-9.177E-05	-2.556E-17	-1.979E-02	-1.003E-02
42	31	-1.225E-17	-2.005E-03	-3.140E-03	-2.794E-18	-1.061E-17	-7.952E-18	6.216E-19	6.244E-05	-1.034E-03	-1.027E-03
42	41	-3.308E-17	4.038E-17	-4.742E-18	1.795E-04	2.292E-03	-4.335E-01	-1.301E+00			
43	1	-2.202E-01	-6.176E-13	-3.254E-14	7.163E-02	2.142E-03	-1.889E-01	-2.432E-01	-3.556E-14	-7.052E-16	6.986E-02
43	11	-2.266E-02	5.800E-02	5.496E-03	4.384E-16	2.071E-16	8.341E-17	1.539E-15	-2.835E-02	7.387E-16	2.378E-02
43	21	-1.320E-15	-1.728E-03	-5.254E-02	-1.832E-02	9.273E-16	-3.484E-02	1.966E-16	-4.802E-01	3.889E-16	5.422E-17
43	31	-4.556E-02	6.096E-17	-1.936E-17	2.782E-01	-3.184E-02	9.205E-03	6.393E-03	-3.996E-18	7.517E-18	4.379E-19
43	41	-6.903E-06	2.628E-04	-4.147E-04	-8.977E-19	-3.623E-20	-1.439E-20	-2.707E-21			
44	1	-6.479E-13	2.308E-01	8.349E-02	4.784E-14	4.107E-14	2.418E-15	-1.360E-14	1.199E-01	-2.548E-01	1.572E-15
44	11	-2.035E-15	1.101E-15	6.542E-15	-1.023E-01	3.074E-01	-9.516E-02	-1.655E-01	-3.265E-15	-2.893E-02	-2.537E-14
44	21	2.741E-01	-5.426E-14	-2.380E-14	-1.986E-15	-2.984E-01	-6.655E-16	-2.016E-02	3.210E-17	1.241E-01	5.106E-02
44	31	1.632E-15	-9.808E-02	1.044E-02	2.076E-17	4.336E-18	2.781E-17	-1.327E-19	6.033E-04	3.039E-04	5.066E-05
44	41	-3.559E-18	3.270E-19	-5.001E-18	-8.528E-05	-6.566E-05	7.053E-03	5.337E-03			
45	1	-3.612E-02	-1.185E-13	-9.389E-14	7.620E-03	2.984E-01	6.873E-02	-1.038E-01	-1.180E-14	4.117E-15	-3.954E-01
45	11	8.560E-02	4.144E-03	4.201E-01	2.181E-14	-5.284E-16	1.801E-15	-1.386E-15	-3.940E-02	2.646E-14	4.798E-02
45	21	2.536E-14	7.393E-02	2.458E-02	1.073E-02	-5.900E-16	-1.028E-01	7.239E-16	-1.242E-04	-5.469E-16	-2.222E-16
45	31	2.131E-03	2.516E-16	-4.439E-17	5.082E-03	2.378E-02	8.145E-02	2.591E-03	3.051E-18	1.699E-16	-3.108E-17
45	41	2.178E-03	7.032E-03	1.541E-02	-1.279E-19	-7.880E-19	-2.894E-19	-1.500E-19			
46	1	1.245E-15	-4.419E-04	-3.343E-04	-9.049E-17	-1.254E-16	5.627E-18	-5.317E-16	3.676E-03	-6.281E-04	-2.759E-17
46	11	8.857E-18	1.667E-17	2.576E-16	-5.267E-03	4.765E-03	4.290E-02	-1.136E-02	-2.940E-16	9.815E-03	-1.468E-15
46	21	4.348E-03	-5.662E-15	-7.123E-16	-1.857E-16	-4.182E-03	3.806E-16	6.045E-02	8.949E-18	3.716E-02	-5.847E-02
46	31	1.892E-18	1.730E-02	-3.538E-02	-2.684E-19	-1.652E-18	-6.504E-18	1.073E-18	5.090E-03	-2.316E-03	-3.605E-05
46	41	1.161E-17	7.029E-17	-6.680E-18	1.119E-02	8.336E-05	9.952E-05	7.315E-05			
47	1	3.025E-03	7.279E-15	9.149E-16	4.309E-03	-6.291E-04	-1.294E-03	6.986E-03	9.779E-16	2.421E-17	1.714E-02
47	11	-1.294E-02	1.746E-03	-2.494E-02	-1.289E-15	-1.102E-16	6.038E-17	2.361E-16	-6.256E-03	8.999E-16	1.257E-02
47	21	1.672E-15	1.008E-03	1.307E-03	-3.149E-03	-1.142E-16	2.769E-02	-9.705E-17	1.527E-03	-9.392E-17	-1.353E-17
47	31	8.040E-03	6.354E-17	-2.450E-18	3.542E-03	3.835E-02	2.522E-01	-2.569E-02	-1.126E-18	1.868E-15	-1.610E-17
47	41	6.906E-03	7.658E-02	-4.022E-02	3.294E-18	9.637E-19	7.168E-19	8.520E-19			
48	1	-4.136E-15	1.664E-03	-3.203E-03	6.432E-16	-7.561E-16	1.249E-16	-6.130E-17	7.224E-04	-1.043E-02	-3.081E-17
48	11	-5.172E-18	-1.465E-16	-9.171E-16	1.583E-02	2.852E-02	-7.781E-03	-2.450E-02	-4.502E-16	3.114E-03	1.143E-16
48	21	-4.053E-03	7.874E-17	-1.8.3E-16	-1.519E-16	-1.246E-02	5.974E-17	-9.493E-04	-7.558E-17	-7.539E-02	-2.825E-02
48	31	-1.208E-16	6.639E-02	-4.751E-03	-4.971E-18	-1.013E-17	-4.898E-17	2.715E-18	1.762E-04	-4.750E-03	1.034E-05
48	41	2.647E-17	1.384E-16	-8.091E-18	7.358E-04	-1.081E-05	1.698E-03	1.271E-03			
49	1	-5.736E-02	2.181E-13	1.769E-14	2.889E-01	-5.162E-02	-4.355E-01	4.188E-01	6.011E-14	1.068E-15	-1.953E-01
49	11	5.151E-03	3.160E-03	1.735E-02	8.838E-16	9.961E-18	2.104E-17	-2.671E-16	7.132E-03	2.901E-16	2.670E-04
49	21	2.531E-16	7.748E-04	9.342E-05	2.400E-03	-5.289E-18	4.604E-04	7.062E-18	-2.280E-04	-9.477E-18	-5.847E-18
49	31	-1.416E-03	-3.195E-18	-1.439E-18	-9.740E-04	-1.816E-03	-3.466E-04	2.793E-02	2.281E-19	-3.130E-17	1.243E-17
49	41	-8.545E-04	-1.586E-03	-7.610E-03	-1.614E-20	2.927E-19	1.426E-19	-4.891E-20			
50	1	-6.903E-13	2.438E-01	1.553E-01	4.723E-14	6.733E-14	4.638E-16	9.254E-14	-6.382E-01	-2.916E-02	-7.951E-16
50	11	-1.566E-16	-1.217E-16	-3.918E-16	1.300E-03	4.428E-03	2.747E-02	-6.452E-03	-1.593E-16	-3.062E-03	1.211E-16
50	21	-1.538E-04	1.361E-16	-1.360E-16	3.7[illegible]-17	-3.851E-03	1.025E-16	1.774E-02	1.974E-19	6.453E-04	-2.346E-03
50	31	5.222E-19	4.288E-04	1.453E-03	-[illegible]19	-1.266E-18	-2.433E-19	1.004E-18	2.850E-02	-5.797E-05	1.996E-05

Table B-3.(Continued)

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

10.21.49 CLOCK TIME
36.003 SEC. CPTIME
29915 SEC. PPTIME

MODES (54 X 47) /OUTPUT/ CONTINUED

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
50	41	1.009E-18	1.700E-18	-1.642E-19	-5.971E-03	-4.464E-05	-2.997E-07	-7.796E-09			
51	1	1.017E-02	-6.533E-15	-7.965E-14	6.957E-02	2.890E-01	3.797E-02	4.712E-03	3.376E-15	4.366E-15	-7.496E-02
51	11	-3.781E-01	1.345E-01	-2.642E-01	-1.273E-14	-3.506E-16	-9.164E-16	-4.156E-15	1.761E-01	-1.669E-14	-6.634E-02
51	21	-1.448E-14	-4.199E-02	3.683E-02	8.352E-02	-9.248E-17	-3.478E-01	1.585E-15	1.640E-02	1.193E-16	-3.296E-16
51	31	-2.378E-02	1.627E-17	-5.322E-17	-1.343E-03	-7.068E-03	6.700E-03	-1.720E-04	-3.952E-17	1.448E-18	2.644E-18
51	41	-1.777E-05	5.232E-05	-1.201E-05	-2.793E-19	4.465E-19	-1.145E-20	6.007E-20			
52	1	2.075E-15	-7.544E-04	-6.826E-04	-2.064E-16	-4.036E-16	-1.100E-17	-2.529E-15	1.794E-02	1.024E-03	7.510E-17
52	11	-2.347E-17	1.039E-16	7.252E-16	-1.311E-02	-2.008E-03	-1.207E-02	4.655E-03	9.145E-17	1.786E-03	-2.682E-17
52	21	-3.919E-04	2.274E-17	2.533E-16	-7.077E-18	9.412E-03	-1.014E-16	-1.995E-02	3.204E-19	-2.216E-03	5.587E-03
52	31	-1.506E-17	4.357E-03	-4.309E-03	5.081E-19	6.543E-18	3.645E-18	1.554E-17	4.355E-01	-3.542E-04	1.205E-04
52	41	5.689E-18	9.992E-18	-1.358E-18	-3.339E-02	-2.454E-04	-1.563E-06	-3.866E-08			
53	1	3.248E-03	7.965E-15	1.018E-15	4.454E-03	-1.116E-03	-5.604E-03	1.525E-02	2.210E-15	5.336E-17	-1.184E-02
53	11	1.428E-03	-5.987E-04	3.473E-03	1.721E-16	-1.449E-17	1.003E-17	-1.309E-16	4.440E-03	1.555E-16	5.435E-04
53	21	2.087E-16	3.368E-04	7.649E-04	1.870E-03	-6.572E-18	5.554E-04	-1.109E-19	-1.671E-04	1.293E-17	-7.043E-18
53	31	-3.604E-03	-8.146E-19	-7.607E-19	2.252E-02	-2.300E-02	-3.604E-02	-4.325E-01	1.641E-17	2.071E-16	-7.962E-17
53	41	5.173E-03	9.560E-03	4.434E-02	-5.886E-19	-1.680E-18	-8.487E-19	-2.596E [illegible]			
54	1	-3.301E-15	1.317E-03	-2.127E-03	5.098E-16	-4.335E-16	9.932E-17	-5.189E-17	7.236E-04	-1.478E-02	-1.872E-17
54	11	-1.193E-15	-4.969E-17	2.460E-17	-1.382E-04	2.248E-02	-1.568E-03	2.254E-03	6.770E-17	1.264E-03	-8.957E-16
54	21	8.056E-03	-1.963E-15	-3.740E-16	1.900E-17	4.342E-05	2.925E-18	-9.259E-05	-2.321E-17	-2.006E-02	-1.018E-02
54	31	-1.214E-17	-2.037E-03	-3.199E-03	-2.553E-18	-1.152E-17	-8.347E-18	5.952E-19	6.733E-05	-1.367E-03	-1.368E-03
54	41	-4.908E-17	3.501E-17	-1.343E-17	2.955E-04	4.062E-03	-1.897E+00	6.330E-01			

END OF WRITE.

W2A (1 X 10) /INPUT/ 0

1	1	3.61700000E+02	0.	0.	0.
1	2	4.34200000E+02	0.	0.	0.
1	3	8.66300000E+02	0.	0.	0.
1	4	1.11300000E+03	0.	0.	0.
1	5	2.27800000E+03	0.	0.	0.
1	6	4.91400000E+03	0.	0.	0.
1	7	1.51500000E+04	0.	0.	0.
1	8	1.57200000E+04	0.	0.	
1	9	4.51900000E+04	0.		
1	10	1.03800000E+05			

END OF READ.

SIZE OF MATRIX READ IS (54 X 47)

RUN NO. ORBIT

Table B-4. Baseline payload model B modal characteristics

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

10.22.19 CLOCK TIME
37.090 SEC. CPTIME
30945 SEC. PPTIME

MODES	(54 X 47) /OUTPUT/ (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1 1	1.014E-01	8.263E-02	2.422E-01	1.774E-01	1.775E-01	1.335E-01	2.073E+00	1.574E+00	6.780E-01	3.005E+00
1 11	2.133E-01	2.398E-01	1.091E-01	3.708E-02	3.168E-03	1.535E-02	1.552E-01	2.723E-01	8.311E-01	4.531E-02
1 21	2.887E-02	7.360E-01	9.471E-01	1.134E-02	3.031E-02	3.962E-01	2.965E-01	5.231E-01	3.032E-02	1.128E-03
1 31	1.468E-01	7.793E-05	7.489E-03	6.552E-03	2.163E-03	3.731E-05	1.380E-05	1.337E-02	1.030E-03	4.706E-04
1 41	2.332E-04	7.805E-03	4.922E-01	6.588E-04	4.857E-01	4.458E-04	2.544E-06			
2 1	-3.840E-02	2.670E-01	-3.256E-02	1.162E-01	2.175E-01	1.148E-02	5.878E-01	3.487E-01	-1.371E-01	3.063E-01
2 11	-6.714E-02	-1.761E-01	-8.023E-02	9.590E-03	-8.622E-03	-4.984E-04	-1.745E-03	3.627E-03	7.129E-02	-5.079E-03
2 21	4.374E-03	1.087E-01	1.510E-01	2.896E-04	-8.934E-03	9.821E-02	6.538E-02	1.203E-01	3.460E-03	-7.043E-02
2 31	4.659E-02	-9.339E-05	4.799E-03	-5.852E-02	1.007E-03	-6.898E-05	4.515E-05	7.380E-03	-4.478E-03	-3.019E-03
2 41	-1.178E-03	-2.303E-02	-3.098E+00	-4.316E-03	-3.058E+00	-4.899E-03	3.665E-04			
4 1	1.248E-03	3.189E-04	7.230E-04	-4.168E-03	-1.529E-03	1.906E-03	-1.519E-04	-9.226E-03	-2.125E-04	3.529E-04
4 11	8.846E-03	-9.543E-04	-5.287E-03	-7.200E-06	3.128E-02	8.805E-02	2.241E-02	6.319E-03	-6.931E-04	-1.063E-01
4 21	-8.768E-03	5.624E-03	7.008E-03	1.492E-02	4.757E-02	3.071E-03	-1.255E-03	-6.202E-03	4.077E-03	1.783E-03
4 31	4.814E-02	2.658E-04	6.124E-03	6.454E-04	1.467E-01	2.197E-04	-1.066E-03	-1.378E-01	-1.943E-03	-2.210E-04
4 41	-1.185E-05	-6.446E-03	-2.802E-04	4.606E-05	-2.589E-04	-5.020E-05	6.982E-06			
5 1	-2.808E-03	5.618E-05	3.669E-03	1.927E-03	2.831E-04	-4.593E-03	2.042E-03	1.894E-02	1.525E-03	1.525E-02
5 11	-1.131E-02	8.483E-03	2.172E-03	-2.057E-03	8.762E-03	1.910E-02	-1.552E-03	-2.254E-02	-4.002E-02	-1.343E-02
5 21	-9.725E-04	-5.799E-03	-1.628E-02	1.139E-03	-8.518E-03	7.264E-03	8.235E-03	2.230E-02	-2.925E-02	-1.203E-02
5 31	-3.191E-01	-9.249E-04	-3.940E-02	-4.112E-03	-9.241E-01	-1.384E-03	6.707E-03	8.660E-01	1.219E-02	2.010E-03
5 41	1.416E-04	4.013E-02	9.020E-05	-2.890E-04	-9.595E-05	3.173E-04	-4.446E-05			
6 1	-7.813E-06	-7.376E-04	-1.557E-05	-1.922E-04	-2.158E-03	-1.078E-03	-2.342E-02	-1.477E-02	-9.816E-03	-4.302E-02
6 11	-1.079E-02	-9.756E-03	-5.070E-03	-3.836E-03	2.921E-03	4.137E-03	2.042E-02	2.690E-02	7.656E-02	5.750E-03
6 21	2.961E-03	6.239E-02	7.601E-02	4.131E-04	-3.989E-03	2.507E-02	1.901E-02	3.548E-02	-9.191E-03	-5.176E-03
6 31	-1.090E-01	-3.387E-04	-1.391E-02	-1.664E-03	-3.342E-01	-4.997E-04	2.427E-03	3.138E-01	4.418E-03	7.212E-04
6 41	5.232E-05	1.467E-02	5.311E-05	-1.055E-04	-2.282E-05	1.025E-04	-1.385E-05			
8 1	3.172E-02	2.351E-01	-7.413E-02	7.631E-02	1.302E-01	6.197E-02	-2.081E-01	-8.504E-02	1.759E-01	1.487E-01
8 11	-6.933E-02	-8.618E-02	-8.745E-02	-5.346E-02	-2.444E-02	1.474E-03	3.253E-02	1.082E-02	-2.100E-03	-4.054E-04
8 21	-8.405E-04	6.205E-03	-1.069E-02	1.951E-03	-7.278E-03	1.304E-01	-2.818E-01	5.306E-02	-1.622E-03	-4.819E-02
8 31	6.275E-04	1.856E-04	-1.811E-03	5.491E-02	-1.002E-04	1.261E-04	2.024E-04	2.508E-03	-2.233E-01	-8.780E-04
8 41	-1.376E-03	4.505E-02	-4.787E-03	4.420E+00	-1.779E-03	4.482E-03	-3.363E-04			
10 1	-1.365E-03	4.679E-04	3.317E-03	-2.018E-03	-6.136E-04	-1.174E-03	-6.199E-04	4.577E-03	1.562E-03	-2.511E-03
10 11	3.738E-03	3.876E-03	-1.256E-02	-2.795E-03	4.510E-02	-3.357E-02	4.172E-03	-2.570E-02	1.112E-02	-1.281E-03
10 21	-1.327E-01	-5.796E-03	7.145E-03	3.913E-02	-5.196E-03	-3.996E-03	-3.171E-04	8.405E-04	-1.441E-04	-1.152E-04
10 31	4.570E-04	2.881E-05	-1.060E-04	4.870E-06	-1.538E-04	1.005E-01	1.004E-01	-6.993E-04	-8.427E-05	-8.747E-05
10 41	1.016E-03	2.325E-04	-1.836E-06	3.881E-04	-9.775E-07	3.440E-05	-4.632E-06			
11 1	-3.737E-03	-5.750E-04	1.561E-03	2.300E-03	1.767E-04	-1.923E-03	-3.587E-03	6.835E-03	4.187E-03	-2.330E-03
11 11	6.535E-03	-4.717E-03	4.136E-03	-1.638E-02	-1.107E-02	8.917E-03	9.555E-03	-5.981E-02	2.703E-02	-7.636E-04
11 21	1.837E-02	3.402E-02	-3.563E-02	4.107E-03	-3.495E-03	1.515E-02	8.822E-03	-1.547E-02	-1.189E-03	-1.356E-05
11 31	4.520E-03	-7.591E-05	-9.904E-04	-3.492E-04	-1.432E-03	9.322E-01	9.316E-01	-6.504E-03	1.055E-03	-1.068E-03
11 41	9.021E-03	2.071E-03	-1.290E-05	-5.165E-06	-7.217E-06	3.022E-04	-4.045E-05			
12 1	1.111E-03	2.052E-0	2.783E-03	2.677E-03	-4.745E-05	2.287E-03	1.993E-03	3.999E-03	-1.308E-03	-3.705E-03
12 11	3.895E-03	4.592E-03	3.631E-03	-1.003E-02	5.011E-04	-7.168E-03	9.947E-02	4.690E-02	-4.925E-02	-1.566E-03
12 21	2.043E-03	-5.361E-02	4.657E-02	4.684E-03	-8.351E-03	3.341E-02	1.414E-02	-2.137E-02	-3.798E-04	1.036E-03

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

10.23.15 CLOCK TIME
37.431 SEC. CPTIME
30993 SEC. PPTIME

MODES	(54 X 47)	/OUTPUT/ CONTINUED								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
12	31	1.520E-03	-4.319E 05	-3.351E-04	-2.779E-04	-5.190E-04	3.371E-01	3.370E-01	-2.356E-03	3.407E-04	-3.689E-04
12	41	3.026E-03	7.563E-04	-4.480E-06	-1.189E-04	-2.326E-06	9.703E-05	-1.250E-05			
13	1	1.007E-01	-6.055E-02	2.475E-01	1.492E-01	-1.864E-01	-5.644E-02	-2.093E+00	1.166E+00	-2.914E+00	1.423E+00
13	11	2.689E-01	-2.415E-01	-1.120E-01	-6.070E-03	-3.795E-03	-1.595E-02	-9.172E-02	-3.175E-01	-8.091E-01	6.291E-02
13	21	1.284E-03	8.884E-01	8.195E-01	-4.029E-02	-2.974E-02	-3.951E-01	-3.012E-01	-5.219E-01	3.033E-02	1.184E-03
13	31	1.468E-01	-7.837E-05	7.489E-03	6.550E-03	-2.163E-03	-3.757E-05	1.366E-05	1.337E-02	1.034E-03	-4.705E-04
13	41	-2.337E-04	7.804E-03	4.922E-01	2.523E-04	-4.857E-01	-4.458E-04	-2.544E-06			
14	1	2.182E-02	2.738E-01	1.714E-03	-8.499E-02	1.943E-01	1.116E-01	5.946E-01	-3.235E-01	1.946E-01	-2.909E-01
14	11	7.986E-02	-1.730E-01	-7.658E-02	-2.818E-02	-8.656E-03	-5.680E-04	1.300E-03	2.216E-03	7.039E-02	3.192E-03
14	21	3.343E-04	-1.338E-01	-1.294E-01	6.288E-03	-8.920E-03	9.459E-02	7.366E-02	1.185E-01	-3.457E-03	7.045E-02
14	31	-4.659E-02	-9.156E-05	-4.798E-03	5.851E-02	1.008E-03	-7.109E-05	-4.541E-05	-7.380E-03	4.490E-03	-3.019E-03
14	41	-1.180E-03	2.303E-02	3.098E+00	1.805E-03	-3.058E+00	-4.899E-03	3.665E-04			
16	1	-1.264E-03	3.766E-05	-7.432E-04	4.185E-03	-5.618E-04	-2.296E-03	-4.204E-04	8.148E-03	-1.484E-03	-1.182E-03
16	11	-8.627E-03	-1.058E-03	-5.333E-03	-1.312E-03	3.129E-02	8.798E-02	7.284E-03	2.819E-03	1.800E-03	1.061E-01
16	21	-9.824E-03	-7.317E-03	-4.713E-03	1.509E-02	4.755E-02	3.184E-03	-1.351E-03	-6.211E-03	-4.077E-03	-1.782E-03
16	31	-4.814E-02	2.662E-04	-6.124E-03	-6.463E-04	1.467E-01	2.195E-04	1.066E-03	1.378E-01	1.942E-03	-2.209E-04
16	41	-1.236E-05	6.446E-03	2.802E-04	-4.484E-05	-2.589E-04	-5.020E-05	6.982E-06			
17	1	-2.799E-03	-1.556E-04	3.682E-03	1.915E-03	1.256E-03	-4.489E-03	-1.749E-03	1.762E-02	-1.592E-02	7.136E-03
17	11	-1.039E-02	-8.167E-03	-1.642E-03	-3.295E-03	-8.654E-03	-1.931E-02	1.371E-02	1.482E-02	4.124E-02	-1.421E-02
17	21	2.508E-03	-1.024E-02	-1.284E-02	9.333E-04	8.290E-03	-6.201E-03	-9.132E-03	-2.236E-02	-2.925E-02	-1.202E-02
17	31	-3.191E-01	9.276E-04	-3.940E-02	-4.117E-03	9.241E-01	1.383E-03	6.711E-03	8.660E-01	1.218E-02	-2.010E-03
17	41	-1.447E-04	4.013E-02	9.019E-05	-2.799E-04	9.613E-05	-3.173E-04	4.446E-05			
18	1	-2.098E-06	-7.364E-04	6.945E-05	-1.070E-04	-2.153E-03	-1.070E-03	-2.346E-02	9.575E-03	-4.023E-02	2.065E-02
18	11	1.214E-02	-9.931E-03	-5.458E-03	1.710E-03	2.923E-03	4.330E-03	6.828E-03	3.596E-02	7.363E-02	-7.297E-03
18	21	-4.969E-04	-7.418E-02	-6.629E-02	1.925E-03	-3.934E-03	2.450E-02	1.982E-02	3.540E-02	9.190E-03	5.170E-03
18	31	1.090E-01	-3.397E-04	1.391E-02	1.666E-03	-3.342E-01	-4.991E-04	-2.428E-03	-3.138E-01	-4.415E-03	7.211E-04
18	41	5.346E-05	-1.467E-02	-5.311E-05	1.025E-04	-2.289E-05	1.025E-04	-1.385E-05			
20	1	-4.867E-02	2.367E-01	4.614E-02	-5.870E-02	1.393E-01	-1.758E-02	-1.994E-01	7.062E-02	2.015E-01	5.307E-02
20	11	3.834E-02	-9.925E-02	-1.039E-01	2.966E-03	-3.794E-02	4.191E-03	1.510E-02	5.840E-02	-1.268E-02	8.852E-04
20	21	-6.432E-03	1.358E-02	-8.401E-03	-4.796E-03	2.544E-02	-2.901E-01	4.464E-01	-6.183E-02	-1.606E-03	-1.733E-02
20	31	1.743E-04	-1.617E-05	-2.151E-04	2.825E-03	3.312E-06	-3.159E-06	7.301E-06	7.855E-05	-5.548E-03	7.343E-06
20	41	1.428E-05	1.069E-04	-2.783E-06	1.293E-03	-1.200E-06	4.038E-05	-7.318E-06			
22	1	1.392E-03	4.146E-04	-3.535E-03	2.140E-03	-9.056E-04	9.022E-04	-1.036E-03	-4.705E-03	3.641E-04	3.580E-03
22	11	-3.817E-03	3.486E-03	-1.522E-02	1.970E-04	4.393E-02	-2.566E-02	-1.868E-02	-2.968E-03	4.481E-04	5.295E-04
22	21	6.183E-02	-1.337E-02	1.410E-02	1.259E-01	-8.158E-03	-9.388E-03	7.454E-04	2.208E-03	1.362E-04	4.001E-05
22	31	-4.443E-04	4.306E-05	1.040E-04	1.050E-05	-1.533E-04	1.006E-01	-1.003E-01	6.993E-04	7.663E-05	-7.724E-05
22	41	1.034E-03	-2.292E-04	1.397E-06	1.894E-05	-8.494E-07	3.484E-05	-4.749E-06			
23	1	-3.758E-03	2.462E-04	1.472E-03	2.372E-03	4.713E-04	-1.617E-03	3.869E-03	6.604E-03	-2.505E-03	-5.588E-03
23	11	6.831E-03	7.967E-03	-1.031E-04	-1.553E-02	1.131E-02	-8.675E-03	4.943E-02	9.964E-03	-7.635E-03	-2.284E-05
23	21	6.074E-03	4.700E-02	-4.632E-02	2.201E-02	6.755E-04	-8.275E-03	-4.792E-03	1.161E-02	-1.175E-03	8.734E-05
23	31	4.515E-03	7.495E-05	-9.883E-04	-4.014E-04	1.429E-03	-9.331E-01	9.306E-01	-6.500E-03	1.065E-03	1.070E-03
23	41	-9.036E-03	2.069E-03	-1.289E-05	-1.488E-05	7.242E-06	-3.034E-04	4.069E-05			
24	1	-1.161E-03	1.083E-05	-2.932E-03	-2.758E-03	6.878E-04	-2.101E-03	2.954E-03	-4.325E-03	-3.483E-03	1.487E-03

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

10.23.16 CLOCK TIME
37.769 SEC. CPTIME
31045 SEC. PPTIME

MODES	(54 X 47)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
24	11	-3.840E-03	3.344E-03	1.168E-03	1.185E-02	1.592E-04	-3.935E-03	-1.899E-02	8.578E-02	-3.065E-02	2.946E-03
24	21	-2.001E-02	6.946E-02	-5.887E-02	2.047E-02	-1.253E-02	4.896E-02	1.806E-02	-2.819E-02	3.440E-04	-1.351E-03
24	31	-1.474E-03	-4.890E-05	3.278E-04	3.259E-04	-5.183E-04	3.374E-01	-3.367E-01	2.355E-03	-3.206E-04	-3.630E-04
24	41	2.943E-03	-7.600E-04	4.605E-06	1.363E-06	-2.291E-06	9.302E-05	-1.180E-05			
25	1	4.857E-01	2.451E-02	-1.464E-01	-2.024E-01	5.384E-02	-2.910E-01	7.243E-03	1.012E-01	1.074E-02	-4.635E-02
25	11	2.441E-02	-3.384E-03	-6.940E-03	9.716E-02	1.352E-03	-6.360E-04	3.581E-02	-2.378E-02	4.167E-03	-7.246E-04
25	21	7.523E-03	8.044E-03	-1.016E-02	4.400E-03	-8.606E-04	7.611E-03	-1.147E-02	1.558E-03	1.445E-03	-8.298E-03
25	31	1.522E-03	1.364E-06	-6.466E-04	1.249E-02	-6.147E-07	-3.613E-07	4.344E-05	1.498E-03	-9.085E-02	6.601E-07
25	41	1.784E-06	8.849E-04	6.411E-06	-2.534E-03	9.722E-07	-7.690E-07	1.389E-09			
27	1	1.062E-01	-3.775E-03	-2.514E-01	1.058E-01	1.363E-02	-3.928E-02	-6.464E-03	-2.018E-01	-3.024E-02	1.393E-01
27	11	-1.340E-01	-1.127E-02	-1.010E-02	-4.728E-02	-4.754E-03	-1.085E-03	4.854E-02	-2.199E-02	4.452E-03	-9.183E-04
27	21	-2.001E-02	1.543E-02	-1.202E-02	-8.891E-03	3.715E-03	-3.885E-02	6.222E-02	-9.117E-03	-8.463E-03	4.916E-02
27	31	-6.756E-03	-7.270E-06	3.379E-03	-6.737E-02	3.271E-06	2.052E-06	-8.280E-04	-7.919E-03	4.842E-01	-3.482E-06
27	41	-9.854E-06	-4.869E-03	-3.264E-05	1.353E-02	-5.188E-06	4.096E-06	-7.122E-09			
28	1	1.426E-04	-3.917E-03	2.517E-04	-1.276E-04	-3.167E-03	-4.562E-04	5.899E-03	1.807E-04	-5.667E-03	-3.052E-03
28	11	9.054E-04	3.297E-02	-5.577E-02	-3.329E-03	-2.925E-02	6.245E-03	3.416E-03	5.670E-03	-1.384E-03	3.754E-05
28	21	-3.885E-03	1.465E-03	-1.184E-03	5.196E-03	8.484E-04	-1.306E-02	-7.587E-03	1.160E-02	8.550E-06	6.384E-05
28	31	-5.048E-06	1.638E-04	9.942E-07	-6.954E-06	2.484E-05	1.677E-03	2.988E-06	-2.963E-07	8.353E-07	1.099E-02
28	41	-9.134E-02	-1.960E-06	4.008E-08	-3.707E-05	1.747E-05	-4.432E-04	4.368E-05			
29	1	-4.009E-03	-1.688E-04	3.845E-03	4.286E-03	-1.838E-03	1.045E-02	-4.196E-04	-6.751E-03	-6.219E-04	3.628E-03
29	11	-9.552E-03	-4.661E-03	-7.170E-03	6.710E-02	2.192E-04	-3.488E-04	1.834E-02	-1.135E-02	1.982E-03	-3.518E-04
29	21	1.480E-03	4.202E-03	-4.702E-03	1.026E-03	-5.957E-05	1.252E-04	5.810E-05	-5.113E-05	-4.663E-05	4.475E-04
29	31	8.000E-05	1.106E-09	-1.927E-06	-6.971E-05	-4.410E-10	8.746E-09	-3.618E-05	4.128E-06	-8.001E-06	1.999E-09
29	41	-1.973E-08	-9.196E-06	1.085E-07	1.508E-06	-5.673E-10	7.349E-11	1.570E-11			
30	1	9.300E-06	-1.107E-03	4.210E-05	-1.334E-04	-1.698E-03	-6.119E-04	-7.426E-03	2.215E-04	6.727E-03	3.274E-03
30	11	-1.680E-04	-2.808E-03	-1.750E-02	-2.295E-03	-1.533E-03	2.800E-03	-1.757E-02	-3.452E-02	9.448E-03	-4.036E-04
30	21	3.271E-03	-1.177E-02	1.049E-02	2.046E-05	-1.257E-02	7.288E-02	3.499E-02	-6.153E-02	-3.626E-05	-2.729E-04
30	31	2.671E-05	-7.998E-04	-4.833E-06	3.244E-05	-1.317E-04	-8.965E-03	-1.599E-05	1.463E-06	4.027E-06	-5.853E-02
30	41	4.869E-01	9.924E-06	-1.658E-07	1.544E-04	-9.308E-05	2.360E-03	-2.323E-04			
31	1	1.982E-01	1.291E-02	1.185E-01	8.870E-02	-3.141E-02	1.952E-01	-1.341E-02	1.563E-02	1.657E-02	-2.388E-02
31	11	-9.508E-03	-1.117E-03	-1.718E-04	-2.892E-02	-1.340E-03	4.354E-04	-1.362E-02	8.212E-03	5.129E-04	1.776E-04
31	21	-3.878E-03	5.584E-03	-1.422E-02	5.818E-04	6.723E-04	-1.194E-02	2.382E-02	-4.655E-03	-1.038E-03	3.998E-01
31	31	-1.815E-02	4.273E-06	-1.590E-02	2.384E-01	4.745E-07	-3.814E-06	5.494E-05	-1.819E-05	1.360E-02	1.499E-07
31	41	-8.906E-07	-1.262E-03	-1.869E-02	-1.448E-04	5.248E-08	-4.393E-08	5.648E-11			
32	1	-8.348E-03	2.590E-01	-1.500E-02	1.337E-02	1.771E-01	4.647E-02	2.602E-01	-1.981E-02	-2.563E-01	-1.178E-01
32	11	1.074E-02	2.117E-01	-9.519E-02	-2.216E-02	-8.838E-03	7.552E-04	-1.935E-02	-4.314E-02	-5.877E-02	4.461E-04
32	21	-6.470E-04	-5.201E-04	7.609E-04	1.082E-03	-3.027E-03	3.340E-02	2.116E-02	3.379E-02	1.662E-06	1.376E-05
32	31	4.356E-07	1.578E-04	9.350E-08	-1.322E-06	2.163E-04	-4.263E-05	-7.938E-08	-3.450E-08	2.881E-06	7.949E-05
32	41	-1.482E-04	-1.554E-07	-4.227E-09	2.084E-05	9.962E-02	2.815E-03	-2.688E-03			
33	1	-4.071E-02	-8.501E-03	-1.029E-01	2.457E-01	2.015E-02	-6.974E-02	-1.093E-02	3.349E-01	3.969E-02	-1.571E-01
33	11	-3.127E-01	-4.404E-03	-4.456E-03	6.034E-03	-4.043E-04	4.164E-04	-2.399E-02	1.541E-02	-3.498E-03	-5.629E-02
33	21	-2.559E-03	-1.706E-02	-5.442E-03	-1.602E-03	1.513E-04	-6.370E-04	4.611E-04	3.113E-05	-4.926E-03	2.604E-03
33	31	3.932E-02	3.499E-09	5.263E-05	5.141E-04	3.674E-10	-2.227E-08	8.625E-05	4.517E-03	-8.012E-05	-7.901E-09
33	41	1.572E-07	-6.204E-03	3.642E-02	9.088E-05	-2.277E-08	1.675E-09	2.312E-12			

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

10.23.17 CLOCK TIME
38.117 SEC. CPTIME
31045 SEC. PPTIME

MODES	(54 X 47)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
34	1	2.058E-05	-4.705E-04	2.661E-05	-2.248E-05	2.690E-03	4.865E-04	-3.627E-05	-1.529E-04	-1.220E-03	-5.203E-04
34	11	-7.358E-05	-5.270E-04	8.439E-03	9.230E-04	-2.924E-02	-3.966E-02	-1.131E-03	-4.487E-04	4.050E-04	-8.558E-08
34	21	-1.558E-03	-1.660E-04	3.329E-04	1.081E-02	9.452E-02	1.081E-02	2.269E-04	-1.012E-02	-5.717E-07	-1.566E-06
34	31	1.219E-07	3.186E-03	1.029E-07	-3.630E-08	-2.102E-03	-8.637E-06	-1.083E-08	-1.957E-09	1.884E-07	1.010E-02
34	41	1.133E-03	1.377E-08	-5.087E-10	3.589E-07	-2.895E-04	1.291E-04	-1.233E-04			
35	1	-3.004E-03	-7.227E-05	3.544E-03	2.569E-03	8.452E-04	-4.875E-03	1.328E-04	1.531E-02	-1.796E-03	-4.402E-04
35	11	-1.627E-02	1.790E-04	3.279E-04	-3.733E-03	5.222E-05	-1.431E-04	8.621E-03	-5.567E-03	1.283E-03	5.183E-03
35	21	1.252E-03	1.492E-02	9.758E-03	7.346E-04	-1.162E-04	5.892E-04	-5.450E-04	-1.471E-05	-2.735E-02	-1.044E-02
35	31	-2.552E-01	7.800E-07	-2.267E-02	-7.896E-04	1.624E-10	1.238E-08	-1.287E-04	-9.395E-02	-3.122E-03	-8.721E-06
35	41	1.526E-06	-5.306E-02	-1.090E-04	4.320E-04	-1.362E-07	1.068E-08	1.291E-11			
36	1	-4.988E-06	-7.291E-04	2.604E-05	-1.455E-04	-1.859E-03	-9.192E-04	-1.808E-02	-8.260E-04	-1.064E-03	-1.170E-05
36	11	-6.627E-04	1.322E-02	5.016E-03	1.330E-03	7.911E-05	6.334E-04	-9.725E-03	-2.160E-02	-3.581E-02	3.098E-04
36	21	-2.034E-04	5.182E-04	-2.317E-04	-1.143E-04	-2.918E-03	4.319E-02	3.993E-02	8.487E-02	-8.396E-07	-1.315E-05
36	31	-9.004E-07	-1.141E-04	-8.360E-08	1.331E-06	4.958E-03	5.569E-05	9.991E-08	3.569E-08	-2.993E-06	-5.994E-04
36	41	1.150E-04	2.262E-07	-2.074E-08	1.890E-05	1.082E-04	-2.507E-03	2.452E-03			
37	1	1.982E-01	1.291E-02	1.185E-01	8.868E-02	-3.138E-02	1.950E-01	-1.339E-02	1.530E-02	1.673E-02	-2.430E-02
37	11	-9.465E-03	-1.068E-03	-1.621E-04	-2.759E-02	-1.216E-03	3.843E-04	-1.202E-02	7.245E-03	3.889E-04	-1.076E-04
37	21	-3.348E-03	2.419E-04	-1.668E-02	5.607E-04	4.877E-04	-8.328E-03	1.583E-02	-2.906E-03	-1.005E-03	2.445E-02
37	31	-3.717E-03	-3.298E-06	1.201E-02	-4.719E-01	-1.220E-06	9.962E-06	-1.458E-04	-1.640E-03	-4.569E-02	-8.107E-07
37	41	5.012E-06	6.431E-03	3.161E-03	9.250E-04	-3.687E-07	5.121E-07	-3.748E-09			
38	1	-8.413E-03	2.476E-01	-1.453E-02	1.111E-02	1.434E-01	3.136E-02	-6.568E-03	-2.037E-02	-8.744E-02	-3.034E-02
38	11	-1.520E-02	4.278E-01	2.005E-01	4.730E-02	2.834E-02	1.251E-02	-1.167E-02	-1.366E-02	8.936E-02	-9.408E-04
38	21	5.287E-03	-1.330E-02	1.157E-02	-2.855E-03	-1.340E-02	2.019E-03	1.393E-02	-6.234E-02	-3.856E-05	-2.594E-04
38	31	5.138E-06	-1.731E-02	-2.474E-06	1.612E-05	-1.526E-04	-1.536E-04	-2.349E-07	4.109E-07	-2.742E-06	5.436E-03
38	41	8.873E-05	1.688E-06	-1.592E-07	1.436E-04	-2.233E-04	9.023E-07	-2.380E-07			
39	1	3.964E-03	-7.448E-03	-1.557E-01	2.070E-01	6.852E-03	5.569E-03	-1.225E-02	4.872E-02	3.122E-02	-4.850E-02
39	11	2.819E-01	8.237E-04	-1.150E-03	5.147E-02	3.938E-04	3.813E-04	-1.952E-02	1.154E-02	-1.984E-03	4.921E-03
39	21	-3.603E-04	-6.180E-04	8.990E-03	-6.546E-04	-8.149E-06	3.425E-05	3.764E-04	-1.787E-04	4.119E-01	-1.868E-03
39	31	-5.897E-02	1.305E-07	-2.190E-03	-3.695E-04	6.770E-09	-1.311E-08	1.995E-04	-3.720E-03	1.422E-03	-3.499E-08
39	41	1.237E-07	-9.587E-04	-8.927E-05	8.125E-05	-3.097E-08	2.967E-08	-1.678E-10			
40	1	3.787E-05	-8.653E-04	4.890E-05	-4.118E-05	4.940E-03	8.965E-04	1.130E-04	-2.180E-04	-1.425E-03	-5.781E-04
40	11	-1.515E-04	-3.782E-04	1.249E-02	1.361E-03	-2.647E-02	-8.532E-03	5.835E-04	1.063E-03	3.910E-04	-2.586E-05
40	21	-5.434E-03	-5.563E-04	8.163E-04	1.389E-02	3.237E-02	-6.840E-04	-2.010E-03	-6.125E-04	1.420E-06	1.054E-05
40	31	-3.813E-07	-3.277E-02	-1.020E-06	-5.358E-07	-1.689E-03	1.965E-05	3.490E-08	-3.991E-09	-6.675E-07	-4.253E-01
40	41	-4.962E-02	-1.310E-06	9.007E-08	-7.982E-05	3.285E-04	-1.484E-04	1.435E-05			
41	1	-3.180E-03	9.154E-05	3.455E-03	3.071E-03	8.768E-04	-5.039E-03	1.522E-04	1.058E-02	4.924E-04	-4.162E-03
41	11	-3.556E-03	5.406E-04	7.182E-04	-4.566E-03	1.220E-04	-2.246E-04	1.330E-02	-8.569E-03	1.797E-03	3.432E-04
41	21	1.801E-03	7.458E-03	-2.575E-03	1.497E-03	-1.767E-04	7.660E-04	-5.377E-04	-7.114E-05	-7.241E-03	-2.926E-03
41	31	-6.922E-02	-6.531E-07	2.007E-02	4.543E-03	3.010E-08	2.553E-07	-2.238E-03	-4.466E-02	7.021E-03	5.255E-07
41	41	-9.637E-06	4.175E-01	-3.113E-03	-3.771E-03	1.212E-06	-1.578E-07	-1.158E-09			
42	1	-5.458E-06	-7.003E-04	2.185E-05	-1.386E-04	-1.365E-03	-7.387E-04	-1.411E-02	-4.094E-05	7.833E-03	4.023E-03
42	11	-6.867E-04	2.632E-03	1.151E-03	-2.365E-05	-1.395E-03	1.596E-03	-7.613E-03	-1.598E-02	-7.157E-03	-3.620E-05
42	21	3.285E-04	-3.381E-03	3.082E-03	1.278E-03	-5.169E-03	3.529E-02	1.790E-02	8.394E-03	3.311E-06	7.566E-05
42	31	5.099E-06	-1.643E-04	1.026E-06	-2.976E-05	1.625E-03	-1.260E-03	-2.380E-06	-1.038E-06	9.864E-06	4.257E-04

MODEL RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

10.29.17 CLOCK TIME
38.467 SEC. CPTIME
31093 SEC. PPTIME

MODES	(54 X 47)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
4.	41	-9.217E-03	-1.365E-05	1.338E-06	-1.230E-03	-1.846E-03	2.533E-01	-1.348E+00			
43	1	1.981E-01	1.231E-02	1.184E-01	8.860E-02	-3.137E-02	1.950E-01	-1.337E-02	1.569E-02	1.682E-02	-2.482E-02
43	11	-9.409E-03	-9.441E-04	-1.035E-04	-2.529E-02	-9.760E-04	2.756E-04	-8.178E-03	4.881E-03	3.134E-04	-3.579E-04
43	21	-2.207E-03	-4.718E-03	-1.654E-02	5.200E-04	1.646E-04	-2.208E-03	2.619E-03	-9.052E-05	-7.145E-04	-3.735E-01
43	31	1.218E-02	-4.128E-06	-1.116E-02	1.696E-01	1.339E-06	-1.134E-05	-2.684E-05	-8.344E-04	8.976E-02	3.319E-06
43	41	-2.198E-05	-1.613E-03	-3.852E-04	-5.737E-03	2.315E-06	-5.288E-06	2.393E-07			
44	1	-8.470E-03	2.358E-01	-1.401E-02	8.629E-03	1.345E-01	2.225E-02	-2.028E-01	-8.161E-03	1.842E-01	9.958E-02
44	11	-1.788E-02	-8.189E-02	-8.310E-02	-2.537E-02	-2.200E-02	5.241E-04	1.784E-02	1.386E-02	-1.688E-03	-1.254E-04
44	21	-4.088E-03	3.150E-03	-4.784E-03	9.706E-03	-8.915E-03	1.352E-01	-2.922E-01	5.630E-02	1.001E-03	1.111E-02
44	31	-1.163E-04	2.306E-04	1.541E-04	-2.464E-03	-5.237E-05	1.628E-04	-6.947E-06	-8.281E-05	6.498E-03	-1.952E-05
44	41	6.268E-04	-7.128E-04	7.068E-05	-6.450E-02	5.276E-05	-2.455E-03	2.393E-03			
45	1	5.223E-02	-5.950E-03	-2.017E-01	1.604E-01	-2.354E-03	5.188E-02	-1.033E-02	-2.173E-01	-2.900E-02	1.428E-01
45	11	-1.389E-01	-1.064E-02	-8.666E-03	-6.906E-02	-5.011E-03	-8.693E-04	3.821E-02	-1.573E-02	3.525E-03	-8.048E-04
45	21	-2.053E-02	1.213E-02	-1.255E-02	-8.898E-03	3.498E-03	-3.593E-02	5.643E-02	-8.042E-03	-6.725E-03	-3.791E-02
45	31	-1.796E-03	-3.095E-06	-1.026E-03	4.674E-02	-1.071E-06	-2.988E-06	3.384E-04	4.090E-03	-9.316E-01	6.971E-06
45	41	1.174E-05	9.630E-03	1.296E-06	-3.199E-02	1.256E-05	-1.770E-05	2.314E-07			
46	1	5.148E-05	-1.078E-03	4.142E-05	-2.724E-05	1.628E-03	3.195E-04	9.341E-04	-1.040E-04	-1.347E-03	-6.098E-04
46	11	-1.103E-04	-6.981E-03	2.277E-02	2.090E-03	-4.285E-02	1.651E-02	2.871E-03	3.508E-03	-3.889E-04	-5.548E-05
46	21	-1.305E-02	-1.126E-03	1.677E-03	2.614E-02	-9.576E-03	-1.261E-02	-5.623E-03	9.414E-03	4.529E-06	2.847E-05
46	31	-1.014E-06	9.696E-04	2.530E-07	-1.165E-06	2.915E-05	3.387E-05	5.815E-08	-1.134E-08	-1.874E-07	2.781E-03
46	41	4.550E-03	7.232E-07	-6.987E-08	6.515E-05	-5.758E-06	2.898E-04	-2.641E-04			
47	1	-3.485E-03	-1.264E-04	2.919E-03	3.095E-03	2.087E-04	-1.088E-03	-1.030E-05	8.712E-03	1.296E-03	-8.213E-03
47	11	8.428E-03	1.850E-03	2.573E-03	-1.981E-02	2.383E-04	-8.599E-04	5.031E-02	-3.199E-02	6.634E-03	-1.253E-03
47	21	5.477E-03	1.780E-02	-2.123E-02	5.232E-03	-4.571E-04	8.370E-04	1.132E-03	-6.888E-04	-1.096E-03	3.402E-04
47	31	3.578E-03	-1.097E-07	-5.662E-04	-8.420E-05	-1.496E-08	7.234E-07	-4.914E-03	6.013E-04	-2.426E-04	6.532E-07
47	41	-5.658E-06	-2.646E-03	1.853E-05	1.527E-05	1.357E-09	-2.980E-07	5.122E-08			
48	1	-7.800E-06	-5.746E-04	2.657E-06	-1.146E-04	-7.983E-04	-4.663E-04	-8.355E-03	1.680E-04	7.527E-03	3.727E-03
48	11	-3.572E-04	-1.024E-02	-2.714E-03	-1.265E-03	-4.143E-03	4.694E-03	-1.730E-02	-3.419E-02	9.417E-03	-4.114E-04
48	21	1.451E-03	-1.193E-02	1.074E-02	3.979E-03	-1.397E-02	6.930E-02	3.339E-02	-5.809E-02	-3.319E-05	-2.364E-04
48	31	2.269E-05	-4.126E-04	-3.540E-06	1.744E-05	-5.302E-05	-3.913E-03	-6.948E-06	5.694E-07	1.140E-06	1.742E-03
48	41	-2.455E-02	-2.140E-06	3.947E-08	-3.908E-05	3.150E-05	-2.459E-03	2.304E-03			
49	1	4.009E-02	8.687E-03	3.257E-01	2.828E-01	5.763E-02	-3.386E-01	1.564E-02	-1.507E-01	-6.908E-03	3.651E-02
49	11	8.985E-03	-7.366E-04	-9.790E-04	6.583E-03	-6.367E-05	1.066E-04	-6.043E-03	3.831E-03	-7.403E-04	-1.354E-04
49	21	-6.493E-04	-2.599E-03	9.811E-04	-4.583E-04	3.553E-05	-1.199E-04	5.298E-05	1.594E-06	5.895E-04	1.260E-04
49	31	2.340E-03	-5.892E-07	1.738E-02	7.595E-04	8.863E-10	-1.954E-08	5.564E-05	1.008E-03	-9.310E-05	-6.176E-09
49	41	1.152E-07	4.343E-03	2.881E-05	3.573E-05	-1.127E-08	8.273E-10	1.458E-12			
50	1	-1.056E-02	3.031E-01	-1.899E-02	1.537E-02	-4.790E-01	-8.007E-02	3.315E-02	2.601E-03	2.627E-03	1.972E-04
50	11	3.528E-04	-1.228E-02	1.179E-02	5.769E-04	-1.735E-02	-4.289E-03	3.667E-04	5.942E-04	-3.460E-04	-3.652E-06
50	21	-2.060E-03	-1.133E-04	2.110E-04	4.240E-03	6.841E-03	-1.329E-04	-3.669E-04	2.770E-05	1.291E-07	2.668E-07
50	31	-5.772E-09	1.701E-02	5.798E-07	-4.867E-08	-4.248E-05	6.924E-07	1.174E-09	-5.676E-10	1.371E-08	-5.361E-03
50	41	-6.077E-04	-1.440E-08	9.412E-10	-8.254E-07	3.189E-06	-9.029E-07	1.698E-08			
51	1	3.961E-03	-7.449E-03	-1.558E-01	2.071E-01	6.873E-03	5.587E-03	-1.232E-02	4.960E-02	3.208E-02	-4.991E-02
51	11	3.078E-01	9.565E-04	-1.343E-03	6.068E-02	5.618E-04	6.246E-04	-3.323E-02	1.688E-02	-3.690E-03	8.431E-03

10.23.18 CLOCK TIME
MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB
38.812 SEC. CPTIME
31141 SEC. PPTIME

MODES (54 X 47) /OUTPUT/ CONTINUED

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
51	21	-7.315E-04	-1.348E-03	2.000E-02	-1.710E-03	-6.699E-05	2.072E-03	-4.128E-03	7.980E-04	-3.953E-01	9.135E-04
51	31	2.359E-02	-2.743E-08	4.580E-04	4.268E-05	-6.404E-10	1.225E-09	-1.857E-05	3.198E-04	-1.085E-04	1.779E-09
51	41	-6.097E-09	4.038E-05	3.513E-06	-3.161E-06	1.186E-09	-7.398E-10	7.712E-13			
52	1	4.385E-05	-1.161E-03	9.730E-05	-9.425E-05	1.398E-02	2.501E-03	-9.800E-04	-5.102E-04	-1.887E-03	-8.205E-04
52	11	-3.485E-04	1.093E-02	2.049E-03	8.702E-04	6.842E-03	2.296E-03	-4.397E-04	-6.029E-04	1.736E-03	-1.883E-05
52	21	1.406E-03	-2.251E-04	1.184E-04	-3.356E-03	-8.336E-03	2.299E-04	9.272E-04	-1.742E-03	-1.878E-06	-1.756E-05
52	31	5.035E-07	4.363E-01	1.476E-05	-7.608E-07	-3.473E-04	7.675E-06	1.264E-08	-9.200E-09	3.699E-07	-3.418E-02
52	41	-3.824E-03	-9.499E-08	6.297E-09	-5.520E-06	1.985E-05	-5.008E-06	8.035E-08			
53	1	-3.158E-03	-8.307E-05	4.286E-03	4.048E-03	1.965E-03	-1.183E-02	6.684E-04	-6.170E-03	-6.725E-04	2.323E-03
53	11	1.186E-03	-1.046E-04	-1.702E-04	1.799E-03	3.034E-06	4.186E-05	-2.761E-03	1.792E-03	-4.270E-04	-7.686E-05
53	21	-3.307E-04	-1.750E-03	1.049E-03	-3.686E-04	2.955E-05	5.001E-05	-3.325E-04	1.074E-04	2.328E-03	-2.335E-04
53	31	3.560E-02	1.479E-05	-4.353E-01	-1.596E-02	-2.366E-08	2.907E-07	-4.552E-04	-7.864E-03	2.344E-04	3.449E-08
53	41	-6.970E-07	2.633E-02	-1.585E-04	-2.089E-04	6.537E-08	-3.281E-09	-8.950E-12			
54	1	-5.458E-06	-7.003E-04	2.185E-05	-1.386E-04	-1.365E-03	-7.388E-04	-1.411E-02	-4.096E-05	7.837E-03	4.025E-03
54	11	-6.900E-04	2.639E-03	1.155E-03	-2.373E-05	-1.404E-03	1.609E-03	-7.680E-03	-1.612E-02	-7.228E-03	-3.859E-05
54	21	3.321E-04	-3.420E-03	3.119E-03	1.295E-03	-5.267E-03	3.604E-02	1.832E-02	8.617E-03	3.461E-06	8.088E-05
54	31	5.507E-06	-1.871E-04	1.170E-06	-3.742E-05	2.152E-03	-1.701E-03	-3.168E-06	-1.417E-06	1.407E-04	7.574E-04
54	41	-1.679E-02	-2.869E-05	3.033E-06	-2.833E-03	-4.338E-03	1.985E+00	3.711E-01			

END OF WRITE.

W2B (1 X 10) /INPUT/ 0

1	1	5.99000000E+01	0.	0.	0.
1	2	1.03300000E+02	0.	0.	0.
1	3	2.69500000E+02	0.	0.	0.
1	4	3.65100000E+02	0.	0.	0.
1	5	1.99300000E+03	0.	0.	0.
1	6	2.11600000E+03	0.	0.	0.
1	7	3.48100000E+03	0.	0.	0.
1	8	1.17300000E+04	0.	0.	
1	9	1.77200000E+04	0.		
1	10	1.87100000E+04			

END OF READ.

Table B-5. Baseline payload model A constraint modes

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

10.24.37 CLOCK TIME
39.186 SEC. CPTIME
31512 SEC. PPTIME

TR (54 X 7) /OUTPUT/ CONTINUED

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
7	1	1.000E+00	6.008E-03	-6.008E-03	1.238E-12	-6.008E-03	6.008E-03	2.308E-13			
8	1	-3.138E-01	-2.616E-01	-3.182E-01	3.138E-01	2.616E-01	3.182E-01	1.000E+00			
9	1	0.	0.	1.000E+00	0.	0.	0.	0.			
10	1	-8.302E-15	-7.713E-04	6.090E-03	-8.380E-15	7.713E-04	-6.090E-03	-8.871E-16			
11	1	-1.617E-14	9.562E-03	-9.562E-03	-1.600E-14	8.597E-03	-8.597E-03	7.566E-16			
12	1	-5.319E-03	5.526E-05	-5.526E-05	5.319E-03	-5.526E-05	5.526E-05	-2.008E-15			
13	1	0.	0.	0.	1.000E+00	0.	0.	0.			
14	1	-2.090E-02	-4.422E-01	-1.376E-01	2.090E-02	4.422E-01	1.376E-01	1.000E+00			
15	1	0.	0.	0.	0.	1.000E+00	0.	0.			
16	1	-7.488E-15	6.127E-03	-8.080E-04	-7.749E-15	-6.127E-03	8.080E-04	-1.761E-15			
17	1	-2.520E-14	8.856E-03	-8.856E-03	-2.456E-14	9.303E-03	-9.303E-03	1.455E-15			
18	1	-5.319E-03	5.526E-05	-5.526E-05	5.319E-03	-5.526E-05	5.526E-05	3.193E-16			
19	1	1.239E-12	-6.008E-03	6.008E-03	1.000E+00	6.008E-03	-6.008E-03	-2.142E-13			
20	1	-3.138E-01	-2.616E-01	-3.182E-01	3.138E-01	2.616E-01	3.182E-01	1.000E+00			
21	1	0.	0.	0.	0.	0.	1.000E+00	0.			
22	1	8.366E-15	-7.713E-04	6.090E-03	8.316E-15	7.713E-04	-6.090E-03	-1.011E-15			
23	1	-1.587E-14	8.597E-03	-8.597E-03	-1.630E-14	9.562E-03	-9.562E-03	-4.309E-16			
24	1	-5.319E-03	5.526E-05	-5.526E-05	5.319E-03	-5.526E-05	5.526E-05	-2.008E-15			
25	1	5.000E-01	-9.896E-01	9.896E-01	5.000E-01	-9.896E-01	9.896E-01	-2.377E-14			
26	1	0.	0.	0.	0.	0.	0.	1.000E+00			
27	1	-5.497E-13	5.357E-01	-3.568E-02	-5.559E-13	5.357E-01	-3.568E-02	7.023E-15			
28	1	-1.117E-15	3.499E-03	1.820E-03	1.117E-15	-3.499E-03	-1.820E-03	1.907E-14			
29	1	-2.086E-14	9.079E-03	-9.079E-03	-2.096E-14	9.079E-03	-9.079E-03	2.405E-16			
30	1	-5.319E-03	5.526E-05	-5.526E-05	5.319E-03	-5.526E-05	5.526E-05	-4.034E-15			
31	1	5.000E-01	-3.087E-01	3.087E-01	5.000E-01	-3.087E-01	3.087E-01	-6.655E-15			
32	1	-6.346E-02	-2.618E-01	-1.372E-01	6.346E-02	2.618E-01	1.372E-01	1.000E+00			
33	1	-3.008E-13	4.274E-01	7.263E-02	-3.059E-13	4.274E-01	7.263E-02	4.305E-15			
34	1	-2.631E-16	3.499E-03	1.820E-03	2.643E-16	-3.499E-03	-1.820E-03	4.368E-15			
35	1	-2.086E-14	9.079E-03	-9.079E-03	-2.096E-14	9.079E-03	-9.079E-03	1.991E-16			
36	1	-5.319E-03	5.526E-05	-5.526E-05	5.319E-03	-5.526E-05	5.526E-05	-1.700E-15			
37	1	5.000E-01	-3.087E-01	3.087E-01	5.000E-01	-3.087E-01	3.087E-01	-6.655E-15			
38	1	-1.432E-01	-2.609E-01	-1.380E-01	1.432E-01	2.609E-01	1.380E-01	1.000E+00			
39	1	-9.616E-15	2.912E-01	2.088E-01	-1.299E-14	2.912E-01	2.088E-01	1.481E-15			
40	1	-1.967E-16	2.693E-03	2.626E-03	1.948E-16	-2.693E-03	-2.626E-03	3.346E-15			
41	1	-1.881E-14	9.079E-03	-9.079E-03	-1.893E-14	9.079E-03	-9.079E-03	1.837E-16			
42	1	-5.319E-03	5.526E-05	-5.526E-05	5.319E-03	-5.526E-05	5.526E-05	-1.892E-15			
43	1	5.000E-01	-3.087E-01	3.087E-01	5.000E-01	-3.087E-01	3.087E-01	-6.655E-15			
44	1	-2.230E-01	-2.601E-01	-1.388E-01	2.230E-01	2.601E-01	1.388E-01	1.000E+00			
45	1	2.568E-13	1.550E-01	3.450E-01	2.554E-13	1.550E-01	3.450E-01	-1.154E-15			
46	1	-1.336E-16	1.886E-03	3.433E-03	1.340E-16	-1.886E-03	-3.433E-03	2.321E-15			
47	1	-1.753E-14	9.079E-03	-9.079E-03	-1.767E-14	9.079E-03	-9.079E-03	1.741E-16			
48	1	-5.319E-03	5.526E-05	-5.526E-05	5.319E-03	-5.526E-05	5.526E-05	-2.008E-15			
49	1	5.000E-01	1.453E-01	-1.453E-01	5.000E-01	1.453E-01	-1.453E-01	2.527E-15			
50	1	-1.432E-01	-3.956E-01	-2.693E-01	1.432E-01	3.956E-01	2.693E-01	1.000E+00			
51	1	-9.635E-15	2.912E-01	2.088E-01	-1.303E-14	2.912E-01	2.088E-01	1.481E-15			
52	1	-1.654E-16	2.693E-03	2.626E-03	1.435E-16	-2.693E-03	-2.626E-03	2.986E-15			
53	1	-1.872E-14	9.079E-03	-9.079E-03	-1.886E-14	9.079E-03	-9.079E-03	1.837E-16			
54	1	-5.319E-03	5.526E-05	-5.526E-05	5.319E-03	-5.526E-05	5.526E-05	-1.902E-15			

END OF WRITE.

END OF READ.

Table B-6. Baseline payload model B constraint modes

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

10.27.24 CLOCK TIME
39.928 SEC. CPTIME
31743 SEC. PPTIME

IVEC (1 X 7) /INPUT/ 0

1 1 6 8 9 15 17 18 21

END OF READIM.

TR 0 13 8FREE /INPUT/ 0

SIZE OF MATRIX READ IS (54 X 7)

TR (54 X 7) /OUTPUT/

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1	2.501E-03	1.000E+00	-2.501E-03	-2.501E-03	-8.635E-13	2.501E-03	2.594E-12			
2	1	-2.876E-01	3.138E-01	-2.921E-01	2.876E-01	-3.138E-01	2.921E-01	1.000E+00			
3	1	1.000E+00	0.	0.	0.	0.	0.	0.			
4	1	5.875E-03	-3.923E-15	-5.555E-04	-5.875E-03	-3.920E-15	5.555E-04	6.122E-17			
5	1	9.338E-03	-3.419E-14	-9.338E-03	8.824E-03	-3.144E-14	-8.824E-03	-4.975E-15			
6	1	5.382E-05	-5.319E-03	-5.382E-05	-5.382E-05	5.319E-03	5.382E-05	-2.864E-14			
7	1	0.	1.000E+00	0.	0.	0.	0.	0.			
8	1	-1.045E-01	2.096E-02	-4.753E-01	1.045E-01	-2.096E-02	4.753E-01	1.000E+00			
9	1	0.	0.	1.000E+00	0.	0.	0.	0.			
10	1	-6.077E-04	-3.090E-14	5.927E-03	6.077E-04	-2.973E-14	-5.927E-03	-1.627E-15			
11	1	9.234E-03	-3.351E-14	-9.234E-03	8.928E-03	-2.444E-14	-8.928E-03	-1.072E-14			
12	1	5.382E-05	-5.319E-03	-5.382E-05	-5.382E-05	5.319E-03	5.382E-05	2.713E-15			
13	1	-2.770E-03	-1.314E-12	2.770E-03	2.770E-03	1.000E+00	-2.770E-03	-4.015E-12			
14	1	-2.876E-01	3.138E-01	-2.921E-01	2.876E-01	-3.138E-01	2.921E-01	1.000E+00			
15	1	0.	0.	0.	1.000E+00	0.	0.	0.			
16	1	5.875E-03	4.692E-15	-5.555E-04	-5.875E-03	2.729E-15	5.555E-04	2.110E-15			
17	1	8.697E-03	-3.699E-14	-8.697E-03	9.465E-03	-2.906E-14	-9.465E-03	-1.188E-14			
18	1	5.382E-05	-5.319E-03	-5.382E-05	-5.382E-05	5.319E-03	5.382E-05	-4.370E-14			
19	1	0.	0.	0.	0.	1.000E+00	0.	0.			
20	1	-1.070E-01	2.096E-02	-4.728E-01	1.070E-01	-2.096E-02	4.728E-01	1.000E+00			
21	1	0.	0.	0.	0.	0.	1.000E+00	0.			
22	1	-6.077E-04	9.505E-14	5.927E-03	6.077E-04	2.757E-14	-5.927E-03	9.105E-15			
23	1	8.801E-03	-2.683E-14	-8.801E-03	9.361E-03	-3.063E-14	-9.361E-03	6.227E-15			
24	1	5.382E-05	-5.319E-03	-5.382E-05	-5.382E-05	5.319E-03	5.382E-05	5.160E-15			
25	1	-9.831E-01	5.000E-01	9.831E-01	-9.966E-01	5.000E-01	9.966E-01	2.868E-13			
26	1	0.	0.	0.	0.	0.	0.	1.000E+00			
27	1	-3.204E-02	2.265E-12	5.320E-01	-3.952E-02	1.992E-12	5.395E-01	3.421E-13			
28	1	1.399E-03	-1.445E-14	3.920E-03	-1.399E-03	1.732E-14	-3.920E-03	-3.791E-14			
29	1	9.018E-03	-3.194E-14	-9.018E-03	9.144E-03	-2.898E-14	-9.144E-03	-3.168E-15			
30	1	5.382E-05	-5.319E-03	-5.382E-05	-5.382E-05	5.319E-03	5.382E-05	-2.066E-14			
31	1	-3.067E-01	5.000E-01	3.067E-01	-3.108E-01	5.000E-01	3.108E-01	4.657E-14			
32	1	-1.073E-01	2.344E-01	-2.917E-01	1.073E-01	-2.344E-01	2.917E-01	1.000E+00			
33	1	3.654E-01	8.130E-13	1.346E-01	3.635E-01	6.730E-13	1.365E-01	1.832E-13			
34	1	3.856E-03	-1.364E-15	1.483E-03	-3.856E-03	1.871E-15	-1.483E-03	-3.921E-15			
35	1	9.018E-03	-3.412E-14	-9.018E-03	9.144E-03	-3.020E-14	-9.144E-03	-5.597E-15			
36	1	5.382E-05	-5.319E-03	-5.382E-05	-5.382E-05	5.319E-03	5.382E-05	-2.958E-14			
37	1	-3.067E-01	5.000E-01	3.067E-01	-3.108E-01	5.000E-01	3.108E-01	4.657E-14			
38	1	-1.065E-01	1.546E-01	-2.925E-01	1.065E-01	-1.546E-01	2.925E-01	1.000E+00			
39	1	2.301E-01	1.321E-12	2.699E-01	2.263E-01	1.132E-12	2.737E-01	2.489E-13			
40	1	2.628E-03	-2.402E-15	2.692E-03	-2.628E-03	3.347E-15	-2.692E-03	-6.941E-16			
41	1	9.018E-03	-3.314E-14	-9.018E-03	9.144E-03	-2.987E-14	-9.144E-03	-4.177E-15			

Table B-6 (Continued)

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

10.27.25 CLOCK TIME
40.231 SEC. CPTIME
31919 SEC. PPTIME

TR (54 X 7) /OUTPUT/ CONTINUED

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
42	1	5.382E-05	-5.319E-03	-5.382E-05	-5.382E-05	5.319E-03	5.382E-05	-2.386E-14			
43	1	-3.067E-01	5.000E-01	3.067E-01	-3.108E-01	5.000E-01	3.108E-01	4.657E-14			
44	1	-1.057E-01	7.484E-02	-2.933E-01	1.057E-01	-7.484E-02	2.933E-01	1.000E+00			
45	1	9.484E-02	1.814E-12	4.052E-01	8.914E-02	1.583E-12	4.109E-01	2.971E-13			
46	1	1.399E-03	-3.445E-15	3.920E-03	-1.399E-03	4.822E-15	-3.920E-03	-9.969E-15			
47	1	9.018E-03	-3.213E-14	-9.018E-03	9.144E-03	-2.914E-14	-9.144E-03	-3.272E-15			
48	1	5.382E-05	-5.319E-03	-5.382E-05	-5.382E-05	5.319E-03	5.382E-05	-1.542E-14			
49	1	1.441E-01	5.000E-01	-1.441E-01	1.464E-01	5.000E-01	-1.464E-01	-1.623E-13			
50	1	-2.378E-01	1.546E-01	-4.271E-01	2.378E-01	-1.546E-01	4.271E-01	1.000E+00			
51	1	2.301E-01	1.321E-12	2.699E-01	2.263E-01	1.132E-12	2.737E-01	2.489E-13			
52	1	2.628E-03	-2.408E-15	2.692E-03	-2.628E-03	3.343E-15	-2.692E-03	-7.110E-15			
53	1	9.018E-03	-3.290E-14	-9.018E-03	9.144E-03	-2.958E-14	-9.144E-03	-4.177E-15			
54	1	5.382E-05	-5.319E-03	-5.382E-05	-5.382E-05	5.319E-03	5.382E-05	-2.384E-14			

END OF WRITE.

END OF READ.

APPENDIX C

BASELINE COUPLED SYSTEM MODAL MODES

RUN NO. ORBIT

Table C-1. Baseline coupled system modal modes

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.33.31 CLOCK TIME
149.046 SEC. CPTIME
48687 SEC. PPTIME

FREQ (84 X 1) /OUTPUT/ CONTINUED

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
52	1	1.685E+01									
53	1	1.723E+01									
54	1	1.733E+01									
55	1	1.739E+01									
56	1	1.749E+01									
57	1	1.805E+01									
58	1	1.839E+01									
59	1	1.884E+01									
60	1	1.930E+01									
61	1	1.959E+01									
62	1	1.965E+01									
63	1	1.970E+01									
64	1	1.982E+01									
65	1	1.997E+01									
66	1	2.009E+01									
67	1	2.120E+01									
68	1	2.177E+01									
69	1	2.517E+01									
70	1	2.735E+01									
71	1	2.823E+01									
72	1	3.069E+01									
73	1	3.152E+01									
74	1	3.383E+01									
75	1	3.417E+01									
76	1	3.482E+01									
77	1	3.716E+01									
78	1	3.813E+01									
79	1	4.276E+01									
80	1	4.608E+01									
81	1	4.845E+01									
82	1	5.128E+01									
83	1	5.159E+01									
84	1	5.275E+01									

END OF WRITE.

MODES (84 X 84) /OUTPUT/

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1	6.373E-01	7.064E-01	6.940E-03	1.395E-02	1.573E-01	4.799E-04	1.501E-01	9.720E-03	8.180E-02	5.105E-02
1	11	1.602E-01	1.249E-04	6.804E-05	6.464E-06	3.769E-02	9.383E-02	1.444E-04	7.507E-03	8.617E-03	8.316E-04
1	21	8.190E-03	3.775E-03	2.840E-03	6.154E-03	1.473E-04	3.440E-04	1.906E-04	3.375E-03	8.511E-05	6.281E-06
1	31	1.487E-04	3.826E-04	1.111E-02	5.363E-03	3.112E-02	2.934E-03	3.320E-04	3.053E-06	8.436E-06	1.003E-05
1	41	7.025E-05	5.683E-05	6.086E-05	2.127E-03	1.121E-04	6.869E-04	4.695E-04	7.124E-05	3.194E-06	1.506E-03
1	51	9.838E-05	6.962E-04	3.651E-03	3.426E-04	8.134E-05	7.850E-05	2.295E-04	4.126E-04	1.517E-04	8.496E-05
1	61	5.357E-03	8.862E-06	3.164E-05	1.891E-04	2.041E-05	6.883E-05	2.652E-03	5.366E-04	3.216E-06	2.698E-05
1	71	9.009E-05	2.553E-04	8.317E-05	9.150E-07	5.191E-07	3.404E-05	1.951E-06	3.546E-05	6.394E-06	2.363E-05
1	81	2.402E-07	4.586E-03	5.897E-06	7.233E-06						
2	1	-9.725E-03	2.409E-03	5.290E-01	7.807E-01	-6.348E-02	-1.808E-01	-9.822E-03	1.792E-01	-4.752E-03	-9.927E-04
2	11	6.103E-04	1.780E-01	-2.718E-02	8.512E-02	1.216E-04	-9.448E-05	7.508E-03	-3.933E-04	-8.094E-04	1.508E-02
2	21	2.352E-03	1.146E-04	-7.552E-04	2.078E-04	8.245E-04	-4.409E-03	4.885E-04	8.664E-03	8.413E-03	3.473E-03

MODEL RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.33.32 CLOCK TIME
149.253 SEC. CPTIME
48735 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2	31	-1.558E-03	4.868E-04	-1.232E-03	2.561E-03	1.773E-05	-1.334E-04	3.621E-05	3.359E-04	2.388E-04	1.634E-03
2	41	5.200E-04	-7.543E-04	-5.010E-04	-4.998E-05	-7.764E-04	1.915E-06	-1.951E-05	3.267E-05	1.445E-05	-1.263E-05
2	51	-8.267E-04	1.699E-05	-1.507E-04	-2.859E-05	1.880E-04	5.893E-04	3.534E-05	2.067E-04	-1.538E-03	-1.689E-03
2	61	3.860E-06	-1.436E-03	-1.294E-04	-2.149E-04	1.240E-02	-7.148E-05	6.857E-04	-3.461E-04	-1.146E-03	9.151E-05
2	71	3.615E-05	9.876E-05	-1.244E-04	-4.161E-03	7.681E-04	8.507E-06	-1.507E-04	1.433E-05	2.470E-05	3.393E-06
2	81	2.729E-06	-6.988E-08	1.065E-05	-8.875E-07						
3	1	6.971E-01	-5.388E-01	-1.141E-03	-2.220E-02	-4.027E-01	-2.465E-03	1.610E-02	-4.901E-03	-1.226E-01	-1.219E-01
3	11	6.966E-02	6.305E-04	-8.127E-05	5.662E-05	4.618E-02	3.177E-02	-2.135E-04	-4.670E-02	-5.522E-02	-3.899E-04
3	21	-1.354E-03	-3.421E-02	-3.339E-02	-9.944E-02	-3.222E-03	5.394E-04	2.716E-02	1.388E-02	-4.684E-03	1.653E-04
3	31	1.685E-04	-3.021E-03	1.175E-02	7.028E-03	-1.483E-02	-1.915E-03	-9.893E-04	2.493E-04	-2.622E-04	1.554E-04
3	41	4.455E-04	8.950E-05	1.200E-04	2.541E-03	-3.129E-05	-1.064E-03	-7.397E-04	-3.705E-04	4.434E-06	4.518E-04
3	51	2.464E-04	2.054E-03	4.714E-03	1.042E-03	1.592E-04	2.312E-05	-1.590E-03	1.623E-03	5.478E-04	2.777E-04
3	61	2.618E-03	1.246E-04	-1.725E-04	2.017E-04	6.670E-05	9.473E-05	7.094E-03	-2.188E-03	-1.098E-04	4.460E-06
3	71	-1.330E-04	-9.027E-04	-4.228E-04	-1.620E-06	-2.387E-05	-8.625E-05	-1.079E-04	-2.539E-04	6.096E-06	-2.287E-04
3	81	-1.265E-04	1.996E-03	-4.005E-05	-3.203E-05						
4	1	8.009E-04	7.082E-04	-1.489E-01	-1.088E-01	1.278E-02	-9.804E-01	2.089E-03	-2.946E-02	1.867E-04	-3.872E-04
4	11	3.381E-04	-3.821E-02	5.309E-03	-1.708E-02	-1.552E-04	4.337E-05	2.332E-03	-3.700E-04	-1.055E-03	1.975E-02
4	21	4.309E-03	7.466E-05	-7.834E-05	-4.574E-04	-2.785E-04	9.519E-04	1.413E-04	-2.975E-03	-2.264E-03	-8.718E-04
4	31	3.965E-04	-1.403E-04	5.045E-04	-8.353E-04	-2.683E-05	-1.565E-04	-5.984E-05	-4.766E-04	2.755E-04	-3.158E-04
4	41	8.158E-05	-1.519E-04	-1.600E-04	5.840E-05	-1.958E-04	-2.425E-04	-5.977E-05	-5.185E-05	-3.308E-05	-1.881E-04
4	51	-5.707E-04	-2.755E-04	-1.773E-03	-1.191E-04	3.782E-05	2.450E-04	-2.535E-04	4.300E-04	-1.009E-03	-1.555E-03
4	61	2.557E-05	-1.336E-03	-9.908E-05	-1.671E-04	1.086E-02	-1.889E-04	-5.317E-03	1.557E-03	-1.245E-03	2.584E-04
4	71	4.069E-05	1.116E-04	-2.113E-04	6.694E-04	6.735E-05	6.869E-05	-3.389E-04	2.117E-05	1.270E-04	1.562E-05
4	81	3.311E-06	2.573E-06	4.166E-05	-5.761E-05						
5	1	-2.230E-01	3.971E-01	-1.722E-02	-5.459E-02	-8.842E-01	-1.646E-03	-8.650E-03	-2.350E-04	1.282E-02	-1.716E-02
5	11	-2.264E-03	-6.849E-06	1.353E-05	-1.392E-05	3.207E-02	2.919E-02	-2.221E-04	-2.003E-02	-2.345E-02	-2.940E-03
5	21	1.450E-03	-1.447E-02	-1.420E-02	-4.219E-02	-1.360E-03	-1.412E-04	1.254E-02	2.698E-03	-2.540E-03	6.180E-05
5	31	1.011E-04	-1.360E-03	6.596E-03	3.783E-03	-2.392E-03	-2.417E-04	-3.900E-04	5.835E-05	-6.105E-05	9.985E-05
5	41	2.344E-04	-5.733E-06	2.212E-05	1.295E-03	-2.730E-05	-2.424E-04	-1.868E-04	-1.335E-04	2.781E-06	3.982E-04
5	51	1.946E-05	8.787E-04	7.244E-04	3.542E-04	6.304E-05	7.321E-05	-7.325E-04	8.957E-04	1.131E-04	-1.453E-05
5	61	1.472E-03	-1.893E-05	-6.494E-05	1.261E-04	8.263E-06	-3.361E-05	-1.879E-05	2.587E-04	-6.263E-06	-6.253E-06
5	71	-5.623E-05	-3.725E-04	-1.713E-04	-2.449E-06	-1.187E-05	-4.810E-05	-2.663E-05	-1.073E-04	-3.356E-06	-1.001E-04
5	81	-4.784E-05	3.510E-04	-1.558E-05	-3.002E-06						
6	1	-2.521E-03	-4.608E-04	8.276E-01	-5.490E-01	2.453E-02	-6.037E-02	-5.948E-05	-1.249E-03	1.897E-04	8.519E-05
6	11	-2.748E-06	-7.215E-02	9.440E-03	-6.178E-02	1.167E-04	-1.007E-05	-2.309E-03	-1.109E-04	-2.342E-04	2.558E-03
6	21	9.892E-05	-2.884E-05	3.301E-04	-2.409E-05	-3.276E-04	3.547E-03	-1.983E-03	6.377E-03	-3.023E-03	-1.652E-03
6	31	7.092E-04	-2.282E-04	6.804E-04	-1.270E-03	-1.429E-05	-2.154E-05	-3.470E-05	-2.525E-04	-5.205E-05	-8.064E-04
6	41	-2.131E-04	3.057E-04	2.038E-04	3.602E-05	3.934E-04	-4.102E-05	-1.303E-05	-1.674E-05	-7.553E-06	-1.337E-05
6	51	5.075E-04	-1.221E-05	2.721E-05	1.029E-06	-5.647E-05	9.398E-05	1.631E-05	-7.156E-05	5.840E-04	7.498E-04
6	61	-2.141E-06	5.750E-04	4.912E-05	7.884E-05	-5.250E-03	4.986E-05	9.822E-04	-4.632E-04	3.780E-04	6.752E-05
6	71	-1.834E-05	-4.242E-05	3.826E-05	6.207E-03	-1.046E-03	2.131E-05	5.854E-05	-1.095E-05	1.414E-05	1.670E-06
6	81	-2.749E-07	1.273E-06	-2.373E-06	-1.175E-05						
7	1	1.446E-12	-1.839E-12	9.752E-13	-8.944E-12	-4.083E-13	-7.403E-10	3.077E-04	-9.775E-03	1.029E-03	3.658E-04
7	11	5.892E-05	-1.560E-01	-9.871E-01	3.146E-02	1.674E-04	-1.565E-04	4.608E-04	-7.045E-06	1.542E-04	-4.280E-03
7	21	-1.225E-03	-4.198E-05	-1.218E-04	1.345E-04	2.254E-04	-7.500E-04	-2.381E-04	3.960E-03	2.140E-03	7.767E-04
7	31	-3.532E-04	1.138E-04	-3.295E-04	6.321E-04	-2.558E-05	1.907E-05	2.238E-05	2.040E-04	-6.265E-05	3.147E-04
7	41	4.046E-05	-4.596E-05	-8.498E-06	-2.322E-05	-1.886E-05	7.252E-05	1.026E-05	2.184E-05	1.377E-05	5.589E-05

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.33.32 CLOCK TIME
149.610 SEC. CPTIME
48783 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ (1)	(2)	CONTINUED (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
7	51	1.232E-04	9.034E-05	5.427E-04	3.283E-05	1.577E-05	5.638E-05	8.848E-05	-1.096E-04	1.425E-04	3.347E-04
7	61	-9.785E-06	2.817E-04	1.832E-05	3.177E-05	-2.291E-03	5.542E-05	1.942E-03	-6.212E-04	2.617E-04	-6.205E-05
7	71	-9.527E-06	-2.735E-05	5.444E-05	-1.053E-04	-3 151E-05	-1.835E-05	9.531E-05	-6.637E-06	-3.657E-05	-4.628E-06
7	81	-1.081E-06	-1.641E-06	-1.275E-05	1.718E-05						
8	1	1.276E-15	3.279E-14	9.603E-14	4.125E-13	-1.547E-14	2.029E-11	7.665E-05	6.583E-04	4.000E-02	7.082E-02
8	11	-2.125E-02	-8.234E-05	1.110E-05	3.633E-04	-8.766E-01	3.663E-01	-7.344E-04	-1.283E-01	-1.418E-01	-2.025E-03
8	21	-4.052E-03	-7.636E-02	-6.977E-02	-1.885E-01	-5.420E-03	7.685E-04	4.227E-02	2.033E-02	-7.107E-03	2.220E-04
8	31	1.768E-04	-4.317E-03	1.181E-02	7.537E-03	-3.170E-02	-3.629E-03	-1.428E-03	3.224E-04	-3.443E-04	1.925E-04
8	41	5.492E-06	9.763E-05	1.301E-04	2.428E-03	-6.726E-05	-1.480E-03	-1.024E-03	-4.622E-04	3.998E-06	8.010E-05
8	51	2.653E-04	2.212E-03	5.312E-03	1.184E-03	1.912E-04	5.338E-05	-1.935E-03	1.774E-03	5.705E-04	2.786E-04
8	61	1.450E-03	1.292E-04	-2.056E-04	1.717E-04	1.260E-04	8.452E-05	7.263E-03	-2.232E-03	-1.229E-04	2.004E-07
8	71	-1.722E-04	-1.052E-03	-4.846E-04	2.337E-06	-2.634E-05	-1.019E-04	-1.176E-04	-2.789E-04	6.141E-06	-2.504E-04
8	81	-1.354E-04	1.187E-03	-4.247E-05	-3.419E-05						
9	1	9.713E-12	-1.246E-11	-1.939E-11	-9.140E-11	5.461E-12	-4.687E-09	-3.498E-05	1.690E-03	-2.134E-04	-1.171E-04
9	11	1.377E-04	-2.726E-02	5.345E-03	-8.641E-03	-6.438E-04	-1.256E-04	9.930E-01	-1.719E-04	4.306E-03	-1.073E-01
9	21	-1.712E-02	-1.007E-03	-1.146E-03	-1.868E-04	3.707E-04	-2.646E-03	-5.074E-04	1.176E-02	6.319E-03	2.084E-03
9	31	-9.196E-04	3.197E-04	-8.739E-04	1.861E-03	-8.330E-05	5.846E-05	7.319E-05	7.839E-04	-3.875E-04	7.257E-04
9	41	-1.756E-05	8.147E-05	1.233E-04	-3.173E-05	1.092E-04	1.646E-04	-1.342E-05	6.596E-05	5.176E-05	1.261E-04
9	51	5.295E-04	1.829E-04	1.100E-03	7.050E-05	1.225E-05	1.525E-06	1.494E-04	-2.638E-04	7.718E-04	1.453E-03
9	61	-6.210E-06	1.302E-03	1.063E-04	1.934E-04	-1.148E-02	1.401E-04	3.825E-03	-1.266E-03	1.066E-03	-2.157E-04
9	71	-3.110E-05	-1.156E-04	1.980E-04	6.954E-04	-2.871E-04	-5.183E-05	3.219E-04	-2.971E-05	-1.189E-04	-1.571E-05
9	81	-8.899E 06	6.296E-06	-4.575E-05	4.602E-05						
10	1	3.163E-14	-3.639E-14	-4.595E-14	-2.459E-13	1.475E-14	-1.323E-11	-3.481E-05	9.249E-05	3.404E-03	5.967E-03
10	11	-2.515E-03	4.697E-05	-1.277E-05	1.113E-04	-1.206E-02	-6.470E-03	1.134E-03	8.487E-01	-5.163E-01	-9.303E-03
10	21	-1.750E-03	-6.067E-02	-4.161E-02	-8.332E-02	-1.853E-03	2.066E-04	1.313E-02	5.788E-03	-2.154E-03	5.257E-05
10	31	5.977E-05	-1.108E-03	3.703E-03	2.254E-03	-6.276E-03	-7.169E-04	-3.324E-04	7.697E-05	-8.132E-05	4.689E-05
10	41	1.354E-04	2.449E-05	3.241E-05	6.571E-04	-9.966E-06	-2.982E-04	-2.075E-04	-1.002E-04	1.287E-06	8.414E-05
10	51	5.950E-05	5.046E-04	1.112E-03	2.563E-04	4.096E-05	1.312E-05	-4.120E-04	4.055E-04	1.277E-04	6.592E-05
10	61	5.031E-04	3.428E-05	-4.125E-05	4.728E-05	-7.318E-05	1.550E-05	1.398E-03	-3.961E-04	-1.330E-05	-1.680E-06
10	71	-3.317E-05	-2.095E-04	-9.517E-05	5.989E-07	-6.683E-06	-2.104E-05	-2.058E-05	-5.034E-05	2.382E-07	-5.057E-05
10	81	-2.720E-05	3.394E-04	-8.746E-06	-5.883E-06						
11	1	9.205E-14	-1.042E-13	-2.650E-13	-8.702E-13	8.536E-14	-3.677E-11	-3.6[illegible]	7.014E-05	8.514E-03	1.605E-02
11	11	-9.375E-03	-5.968E-04	1.140E-04	-3.722E-04	-3.728E-02	-2.815E-02	9	[illegible]51E-01	7.067E-01	4.546E-02
11	21	5 205E-03	-4.491E-01	-2.139E-01	-3.464E-01	-6.826E-03	5.945E-04	4.	102E-02	-7.394E-03	2.726E-04
11	31	1.907E-04	-3.723E-03	1.431E-02	8.563E-03	-1.560E-02	-1.974E-03	-1.[illegible]	[illegible]3E-04	-2.575E-04	1.965E-04
11	41	4.779E-04	6.467E-05	9.893E-05	2.430E-03	-4.036E-05	-8.952E-04	-6.[illegible]E-04	-3.205E-04	4.748E-06	4.452E-04
11	51	1.769E-04	1.717E-03	3.793E-03	8.566E-04	1.432E-04	6.703E-05	-1.330[illegible]-03	1.386E-03	3.861E-04	1.719E-04
11	61	2.144E-03	7.330E-05	-1.337E-04	[illegible].698E-04	3.504E-05	4.766E-05	4.4[illegible]E-03	-1.156E-03	-6.565E-05	9.094E-08
11	71	-9.925E-05	-6.541E-04	-3.035E-04	-1.952E-06	-1.880E-05	-6.557E-05	-6.866E-05	-1.791E-04	1.984E-06	-1.615E-04
11	81	-9.717E-05	1.388E-03	-2.735E-05	-1.805E-05						
12	1	6.635E-13	-8.410E-13	-3.418E-13	-5.018E-12	6.785E-14	-3.282E-10	-1.613E-04	-5.433E-05	3.906E-03	9.021E-03
12	11	-4.589E-03	-1.563E-03	3.225E-04	-3.489E-05	-2.217E-02	-1.653E-02	-2.240E-04	1.229E-01	1.895E-01	6.367E-03
12	21	-1.053E-02	8.362E-01	-9.725E-01	-3.275E-01	-5.281E-03	3.357E-04	3.495E-02	1.658E-02	-4.982E-03	3.193E-04
12	31	7.768E-05	-2.601E-03	1.000E-02	6.098E-03	-1.136E-02	-1.319E-03	-7.362E-04	1.936E-04	-1.746E-04	1.830E-04
12	41	3.407E-04	2.669E-05	5.369E-05	1.641E-03	-2.955E-05	-5.803E-04	-4.124E-04	-2.092E-04	5.687E-06	3.059E-04
12	51	1.300E-04	1.136E-03	2.329E-03	5.556E-04	1.015E-04	1.026E-04	-8.992E-04	9.531E-04	2.401E-04	1.342E-04
12	61	1.401E-03	7.244E-05	-8.174E-05	1.222E-04	-3.488E-04	2.223E-05	2.611E-03	-8.353E-04	-1.708E-05	-4.807E-06

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.33.33 CLOCK TIME
149.971 SEC. CPTIME
48831 SEC. PPTIME

MODES	(84 x 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
12	71	-6.695E-05	-4.368E-04	-1.945E-04	1.282E-04	-3.924E-05	-4.553E-05	-3.328E-05	-1.196E-04	-2.789E-06	-1.073E-04
12	81	-5.717E-05	8.058E-04	-1.954E-05	-9.764E-06						
13	1	1.228E-12	-1.578E-12	-1.816E-12	-1.082E-11	4.846E-13	-6.019E-10	1.113E-04	-2.815E-04	-3.507E-03	-7.436E-03
13	11	3.497E-03	-3.306E-03	6.791E-04	-7.440E-04	1.675E-02	1.203E-02	-1.769E-03	-7.603E-02	1.090E-01	-1.030E-02
13	21	1.200E-03	-1.723E-01	-8.670E-01	4.453E-01	5.585E-03	-8.588E-04	-3.428E-02	-9.217E-03	6.916E-03	3.180E-04
13	31	-3.344E-04	2.456E-03	-9.077E-03	-4.984E-03	1.074E-02	1.193E-03	6.706E-04	-6.169E-05	1.320E-04	3.971E-05
13	41	-2.618E-04	-7.201E-05	-7.237E-05	-1.424E-03	3.330E-06	5.162E-04	3.510E-04	1.952E-04	3.411E-06	-2.545E-04
13	51	-6.565E-05	-9.873E-04	-2.020E-03	-4.866E-04	-6.602E-05	4.287E-05	7.869E-04	-8.105E-04	-2.284E-04	-2.837E-05
13	61	-1.164E-03	1.705E-05	6.201E-05	-8.766E-05	-6.085E-04	-1.448E-05	-2.022E-03	4.449E-04	6.564E-05	-6.786E-06
13	71	5.793E-05	3.698E-04	1.854E-04	1.922E-04	-3.186E-05	3.733E-05	5.833E-05	9.939E-05	-8.398E-06	9.131E-05
13	81	4.777E-05	-6.541E-04	1.155E-05	1.182E-05						
14	1	-3.536E-12	4.540E-12	7.871E-12	3.425E-11	-2.245E-12	1.637E-09	2.946E-05	-1.451E-03	-1.972E-04	-6.442E-04
14	11	7.732E-05	-1.856E-04	-1.316E-05	-7.399E-03	1.424E-03	8.200E-04	3.428E-04	-4.170E-03	-5.581E-03	5.690E-03
14	21	1.474E-03	-4.460E-03	-5.477E-03	-2.824E-02	9.993E-01	-6.725E-03	-9.332E-03	-1.34[illegible]02	4.354E-03	1.004E-03
14	31	-4.112E-04	5.360E-04	-1.864E-03	-3.933E-04	2.276E-03	3.366E-04	1.345E-04	1.005E-05	9.066E-05	2.403E-04
14	41	3.130E-05	-1.211E-04	-8.128E-05	-2.363E-04	-1.205E-04	1.786E-04	1.174E-04	3.028E-05	-6.468E-06	4.115E-05
14	51	-1.719E-04	3.694E-05	3.712E-04	-1.958E-05	-1.476E-05	-1.724E-04	1.921E-04	-2.069E-04	-1.201E-04	-2.382E-04
14	61	-1.309E-04	-2.172E-04	-1.650E-05	-6.556E-05	2.527E-03	2.213E-05	9.388E-04	-1.905E-04	-8.256E-05	-9.590E-06
14	71	8.266E-06	7.056E-05	6.533E-06	-1.545E-03	2.697E-04	-2.575E-06	-1.724E-05	2.131E-05	2.400E-06	1.284E-05
14	81	9.993E-06	-4.607E-05	7.406E-06	6.231E-06						
15	1	1.640E-12	-2.098E-12	-1.841E-12	-1.371E-11	4.702E-13	-8.072E-10	9.180E-05	-3.963E-03	1.707E-04	6.380E-04
15	11	-4.518E-04	-2.361E-02	4.621E-03	-2.148E-02	-2.763E-03	-2.728E-03	-7.052E-03	5.247E-03	7.077E-03	-1.706E-02
15	21	-3.930E-03	4.900E-03	7.440E-03	2.603E-02	-3.381E-03	-9.826E-01	9.329E-02	1.366E-01	6.113E-02	1.248E-02
15	31	-4.562E-03	5.172E-04	7.652E-04	8.967E-03	-1.158E-03	-4.332E-04	-9.962E-05	8.154E-04	3.226E-04	2.932E-03
15	41	9.472E-04	-1.182E-03	-6.990E-04	3.880E-04	-1.030E-03	-1.024E-04	-1.130E-04	7.689E-06	2.784E-05	8.700E-05
15	51	-8.641E-04	2.311E-04	1.394E-05	6.097E-05	2.290E-04	6.893E-04	-1.727E-04	4.597E-04	-1.486E-03	-1.540E-03
15	61	4.001E-04	-1.273E-03	-1.264E-04	-1.476E-04	1.051E-02	-7.948E-05	3.563E-04	-1.728E-04	-9.370E-04	7.992E-05
15	71	1.695E-05	-6.971E-06	-1.209E-04	-2.361E-03	4.362E-04	-5.099E-07	-9.540E-05	-1.418E-05	1.112E-05	-1.783E-05
15	81	-9.578E-06	1.563E-04	4.582E-08	2.306E-08						
16	1	-3.374E-13	4.328E-13	9.536E-13	3.483E-12	-2.684E-13	1.576E-10	-7.198E-05	-7.797E-04	-1.129E-03	4.491E-03
16	11	-2.110E-03	-3.355E-03	6.384E-04	-4.291E-03	-2.184E-02	-2.080E-02	-5.004E-04	3.976E-02	5.063E-02	4.810E-03
16	21	-4.534E-03	4.112E-02	4.850E-02	2.109E-01	1.875E-02	1.158E-01	9.532E-01	1.413E-01	-2.905E-02	2.568E-03
16	31	-2.098E-04	-7.073E-03	3.206E-02	1.972E-02	-1.364E-02	-1.375E-03	-1.517E-03	4.053E-04	-2.155E-04	7.940E-04
16	41	8.932E-04	-1.667E-04	-2.157E-05	3.599E-03	-2.174E-04	-6.815E-04	-5.145E-04	-3.330E-04	1.016E-05	9.390E-04
16	51	-4.586E-05	1.997E-03	2.829E-03	8.579E-04	1.826E-04	2.090E-04	-1.496E-03	1.798E-03	8.050E-05	-1.895E-04
16	61	3.001E-03	-1.894E-04	-1.487E-04	2.097E-04	1.659E-03	-3.750E-05	1.593E-03	1.251E-04	-1.369E-04	-4.901E-06
16	71	-9.297E-05	-6.218E-04	-3.020E-04	-6.899E-04	9.871E-05	-7.737E-03	-5.885E-05	-1.726E-04	-4.066E-06	-1.602E-04
16	81	-7.878E-05	1.056E-03	-2.418E-05	-4.644E-06						
17	1	4.652E-13	-6.098E-13	-3.867E-12	-7.932E-12	1.193E-12	-1.930E-10	-1.835E-04	5.020E-03	-9.639E-04	5.330E-04
17	11	-3.340E-04	2.682E-02	-5.159E-03	2.910E-02	-5.020E-03	-5.343E-03	6.995E-03	7.355E-03	9.043E-03	1.369E-02
17	21	1.035E-03	7.766E-03	7.380E-03	3.620E-02	6.466E-03	-5.278E-02	-5.032E-02	1.099E-01	-9.883E-01	-2.607E-02
17	31	8.889E-03	-4.657E-03	1.663E-02	-5.674E-03	-1.630E-03	1.467E-04	-5.520E-04	-1.209E-03	-6.065E-04	-4.370E-03
17	41	-1.077E-03	1.767E-03	1.058E-03	1.129E-03	1.499E-03	-2.235E-04	-9.989E-05	-1.519E-04	-3.100E-05	2.532E-04
17	51	1.322E-03	4.138E-03	4.532E-04	2.176E-04	-2.257E-04	-6.047E-04	-4.500E-04	2.406E-04	2.064E-03	2.140E-03
17	61	8.307E-04	1.761E-03	1.310E-04	3.292E-04	-1.527E-02	6.153E-05	-1.143E-03	5.943E-04	1.206E-03	-7.121E-05
17	71	-5.589E-05	-2.436E-04	4.700E-05	4.644E-03	-8.368E-04	-1.761E-05	1.084E-04	-5.492E-05	-1.112E-03	-3.902E-05
17	81	-2.110E-05	2.635E-04	-1.216E-05	-8.894E-06						

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.33.33 CLOCK TIME
150.331 SEC. CPTIME
48831 SEC. PPTIME

MODES	(84 X 84) (1)	/OUTPUT/ CONTINUED (2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
18 1	1.107E-12	-1.425E-12	-3.376E-12	-1.182E-11	9.908E-13	-5.213E-10	-7.686E-05	2.229E-03	-3.537E-05	2.595E-05
18 11	-2.309E-05	1.126E-02	-2.116E-03	1.391E-02	3.323E-04	3.778E-04	2.289E-03	-3.200E-04	-3.887E-04	1.284E-03
18 21	1.559E-04	-2.170E-04	-7.379E-04	-8.427E-04	1.117E-03	-1.042E-02	3.967E-03	9.591E-03	2.936E-02	-9.989E-01
18 31	1.468E-02	-2.810E-03	5.222E-03	-1.380E-02	-9.477E-04	-1.888E-05	-1.199E-04	-1.078E-03	-3.291E-04	-3.136E-03
18 41	-8.587E-04	1.130E-03	6.245E-04	2.657E 05	9.105E-04	-1.408E-04	-4.119E-05	-4.268E-05	-1.902E-05	-1.013E-04
18 51	7.441E-04	-1.441E-04	-4.925E-04	-3.328E-05	-1.285E-04	-1.766E-04	-7.613E-05	-6.032E-05	9.753E-04	1.081E-03
18 61	-6.163E-05	8.857E-04	8.702E-05	1.386E-04	-8 003E-03	1.672E-05	-1.408E-03	3.882E-04	5.425E-04	-9.867E-06
18 71	-1.330E-05	-4.198E-05	5.165E-05	3.152E-03	-5.450E-04	1.036E-05	4.513E-05	-6.684E-06	3.409E-06	2.184E-06
18 81	-1.820E-06	-5.322E-06	-2.302E-06	-1.011E-05						
19 1	6.543E-13	-8.543E-13	-4.788E-12	-1.036E-11	1.469E-12	-2.775E-10	-5 251E-05	1.025E-03	1.432E-04	2.321E-04
19 11	-9.973E-07	5.104E-03	-9.614E-04	5.944E-03	-3.075E-06	3.339E-04	9.786E-04	5.678E-04	7.154E-04	6.515E-04
19 21	5.340E-05	5.590E-04	4.097E-04	2.292E-03	6.060E-04	-3.253E-03	-1.032E-03	8.150E-03	1.066E-02	1.561E-02
19 31	9.996E-01	-5.928E-03	6.908E-03	-1.171E-02	-8.146E-03	-4.076E-04	-1.940E-04	-6.404E-04	-1.985E-04	-1.750E-03
19 41	-4.434E-04	6.130E-04	3.264E-04	8.178E-05	4.446E-04	-1.360E-04	-5.955E-05	-4.052E-05	-1.103E-05	-6 857E-05
19 51	3.300E-04	-2.667E-05	-2.205E-04	7.116E-06	-6.062E-05	-1.177E-04	-1.029E-04	2.754E-05	4.576E-04	4.715E-04
19 61	-2.920E-05	3.904E-04	3.461E-05	6.675E-05	-3.528E-03	-1.449E-06	-1.020E-03	3.299E-04	2.306E-04	-4.868E-06
19 71	-9.817E-06	-4.050E-05	5.579E-06	1.203E-03	-2.068E-04	2.458E-06	1.032E-05	-7.382E-06	3.488E-06	-3.869E-06
19 81	-3.371E-06	7.592E-06	-6.614E-07	-5.651E-06						
20 1	5.161E-14	-6.452E-14	-4.350E-13	-8.579E-13	1.294E-13	-1.913E-11	-2.169E-04	-2.184E-04	2.865E-04	-1.008E-03
20 11	-8.397E-04	-1.754E-03	3.316E-04	-1.714E-03	7.536E-03	5.983E-03	-5.390E-04	-1.193E-02	-1.479E-02	-2.728E-03
20 21	4.534E-04	-1.097E-02	-1.193E-02	-4.417E-02	-2.263E-03	7.781E-04	2.883E-02	5.210E-03	-1.085E-02	-2.688E-03
20 31	6.982E-03	9.714E-01	-1.993E-01	-8.931E-02	6.767E-02	2.812E-03	2.237E-03	-9.450E-05	3.846E-04	2.737E-04
20 41	-6.052E-04	-2.158E-04	-1.812E-04	-2.725E-03	-1.137E-04	5.996E-04	4.335E-04	2.645E-04	-2.395E-06	-5.203E-04
20 51	-1.854E-04	-1.209E-03	-4.105E-04	-4.434E-04	-4.528E-05	-3.607E-05	9.844E-04	-1.091E-03	-3.560E-04	-2.383E-04
20 61	-1.489E-03	-1.876E-04	6.322E-05	-1.726E-04	1.802E-03	3.396E-05	2.383E-04	-1.971E-04	-1.422E-04	2.333E-05
20 71	6.584E-05	3.906E-04	1.545E-04	-3.665E-04	8.278E-05	4.913E-07	5.025E-06	1.038E-04	7.700E-06	9.245E-05
20 81	4.375E-05	-2.646E-04	1.605E-05	2.051E-06						
21 1	-5.285E-15	2.855E-15	3.607E-15	9.166E-15	7.883E-15	2.740E-13	4.790E-04	8.426E-05	2.078E-03	5.144E-03
21 11	1.033E-03	7.761E-06	-2.314E-06	2.164E-05	-1.442E-02	-7.204E-03	2.640E-04	2.956E-02	3.676E-02	3.496E-03
21 21	-1.497E-04	2.698E-02	2.935E-02	1.074E-01	5.196E-03	2.972E-04	-6.704E-02	-1.989E-02	1.782E-02	-1.201E-03
21 31	-3.443E-03	2.350E-01	8.102E-01	3.591E-01	-3.681E-01	-1.456E-02	-6.372E-03	9.899E-04	-9.515E-04	8.418E-04
21 41	1.889E-03	1.901E-05	1.571E-04	5.788E-03	-1.962E-04	-2.049E-03	-1.424E-03	-7.063E-04	9.578E-06	6.562E-04
21 51	1.345E-04	2.908E-03	2.378E-03	1.195E-03	1.879E-04	1.441E-04	-2.473E-03	2.539E-03	4.287E-04	6.707E-05
21 61	2.545E-03	1.379E-05	-2.183E-04	2.849E-04	-8.332E-06	-5.457E-05	1.886E-03	-5.121E-04	-4.382E-05	-1.770E-05
21 71	-1.668E-04	-9.874E-04	-4.433E-04	-9.757E-07	-2.852E-05	-1.126E-04	-7.488E-05	-2.576E-04	-4.875E-06	-2.296E-04
21 81	-1.134E-04	7.105E-04	-3.738E-05	-1.494E-05						
22 1	1.722E-13	-2.186E-13	-1.097E-13	-1.322E-12	2.103E-14	-8.470E-11	-1.174E-04	1.350E-03	3.071E-04	1.052E-04
22 11	-3.824E-04	1.053E-02	-1.979E-03	1.076E-02	2.344E-03	2.341E-03	2.259E-03	-2.882E-03	-3.619E-03	2.649E-03
22 21	8.521E-04	-2.518E-03	-3.209E-03	-1.018E-02	1.882E-04	-6.521E-03	8.493E-03	7.364E-03	1.303E-02	1.564E-02
22 31	-1.415E-02	-8.633E-04	4.092E-01	-9.116E-01	4.754E-03	4.380E-04	4.013E-04	-1.608E-03	-6.384E-04	-4.612E-03
22 41	-1.502E-03	1.663E-03	8.716E-04	-7.613E-04	1.233E-03	4.505E-05	6.774E-05	2.109E-05	-1.853E-05	-2.176E-04
22 51	1.033E-03	-3.504E-04	2.101E-04	-8.292E-05	-1.707E-04	-2.693E-04	2.343E-04	-4.862E-04	1.305E-03	1.541E-03
22 61	-5.251E-04	1.242E-03	1.290E-04	1.355E-04	-1.055E-02	9.445E-05	1.450E-04	-4.728E-05	8.164E-04	-6.893E-05
22 71	-8.404E-06	2.370E-05	1.252E-04	2.376E-03	-4.425E-04	6.479E-06	1.001E-04	1.564E-05	-1.600E-05	2.082E-05
22 81	8.114E-06	-4.922E-05	-3.681E-06	4.115E-07						
23 1	-1.594E-14	2.655E-14	2.019E-14	1.910E-13	-8.269E-15	1.180E-11	-4.899E-04	-2.940E-05	1.771E-03	3.658E-03
23 11	-2.956E-03	-1.644E-04	2.934E-05	-1.485E-04	2.505E-03	4.784E-03	-6.338E-05	1.704E-03	2.218E-03	-1.185E-03

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.33.34 CLOCK TIME
150.716 SEC. CPTIME
48879 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ (1)	(2)	CONTINUED (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
23	21	-6.865E-05	1.585E-03	1.657E-03	5.900E-03	2.576E-04	-6.070E-04	-1.373E-03	-7.742E-03	-6.522E-04	-2.006E-04
23	31	2.430E-04	9.935E-04	1.148E-02	4.896E-03	7.373E-02	-9.970E-01	-3.256E-03	1.472E-03	-9.437E-04	-5.682E-05
23	41	-6.217E-05	2.476E-04	1.209E-04	-5.396E-04	3.674E-05	-6.571E-04	-4.028E-04	-9.535E-05	-1.260E-06	-4.537E-04
23	51	1.889E-04	2.752E-04	4.505E-03	4.184E-04	8.709E-05	-5.827E-06	-1.646E-04	-9.490E-05	2.071E-04	1.933E-04
23	61	-5.560E-04	9.960E-05	-3.304E-05	-5.214E-05	1.555E-04	1.079E-04	4.811E-03	-1.171E-03	-5.330E-05	1.089E-05
23	71	-1.830E-05	-9.545E-05	-4.873E-05	-1.745E-05	2.174E-06	2.752E-06	-2.618E-05	-1.633E-05	6.396E-06	-1.466E-05
23	81	-1.465E-05	5.729E-04	-2.287E-06	-9.452E-06						
24	1	4.703E-14	-6.083E-14	-2.142E-13	-5.892E-13	6.425E-14	-2.146E-11	9.576E-05	1.873E-05	1.220E-04	-6.533E-04
24	11	1.120E-04	-2.562E-04	4.846E-05	-1.764E-04	6.499E-04	1.776E-04	-8.736E-05	-1.528E-03	-1.887E-03	-3.699E-04
24	21	2.714E-04	-1.364E-03	-1.456E-03	-5.212E-03	-2.374E-04	1.654E-04	2.627E-03	1.406E-03	-7.828E-04	-1.149E-04
24	31	1.181E-04	-1.091E-03	3.527E-03	2.065E-03	-1.128E-02	-4.147E-03	9.999E-01	-1.234E-03	6.292E-04	1.566E-04
24	41	-1.762E-04	-1.322E-04	-7.594E-05	-4.600E-04	-5.895E-05	1.433E-04	1.058E-04	5.303E-05	-9.387E-07	-4.956E-05
24	51	-2.407E-05	-2.539E-04	-7.935E-04	-1.389E-04	-2.015E-05	-9.898E-06	1.782E-04	-1.589E-04	-1.154E-04	-1.062E-04
24	61	-9.376E-05	-7.853E-05	1.193E-05	-2.322E-05	5.561E-04	-1.229E-05	-6.679E-04	7.234E-05	-4.638E-05	7.647E-06
24	71	1.440E-05	7.501E-05	2.624E-05	-3.145E-05	1.184E-05	9.289E-06	-2.297E-06	1.753E-05	2.629E-06	1.608E-05
24	81	7.895E-06	5.482E-06	2.898E-06	-1.074E-07						
25	1	6.852E-13	-8.893E-13	-3.761E-12	-9.340E-12	1.142E-12	-3.044E-10	-2.483E-05	3.207E-04	-5.064E-05	7.314E-05
25	11	-2.130E-05	-2.539E-03	4.802E-04	-1.039E-03	-1.108E-04	-6.508E-05	-8.324E-04	2.676E-04	4.081E-04	-2.793E-03
25	21	-7.134E-04	1.716E-04	3.238E-04	7.989E-04	4.585E-05	1.002E-03	-8.137E-04	1.184E-04	-1.485E-03	-1.213E-03
25	31	7.116E-04	-1.353E-04	8.470E-05	-2.023E-03	1.141E-03	1.513E-03	1.246E-03	9.999E-01	3.102E-03	2.854E-03
25	41	1.050E-03	-1.148E-03	-5.506E-04	1.066E-04	-6.706E-04	-2.002E-04	-6.854E-05	-2.317E-05	-7.430E-06	-1.102E-04
25	51	-6.647E-04	-1.009E-04	-8.148E-04	-4.176E-05	6.988E-05	1.110E-04	-1.521E-04	2.708E-04	-8.043E-04	-1.042E-03
25	61	3.981E-05	-8.282E-04	-6.697E-05	-1.005E-04	6.617E-03	-9.318E-05	-1.903E-03	5.350E-04	-6.142E-04	1.067E-04
25	71	1.552E-05	3.556E-05	-8.324E-05	1.993E-04	2.596E-05	2.173E-05	-1.077E-04	3.607E-06	3.647E-05	2.078E-06
25	81	-6.069E-07	7.241E-06	1.016E-05	-1.532E-05						
26	1	-7.481E-13	9.712E-13	4.197E-12	1.031E-11	-1.276E-12	3.313E-10	2.827E-05	-5.912E-04	-2.080E-05	-1.053E-04
26	11	6.651E-05	2.949E-04	-6.419E-05	-1.361E-03	8.052E-05	2.672E-05	3.808E-04	-2.855E-04	-4.237E-04	2.269E-03
26	21	5.601E-04	-2.104E-04	-2.781E-04	-9.317E-04	-1.670E-04	1.289E-04	4.807E-04	-4.902E-04	-6.559E-04	-3.541E-04
26	31	2.066E-04	-2.085E-04	9.012E-04	-2.336E-04	-1.414E-03	-1.010E-03	-6.531E-04	-2.982E-03	9.999E-01	5.251E-04
26	41	-3.963E-04	3.946E-04	2.327E-[illegible]	-1.693E-04	2.763E-04	2.575E-04	8.907E-05	4.237E-05	1.386E-05	1.261E-04
26	51	3.770E-04	1.090E-04	8.030E-[illegible]	3.619E-05	-2.769E-05	-5.442E-05	1.644E-04	-2.332E-04	4.557E-04	6.483E-04
26	61	-4.544E-05	5.143E-04	3.937E-05	5.449E-05	-3.914E-03	7.579E-05	1.902E-03	-5.194E-04	4.197E-04	-9.495E-05
26	71	-9.888E-06	-1.768E-05	6.484E-05	-9.708E-04	1.128E-04	-2.174E-05	8.687E-05	-5.638E-07	-3.399E-05	-1.402E-06
26	81	1.450E-06	-2.718E-05	-8.555E-06	1.631E-05						
27	1	8.174E-13	-1.061E-12	-4.406E-12	-1.104E-11	1.337E-12	-3.641E-10	-1.234E-05	9.761E-04	-7.506E-06	-1.067E-04
27	11	1.008E-04	5.627E-03	-1.027E-03	7.115E-03	2.920E-04	2.622E-04	8.159E-04	-3.924E-04	-4.443E-04	-7.864E-04
27	21	-1.621E-04	-3.478E-04	-5.442E-04	-1.249E-03	3.083E-04	-2.685E-03	1.447E-03	2.158E-03	5.180E-03	3.586E-03
27	31	-1.975E-03	5.098E-04	-1.156E-03	5.099E-03	-4.212E-04	-4.359E-05	1.320E-04	2.917E-03	5.802E-04	-9.998E-01
27	41	-8.069E-03	4.472E-03	1.133E-03	-1.200E-04	1.248E-03	-2.359E-04	-5.101E-05	-4.959E-05	-2.921E-05	-1.887E-04
27	51	6.640E-04	-2.584E-04	-1.033E-03	-9.356E-05	-1.144E-04	-4.573E-05	-6.185E-05	-2.669E-05	6.908E-04	7.351E-04
27	61	-1.209E-04	5.867E-04	6.626E-05	9.353E-05	-5.539E-03	-1.243E-05	-1.988E-03	5.155E-04	2.888E-04	2.469E-05
27	71	-4.070E-06	-7.374E-06	2.533E-05	2.683E-03	-4.438E-04	1.678E-05	4.950E-06	3.565E-07	1.443E-05	6.401E-06
27	81	7.542E-07	-5.078E-05	2.308E-06	-1.239E-05						
28	1	-4.991E-13	6.490E-13	2.979E-12	7.093E-12	-9.076E-13	2.192E-10	-2.329E-05	-5.422E-04	-6.897E-05	2.138E-04
28	11	-2.406E-04	-1.274E-03	2.328E-04	-2.134E-03	-6.838E-04	-6.741E-04	-2.138E-05	9.077E-04	1.083E-03	1.200E-03
28	21	1.357E-04	8.310E-04	9.122E-04	3.094E-03	-8.939E-06	5.227E-04	-1.567E-03	-2.561E-03	-1.239E-03	-9.728E-04
28	31	5.028E-04	2.473E-04	-1.829E-03	-2.609E-03	7.418E-04	6.038E-05	2.448E-04	-9.859E-04	3.349E-04	-8.196E-03

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.33.34 CLOCK TIME
151.111 SEC. CPTIME
48927 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
28	41	9.999E-01	-1.079E-03	-9.085E-05	8.222E-04	-1.283E-04	1.019E-04	-2.027E-05	-1.066E-05	1.840E-05	2.634E-04
28	51	1.029E-04	3.664E-04	1.289E-03	1.566E-04	3.674E-05	3.268E-05	-3.695E-05	4.499E-05	1.300E-04	2.202E-04
28	61	3.232E-04	1.647E-04	-5.820E-06	3.093E-05	-8.961E-04	5.191E-05	2.094E-03	-5.204E-04	1.593E-04	-5.365E-05
28	71	-1.178E-05	-5.728E-05	7.700E-06	-9.250E-04	1.248E-04	-1.994E-05	4.401E-05	-1.399E-05	-2.165E-05	-1.395E-05
28	81	-5.629E-06	1.346E-04	-7.372E-06	1.068E-05						
29	1	-7.329E-13	9.535E-13	4.607E-12	1.069E-11	-1.407E-12	3.191E-10	4.910E-05	-8.368E-04	6.693E-05	-3.325E-05
29	11	1.131E-04	-1.858E-03	3.413E-04	-3.099E-03	-3.920E-05	2.047E-05	-1.316E-05	1.682E-05	-3.958E-05	1.705E-03
29	21	5.365E-04	3.379E-05	4.809E-05	-2.930E-05	-2.166E-04	6.864E-04	1.119E-04	-3.259E-03	-2.307E-03	-1.318E-03
29	31	7.222E-04	-2.341E-04	8.442E-04	-1.563E-03	2.471E-04	-1.428E-04	-1.162E-04	-1.045E-03	2.766E-04	-4.617E-03
29	41	-1.226E-03	-9.999E-01	-1.979E-04	-2.195E-04	-1.622E-04	3.730E-04	8.736E-05	6.730E-05	3.191E-05	1.888E-04
29	51	2.014E-04	2.213E-04	1.136E-03	6.807E-05	1.940E-05	3.603E-05	1.879E-04	-2.247E-04	2.101E-04	4.258E-04
29	61	-4.582E-05	3.298E-04	1.541E-05	2.278E-05	-2.199E-03	8.774E-05	3.030E-03	-9.325E-04	3.025E-04	-9.265E-05
29	71	-9.394E-06	-2.242E-05	5.292E-05	-1.400E-03	1.846E-04	-2.520E-05	8.521E-05	-3.930E-06	-3.718E-05	-6.653E-06
29	81	3.133E-07	-4.108E-05	-1.023E-05	1.861E-05						
30	1	4.268E-13	-5.595E-13	-3.647E-12	-7.395E-12	1.124E-12	-1.754E-10	-2.235E-05	7.242E-04	-5.926E-05	-3.690E-05
30	11	-4.613E-05	1.317E-03	-2.514E-04	1.951E-03	-9.651E-05	-1.602E-04	1.980E-05	8.739E-05	1.397E-04	-8.379E-04
30	21	-3.256E-04	7.221E-05	7.319E-05	3.834E-04	1.699E-04	-2.575E-04	-4.604E-04	3.460E-03	1.646E-03	7.898E-04
30	31	-4.303E-04	1.763E-04	-7.491E-04	7.063E-04	-2.951E-04	1.167E-05	6.488E-05	4.644E-04	-1.308E-04	1.246E-03
30	41	1.899E-04	-3.510E-04	9.999E-01	1.160E-03	-6.004E-06	-4.766E-04	-8.515E-05	-9.330E-05	-3.924E-05	-1.493E-04
30	51	-3.530E-04	-1.741E-04	-1.175E-03	-5.759E-05	-2.408E-05	-1.619E-04	-2.032E-04	2.417E-04	-2.585E-04	-5.246E-04
30	61	1.148E-04	-3.972E-04	-2.378E-05	-2.937E-05	2.891E-03	-9.006E-05	-3.017E-03	9.547E-04	-3.092E-04	8.287E-05
30	71	7.959E-06	1.841E-05	-5.546E-05	9.160E-04	-1.064E-04	2.026E-05	-8.235E-05	3.171E-06	3.368E-05	2.539E-06
30	81	-4.537E-07	5.010E-05	9.822E-06	-1.566E-05						
31	1	-4.358E-14	4.951E-14	3.211E-13	6.703E-13	-1.008E-13	1.684E-11	-2.678E-04	-1.040E-04	-1.005E-03	1.631E-03
31	11	5.195E-03	-2.121E-04	4.166E-05	-2.649E-04	5.633E-03	8.169E-03	-5.284E-05	-4.830E-03	-5.973E-03	-2.550E-04
31	21	-3.583E-04	-4.505E-03	-4.885E-03	-1.737E-02	-7.606E-04	6.364E-05	8.624E-03	2.747E-03	-2.124E-03	-4.088E-05
31	31	2.773E-04	-1.564E-03	1.666E-02	8.842E-03	1.709E-02	1.753E-03	-5.593E-04	1.205E-04	-1.851E-04	2.005E-04
31	41	1.028E-03	2.070E-04	1.173E-03	-9.991E-01	1.614E-04	2.427E-03	1.208E-03	8.300E-04	-1.430E-05	-3.723E-03
31	51	-1.[illegible]15E-04	-2.590E-03	-4.134E-03	-9.913E-04	-1.711E-04	-1.381E-04	1.203E-03	-1.843E-03	-3.315E-04	-7.734E-05
31	61	-7.488E-03	1.777E-05	7.138E-05	-3.589E-04	4.145E-06	6.978E-06	-1.544E-03	1.832E-04	5.139E-05	-1.200E-05
31	71	6.336E-08	2.335E-04	1.269E-04	-1.097E-04	2.485E-05	1.330E-05	3.823E-05	8.636E-05	-7.038E-06	7.452E-05
31	81	5.014E-05	-4.628E-03	1.481E-05	9.428E-06						
32	1	-3.687E-13	4.997E-13	6.663E-12	1.064E-11	-2.083E-12	1.136E-10	1.049E-04	-1.492E-03	7.098E-04	2.014E-04
32	11	-6.315E-04	-2.786E-03	5.534E-04	-3.143E-03	1.941E-04	4.539E-04	-2.755E-04	3.087E-04	3.641E-04	-3.405E-04
32	21	5.426E-04	2.624E-04	3.038E-03	7.962E-04	-2.316E-04	2.325E-04	5.193E-04	-8.093E-03	-2.903E-03	-1.307E-03
32	31	6.911E-04	-1.833E-04	6.194E-04	-1.366E-03	1.245E-03	2.883E-04	-6.819E-06	-5.553E-04	1.152E-04	-1.486E-03
32	41	-3.260E-04	4.485E-04	2.708E-04	-2.456E-04	-9.997E-01	4.489E-06	-9.397E-04	1.709E-04	1.440E-04	2.926E-04
32	51	9.844E-04	5.184E-04	3.088E-03	2.112E-04	1.417E-04	8.957E-04	2.960E-04	-3.207E-04	3.640E-04	1.018E-03
32	61	2.417E-04	7.102E-04	3.128E-05	6.520E-05	-5.262E-03	1.845E-04	6.804E-03	-2.355E-03	4.727E-04	-1.382E-04
32	71	-1.109E-05	-5.762E-05	8.440E-05	-1.429E-03	1.555E-04	-3.117E-05	1.380E-04	-1.593E-05	-5.802E-05	-1.026E-05
32	81	-5.088E-06	4.774E-04	-2.081E-05	2.286E-05						
33	1	3.250E-14	-3.444E-14	-3.433E-13	-5.849E-13	1.042E-13	-8.479E-12	3.000E-04	1.514E-04	4.017E-03	1.747E-03
33	11	-3.956E-03	2.341E-04	-4.538E-05	1.772E-04	1.494E-03	3.369E-03	8.877E-06	2.355E-03	2.884E-03	-1.036E-03
33	21	1.901E-03	2.159E-03	2.208E-03	7.653E-03	3.353E-04	-3.312E-04	-2.409E-03	-3.477E-03	3.400E-04	5.997E-05
33	31	-4.875E-05	5.096E-04	4.091E-05	-1.022E-04	1.099E-02	2.020E-03	3.998E-04	-1.668E-04	2.347E-04	1.457E-04
33	41	-3.088E-05	-2.829E-04	-3.919E-04	-2.836E-03	2.925E-04	-9.994E-01	-1.278E-02	-1.667E-03	-9.403E-06	-1.614E-03
33	51	5.247E-04	1.040E-03	7.771E-03	9.073E-04	1.297E-04	-1.543E-04	-6.633E-04	1.750E-04	5.166E-04	4.239E-04

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.33.35 CLOCK TIME
151.478 SEC. CPTIME
48976 SEC. PPTIME

MODES	(84 X 84) (1)	/OUTPUT/ (2)	CONTINUED (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
33	61	1.434E-03	2.121E-04	-6.632E-05	2.400E-05	-1.666E-04	1.633E-04	7.187E-03	-2.778E-03	-9.849E-05	1.219E-05
33	71	-1.742E-05	-1.808E-04	-9.118E-05	-2.936E-05	4.551E-06	9.790E-06	-5.171E-05	-4.750E-05	1.310E-05	-3.429E-05
33	81	-3.545E-05	2.991E-03	-1.041E-05	-2.262E-05						
34	1	-3.199E-14	4.274E-14	-5.337E-13	-3.931E-13	1.702E-13	2.402E-11	2.459E-04	2.563E-04	2.243E-03	8.600E-04
34	11	-2.046E-03	-7.756E-05	8.898E-06	1.084E-04	6.986E-04	2.140E-03	-2.883E-05	1.729E-03	2.168E-03	-3.987E-04
34	21	1.161E-03	1.537E-03	1.579E-03	5.388E-03	2.429E-04	-8.120E-05	-1.897E-03	-1.478E-03	3.118E-04	3.766E-06
34	31	-1.513E-05	3.842E-04	-4.976E-05	-1.680E-04	7.339E-03	1.235E-03	2.714E-04	-7.841E-05	1.027E-04	3.077E-06
34	41	-8.710E-05	-6.248E-05	-6.505E-05	-1.430E-03	1.031E-03	1.341E-02	-9.997E-01	-1.867E-03	-2.537E-05	-1.395E-03
34	51	-7.157E-05	7.090E-04	4.088E-03	5.625E-04	8.405E-05	-2.342E-04	-5.839E-04	2.767E-04	8.668E-05	-9.573E-05
34	61	8.591E-04	-1.288E-04	-6.785E-05	-7.528E-06	1.913E-03	5.655E-05	3.345E-03	-1.424E-03	-1.999E-04	3.778E-05
34	71	-1.478E-05	-1.283E-04	-8.656E-05	3.278E-04	-4.004E-05	7.431E-06	-5.494E-05	-3.392E-05	1.719E-05	-2.556E-05
34	81	-2.305E-05	1.797E-03	-4.290E-06	-1.673E-05						
35	1	4.675E-14	-5.880E-14	-1.596E-14	-3.428E-13	1.982E-15	-2.315E-11	1.452E-04	-3.672E-05	5.397E-04	-2.220E-05
35	11	-5.767E-04	2.174E-04	-3.908E-05	5.982E-05	-2.294E-04	3.179E-04	3.780E-05	9.530E-04	1.174E-03	-3.779E-05
35	21	3.442E-04	8.203E-04	8.452E-04	2.889E-03	1.182E-04	-3.820E-05	-1.182E-03	-2.863E-04	3.425E-04	4.186E-05
35	31	-3.907E-05	2.371E-04	-7.275E-04	-3.920E-04	2.009E-03	3.090E-04	1.193E-04	-1.497E-05	3.874E-05	3.680E-05
35	41	-4.690E-05	-5.129E-05	-7.849E-05	-9.916E-04	-1.197E-04	1.822E-03	2.002E-03	-1.000E+00	1.918E-05	-6.582E-05
35	51	2.777E-04	5.000E-04	8.342E-04	2.267E-04	3.467E-05	1.043E-04	-3.700E-04	3.071E-04	1.875E-04	2.032E-04
35	61	7.595E-04	1.396E-04	-1.188E-05	6.273E-05	-1.135E-03	3.240E-06	3.471E-04	-2.258E-04	6.087E-05	-1.876E-05
35	71	-1.116E-05	-8.190E-05	-2.601E-05	-2.442E-04	3.147E-05	-7.322E-06	1.168E-06	-2.115E-05	-3.324E-06	-1.718E-05
35	81	-1.157E-05	7.830E-04	-4.992E-06	-1.770E-06						
36	1	8.018E-15	-8.809E-15	3.289E-13	3.415E-13	-1.046E-13	-7.638E-12	-1.078E-06	-1.981E-05	4.383E-06	9.690E-06
36	11	3.923E-06	2.161E-04	-4.541E-05	-1.872E-04	1.683E-05	1.526E-05	2.899E-05	-1.492E-05	-1.778E-05	-9.315E-07
36	21	-7.738E-06	-1.146E-05	-1.696E-05	-3.923E-05	-6.313E-06	-1.026E-06	-9.348E-06	2.455E-04	6.484E-05	2.508E-05
36	31	-1.463E-05	1.229E-06	1.650E-05	4.199E-05	1.682E-05	-7.052E-07	-1.002E-06	3.790E-06	4.684E-06	3.014E-05
36	41	1.518E-05	-2.488E-05	-3.283E-05	1.973E-05	-1.336E-04	5.943E-06	2.014E-05	-1.777E-05	-1.000E+00	-9.879E-05
36	51	1.864E-04	-2.271E-05	-4.536E-05	-8.363E-06	-5.382E-06	5.461E-05	2.643E-06	-1.332E-05	9.950E-05	1.343E-04
36	61	-2.435E-05	1.008E-04	9.879E-06	1.456E-05	-8.163E-04	1.876E-06	-1.609E-04	6.443E-05	8.327E-05	-2.574E-05
36	71	4.243E-07	-2.499E-06	8.275E 06	-6.670E-04	1.039E-04	-4.198E-06	8.295E-06	1.642E-07	-5.258E-06	-3.200E-07
36	81	-2.461E-07	-1.147E-05	-9.868E-07	1.764E-06						
37	1	-1.483E-14	1.720E-14	8.452E-14	1.739E-13	-2.276E-14	4.233E-12	4.529E-05	-4.061E-05	-2.373E-03	-2.721E-03
37	11	-1.850E-04	-7.593E-05	1.287E-05	-5.245E-05	-3.953E-03	-6.343E-03	2.844E-05	7.238E-04	8.181E-04	9.840E-04
37	21	-9.574E-04	6.670E-04	7.973E-04	2.861E-03	1.153E-04	2.508E-04	-2.250E-03	1.539E-03	7.236E-04	-2.877E-05
37	31	-7.860E-05	2.683E-04	-6.459E-03	-3.336E-03	-1.359E-02	-1.855E-03	-6.823E-05	6.412E-05	-8.602E-05	-1.484E-04
37	41	-2.486E-04	1.103E-04	6.764E-05	-4.321E-03	9.083E-05	-2.159E-03	-1.728E-03	-1.030E-04	-9.356E-05	9.960E-01
37	51	-6.024E-04	1.861E-03	-5.605E-03	-4.273E-05	3.017E-05	3.351E-04	-4.886E-04	1.632E-03	-2.860E-04	-4.016E-04
37	61	5.824E-03	-2.516E-04	1.215E-05	3.133E-04	1.398E-04	-1.937E-04	-6.557E-03	2.677E-03	5.901E-05	-8.273E-06
37	71	2.064E-05	8.086E-06	-2.596E-06	2.684E-05	-9.531E-06	-1.545E-05	2.150E-05	-1.690E-05	-6.748E-06	-1.971E-05
37	81	-4.644E-06	1.331E-03	-1.720E-06	1.362E-05						
38	1	-1.066E-12	1.375E-12	4.048E-12	1.235E-11	-1.207E-12	4.932E-10	-4.760E-05	1.545E-03	-1.179E-04	-3.810E-05
38	11	1.334E-05	2.790E-03	-5.164E-04	4.951E-03	-4.360E-05	-5.694E-05	3.257E-04	4.626E-05	5.394E-05	5.888E-04
38	21	-9.837E-05	6.737E-05	2.442E-05	3.347E-04	2.792E-04	-5.556E-04	-5.206E-04	5.221E-03	2.600E-03	1.174E-03
38	31	-5.877E-04	2.211E-04	-6.335E-04	1.067E-03	5.493E-05	-2.118E-05	4.724E-05	4.005E-04	7.288E-05	9.512E-04
38	41	1.741E-04	-2.361E-04	-7.989E-05	-1.232E-04	2.218E-05	2.813E-04	-6.967E-05	2.112E-04	1.47[illegible]E-04	3.899E-04
38	51	9.991E-01	-4.191E-03	-1.093E-02	-2.928E-04	-8.652E-04	-6.138E-03	-1.219E-03	9.630E-04	-1.213E-03	-3.2[illegible]6E-03
38	61	1.768E-04	-2.273E-03	-1.665E-04	-2.616E-04	1.752E-02	-3.321E-04	-9.558E-03	3.062E-03	-1.10[illegible]E-03	[illegible]965E-04
38	71	-9.770E-07	6.434E-05	-1.968E-04	9.730E-03	-1.440E-03	8.738E-05	-2.399E-04	1.329E-06	1.239E-04	1.261[illegible]06

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.33.39 CLOCK TIME
151.863 SEC. CPTIME
49023 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
38	81	5.983E-06	3.423E-05	3.735E-05	-5.177E-05						
39	1	4.037E-14	-4.748E-14	-1.283E-13	-3.898E-13	3.272E-14	-1.550E-11	-3.047E-04	-4.742E-06	1.642E-03	1.840E-03
39	11	-7.971E-04	1.134E-04	-1.862E-05	1.003E-04	5.544E-03	3.854E-03	-9.226E-05	-6.270E-03	-7.565E-03	-1.770E-03
39	21	6.438E-04	-5.203E-03	-5.465E-03	-1.830E-02	-7.203E-04	-3.167E-04	8.315E-03	-8.894E-05	-2.014E-03	8.215E-05
39	31	8.743E-05	-1.462E-03	7.042E-03	4.121E-03	-2.864E-03	-1.503E-04	-5.434E-04	3.854E-05	-3.398E-05	2.414E-04
39	41	4.690E-04	-9.800E-05	-2.504E-05	3.714E-03	-2.489E-04	-8.321E-04	-7.398E-04	-6.786E-04	2.186E-05	2.830E-03
39	51	-3.538E-03	-9.980E-01	3.746E-02	-5.208E-03	-7.730E-04	-1.553E-03	8.383E-03	-8.631E-01	3.800E-05	7.238E-04
39	61	-1.044E-02	4.375E-04	3.153E-04	-8.088E-04	-6.582E-05	4.772E-04	1.035E-02	-3.472E-03	-7.377E-05	3.678E-05
39	71	1.306E-04	7.671E-04	3.339E-04	-1.839E-05	3.193E-05	1.027E-04	1.371E-05	1.938E-04	1.418E-05	1.709E-04
39	81	7.730E-05	-2.258E-03	2.642E-05	-9.257E-06						
40	1	7.111E-14	-9.111E-14	-2.230E-13	-7.655E-13	6.644E-14	-3.332E-11	1.263E-05	-2.147E-05	2.170E-04	6.093E-04
40	11	-5.119E-04	4.200E-05	-8.633E-06	-7.848E-05	-1.433E-03	-8.001E-04	1.068E-05	2.477E-03	3.035E-03	1.067E-04
40	21	-1.041E-04	2.108E-03	2.212E-03	7.466E-03	2.971E-04	6.155E-06	-3.105E-03	-9.886E-04	6.627E-04	-2.218E-05
40	31	-3.151E-05	5.514E-04	-2.179E-03	-1.309E-03	2.831E-03	3.852E-04	2.373E-04	-4.440E-05	5.038E-05	-5.407E-05
40	41	-1.455E-04	-1.143E-05	-3.407E-05	-1.158E-03	2.359E-05	5.700E-04	4.410E-04	2.672E-04	-5.039E-06	-4.803E-04
40	51	-6.192E-04	-9.308E-03	-8.709E-02	9.959E-01	6.858E-03	3.761E-03	-6.017E-03	4.560E-03	6.824E-04	2.264E-04
40	61	3.804E-03	8.769E-05	-1.895E-04	2.929E-04	-4.469E-04	-1.673E-05	2.196E-03	-2.144E-04	-1.487E-05	-1.744E-05
40	71	-5.926E-05	-3.633E-04	-1.616E-04	-4.747E-04	6.587E-05	-3.696E-05	-2.961E-05	-8.632E-05	-2.040E-06	-7.412E-05
40	81	-3.925E-05	8.911E-04	-1.219E-05	-5.162E-06						
41	1	-2.827E-13	3.651E-13	1.030E-12	3.225E-12	-3.062E-13	1.315E-10	-3.926E-06	8.253E-06	1.359E-04	1.890E-04
41	11	-1.440E-04	-6.879E-04	1.295E-04	-1.422E-04	-1.066E-04	-1.939E-05	-1.161E-05	3.026E-04	3.567E-04	5.370E-04
41	21	1.861E-04	2.712E-04	2.869E-04	9.252E-04	1.872E-05	1.538E-05	-2.447E-04	-1.315E-03	-3.125E-04	-1.546E-04
41	31	7.877E-05	4.041E-05	-1.404E-04	-2.910E-04	5.177E-04	7.008E-05	2.486E-05	-6.859E-05	2.498E-05	-1.249E-04
41	41	-3.876E-05	3.077E-05	2.359E-05	-1.063E-04	1.089E-04	1.440E-05	3.048E-05	2.209E-05	-8.392E-06	-1.261E-04
41	51	4.953E-04	-1.903E-03	-3.189E-02	-9.721E-03	9.994E-01	-8.461E-03	-1.838E-04	-5.497E-05	5.254E-05	-6.580E-05
41	61	3.523E-04	-3.850E-05	-5.747E-05	-2.825E-05	1.344E-03	1.247E-04	4.957E-03	-1.465E-03	-1.835E-05	3.730E-05
41	71	-1.457E-05	-4.833E-05	-1.774E-05	1.608E-03	-2.697E-04	-1.273E-06	1.879E-05	-1.297E-05	3.311E-07	-9.256E-06
41	81	-4.096E-06	1.241E-04	-3.074E-06	4.541E-07						
42	1	2.163E-12	-2.795E-12	-8.833E-12	-2.581E-11	2.645E-12	-9.945E-10	4.098E-05	-1.285E-03	-5.091E-05	-1.468E-04
42	11	9.269E-05	7.981E-04	-1.197E-04	-1.781E-03	5.558E-05	-5.973E-05	-3.731E-04	-1.711E-04	-9.283E-05	-4.160E-03
42	21	-9.997E-04	-2.309E-04	-1.922E-04	-6.448E-04	-8.770E-05	3.040E-04	-6.956E-05	1.957E-03	4.579E-05	-4.852E-05
42	31	-3.815E-06	-5.792E-05	7.651E-05	1.023E-04	-5.423E-04	9.793E-06	-1.006E-05	9.392E-05	-6.532E-05	-3.991E-05
42	41	-3.190E-05	5.333E-05	-1.414E-05	9.531E-06	-3.747E-04	2.620E-04	2.124E-04	-4.045E-05	-2.257E-05	4.055E-04
42	51	-4.621E-03	3.253E-03	5.177E-02	8.395E-03	-6.462E-03	-9.976E-01	-1.372E-03	2.373E-03	-2.684E-04	2.151E-03
42	61	-1.100E-04	1.212E-03	2.291E-04	3.625E-04	-1.442E-02	-3.699E-04	-1.474E-02	4.304E-03	3.864E-04	-3.744E-04
42	71	4.451E-05	8.508E-06	8.102E-05	-1.186E-02	1.494E-03	-4.512E-05	1.193E-05	8.049E-06	-8.357E-05	-2.118E-07
42	81	-6.767E-06	-8.918E-05	-1.152E-05	1.606E-05						
43	1	-1.110E-13	1.400E-13	6.464E-13	1.527E-12	-1.978E-13	4.667E-11	-3.637E-05	3.118E-05	-2.526E-03	-3.586E-03
43	11	2.162E-03	7.404E-06	-4.562E-06	3.971E-05	3.110E-03	8.429E-04	-9.187E-06	-7.163E-03	-9.444E-03	1.984E-04
43	21	-3.883E-04	-6.572E-03	-6.862E-03	-2.316E-02	-9.216E-04	1.812E-04	9.038E-03	4.069E-03	-1.707E-03	8.055E-05
43	31	6.760E-05	-1.620E-03	5.287E-03	3.316E-03	-1.192E-02	-1.681E-03	-7.402E-04	1.770E-04	-1.975E-04	1.267E-04
43	41	3.756E-04	7.730E-05	1.290E-04	2.771E-03	-8.136E-05	-1.964E-03	-1.457E-03	-7.545E-04	9.229E-06	4.403E-04
43	51	1.458E-03	1.251E-02	5.209E-02	1.219E-02	2.364E-03	1.952E-03	9.950E-01	-3.975E-02	-5.838E-03	-2.052E-03
43	61	-1.267E-02	-8.047E-04	1.008E-03	-9.730E-04	3.733E-04	-4.058E-04	-2.332E-02	5.993E-03	2.169E-04	7.641E-06
43	71	2.258E-04	1.335E-03	6.028E-04	4.178E-04	-3.534E-05	1.107E-04	1.367E-04	3.074E-04	-7.008E-06	2.543E-04
43	81	1.413E-04	-2.566E-03	4.345E-05	3.566E-05						

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.33.41 CLOCK TIME
152.220 SEC. CPTIME
49071 SEC. PPTIME

MODES	(84 X 84) (1)	/OUTPUT/ (2)	CONTINUED (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
44 1	-3.556E-14	5.304E-14	6.102E-13	1.015E-12	-1.888E-13	1.335E-11	-1.268E-04	2.779E-05	1.370E-03	2.932E-03
44 11	-3.295E-03	-4.500E-04	7.370E-05	-5.318E-04	-5.035E-03	-4.512E-03	2.662E-05	7.896E-03	9.699E-03	6.383E-04
44 21	-1.446E-04	6.856E-03	7.224E-03	2.448E-02	9.632E-04	-1.726E-05	-9.980E-03	-4.870E-03	1.737E-03	-2.030E-04
44 31	-4.670E-05	1.666E-03	-8.047E-03	-4.868E-03	5.565E-03	9.289E-04	6.903E-04	-2.243E-04	2.021E-04	-2.494E-04
44 41	4.509E-04	-5.569E-05	-1.236E-04	-3.846E-03	9.007E-05	1.438E-03	1.096E-03	6.846E-04	-1.875E-05	-1.835E-03
44 51	1.005E-03	-1.231E-02	-4.697E-02	-9.989E-03	-1.973E-03	-1.016E-03	4.850E-02	9.939E-01	1.088E-02	2.562E-03
44 61	3.356E-02	9.913E-04	-1.295E-03	1.919E-03	-8.022E-04	4.859E-04	2.755E-02	-4.745E-03	-1.120E-04	-2.566E-05
44 71	-2.163E-04	-1.405E-03	-6.308E-04	-6.841E-04	5.953E-05	-1.281E-04	-1.140E-04	-3.362E-04	-3.648E-06	-2.831E-04
44 81	-1.558E-04	4.204E-03	-4.888E-05	-2.548E-05						
45 1	-8.300E-14	1.178E-13	2.930E-12	4.118E-12	-9.216E-13	9.629E-12	3.043E-05	-4.708E-04	-7.968E-05	-3.162E-04
45 11	4.057E-04	-4.069E-03	7.252E-04	-4.212E-03	8.408E-04	8.238E-04	-2.545E-04	-1.200E-03	-1.538E-03	1.813E-03
45 21	5.791E-04	-1.010E-03	-1.007E-03	-3.727E-03	-3.224E-04	9.594E-04	1.460E-03	-1.794E-03	-2.560E-03	-1.105E-03
45 31	5.683E-04	-4.379E-04	1.834E-03	-3.481E-04	-5.800E-04	-1.308E-04	-1.442E-04	-3.827E-04	6.492E-05	-8.384E-04
45 41	-9.157E-05	2.257E-04	1.444E-04	6.533E-04	3.390E-04	-4.488E-04	-1.896E-04	-1.905E-04	-6.273E-05	5.209E-06
45 51	1.589E-04	5.286E-04	-2.913E-03	5.038E-04	-1.522E-04	2.495E-04	-5.400E-03	1.129E-02	-9.989E-01	6.789E-03
45 61	-9.412E-03	4.591E-03	5.016E-04	-1.558E-04	-2.428E-02	9.267E-04	1.909E-02	-5.566E-03	1.066E-03	-3.563E-04
45 71	1.177E-05	1.572E-04	2.847E-04	-4.908E-03	6.520E-04	-5.759E-05	2.972E-04	3.775E-05	-1.218E-04	3.114E-05
45 81	2.127E-05	-6.409E-04	-2.887E-05	5.804E-05						
46 1	2.181E-13	-2.721E-13	1.310E-12	5.722E-14	-4.295E-13	-1.243E-10	1.955E-05	-7.008E-04	5.298E-05	1.536E-05
46 11	-1.433E-04	-2.764E-03	5.016E-04	-3.270E-03	-2.033E-04	-2.669E-04	-2.002E-04	1.641E-04	1.710E-04	7.450E-04
46 21	2.318E-04	1.520E-04	2.042E-04	4.826E-04	-1.264E-04	6.484E-04	-2.253E-04	-2.083E-03	-1.602E-03	-8.044E-04
46 31	3.881E-04	-1.005E-04	9.107E-05	-9.326E-04	-2.168E-04	-2.973E-05	-2.033E-05	-2.904E-04	7.064E-05	-6.012E-04
46 41	-1.132E-04	1.323E-04	5.304E-05	-8.040E-05	1.128E-04	-1.435E-04	1.036E-05	-6.194E-05	-5.095E-05	-2.499E-04
46 51	-6.912E-04	-7.146E-04	-4.100E-03	-3.275E-04	-2.742E-04	-1.184E-03	-8.004E-04	1.054E-03	-3.613E-03	-9.959E-01
46 61	1.022E-02	2.146E-02	1.109E-03	1.893E-03	-7.981E-02	1.441E-03	2.186E-02	-5.366E-03	1.424E-03	-4.430E-04
46 71	-2.221E-05	-1.222E-04	1.941E-04	-6.139E-03	8.292E-04	-8.611E-05	2.923E-04	-2.667E-05	-1.281E-04	-2.199E-05
46 81	-9.776E-06	2.313E-04	-3.879E-05	5.170E-05						
47 1	-1.224E-13	1.680E-13	2.837E-12	4.284E-12	-8.891E-13	3.061E-11	9.191E-06	-2.984E-04	-1.699E-07	-9.182E-06
47 11	2.862E-05	-1.248E-03	2.218E-04	-1.612E-03	-8.541E-05	-6.330E-05	-4.186E-05	7.943E-05	7.080E-05	7.527E-04
47 21	1.630E-04	7.731E-05	9.675E-05	2.299E-04	-5.723E-05	3.758E-04	-1.971E-04	-3.660E-04	-6.800E-04	-3.704E-04
47 31	1.769E-04	-4.253E-05	1.019E-04	-4.100E-04	4.305E-05	-1.625E-05	-1.016E-05	-1.461E-04	2.229E-05	-2.760E-04
47 41	-4.176E-05	4.853E-05	1.316E-05	-8.238E-06	4.106E-05	-8.733E-05	-5.171E-06	-3.050E-05	2.369E-05	-1.115E-04
47 51	-3.106E-04	-3.223E-04	-1.653E-03	-1.291E-04	-7.265E-05	-2.029E-04	-3.617E-04	6.044E-04	-1.891E-03	-1.399E-02
47 61	-5.486E-03	-9.960E-01	3.978E-03	2.718E-03	-8.539E-02	1.177E-03	1.143E-02	-2.497E-03	9.335E-04	-2.424E-04
47 71	-2.171E-05	-7.659E-05	1.118E-04	-2.747E-03	3.490E-04	-4.850E-05	1.662E-04	-1.381E-05	-6.988E-05	-1.219E-05
47 81	-4.032E-06	1.189E-06	-2.030E-05	2.974E-05						
48 1	-1.295E-14	1.661E-14	2.525E-13	3.895E-13	-7.836E-14	3.313E-12	1.342E-05	-2.269E-05	-1.516E-04	2.436E-04
48 11	3.883E-04	-7.110E-05	1.226E-05	-1.171E-04	-6.339E-04	-9.852E-05	1.260E-05	1.123E-03	1.360E-03	2.631E-04
48 21	-9.686E-05	9.197E-04	9.556E-04	3.157E-03	1.187E-04	5.134E-05	-1.308E-03	-1.790E-04	2.548E-04	-3.220E-05
48 31	2.022E-06	2.305E-04	-5.748E-04	-4.090E-04	1.837E-03	1.912E-04	9.785E-05	-2.138E-05	1.626E-05	-4.095E-05
48 41	-5.612E-05	7.817E-06	-1.689E-06	-2.368E-04	1.848E-05	1.347E-04	1.139E-04	6.413E-05	-2.624E-06	-2.694E-05
48 51	-2.229E-05	-7.227E-04	-8.303E-05	-3.547E-04	-6.657E-05	-1.058E-04	1.463E-03	-1.887E-03	-4.199E-04	-5.095E-04
48 61	-2.663E-03	-3.219E-03	-9.999E-01	2.698E-03	-8.655E-03	-4.190E-04	-1.337E-03	6.859E-04	8.397E-05	-2.996E-06
48 71	-6.010E-05	-2.776E-04	-1.064E-04	-2.483E-04	2.539E-05	-3.552E-05	1.108E-06	-5.705E-05	-8.189E-06	-4.826E-05
48 81	-2.074E-05	-3.259E-04	-8.066E-06	1.974E-06						
49 1	-2.286E-14	3.044E-14	3.510E-13	5.843E-13	-1.100E-13	7.697E-12	-3.707E-05	-1.815E-05	-2.506E-04	-1.340E-04
49 11	1.476E-04	5.000E-05	-1.036E-05	-5.328E-05	7.898E-04	5.044E-04	5.083E-07	-1.231E-03	-1.504E-03	-7.821E-05

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.33.42 CLOCK TIME
152.603 SEC. CPTIME
49119 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
49	21	-3.748E-05	-1.039E-03	-1.085E-03	-3.630E-04	-1.435E-04	1.691E-05	1.441E-03	6.446E-04	-2.869E-04	1.390E-05
49	31	1.212E-05	-2.462E-04	1.045E-03	6.231E-04	-1.072E-03	-1.399E-04	-9.808E-05	1.636E-05	-1.805E-05	2.642E-05
49	41	6.331E-05	-2.332E-06	5.819E-06	4.580E-04	-2.777E-05	-1.982E-04	-1.466E-04	-8.722E-05	1.076E-06	1.634E-04
49	51	1.893E-06	9.224E-04	6.090E-04	4.489E-04	6.460E-05	2.138E-05	-1.446E-03	2.041E-03	3.812E-04	-3.999E-04
49	61	2.671E-02	-1.468E-03	-2.725E-03	-9.994E-01	-1.708E-02	1.618E-04	-3.932E-03	1.328E-03	1.090E-04	-1.509E-05
49	71	4.636E-05	2.756E-04	1.313E-04	-2.934E-04	4.966E-05	2.339E-05	2.631E-05	6.435E-05	-3.377E-06	5.177E-06
49	81	2.687E-05	-6.639E-04	8.132E-06	5.606E-06						
50	1	-5.687E-15	6.623E-15	6.394E-14	1.101E-13	-1.969E-14	1.666E-12	1.255E-05	4.667E-06	-4.890E-04	-4.300E-04
50	11	3.315E-04	1.159E-04	-2.174E-05	6.501E-05	1.014E-04	-1.154E-04	1.120E-05	-6.206E-04	-7.696E-04	6.236E-05
50	21	-1.145E-04	-5.380E-04	-5.591E-04	-1.875E-03	-7.073E-05	2.546E-05	6.488E-04	7.228E-04	-4.049E-05	3.184E-05
50	31	-9.494E-06	-1.123E-04	2.902E-04	2.255E-04	-1.158E-03	-1.721E-04	-5.568E-05	2.621E-05	-2.146E-05	2.334E-05
50	41	2.543E-05	5.606E-06	9.367E-06	1.615E-04	-1.237E-05	-1.617E-04	-1.161E-04	-5.010E-05	1.306E-06	-1.385E-05
50	51	7.583E-05	4.741E-04	1.997E-03	3.441E-04	5.074E-05	-4.059E-05	-5.739E-04	5.263E-04	5.084E-04	6.970E-04
50	61	3.245E-03	5.243E-04	-5.016E-04	3.163E-04	4.744E-03	9.998E-01	-1.495E-02	3.762E-03	6.154E-05	-4.312E-06
50	71	2.754E-05	1.614E-04	7.197E-05	-4.102E-05	1.127E-05	9.381E-06	1.705E-05	3.538E-05	-1.148E-06	2.716E-05
50	81	1.678E-05	-4.267E-04	5.724E-06	5.828E-06						
51	1	1.476E-12	-1.945E-12	-1.538E-11	-2.891E-11	4.765E-12	-5.751E-10	8.745E-05	4.139E-04	8.040E-04	9.612E-04
51	11	-7.303E-04	5.292E-03	-9.661E-04	3.648E-03	3.525E-04	-8.713E-05	3.904E-04	-2.032E-05	5.846E-05	-1.466E-03
51	21	1.687E-04	4.167E-05	-4.147E-05	3.074E-04	1.572E-04	-1.312E-03	3.910E-04	-1.978E-04	1.979E-03	1.072E-03
51	31	-5.123E-04	1.747E-04	-5.906E-04	1.005E-03	1.432E-04	9.972E-05	4.868E-05	3.763E-04	-8.342E-05	7.754E-04
51	41	1.340E-04	-1.815E-04	-9.023E-05	-8.647E-05	-1.964E-04	2.217E-04	3.733E-05	8.881E-05	5.113E-05	1.330E-04
51	51	9.385E-05	6.956E-05	-1.654E-03	-1.973E-04	8.062E-05	3.656E-04	3.179E-04	-2.596E-04	5.238E-05	1.755E-03
51	61	-4.030E-06	1.937E-03	1.922E-04	3.886E-04	-2.099E-02	1.115E-04	1.366E-03	-3.308E-04	9.977E-01	1.857E-03
51	71	3.156E-04	5.782E-04	-9.623E-04	-1.096E-02	2.499E-03	1.961E-04	-1.234E-03	8.683E-05	3.482E-04	4.385E-05
51	81	1.316E-05	5.258E-05	1.118E-04	-1.437E-04						
52	1	5.343E-13	-6.991E-13	-4.171E-12	-8.783E-12	1.283E-12	-2.240E-10	4.123E-05	-2.302E-05	-2.161E-05	-1.331E-04
52	11	1.162E-04	-5.317E-04	8.213E-05	-1.050E-03	-1.126E-04	-8.551E-05	-4.665E-05	6.854E-05	7.463E-05	1.583E-04
52	21	7.838E-05	5.308E-05	6.241E-05	1.591E-04	-2.419E-05	1.429E-04	-8.594E-05	-3.152E-04	-3.007E-04	-1.565E-04
52	31	7.349E-05	-1.359E-05	-5.635E-06	-1.904E-04	-4.083E-05	-1.221E-05	-2.979E-06	-5.196E-05	1.178E-05	-1.078E-04
52	41	-2.148E-05	2.480E-05	1.078E-05	-1.878E-05	2.407E-05	-1.437E-05	5.809E-06	-7.289E-06	-7.311E-06	-2.474E-05
52	51	-4.743E-05	-3.675E-05	1.745E-04	1.277E-05	-1.575E-05	-8.700E-05	-1.037E-05	-1.165E-06	-8.230E-05	-2.699E-04
52	61	-1.044E-04	-2.539E-04	-2.056E-05	-5.358E-05	2.385E-03	-1.705E-05	-7.115E-04	4.802E-04	-1.310E-03	9.998E-01
52	71	9.128E-05	-1.392E-04	2.184E-04	-1.723E-02	2.603E-03	-1.122E-04	1.488E-04	-1.915E-05	-1.019E-04	-1.649E-05
52	81	-7.603E-06	2.443E-06	-2.394E-05	3.198E-05						
53	1	4.313E-14	-5.511E-14	-7.547E-14	-3.908E-13	2.055E-14	-2.077E-11	1.055E-05	4.498E-05	1.026E-04	2.736E-05
53	11	-4.308E-05	1.344E-04	-2.802E-05	-2.147E-06	4.907E-04	6.249E-04	1.297E-06	-3.747E-04	-4.523E-04	-1.422E-04
53	21	7.145E-05	-3.200E-04	-3.420E-04	-1.139E-03	-4.367E-05	-5.111E-05	5.221E-04	-3.785E-05	-8.600E-05	2.307E-05
53	31	-1.832E-06	-7.023E-05	5.003E-04	3.027E-04	2.467E-04	3.546E-05	-2.047E-05	1.064E-05	-4.974E-06	2.255E-05
53	41	2.200E-05	-3.757E-06	7.265E-07	1.602E-04	-4.943E-06	3.497E-06	-3.496E-06	-1.172E-05	1.304E-06	9.872E-05
53	51	-2.488E-06	1.775E-04	8.443E-06	5.697E-05	8.233E-06	2.268E-06	-1.330E-04	2.144E-04	2.977E-05	1.286E-05
53	61	6.522E-04	1.718E-05	1.531E-05	5.434E-05	-2.728E-04	-8.584E-06	-1.510E-04	2.290E-04	1.655E-04	7.188E-05
53	71	-1.000E+00	7.162E-04	2.109E-04	-2.417E-03	4.189E-04	4.779E-05	-3.352E-05	7.364E-05	9.372E-06	5.049E-05
53	81	2.024E-05	-9.197E-05	8.519E-06	-5.247E-06						
54	1	3.646E-14	-5.372E-14	-1.650E-12	-2.254E-12	5.207E-13	-6.094E-13	-5.752E-06	-1.089E-06	-6.201E-05	9.764E-05
54	11	-5.524E-05	-4.317E-04	8.006E-05	-1.796E-04	-1.417E-03	-1.416E-03	-3.835E-05	1.525E-03	1.854E-03	1.643E-04
54	21	-1.715E-04	1.279E-03	1.350E-03	4.462E-03	1.703E-04	1.461E-04	-1.893E-03	-1.489E-04	2.931E-04	-8.034E-05
54	31	9.927E-05	2.648E-04	-1.447E-03	-9.141E-04	2.847E-04	3.237E-05	9.159E-05	4.090E-05	2.270E-05	-7.808E-05

Table C-1. (Continued)

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.33.43 CLOCK TIME
152.961 SEC. CPTIME
49167 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
54	41	-7.596E-05	1.189E-05	-2.921E-06	-4.905E-04	2.384E-05	9.261E-05	7.967E-05	5.497E-05	-4.659E-06	-2.135E-04
54	51	-1.011E-05	-5.486E-04	-1.843E-04	-2.113E-04	-4.329E-05	-6.857E-05	5.303E-04	-7.160E-04	-8.063E-05	-5.086E-05
54	61	-1.740E-03	-5.764E-05	5.509E-05	-1.588E-04	9.291E-04	3.561E-05	3.717E-04	-3.923E-04	-1.930E-04	1.019E-04
54	71	4.303E-04	9.994E-01	-4.138E-03	3.448E-03	-7.759E-04	-3.170E-04	5.935E-05	-4.521E-04	-5.006E-05	-2.624E-04
54	81	-1.223E-04	1.750E-03	-4.907E-05	4.552E-06						
55	1	-7.283E-14	8.992E-14	-6.767E-13	-3.091E-13	2.195E-13	4.408E-11	-7.219E-06	1.361E-06	-2.631E-05	1.087E-04
55	11	-7.965E-05	5.715E-04	-1.041E-04	3.109E-04	-5.142E-04	-4.656E-04	5.331E-05	6.228E-04	7.613E-04	-1.443E-05
55	21	-9.176E-05	5.216E-04	5.361E-04	1.818E-03	8.223E-05	-8.813E-05	7.240E-04	5.634E-05	3.725E-04	9.667E-05
55	31	-5.690E-05	1.292E-04	-5.929E-04	-2.174E-04	2.526E-04	3.019E-05	4.323E-05	2.949E-05	-2.362E-06	5.877E-05
55	41	-1.442E-05	-1.579E-05	-1.154E-05	-1.873E-04	-1.519E-05	5.152E-05	3.044E-05	3.020E-05	4.165E-06	-6.731E-05
55	51	2.335E-06	-2.078E-04	-2.155E-04	-9.862E-05	-5.417E-06	1.966E-05	2.284E-04	-2.853E-04	-4.211E-05	1.116E-04
55	61	-6.224E-04	1.245E-04	3.661E-05	-2.822E-05	-1.252E-03	2.243E-05	3.485E-04	-3.239E-04	3.368E-04	-1.413E-04
55	71	1.166E-04	3.687E-03	9.998E-01	-9.286E-04	3.963E-04	-8.167E-05	-3.766E-04	-1.787E-04	7.249E-05	-1.067E-04
55	81	-4.797E-05	8.806E-04	7.168E-06	-2.487E-05						
56	1	1.089E-13	-1.411E-13	-5.337E-13	-1.407E-12	1.613E-13	-4.909E-11	-4.870E-06	-4.860E-06	-1.700E-05	-1.136E-05
56	11	2.369E-06	-2.093E-04	3.157E-05	-4.385E-04	-2.562E-05	-2.525E-06	-2.237E-05	3.470E-05	4.038E-05	2.607E-05
56	21	-1.234E-05	2.736E-05	3.262E-05	8.987E-05	-7.387E-06	7.466E-05	-6.572E-05	2.243E-05	-9.837E-05	-5.881E-05
56	31	2.682E-05	-3.907E-06	8.964E-06	-6.622E-05	3.120E-05	3.196E-06	1.635E-07	-1.977E-05	4.684E-06	-4.043E-05
56	41	-8.027E-06	8.518E-06	3.201E-06	-5.338E-06	7.093E-06	-9.814E-07	4.651E-06	-2.252E-06	-2.455E-06	-3.993E-06
56	51	-1.772E-05	-1.064E-05	1.238E-05	-7.952E-07	-7.566E-06	-3.538E-05	6.612E-06	-9.815E-06	-1.658E-05	-7.998E-05
56	61	-2.578E-05	-7.573E-05	-6.267E-06	-1.682E-05	7.273E-04	-1.566E-06	2.752E-05	-2.647E-05	-1.943E-04	1.907E-04
56	71	-2.136E-06	1.209E-04	-1.849E-04	1.655E-01	9.862E-01	-6.609E-04	3.054E-04	-3.598E-05	-1.020E-04	-1.804E-05
56	81	-1.021E-05	1.294E-04	-1.947E-05	2.407E-05						
57	1	-7.341E-15	9.645E-15	1.036E-13	1.753E-13	-3.215E-14	2.473E-12	-3.352E-07	-2.417E-05	-4.535E-05	-2.348E-05
57	11	6.948E-05	-1.044E-04	2.009E-05	-5.208E-05	-1.628E-04	-2.017E-04	-2.088E-06	1.126E-04	1.339E-04	8.564E-05
57	21	-1.354E-05	9.477E-05	1.015E-04	3.315E-04	1.011E-05	2.498E-05	-1.509E-04	-2.978E-05	-3.304E-06	-1.994E-05
57	31	7.072E-06	1.887E-05	-1.368E-04	-9.938E-05	-6.795E-05	-1.281E-05	5.314E-06	-7.176E-06	2.205E-06	-1.509E-05
57	41	-7.757E-06	3.348E-06	1.006E-06	-4.063E-05	3.489E-06	-6.290E-06	-1.101E-06	1.891E-06	-8.343E-07	-2.820E-05
57	51	-1.845E-07	-4.678E-05	4.822E-05	-9.419E-06	-1.163E-06	-8.707E-08	2.647E-05	-4.554E-05	-1.042E-05	-1.849E-05
57	61	-1.168E-04	-1.960E-05	2.399E-06	-1.190E-05	2.047E-04	-1.317E-07	-4.492E-05	5.165E-06	-6.739E-05	1.710E-05
57	71	2.041E-05	1.950E-04	4.751E-05	-3.413E-03	1.241E-03	1.000E+00	1.895E-04	-1.008E-04	-2.843E-05	-3.645E-05
57	81	-1.112E-05	-3.098E-04	-8.927E-06	9.804E-06						
58	1	2.118E-14	-2.671E-14	1.032E-13	-2.488E-14	-3.406E-14	-1.191E-11	3.406E-06	-3.364E-05	-5.856E-05	-1.024E-04
58	11	6.600E-05	-4.568E-04	8.015E-05	-4.544E-04	-3.434E-06	1.431E-05	-3.435E-05	-4.561E-05	-6.237E-05	1.205E-04
58	21	1.124E-05	-4.195E-05	-3.681E-05	-1.584E-04	-2.116E-05	1.070E-04	2.710E-05	-4.059E-05	-1.942E-04	-9.398E-05
58	31	4.516E-05	-2.346E-05	7.354E-05	-7.158E-05	-5.754E-05	-1.381E-05	-7.311E-06	-3.077E-05	6.318E-06	-6.299E-05
58	41	-9.241E-06	1.468E-05	7.150E-06	1.450E-05	1.426E-05	-1.919E-05	-4.691E-06	-8.060E-06	-3.838E-06	-7.562E-06
58	51	-1.195E-05	7.195E-06	1.042E-04	1.743E-05	-5.063E-06	-2.868E-05	-3.339E-05	3.187E-05	-8.642E-06	-1.041E-04
58	61	1.520E-05	-1.058E-04	-1.191E-05	-1.774E-05	1.051E-03	-7.337E-06	-1.359E-04	7.000E-05	-2.664E-04	1.321E-04
58	71	2.345E-06	1.155E-05	-2.198E-04	8.077E-03	-1.145E-03	1.901E-04	-9.999E-01	-3.117E-05	-2.287E-04	-7.105E-07
58	81	1.714E-06	-5.267E-05	-3.655E-05	5.071E-05						
59	1	1.649E-15	-2.573E-15	-8.585E-14	-1.160E-13	2.715E-14	6.090E-14	6.790E-06	1.228E-05	2.472E-05	4.026E-05
59	11	4.740E-05	-3.393E-05	4.884E-06	-5.335E-05	-8.862E-05	3.521E-05	-2.695E-06	2.026E-04	2.456E-04	1.503E-05
59	21	1.948E-06	1.629E-04	1.672E-04	5.419E-04	1.882E-05	3.652E-06	-1.968E-04	-1.043E-04	2.286E-05	-9.465E-06
59	31	3.024E-06	3.232E-05	-6.446E-05	-5.491E-05	3.127E-04	3.489E-05	1.371E-05	-4.631E-06	2.904E-06	-8.152E-06
59	41	-7.487E-06	1.618E-06	1.553E-07	-2.536E-05	3.596E-06	2.199E-05	1.686E-05	7.204E-06	-4.327E-07	4.042E-06
59	51	-2.977E-06	-4.290E-05	1.899E-05	-1.710E-05	-3.328E-06	-7.380E-06	5.734E-05	-5.572E-05	-9.146E-06	-9.950E-06

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.33.43 CLOCK TIME
153.328 SEC. CPTIME
49187 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
59	61	-1.376E-05	-9.014E-06	6.389E-06	-8.405E-06	9.518E-05	2.578E-06	-5.859E-05	5.640E-05	-1.500E-05	1.821E-05
59	71	2.461E-05	2.213E-04	9.661E-05	1.254E-03	-1.892E-04	8.209E-05	-1.700E-05	1.000E+00	-3.123E-05	-9.066E-05
59	81	-3.785E-05	4.794E-05	-1.509E-05	-7.526E-07						
60	1	4.852E-14	-6.445E-14	-6.165E-13	-1.084E-12	1.917E-13	-1.771E-11	2.474E-06	3.917E-06	6.650E-06	1.870E-05
60	11	-2.273E-05	2.055E-04	-3.913E-05	3.419E-05	1.747E-05	2.104E-05	1.677E-05	-4.306E-06	-3.734E-06	-3.001E-05
60	21	1.164E-06	-3.031E-06	-6.782E-06	-9.310E-06	1.786E-06	-3.600E-05	1.605E-05	1.498E-05	5.585E-05	2.920E-05
60	31	-1.379E-05	4.073E-06	-3.550E-06	3.403E-05	1.723E-05	2.985E-06	1.037E-06	1.045E-05	-2.681E-06	2.021E-05
60	41	3.748E-06	-4.672E-06	-2.460E-06	1.377E-06	-5.663E-06	3.684E-06	-2.687E-08	1.730E-06	1.281E-06	3.694E-06
60	51	-1.636E-06	2.822E-06	-4.117E-05	-3.644E-06	1.724E-06	5.616E-06	3.426E-06	-2.950E-07	-5.130E-06	2.084E-05
60	61	5.464E-06	2.568E-05	2.457E-06	6.098E-06	-2.980E-04	1.443E-06	2.600E-05	-2.348E-05	5.690E-05	5.646E-06
60	71	-6.041E-06	-2.343E-05	3.058E-05	3.161E-03	-6.009E-04	-2.663E-06	1.893E-04	-2.858E-05	-1.000E+00	2.331E-05
60	81	6.705E-06	2.045E-04	2.481E-05	-1.894E-05						
61	1	-7.178E-15	9.085E-15	-9.956E-15	3.788E-14	3.718E-15	3.707E-12	-7.302E-07	-1.176E-06	-5.361E-06	4.323E-06
61	11	-2.019E-07	-1.686E-05	3.074E-06	-1.115E-05	-9.631E-05	-8.767E-05	-7.427E-07	1.071E-04	1.298E-04	1.545E-05
61	21	-1.199E-05	8.891E-05	9.310E-05	3.064E-04	1.149E-05	7.075E-06	-1.261E-04	-1.236E-05	2.275E-05	-3.632E-06
61	31	-5.794E-08	1.795E-05	-9.095E-05	-5.595E-05	3.248E-05	3.356E-06	6.156E-06	-1.979E-06	1.271E-06	-3.804E-06
61	41	-4.624E-06	5.230E-07	-2.990E-07	-2.933E-05	1.126E-06	5.980E-06	4.980E-06	3.470E-06	-1.918E-07	-1.181E-05
61	51	-6.639E-07	-3.090E-05	-4.461E-06	-1.136E-05	-1.936E-06	-2.617E-06	2.883E-05	-3.752E-05	-5.057E-06	-2.016E-06
61	61	-8.409E-05	-1.898E-06	3.013E-06	-7.494E-06	3.138E-05	1.743E-06	1.352E-05	-1.418E-05	-6.048E-06	1.912E-06
61	71	7.966E-06	6.983E-05	3.140E-05	-1.043E-04	2.605E-05	1.523E-05	-1.895E-06	5.495E-05	1.855E-05	1.000E+00
61	81	-1.204E-04	9.519E-04	-2.266E-05	1.527E-06						
62	1	9.581E-16	-1.506E-15	-7.279E-14	-9.458E-14	2.298E-14	3.206E-13	-3.248E-07	5.039E-06	6.488E-06	7.151E-06
62	11	-1.870E-05	-1.500E-05	2.535E-06	-8.006E-06	-3.280E-05	-2.539E-05	-2.887E-06	4.621E-05	5.663E-05	-9.119E-06
62	21	-5.097E-06	3.847E-05	4.053E-05	1.330E-04	5.218E-06	5.009E-06	-5.471E-05	-7.491E-07	8.207E-06	-2.343E-06
62	31	3.309E-07	7.174E-06	-3.526E-05	-2.305E-05	2.182E-05	3.524E-06	2.698E-06	-1.302E-06	7.656E-07	-2.264E-06
62	41	-2.017E-06	2.687E-07	-1.165E-07	-1.268E-05	7.710E-07	4.741E-06	3.489E-06	1.676E-06	-1.341E-07	-3.511E-06
62	51	-5.634E-07	-1.216E-05	-1.421E-05	-5.899E-06	-1.647E-06	-3.526E-06	1.397E-05	-1.728E-05	-8.411E-07	-9.732E-07
62	61	-4.139E-05	-1.203E-06	1.126E-06	-3.550E-06	2.442E-05	1.077E-06	1.818E-05	-1.180E-05	-2.232E-07	8.825E-07
62	71	2.604E-06	2.841E-05	1.236E-05	-2.623E-05	8.510E-06	4.065E-06	5.918E-07	2.026E-05	4.803E-06	1.043E-04
62	81	1.000E+00	2.095E-03	-2.356E-05	-6.082E-06						
63	1	2.872E-14	-3.736E-14	-1.777E-13	-4.157E-13	5.423E-14	-1.254E-11	1.967E-06	3.285E-06	7.253E-06	-2.327E-08
63	11	3.824E-06	-4.508E-05	8.081E-06	-2.396E-05	-1.344E-05	-1.867E-05	-4.764E-06	1.165E-05	1.419E-05	6.061E-07
63	21	4.231E-06	1.000E-05	1.129E-05	3.492E-05	7.348E-07	7.001E-06	-1.443E-05	-2.198E-05	-1.258E-05	-7.286E-06
63	31	3.253E-06	7.524E-07	-1.068E-05	-1.474E-05	-4.148E-06	-1.727E-07	3.780E-07	-2.668E-06	8.203E-07	-5.008E-06
63	41	-1.335E-06	1.095E-06	5.013E-07	-4.014E-06	1.490E-06	7.098E-07	1.076E-06	8.221E-08	-3.378E-07	-1.742E-06
63	51	-4.935E-07	-3.649E-06	6.955E-06	-5.491E-07	-8.529E-07	-3.021E-06	2.716E-06	-4.326E-06	1.376E-07	-5.424E-06
63	61	-1.032E-05	-5.887E-06	-2.355E-07	-2.103E-06	6.492E-05	-2.288E-07	-1.705E-05	1.576E-05	-7.556E-06	5.874E-06
63	71	3.792E-07	8.401E-06	-2.054E-06	2.274E-04	-3.225E-05	3.850E-06	-1.337E-05	6.614E-06	1.661E-05	1.629E-05
63	81	1.825E-05	1.060E-03	1.000E+00	4.716E-05						
64	1	8.558E-14	-1.120E-13	-7.024E-13	-1.448E-12	2.163E-13	-3.546E-11	3.652E-06	9.159E-06	1.782E-05	1.557E-05
64	11	-1.243E-05	6.642E-05	-1.381E-05	-3.036E-05	3.676E-06	-5.503E-06	2.838E-06	1.308E-06	2.890E-06	-2.485E-05
64	21	6.935E-06	2.192E-06	1.421E-06	9.876E-06	6.649E-07	-1.115E-05	2.091E-06	-1.623E-05	1.242E-05	6.932E-06
64	31	-3.408E-06	1.299E-06	-7.521E-06	4.827E-06	-6.580E-07	1.404E-06	4.597E-07	2.430E-06	-5.026E-07	4.895E-06
64	41	7.849E-07	-1.254E-06	-7.635E-07	-1.915E-06	-1.575E-06	2.954E-06	1.269E-06	7.416E-07	2.496E-07	1.183E-06
64	51	-2.466E-06	1.548E-08	-1.669E-05	-1.941E-06	-3.336E-07	-2.380E-06	3.247E-06	-2.921E-06	-2.727E-06	2.866E-06
64	61	-3.053E-06	5.273E-06	5.907E-07	9.990E-07	-7.018E-05	4.176E-07	-3.496E-06	7.157E-06	1.890E-05	1.584E-05
64	71	-3.944E-06	-5.922E-06	6.884E-06	2.003E-03	-3.523E-04	4.702E-06	4.105E-05	-3.000E-06	7.051E-07	-4.747E-07

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.33.44 CLOCK TIME
153.691 SEC. CPTIME
49215 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ CONTINUED									
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
64	81	5.611E-06	-2.213E-04	-4.551E-05	1.000E+00						
65	1	2.220E-14	1.011E-14	3.296E-18	-1.903E-16	-3.465E-15	-1.243E-16	-4.821E-03	-6.636E-04	-3.915E-02	6.223E-01
65	11	7.939E-01	1.856E-04	3.225E-04	-4.175E-05	7.950E-02	-7.975E-03	-1.295E-04	-4.230E-03	2.488E-03	-5.687E-04
65	21	2.100E-03	2.260E-04	1.972E-03	2.316E-02	2.979E-03	-9.403E-04	-1.167E-02	-2.503E-03	1.149E-03	3.065E-05
65	31	-1.522E-03	4.495E-03	-4.440E-02	-2.331E-02	2.564E-02	1.066E-03	5.665E-03	-5.996E-04	3.294E-04	1.005E-04
65	41	6.004E-04	1.082E-03	9.655E-04	1.033E-01	-8.465E-03	-4.704E-02	-2.658E-02	-1.174E-02	2.220E-04	4.570E-02
65	51	3.320E-04	1.551E-02	-5.819E-04	1.076E-03	-2.756E-06	-5.022E-04	1.708E-02	2.906E-02	5.068E-03	-4.267E-03
65	61	2.676E-03	7.987E-04	1.929E-02	2.112E-03	-2.369E-06	-3.729E-04	3.741E-04	1.970E-04	1.835E-04	-4.243E-04
65	71	-1.332E-03	-7.215E-04	-3.409E-04	1.074E-04	5.497E-04	-5.163E-03	-1.549E-03	-9.532E-03	-1.194E-03	-4.315E-04
65	81	2.693E-03	1.396E-03	-6.789E-04	2.565E-04						
66	1	3.278E-16	-3.212E-17	-8.010E-17	9.108E-15	-9.684E-16	8.223E-15	-3.023E-04	1.030E-02	-1.664E-03	-2.471E-03
66	11	2.041E-03	-9.831E-01	1.907E-01	-1.179E-02	-4.100E-04	3.652E-04	-1.092E-01	-6.234E-04	-2.579E-03	1.587E-02
66	21	2.778E-03	-2.564E-03	1.813E-02	-7.210E-03	1.926E-04	1.630E-01	-5.247E-02	-1.559E-03	-2.322E-01	-1.179E-01
66	31	5.681E-02	-2.033E-02	5.641E-02	-1.116E-01	-1.487E-03	1.875E-03	-3.484E-03	-3.391E-02	3.527E-03	-8.241E-02
66	41	-1.992E-02	2.943E-02	2.249E-02	3.910E-03	5.235E-02	-4.867E-03	1.336E-03	-4.522E-03	-4.503E-03	-1.839E-03
66	51	7.232E-02	-3.382E-03	1.583E-03	1.626E-03	-1.949E-02	-2.307E-02	-4.291E-04	-1.514E-02	1.359E-01	9.759E-02
66	61	1.704E-04	4.352E-02	2.405E-03	-1.797E-03	1.212E-04	3.920E-03	-7.931E-03	2.252E-03	3.120E-01	-3.693E-02
66	71	-9.780E-03	-3.737E-02	5.270E-02	-1.790E-03	-2.288E-02	-1.163E-02	5.847E-02	-4.633E-03	-3.461E-02	-3.302E-03
66	81	-3.275E-03	-1.412E-05	-1.112E-02	1.688E-02						
67	1	6.803E-17	-7.159E-18	3.767E-18	2.435E-15	-2.438E-16	2.098E-15	-6.302E-05	2.012E-03	-1.883E-04	-1.244E-04
67	11	8.782E-05	1.182E-02	-2.235E-02	-9.971E-01	-3.844E-04	2.815E-04	-1.507E-02	-1.357E-04	-8.684E-04	3.914E-03
67	21	6.554E-04	5.766E-04	1.300E-03	-1.291E-03	-2.482E-02	6.986E-02	-2.848E-02	2.645E-03	-1.202E-01	-6.982E-02
67	31	3.198E-02	-9.669E-03	2.782E-02	-5.522E-02	-7.566E-04	9.375E-04	-1.142E-03	-6.615E-03	-9.222E-03	-5.008E-02
67	41	-1.586E-02	2.348E-02	1.612E-02	2.275E-03	2.881E-02	-1.658E-03	-1.073E-03	-5.854E-04	1.980E-03	-5.446E-04
67	51	6.234E-02	-1.561E-03	-1.286E-03	-1.240E-03	-1.770E-03	2.447E-02	5.130E-04	-8.946E-03	6.806E-02	5.577E-02
67	61	-6.304E-05	2.708E-02	1.922E-03	8.757E-04	3.042E-03	9.957E-04	-3.875E-03	1.062E-03	1.037E-01	-3.539E-02
67	71	1.636E-04	-7.405E-03	1.372E-02	-1.146E-03	-2.328E-02	-2.754E-03	2.815E-02	-3.509E-03	-2.567E-03	-1.052E-03
67	81	-8.383E-04	-1.016E-06	-2.827E-03	-4.002E-03						
68	1	-6.882E-15	-1.748E-15	-2.958E-20	-4.067E-17	-1.010E-15	-3.650E-17	9.066E-04	8.084E-05	1.308E-03	6.426E-04
68	11	9.075E-03	6.565E-06	4.325E-05	-5.209E-05	-3.614E-01	-9.306E-01	-8.640E-04	-5.762E-02	-6.542E-02	-5.638E-03
68	21	-4.040E-04	-1.840E-02	-5.677E-03	2.738E-02	2.317E-03	1.699E-03	-7.821E-02	-1.769E-02	2.323E-02	-1.411E-03
68	31	1.372E-03	2.283E-02	-4.681E-02	-3.555E-02	2.493E-02	-2.479E-02	2.496E-03	-5.836E-04	3.531E-04	-1.957E-03
68	41	-5.027E-03	1.065E-05	-1.114E-03	6.374E-02	-3.509E-03	-2.657E-02	-1.711E-02	-1.699E-03	-1.598E-04	-6.112E-02
68	51	-7.236E-04	-5.648E-02	7.088E-03	-1.318E-02	-6.180E-04	3.080E-04	2.000E-02	-7.399E-02	-1.452E-02	4.208E-03
68	61	-5.078E-03	1.176E-03	4.850E-03	-1.104E-02	-4.880E-05	-9.810E-04	-2.400E-03	1.619E-04	1.266E-03	-3.295E-03
68	71	-2.163E-02	-6.154E-02	-2.162E-02	-2.152E-04	-4.493E-04	-1.069E-02	-5.376E-04	-1.409E-06	-1.713E-03	-8.767E-03
68	81	-2.916E-03	-1.610E-03	-2.116E-03	-3.665E-04						
69	1	-3.074E-15	8.518E-16	4.915E-19	-6.759E-17	-1.515E-15	-6.351E-17	5.781E-06	-3.359E-05	-1.306E-03	-6.669E-04
69	11	4.317E-04	-2.106E-06	-3.845E-05	2.260E-05	-1.257E-01	5.169E-02	2.945E-03	2.751E-01	3.332E-01	4.223E-02
69	21	-2.167E-02	2.230E-01	2.299E-01	7.548E-01	2.918E-02	3.114E-03	-2.943E-01	-6.414E-02	6.368E-02	-1.677E-03
69	31	-3.922E-03	4.462E-02	-2.329E-01	-1.328E-01	1.167E-01	2.084E-02	1.789E-02	-2.660E-03	2.983E-03	-4.705E-03
69	41	-1.129E-02	3.723E-04	-1.101E-03	-7.019E-02	3.769E-03	3.245E-02	2.461E-02	1.407E-02	-2.236E-04	-1.563E-02
69	51	-1.605E-03	-1.154E-01	2.289E-02	-4.731E-02	-6.214E-03	-4.987E-03	1.595E-01	-1.908E-01	-3.176E-02	4.003E-03
69	61	-1.111E-02	2.121E-03	2.855E-02	-3.296E-02	-2.859E-04	1.650E-02	-1.163E-02	2.544E-03	-7.179E-04	-3.190E-03
69	71	-2.061E-02	-9.484E-02	-4.002E-02	-6.298E-04	-2.439E-03	-9.234E-03	-4.232E-03	-1.790E-02	-5.719E-04	-1.466E-02
69	81	-6.933E-03	-2.816E-03	-2.074E-03	-3.558E-04						

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.33.45 CLOCK TIME
154.051 SEC. CPTIME
49263 SEC. PPTIME

MODES	(84 X 84) (1)	/OUTPUT/ (2)	CONTINUED (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
70 1	2.714E-16	1.841E-16	4.201E-20	-2.547E-18	-4.863E-17	-2.287E-18	-6.188E-05	-7.809E-06	-1.674E-04	-8.429E-05
70 11	-4.340E-04	-5.138E-07	-4.021E-06	2.046E-06	-4.906E-03	1.138E-03	2.156E-05	1.320E-03	3.611E-04	1.354E-04
70 21	-2.632E-04	-4.914E-04	-8.958E-04	-8.393E-03	-1.130E-03	3.891E-04	1.105E-03	2.245E-04	2.114E-03	-9.866E-04
70 31	6.593E-03	1.93dE-02	3.354E-01	1.560E-01	9.250E-01	7.904E-02	1.024E-02	-9.860E-04	1.273E-03	4.440E-05
70 41	4.594E-04	3.367E-04	5.738E-04	3.472E-02	1.830E-03	1.640E-02	1.151E-02	2.704E-03	4.966E-05	2.917E-02
70 51	1.303E-05	1.868E-03	1.430E-03	-3.510E-03	-8.883E-04	-1.049E-03	2.195E-02	-4.549E-03	5.927E-06	-1 053E-03
70 61	4.918E-05	1.368E-05	4.424E-03	-1.600E-03	-3.072E-05	2.974E-03	-1.056E-03	3.596E-04	-4.616E-04	4.375E-04
70 71	2.964E-03	3.235E-03	1.709E-04	-2.489E-05	-1.911E-04	1.266E-03	-5.254E-04	-2.965E-03	3.001E-04	2.266E-04
70 81	-5.894E-05	9.836E-05	2.205E-04	5.749E-05						
71 1	2.798E-17	6.165E-18	6.939E-22	8.229E-20	2.888E-18	1.365E-19	-3.378E-06	-2.882E-07	-4.118E-06	-2.444E-06
71 11	-2.357E-05	-2.382E-08	-6.191E-08	2.192E-08	8.030E-05	-6.970E-05	-2.100E-06	-1.702E-04	-2.054E-04	-1.856E-05
71 21	-3.012E-06	-5.927E-05	-1.385E-05	1.957E-04	1.756E-05	1.536E-05	-6.425E-04	-1.516E-04	2.095E-04	-1.329E-05
71 31	1.152E-05	2.663E-04	-7.036E-04	-4.947E-04	3.639E-04	-1.710E-04	4.108E-05	-1.124E-05	1.394E-05	-4.994E-05
71 41	-1.348E-04	-1.276E-05	-4.298E-05	-3.618E-03	1.403E-04	7.829E-04	4.911E-04	4.361E-04	-1.395E-05	-3.520E-03
71 51	-9.489E 05	-7.449E-03	1.333E-03	-2.791E-03	-2.838E-04	-1.371E-04	9.783E-03	-3.036E-02	-9.097E-03	9.971E-03
71 61	9.990E-01	-5.618E-03	-2.502E-03	2.721E-02	1.079E-04	-3.367E-03	1.277E-03	-1.459E-04	-3.938E-05	2.065E-04
71 71	1.326E-03	4.154E-03	1.540E-03	2.175E-05	7.480E-05	3.571E-04	4.444E-05	3.525E-05	2.686E-05	4.484E-04
71 81	2.448E-04	1.158E-04	6.981E-05	2.062E-05						
72 1	5.635E-19	-8.894E-20	-3.220E-20	1.515E-17	-1.501E-18	-2.958E-16	-3.763E-07	1.256E-05	-6.817E-07	4.734E-08
72 11	-5.089E-08	6.488E-05	7.078E-05	3.557E-05	-3.271E-06	1.998E-06	-1.315E-03	-1.028E-05	-3.861E-06	1.705E-04
72 21	3 128E-05	-2.688E-05	1.033E-04	-1.713E-05	4.675E-04	-1.985E-03	7.158E-04	-4.165E-05	3.656E-03	2.293E-03
72 31	-1.075E-03	5.636E-04	-1.540E-03	3.056E-03	4.249E-05	-3.740E-05	2.075E-04	2.425E-03	-1.441E-03	2.263E-03
72 41	-3.576E-04	8.721E-04	1.303E-03	-1.058E-05	2.672E-03	1.400E-04	-1.008E-03	6.420E-04	4.769E-04	1.254E-04
72 51	1.237E-02	5.800E-05	-7.512E-04	-4.697E-04	1.075E-03	1.106E-02	6.166E-04	-1.258E-03	2.227E-02	7.657E-02
72 61	-4.608E-04	8.130E-02	8.094E-03	1.653E-02	-9.931E-01	4.689E-03	2.474E-03	-4.680E-04	-3.385E-02	4.511E-03
72 71	5.442E-04	2.196E-03	-3.161E-03	6.418E-04	2.078E-03	6.291E-04	-3.681E-03	3.520E-04	1.380E-03	1.686E-04
72 81	1.448E-04	6.817E-07	4.394E-04	-4.926E-04						
73 1	4.998E-20	-2.263E-20	5.344E-20	3.141E-18	-2.850E-19	1.898E-18	-5.376E-08	1.681E-06	-7.455E-08	5.517E-09
73 11	-1.314E-08	9.561E-06	-2.788E-06	8.032E-06	1.236E-07	-5.276E-08	-2.971E-05	2.191E-08	-3.648E-09	-6.788E-07
73 21	1.172E-07	-3.597E-06	1.158E-05	-1.973E-06	1.027E-04	-1.493E-04	8.389E-05	-1.903E-05	3.820E-04	3.112E-04
73 31	-1.288E-04	4.158E-05	-1.221E-04	2.431E-04	3.433E-06	-2.531E-06	4.158E-06	-2.348E-05	1.248E-04	3.698E-04
73 41	1.331E-04	-2.059E-04	-1.476E-04	-1.878E-05	-2.594E-04	-5.676E-06	6.154E-05	-4.751E-05	-1.345E-04	-6.034E-06
73 51	-2.394E-03	9.575E-06	1.690E-04	1.537E-04	-4.487E-04	-3.191E-03	-1.204E-04	2.316E-04	-1.548E-03	-2.018E-03
73 61	1.219E-05	-8.711E-04	-7.715E-05	-9.327E-05	-3.733E-04	2.020E-05	1.082E-04	-2.912E-05	6.194E-03	1.140E-02
73 71	-1.706E-03	-2.898E-03	8.622E-04	9.857E-01	-1.687E-01	3.886E-03	9.831E-03	-1.609E-03	5.143E-03	1.993E-04
73 81	5.611E-05	2.665E-07	-5.326E-04	-4.945E-03						
74 1	-3.584E-18	-6.969E-19	-2.131E-22	-1.232E-21	-1.247E-19	-9.151E-21	4.261E-07	3.739E-08	5.873E-07	4.417E-07
74 11	2.789E-06	4.291E-09	4.158E-09	8.911E-10	-1.032E-05	8.897E-06	1.881E-07	1.618E-05	1.888E-05	1.627E-06
74 21	5.962E-07	3.133E-06	-4.658E-07	-2.161E-05	-1.190E-06	-1.300E-06	3.572E-05	8.474E-06	-1.015E-05	1.303E-07
74 31	2.542E-07	-4.522E-06	3.139E-05	1.668E-05	-1.083E-05	-3.024E-05	-1.313E-07	4.068E-07	-1.494E-06	2 377E-06
74 41	8.049E-06	2.380E-06	2.934E-06	3.286E-04	-3.640E-05	-2.330E-04	-1.481E-04	-6.663E-05	9.881E-07	1.107E-04
74 51	3.854E-06	2.405E-04	-4.572E-05	9.811E-05	1.437E-05	1.063E-05	-3.043E-04	5.855E-04	9.683E-05	-3.140E-05
74 61	4.375E-05	1.091E-06	4.551E-05	1.035E-04	8.928E-07	-6.627E-05	4.534E-05	-9.411E-06	1.339E-05	9.050E-07
74 71	2.954E-05	6.336E-04	3.324E-04	1.173E-05	5.624E-05	-1.426E-04	7.784E-05	2.691E-05	-1.422E-04	7.694E-04
74 81	1.871E-03	-1.000E+00	1.072E-03	-2.342E-04						
75 1	-1.685E-13	-5.356E-14	6.418E-17	-2.167E-15	1.313E-14	-1.365E-15	-1.012E+00	7.680E-04	-1.393E-02	-7.776E-03
75 11	-3.202E-02	1.274E-03	-3.107E-03	4.169E-04	-9.534E-03	-1.527E-02	-9.542E-04	-6.043E-03	1.503E-03	-7.282E-04

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.34.00 CLOCK TIME
154.423 SEC. CPTIME
49311 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ CONTINUED								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
75	21	-1.196E-03	7.584E-04	2.345E-03	1.312E-02	1.746E-03	-5.229E-03	-8.935E-03	-3.421E-03	1.355E-02	5.942E-03
75	31	-2.164E-03	-6.820E-03	2.639E-02	2.220E-02	-2.260E-02	4.207E-02	8.692E-03	-2.280E-03	2.752E-03	1.557E-03
75	41	-2.452E-03	-5.473E-03	-2.863E-03	2.788E-02	-1.388E-02	-3.937E-02	-3.424E-02	-2.079E-02	1.570E-04	3.800E-03
75	51	-8.836E-03	5.508E-02	-9.434E-04	2.620E-03	-6.999E-04	-3.101E-03	-9.756E-03	-2.990E-02	-8.332E-03	-4.919E-03
75	61	-1.114E-03	-2.322E-03	-3.756E-03	9.370E-03	-1.210E-03	3.142E-03	-1.149E-03	1.363E-05	3.514E-02	2.037E-02
75	71	-5.907E-03	-4.829E-03	-5.455E-03	-1.731E-03	-3.427E-03	-2.716E-04	-3.306E-03	6.793E-03	-2.804E-03	-1.187E-03
75	81	-6.543E-04	-4.543E-04	3.467E-03	6.585E-03						
76	1	-1.149E-15	-3.232E-15	-8.359E-16	3.144E-14	-2.532E-15	-1.102E-14	-5.297E-04	-1.014E+00	-5.640E-04	-4.943E-04
76	11	-2.402E-03	-2.279E-02	5.550E-02	-5.333E-03	-6.781E-03	1.644E-03	2.591E-02	1.082E-03	-7.724E-04	1.972E-04
76	21	2.827F-05	-1.388E-03	5.026E-03	-5.614E-03	-4.081E-02	1.168E-01	-4.539E-02	1.753E-03	-1.859E-01	-1.000E-01
76	31	4.919E 02	-1.076E-02	3.570E-02	-6.300E-02	-2.918E-03	1.646E-03	7.941E-04	1.560E-02	-3.253E-02	-6.133E-02
76	41	-3.392E-02	5.366E-02	5.045E-02	7.318E-03	1.159E-01	-1.171E-02	-2.043E-02	2.777E-03	1.546E-03	-3.901E-03
76	51	1.657E-01	-7.694E-04	-9.061E-03	-3.642E-03	8.259E-04	1.461E-01	5.012E-03	1.439E-03	7.085E-02	1.042E-01
76	61	-1.120E-04	4.348E-02	3.111E-03	2.410E-03	9.209E-03	6.412E-04	-5.287E-03	1.525E-03	1.135E-01	-8.228E-03
76	71	-1.392E-02	-2.063E-03	2.825E-03	5.757E-03	-4.379E-03	-1.151E-02	2.026E-02	6.514E-03	-4.107E-03	-1.091E-03
76	81	4.299E-03	7.815E-05	2.803E-03	1.021E-02						
77	1	1.122E-14	-1.623E-14	6.242E-18	-8.663E-17	6.223E-15	1.335E-15	3.376E-03	3.041E-04	-1.002E+00	-2.938E-02
77	11	-3.781E-02	2.437E-03	-2.583E-03	6.941E-04	-1.563E-01	5.487E-02	-1.139E-03	2.806E-02	1.828E-02	2.500E-03
77	21	-1.144E-03	-1.214E-02	-1.316E-02	-8.493E-02	-4.411E-03	-3.488E-03	5.496E-04	1.033E-03	1.226E-02	1.422E-03
77	31	2.085E-03	1.222E-02	3.739E-02	1.196E-02	-1.870E-02	-3.739E-02	1.356E-03	-7.537E-04	-5.970E-04	6.455E-04
77	41	-1.212E-03	-1.773E-03	-1.758E-03	2.307E-02	-2.068E-02	-1.185E-01	-7.016E-02	-1.734E-02	-1.334E-04	-8.461E-02
77	51	-5.298E-03	7.058E-02	-5.180E-03	8.153E-03	5.947E-03	2.090E-03	-1.211E-01	7.463E-02	5.759E-03	-2.317E-03
77	61	3.073E-03	3.353E-04	7.123E-03	1.493E-02	-1.524E-03	-2.920E-02	1.040E-02	-3.019E-03	7.450E-02	-2.337E-03
77	71	-1.186E-02	-7.982E-03	-3.669E-03	-1.531E-03	-2.588E-03	-7.834E-03	1.189E-02	5.840E-03	-1.665E-03	-1.606E-03
77	81	2.161E-03	1.123E-03	2.868E-03	7.233E-03						
78	1	-3.245E-14	2.365E-15	-1.723E-18	-8.442E-17	-4.831E-15	-1.000E-15	2.326E-03	1.567E-04	-1.125E-02	7.717E-01
78	11	-6.265E-01	-4.031E-03	1.151E-03	-7.303E-04	1.882E-01	-8.579E-02	3.175E-04	-5.438E-02	-5.044E-02	-5.041E-03
78	21	3.582E-04	8.592E-04	1.127E-02	1.021E-01	5.864E-03	2.734E-03	-5.750E-02	-1.371E-02	8.211E-03	-2.988E-04
78	31	-1.890E-03	-5.208E-03	-4.642E-02	-1.771E-02	1.644E-02	6.959E-02	9.776E-03	-1.461E-03	2.144E-03	-2.908E-03
78	41	-5.820E-03	-1.535E-03	1.418E-04	-4.080E-02	1.209E-02	8.432E-02	4.548E-02	8.426E-03	9.737E-05	5.056E-02
78	51	1.766E-03	6.109E-02	1.201E-02	-2.316E-02	-7.567E-03	-5.408E-03	1.402E-01	-1.665E-01	-2.201E-02	3.594E-03
78	61	-8.329E-03	-1.400E-03	-1.398E-03	-9.294E-03	1.612E-03	2.368E-02	-1.349E-02	3.273E-03	-8.187E-02	1.393E-02
78	71	3.809E-03	-1.220E-02	-1.436E-02	9.933F-04	1.036E-03	7.898E-03	-1.781E-02	-2.934E-04	5.521E-03	-8.511E-04
78	81	-4.372E-03	-2.517E-03	6.133E-04	-5.956E-03						
79	1	-1.897E-16	5.467E-17	-3.587E-18	9.351E-17	-4.959E-17	-4.103E-15	-3.664E-07	1.217E-04	-7.383E-05	-3.402E-05
79	11	4.295E-05	6.342E-04	1.025E-03	2.664E-04	-6.611E-03	3.195E-03	-9.509E-02	2.520E-02	5.760E-02	-9.928E-01
79	21	-3.354E-03	-8.955E-01	1.029E-02	1.633E-02	1.010E-02	2.882E-02	-8.741E-03	-2.099E-03	-2.543E-02	-4.437E-03
79	31	1.883E-03	-2.686E-03	1.337E-03	-9.160E-03	1.054E-03	3.944E-03	-3.474E-04	-8.336E-03	6.683E-03	1.431E-03
79	41	3.118E-03	-5.289E-03	-2.894E-03	-1.993E-03	1.825E-03	5.604E-03	2.846E-03	7.994E-04	-2.476E-05	3.924E-03
79	51	3.695E-03	4.445E-03	-9.365E-04	-1.755E-03	3.046E-03	2.506E-02	8.726E-03	-4.372E-03	-1.363E-02	-4.961E-03
79	61	-3.331E-04	-5.293E-03	-6.301E-04	-8.840E-04	-1.515E-03	1.316E-03	3.080E-04	-8.629E-05	-1.727E-02	2.000E-03
79	71	1.270E-03	-1.537E-03	-1.987E-03	5.598E-04	2.726E-04	1.595E-03	-3.258E-03	-4.685E-04	9.475E-04	-5.959E-05
79	81	-7.711E-04	-9.350E-05	-1.057E-04	-1.342E-03						
80	1	-8.173E-17	-1.273E-16	-3.027E-19	1.618E-17	4.480E-17	-7.861E-16	3.472E-05	2.118E-05	1.396E-04	1.021E-04
80	11	2.622E-04	1.052E-04	2.899E-04	3.320E-05	5.310E-03	-1.505E-03	-1.398E-02	-7.572E-03	-5.982E-03	3.994E-03
80	21	-9.996E-01	-1.693E-02	-3.698E-03	-1.641E-02	1.324E-03	5.104E-03	-9.085E-04	-2.262E-04	-3.513E-03	-4.914E-04
80	31	2.788E-04	-1.156E-04	5.339E-03	7.024E-04	-2.705E-03	-3.054E-04	3.090E-04	-1.862E-03	1.430E-03	4.368E-04

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA AND MODELB

11.34.01 CLOCK TIME
154.792 SEC. CPTIME
49359 SEC. PPTIME

MODES	(84 X 84) /OUTPUT/ CONTINUED	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
80	41	6.147E-04	-1.586E-03	-1.035E-03	2.870E-03	-2.067E-03	-7.965E-03	-5.224E-03	-1.767E-03	3.600E-05	-3.815E-03
80	51	-3.978E-04	-7.487E-04	-6.924E-04	4.385E-04	1.199E-03	5.710E-03	-6.092E-03	3.631E-03	-2.937E-03	-1.599E-03
80	61	1.399E-04	-1.095E-03	5.291E-05	1.047E-03	-4.796E-04	-1.229E-03	6.837E-04	-2.006E-04	2.242E-03	1.138E-03
80	71	-5.868E-04	-8.040E-04	-7.102E-04	-3.498E-05	-2.247E-04	-9.845E-05	-1.467E-04	4.709E-04	-4.693E-05	-1.295E-04
80	81	-5.844E-05	4.056E-05	2.525E-04	3.783E-04						
81	1	1.897E-16	-1.801E-17	2.584E-18	-2.135E-17	2.732E-17	-1.042E-16	-9.509E-06	-4.897E-05	2.522E-05	5.278E-06
81	11	-9.294E-05	-1.253E-06	6.428E-04	3.066E-05	2.930E-03	-1.528E-03	-6.012E-03	-2.541E-03	-2.630E-03	7.163E-04
81	21	2.085E-04	-3.275E-04	4.385E-03	1.235E-02	1.077E-02	1.215E-01	-1.568E-01	9.726E-01	1.158E-01	1.257E-02
81	31	-1.160E-02	3.383E-03	1.830E-03	1.058E-02	-1.447E-03	-1.137E-02	-1.372E-03	-3.413E-04	1.040E-03	3.651E-03
81	41	4.109E-03	-6.257E-03	-7.343E-03	1.779E-03	-1.877E-02	-6.721E-03	-2.597E-03	-7.269E-05	6.373E-04	-5.341E-03
81	51	-1.692E-02	-6.219E-03	-9.641E-04	7.229E-04	4.361E-03	6.780E-03	-1.004E-02	1.064E-02	-8.713E-03	-8.779E-03
81	61	4.525E-04	-1.285E-03	4.512E-04	1.501E-03	-1.070E-03	-2.595E-03	1.690E-03	-4.729E-04	1.282E-03	2.521E-03
81	71	-1.353E-03	-2.788E-03	-2.505E-03	-3.605E-04	-3.538E-04	-2.184E-05	-8.670E-04	1.010E-03	2.864E-04	-3.632E-04
81	81	-2.957E-04	1.130E-04	5.806E-04	5.038E-04						
82	1	-4.215E-17	-6.478E-19	-4.685E-20	-8.567E-20	-5.678E-18	5.334E-17	3.288E-03	3.554E-07	-4.448E-08	3.060E-06
82	11	2.344E-05	-2.752E-06	-2.494E-05	5.952E-07	-4.458E-04	2.327E-04	1.650E-04	3.426E-04	3.512E-04	1.025E-05
82	21	-5.504E-06	2.679E-05	-6.641E-05	-8.746E-04	7.833E-05	7.240E-05	1.043E-03	2.250E-04	-2.122E-04	1.806E-04
82	31	-8.906E-05	-3.808E-06	1.211E-03	5.001E-04	-4.373E-04	-2.094E-03	-4.208E-04	-3.771E-04	3.781E-04	5.328E-04
82	41	7.087E-04	-6.216E-04	-7.100E-04	2.868E-03	-2.119E-03	-5.434E-03	-3.054E-03	-7.051E-04	3.395E-05	-4.224E-03
82	51	-1.044E-02	-3.405E-02	-9.903E-01	-8.693E-02	-3.355E-02	-5.369E-02	5.636E-02	-5.754E-02	2.388E-03	5.118E-03
82	61	-1.559E-03	1.961E-03	3.766E-04	-1.159E-03	8.709E-04	2.781E-03	-1.782E-03	3.868E-04	-3.526E-03	4.158E-04
82	71	-8.383E-05	-8.537E-04	-8.162E-04	4.446E-05	2.770E-05	1.748E-04	-4.865E-04	5.937E-05	2.505E-04	-6.174E-05
82	81	-1.275E-04	-1.186E-04	5.662E-05	-1.594E-04						
83	1	-3.272E-17	3.560E-18	-9.498E-20	5.077E-19	-4.227E-18	1.039E-16	1.716E-06	1.406E-06	-4.098E-08	-1.052E-06
83	11	1.379E-05	-6.560E-06	-5.933E-05	-1.215E-06	-3.774E-04	1.907E-04	3.806E-04	2.238E-04	2.101E-04	-3.329E-05
83	21	-1.115E-05	-3.303E-05	-1.125E-04	-7.273E-04	1.467E-04	-1.048E-05	4.536E-04	7.821E-05	1.864E-04	3.401E-04
83	31	-2.665E-04	1.612E-04	5.269E-04	2.059E-04	-1.573E-04	-1.476E-03	-2.267E-04	-6.128E-04	6.197E-04	6.703E-04
83	41	7.464E-04	-1.111E-03	-1.216E-03	6.612E-04	-3.058E-03	-3.302E-03	-1.635E-03	-1.839E-04	8.148E-05	-3.471E-03
83	51	-5.905E-03	-6.864E-03	-1.258E-03	1.085E-03	3.394E-03	1.008E-02	-1.624E-02	2.179E-02	-1.481E-02	-1.808E-02
83	61	1.815E-03	-9.146E-03	1.171E-03	3.674E-03	-4.894E-03	-1.342E-02	-9.993E-01	5.020E-03	1.862E-03	-1.174E-03
83	71	2.964E-04	9.043E-04	8.05CE-04	1.065E-04	6.294E-05	-1.114E-04	4.158E-04	-1.733E-04	-9.984E-05	7.887E-05
83	81	1.038E-04	-1.209E-04	-9.727E-05	-2.307E-05						
84	1	-5.652E-18	2.834E-18	-3.565E-20	1.499E-19	-1.207E-18	2.757E-17	-1.686E-07	4.445E-07	-2.878E-06	-1.775E-06
84	11	-3.022E-07	-1.941E-06	-1.766E-05	-5.801E-07	-1.094E-04	4.798E-05	1.172E-04	4.618E-05	3.545E-05	-1.243E-05
84	21	-4.166E-06	-2.118E-05	-4.196E-05	-2.007E-04	2.416E-05	-2.458E-05	2.563E-05	1.434E-06	1.045E-04	8.802E-05
84	31	-8.024E-05	7.280E-05	1.216E-04	4.523E-05	-4.980E-05	-3.038E-04	-2.489E-05	-1.602E-04	1.573E-04	1.610E-04
84	41	1.723E-04	-3.177E-04	-3.577E-04	7.568E-05	-9.848E-04	-1.186E-03	-6.459E-04	-1.092E-04	3.048E-05	-1.316E-03
84	51	-1.759E-03	-2.106E-03	-2.371E-04	4.227E-05	9.319E-04	2.730E-03	-3.934E-03	3.526E-03	-4.042E-03	-4.114E-03
84	61	2.073E-04	-1.834E-03	5.610E-04	1.123E-03	-9.851E-04	-3.128E-03	5.317E-03	1.000E+00	4.200E-04	-7.488E-04
84	71	3.887E-04	8.012E-04	6.781E-04	4.719E-05	5.953E-05	-1.107E-05	2.011E-04	-1.685E-04	-8.853E-05	6.597E-05
84	81	5.963E-05	-2.274E-05	-8.705E-05	-4.222E-05						

END OF WRITE.

MODE1	(21 X 84) /OUTPUT/	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1	3.091E-02	3.752E-02	-9.092E-03	6.576E-03	3.120E-03	6.975E-04	7.504E-03	4.450E-04	3.534E-03	1.382E-03

APPENDIX D

PERTURBED PAYLOAD MODEL DATA

Table D-1. Perturbed payload model A modal characteristics

RUN NO. ORBITP PAGE NO. 18

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.47.03 CLOCK TIME
32.623 SEC. CPTIME
29112 SEC. PPTIME

MODES 0 16 ASMODL /INPUT/ 0

SIZE OF MATRIX READ IS (54 X 47)

MODES	(54 X 17)	/OUTPUT/ (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2	1	3.898E-02	1.863E-01	1.265E-01	3.963E-02	8.965E-02	6.285E-03	1.103E-01	4.563E-02	3.013E-01	1.156E-01
2	11	1.624E-01	4.292E-01	7.232E-03	1.757E-01	1.451E-01	6.894E-02	1.335E-01	7.830E-02	1.006E-02	5.135E-02
2	21	5.965E-03	1.840E-03	1.109E-02	3.513E-03	1.135E-01	1.666E-02	3.446E-03	1.083E-02	7.135E-03	1.135E-02
2	31	3.281E-03	9.596E-03	1.564E-04	1.346E-03	1.134E-03	1.161E-05	5.185E-05	1.876E-05	5.011E-07	8.014E-07
2	41	8.407E-06	5.755E-06	2.581E-05	1.342E-05	3.049E-06	1.268E-05	2.418E-06			
4	1	-1.355E-03	3.039E-04	2.971E-04	-2.300E-03	-3.664E-03	4.116E-04	-1.049E-03	-1.258E-03	7.873E-04	-5.787E-03
4	11	-3.584E-03	-7.128E-04	-7.379E-05	1.798E-03	-4.552E-03	-5.196E-02	2.271E-03	3.047E-02	-6.810E-02	4.674E-02
4	21	1.535E-02	3.417E-03	1.173E-02	-1.020E-01	8.989E-03	-8.910E-03	1.548E-03	4.360E-02	-4.895E-03	1.172E-02
4	31	-3.412E-03	-2.928E-04	1.183E-02	-1.312E-03	-1.344E-02	2.367E-03	7.315E-04	1.927E-04	9.001E-06	-7.959E-02
4	41	7.741E-02	-1.006E-02	-4.401E-03	-4.308E-05	2.974E-04	2.290E-05	3.193E-06			
5	1	3.878E-03	4.407E-04	-4.759E-04	2.638E-03	-1.378E-03	-1.119E-03	-6.003E-05	2.038E-03	-4.728E-03	8.993E-01
5	11	6.785E-03	-3.168E-03	-9.809E-04	-8.077E-03	7.258E-03	2.824E-03	3.471E-02	-7.374E-03	-2.229E-02	-6.256E-03
5	21	5.047E-03	-1.632E-03	-2.438E-02	-8.705E-03	-1.836E-02	-3.173E-02	7.685E-03	-1.044E-03	-1.160E-02	-1.077E-02
5	31	4.541E-02	-2.080E-02	-6.718E-03	1.727E-02	1.706E-01	-2.949E-02	-8.949E-03	-3.013E-04	-9.471E-05	9.353E-01
5	41	-9.092E-01	1.182E-01	5.155E-02	1.225E-03	-3.418E-03	-2.657E-04	-3.690E-05			
6	1	-1.371E-03	-1.942E-04	3.570E-04	2.533E-03	-7.840E-04	-2.892E-03	-2.103E-04	-2.855E-03	3.114E-03	6.344E-03
6	11	3.361E-03	-2.211E-03	5.139E-04	7.947E-03	-1.025E-02	-1.639E-02	-5.831E-02	-1.455E-02	3.104E-02	2.459E-02
6	21	-3.270E-02	1.375E-03	9.908E-02	-1.175E-05	6.218E-02	4.597E-04	-1.221E-02	5.447E-05	-2.097E-02	-1.430E-02
6	31	1.132E-02	-2.859E-02	-4.548E-03	4.523E-03	5.625E-02	-1.007E-02	-3.146E-03	-1.239E-04	-3.410E-05	3.382E-01
6	41	-3.290E-01	4.276E-02	1.869E-02	4.427E-04	-1.187E-03	-9.024E-05	-1.225E-05			
7	1	-1.404E-01	-1.665E-01	4.444E-01	3.261E-01	-7.961E-02	3.193E-01	4.325E-02	1.260E-03	-1.109E-01	-4.341E-02
7	11	4.058E-02	-8.230E-03	-7.010E-02	4.183E-02	-4.480E-02	3.071E-03	1.657E-02	-1.997E-03	7.862E-03	8.965E-03
7	21	2.673E-02	-9.922E-03	9.520E-03	4.272E-03	-2.757E-03	-1.974E-03	5.457E-03	4.618E-04	-1.340E-02	-3.572E-03
7	31	-2.209E-04	8.370E-03	-5.266E-04	-5.680E-04	-7.259E-04	-3.233E-03	1.961E-04	2.623E-06	-2.995E-05	3.097E-08
7	41	-1.540E-05	-1.629E-04	6.956E-05	2.893E-06	-1.302E-08	1.877E-08	3.497E-07			
8	1	-2.644E-02	2.520E-01	-2.064E-02	-4.624E-02	1.142E-01	-6.710E-02	1.266E-01	-7.131E-02	-2.367E-01	-1.338E-01
8	11	2.054E-01	-4.485E-02	-3.948E-01	2.143E-01	-2.290E-01	1.072E-02	5.345E-02	4.476E-03	-2.405E-02	-6.581E-02
8	21	-5.509E-03	1.105E-02	5.235E-04	-7.005E-04	3.798E-02	8.060E-03	1.192E-02	9.435E-03	-5.389E-03	-5.359E-03
8	31	3.697E-04	4.666E-03	-1.746E-03	-1.539E-03	-1.584E-04	-6.079E-04	-2.424E-05	3.218E-05	-9.987E-07	-2.753E-07
8	41	-2.722E-06	-8.883E-06	-1.576E-05	1.541E-05	2.481E-07	-8.777E-06	-1.676E-06			
10	1	1.252E-03	1.548E-04	2.415E-04	1.154E-03	-4.427E-03	-4.674E-04	-1.195E-03	2.541E-03	-5.681E-04	9.430E-03
10	11	-7.204E-03	7.135E-04	-6.727E-03	2.392E-03	1.304E-02	-6.632E-02	2.637E-02	-5.480E-03	4.787E-02	-3.655E-02
10	21	3.109E-02	1.004E-01	7.755E-03	7.351E-03	-8.294E-04	-3.213E-03	1.958E-04	4.284E-02	3.373E-03	-1.938E-02
10	31	9.891E-04	7.565E-03	-7.748E-03	4.998E-04	6.632E-03	4.664E-02	-5.569E-03	3.987E-04	1.670E-01	1.757E-05
10	41	-1.919E-02	-1.566E-01	2.415E-02	-5.155E-04	-1.743E-06	-4.560E-05	-8.412E-06			
11	1	2.572E-03	-2.552E-04	5.732E-04	4.716E-03	-2.624E-04	1.593E-03	1.178E-03	5.442E-03	-5.310E-03	1.187E-02
11	11	-1.029E-02	1.218E-04	-1.127E-02	6.811E-03	1.129E-02	1.619E-02	-2.262E-02	-1.[illegible]8E-03	-2.824E-02	-2.156E-02
11	21	-2.407E-02	-4.308E-03	-1.043E-02	-9.799E-03	7.378E-03	2.715E-02	-3.776E-03	3.[illegible]5-03	-1.698E-02	-1.312E-02
11	31	7.330E-03	1.810E-02	-6.138E-03	3.215E-03	3.975E-02	2.712E-01	-3.162E-02	1.179E-03	9.195E-01	9.879E-05
11	41	-1.056E-01	-8.614E-01	1.327E-01	-3.228E-03	-1.222E-05	-2.520E-04	-3.546E-05			

Table D-1. (Continued)

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.47.04 CLOCK TIME
33.068 SEC. CPTIME
29499 SEC. PPTIME

MODES	(54 X 47)	(1) /OUTPUT/	(2) CONTINUED	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
12	1	2.269E-04	1.835E-03	-5.169E-03	-1.664E-03	9.531E-04	-6.654E-03	-5.218E-04	-9.421E-04	4.529E-03	8.879E-03
12	11	-7.405E-03	1.218E-03	-7.539E-03	-8.021E-03	-3.050E-02	8.548E-03	2.671E-02	-1.461E-02	4.024E-02	6.900E-02
12	21	9.150E-02	-3.586E-02	2.909E-02	1.129E-02	-2.747E-02	8.428E-04	8.568E-03	9.088E-04	-3.043E-02	-1.094E-02
12	31	2.129E-03	2.131E-02	-3.030E-03	4.544E-04	1.315E-02	9.270E-02	-1.110E-02	4.331E-04	3.326E-01	3.584E-04
12	41	-3.823E-02	-3.118E-01	4.811E-02	-1.163E-03	-4.402E-06	-8.563E-05	-1.179E-05			
14	1	-3.898E-02	1.863E-01	1.265E-01	-3.963E-02	-8.965E-02	-8.285E-03	1.103E-01	-4.563E-02	3.013E-01	-1.156E-01
14	11	-1.624E-01	-4.292E-01	-7.232E-03	1.757E-01	1.451E-01	6.694E-02	1.335E-01	-7.830E-02	1.006E-02	5.135E-02
14	21	-5.965E-03	-1.840E-03	-1.109E-02	-3.513E-03	1.135E-01	-1.666E-02	-3.446E-03	1.083E-02	7.135E-03	1.135E-02
14	31	-3.281E-03	9.596E-03	1.564E-04	-1.346E-03	-1.134E-03	-1.161E-05	-5.185E-05	1.878E-05	5.011E-07	8.014E-07
14	41	-6.407E-06	-5.755E-06	-2.581E-05	1.342E-05	3.049E-06	1.268E-05	2.418E-06			
16	1	1.355E-03	3.039E-04	2.971E-04	2.300E-03	3.664E-03	-4.116E-04	-1.049E-03	1.258E-03	7.873E-04	5.787E-03
16	11	3.584E-03	7.128E-04	7.379E-05	1.798E-03	-4.562E-03	-5.196E-02	2.271E-03	-3.047E-02	-6.810E-02	4.674E-02
16	21	-1.535E-02	-3.417E-03	-1.173E-02	1.020E-01	9.989E-03	8.910E-03	-1.548E-03	4.360E-02	-4.895E-03	1.172E-02
16	31	3.412E-03	-2.928E-04	1.183E-02	1.312E-03	1.344E-02	-2.367E-03	-7.315E-04	1.927E-04	9.001E-08	-7.959E-02
16	41	-7.741E-02	1.006E-02	4.401E-03	-4.308E-05	2.974E-04	2.290E-05	3.193E-06			
17	1	3.878E-03	-4.407E-04	4.759E-04	2.638E-03	-1.378E-03	-1.119E-03	8.003E-05	2.038E-03	4.728E-03	8.993E-03
17	11	6.785E-03	-3.168E-03	-9.809E-04	8.077E-03	-7.258E-03	-2.824E-03	-3.471E-02	-7.374E-03	2.229E-02	6.256E-03
17	21	5.047E-03	-1.632E-03	-2.439E-02	-8.705E-03	1.836E-02	-3.173E-02	7.685E-03	1.044E-03	1.160E-02	1.077E-02
17	31	4.541E-02	2.080E-02	6.718E-03	1.727E-02	1.706E-01	-2.949E-02	-8.949E-03	3.613E-04	9.471E-05	-9.353E-01
17	41	-9.092E-01	1.182E-01	5.155E-02	-1.225E-03	3.418E-03	2.657E-04	3.690E-05			
18	1	1.371E-03	-1.942E-04	3.570E-04	-2.533E-03	7.840E-04	2.892E-03	-2.103E-04	2.855E-03	3.114E-03	-8.344E-03
18	11	-3.361E-03	2.211E-03	-5.139E-04	7.947E-03	-1.025E-02	-1.639E-02	-5.831E-02	1.455E-02	3.104E-02	2.459E-02
18	21	3.270E-02	-1.375E-03	-9.908E-02	1.175E-05	6.218E-02	-4.597E-04	1.221E-02	5.447E-05	-2.097E-02	-1.430E-02
18	31	-1.132E-02	-2.859E-02	-4.548E-03	-4.523E-03	-5.625E-02	1.007E-02	3.146E-03	-1.239E-04	-3.410E-05	3.382E-01
18	41	3.290E-01	-4.276E-02	-1.869E-02	4.427E-04	-1.187E-03	-9.024E-06	-1.225E-05			
19	1	-1.404E-01	1.665E-01	-4.444E-01	3.261E-01	-7.961E-02	3.193E-01	-4.325E-02	1.260E-03	1.109E-01	-4.341E-02
19	11	4.058E-02	-8.230E-03	-7.010E-02	-4.183E-02	4.480E-02	-3.071E-03	-1.657E-02	-1.997E-03	-7.862E-03	-8.965E-03
19	21	2.673E-02	-9.922E-03	9.520E-03	4.272E-03	2.757E-03	-1.974E-03	5.457E-03	-4.618E-04	1.340E-02	3.572E-03
19	31	-2.209E-04	-8.370E-03	5.266E-04	-5.680E-04	-7.259E-04	-3.233E-03	1.961E-04	-2.623E-06	2.995E-05	-3.097E-08
19	41	-1.540E-05	-1.629E-04	6.956E-05	-2.893E-06	1.362E-08	-1.877E-06	-3.497E-07			
20	1	2.644E-02	2.520E-01	-2.064E-02	4.674E-02	-1.142E-01	6.710E-02	1.266E-01	7.131E-02	-2.367E-01	1.338E-01
20	11	-2.054E-01	4.485E-02	3.948E-01	2.143E-01	-2.290E-01	1.072E-02	5.345E-02	-4.476E-03	-2.405E-02	-6.581E-02
20	21	5.509E-03	-1.105E-02	-5.235E-04	7.005E-04	3.798E-02	-8.060E-03	-1.192E-02	9.435E-03	-5.389E-03	-5.359E-03
20	31	-3.697E-04	4.666E-03	-1.746E-03	1.539E-03	1.584E-04	6.079E-04	2.424E-05	3.218E-05	-9.967E-07	-2.753E-07
20	41	2.722E-06	8.883E-06	1.576E-05	1.541E-05	2.481E-07	-8.777E-06	-1.676E-06			
22	1	-1.252E-03	1.548E-04	2.415E-04	-1.154E-03	4.427E-03	4.674E-04	-1.195E-03	-2.541E-03	-5.681E-04	-9.430E-03
22	11	7.204E-03	-7.135E-04	6.727E-03	2.392E-03	1.304E-02	-6.632E-02	2.637E-02	5.480E-03	4.797E-02	-3.655E-02
22	21	-3.109E-02	-1.004E-01	-7.755E-03	-7.351E-03	-8.294E-04	3.213E-03	-1.958E-04	4.284E-02	3.373E-03	-1.938E-02
22	31	-9.891E-04	7.565E-03	-7.748E-03	-4.998E-04	-6.632E-03	-4.664E-02	5.569E-03	3.987E-04	1.670E-01	1.757E-05
22	41	1.919E-02	1.566E-01	-2.415E-02	-5.155E-04	-1.743E-06	-4.560E-05	-6.412E-06			
23	1	2.572E-03	2.552E-04	-5.732E-04	4.716E-03	-2.624E-04	1.593E-03	-1.178E-03	5.442E-03	5.310E-03	1.187E-02
23	11	-1.029E-02	1.218E-04	-1.127E-02	-6.811E-03	-1.929E-02	-1.619E-02	2.262E-02	-5.166E-03	2.824E-02	2.156E-02
23	21	-2.407E-02	-4.308E-03	-1.043E-02	-9.799E-03	-7.378E-03	2.715E-02	-3.776E-03	-3.199E-03	1.698E-02	1.312E-02
23	31	7.330E-03	-1.810E-02	6.138E-03	3.215E-03	3.975E-02	2.712E-01	-3.162E-02	-1.178E-03	-9.195E-01	-8.879E-05

Table D-1. (Continued)

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.47.04 CLOCK TIME
33.416 SEC. CPTIME
29547 SEC. PPTIME

MODES	(84 X 47)	/OUTPUT/ CONTINUED								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
23	41	-1.056E-01	-8.614E-01	1.327E-01	3.228E-03	1.222E-05	2.520E-04	3.546E-05		
24	1	-2.269E-04	1.835E-03	-5.169E-03	1.664E-03	-9.531E-04	6.654E-03	-5.218E-04	9.421E-04	4.529E-03	-8.879E-03
24	11	7.405E-03	-1.218E-03	7.539E-03	-8.021E-03	-3.050E-02	8.548E-03	2.671E-02	1.481E-02	4.024E-02	6.900E-02
24	21	-9.150E-02	3.586E-02	-2.909E-02	-1.129E-02	-2.747E-02	-8.428E-04	-8.568E-03	9.088E-04	-3.043E-02	-1.094E-02
24	31	-2.129E-03	2.131E-02	-3.030E-03	-4.544E-04	-1.315E-02	-9.270E-02	1.110E-02	4.331E-04	3.326E-01	3.584E-05
24	41	3.823E-02	3.118E-01	-4.811E-02	-1.163E-03	-4.482E-06	-8.563E-05	-1.179E-05			
25	1	-5.060E-01	2.926E-13	9.572E-14	-2.647E-01	1.230E-01	8.878E-02	4.138E-14	3.438E-01	-4.086E-15	1.172E-01
25	11	4.149E-02	-5.175E-02	1.164E-02	-1.346E-16	-4.852E-17	1.867E-16	-8.481E-16	5.880E-02	4.609E-16	1.498E-15
25	21	4.709E-03	5.935E-05	5.855E-03	1.327E-02	2.087E-16	9.398E-03	-4.718E-03	-3.645E-17	1.071E-16	-6.498E-17
25	31	-3.000E-02	4.119E-17	-3.901E-17	5.103E-04	1.986E-02	-1.881E-03	-2.854E-04	2.781E-19	6.705E-21	-1.210E-17
25	41	3.695E-04	-7.021E-05	-1.050E-04	-1.729E-20	1.138E-18	-9.374E-20	1.444E-20			
27	1	1.036E-01	-1.828E-13	-1.171E-13	1.768E-01	2.279E-01	-5.100E-02	9.533E-15	-2.636E-02	-8.941E-15	3.072E-01
27	11	1.811E-01	-2.985E-01	7.978E-02	-8.000E-16	7.105E-17	2.182E-15	-5.504E-15	3.929E-01	3.319E-15	1.032E-14
27	21	3.949E-02	1.861E-03	2.518E-02	8.327E-02	1.666E-15	7.170E-02	-4.279E-02	-2.298E-16	-5.073E-17	1.747E-17
27	31	1.687E-02	-2.971E-16	2.328E-17	-3.092E-03	2.854E-03	3.120E-04	1.898E-04	-8.639E-18	2.834E-18	-5.045E-1
27	41	-3.053E-05	3.591E-05	1.278E-04	3.399E-19	-3.926E-19	1.142E-19	3.484E-20			
28	1	-1.882E-15	-2.981E-03	-2.371E-03	-1.124E-15	-1.770E-15	1.893E-16	-2.800E-03	4.419E-16	-6.905E-03	-1.629E-16
28	11	-4.764E-17	-9.736E-17	-9.746E-18	2.634E-04	7.464E-03	-1.138E-02	1.976E-02	3.277E-16	-1.131E-02	8.693E-03
28	21	-9.989E-16	5.822E-16	5.021E-16	-5.564E-16	1.556E-02	-1.130E-16	3.271E-17	-4.911E-02	3.242E-02	-1.429E-01
28	31	5.159E-18	3.984E-03	1.697E-01	1.892E-18	-2.346E-17	2.764E-18	5.927E-19	6.633E-04	1.250E-05	-1.620E-03
28	41	-3.598E-17	1.509E-18	5.198E-18	2.533E-03	-2.542E-01	-3.533E-04	-3.433E-05			
29	1	4.018E-03	-1.919E-15	-2.258E-15	4.614E-03	-1.839E-03	-3.355E-03	-1.254E-15	-1.182E-02	1.780E-17	-5.932E-03
29	11	-4.928E-03	2.718E-03	1.366E-03	-3.834E-18	1.300E-17	6.440E-17	-7.667E-17	1.100E-02	9.334E-17	3.652E-16
29	21	3.657E-03	1.479E-03	-5.701E-03	7.216E-04	1.651E-16	2.722E-02	1.556E-02	4.215E-17	2.494E-16	-6.858E-16
29	31	-2.299E-01	-2.681E-16	-1.539E-16	1.859E-03	6.741E-02	-6.011E-03	-9.183E-04	-7.761E-19	-2.419E-19	-2.079E-17
29	41	9.686E-04	-1.966E-04	-3.232E-04	-1.990E-18	2.041E-18	2.863E-19	1.971E-20			
30	1	1.015E-15	1.130E-03	-8.755E-04	-6.558E-16	3.330E-16	7.305E-18	1.212E-03	2.460E-18	-9.500E-03	-2.388E-18
30	11	-4.140E-17	-4.891E-17	3.837E-17	-1.654E-02	9.540E-03	1.869E-02	3.083E-02	3.792E-18	-5.706E-03	-9.980E-03
30	21	8.634E-16	-2.886E-16	1.120E-15	2.708E-16	5.045E-03	2.429E-17	-4.952E-17	1.735E-02	-6.380E-02	-8.358E-03
30	31	-1.197E-17	-8.812E-02	-2.859E-02	-9.079E-18	-3.985E-17	4.058E-18	2.181E-19	9.268E-04	6.299E-05	-1.046E-02
30	41	-2.682E-16	2.140E-17	1.288E-17	1.487E-02	-1.503E+00	-2.188E-03	-2.097E-04			
31	1	-2.163E-01	1.586E-13	-6.587E-14	6.202E-02	-4.072E-03	-1.369E-01	-2.270E-14	-2.421E-01	-7.863E-15	6.615E-02
31	11	-3.113E-02	2.552E-02	4.782E-02	9.098E-17	5.345E-16	-7.671E-17	-1.221E-15	1.294E-02	-3.114E-15	-6.257E-15
31	21	-5.789E-02	1.996E-02	2.590E-02	6.379E-04	-2.940E-15	7.327E-02	4.759E-01	5.694E-16	3.926E-17	5.979E-17
31	31	4.375E-02	-6.303E-18	1.296E-17	2.997E-01	-3.972E-02	2.067E-03	6.821E-03	-1.070E-18	-1.682E-18	7.361E-18
31	41	-2.510E-04	-2.787E-05	-2.156E-04	3.007E-19	-1.198E-18	2.435E-20	1.211E-20			
32	1	1.209E-13	1.860E-01	1.261E-01	5.832E-14	1.088E-13	-1.071E-14	1.079E-01	-1.866E-14	2.705E-01	6.184E-15
32	11	1.484E-15	3.154E-15	7.873E-16	-9.020E-02	-2.053E-01	-1.285E-01	-2.885E-01	-2.078E-15	-4.487E-02	-1.200E-01
32	21	3.374E-14	-8.986E-15	-2.305E-15	2.248E-15	-3.678E-01	5.502E-16	-2.546E-16	-1.827E-02	-8.127E-02	-9.186E-02
32	31	3.586E-16	-1.138E-01	2.480E-02	-3.840E-18	-2.813E-17	-4.406E-18	1.564E-18	8.650E-04	-5.089E-05	-2.715E-04
32	41	4.075E-18	3.270E-18	-9.349E-18	1.491E-05	2.945E-04	-6.933E-03	-5.246E-03			
33	1	5.750E-02	-1.610E-13	-9.128E-14	1.246E-01	2.474E-01	-1.488E-02	1.958E-14	6.830E-02	-7.291E-15	2.712E-0
33	11	9.734E-02	-9.126E-02	6.094E-03	1.989E-16	3.754E-16	-1.297E-15	8.779E-15	-4.526E-01	-4.719E-15	-1.403E-14

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELAG AND MODEL86

19.47.04 CLOCK TIME
33.760 SEC. CPTIME
29607 SEC. PPTIME

MODES	(54 x 47) (1)	/OUTPUT/ (2)	CONTINUED (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
33	21	-5.213E-02	-6.165E-03	-4.713E-02	-1.497E-01	-1.715E-15	-2.005E-01	5.971E-02	3.482E-16	8.353E-17	6.670E-17
33	31	-8.097E-02	-1.406E-16	4.746E-17	-7.806E-03	-8.372E-02	-6.060E-04	-5.967E-03	1.451E-17	-7.682E-17	8.595E-17
33	41	-3.435E-03	-3.096E-03	-1.630E-02	8.045E-19	-1.949E-19	-2.438E-19	2.086E-20			
34	1	-4.828E-16	-7.526E-04	-5.679E-04	-2.800E-16	-5.741E-16	8.333E-17	2.273E-03	-1.969E-16	-1.157E-03	-4.199E-17
34	11	-3.598E-19	2.319E-17	1.644E-17	-4.411E-03	-2.488E-04	3.332E-02	-7.203E-03	-3.152E-16	1.739E-02	-1.235E-02
34	21	4.079E-16	-5.806E-16	-2.151E-16	9.681E-16	-4.195E-03	1.133E-17	-5.493E-17	5.571E-02	-1.969E-02	3.571E-02
34	31	-1.644E-16	-9.414E-03	5.692E-02	-4.287E-19	-1.406E-17	8.068E-18	4.929E-19	4.275E-03	8.741E-05	7.970E-04
34	41	1.466E-17	-3.773E-18	1.860E-18	9.295E-03	1.093E-03	9.812E-06	6.702E-06			
35	1	3.497E-03	-1.474E-15	-1.915E-15	3.750E-03	-1.350E-03	-2.200E-03	9.486E-17	1.112E-03	-1.984E-16	1.177E-02
35	11	8.271E-03	-3.884E-03	-7.833E-04	7.100E-18	-2.117E-18	-1.174E-16	3.770E-17	-1.496E-02	-2.347E-16	-7.724E-16
35	21	-7.915E-03	-1.395E-03	1.023E-02	-3.166E-05	-3.760E-16	-2.988E-02	3.029E-03	-5.054E-17	-9.065E-17	1.624E-16
35	31	4.684E-02	-2.095E-18	-3.015E-18	1.676E-02	1.665E-01	-2.705E-02	-7.205E-03	-2.850E-18	-1.230E-17	-7.435E-16
35	41	3.424E-02	-7.065E-03	-1.368E-02	-4.611E-18	-1.979E-19	1.213E-18	3.805E-19			
36	1	7.961E-16	7.755E-04	-1.162E-03	-7.748E-16	1.317E-16	3.135E-17	4.054E-04	1.007E-16	-1.041E-02	-2.453E-16
36	11	-6.355E-17	-4.735E-17	7.595E-17	-1.572E-02	1.069E-02	1.142E-02	3.479E-02	4.483E-16	-1.019E-02	-6.534E-03
36	21	6.322E-16	-1.030E-16	1.215E-15	5.228E-17	8.084E-03	5.077E-18	-3.478E-17	4.824E-04	-5.365E-02	-3.575E-02
36	31	1.339E-16	-8.285E-02	-1.059E-02	-8.700E-18	-5.048E-17	4.176E-18	3.417E-19	1.792E-04	1.456E-05	-4.690E-03
36	41	-1.757E-16	1.713E-17	1.304E-18	-3.429E-05	8.317E-03	1.748E-03	1.300E-03			
37	1	-2.164E-01	1.587E-13	-6.610E-14	6.241E-02	-4.233E-03	-1.372E-01	-2.281E-14	-2.428E-01	-7.707E-15	8.243E-02
37	11	-2.885E-02	3.926E-02	3.779E-02	1.546E-16	4.586E-16	-5.978E-17	-1.335E-16	-9.965E-03	-1.909E-15	-3.532E-15
37	21	-2.031E-02	8.658E-03	-2.174E-02	-6.614E-03	-4.986E-16	7.834E-03	8.132E-02	1.001E-16	-1.298E-16	3.377E-17
37	31	2.884E-02	6.485E-17	4.056E-18	-5.841E-01	4.957E-02	-2.335E-03	-4.131E-02	-3.554E-18	3.921E-17	-1.505E-17
37	41	9.373E-04	1.710E-03	8.126E-03	6.400E-20	1.817E-19	-2.093E-20	-2.478E-20			
38	1	1.377E-13	2.015E-01	1.013E-01	4.164E-14	1.117E-13	-9.863E-15	1.123E-01	-1.565E-14	1.792E-02	-6.905E-16
38	11	1.078E-15	2.503E-15	1.894E-15	-5.247E-01	-1.301E-01	8.806E-03	1.069E-01	2.819E-15	-4.054E-02	-9.011E-02
38	21	2.940E-15	-7.864E-16	8.186E-15	-6.457E-16	2.703E-01	-2.624E-16	5.887E-16	-2.128E-02	-3.771E-02	2.952E-02
38	31	-3.402E-16	1.783E-01	5.824E-05	1.200E-18	1.750E-17	-1.052E-17	3.125E-18	-2.984E-02	-1.997E-04	2.295E-04
38	41	9.381E-18	4.913E-18	-1.008E-17	6.005E-03	-2.058E-04	4.330E-06	8.050E-07			
39	1	8.794E-03	-1.424E-13	-6.036E-14	6.658E-02	2.665E-01	1.962E-02	1.434E-14	1.570E-02	-2.176E-15	-2.424E-02
39	11	-1.960E-01	2.262E-02	-2.633E-02	-1.682E-16	-1.980E-16	2.823E-16	3.122E-15	-1.468E-01	3.730E-15	3.934E-15
39	21	7.043E-02	2.772E-02	-5.113E-02	-1.034E-01	3.228E-15	5.544E-01	-7.483E-02	1.072E-15	-1.159E-16	-3.446E-16
39	31	8.445E-02	2.579E-17	-5.381E-17	8.225E-03	6.703E-02	-9.256E-02	3.788E-03	8.625E-18	-1.280E-18	-8.082E-17
39	41	1.427E-03	-4.256E-03	1.184E-03	-1.345E-19	2.849E-19	1.462E-19	8.338E-20			
40	1	-3.980E-16	-8.252E-04	-4.680E-04	-2.267E-16	-5.907E-16	9.887E-17	4.304E-03	-4.141E-16	-5.793E-04	-2.388E-17
40	11	5.392E-18	3.946E-17	3.111E-18	-5.757E-03	-1.366E-03	3.170E-02	-8.925E-03	-3.531E-16	3.788E-03	-2.572E-03
40	21	1.374E-16	-2.540E-16	-1.121E-16	4.652E-16	-1.787E-03	-3.850E-17	-4.443E-17	4.942E-02	1.309E-03	-1.117E-02
40	31	1.917E-17	3.949E-03	9.490E-03	2.172E-20	-7.514E-18	-4.404E-18	3.107E-18	-2.954E-02	-2.426E-03	8.642E-04
40	41	3.113E-17	7.947E-17	-4.518E-18	-4.265E-01	-3.581E-03	-4.396E-05	-4.650E-06			
41	1	3.120E-03	-1.170E-15	-2.266E-15	4.143E-03	-1.088E-03	-2.379E-03	5.740E-16	5.523E-03	-1.719E-18	1.349E-02
41	11	-1.591E-03	-1.928E-03	-7.059E-03	-1.901E-17	-2.309E-17	-5.561E-17	1.866E-16	-1.120E-02	2.561E-17	-1.644E-16
41	21	-3.289E-04	-9.032E-04	6.525E-04	-3.414E-03	-2.216E-17	-2.693E-03	9.480E-04	2.042E-17	-8.198E-18	8.073E-17
41	31	5.764E-03	-1.351E-17	-9.993E-19	4.935E-03	3.222E-02	3.986E-02	3.940E-02	1.997E-18	1.814E-18	-8.022E-16
41	41	3.798E-02	7.205E-02	4.133E-01	5.663E-19	4.816E-18	-8.395E-19	-8.748E-19			

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.47.05 CLOCK TIME
34.462 SEC. CPTIME
29703 SEC. PPTIME

MODES (54 X 47) /OUTPUT/ CONTINUED

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
50	61	4.154E-19	9.515E-19	-6.732E-20	-3.997E-03	-2.987E-05	-2.020E-07	-5.266E-09			
51	1	8.799E-03	-1.423E-13	-6.036E-14	6.668E-02	2.673E-01	1.974E-02	1.468E-14	1.800E-02	-2.085E-15	-2.794E-02
51	11	-3.891E-01	7.526E-02	-1.410E-01	-3.185E-16	3.394E-16	6.475E-17	-3.026E-15	1.369E-01	-2.493E-15	-2.767E-15
51	21	-4.801E-02	-1.801E-02	3.222E-02	6.123E-02	-1.822E-15	-2.219E-01	2.481E-02	-6.811E-16	-3.203E-17	3.026E-16
51	31	-1.418E-02	-7.174E-17	1.908E-17	-6.370E-04	-4.588E-03	4.380E-03	-1.147E-04	1.849E-18	3.832E-19	1.374E-18
51	41	-1.187E-05	3.475E-05	-8.239E-06	-3.241E-19	-7.603E-21	6.804E-20	2.509E-20			
52	1	-4.956E-16	-8.013E-04	-6.798E-04	-3.457E-16	-1.196E-15	2.425E-16	1.503E-02	-1.546E-15	1.295E-03	-9.304E-18
52	11	2.298E-17	5.109E-17	5.737E-17	-1.256E-02	-3.178E-03	-1.149E-02	6.369E-03	2.225E-16	-2.580E-03	-1.643E-03
52	21	3.165E-17	5.706E-17	2.844E-16	-2.221E-16	8.804E-03	7.642E-18	3.544E-17	-1.984E-02	-1.783E-03	5.672E-03
52	31	-1.930E-17	4.343E-03	-4.269E-03	2.851E-19	5.457E-18	3.637E-18	-3.570E-17	4.356E-01	-3.540E-04	1.204E-04
52	41	6.364E-18	1.038E-17	-3.377E-19	-3.338E-02	-2.453E-04	-1.581E-06	-3.932E-08			
53	1	3.080E-03	-1.092E-15	-2.581E-15	4.700E-03	-1.337E-03	-5.153E-03	1.248E-15	1.255E-02	4.808E-16	-1.001E-02
53	11	1.454E-03	-3.606E-04	1.623E-03	1.383E-18	-5.621E-18	1.852E-17	-5.768E-17	4.441E-03	4.959E-17	1.645E-16
53	21	7.108E-04	8.627E-05	3.876E-04	1.472E-03	1.812E-17	7.937E-04	-2.830E-03	-8.455E-18	8.720E-18	-9.120E-18
53	31	-3.827E-03	-4.305E-18	1.187E-18	2.314E-02	-2.199E-02	-3.630E-02	-4.327E-01	-3.509E-17	2.252E-16	-8.338E-17
53	41	5.185E-03	9.582E-03	4.433E-02	-2.707E-20	3.607E-19	-4.815E-20	-1.026E-19			
54	1	1.274E-15	1.153E-03	-2.217E-03	-1.490E-15	2.203E-16	2.576E-17	6.844E-04	1.386E-16	-1.437E-02	-3.336E-16
54	11	-5.400E-17	-6.634E-17	4.057E-17	-7.286E-04	1.899E-02	3.893E-03	7.411E-03	2.318E-17	-1.037E-03	2.488E-03
54	21	-3.504E-16	2.103E-17	2.190E-16	1.941E-18	5.499E-03	-1.669E-17	6.987E-18	1.948E-04	-2.207E-02	-8.419E-03
54	31	1.297E-18	-2.711E-03	-3.227E-03	-1.406E-19	-1.095E-17	-7.472E-18	8.514E-19	6.278E-05	-1.370E-03	-1.368E-03
54	41	-2.002E-17	6.565E-17	-5.038E-18	2.968E-04	4.063E-03	-1.897E+00	6.330E-01			

END OF WRITE.

W2A (1 X 10) /INPUT/ 0

1	1	3.43200000E+02	0.	0.	0.
1	2	3.89100000E+02	0.	0.	0.
1	3	8.44400000E+02	0.	0.	0.
1	4	1.01400000E+03	0.	0.	0.
1	5	1.93300000E+03	0.	0.	0.
1	6	4.07100000E+03	0.	0.	0.
1	7	1.12300000E+04	0.	0.	0.
1	8	1.25100000E+04	0.	0.	
1	9	4.25800000E+04	0.		
1	10	8.74900000E+04			

END OF READ.

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.47.06 CLOCK TIME
35.572 SEC. CPTIME
30721 SEC. PPTIME

MODES	(54 X 47)	/OUTPUT/ (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1	1.011E-01	8.660E-02	2.447E-01	1.805E-01	1.652E-01	1.499E-01	1.948E+00	1.007E+00	1.830E+00	2.861E+00
1	11	3.501E-01	3.407E-01	5.557E-03	3.544E-02	4.076E-03	2.612E-01	1.829E-01	1.143E-01	7.043E-01	3.647E-02
1	21	4.020E-02	1.017E+00	5.721E-01	8.957E-03	1.409E-02	1.563E-01	5.978E-01	2.308E-02	4.334E-01	1.647E-02
1	31	1.534E-01	1.713E-03	1.798E-05	4.381E-03	8.822E-04	1.460E-03	6.276E-05	7.358E-06	3.270E-03	4.924E-01
1	41	4.902E-04	4.857E-01	4.657E-04	1.119E-05	4.944E-03	2.417E-04	5.138E-05			
2	1	-3.917E-02	2.669E-01	-3.428E-02	1.182E-01	2.152E-01	3.054E-03	5.847E-01	2.705E-01	1.470E-02	4.136E-01
2	11	-4.594E-02	-1.906E-01	2.644E-03	1.961E-02	-4.602E-03	5.833E-03	6.034E-03	-2.430E-04	8.247E-02	7.289E-03
2	21	8.233E-03	1.559E-01	1.005E-01	-1.669E-03	-2.691E-03	5.100E-02	1.168E-01	3.728E-04	8.879E-02	7.378E-02
2	31	4.461E-02	-2.682E-02	1.330E-04	-5.230E-02	-4.474E-03	2.760E-03	-1.947E-04	-2.514E-04	4.741E-02	-3.098E+00
2	41	-2.841E-03	-3.058E+00	-2.912E-03	2.940E-04	5.985E-04	7.894E-04	1.127E-04			
4	1	1.193E-03	3.011E-04	6.700E-04	-3.928E-03	-1.030E-03	1.635E-03	-1.080E-04	-7.922E-03	2.339E-04	-2.337E-03
4	11	6.687E-03	-1.664E-03	-4.199E-03	1.769E-05	3.256E-02	-1.949E-02	-6.604E-03	8.883E-02	-1.115E-02	1.059E-01
4	21	-1.425E-02	8.719E-03	1.719E-03	-3.641E-03	1.461E-02	-3.764E-02	1.133E-02	1.381E-03	-6.026E-03	-3.306E-04
4	31	4.481E-02	-6.373E-05	4.274E-06	3.105E-04	5.476E-04	1.468E-01	3.198E-04	1.949E-03	-1.389E-01	-2.320E-03
4	41	-2.106E-04	-3.610E-04	3.102E-04	9.582E-06	-1.040E-02	6.645E-05	9.547E-06			
5	1	-2.873E-03	8.518E-05	3.654E-03	1.956E-03	-1.319E-04	-3.980E-03	1.782E-03	1.274E-02	4.958E-03	1.876E-02
5	11	-5.564E-03	4.686E-03	-6.152E-04	-5.344E-03	8.165E-03	-1.603E-02	-3.356E-02	9.878E-03	-3.459E-02	1.059E-02
5	21	-5.283E-04	-1.361E-02	-1.689E-02	-1.961E-03	8.081E-04	1.265E-02	8.746E-03	-1.197E-02	2.109E-02	2.600E-03
5	31	-2.970E-01	3.849E-04	-5.605E-06	-2.047E-03	-3.486E-03	-9.242E-01	-2.014E-03	-1.227E-02	8.736E-01	1.175E-02
5	41	1.320E-03	-6.652E-04	-2.465E-03	-4.407E-05	6.500E-02	-4.215E-04	-6.070E-05			
6	1	-2.709E-05	-7.432E-04	-5.150E-05	-2.480E-04	-1.977E-03	-9.800E-04	-2.179E-02	-8.052E-03	-2.387E-02	-3.603E-02
6	11	-9.060E-03	-7.348E-03	-2.174E-04	-4.586E-03	4.247E-02	3.973E-02	1.779E-02	1.612E-02	7.105E-02	2.059E-03
6	21	4.822E-03	8.836E-02	4.413E-02	-4.478E-05	3.561E-04	1.555E-02	3.523E-02	-3.208E-03	2.840E-02	3.012E-03
6	31	-1.015E-01	-2.159E-05	-9.198E-07	-1.006E-03	-1.261E-03	-3.342E-01	-7.275E-04	-4.438E-03	3.164E-01	4.290E-03
6	41	4.789E-04	-2.208E-04	-8.868E-04	-1.422E-05	2.388E-02	-1.407E-04	-1.976E-05			
8	1	2.978E-02	2.319E-01	-7.653E-02	7.631E-02	1.392E-01	4.529E-02	-2.199E-01	-1.029E-01	2.111E-01	5.812E-02
8	11	-7.145E-02	-1.161E-01	-3.164E-02	-3.391E-02	-1.088E-02	9.015E-03	-1.582E-02	-1.892E-03	2.858E-03	1.391E-03
8	21	2.120E-02	-2.529E-02	7.268E-02	-3.007E-01	-4.772E-02	-1.804E-02	-3.289E-02	-1.650E-03	1.110E-02	4.793E-02
8	31	-7.622E-04	2.391E-02	1.355E-04	4.938E-02	-2.227E-01	-3.111E-04	-5.233E-04	5.138E-04	-7.611E-03	-3.426E-03
8	41	4.420E+00	-8.242E-04	-8.629E-04	1.859E-03	-2.283E-03	-7.556E-04	-1.046E-04			
10	1	-1.275E-03	4.290E-04	3.107E-03	-1.954E-03	-5.177E-04	-8.995E-04	-5.824E-04	4.567E-03	1.199E-04	-1.578E-03
10	11	2.566E-03	-8.201E-04	-1.064E-02	-4.865E-03	4.444E-02	4.079E-03	-1.717E-02	-4.345E-02	1.516E-02	4.374E-03
10	21	-1.358E-01	3.705E-03	-9.163E-04	-4.486E-03	1.899E-02	4.614E-03	-4.511E-03	-1.738E-04	4.937E-04	2.369E-04
10	31	7.694E-04	3.099E-05	-7.578E-07	5.704E-05	-3.873E-04	-2.240E-04	1.004E-01	-1.004E-01	-1.317E-03	-1.137E-05
10	41	8.776E-04	-5.111E-06	1.403E-05	9.996E-04	3.593E-04	-4.484E-05	-6.209E-06			
11	1	-3.758E-03	-5.501E-04	1.638E-03	2.294E-03	-2.856E-05	-1.568E-03	-3.252E-03	5.298E-03	1.033E-03	-6.178E-04
11	11	2.116E-03	-1.484E-03	8.674E-03	-2.055E-02	-1.082E-02	-8.894E-03	-5.872E-02	-2.165E-03	4.052E-02	6.157E-03
11	21	2.268E-02	2.563E-03	-3.439E-02	-5.218E-03	5.741E-03	8.750E-03	1.339E-02	-1.156E-03	-1.978E-02	2.654E-04
11	31	7.580E-03	-1.776E-05	-1.813E-05	-8.722E-05	-4.377E-04	-2.083E-03	9.319E-01	-9.318E-01	-1.219E-02	-1.006E-04
11	41	1.680E-04	-4.675E-05	3.668E-04	8.997E-03	3.303E-03	-4.024E-04	-5.526E-05			
12	1	1.036E-03	2.010E-04	2.637E-03	2.489E-03	7.091E-05	2.353E-03	1.350E-03	3.099E-03	-1.127E-03	-9.244E-04
12	11	1.060E-03	1.638E-03	2.393E-03	-1.290E-02	3.532E-02	9.436E-02	2.847E-03	1.718E-02	-7.806E-02	-4.614E-03
12	21	-8.206E-03	-1.967E-02	6.510E-02	8.312E-03	2.957E-03	1.532E-02	2.497E-02	-2.375E-04	-2.262E-02	-1.804E-03

WOOL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.47.06 CLOCK TIME
35.920 SEC. CPTIME
30773 SEC. PPTIME

NODES	(54 X 47) /OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
12 31	2.603E-03	-1.350E-04	-8.101E-06	-2.618E-04	-2.288E-04	-7.542E-04	3.370E-01	-3.371E-01	-4.414E-03	-3.612E-05
12 41	-1.380E-04	-1.663E-05	1.345E-04	3.084E-03	1.203E-03	-1.339E-04	-1.789E-05			
13 1	9.683E-02	-5.785E-02	2.430E-01	1.414E-01	-1.713E-01	-1.937E-02	-1.976E+00	5.118E-01	-2.339E+00	2.583E+00
13 11	4.356E-01	-3.405E-01	-1.777E-02	3.086E-02	-5.328E-03	-1.963E-01	-2.747E-01	-1.132E-01	-6.357E-01	-1.122E-01
13 21	3.616E-02	1.190E+00	4.495E-02	-4.359E-03	-4.330E-02	-1.629E-01	-6.060E-01	2.988E-02	-4.297E-01	1.833E-02
13 31	1.534E-01	1.714E-03	-1.797E-05	4.382E-03	8.889E-04	-1.460E-03	-6.290E-05	7.707E-06	3.270E-03	4.924E-01
13 41	2.888E-04	-4.857E-01	-4.657E-04	-1.274E-05	4.944E-03	-2.417E-04	-5.138E-05			
14 1	2.168E-02	2.746E-01	-8.567E-04	-8.176E-02	2.025E-01	8.819E-02	5.944E-01	-2.267E-01	1.204E-01	-4.119E-01
14 11	5.850E-02	-1.879E-01	9.431E-03	-1.997E-02	-4.959E-03	4.680E-03	8.741E-03	-1.203E-04	7.660E-02	1.107E-02
14 21	-2.945E-03	-1.851E-01	-7.794E-03	2.781E-03	4.508E-03	5.383E-02	1.211E-01	-1.762E-03	8.581E-02	-7.411E-02
14 31	-4.461E-02	2.682E-02	1.332E-04	5.230E-02	4.480E-03	2.760E-03	-1.955E-04	2.525E-04	-4.741E-02	3.098E+00
14 41	1.669E-03	-3.058E+00	-2.912E-03	2.943E-04	-6.984E-04	7.894E-04	1.127E-04			
16 1	-1.210E-03	-2.944E-06	-6.860E-04	3.936E-03	-6.256E-04	-1.785E-03	-4.728E-04	7.847E-03	-1.806E-03	2.190E-03
16 11	-6.539E-03	-1.818E-03	-3.934E-03	-1.521E-03	3.261E-02	-1.130E-02	-1.810E-02	8.884E-02	1.226E-02	-1.052E-01
16 21	-1.721E-02	-7.709E-03	-1.102E-03	-3.638E-03	1.486E-02	-3.749E-02	1.152E-02	-1.295E-03	-6.181E-03	3.741E-04
16 31	-4.481E-02	6.382E-05	4.272E-06	-3.104E-04	-5.465E-04	1.468E-01	3.190E-04	-1.950E-03	1.389E-01	2.320E-03
16 41	2.265E-04	-3.610E-04	3.101E-04	6.118E-06	1.040E-02	6.645E-05	9.547E-06			
17 1	-2.861E-03	-1.232E-04	3.665E-03	1.946E-03	7.261E-04	-3.979E-03	-1.521E-03	1.153E-02	-1.050E-02	1.752E-02
17 11	-4.832E-03	-4.492E-03	2.459E-03	-4.778E-03	-7.931E-03	3.248E-02	1.171E-02	-9.892E-03	3.566E-02	1.797E-02
17 21	3.600E-03	-1.910E-02	-3.158E-03	-1.582E-03	2.586E-03	-1.133E-02	-7.105E-03	-1.168E-02	-2.229E-02	2.783E-03
17 31	-2.970E-01	3.854E-04	5.674E-06	-2.047E-03	-3.479E-03	9.242E-01	2.009E-03	-1.228E-02	8.736E-01	1.175E-02
17 41	1.422E-03	6.658E-04	2.464E-03	2.240E-05	6.500E-02	4.214E-04	6.070E-05			
18 1	-2.180E-05	-7.416E-04	3.020E-05	-1.682E-04	-1.977E-03	-8.955E-04	-2.185E-02	2.138E-03	-2.919E-02	3.237E-02
18 11	1.047E-02	-7.296E-03	-1.725E-03	4.223E-03	4.225E-03	2.180E-02	4.213E-02	1.601E-02	6.146E-02	1.235E-02
18 21	-4.028E-03	-1.025E-01	-3.044E-03	1.353E-03	1.295E-03	1.550E-02	3.519E-02	2.765E-03	2.860E-02	-3.157E-03
18 31	1.015E-01	2.139E-05	-9.150E-07	1.006E-03	1.258E-03	-3.342E-01	-7.258E-04	4.441E-03	-3.184E-01	-4.290E-03
18 41	-8.152E-04	-2.207E-04	-8.866E-04	-6.335E-06	-2.368E-02	-1.407E-04	-1.976E-05			
20 1	-4.926E-02	2.351E-01	4.195E-02	-5.963E-02	1.414E-01	-3.050E-02	-2.133E-01	7.883E-02	2.010E-01	-8.939E-03
20 11	3.672E-02	-1.327E-01	-5.622E-02	4.372E-03	-5.780E-02	4.348E-02	5.817E-02	3.897E-02	-1.402E-02	-3.528E-03
20 21	-3.044E-02	4.511E-02	-1.488E-01	4.973E-01	7.668E-02	1.242E-02	1.796E-02	-1.556E-03	-2.683E-03	1.719E-02
20 31	-9.308E-05	1.323E-03	-6.258E-06	2.492E-03	-5.523E-03	1.203E-06	3.477E-06	1.993E-06	-1.591E-05	-1.997E-06
20 41	1.298E-03	-5.567E-07	-9.940E-06	2.692E-05	2.254E-05	-1.316E-05	-2.499E-06			
22 1	1.353E-03	3.814E-04	-3.474E-03	2.152E-03	-6.916E-04	8.126E-04	-1.036E-03	-4.972E-03	1.400E-03	1.860E-03
22 11	-2.812E-03	-1.960E-03	-1.527E-02	4.742E-04	4.303E-02	-1.185E-02	7.401E-03	-2.571E-02	-1.026E-03	-1.268E-03
22 21	4.127E-02	-5.443E-03	2.452E-02	-4.202E-03	1.332E-01	1.078E-02	-1.523E-02	1.312E-04	4.503E-03	-1.692E-04
22 31	-7.285E-04	-2.690E-05	2.538E-07	-5.032E-05	4.373E-04	-2.229E-04	1.006E-01	1.003E-01	1.316E-03	1.082E-05
22 41	3.963E-05	-4.942E-06	-7.215E-06	1.027E-03	-3.613E-04	-4.624E-05	-6.469E-06			
23 1	-3.778E-03	2.526E-04	1.523E-03	2.373E-03	2.948E-04	-1.284E-03	3.715E-03	5.338E-03	-2.424E-03	-9.793E-04
23 11	2.344E-03	2.681E-03	-1.738E-03	-2.183E-02	1.102E-02	5.038E-02	-1.308E-02	1.661E-03	-4.585E-03	7.784E-04
23 21	9.331E-03	1.159E-02	-5.941E-02	-2.183E-02	2.214E-02	3.012E-03	1.579E-03	-1.329E-03	1.120E-02	-3.029E-05
23 31	7.572E-03	-2.925E-05	1.759E-05	-1.094E-04	-4.388E-04	2.077E-03	-9.334E-01	-9.303E-01	-1.218E-02	-1.005E-04
23 41	-4.044E-05	4.663E-05	-3.675E-04	-9.021E-03	3.297E-03	4.049E-04	5.578E-05			
26 1	-1.127E-03	-3.124E-05	-2.900E-03	-2.671E-03	4.723E-04	-2.351E-03	2.840E-03	-3.333E-03	-1.198E-03	7.439E-04

WODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS 19.47.07 CLOCK TIME
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6 36.273 SEC. CPTIME
30825 SEC. PPTIME

MODES	(54 X 47)	/OUTPUT/ CONTINUED								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
24	11	-9.916E-04	1.824E-03	-2.650E-03	1.420E-02	-1.071E-04	8.008E-03	6.978E-02	9.935E-03	-2.766E-02	-7.227E-03
24	21	-1.058E-02	2.910E-02	-8.273E-02	-4.233E-02	1.671E-02	3.432E-02	5.463E-02	3.955E-04	-3.915E-02	3.505E-03
24	31	-2.456E-03	1.960E-04	-9.246E-06	3.697E-04	2.910E-04	-7.529E-04	3.375E-01	3.365E-01	4.413E-03	3.621E-05
24	41	5.599E-06	-7.641E-05	1.361E-04	2.950E-03	-1.208E-03	-1.251E-04	-1.634E-05			
25	1	4.867E-01	2.496E-02	-1.469E-01	-1.957E-01	2.681E-02	-2.952E-01	8.386E-03	1.170E-01	-9.951E-03	-2.432E-02
25	11	2.910E-02	3.628E-03	-1.289E-02	8.324E-02	1.909E-03	3.327E-02	-4.632E-02	-5.870E-04	7.285E-03	3.168E-03
25	21	9.261E-03	-2.448E-03	-8.051E-03	-1.550E-02	3.129E-03	4.888E-04	6.224E-06	1.251E-03	-6.020E-05	7.275E-03
25	31	1.662E-03	5.248E-03	6.650E-07	1.125E-02	-9.086E-02	2.772E-07	8.218E-07	1.283E-04	-1.133E-04	9.550E-05
25	41	-2.516E-03	4.454E-07	4.514E-07	-3.774E-07	1.494E-04	2.653E-08	1.497E-10			
27	1	1.048E-01	-7.019E-03	-2.488E-01	1.096E-01	9.974E-03	-4.731E-02	-4.287E-03	-2.335E-01	2.665E-02	9.955E-02
27	11	-1.313E-01	-2.000E-02	-3.319E-03	-2.443E-02	-7.396E-03	2.888E-02	-2.257E-02	3.519E-03	4.481E-03	1.708E-03
27	21	-2.105E-02	1.013E-02	-3.051E-02	6.769E-02	-2.251E-03	1.529E-03	4.980E-03	-8.488E-03	-1.788E-03	-4.943E-02
27	31	-5.501E-03	-2.874E-02	-3.554E-06	-6.133E-02	4.841E-01	-1.484E-06	-4.212E-06	-9.458E-05	7.135E-04	-4.823E-05
27	41	1.344E-02	-2.378E-06	-2.435E-06	1.493E-06	-1.013E-03	-1.217E-07	-7.356E-11			
28	1	1.639E-04	-3.860E-03	3.295E-04	-1.138E-04	-3.172E-03	-1.000E-04	5.991E-03	4.000E-04	-4.880E-03	-8.502E-04
28	11	8.531E-04	3.495E-03	-5.375E-02	-1.084E-02	-2.947E-02	3.632E-03	2.693E-03	7.897E-03	-1.281E-03	-1.316E-04
28	21	-5.497E-03	1.058E-03	-3.072E-03	-5.186E-03	4.220E-03	-3.447E-03	-1.167E-02	-5.641E-05	1.370E-02	-2.569E-04
28	31	-1.437E-05	-7.907E-06	1.270E-05	-1.417E-05	-7.072E-08	3.474E-05	1.655E-03	-4.745E-06	-7.496E-07	-2.096E-08
28	41	3.725E-05	-1.167E-05	-3.947E-03	-9.195E-02	-1.213E-05	5.976E-04	6.015E-05			
29	1	-4.019E-03	-1.443E-04	3.829E-03	4.130E-03	-8.503E-04	1.038E-02	-4.922E-04	-5.955E-03	7.978E-04	7.502E-04
29	11	-3.186E-03	-8.451E-04	-1.137E-02	6.555E-02	2.520E-04	1.635E-02	-2.131E-02	2.698E-05	3.296E-03	1.411E-03
29	21	2.134E-03	-1.720E-04	-5.327E-03	-1.107E-03	1.018E-03	2.811E-04	3.395E-04	-1.175E-04	-1.417E-04	-9.710E-04
29	31	2.083E-04	-6.902E-05	-1.548E-10	-1.251E-04	-1.598E-05	-4.493E-10	1.110E-08	3.569E-05	6.635E-06	1.944E-07
29	41	2.849E-06	-4.294E-10	-1.904E-09	-2.929E-08	-1.310E-05	1.108E-09	4.122E-11			
30	1	-9.700E-06	-1.103E-03	1.874E-05	-1.896E-04	-1.642E-03	-5.050E-04	-7.166E-03	-1.038E-04	3.586E-03	3.743E-04
30	11	-1.809E-04	-5.018E-03	-1.316E-02	-2.360E-03	-1.472E-03	-3.116E-02	-2.732E-02	-8.741E-03	1.116E-02	1.816E-03
30	21	2.481E-03	-8.065E-03	2.810E-02	6.519E-03	-5.160E-04	2.877E-02	5.730E-02	3.218E-04	-7.339E-02	1.235E-03
30	31	7.879E-05	3.773E-05	-6.472E-05	6.738E-05	1.812E-05	-1.844E-04	-8.850E-03	2.536E-05	4.176E-06	1.795E-07
30	41	-2.840E-04	6.253E-05	2.096E-02	4.901E-01	6.467E-05	-3.182E-03	-3.200E-04			
31	1	1.979E-01	1.518E-02	1.177E-01	8.658E-02	-1.341E-02	1.994E-01	-1.599E-02	1.558E-02	6.654E-03	-2.241E-02
31	11	-1.369E-02	-3.968E-03	3.200E-03	-2.895E-02	-2.341E-03	-1.218E-02	1.698E-02	8.994E-04	2.719E-03	-1.004E-03
31	21	-4.040E-03	5.478E-03	-2.209E-02	2.003E-02	4.473E-03	4.271E-03	7.388E-03	-1.029E-03	-6.424E-03	-3.997E-01
31	31	-9.029E-03	1.112E-01	3.513E-07	2.113E-01	1.308E-02	7.131E-09	-3.493E-07	-1.420E-05	4.627E-05	-1.870E-02
31	41	-1.496E-04	2.640E-08	1.113E-08	-2.064E-07	-4.569E-04	4.998E-09	2.767E-11			
32	1	-9.085E-03	2.593E-01	-1.771E-02	1.510E-02	1.823E-01	3.219E-02	2.778E-01	-1.745E-02	-2.632E-01	-2.114E-02
32	11	1.301E-02	-2.416E-01	4.646E-03	-4.472E-04	-4.954E-03	-3.163E-02	-2.936E-02	-1.039E-02	-2.663E-02	-2.571E-03
32	21	-9.587E-05	-6.140E-04	4.162E-03	-1.296E-03	4.782E-04	1.021E-02	2.769E-02	-1.311E-04	1.540E-02	-5.371E-06
32	31	1.466E-06	5.300E-08	9.647E-05	1.656E-08	1.725E-06	4.660E-05	-2.360E-05	6.570E-08	1.924E-08	-8.201E-10
32	41	8.986E-06	9.964E-02	1.124E-04	-1.354E-04	-3.102E-08	-1.580E-03	-1.514E-03			
33	1	-4.087E-02	-1.030E-02	-1.017E-01	2.444E-01	1.302E-02	-5.905E-02	-1.453E-02	3.615E-01	-3.128E-02	-6.387E-02
33	11	-3.226E-01	-5.515E-03	-5.193E-03	2.683E-02	-2.743E-04	-1.809E-02	2.411E-02	-9.076E-06	-9.300E-03	4.691E-02
33	21	-2.331E-03	-7.589E-03	3.829E-03	1.744E-03	-1.297E-03	-4.176E-04	-5.020E-04	-9.332E-03	1.659E-04	-1.378E-03
33	31	2.563E-02	2.809E-04	9.666E-10	5.885E-04	9.440E-06	1.254E-09	-1.918E-08	-6.869E-05	1.917E-03	3.631E-02
33	41	2.482E-05	-1.561E-09	1.076E-08	5.303E-07	-3.589E-03	1.079E-09	4.472E-12			

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.47.07 CLOCK TIME
36.627 SEC. CPTIME
30877 SEC. PPTIME

MODES (54 X 47) /OUTPUT/ CONTINUED

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
34	1	2.864E-05	-4.894E-04	2.617E-05	-1.438E-05	2.483E-03	2.204E-04	8.070E-05	-1.865E-04	-1.235E-03	-8.728E-05
34	11	-4.233E-05	2.441E-03	8.475E-03	1.559E-03	-3.016E-02	7.606E-03	5.898E-03	-2.990E-02	1.145E-04	-1.990E-06
34	21	-3.207E-03	3.769E-04	-4.207E-04	-3.041E-03	1.802E-02	-8.986E-02	3.499E-02	8.168E-05	-1.232E-02	5.608E-05
34	31	5.934E-07	2.431E-07	1.002E-04	3.966E-07	-1.340E-07	-2.076E-03	-9.183E-06	2.251E-08	1.106E-08	4.658E-09
34	41	-6.216E-06	-4.679E-04	-1.081E-02	3.705E-04	2.612E-08	-1.686E-04	-1.549E-04			
35	1	-3.059E-03	-4.346E-05	3.537E-03	2.561E-03	3.371E-04	-4.265E-03	1.121E-04	1.153E-02	-1.967E-03	8.118E-03
35	11	-9.743E-03	7.484E-05	1.201E-03	-8.693E-03	1.220E-04	1.174E-02	-1.572E-02	1.299E-05	3.975E-03	-4.191E-03
35	21	2.788E-03	1.617E-02	-1.641E-03	-1.930E-03	1.467E-03	6.355E-04	7.827E-04	-1.194E-02	-5.896E-04	3.353E-03
35	31	-2.575E-01	2.323E-04	-3.748E-09	-1.421E-03	-1.566E-03	-4.081E-10	3.655E-08	2.349E-04	-8.293E-02	-1.963E-03
35	41	-2.479E-04	3.482E-08	2.327E-07	1.055E-05	-6.924E-02	1.623E-08	5.649E-11			
36	1	-2.441E-05	-7.347E-04	-1.093E-05	-2.028E-04	-1.730E-03	-8.099E-04	-1.709E-02	-1.348E-03	-5.347E-03	-1.246E-04
36	11	-3.657E-04	7.158E-03	3.281E-04	5.888E-05	-1.375E-03	-2.526E-02	-2.375E-02	-8.885E-03	-2.992E-02	-3.035E-03
36	21	1.272E-04	4.409E-04	1.182E-03	3.122E-04	2.294E-04	2.131E-02	6.380E-02	-5.825E-04	7.722E-02	-2.665E-04
36	31	-6.527E-06	-3.637E-07	3.300E-05	-4.154E-07	-4.268E-06	4.871E-03	8.109E-05	-2.203E-07	-7.063E-08	-1.774E-08
36	41	2.269E-05	1.259E-04	6.200E-04	2.516E-04	6.227E-08	3.265E-03	3.079E-03			
37	1	1.979E-01	1.517E-02	1.177E-01	8.655E-02	-1.339E-02	1.990E-01	-1.594E-02	1.525E-02	6.675E-03	-2.343E-02
37	11	-1.366E-02	-3.772E-03	2.940E-03	-2.651E-02	-1.913E-03	-9.677E-03	1.347E-02	6.881E-04	1.731E-03	-4.223E-04
37	21	-3.265E-03	-6.699E-03	-1.840E-02	1.336E-02	3.003E-03	2.270E-03	3.750E-03	-9.228E-04	-2.191E-03	-2.408E-02
37	31	-1.994E-03	-2.060E-01	-6.623E-07	-4.247E-01	-4.596E-02	-4.395E-08	2.187E-06	8.681E-05	-1.129E-03	3.187E-03
37	41	9.781E-04	-1.859E-07	-1.148E-07	2.831E-06	3.593E-03	-1.190E-07	-3.400E-09			
38	1	-9.428E-03	2.471E-01	-1.766E-02	1.185E-02	1.428E-01	1.769E-02	1.103E-04	-2.435E-02	-1.001E-01	-9.034E-04
38	11	-1.483E-02	4.819E-01	-7.155E-03	2.811E-03	1.881E-02	-3.042E-03	3.628E-04	5.880E-03	2.872E-02	3.203E-03
38	21	2.626E-03	-3.079E-03	8.592E-03	2.451E-02	-1.310E-03	1.032E-02	-4.224E-03	1.817E-04	-3.444E-02	4.675E-04
38	31	5.752E-06	8.642E-06	-1.528E-02	1.700E-05	-2.823E-05	-7.227E-05	-7.910E-05	2.473E-07	-2.628E-07	-1.168E-07
38	41	1.469E-04	-2.230E-04	-3.569E-03	-1.429E-04	-8.404E-08	-9.401E-07	-2.034E-07			
39	1	3.137E-03	-9.849E-03	-1.546E-01	2.088E-01	7.363E-03	7.374E-03	-1.447E-02	6.762E-02	1.184E-02	-5.969E-02
39	11	2.804E-01	6.099E-03	-2.226E-03	1.797E-02	2.212E-04	-3.474E-03	4.161E-03	-6.945E-05	-3.667E-04	-1.110E-03
39	21	-3.828E-05	3.700E-04	6.617E-05	2.234E-04	2.810E-04	4.908E-04	9.256E-04	4.158E-01	2.209E-03	2.594E-04
39	31	-2.873E-02	-1.397E-04	2.844E-09	-3.832E-04	1.541E-03	-7.134E-09	-3.948E-08	-9.685E-05	-1.634E-03	-1.253E-04
39	41	7.263E-05	-1.343E-08	-8.623E-09	2.358E-07	-7.080E-04	-4.879E-09	-1.445E-10			
40	1	5.141E-05	-8.779E-04	4.693E-05	-2.561E-05	4.450E-03	3.983E-04	3.026E-04	-2.412E-04	-1.488E-03	-8.386E-05
40	11	-1.008E-04	4.255E-03	1.224E-02	2.247E-03	-2.800E-02	3.229E-03	2.276E-03	-5.135E-03	1.995E-04	9.789E-05
40	21	-7.879E-03	4.330E-04	-6.860E-05	-3.374E-03	1.569E-02	-3.206E-02	7.663E-03	1.197E-05	-4.220E-04	-4.499E-05
40	31	-8.145E-07	-1.785E-06	-8.277E-04	-3.196E-06	4.718E-06	-1.959E-03	1.772E-05	-4.517E-08	-1.675E-07	-9.515E-08
40	41	1.293E-04	-6.046E-04	4.288E-01	-1.674E-02	-1.338E-06	1.892E-04	1.965E-05			
41	1	-3.227E-03	-6.424E-05	3.455E-03	3.034E-03	3.520E-04	-4.409E-03	1.345E-04	8.701E-03	-1.184E-03	5.681E-04
41	11	-3.109E-03	3.203E-04	1.712E-03	-9.410E-03	1.665E-04	1.453E-02	-1.940E-02	1.066E-05	4.041E-03	2.561E-04
41	21	3.041E-03	4.580E-03	-6.629E-03	-2.332E-03	2.019E-03	8.018E-04	9.944E-04	-4.216E-03	-6.140E-04	7.129E-04
41	31	-8.767E-02	4.165E-04	3.321E-09	1.712E-03	2.522E-03	-5.920E-08	7.027E-07	3.500E-03	-6.109E-02	-1.028E-03
41	41	3.057E-04	-5.226E-08	-1.132E-06	-5.899E-05	4.120E-01	-2.067E-07	-3.997E-09			
42	1	-2.485E-05	-7.064E-04	-1.525E-05	-1.948E-04	-1.292E-03	-6.762E-04	-1.348E-02	-5.651E-04	3.149E-03	4.915E-04
42	11	-5.141E-04	1.803E-03	1.105E-03	9.168E-05	-2.076E-03	-2.148E-02	-1.955E-02	-6.061E-03	-6.974E-03	-4.271E-04
42	21	2.161E-04	-3.062E-03	1.182E-02	9.322E-05	8.671E-04	1.963E-02	4.512E-02	-9.147E-05	2.907E-03	2.579E-04
42	31	2.533E-05	2.575E-06	-4.891E-06	2.958E-06	5.721E-05	2.067E-03	-1.633E-03	4.591E-06	1.723E-06	4.617E-07

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.47.07 CLOCK TIME
36.983 SEC. CPTIME
30877 SEC. PPTIME

MODES	(84 X 47) (1)	/OUTPUT/ (2)	CONTINUED (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
42 41	-5.973E-04	-8.205E-04	4.085E-04	-1.205E-02	-2.942E-06	-2.801E-01	-1.342E+00			
43 1	1.979E-01	1.517E-02	1.176E-01	8.640E-02	-1.339E-02	1.989E-01	-1.590E-02	1.594E-02	6.492E-03	-2.409E-02
43 11	-1.359E-02	-3.370E-03	2.604E-03	-2.278E-02	-1.133E-03	-3.656E-03	5.101E-03	3.240E-04	7.031E-04	2.914E-04
43 21	-1.317E-03	-1.651E-02	-9.866E-03	2.138E-03	6.536E-04	-7.162E-04	-1.626E-03	-6.529E-04	3.406E-03	3.737E-01
43 31	5.108E-05	8.855E-02	-1.681E-06	1.681E-01	8.985E-02	2.056E-07	-1.063E-05	-8.545E-05	2.523E-04	-3.930E-04
43 41	-5.736E-03	1.116E-06	9.955E-07	-3.616E-05	-3.635E-04	2.638E-06	4.050E-07			
44 1	-9.731E-03	2.334E-01	-1.730E-02	8.383E-03	1.398E-01	7.554E-03	-2.146E-01	-1.374E-02	1.991E-01	2.486E-02
44 11	-2.000E-02	-1.072E-01	-3.004E-02	-1.530E-02	-7.473E-03	2.463E-04	-1.295E-02	-6.789E-03	5.996E-03	1.608E-03
44 21	9.345E-03	-2.328E-02	7.728E-02	-3.126E-01	-3.996E-02	-1.723E-02	-3.744E-02	9.205E-04	1.499E-02	-1.122E-02
44 31	6.016E-05	-1.131E-03	9.354E-05	-2.192E-03	6.479E-03	-3.061E-05	9.140E-05	-8.831E-06	1.192E-04	5.061E-05
44 41	-6.453E-02	2.470E-05	-1.308E-05	3.023E-04	1.973E-05	1.405E-03	1.349E-03			
45 1	5.057E-02	-8.856E-03	-1.992E-01	1.625E-01	2.431E-03	4.537E-02	-8.835E-03	-2.516E-01	2.960E-02	9.896E-02
45 11	-1.377E-01	-2.091E-02	-3.818E-04	-4.295E-02	-7.419E-03	1.997E-02	-1.170E-02	3.364E-03	2.934E-03	1.055E-03
45 21	-2.057E-02	6.280E-03	-2.739E-02	6.136E-02	-2.308E-03	1.034E-03	3.701E-03	-6.893E-03	-6.770E-04	3.795E-02
45 31	-1.859E-03	1.992E-02	1.405E-07	4.247E-02	-3.318E-01	2.774E-06	5.919E-06	2.001E-04	-1.424E-03	3.502E-05
45 41	-3.181E-02	5.770E-06	9.451E-06	-1.321E-05	4.440E-03	1.599E-06	8.079E-08			
46 1	7.007E-05	-1.087E-03	3.320E-05	-5.206E-06	1.424E-03	1.670E-04	1.056E-03	-1.161E-04	-1.361E-03	-9.273E-05
46 11	-2.913E-05	2.557E-03	2.362E-02	4.278E-03	-4.245E-02	7.437E-04	-4.487E-05	1.681E-02	3.994E-05	2.133E-04
46 21	-1.701E-02	7.688E-04	1.386E-04	-5.864E-03	2.185E-02	9.110E-03	-1.570E-02	-5.425E-05	1.170E-02	-1.704E-04
46 31	-2.484E-06	-3.838E-06	3.450E-05	-6.883E-05	8.309E-06	3.547E-05	2.832E-05	-7.163E-08	-1.612E-07	-8.113E-08
46 41	1.077E-04	4.473E-06	-3.340E-03	4.306E-03	5.152E-07	-3.784E-04	-3.319E-04			
47 1	-3.518E-03	-1.031E-04	2.936E-03	3.045E-03	6.989E-05	-6.874E-04	-1.349E-05	6.986E-03	-7.500E-04	-1.283E-03
47 11	2.879E-03	6.223E-04	4.574E-03	-2.606E-02	2.502E-04	3.606E-02	-4.778E-02	9.908E-05	9.379E-03	4.091E-03
47 21	6.629E-03	-1.199E-03	-2.062E-02	-4.178E-03	5.031E-03	1.974E-03	2.509E-03	-1.251E-03	-1.380E-03	-7.136E-04
47 31	6.501E-03	-4.849E-05	-7.237E-08	-1.204E-04	-2.285E-04	-3.236E-08	1.143E-06	4.877E-03	9.657E-04	1.495E-05
47 41	-1.030E-05	1.736E-08	-3.266E-07	-8.802E-06	-3.390E-03	6.416E-07	1.142E-07			
48 1	-2.729E-05	-5.831E-04	-3.685E-05	-1.692E-04	-7.797E-04	-4.549E-04	-8.089E-03	-2.003E-04	4.242E-03	4.783E-04
48 11	-3.082E-04	-5.172E-03	3.242E-03	4.783E-04	-3.966E-03	-3.113E-02	-2.733E-02	-6.918E-03	1.117E-02	1.843E-03
48 21	2.433E-04	-7.925E-03	2.800E-02	6.193E-03	2.830E-03	3.000E-02	5.415E-02	3.053E-04	-6.971E-02	1.155E-03
48 31	8.986E-05	2.954E-05	-4.514E-05	5.188E-05	1.338E-05	-7.522E-05	-3.864E-03	1.102E-05	1.624E-06	4.864E-08
48 41	-7.900E-05	2.224E-05	2.291E-04	-2.442E-02	-6.252E-06	3.209E-03	2.894E-03			
49 1	3.754E-02	1.258E-02	3.310E-01	2.846E-01	2.555E-02	-3.416E-01	1.714E-02	-1.418E-01	9.604E-03	-7.510E-04
49 11	1.196E-02	-5.144E-04	-2.066E-03	1.148E-02	-7.233E-05	-6.380E-03	8.432E-03	-1.007E-05	-1.578E-03	-9.523E-05
49 21	-1.075E-03	-1.511E-03	2.262E-03	8.300E-04	-5.604E-04	-1.734E-04	-2.087E-04	6.629E-04	9.612E-05	-4.913E-05
49 31	4.950E-03	-1.346E-02	6.673E-07	6.975E-03	2.523E-05	8.635E-10	-1.136E-08	-4.845E-05	7.940E-04	1.063E-05
49 41	-4.315E-06	7.372E-10	9.466E-09	4.482E-07	-3.009E-03	8.472E-10	3.325E-12			
50 1	-1.233E-02	3.055E-01	-2.280E-02	1.569E-02	-4.831E-01	-3.529E-02	2.798E-02	3.841E-03	4.621E-03	-3.378E-04
50 11	6.819E-04	-1.090E-02	1.446E-02	2.537E-03	-1.567E-02	1.460E-03	9.989E-04	-2.274E-03	-1.233E-04	1.542E-05
50 21	-2.855E-03	1.651E-04	-7.154E-05	-1.140E-03	4.253E-03	-6.666E-03	1.531E-03	1.468E-06	8.699E-06	-5.237E-06
50 31	-4.243E-08	5.365E-07	1.515E-02	-4.018E-07	1.608E-07	-2.743E-05	3.042E-07	-8.061E-10	-1.998E-09	-1.096E-09
50 41	1.480E-06	-7.097E-06	3.571E-03	-1.274E-04	-9.742E-09	7.574E-07	1.581E-08			
51 1	3.138E-03	-9.852E-03	-1.548E-01	2.090E-01	7.403E-03	7.418E-03	-1.461E-02	6.849E-02	1.236E-02	-6.284E-02
51 11	3.105E-01	7.263E-03	-3.099E-03	2.510E-02	5.365E-04	-1.282E-02	1.577E-02	-2.746E-04	-2.228E-03	-7.148E-03

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.47.08 CLOCK TIME
37.332 SEC. CPTIME
30925 SEC. PPTIME

MODES (54 X 47) /OUTPUT/ CONTINUED

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
51	21	-3.756E-04	8.238E-03	1.032E-02	-2.896E-03	-1.458E-03	-8.791E-04	-1.476E-03	-3.946E-01	-1.907E-03	1.264E-04
51	31	6.181E-03	1.694E-05	-3.405E-10	4.376E-05	-1.175E-04	3.222E-10	1.762E-09	4.308E-06	6.810E-05	4.931E-06
51	41	-2.825E-06	5.142E-10	2.274E-10	-5.677E-09	1.633E-05	6.110E-11	3.603E-13			
52	1	5.807E-05	-1.170E-03	1.030E-04	-7.700E-05	1.257E-02	1.064E-03	-5.623E-04	-5.670E-04	-2.108E-03	-1.110E-05
52	11	-3.146E-04	1.006E-02	-5.131E-04	-6.263E-06	9.937E-04	-1.162E-04	-2.662E-05	2.069E-04	6.356E-04	6.989E-05
52	21	1.668E-04	-7.512E-05	1.953E-04	6.024E-04	-2.209E-04	6.081E-04	-1.879E-04	4.566E-06	-8.977E-04	1.446E-05
52	31	3.052E-07	1.746E-05	4.379E-01	-8.234E-06	1.165E-06	-6.224E-06	1.121E-06	-3.449E-09	2.613E-09	1.004E-09
52	41	-1.213E-06	6.435E-07	7.433E-04	-2.420E-05	-1.441E-09	1.318E-07	2.513E-09			
53	1	-3.207E-03	-5.225E-05	4.269E-03	3.967E-03	7.815E-04	-1.085E-02	6.651E-04	-3.207E-03	6.529E-05	4.555E-04
53	11	5.368E-04	6.496E-05	-1.129E-04	8.378E-04	3.857E-05	-9.330E-06	-1.336E-06	-1.531E-05	-9.593E-05	5.777E-06
53	21	3.138E-05	8.988E-05	5.030E-04	-2.756E-04	-9.404E-05	-6.392E-05	-1.026E-04	6.871E-05	6.390E-05	7.122E-04
53	31	1.496E-03	3.922E-01	-1.925E-05	-1.949E-01	-1.784E-03	-8.162E-10	3.176E-08	1.371E-05	-2.110E-04	3.203E-05
53	41	1.147E-05	-2.113E-09	-2.631E-09	-7.208E-08	6.019E-04	-4.538E-10	-2.117E-12			
54	1	-2.485E-05	-7.064E-04	-1.525E-05	-1.948E-04	-1.292E-03	-6.762E-04	-1.348E-02	-5.653E-04	3.151E-03	4.917E-04
54	11	-5.147E-04	1.806E-03	1.108E-03	9.196E-05	-2.089E-03	-2.165E-02	-1.971E-02	-6.109E-03	-7.036E-03	-4.310E-04
54	21	2.182E-04	-3.093E-03	1.195E-02	9.429E-05	8.782E-04	1.996E-02	4.591E-02	-9.351E-05	2.975E-03	2.665E-04
54	31	2.694E-05	2.854E-06	-5.429E-06	3.299E-06	6.727E-05	2.739E-03	-2.172E-03	6.112E-06	2.343E-06	6.411E-07
54	41	-8.331E-04	-1.151E-03	6.952E-04	-2.194E-02	-5.552E-06	-1.956E+00	4.114E-01			

END OF WRITE.

W28 (1 X 10) /INPUT/

0

1	1	1.14300000E+02	0.	0.	0.
1	2	2.02100000E+02	0.	0.	0.
1	3	5.20100000E+02	0.	0.	0.
1	4	6.93000000E+02	0.	0.	0.
1	5	3.54900000E+03	0.	0.	0.
1	6	3.98100000E+03	0.	0.	0.
1	7	6.53300000E+03	0.	0.	0.
1	8	1.77700000E+04	0.	0.	
1	9	2.75100000E+04	0.		
1	10	3.31200000E+04			

END OF READ.

Table D-3. Perturbed payload model A constraint modes

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.47.08 CLOCK TIME
37.704 SEC. CPTIME
31340 SEC. PPTIME

TR (54 X 7) /OUTPUT/ CONTINUED

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
7	1	1.000E+00	6.008E-03	-6.008E-03	1.238E-12	-6.008E-03	6.008E-03	2.308E-13			
8	1	-3.138E-01	-2.616E-01	-3.182E-01	3.138E-01	2.616E-01	3.182E-01	1.000E+00			
9	1	0.	0.	1.000E+00	0.	0.	0.	0.			
10	1	-8.302E-15	-7.713E-04	6.090E-03	-8.380E-15	7.713E-04	-6.090E-03	-8.871E-16			
11	1	-1.617E-14	9.562E-03	-9.562E-03	-1.600E-14	8.597E-03	-8.597E-03	7.566E-16			
12	1	-5.319E-03	5.526E-05	-5.526E-05	5.319E-03	-5.526E-05	5.526E-05	-2.008E-15			
13	1	0.	0.	0.	1.000E+00	0.	0.	0.			
14	1	-2.090E-02	-4.422E-01	-1.376E-01	2.090E-02	4.422E-01	1.376E-01	1.000E+00			
15	1	0.	0.	0.	0.	1.000E+00	0.	0.			
16	1	-7.488E-15	6.127E-03	-8.080E-04	-7.749E-15	-6.127E-03	8.080E-04	-1.761E-15			
17	1	-2.520E-14	8.856E-03	-8.856E-03	-2.456E-14	9.303E-03	-9.303E-03	1.455E-15			
18	1	-5.319E-03	5.526E-05	-5.526E-05	5.319E-03	-5.526E-05	5.526E-05	3.193E-16			
19	1	1.239E-12	-6.008E-03	6.008E-03	1.000E+00	6.008E-03	-6.008E-03	-2.142E-13			
20	1	-3.138E-01	-2.616E-01	-3.182E-01	3.138E-01	2.616E-01	3.182E-01	1.000E+00			
21	1	0.	0.	0.	0.	0.	1.000E+00	0.			
22	1	8.366E-15	-7.713E-04	6.090E-03	8.316E-15	7.713E-04	-6.090E-03	-1.011E-15			
23	1	-1.587E-14	8.597E-03	-8.597E-03	-1.630E-14	9.562E-03	-9.562E-03	-4.309E-16			
24	1	-5.319E-03	5.526E-05	-5.526E-05	5.319E-03	-5.526E-05	5.526E-05	-2.008E-15			
25	1	5.000E-01	-9.896E-01	9.896E-01	5.000E-01	-9.896E-01	9.896E-01	-2.377E-14			
26	1	0.	0.	0.	0.	0.	0.	1.000E+00			
27	1	-5.497E-13	5.357E-01	-3.568E-02	-5.559E-13	5.357E-01	-3.568E-02	7.023E-15			
28	1	-1.117E-15	3.499E-03	1.820E-03	1.117E-15	-3.499E-03	-1.820E-03	1.907E-14			
29	1	-2.086E-14	9.079E-03	-9.079E-03	-2.096E-14	9.079E-03	-9.079E-03	2.405E-16			
30	1	-5.319E-03	5.526E-05	-5.526E-05	5.319E-03	-5.526E-05	5.526E-05	-4.034E-15			
31	1	5.000E-01	-3.087E-01	3.087E-01	5.000E-01	-3.087E-01	3.087E-01	-6.655E-15			
32	1	-6.346E-02	-2.618E-01	-1.372E-01	6.346E-02	2.618E-01	1.372E-01	1.000E+00			
33	1	-3.008E-13	4.274E-01	7.263E-02	-3.059E-13	4.274E-01	7.263E-02	4.305E-15			
34	1	-2.631E-16	3.499E-03	1.820E-03	2.643E-16	-3.499E-03	-1.820E-03	4.368E-15			
35	1	-2.086E-14	9.079E-03	-9.079E-03	-2.096E-14	9.079E-03	-9.079E-03	1.991E-16			
36	1	-5.319E-03	5.526E-05	-5.526E-05	5.319E-03	-5.526E-05	5.526E-05	-1.700E-15			
37	1	5.000E-01	-3.087E-01	3.087E-01	5.000E-01	-3.087E-01	3.087E-01	-6.655E-15			
38	1	-1.432E-01	-2.609E-01	-1.380E-01	1.432E-01	2.609E-01	1.380E-01	1.000E+00			
39	1	-9.616E-15	2.912E-01	2.088E-01	-1.299E-14	2.912E-01	2.088E-01	1.481E-15			
40	1	-1.967E-16	2.693E-03	2.626E-03	1.948E-16	-2.693E-03	-2.626E-03	3.346E-15			
41	1	-1.881E-14	9.079E-03	-9.079E-03	-1.893E-14	9.079E-03	-9.079E-03	1.837E-16			
42	1	-5.319E-03	5.526E-05	-5.526E-05	5.319E-03	-5.526E-05	5.526E-05	-1.892E-15			
43	1	5.000E-01	-3.087E-01	3.087E-01	5.000E-01	-3.087E-01	3.087E-01	-6.655E-15			
44	1	-2.230E-01	-2.601E-01	-1.388E-01	2.230E-01	2.601E-01	1.388E-01	1.000E+00			
45	1	2.568E-13	1.550E-01	3.450E-01	2.554E-13	1.550E-01	3.450E-01	-1.154E-15			
46	1	-1.336E-16	1.886E-03	3.433E-03	1.340E-16	-1.886E-03	-3.433E-03	2.321E-15			
47	1	-1.753E-14	9.079E-03	-9.079E-03	-1.767E-14	9.079E-03	-9.079E-03	1.741E-16			
48	1	-5.319E-03	5.526E-05	-5.526E-05	5.319E-03	-5.526E-05	5.526E-05	-2.008E-15			
49	1	5.000E-01	1.453E-01	-1.453E-01	5.000E-01	1.453E-01	-1.453E-01	3.527E-15			
50	1	-1.432E-01	-3.956E-01	-2.693E-01	1.432E-01	3.956E-01	2.693E-01	1.000E+00			
51	1	-9.635E-15	2.912E-01	2.088E-01	-1.303E-14	2.912E-01	2.088E-01	1.481E-15			
52	1	-1.654E-16	2.693E-03	2.626E-03	1.435E-16	-2.693E-03	-2.626E-03	2.986E-15			
53	1	-1.872E-14	9.079E-03	-9.079E-03	-1.886E-14	9.079E-03	-9.079E-03	1.837E-16			
54	1	-5.319E-03	5.526E-05	-5.526E-05	5.319E-03	-5.526E-05	5.526E-05	-1.902E-15			

END OF WRITE.

END OF READ.

Table D-4. Perturbed payload model B constraint modes

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODEL66

19.47.09 CLOCK TIME
38.478 SEC. CPTIME
31619 SEC. PPTIME

IVEC (1 X 7) /INPUT/ 0

1 1 6 8 9 15 17 18 21
END OF READIM.

TR 0 13 86FREE /INPUT/ 0

SIZE OF MATRIX READ IS (54 X 7)

TR (54 X 7) /OUTPUT/

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1	2.575E-03	1.000E+00	-2.575E-03	-2.575E-03	-1.535E-12	2.575E-03	1.752E-12			
2	1	-2.884E-01	3.138E-01	-2.914E-01	2.884E-01	-3.138E-01	2.914E-01	1.000E+00			
3	1	1.000E+00	0.	0.	0.	0.	0.	0.			
4	1	5.780E-03	-6.107E-15	-4.610E-04	-5.780E-03	-8.652E-15	4.610E-04	4.638E-15			
5	1	9.270E-03	1.675E-14	-9.270E-03	8.892E-03	1.977E-14	-8.892E-03	-3.560E-15			
6	1	5.420E-05	5.319E-03	-5.420E-05	-5.420E-05	5.319E-03	5.420E-05	-1.842E-14			
7	1	0.	1.000E+00	0.	0.	0.	0.	0.			
8	1	-1.042E-01	2.096E-02	-4.756E-01	1.042E-01	-2.096E-02	4.756E-01	1.000E+00			
9	1	0.	0.	1.000E+00	0.	0.	0.	0.			
10	1	-5.488E-04	8.825E-15	5.868E-03	5.488E-04	8.082E-15	-5.868E-03	3.401E-15			
11	1	9.168E-03	2.282E-14	-9.168E-03	8.994E-03	2.937E-14	-8.994E-03	-1.077E-14			
12	1	5.420E-05	-5.319E-03	-5.420E-05	-5.420E-05	5.319E-03	5.420E-05	1.565E-15			
13	1	-3.100E-03	-1.653E-12	3.100E-03	3.100E-03	1.000E+00	-3.100E-03	-2.363E-12			
14	1	-2.884E-01	3.138E-01	-2.914E-01	2.884E-01	-3.138E-01	2.914E-01	1.000E+00			
15	1	0.	0.	0.	1.000E+00	0.	0.	0.			
16	1	5.780E-03	6.723E-15	-4.610E-04	-5.780E-03	8.053E-15	4.610E-04	-1.743E-15			
17	1	8.644E-03	1.553E-14	-8.644E-03	9.516E-03	2.064E-14	-9.518E-03	-8.625E-15			
18	1	5.420E-05	-5.319E-03	-5.420E-05	-5.420E-05	5.319E-03	5.420E-05	-2.595E-14			
19	1	0.	0.	0.	0.	1.000E+00	0.	0.			
20	1	-1.091E-01	2.096E-02	-4.707E-01	1.091E-01	-2.096E-02	4.707E-01	1.000E+00			
21	1	0.	0.	0.	0.	0.	1.000E+00	0.			
22	1	-5.488E-04	-7.550E-15	5.868E-03	5.488E-04	-1.090E-14	-5.868E-03	6.501E-15			
23	1	8.746E-03	2.599E-14	-8.746E-03	9.416E-03	2.636E-14	-9.416E-03	2.824E-15			
24	1	5.420E-05	-5.319E-03	-5.420E-05	-5.420E-05	5.319E-03	5.420E-05	2.616E-15			
25	1	-9.766E-01	5.000E-01	9.766E-01	-1.003E+00	5.000E-01	1.003E+00	4.772E-13			
26	1	0.	0.	0.	0.	0.	0.	1.000E+00			
27	1	-2.848E-02	-6.148E-13	5.285E-01	-4.308E-02	-6.885E-13	5.431E-01	5.606E-14			
28	1	1.410E-03	-1.064E-14	3.909E-03	-1.410E-03	1.101E-14	-3.909E-03	-5.270E-14			
29	1	8.957E-03	2.066E-14	-8.957E-03	9.205E-03	2.413E-14	-9.205E-03	-4.230E-15			
30	1	5.420E-05	-5.319E-03	-5.420E-05	-5.420E-05	5.319E-03	5.420E-05	-1.843E-14			
31	1	-3.048E-01	5.000E-01	3.048E-01	-3.127E-01	5.000E-01	3.127E-01	1.574E-13			
32	1	-1.081E-01	2.344E-01	-2.908E-01	1.081E-01	-2.344E-01	2.908E-01	1.000E+00			
33	1	3.663E-01	2.043E-13	1.337E-01	3.626E-01	2.810E-13	1.374E-01	-1.364E-13			
34	1	3.810E-03	-1.176E-15	1.509E-03	-3.810E-03	1.059E-15	-1.509E-03	-5.421E-15			
35	1	8.957E-03	1.758E-14	-8.957E-03	9.205E-03	2.127E-14	-9.205E-03	-5.148E-15			
36	1	5.420E-05	-5.319E-03	-5.420E-05	-5.420E-05	5.319E-03	5.420E-05	-1.842E-14			
37	1	-3.048E-01	5.000E-01	3.048E-01	-3.127E-01	5.000E-01	3.127E-01	1.574E-13			
38	1	-1.073E-01	1.546E-01	-2.916E-01	1.073E-01	-1.546E-01	2.916E-01	1.000E+00			
39	1	2.319E-01	-4.838E-14	2.681E-01	2.245E-01	-2.307E-14	2.755E-01	-6.712E-14			
40	1	2.610E-03	-2.074E-15	2.709E-03	-2.610E-03	1.882E-15	-2.709E-03	-9.588E-15			
41	1	8.957E-03	1.878E-14	-8.957E-03	9.205E-03	2.230E-14	-9.205E-03	-4.666E-15			

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.47.10 CLOCK TIME
38.775 SEC. CPTIME
31747 SEC. PPTIME

TR (54 X 7) /OUTPUT/ CONTINUED

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
42	1	5.420E-05	-5.319E-03	-5.420E-05	-5.420E-05	5.319E-03	5.420E-05	-1.542E-14			
43	1	-3.048E-01	5.000E-01	3.048E-01	-3.127E-01	5.000E-01	3.127E-01	1.574E-13			
44	1	-1.065E-01	7.484E-02	-2.924E-01	1.065E-01	-7.484E-02	2.924E-01	1.000E+00			
45	1	9.755E-02	-3.241E-13	4.024E-01	8.643E-02	-3.489E-13	4.136E-01	-3.937E-15			
46	1	1.410E-03	-2.978E-15	3.909E-03	-1.410E-03	2.715E-15	-3.909E-03	-1.379E-14			
47	1	8.957E-03	2.065E-14	-8.957E-03	9.205E-03	2.414E-14	-9.205E-03	-4.334E-15			
48	1	5.420E-05	-5.319E-03	-5.420E-05	-5.420E-05	5.319E-03	5.420E-05	-1.113E-14			
49	1	1.431E-01	5.000E-01	-1.431E-01	1.475E-01	5.000E-01	-1.475E-01	-7.588E-14			
50	1	-2.378E-01	1.546E-01	-4.271E-01	2.378E-01	-1.546E-01	4.271E-01	1.000E+00			
51	1	2.319E-01	-4.838E-14	2.681E-01	2.245E-01	-2.306E-14	2.755E-01	-6.712E-14			
52	1	2.610E-03	-2.062E-15	2.709E-03	-2.610E-03	1.867E-15	-2.709E-03	-9.346E-15			
53	1	8.957E-03	1.875E-14	-8.957E-03	9.205E-03	2.230E-14	-9.205E-03	-4.665E-15			
54	1	5.420E-05	-5.319E-03	-5.420E-05	-5.420E-05	5.319E-03	5.420E-05	-1.540E-14			

END OF WRITE.

END OF READ.

APPENDIX E

PERTURBED COUPLED SYSTEM MODAL MODES

Table E-1. Perturbed coupled system modal modes

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODEL86

19.48.46 CLOCK TIME
157.726 SEC. CPTIME
48541 SEC. PPTIME

FREQ (84 X 1) /OUTPUT/ CONTINUED

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
52	1	1.685E+01								
53	1	1.689E+01								
54	1	1.733E+01								
55	1	1.739E+01								
56	1	1.749E+01								
57	1	1.780E+01								
58	1	1.806E+01								
59	1	1.839E+01								
60	1	1.884E+01								
61	1	1.939E+01								
62	1	1.965E+01								
63	1	1.970E+01								
64	1	1.982E+01								
65	1	2.009E+01								
66	1	2.122E+01								
67	1	2.516E+01								
68	1	2.641E+01								
69	1	2.735E+01								
70	1	2.823E+01								
71	1	2.896E+01								
72	1	3.069E+01								
73	1	3.152E+01								
74	1	3.285E+01								
75	1	3.417E+01								
76	1	3.482E+01								
77	1	3.716E+01								
78	1	3.813E+01								
79	1	4.276E+01								
80	1	4.608E+01								
81	1	4.708E+01								
82	1	4.845E+01								
83	1	5.159E+01								
84	1	5.275E+01								

END OF WRITE.

MODES (84 X 84) /OUTPUT/

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1	9.616E-01	2.307E-02	2.295E-02	4.489E-03	1.030E-02	1.063E-03	1.475E-01	1.101E-02	1.608E-01	6.862E-04
1	11	8.865E-02	3.864E-03	6.809E-02	4.208E-05	1.031E-01	3.582E-02	6.357E-04	1.571E-02	4.491E-03	3.537E-03
1	21	2.837E-03	4.230E-03	1.115E-04	1.502E-04	7.731E-04	7.102E-04	4.864E-05	9.200E-03	3.019E-02	8.443E-05
1	31	1.671E-04	5.559E-04	1.632E-03	1.434E-03	9.656E-04	6.118E-05	6.402E-05	5.487E-05	9.023E-05	7.803E-05
1	41	8.181E-04	4.120E-03	1.342E-04	1.754E-03	7.684E-05	6.692E-04	5.082E-04	1.135E-04	6.175E-06	1.304E-03
1	51	5.734E-06	3.079E-04	1.573E-05	5.775E-05	3.438E-05	1.027E-04	8.645E-03	4.514E-05	1.097E-03	2.624E-04
1	61	4.969E-06	3.831E-05	4.488E-05	5.235E-05	9.103E-05	3.903E-03	2.638E-05	2.174E-03	2.291E-05	9.631E-05
1	71	5.045E-04	2.714E-04	9.606E-05	1.561E-06	2.402E-06	3.517E-05	4.592E-06	3.548E-05	6.158E-06	2.908E-05
1	81	4.881E-03	1.921E-05	8.884E-06	5.362E-06						
2	1	-1.739E-02	7.893E-01	-9.157E-03	5.085E-01	-1.800E-02	-1.893E-01	-1.050E-02	1.738E-01	4.730E-04	1.979E-01
2	11	-7.573E-03	-2.420E-02	1.825E-03	7.625E-02	-2.791E-04	7.221E-04	5.730E-03	-1.693E-04	4.760E-05	-4.474E-06
2	21	-5.459E-04	4.844E-04	1.378E-03	-2.442E-03	4.141E-04	1.447E-02	-1.281E-02	9.527E-04	-1.002E-04	3.783E-03

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.48.46 CLOCK TIME
157.942 SEC. CPTIME
48589 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2	31	1.578E-03	-5.194E-04	2.297E-03	-1.871E-03	7.957E-05	7.252E-05	3.058E-04	-2.632E-04	-1.421E-03	-1.953E-04
2	41	8.314E-04	9.502E-03	1.090E-03	2.610E-05	1.604E-03	-2.049E-04	-1.406E-05	-1.761E-05	-7.243E-06	-1.195E-04
2	51	4.233E-03	-3.261E-04	1.544E-02	4.275E-05	-3.409E-04	-1.424E-03	-1.528E-05	-6.925E-05	2.771E-04	-1.079E-03
2	61	-5.306E-04	-2.865E-04	-1.336E-05	1.794E-05	-4.610E-05	-2.879E-04	-1.208E-03	8.198E-04	7.471E-05	4.305E-05
2	71	-9.525E-05	9.247E-05	-9.926E-05	-4.612E-03	2.816E-04	2.370E-05	-1.609E-04	1.324E-05	2.783E-05	3.618E-06
2	81	2.058E-08	2.047E-06	1.051E-05	-2.500E-06						
3	1	9.725E-04	-1.362E-02	3.734E-01	-6.075E-03	-8.916E-01	-6.156E-03	1.535E-02	-6.757E-03	-1.260E-02	-1.192E-03
3	11	-1.327E-01	-5.355E-03	1.340E-01	2.753E-04	5.089E-02	-4.044E-03	-4.532E-03	-1.034E-01	-3.212E-02	-4.241E-02
3	21	-4.340E-02	-7.816E-02	-2.445E-03	5.319E-04	2.373E-02	9.563E-03	2.274E-03	-4.485E-03	-4.748E-03	6.601E-05
3	31	-3.718E-04	2.725E-03	-1.069E-02	-1.410E-02	-2.018E-03	-8.909E-04	2.941E-04	3.429E-04	7.257E-05	-7.673E-05
3	41	1.693E-03	8.746E-03	2.939E-04	2.973E-03	8.020E-04	-2.233E-03	-1.390E-03	-4.857E-04	1.133E-05	-2.584E-04
3	51	-1.139E-05	1.263E-03	3.897E-05	-7.136E-04	-7.431E-05	1.580E-04	2.104E-03	-2.289E-03	2.469E-03	5.892E-04
3	61	1.423E-04	1.177E-04	-1.236E-04	2.152E-04	-8.581E-05	5.324E-03	2.546E-04	7.116F-03	1.419E-05	-1.531E-04
3	71	-6.146E-04	-9.002E-04	-4.128E-04	-2.749E-06	-2.756E-05	-1.001E-04	-8.568E-05	-2.519E-04	1.301E-06	-2.295E-04
3	81	-1.710E-04	-1.212E-04	-3.731E-05	-2.731E-05						
4	1	5.074E-03	-1.963E-01	9.254E-04	-5.055E-02	1.044E-02	-9.766E-01	2.208E-03	-2.842E-02	-3.972E-05	-4.257E-02
4	11	6.911E-04	4.480E-03	3.017E-04	-1.592E-02	-6.866E-05	2.357E-04	8.349E-04	3.105E-05	-1.736E-05	-1.997E-05
4	21	1.393E-04	-8.608E-05	2.858E-04	5.523E-03	-2.069E-03	1.893E-02	-3.903E-03	2.393E-03	4.435E-05	-6.936E-04
4	31	-3.137E-04	7.379E-05	-7.300E-04	3.969E-04	-3.314E-04	-7.949E-05	-4.301E-04	-2.408E-04	3.111E-04	-2.090E-04
4	41	-7.857E-04	-3.731E-03	-1.231E-05	3.716E-05	8.738E-05	-2.026E-04	-1.083E-05	-7.925E-05	-6.024E-05	-1.671E-04
4	51	3.071E-03	-4.193E-04	1.334E-02	1.563E-06	-1.783E-04	-1.156E-03	-4.013E-05	-2.849E-04	4.534E-04	-4.645E-04
4	61	-3.475E-01	-2.566E-04	-6.760E-06	1.460E-05	-9.310E-05	-1.946E-03	-1.433E-03	-5.523E-03	2.768E-04	3.938E-05
4	71	-1.444E-04	1.242E-04	-2.303E-04	2.136E-03	8.646E-05	8.876E-05	-3.381E-04	2.120E-05	1.371E-04	1.674E-05
4	81	5.949E-07	4.559E-06	4.303E-05	-6.416E-05						
5	1	2.401E-02	-4.658E-04	-9.238E-01	-2.942E-02	-3.712E-01	-3.106E-03	-8.776E-03	-1.186E-04	-1.174E-02	5.625E-06
5	11	9.675E-03	4.529E-04	1.549E-02	1.148E-05	4.669E-02	-1.286E-02	-1.833E-03	-4.417E-02	-1.327E-02	-1.695E-02
5	21	-1.742E-02	-3.102E-02	-9.974E-04	-2.111E-04	1.032E-02	1.728E-03	1.832E-03	2.565E-04	1.937E-03	5.693E-05
5	31	-7.079E-05	1.403E-03	-4.169E-03	-5.754E-03	-2.515E-04	-3.650E-04	5.687E-05	8.039E-05	-8.893E-05	-2.153E-04
5	41	3.483E-05	1.973E-04	-1.499E-05	1.247E-03	3.184E-05	-2.488E-04	-1.921E-04	-1.298E-04	2.827E-06	3.671E-04
5	51	-7.648E-06	8.045E-04	2.612E-05	-2.688E-04	-3.317E-05	-2.934E-05	1.584E-03	-7.369E-04	1.021E-03	1.500E-04
5	61	-2.064E-05	-4.284E-06	-5.967E-05	8.851E-05	-2.140E-05	1.047E-03	1.478E-06	-1.672E-04	-8.744E-06	-5.552E-05
5	71	4.387E-05	-3.702E-04	-1.694E-04	-4.344E-07	-1.210E-05	-4.854E-05	-2.599E-05	-1.085E-04	-3.785E-06	-1.005E-04
5	81	-4.006E-04	-4.827E-05	-1.533E-05	-3.085E-06						
6	1	-7.523E-03	5.451E-01	2.317E-02	-8.295E-01	7.449E-03	-6.199E-02	-1.219E-04	8.861E-04	7.618E-05	-8.114E-02
6	11	4.385E-04	7.268E-03	-3.789E-04	-5.827E-02	1.006E-04	-2.016E-04	-2.346E-03	4.924E-05	-1.930E-03	4.189E-05
6	21	3.389E-04	-5.485E-05	-2.754E-04	3.140E-03	-1.072E-03	2.795E-03	2.853E-03	-2.297E-04	4.708E-05	-1.642E-03
6	31	-7.742E-04	2.405E-04	-1.069E-03	9.169E-04	1.764E-04	1.385E-06	-1.766E-04	1.195E-04	9.191E-04	4.873E-04
6	41	1.464E-03	6.333E-03	7.785E-05	8.321E-05	-1.317E-04	-1.313E-04	-6.579E-05	-4.042E-06	8.239E-06	-5.791E-05
6	51	-1.642E-03	8.157E-05	-6.499E-03	-2.603E-05	9.245E-05	3.470E-04	-3.144E-06	-4.853E-05	9.220E-06	2.904E-04
6	61	1.290E-04	4.310E-05	1.723E-06	-8.527E-06	5.875E-06	-5.761E-05	3.483E-04	6.863E-04	1.123E-04	-2.165E-05
6	71	-6.507E-05	-3.629E-05	-4.945E-06	6.757E-03	-3.156E-04	3.709E-06	6.445E-05	-1.054E-05	1.087E-05	1.381E-06
6	81	1.343E-06	-4.049E-07	-2.364E-06	-1.127E-05						
7	1	-1.918E-13	-2.834E-12	-1.888E-13	-8.641E-12	-1.676E-13	-8.261E-10	7.102E-04	-2.418E-02	-5.937E-07	-1.096E-01
7	11	4.458E-02	-9.922E-01	1.280E-03	2.868E-02	-1.354E-04	1.383E-05	6.619E-04	-1.610E-04	-1.813E-05	-2.712E-05
7	21	-1.697E-04	8.441E-05	1.389E-04	-2.098E-03	7.084E-04	-3.471E-03	-8.305E-04	-7.068E-04	-5.852E-05	7.802E-04
7	31	3.172E-04	-9.636E-05	5.613E-04	-4.006E-04	1.532E-04	4.226E-05	1.964E-04	5.834E-05	-2.554E-04	1.085E-04
7	41	8.522E-04	4.050E-03	2.192E-04	6.144E-05	2.466E-04	8.207E-06	-1.457E-05	2.403E-05	2.189E-05	2.224E-07

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.48.47 CLOCK TIME
158.679 SEC. CPTIME
48685 SEC. PPTIME

MODES	(80 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
12	71	-1.681E-04	-4.348E-04	-1.903E-04	8.200E-05	-2.278E-05	-5.054E-05	-2.578E-05	-1.196E-04	-4.965E-06	-1.077E-04
12	81	-1.692E-04	-5.556E-05	-1.864E-05	-8.119E-06						
13	1	4.366E-14	-8.906E-12	6.169E-13	-1.077E-11	6.223E-13	-6.522E-10	2.084E-04	-5.769E-04	-1.526E-03	-3.229E-03
13	11	-8.682E-03	1.735E-04	1.753E-02	-2.901E-04	1.731E-02	-5.137E-03	-6.628E-03	-1.352E-01	-5.733E-02	-1.846E-01
13	21	-6.719E-01	7.003E-01	4.292E-03	-8.293E-04	-2.930E-02	-6.768E-03	-4.877E-03	2.233E-03	4.073E-03	3.820E-04
13	31	4.191E-04	-2.257E-03	8.170E-03	1.025E-02	1.222E-03	6.165E-04	-6.418E-05	-1.479E-04	-8.743E-05	1.946E-04
13	41	-3.589E-04	-1.508E-03	3.528E-06	-1.580E-03	-1.217E-04	9.145E-04	5.751E-04	2.343E-04	3.693E-06	-1.757E-05
13	51	-1.264E-04	-6.940E-04	-7.502E-04	3.302E-04	2.269E-05	-7.540E-05	-9.657E-04	9.761E-04	-1.078E-03	-2.844E-04
13	61	-5.895E-05	-4.499E-05	6.029E-05	-9.049E-05	2.912E-05	-2.194E-03	-3.641E-05	-1.918E-03	-1.002E-05	6.330E-05
13	71	1.317E-04	3.674E-04	1.815E-04	8.961E-05	-3.393E-06	4.061E-05	5.207E-05	9.938E-05	-7.817E-06	9.154E-05
13	81	1.882E-04	4.639E-05	1.065E-05	1.110E-05						
14	1	-3.316E-13	3.207E-11	-2.553E-12	3.432E-11	-2.607E-12	1.819E-09	6.154E-05	-2.922E-03	-3.218E-04	-5.115E-04
14	11	-4.084E-04	1.514E-04	1.179E-03	-7.128E-03	1.419E-03	-7.598E-04	-2.093E-04	-7.966E-03	-2.888E-03	-5.197E-03
14	21	-6.516E-03	-1.624E-02	9.994E-01	-1.309E-02	-6.918E-03	-2.173E-02	-5.513E-04	-6.385E-04	1.315E-03	1.208E-03
14	31	5.605E-04	-4.969E-04	1.985E-03	1.540E-03	2.234E-04	1.022E-04	-9.549E-05	-2.002E-04	-3.587E-04	-1.936E-04
14	41	-8.419E-04	-2.347E-03	4.549E-05	-2.750E-04	1.417E-04	2.435E-04	1.726E-04	2.404E-05	-1.478E-05	7.214E-05
14	51	8.768E-04	-8.126E-05	3.328E-03	6.729E-05	2.959E-07	6.499E-06	-6.357E-05	2.475E-04	-2.825E-04	-4.310E-05
14	61	-2.398E-06	1.006E-05	6.140E-06	-1.853E-05	3.122E-05	3.619E-04	-9.573E-05	1.152E-03	-1.065E-05	1.100E-05
14	71	8.481E-05	6.813E-05	1.524E-05	-1.660E-03	8.728E-05	3.505E-06	-2.140E-05	2.087E-05	3.845E-06	1.305E-05
14	81	6.508E-05	9.822E-06	7.283E-06	5.472E-06						
15	1	1.264E-14	-1.044E-11	6.522E-13	-1.359E-11	6.784E-13	-6.791E-10	1.975E-04	-7.670E-03	-2.135E-05	-2.316E-02
15	11	8.308E-04	3.949E-03	-1.918E-03	-1.812E-02	-3.578E-03	5.745E-04	-5.145E-03	9.835E-03	3.348E-03	5.893E-03
15	21	8.276E-03	1.533E-02	-8.294E-03	-9.758E-01	8.686E-02	1.696E-01	-9.212E-02	5.451E-03	1.729E-03	1.338E-02
15	31	4.588E-03	-5.724E-04	3.457E-03	-8.292E-03	-8.074E-05	-2.608E-05	7.923E-04	-3.307E-04	-2.554E-03	-4.010E-04
15	41	1.307E-03	1.440E-02	1.497E-03	4.865E-04	2.043E-03	-3.880E-04	-1.301E-04	-4.896E-05	5.400E-06	-5.909E-05
15	51	4.185E-03	-1.366E-04	1.478E-02	-3.325E-05	-3.662E-04	-1.449E-03	4.448E-04	-2.992E-04	5.890E-04	-1.060E-03
15	61	-5.377E-04	-2.814E-04	-2.540E-05	4.201E-05	-5.737E-05	-4.611E-05	-9.737E-04	3.414E-04	6.305E-05	2.137E-05
15	71	-8.987E-05	-1.044E-05	-1.036E-04	-2.826E-03	1.685E-04	7.682E-06	-1.009E-04	-1.508E-05	1.157E-05	-1.781E-05
15	81	4.474E-07	-9.830E-06	-7.743E-08	-2.322E-07						
16	1	-4.760E-14	3.541E-12	-3.021E-13	3.505E-12	-2.925E-13	1.672E-10	-1.229E-04	-1.532E-03	9.834E-04	-3.328E-03
16	11	-1.336E-03	4.909E-04	-1.124E-02	-3.802E-03	-2.858E-02	8.050E-03	2.515E-03	7.908E-02	2.767E-02	4.743E-02
16	21	5.830E-02	1.304E-01	1.320E-02	1.017E-01	9.752E-01	6.712E-02	1.396E-02	5.167E-03	1.237E-02	2.628E-03
16	31	2.935E-04	7.190E-03	-2.039E-02	-2.994E-02	-1.487E-03	-1.426E-03	3.943E-04	2.189E-04	-6.622E-04	-6.844E-04
16	41	6.948E-04	4.774E-03	2.600E-04	3.589E-03	5.029E-04	-9.295E-04	-6.240E-04	-3.456E-04	8.100E-06	7.422E-04
16	51	6.339E-04	1.645E-03	2.330E-03	-5.807E-04	-1.127E-04	-1.794E-04	3.396E-03	-1.591E-03	2.148E-03	2.140E-04
16	61	-6.941E-05	-1.311E-05	-1.167E-04	1.734E-04	-3.720E-05	3.140E-03	-7.633E-05	1.250E-03	-1.162E-05	-9.244E-05
16	71	5.373E-05	-6.177E-04	-2.917E-04	-8.091E-04	1.990E-05	-7.721E-05	-5.649E-05	-1.744E-04	-5.161E-06	-1.605E-04
16	81	-2.373E-04	-7.752E-05	-2.341E-05	-4.375E-06						
17	1	2.646E-13	-1.116E-11	1.188E-12	-8.162E-12	1.179E-12	-1.846E-10	-3.724E-04	9.712E-03	1.111E-04	2.655E-02
17	11	-2.266E-03	-4.541E-03	-1.451E-03	2.521E-02	-7.192E-03	2.075E-03	6.240E-03	1.518E-02	5.331E-03	8.713E-03
17	21	9.406E-03	2.353E-02	7.813E-03	-3.847E-02	-3.795E-02	3.236E-01	9.417E-01	-2.781E-03	1.208E-02	-2.786E-02
17	31	-8.984E-03	4.910E-03	-1.667E-02	-1.391E-04	-4.415E-04	-6.094E-04	-1.035E-03	7.494E-04	3.996E-03	5.693E-04
17	41	-7.828E-04	-1.546E-02	-2.003E-03	9.739E-04	-2.753E-03	7.143E-05	-1.294E-04	-6.629E-05	6.074E-06	3.710E-04
17	51	-6.111E-03	8.346E-04	-2.166E-02	-2.079E-04	4.410E-04	1.781E-03	1.044E-03	-3.554E-04	2.709E-04	1.485E-03
17	61	6.613E-04	3.339E-04	-1.073E-05	2.087E-05	3.483E-05	6.475E-04	1.155E-03	-1.410E-03	-5.218E-05	-6.343E-05
17	71	8.894E-05	-2.341E-04	1.636E-05	5.417E-03	-3.046E-04	-3.387E-05	1.191E-04	-5.420E-05	-1.290E-05	-3.911E-05
17	81	-2.501E-05	-1.994E-05	-1.160E-05	-8.395E-06						

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.48.47 CLOCK TIME
159.049 SEC. CPTIME
48685 SEC. P. TIME

MODES	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
18	1	1.750E-13	-1.228E-11	1.067E-12	-1.191E-11	1.084E-12	-5.515E-10	-1.570E-04	4.301E-03	2.141E-05	1.124E-02
18	11	-2.709E-04	-1.849E-03	4.059E-05	1.228E-02	4.714E-04	-2.731E-05	1.979E-03	-6.207E-04	-1.576E-04	-2.858E-03
18	21	-7.190E-04	-3.598E-04	1.411E-03	-1.024E-02	4.155E-03	7.206E-03	-3.420E-02	5.551E-04	3.054E-03	-9.987E-01
18	31	-1.504E-02	2.786E-03	-1.108E-02	9.863E-03	-2.854E-04	-1.463E-04	-8.425E-04	5.169E-04	2.970E-03	6.567E-04
18	41	-2.082E-05	-7.374E-03	-1.113E-03	-5.198E-06	-1.553E-03	-2.262E-05	-8.223E-05	-5.272E-07	2.610E-06	-4.432E-05
18	51	-3.321E-03	1.139E-04	-1.166E-02	-3.940E-05	2.183E-04	7.866E-04	-1.024E-04	-6.484E-05	-4.993E-05	6.657E-04
18	61	3.081E-04	1.360E-04	1.031E-05	-9.674E-06	4.989E-07	-4.308E-04	5.498E-04	-1.516E-03	6.971E-06	-1.823E-05
18	71	-2.715E-05	-3.617E-05	2.951E-05	3.692E-03	-1.848E-04	-2.910E-07	5.167E-05	-5.910E-06	2.651E-06	2.161E-06
18	81	3.637E-06	-1.300E-06	-2.026E-06	-9.991E-06						
19	1	3.212E-13	-1.410E-11	1.451E-12	-1.063E-11	1.463E-12	-2.713E-10	-4.811E-05	1.978E-03	1.415E-04	5.094E-03
19	11	2.314E-04	-8.241E-04	-3.000E-04	5.226E-03	2.661E-04	1.824E-04	9.009E-04	1.183E-03	4.303E-04	6.598E-04
19	21	5.951E-04	1.687E-03	6.655E-04	-3.691E-03	6.394E-05	2.252E-03	-1.121E-02	3.860E-04	4.450E-03	1.609E-02
19	31	-9.995E-01	5.147E-03	-1.429E-02	4.073E-03	-7.792E-04	-2.290E-04	-5.323E-04	2.607E-04	1.497E-03	8.558E-05
19	41	-9.711E-04	-9.052E-03	-7.841E-04	6.127E-05	-9.370E-04	-5.705E-05	-8.152E-05	-2.402E-05	-3.823E-06	1.266E-05
19	51	-1.541E-03	9.506E-05	-5.224E-03	-4.017E-05	1.084E-04	3.942E-04	-1.186E-04	-9.038E-05	2.079E-05	3.403E-04
19	61	1.508E-04	6.672E-05	8.758E-07	-7.967E-08	-3.360E-06	-1.547E-04	2.361E-04	-9.490E-04	7.757E-07	-1.226E-05
19	71	-1.223E-05	-3.727E-05	6.963E-08	1.485E-03	-7.252E-05	-1.958E-06	1.361E-05	-7.093E-06	3.518E-06	-3.866E-06
19	81	-3.965E-05	-3.106E-06	-4.759E-07	-5.753E-06						
20	1	3.007E-14	-1.237E-12	1.307E-13	-8.838E-13	1.259E-13	-1.792E-11	-4.177E-04	-4.125E-04	-1.165E-03	-1.728E-03
20	11	2.782E-04	2.857E-04	9.937E-04	-1.467E-03	9.314E-03	-4.349E-03	-1.329E-03	-2.434E-02	-8.135E-03	-1.252E-02
20	21	-1.430E-02	-2.927E-02	-1.743E-03	1.894E-04	2.332E-02	1.401E-03	9.840E-03	-2.915E-03	-4.734E-04	-2.898E-03
20	31	-6.685E-03	-9.766E-01	1.366E-01	1.560E-01	1.942E-03	1.994E-03	-9.515E-05	-3.737E-04	-2.225E-04	8.249E-04
20	41	7.046E-05	1.696E-03	2.786E-04	-2.645E-03	2.391E-04	5.681E-04	4.481E-04	2.527E-04	-7.397E-06	-5.057E-04
20	51	7.532E-04	-1.205E-03	2.676E-03	3.862E-04	-1.289E-07	-1.514E-04	-1.535E-03	9.804E-04	-1.211E-03	-3.124E-04
20	61	-4.583E-05	-2.742E-05	7.474E-05	-1.025E-04	2.820E-05	-6.821E-04	-1.517E-04	3.185E-04	2.309E-05	6.603E-05
20	71	-8.867E-06	3.896E-04	1.563E-04	-3.963E-04	3.941E-05	5.070E-05	4.251E-06	1.047E-04	8.320E-06	9.302E-05
20	81	4.664E-04	4.454E-05	1.578E-05	1.910E-06						
21	1	-1.049E-15	1.107E-14	-5.566E-16	9.010E-15	1.373E-14	2.765E-13	9.214E-04	1.962E-04	3.627E-03	8.318E-05
21	11	5.189E-03	2.128E-04	-7.238E-03	-8.159E-07	-1.413E-02	9.584E-03	2.493E-03	6.027E-02	2.030E-02	3.133E-02
21	21	3.574E-02	7.282E-02	3.847E-03	4.685E-04	-5.504E-02	-1.498E-02	-1.197E-02	1.452E-02	4.160E-02	-6.628E-04
21	31	5.669E-03	-2.129E-01	-6.425E-01	-7.221E-01	-1.031E-02	-5.448E-03	9.711E-04	9.858E-04	-5.798E-04	-1.475E-03
21	41	1.302E-03	6.552E-03	9.075E-05	6.188E-03	4.948E-04	-2.795E-03	-1.856E-03	-7.791E-04	1.255E-05	2.798E-04
21	51	-4.524E-05	2.507E-03	9.292E-06	-1.002E-03	-1.260E-04	-3.089E-05	1.560E-03	-2.724E-03	2.959E-03	4.861E-04
21	61	1.566E-05	2.692E-05	-1.919E-04	2.517E-04	-1.000E-04	2.682E-03	8.441E-05	1.562E-03	-1.725E-05	-1.735E-04
21	71	-2.478E-04	-9.872E-04	-4.406E-04	2.641E-07	-2.992E-05	-1.176E-04	-6.805E-05	-2.589E-04	-6.803E-06	-2.313E-04
21	81	-1.313E-03	-1.148E-04	-3.630E-05	-1.344E-05						
22	1	-5.167E-15	-8.847E-13	4.364E-14	-1.305E-12	4.465E-14	-9.287E-11	-2.311E-04	2.554E-03	-1.975E-04	1.041E-02
22	11	4.384E-04	-1.616E-03	-3.653E-04	9.300E-03	3.301E-03	-1.149E-03	1.709E-03	-5.791E-03	-1.867E-03	-2.867E-03
22	21	-3.396E-03	-6.389E-03	5.930E-04	-4.951E-03	6.726E-03	1.257E-02	-1.800E-02	1.930E-03	4.101E-03	1.613E-02
22	31	1.928E-02	1.628E-03	-7.476E-01	6.626E-01	-2.296E-04	3.016E-04	-1.303E-03	8.177E-04	4.186E-03	1.138E-03
22	41	7.351E-05	-9.410E-03	-1.412E-03	-7.292E-04	-1.896E-03	1.063E-04	-2.228E-05	6.659E-05	1.280E-05	-1.819E-04
22	51	-4.418E-03	-5.663E-05	-1.594E-02	4.474E-05	3.074E-04	1.198E-03	-6.620E-04	2.402E-04	-5.124E-04	8.375E-04
22	61	4.579E-04	2.232E-04	2.981E-05	-4.272E-05	3.648E-05	1.388E-04	8.678E-04	8.218E-05	-5.540E-05	-1.281E-05
22	71	-1.495E-06	2.670E-05	1.102E-04	2.664E-03	-1.657E-04	-2.018E-06	1.056E-04	1.648E-05	-1.766E-05	2.081E-05
22	81	1.080E-04	8.671E-06	-3.654E-06	1.295E-06						
23	1	-9.960E-16	1.357E-13	-7.924E-15	1.890E-13	-6.987E-15	1.290E-11	-9.391E-04	-4.124E-05	1.863E-06	-1.118E-04
23	11	3.859E-03	1.802E-04	-8.820E-03	-1.437E-04	5.882E-05	-1.876E-03	1.737E-04	3.486E-03	1.380E-03	2.464E-03

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB8

19.48.47 CLOCK TIME
159.417 SEC. CPTIME
48737 SEC. PPTIME

MODES	(B4 X B4)	/OUTPUT/ CONTINUED								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
23 21	2.761E-03	5.802E-03	2.388E-04	-5.665E-04	-2.507E-03	-4.853E-03	1.195E-03	-4.737E-04	1.721E-02	3.176E-05
23 31	5.458E-04	3.701E-04	8.468E-03	9.647E-03	-9.992E-01	-2.695E-03	2.009E-03	1.523E-03	9.570E-04	1.246E-03
23 41	4.956E-03	2.356E-02	7.143E-04	3.708E-04	7.715E-04	-1.893E-03	-1.016E-03	-1.878E-04	7.118E-06	-9.811E-04
23 51	6.568E-05	-2.779E-04	1.811E-04	-1.388E-04	-5.439E-06	1.697E-04	-1.451E-03	-4.812E-04	1.768E-04	1.878E-04
23 61	1.360E-04	9.154E-05	-9.352E-06	2.162E-05	-2.487E-06	5.653E-03	1.300E-04	4.134E-03	1.557E-05	-2.625E-05
23 71	-1.747E-04	-9.219E-05	-4.216E-05	-2.796E-05	-8.085E-07	-2.849E-06	-1.636E-05	-1.555E-05	4.380E-06	-1.447E-05
23 81	2.222E-04	-1.199E-05	-1.628E-06	-7.662E-06						
24 1	1.336E-14	-6.956E-13	6.614E-14	-5.984E-13	6.606E-14	-2.214E-11	1.844E-04	4.281E-05	-3.298E-04	-2.494E-04
24 11	1.447E-04	4.360E-05	1.199E-03	-1.397E-04	5.106E-04	-4.024E-04	-1.922E-04	-3.134E-03	-1.053E-03	-1.615E-03
24 21	-1.819E-03	-3.672E-03	-1.914E-04	-8.047E-06	2.354E-03	1.079E-04	8.479E-04	9.135E-04	-2.016E-03	-1.503E-04
24 31	-1.910E-04	9.611E-04	-4.295E-03	-5.414E-03	-3.008E-03	9.999E-01	-1.506E-03	-7.372E-04	-2.842E-04	-2.887E-05
24 41	-8.815E-04	-3.651E-03	-4.088E-05	-5.472E-04	-2.795E-05	2.235E-04	1.433E-04	5.006E-05	-4.221E-06	-1.597E-05
24 51	2.331E-04	-2.031E-04	8.876E-04	8.069E-05	-7.092E-06	-8.122E-05	4.090E-05	1.790E-04	-1.802E-04	-8.742E-05
24 61	-3.593E-05	-2.235E-05	1.451E-05	-1.251E-05	-2.168E-06	-8.846E-04	-6.676E-05	-5.372E-04	7.525E-06	1.461E-05
24 71	-1.844E-05	7.426E-05	2.515E-05	-1.302E-05	7.232E-06	9.862E-06	-3.178E-06	1.785E-05	3.045E-06	1.622E-05
24 81	1.427E-04	8.155E-06	2.963E-06	-3.109E-07						
25 1	2.386E-13	-1.169E-11	1.152E-12	-9.525E-12	1.163E-12	-3.087E-10	-4.986E-05	6.671E-04	3.630E-05	-2.409E-03
25 11	-1.019E-04	3.229E-04	-1.726E-04	-7.037E-04	-1.164E-04	5.335E-05	-6.230E-04	4.627E-04	1.478E-04	2.300E-04
25 21	3.202E-04	4.764E-04	-9.553E-05	-7.291E-04	6.760E-05	-8.297E-03	4.247E-03	-1.667E-03	1.630E-04	-1.167E-03
25 31	-6.549E-04	1.823E-04	-6.287E-04	1.990E-03	1.976E-03	1.492E-03	9.998E-01	-2.603E-03	-2.259E-03	-1.052E-03
25 41	-1.450E-03	-2.094E-03	4.708E-04	1.122E-04	6.704E-04	-2.105E-04	-2.814E-05	-5.312E-05	-3.280E-05	-1.117E-04
25 51	2.733E-03	-2.529E-04	1.059E-02	-1.416E-07	-1.697E-04	-8.178E-04	-1.360E-06	-1.674E-04	2.859E-04	-4.534E-04
25 61	-2.832E-04	-1.602E-04	-7.101E-06	1.436E-05	-4.746E-05	-6.850E-04	-6.733E-04	-1.775E-03	1.091E-04	1.495E-05
25 71	-5.201E-05	3.917E-05	-8.765E-05	5.326E-04	3.580E-05	2.128E-05	-1.070E-04	3.694E-06	3.863E-05	2.311E-06
25 81	-1.311E-05	-2.820E-07	1.050E-05	-1.669E-05						
26 1	-2.677E-13	1.299E-11	-1.284E-12	1.052E-11	-1.297E-12	3.351E-10	5.727E-05	-1.175E-03	-1.794E-05	1.839E-04
26 11	-1.549E-05	1.397E-05	2.435E-04	-1.389E-03	5.767E-05	-2.007E-05	2.318E-04	-5.154E-04	-1.772E-04	-2.752E-04
26 21	-3.096E-04	-6.277E-04	-6.747E-05	1.555E-03	-2.659E-04	6.632E-03	-1.445E-03	1.174E-03	-2.498E-04	-4.418E-04
26 31	-2.697E-04	1.605E-04	-1.274E-03	-4.582E-04	-1.427E-03	-7.259E-04	-2.367E-03	-9.999E-01	-1.110E-03	4.910E-04
26 41	1.198E-03	5.166E-03	1.177E-05	-1.806E-04	-9.321E-05	2.667E-04	8.516E-05	6.002E-05	2.999E-05	1.288E-04
26 51	-1.542E-03	1.891E-04	-6.338E-03	1.726E-05	9.322E-05	5.194E-04	7.425E-07	1.889E-04	-2.631E-04	2.250E-04
26 61	1.722E-04	1.078E-04	4.580E-06	-1.179E-05	4.246E-05	6.648E-04	4.690E-04	1.802E-03	-1.024E-04	-8.051E-06
26 71	6.037E-05	-2.227E-05	7.452E-05	-1.409E-03	1.363E-05	-1.868E-05	8.461E-05	-8.434E-07	-3.574E-05	-1.610E-06
26 81	5.338E-07	9.770E-07	-8.948E-06	1.751E-05						
27 1	2.785E-13	-1.375E-11	1.350E-12	-1.126E-11	1.364E-12	-3.698E-10	-2.785E-05	1.859E-03	1.951E-05	5.641E-03
27 11	-1.175E-04	-8.812E-04	3.471E-04	6.343E-03	3.578E-04	-4.143E-05	7.539E-04	-8.490E-04	-2.641E-04	-4.255E-04
27 21	-8.330E-04	-8.468E-04	3.162E-04	-3.265E-03	1.702E-03	-1.972E-03	-4.631E-03	-3.037E-04	7.495E-05	3.642E-03
27 31	1.963E-03	-4.787E-04	3.116E-03	-4.009E-03	2.873E-04	1.800E-04	2.308E-03	-1.269E-03	9.995E-01	6.033E-03
27 41	-5.780E-04	-2.546E-02	-2.071E-03	-1.967E-04	-2.076E-03	-4.940E-05	-7.370E-05	-6.487E-06	-1.038E-05	-1.112E-04
27 51	-2.747E-03	-1.069E-05	-9.159E-03	-1.649E-05	1.695E-04	5.036E-04	-1.766E-04	-5.971E-05	-2.068E-05	4.769E-04
27 61	2.021E-04	6.[illegible]7E-05	1.025E-05	-1.048E-05	-1.344E-05	-8.251E-04	2.618E-04	-1.871E-03	4.199E-05	-7.563E-06
27 71	-4.097E-05	[illegible]3E-06	4.484E-06	3.268E-03	-1.422E-04	8.501E-06	9.459E-08	8.879E-07	1.480E-05	6.471E-06
27 81	-1.062E-05	1.059E-06	2.577E-06	-1.290E-05						
28 1	-1.925E-13	9.105E-12	-9.093E-13	7.246E-12	-9.171E-13	2.202E-10	-4.128E-05	-1.057E-03	-5.637E-05	-1.321E-03
28 11	-6.211E-05	2.276E-04	-6.768E-04	-1.964E-03	-9.110E-04	1.535E-04	6.846E-06	1.906E-03	6.301E-04	9.766E-04
28 21	[illegible].139E-03	2.174E-03	-4.052E-06	1.357E-03	-1.859E-03	2.520E-03	3.107E-04	2.355E-04	-4.797E-04	-9.950E-04
28 31	-8.824E-04	-2.909E-04	4.601E-04	2.873E-03	-1.893E-04	1.789E-04	-8.631E-04	-1.980E-04	7.130E-03	-8.991E-01

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.48.48 CLOCK TIME
159.787 SEC. CPTIME
48789 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ CONTINUED								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
28 41	8.732E-03	3.863E-02	1.013E-03	9.068E-04	7.456E-04	-8.707E-05	-7.532E-05	-1.207E-05	2.739E-05	1.779E-04
28 51	-2.643E-04	2.830E-04	-1.679E-03	-5.201E-05	-4.287E-07	1.617E-04	4.534E-04	-5.702E-05	9.359E-05	4.052E-05
28 61	4.615E-05	4.558E-05	-1.028E-05	1.179E-05	2.453E-05	1.030E-03	2.041E-04	1.821E-03	-5.985E-05	-1.030E-05
28 71	4.026E-05	-6.045E-05	1.700E-05	-1.295E-03	2.808E-05	-1.731E-05	4.249E-05	-1.434E-05	-2.305E-05	-1.406E-05
28 81	3.790E-05	-5.621E-06	-7.547E-06	1.160E-05						
29 1	-3.008E-13	1.394E-11	-1.404E-12	1.094E-11	-1.416E-12	3.186E-10	9.803E-05	-1.630E-03	5.218E-05	-1.932E-03
29 11	1.956E-04	3.525E-04	1.784E-04	-2.854E-03	1.164E-05	6.977E-05	-8.135E-05	8.242E-05	1.590E-05	1.683E-05
29 21	6.361E-05	-2.091E-05	-1.542E-04	1.976E-03	-7.329E-04	4.371E-03	7.044E-04	1.219E-03	1.660E-04	-1.352E-03
29 31	-6.812E-04	1.991E-04	-1.387E-03	1.030E-03	-7.191E-04	-2.181E-04	-8.990E-04	-1.159E-04	4.034E-03	-1.689E-03
29 41	-9.845E-01	1.750E-01	2.132E-03	-6.309E-05	1.251E-03	1.357E-04	2.925E-05	6.622E-05	4.987E-05	1.070E-04
29 51	-6.834E-04	1.967E-04	-3.775E-03	1.448E-05	1.672E-05	2.956E-04	-3.585E-05	1.717E-04	-2.218E-04	1.606E-05
29 61	8.262E-05	7.290E-05	-6.835E-07	-5.476E-06	4.142E-05	8.458E-04	3.620E-04	2.667E-03	-1.016E-04	-7.060E-06
29 71	3.566E-05	-2.931E-05	6.590E-05	-2.011E-03	4.023E-05	-2.080E-05	8.186E-05	-4.228E-06	-3.937E-05	-4.994E-06
29 81	-3.961E-05	-4.405E-07	-1.070E-05	2.016E-05						
30 1	2.505E-13	-1.048E-11	1.101E-12	-7.611E-12	1.109E-12	-1.668E-10	-4.632E-05	1.412E-03	-5.014E-05	1.371E-03
30 11	-1.735E-04	-2.704E-04	-2.403E-06	1.791E-03	-1.899E-04	2.247E-05	4.943E-05	1.684E-04	6.087E-05	9.283E-05
30 21	7.873E-05	2.453E-04	1.410E-04	-1.129E-03	2.658E-04	-2.024E-03	-7.553E-04	-6.998E-04	-2.811E-04	8.256E-04
30 31	3.818E-04	-1.616E-04	9.083E-04	-3.887E-04	4.255E-04	1.361E-04	4.430E-04	1.111E-04	-9.108E-04	8.263E-04
30 41	6.332E-03	4.873E-02	-9.987E-01	3.821E-04	-2.254E-03	5.124E-05	6.014E-05	-9.350E-05	-6.894E-05	-7.423E-06
30 51	1.077E-03	-1.466E-04	5.308E-03	-1.522E-05	-1.630E-05	-2.734E-04	1.540E-04	-1.548E-04	2.091E-04	-1.823E-05
30 61	-8.951E-05	-6.737E-05	-1.362E-06	7.936E-04	-3.551E-05	-7.770E-04	-3.660E-04	-2.510E-03	8.864E-05	6.147E-06
30 71	-1.264E-05	2.438E-05	-6.490E-05	1.447E-03	-1.717E-05	1.736E-05	-7.979E-05	3.393E-06	3.590E-05	2.867E-06
30 81	3.810E-05	2.427E-07	1.026E-05	-1.7[illegible]E-05						
31 1	-2.637E-14	9.329E-13	-9.717E-14	6.850E-13	-1.011E-13	1.623E-11	-5.386E-04	-2.249E-04	5.137E-03	-2.364E-04
31 11	-1.664E-03	-2.855E-05	3.903E-03	-2.288E-04	9.265E-03	7.346E-04	-4.446E-04	-1.009E-02	-3.400E-03	-5.453E-03
31 21	-6.162E-03	-1.233E-02	-5.692E-04	1.216E-04	7.124E-03	2.380E-03	1.217E-03	-2.235E-03	1.416E-02	8.241E-06
31 31	-8.086E-05	2.085E-03	-5.733E-03	-8.050E-03	-3.500E-04	-7.464E-04	1.694E-04	2.674E-04	-5.386E-05	-7.483E-04
31 41	1.541E-03	8.311E-03	1.806E-05	-9.992E-01	-1.361E-03	5.716E-03	2.767E-03	1.040E-03	-1.782E-05	-2.392E-03
31 51	7.414E-05	-1.728E-03	5.683E-06	5.340E-04	5.229E-05	-4.970E-05	-1.277E-02	1.939E-03	-3.111E-03	-5.270E-04
31 61	1.708E-05	-2.986E-05	3.608E-05	-2.167E-04	3.867E-05	-3.302E-03	-6.068E-05	-1.082E-03	-1.142E-05	5.809E-06
31 71	1.705E-04	2.277E-04	1.222E-04	-1.573E-04	1.440E-05	1.724E-05	3.135E-05	8.386E-05	-6.058E-06	7.115E-05
31 81	-3.724E-03	3.367E-05	1.037E-05	9.095E-06						
32 1	-4.899E-13	1.767E-11	-1.984E-12	1.110E-11	-1.991E-12	7.598E-11	2.114E-04	-2.896E-03	-4.110E-04	-2.855E-03
32 11	1.494E-03	6.315E-04	-9.592E-04	-2.823E-03	6.169E-04	-3.202E-04	-1.589E-04	5.966E-04	2.163E-04	3.726E-04
32 21	4.495E-04	7.541E-04	-2.823E-04	1.148E-03	-6.465E-04	-1.037E-03	2.729E-03	1.673E-03	6.757E-04	-1.422E-03
32 31	-5.878E-04	2.041E-04	-8.471E-04	1.338E-03	-2.961E-04	-1.328E-04	-6.057E-04	-1.749E-04	8.856E-04	-1.168E-03
32 41	-7.750E-03	-5.226E-02	-5.139E-03	-1.970E-03	9.982E-01	-1.217E-02	-3.404E-03	-3.117E-05	2.555E-04	-8.189E-04
32 51	-2.036E-03	1.466E-04	-1.085E-02	-4.820E-05	-8.355E-05	1.063E-04	3.136E-04	-1.209E-04	5.232E-05	-1.332E-04
32 61	1.052E-04	7.860E-05	4.404E-07	1.113E-05	2.982E-05	1.771E-03	6.162E-04	5.323E-03	-1.458E-04	-1.027E-05
32 71	-1.499E-04	-6.904E-05	1.005E-04	-2.402E-03	2.205E-05	-2.779E-05	1.354E-04	-1.581E-05	-6.263E-05	-1.057E-05
32 81	3.614E-04	-5.311E-06	-2.096E-05	2.597E-05						
33 1	2.675E-14	-9.292E-13	1.022E-13	-6.076E-13	1.044E-13	-6.818E-12	5.865E-04	3.468E-04	-2.158E-03	3.065E-04
33 11	7.899E-03	2.942E-04	-6.630E-03	1.324E-04	4.373E-03	-1.726E-03	2.757E-04	4.929E-03	1.833E-03	3.044E-03
33 21	3.319E-03	6.751E-03	2.885E-04	-4.567E-04	-2.497E-03	-3.157E-03	3.853E-04	5.849E-03	5.592E-03	1.130E-04
33 31	2.430E-04	-1.510E-04	3.310E-03	3.729E-03	2.247E-03	3.232E-04	-2.218E-04	-3.462E-04	-4.370E-04	-4.880E-04
33 41	-3.055E-03	-1.663E-02	-9.095E-04	-6.480E-03	-1.344E-02	-9.988E-01	-2.999E-02	-3.121E-03	2.587E-05	-5.440E-03
33 51	-2.015E-04	-6.058E-04	-5.241E-04	-4.817E-04	-3.141E-05	4.213E-04	1.046E-03	-2.048E-03	1.397E-03	5.449E-04

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.48.48 CLOCK TIME
160.185 SEC. CPTIME
48841 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
33	61	2.506E-04	1.710E-04	-7.213E-06	1.048E-04	-9.534E-05	4.783E-03	2.664E-04	5.809E-03	2.196E-05	-3.917E-05
33	71	-7.591E-04	-1.815E-04	-8.523E-05	-4.037E-06	-3.767E-06	-1.701E-06	-3.349E-05	-4.268E-05	1.001E-35	-3.286E-05
33	81	2.118E-03	-2.381E-05	-6.654E-06	-1.902E-05						
34	1	4.567E-14	-1.178E-12	1.542E-13	-4.399E-13	1.550E-13	3.055E-11	4.763E-04	5.358E-04	-1.149E-03	-1.405E-05
34	11	4.393E-03	1.727E-04	-3.353E-03	1.122E-04	2.525E-03	-5.181E-04	1.349E-04	3.601E-03	1.288E-03	2.049E-03
34	21	2.235E-03	4.476E-03	2.174E-04	-1.855E-04	-1.765E-03	-1.494E-03	1.877E-05	3.548E-03	3.736E-03	7.010E-05
34	31	1.352E-04	-1.681E-04	2.155E-03	2.490E-03	1.255E-03	2.161E-04	-8.558E-05	-1.480E-04	-1.479E-04	-9.730E-05
34	41	-9.720E-04	-5.242E-03	-2.931E-04	-2.986E-03	-3.357E-03	3.079E-02	-9.993E-01	-3.254E-03	-3.306E-05	-3.936E-03
34	51	1.101E-03	-2.885E-04	4.202E-03	-3.349E-04	-6.587E-05	6.248E-05	4.412E-04	-1.360E-03	9.446E-04	2.247E-04
34	61	8.367E-05	5.954E-05	-1.541E-05	7.269E-05	-7.224E-05	2.491E-03	-1.224E-05	2.671E-03	4.633E-05	-2.777E-05
34	71	-4.522E-04	-1.280E-04	-8.692E-05	4.541E-04	-7.785E-06	-8.622E-08	-4.428E-05	-3.108E-05	1.582E-05	-2.474E-05
34	81	1.209E-03	-1.625E-05	-1.934E-06	-1.497E-05						
35	1	-1.859E-15	-2.063E-13	7.802E-15	-3.369E-13	8.993E-15	-2.549E-11	2.809E-04	-6.853E-05	-4.870E-04	2.129E-04
35	11	1.038E-03	2.070E-05	-5.968E-04	3.101E-05	1.962E-04	2.444E-04	1.207E-04	1.963E-03	6.597E-04	9.872E-04
35	21	1.075E-03	2.123E-03	8.251E-05	-8.906E-05	-9.684E-04	-5.170E-04	-1.189E-04	1.135E-03	7.590E-04	2.448E-05
35	31	4.327E-05	-1.854E-04	9.587E-04	1.186E-03	2.905E-04	9.744E-05	-2.104E-05	-4.150E-05	-1.830E-05	4.400E-05
35	41	-5.827E-05	-7.897E-05	6.557E-05	-1.201E-03	-6.633E-05	3.215E-03	3.460E-03	-1.000E+00	5.096E-05	-1.027E-03
35	51	-8.302E-04	3.190E-04	-2.780E-03	-1.795E-04	9.308E-07	1.120E-04	9.729E-04	-5.803E-04	5.200E-04	1.548E-04
35	61	5.616E-05	2.945E-05	-1.372E-05	3.929E-05	-2.574E-05	5.737E-04	1.090E-04	3.138E-04	-2.085E-05	-1.372E-03
35	71	-1.203E-04	-8.267E-05	-2.355E-05	-2.870E-04	3.159E-06	-8.051E-06	2.974E-06	-2.047E-05	-3.743E-06	-1.682E-05
35	81	5.158E-04	-8.993E-06	-4.128E-06	-1.293E-06						
36	1	-2.630E-14	7.772E-13	-9.613E-14	3.682E-13	-9.616E-14	-1.090E-11	-1.898E-06	-4.147E-05	8.677E-06	1.969E-04
36	11	9.826E-06	-3.097E-05	-5.996E-06	-2.071E-04	2.285E-05	-1.024E-05	2.930E-05	-3.045E-05	-9.095E-06	-1.232E-05
36	21	-1.801E-05	-2.372E-05	-9.144E-06	-2.110E-05	1.961E-05	4.063E-06	-2.437E-05	-2.445E-05	1.965E-05	1.310E-05
36	31	4.841E-06	3.048E-06	2.311E-06	-2.251E-05	1.688E-05	1.629E-06	9.236E-07	-2.693E-06	-5.005E-07	2.154E-05
36	41	1.474E-04	1.019E-03	1.004E-04	2.999E-05	2.750E-04	-4.814E-05	1.205E-05	-4.403E-05	-1.000E+00	6.819E-06
36	51	-7.145E-04	2.871E-05	-2.202E-03	-1.377E-06	2.479E-05	7.875E-05	-4.569E-05	8.352E-06	-2.205E-05	6.829E-05
36	61	5.025E-05	2.242E-05	1.744E-06	-8.218E-07	1.274E-06	-1.592E-05	7.355E-05	-8.803E-05	-3.149E-05	7.522E-07
36	71	3.653E-06	-3.367E-06	1.319E-05	-7.387E-04	2.604E-05	-2.353E-06	5.718E-06	1.216E-07	-5.006E-06	-3.087E-07
36	81	-8.458E-06	-2.790E-07	-1.009E-06	1.775E-06						
37	1	-4.144E-15	2.441E-13	-2.521E-14	1.787E-13	-2.516E-14	4.052E-12	9.333E-05	-1.022E-04	-1.745E-03	-1.183E-04
37	11	-4.901E-03	-1.988E-04	3.236E-03	-3.491E-05	-7.710E-03	1.137E-03	3.192E-05	1.493E-03	3.636E-04	4.690E-04
37	21	5.965E-04	1.065E-03	6.226E-05	3.216E-04	-1.459E-03	1.380E-03	-8.534E-04	-2.365E-03	-9.876E-03	-8.692E-05
37	31	-1.372E-04	-7.079E-04	4.537E-05	6.647E-04	-1.261E-03	3.776E-05	8.944E-05	1.358E-04	3.014E-04	5.105E-04
37	41	1.518E-03	8.224E-03	4.610E-04	-2.825E-03	1.329E-03	-5.942E-03	-4.415E-03	-1.079E-03	1.355E-05	9.996E-01
37	51	1.649E-04	3.039E-03	6.390E-04	1.458E-05	-2.242E-05	-4.704E-04	1.359E-02	3.037E-04	1.575E-03	-1.065E-04
37	61	-2.955E-04	-1.591E-04	-1.728E-05	9.004E-05	5.409E-05	-2.210E-03	-2.013E-04	-5.073E-03	-1.714E-05	3.606E-05
37	71	5.309E-04	1.242E-05	-4.438E-06	2.437E-05	-3.593E-06	-7.685E-06	9.849E-06	-1.891E-05	-4.619E-06	-1.806E-05
37	81	1.380E-03	-8.316E-07	-1.189E-06	1.062E-05						
38	1	-2.306E-13	1.377E-11	-1.262E-12	1.250E-11	-1.279E-12	5.153E-10	-9.937E-05	2.995E-03	5.905E-06	2.945E-03
38	11	-3.406E-04	-5.599E-04	7.373E-05	4.605E-03	-9.442E-05	8.944E-05	2.100E-04	1.536E-04	5.930E-05	7.820E-05
38	21	4.596E-05	2.392E-04	3.452E-04	-1.058E-03	2.143E-04	1.262E-03	-2.799E-03	-3.690E-04	-5.620E-05	1.312E-03
38	31	5.669E-04	-2.207E-04	1.136E-03	-7.062E-04	3.093E-04	1.082E-04	4.470E-04	1.038E-04	-7.397E-04	4.219E-04
38	41	2.780E-03	1.824E-02	1.270E-03	7.293E-05	1.964E-03	-3.442E-04	-3.071E-04	2.083E-04	2.447E-04	-2.315E-04
38	51	-9.784E-01	-3.960E-03	2.026E-01	-4.648E-05	3.495E-04	-2.900E-04	2.439E-04	-4.891E-04	4.278E-04	2.898E-04
38	61	-5.017E-04	-2.738E-04	-1.680E-05	-1.690E-06	-7.769E-05	-1.859E-03	-1.374E-03	-8.221E-03	5.448E-04	-9.965E-06
38	71	5.360E-05	9.117E-05	-2.748E-04	1.195E-02	-3.509E-04	5.905E-05	-2.260E-04	1.407E-05	1.363E-04	1.306E-05

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.48.48 CLOCK TIME
160.578 SEC. CPTIME
48889 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ CONTINUED								
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
38	81	1.328E-05	7.448E-06	3.835E-05	-5.510E-05						
39	1	6.158E-15	-4.356E-13	3.950E-14	-3.943E-13	3.671E-14	-1.6[illegible]E-11	-5.849E-04	2.652E-06	4.960E-04	1.427E-04
39	11	3.253E-03	1.246E-04	-2.963E-03	8.102E-05	6.846E-03	-4.707E-03	-4.957E-04	-1.293E-02	-4.065E-03	-5.664E-03
39	21	-6.230E-03	-1.188E-02	-5.149E-04	-4.285E-04	6.445E-03	-3.954E-04	1.773E-03	4.628E-04	1.534E-03	9.034E-05
39	31	-3.702E-06	1.539E-03	-4.244E-03	-6.078E-03	1.794E-04	-4.787E-04	-1.259E-06	-2.296E-05	-3.512E-04	-6.494E-04
39	41	-1.149E-03	-6.047E-03	-3.332E-04	3.137E-03	-4.546E-04	6.045E-04	9.459E-05	-4.827E-04	6.772E-06	4.141E-03
39	51	2.062E-04	-9.982E-01	-1.709E-02	5.978E-03	8.640E-04	2.226E-03	-2.911E-02	6.344E-03	-8.355E-03	-3.084E-04
39	61	5.440E-04	2.869E-04	3.465E-04	-4.433E-04	1.062E-04	3.506E-03	2.249E-04	6.815E-03	5.020E-05	1.148E-04
39	71	-4.357E-04	7.663E-04	3.387E-04	7.598E-06	2.629E-05	9.523E-05	2.649E-05	1.973E-04	1.237E-05	1.703E-04
39	81	-7.469E-04	7.397E-05	2.475E-05	-8.321E-06						
40	1	1.183E-14	-8.027E-13	7.037E-14	-7.718E-13	7.316E-14	-3.519E-11	2.626E-05	-3.923E-05	-4.006E-05	4.292E-05
40	11	5.149E-04	1.644E-05	-1.566E-03	-8.499E-05	-1.429E-03	6.988E-04	2.176E-04	5.149E-03	1.694E-03	2.499E-03
40	21	2.748E-03	5.344E-03	2.131E-04	-3.929E-05	-2.589E-03	-9.995E-04	-3.219E-04	1.636E-04	6.278E-04	-2.266E-05
40	31	4.382E-05	-5.091E-04	1.901E-03	2.569E-03	3.529E-04	2.141E-04	-5.176E-05	-5.938E-05	3.219E-05	1.024E-04
40	41	-2.081E-04	-1.102E-03	-2.846E-05	-1.250E-03	-1.510E-04	8.818E-04	6.333E-04	3.019E-04	-7.852E-06	-1.585E-04
40	51	5.522E-04	-7.185E-03	2.597E-03	-9.996E-01	-2.957E-03	7.274E-05	1.387E-02	-6.965E-03	5.759E-03	8.014E-04
40	61	9.084E-05	6.561E-05	-1.593E-04	2.314E-04	-7.755E-05	3.633E-03	8.475E-05	1.178E-03	-2.238E-05	-6.233E-05
40	71	-8.600E-05	-3.612E-04	-1.547E-04	-5.114E-04	9.303E-06	-3.821E-05	-2.588E-05	-8.656E-05	-2.718E-06	-7.401E-05
40	81	1.787E-04	-3.705E-05	-1.129E-05	-4.666E-06						
41	1	-5.774E-14	3.547E-12	-3.219E-13	3.261E-12	-3.261E-13	1.378E-10	-7.385E-06	2.630E-05	-2.031E-06	-6.554E-04
41	11	2.872E-04	1.071E-04	-4.378E-04	-7.035E-05	-4.542E-05	-1.918E-05	-2.336E-05	6.531E-04	2.201E-04	3.359E-04
41	21	3.827E-04	7.173E-04	4.801E-05	3.423E-04	-4.601E-04	9.456E-04	-1.805E-04	3.506E-04	2.033E-04	-1.C00E-04
41	31	-3.150E-05	-4.550E-05	1.609E-04	3.940E-04	-3.973E-06	1.101E-05	-5.712E-05	-3.014E-05	3.171E-05	-1.010E-04
41	41	-6.274E-04	-3.832E-03	-2.442E-04	-1.805E-04	-4.173E-04	2.312E-04	1.362E-04	4.112E-05	-1.446E-05	6.414E-05
41	51	-1.863E-03	-7.522E-04	-6.806E-03	3.031E-03	-9.999E-01	4.860E-03	1.078E-03	-7.226E-04	3.726E-04	-5.440E-05
41	61	-6.943E-05	4.475E-05	-2.418E-05	2.511E-05	3.303E-05	1.939E-03	3.188E-05	2.738E-03	5.450E-05	-1.724E-05
41	71	-4.011E-05	-4.870E-05	-2.740E-05	1.562E-03	-7.325E-05	-6.871E-06	1.940E-05	-1.260E-05	-1.932E-06	-9.484E-06
41	81	2.537E-05	-3.876E-06	-3.034E-06	1.556E-06						
42	1	5.163E-13	-2.947E-11	2.743E-12	-2.616E-11	2.777E-12	-1.034E-09	8.556E-05	-2.530E-03	-2.842E-05	5.985E-04
42	11	-4.136E-05	4.313E-05	3.235E-04	-1.846E-03	-2.849E-05	-4.561E-05	-3.668E-05	-5.317E-04	-1.792E-04	-2.624E-04
42	21	-3.157E-04	-5.785E-04	-3.762E-04	-1.376E-03	8.483E-04	-8.390E-03	3.463E-03	-1.365E-03	-2.597E-04	-4.540E-04
42	31	-2.096E-04	1.408E-04	-4.342E-04	3.100E-05	1.944E-04	6.606E-06	-9.007E-06	7.491E-05	3.244E-04	2.789E-04
42	41	1.068E-03	5.514E-03	2.378E-04	9.703E-05	4.325E-04	5.590E-05	9.658E-05	-4.870E-05	-2.512E-05	2.476E-04
42	51	1.063E-02	1.126E-03	5.640E-02	3.186E-05	4.244E-03	9.975E-01	-4.440E-04	-1.981E-03	2.473E-03	-7.900E-04
42	61	3.327E-04	-2.501E-04	3.897E-05	2.790E-05	-2.299E-04	-5.371E-03	3.765E-04	-7.561E-03	-4.912E-04	5.892E-05
42	71	-6.958E-05	-1.202E-06	1.658E-04	-1.282E-02	4.961E-04	-2.523E-06	-3.290E-06	5.964E-06	-5.577E-05	5.837E-07
42	81	-5.248E-06	-7.149E-06	-1.176E-05	1.338E-05						
43	1	-4.185E-14	1.969E-12	-1.971E-13	1.560E-12	-2.047E-13	4.680E-11	-7.579E-05	4.427E-05	-3.729E-04	-4.395E-05
43	11	-5.337E-03	-2.330E-04	7.614E-03	5.668E-05	2.002E-03	-7.927E-04	-6.884E-04	-1.602E-02	-5.365E-03	-8.041E-03
43	21	-8.818E-03	-1.723E-02	-6.848E-04	2.624E-04	7.867E-03	3.938E-03	6.315E-04	-2.182E-03	-4.464E-03	4.397E-05
43	31	-1.992E-04	1.368E-03	-6.055E-03	-7.961E-03	-1.550E-03	-6.454E-04	2.133E-04	2.584E-04	5.713E-05	-5.334E-05
43	41	1.605E-03	8.676E-03	3.612E-04	3.446E-03	9.622E-04	-3.901E-03	-2.619E-03	-9.941E-04	2.504E-05	-1.236E-03
43	51	-2.758E-04	7.395E-03	-8.921E-04	-8.116E-03	-1.050E-03	1.708E-03	3.716E-02	9.949E-01	-5.736E-02	-6.188E-03
43	61	-1.070E-03	-6.904E-04	7.331E-04	-1.103E-03	4.611E-04	-2.050E-02	-5.170E-04	-1.200E-02	-1.945E-06	2.579E-04
43	71	9.942E-04	1.330E-03	5.843E-04	4.487E-04	1.898E-05	1.281E-04	1.084E-04	3.051E-04	-1.394E-06	2.550E-04
43	81	-8.800E-06	1.343E-04	4.008E-05	3.052E-05						

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.48.48 CLOCK TIME
160.962 SEC. CPTIME
48937 SEC. PPTIME

MODES	(84 X 84) (1)	/OUTPUT/ (2)	CONTINUED (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
44	1	-4.377E-14	1.639E-12	-1.820E-13	1.056E-12	-1.767E-13	1.022E-11	-2.304E-04	7.842E-05	-8.470E-04	-4.033E-04
44	11	3.008E-03	1.728E-04	-8.241E-03	-4.932E-04	-6.070E-03	3.979E-04	6.724E-04	1.658E-02	5.521E-03	8.351E-03
44	21	9.224E-03	1.800E-02	7.434E-04	1.414E-04	-8.724E-03	-2.571E-03	-1.115E-03	7.272E-04	-4.240E-04	-1.471E-04
44	31	1.163E-04	-1.619E-03	5.955E-03	8.204E-03	1.199E-03	6.597E-04	-2.518E-04	-2.592E-04	6.188E-05	1.453E-04
44	41	-1.513E-03	-8.227E-03	-3.301E-04	-4.238E-03	-8.570E-04	2.986E-03	2.000E-03	8.429E-04	-3.383E-05	-3.834E-04
44	51	1.513E-04	-7.953E-03	9.431E-04	5.851E-03	6.338E-04	-1.764E-03	-6.549E-02	6.553E-02	9.924E-01	1.245E-02
44	61	1.216E-03	9.687E-04	-9.440E-04	1.613E-03	-3.241E-04	2.937E-02	8.256E-04	1.272E-02	-2.919E-05	-2.411E-04
44	71	-5.426E-04	-1.391E-03	-6.013E-04	-9.421E-04	-1.663E-05	-1.432E-04	-8.688E-05	-3.349E-04	-1.020E-05	-2.820E-04
44	81	1.572E-03	-1.429E-04	-4.475E-05	-2.087E-05						
45	1	-2.220E-13	7.479E-12	-8.667E-13	4.332E-12	-8.700E-13	-1.120E-11	5.861E-05	-8.711E-04	1.282E-04	-4.065E-03
45	11	-1.521E-04	5.852E-04	9.437E-04	-3.732E-03	1.110E-03	-1.572E-04	-4.441E-04	-2.439E-03	-8.175E-04	-1.218E-03
45	21	-1.264E-03	-2.675E-03	-1.882E-04	1.953E-03	5.888E-04	4.183E-03	9.666E-04	6.710E-04	2.826E-04	-1.032E-03
45	31	-5.039E-04	4.054E-04	-1.767E-03	-5.171E-04	-3.418E-04	-1.641E-04	-3.401E-04	-4.318E-05	7.229E-04	-1.192E-04
45	41	-9.158E-04	-6.268E-03	-5.200E-04	6.159E-04	-8.212E-04	-4.164E-04	-2.118E-04	-2.061E-04	-8.399E-05	-1.202E-05
45	51	1.410E-03	3.220E-04	1.301E-02	-7.087E-04	7.265E-05	-1.516E-03	6.120E-03	-5.972E-03	1.359E-02	-9.992E-01
45	61	3.645E-04	9.084E-04	2.421E-04	-3.700E-04	4.881E-04	2.347E-03	1.326E-03	8.388E-03	-4.170E-04	1.967E-05
45	71	1.474E-04	1.306E-04	3.346E-04	-7.347E-03	1.550E-04	-4.369E-05	2.876E-04	3.767E-05	-1.296E-04	2.987E-05
45	81	-2.399E-04	1.801E-05	-3.076E-05	6.359E-05						
46	1	-1.195E-13	2.422E-12	-3.702E-13	1.925E-13	-3.675E-13	-1.473E-10	4.161E-05	-1.335E-03	-1.117E-04	-2.802E-03
46	11	1.567E-04	4.524E-04	-2.141E-04	-2.951E-03	-3.104E-04	-3.893E-05	-1.938E-04	3.673E-04	1.141E-04	1.833E-04
46	21	2.540E-04	3.552E-04	-1.107E-04	1.198E-03	-6.059E-04	1.360E-03	1.071E-03	3.605E-04	-2.286E-04	-8.233E-04
46	31	-3.716E-04	8.226E-05	-5.702E-04	6.807E-04	-1.296E-04	-3.872E-05	-2.865E-04	-6.792E-05	5.294E-04	-8.095E-05
46	41	-8.443E-04	-5.875E-03	-8.122E-04	-1.297E-04	-8.212E-04	3.101E-05	8.218E-05	-6.446E-05	-7.459E-05	-1.150E-04
46	51	2.990E-03	-6.686E-04	1.752E-02	4.560E-05	4.592E-05	-9.353E-04	-1.705E-03	-3.935E-04	4.065E-04	7.814E-04
46	61	-9.993E-01	3.224E-03	3.586E-06	1.959E-04	4.980E-04	6.949E-03	1.780E-03	7.994E-03	-5.207E-04	-1.461E-05
46	71	4.394E-05	-1.453E-04	2.565E-04	-8.570E-03	1.824E-04	-6.921E-05	2.746E-04	-2.717E-05	-1.352E-04	-2.270E-05
46	81	1.709E-04	-1.033E-05	-3.984E-05	5.685E-05						
47	1	-2.115E-13	7.395E-12	-8.421E-13	4.485E-12	-8.450E-13	1.270E-11	1.919E-05	-5.682E-04	1.231E-05	-1.270E-03
47	11	2.434E-05	1.973E-04	3.098E-05	-1.467E-03	-1.049E-04	5.569E-05	-6.723E-05	1.943E-04	5.796E-05	8.450E-05
47	21	1.179E-04	1.589E-04	-3.457E-05	7.155E-04	-3.436E-04	1.411E-03	2.456E-04	2.015E-04	3.525E-07	-3.766E-04
47	31	-1.778E-04	3.745E-05	-2.670E-04	3.189E-04	-5.127E-05	-1.517E-05	-1.344E-04	-2.906E-05	2.798E-04	1.450E-05
47	41	-1.294E-04	-1.161E-03	-9.299E-05	-1.282E-05	-1.526E-04	-6.798E-05	3.691E-06	-3.726E-05	-3.377E-05	-9.644E-05
47	51	1.732E-03	-4.032E-04	9.416E-03	1.160E-05	-5.924E-05	-8.221E-04	-2.366E-04	-3.847E-04	6.384E-04	-2.859E-04
47	61	-2.561E-03	-9.998E-01	-7.606E-05	6.645E-05	5.536E-04	3.841E-03	1.113E-03	3.933E-03	-2.849E-04	-1.701E-05
47	71	8.686E-05	-8.822E-05	1.425E-04	-4.057E-03	6.873E-05	-4.147E-05	1.625E-04	-1.429E-05	-7.425E-05	-1.271E-05
47	81	-2.624E-05	-4.848E-06	-2.106E-05	3.268E-05						
48	1	-1.901E-14	6.623E-13	-7.496E-14	4.071E-13	-7.452E-14	1.782E-12	2.431E-05	-4.540E-05	4.517E-04	-7.530E-05
48	11	-2.276E-04	1.415E-06	2.136E-05	-1.085E-04	-5.213E-04	7.278E-04	9.137E-05	2.330E-03	7.441E-04	1.039E-03
48	21	1.134E-03	2.160E-03	8.664E-05	8.040E-05	-1.066E-03	-1.909E-05	-2.178E-04	-6.429E-05	7.966E-04	-2.905E-05
48	31	4.014E-06	-2.009E-04	7.131E-04	1.007E-03	8.094E-05	7.941E-05	-1.764E-05	-1.110E-05	4.673E-05	6.240E-05
48	41	4.695E-05	2.190E-04	1.369E-05	-2.401E-04	4.562E-06	7.450E-05	7.998E-05	5.492E-05	-2.982E-06	-8.602E-05
48	51	1.614E-04	-7.989E-04	7.576E-04	3.381E-04	3.999E-05	5.145E-06	1.056E-03	1.182E-03	-1.595E-03	-3.293E-04
48	61	4.788E-05	1.056E-04	-9.999E-01	1.944E-03	-2.174E-04	8.476E-04	6.904E-05	-4.704E-04	-3.585E-05	-5.782E-05
48	71	6.668E-05	-2.783E-04	-1.040E-04	-3.471E-04	-4.802E-07	-3.445E-05	-1.971E-07	-5.826E-05	-8.496E-06	-4.899E-05
48	81	-7.098E-04	-2.311E-05	-8.458E-06	2.025E-06						
49	1	-2.573E-14	9.430E-13	-1.047E-13	6.075E-13	-1.061E-13	5.896E-12	-7.163E-05	-3.961E-05	6.227E-05	4.019E-05
49	11	-5.116E-04	-2.827E-05	3.846E-04	-5.669E-05	8.501E-04	-4.101E-04	-9.854E-05	-2.868E-03	-8.393E-04	-1.222E-03

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.48.49 CLOCK TIME
161.326 SEC. CPTIME
48937 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
49	21	-1.337E-03	-2.580E-03	-1.066E-04	1.060E-05	1.208E-03	4.090E-04	1.724E-04	-3.169E-04	-1.541E-04	5.526E-06
49	31	-2.252E-05	2.339E-04	-8.479E-04	-1.139E-03	-1.112E-04	-8.404E-05	1.741E-05	2.253E-05	-3.182E-06	-2.686E-05
49	41	1.455E-04	8.336E-04	3.875E-05	4.830E-04	9.665E-05	-3.164E-04	-2.175E-04	-1.025E-04	1.547E-06	5.058E-05
49	51	1.938E-04	7.271E-04	8.501E-04	-3.880E-04	-7.048E-05	-9.018E-05	2.475E-03	-1.851E-03	2.786E-03	5.529E-04
49	61	-2.230E-04	-7.198E-05	-2.057E-03	-9.999E-01	6.885E-04	-2.169E-03	4.336E-05	-1.080E-03	-2.162E-05	5.048E-05
49	71	1.531E-04	2.759E-04	1.337E-04	-3.586E-04	1.727E-05	2.590E-05	2.580E-05	6.404E-05	-2.979E-06	5.177E-05
49	81	-1.709E-04	2.527E-05	7.324E-06	5.299E-06						
50	1	-4.624E-15	1.737E-13	-1.908E-14	1.143E-13	-1.970E-14	1.366E-12	2.317E-05	2.250E-06	2.267E-05	1.040E-04
50	11	-9.868E-04	-5.905E-05	9.472E-04	5.455E-05	-1.224E-04	1.137E-04	-4.813E-05	-1.308E-03	-4.495E-04	-6.898E-04
50	21	-7.540E-04	-1.476E-03	-5.624E-05	5.695E-06	6.228E-04	3.778E-04	-2.203E-05	-3.648E-04	-5.481E-04	2.169E-05
50	31	-1.353E-05	8.272E-05	-4.739E-04	-6.373E-04	-1.630E-04	-4.572E-05	3.039E-05	3.077E-05	1.068E-05	3.091E-05
50	41	2.702E-04	1.505E-03	7.353E-05	2.478E-04	1.467E-04	-4.037E-04	-2.558E-04	-7.891E-05	3.424E-06	-1.985E-04
50	51	6.292E-05	1.453E-04	1.517E-04	-2.237E-04	-3.223E-05	9.370E-05	9.591E-05	-1.164E-03	1.248E-03	4.824E-04
50	61	3.590E-04	4.853E-04	-2.736E-04	7.971E-04	9.999E-01	-7.243E-03	-1.321E-04	-3.689E-03	-1.092E-05	3.592E-05
50	71	2.651E-04	1.623E-04	6.995E-05	-5.938E-06	6.051E-06	1.335E-05	1.135E-05	3.440E-05	9.907E-08	2.724E-05
50	81	-1.148E-04	1.528E-05	5.105E-06	4.636E-06						
51	1	1.082E-12	-4.303E-11	4.622E-12	-2.987E-11	4.649E-12	-5.214E-10	1.670E-04	7.519E-04	-8.261E-06	5.230E-03
51	11	1.577E-03	-6.941E-04	-2.009E-03	3.081E-03	3.573E-04	-1.096E-03	4.417E-04	-4.554E-05	5.768E-05	1.911E-04
51	21	1.288E-04	5.562E-04	1.147E-04	-1.792E-03	4.657E-04	-2.714E-03	-1.220E-03	5.854E-04	4.224E-05	1.073E-03
51	31	5.264E-04	-1.522E-04	1.083E-03	-5.337E-04	2.439E-04	5.935E-05	3.625E-04	6.303E-05	-8.070E-04	-1.444E-04
51	41	-2.181E-04	-9.843E-05	8.619E-05	-1.927E-04	1.421E-04	5.316E-04	2.108E-04	1.441E-04	6.572E-05	3.515E-04
51	51	-2.280E-03	5.475E-04	-1.210E-02	6.843E-05	-5.230E-07	5.431E-04	1.132E-04	6.752E-04	-5.910E-04	-6.309E-04
51	61	-1.043E-04	8.076E-05	-9.937E-06	-2.212E-05	1.158E-04	-5.083E-03	9.977E-01	-9.916E-03	2.345E-03	2.264E-04
51	71	-2.046E-03	6.246E-04	-9.923E-04	-2.880E-03	8.579E-04	2.250E-04	-1.225E-03	9.258E-05	3.935E-04	4.799E-05
51	81	2.607E-05	1.973E-05	1.180E-04	-1.638E-04						
52	1	2.828E-13	-1.216E-11	1.262E-12	-9.022E-12	1.272E-12	-2.167E-10	7.838E-05	-3.702E-05	3.924E-06	-5.497E-04
52	11	-4.707E-05	6.343E-05	3.124E-04	-9.800E-04	-1.571E-04	1.380E-04	-4.573E-05	1.445E-04	3.888E-05	4.362E-05
52	21	5.462E-05	7.144E-05	-1.761E-05	2.255E-04	-1.206E-04	2.848E-04	1.763E-04	1.549E-04	-5.576E-05	-1.454E-04
52	31	-6.565E-05	6.834E-06	-9.553E-05	1.340E-04	-4.463E-05	-8.176E-06	-5.232E-05	-1.447E-05	9.096E-05	-7.115E-06
52	41	-9.293E-05	-6.623E-04	-4.198E-05	-1.365E-05	-5.258E-05	-2.200E-05	2.162E-06	-1.057E-05	-1.038E-05	-3.167E-05
52	51	3.275E-04	-8.028E-05	1.568E-03	1.757E-06	9.909E-06	-1.047E-05	-1.041E-04	-1.891E-05	7.427E-06	1.463E-05
52	61	-5.459E-05	-4.605E-05	-6.661E-07	-1.149E-05	-4.172E-06	3.950E-04	-1.726E-03	-5.021E-03	9.997E-01	1.292E-04
52	71	-1.019E-05	-1.973E-04	3.838E-04	-2.189E-02	6.752E-04	-6.717E-05	1.326E-04	-1.891E-05	-9.912E-05	-1.667E-05
52	81	-3.518E-05	-8.274E-06	-2.402E-05	3.296E-05						
53	1	2.443E-15	-3.398E-13	2.505E-14	-3.900E-13	2.537E-14	-2.241E-11	1.972E-05	8.746E-05	-1.007E-05	1.327E-04
53	11	1.846E-04	-1.697E-05	-4.691E-05	-1.446E-05	8.088E-04	-1.376E-04	-2.353E-05	-7.936E-04	-2.522E-04	-3.642E-04
53	21	-4.055E-04	-7.690E-04	-3.090E-05	-6.757E-05	4.154E-04	-6.643E-05	6.975E-05	9.890E-05	3.929E-04	3.029E-05
53	31	1.337E-05	8.332E-05	-1.916E-04	-3.262E-04	1.253E-05	-2.240E-05	8.445E-06	1.176E-06	-3.224E-05	-3.374E-05
53	41	-5.571E-05	-2.770E-04	-1.254E-05	1.367E-04	-9.140E-06	2.903E-05	1.114E-05	-8.036E-06	1.069E-06	1.070E-04
53	51	-2.770E-05	1.830E-04	-1.695E-04	-4.512E-05	-1.619E-06	2.434E-05	6.137E-04	-1.179E-04	2.428E-04	2.923E-05
53	61	-1.979E-05	-5.322E-06	-1.774E-05	2.848E-05	3.461E-06	1.180E-04	8.640E-05	-4.877E-04	9.330E-05	-1.000E+00
53	71	-1.630E-03	7.077E-04	2.279E-04	-2.584E-03	1.297E-04	5.172E-05	-3.196E-05	7.531E-05	1.121E-05	5.074E-05
53	81	1.506E-04	2.093E-05	8.[illegible]RE-06	-5.385E-06						
54	1	1.259E-13	-4.179E-12	4.877E-13	-2.376E-12	4.901E-13	1.164E-11	-1.025E-05	2.993E-06	-7.784E-06	-4.187E-04
54	11	-7.452E-05	5.603E-05	-3.034E-04	-1.366E-04	-1.994E-03	5.476E-04	8.692E-05	3.204E-03	1.030E-03	1.486E-03
54	21	1.634E-03	3.110E-03	1.186E-04	9.762E-05	-1.504E-03	-3.822E-04	-9.982E-05	-1.019E-04	-5.278E-04	-8.859E-05
54	31	-2.566E-05	-2.763E-04	8.109E-04	1.274E-03	6.434E-05	8.871E-05	-4.249E-05	-2.237E-05	8.850E-05	9.023E-05

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.48.49 CLOCK TIME
161.671 SEC. CPTIME
48989 SEC. PPTIME

MODES	(B4 X B4)	/OUTPUT/	CONTINUED							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
54 41	9.223E-05	4.716E-04	2.955E-05	-4.615E-04	7.991E-06	8.919E-05	8.220E-05	5.270E-05	-4.866E-06	-1.962E-04
54 51	1.403E-04	-5.177E-04	6.286E-04	1.780E-04	2.265E-05	-4.167E-06	-1.469E-03	5.658E-04	-8.642E-04	-1.013E-03
54 61	3.371E-05	6.446E-06	5.739E-05	-9.755E-05	2.681E-05	-6.868E-04	-2.575E-04	1.208E-03	1.527E-04	4.239E-04
54 71	-4.507E-04	9.994E-01	-4.064E-03	2.163E-03	-3.207E-04	-3.325E-04	6.760E-05	-4.559E-04	-5.772E-05	-2.630E-04
54 81	-1.066E-05	-1.199E-04	-4.821E-05	7.018E-06						
55 1	5.861E-14	-1.396E-12	1.940E-13	-3.727E-13	1.938E-13	5.381E-11	-1.338E-05	-4.853E-06	-1.696E-07	5.579E-04
55 11	-2.930E-05	-7.944E-05	-2.812E-04	2.510E-04	-6.782E-04	2.012E-04	1.051E-04	1.302E-03	4.223E-04	6.106E-04
55 21	6.590E-04	1.287E-03	5.633E-05	-1.439E-04	-5.514E-04	-3.173E-04	-2.319E-04	-7.944E-05	-1.079E-04	8.831E-05
55 31	4.823E-05	-1.283E-04	4.397E-04	4.343E-04	4.840E-05	4.319E-05	3.001E-05	4.556E-06	-4.819E-05	3.167E-05
55 41	6.217E-05	4.401E-04	3.242E-05	-1.806E-04	3.493E-05	5.328E-05	3.196E-05	3.148E-05	5.932E-06	-5.908E-05
55 51	-1.600E-04	-1.695E-04	-8.90[illegible]E-04	7.167E-05	2.154E-06	2.512E-05	-4.959E-04	2.365E-04	-3.343E-04	-1.026E-04
55 61	-4.878E-06	4.767E-06	2.348E-05	-3.294E-05	9.759E-06	-5.791E-04	3.853E-04	9.658E-04	-1.726E-04	1.180E-04
55 71	-1.591E-04	3.596E-03	9.998E-01	5.006E-03	1.528E-04	-7.713E-05	-3.748E-04	-1.810E-04	8.008E-05	-1.059E-04
55 81	5.044E-05	-4.563E-05	8.618E-06	-2.863E-05						
56 1	3.293E-14	-1.702E-12	1.642E-13	-1.431E-12	1.660E-13	-5.032E-11	-9.299E-06	-6.714E-06	-4.163E-06	-2.169E-04
56 11	-3.175E-05	2.321E-05	1.194E-05	-4.109E-04	-2.090E-05	3.441E-05	-1.801E-05	7.267E-05	2.183E-05	3.007E-05
56 21	3.586E-05	5.786E-05	-7.436E-06	7.592E-05	-5.376E-05	4.090E-05	9.127E-05	-2.466E-05	1.164E-05	-5.831E-05
56 31	-2.701E-05	4.340E-06	-3.148E-05	6.125E-05	1.608E-06	-4.603E-08	-2.056E-05	-5.292E-06	4.149E-05	9.324E-06
56 41	1.622E-05	5.068E-05	1.065E-06	-3.820E-06	2.020E-07	-6.128E-08	2.941E-06	-3.721E-06	-3.218E-06	-7.268E-06
56 51	1.266E-04	-2.258E-05	5.544E-04	3.004E-06	1.880E-06	-5.692E-06	-1.836E-05	3.189E-06	-8.531E-06	-5.622E-07
56 61	-1.983E-05	-1.433E-05	-1.643E-08	-2.921E-06	-4.308E-09	1.861E-05	-2.560E-04	4.400E-05	2.417E-04	-5.621E-06
56 71	-5.272E-05	1.433E-04	-3.295E-04	4.622E-02	9.989E-01	-4.269E-04	2.868E-04	-3.673E-05	-1.021E-04	-1.813E-05
56 81	8.134E-05	-1.013E-05	-1.974E-05	2.565E-05						
57 1	-7.521E-15	2.799E-13	-3.093E-14	1.822E-13	-3.098E-14	1.962E-12	-6.259E-07	-4.639E-05	3.657E-05	-1.041E-04
57 11	-8.162E-05	1.382E-05	9.772E-05	-4.140E-05	-2.709E-04	7.006E-05	2.809E-06	2.397E-04	7.432E-05	1.034E-04
57 21	1.159E-04	2.144E-04	7.913E-06	4.960E-05	-1.290E-04	9.474E-05	-1.997E-05	-1.765E-05	-1.117E-04	-2.084E-05
57 31	-9.542E-06	-2.355E-05	4.252E-05	9.897E-05	-1.354E-05	4.966E-06	-5.900E-06	-6.862E-07	1.619E-05	7.747E-06
57 41	3.357E-06	-9.311E-06	-2.556E-06	-3.243E-05	-4.333E-06	-1.824E-05	-8.322E-06	8.339E-08	-1.067E-06	-3.431E-05
57 51	2.489E-05	-5.623E-05	1.510E-04	1.024E-05	5.256E-07	-1.128E-05	-1.205E-04	1.681E-05	-4.420E-05	-7.567E-07
57 61	5.321E-06	3.453E-07	4.597E-06	-8.021E-06	-2.418E-06	7.692E-05	-5.385E-05	-1.341E-04	1.774E-05	1.736E-05
57 71	-1.134E-04	1.980E-04	5.096E-05	-7.520E-04	4.432E-04	1.000E+00	1.778E-04	-1.038E-04	-3.073E-05	-3.715E-05
57 81	-4.767E-04	-1.340E-05	-9.569E-06	1.023E-05						
58 1	-9.743E-15	1.756E-13	-2.887E-14	-1.358E-14	-2.868E-14	-1.394E-11	6.449E-06	-6.021E-05	-9.604E-06	-4.570E-04
58 11	-1.178E-04	5.845E-05	2.082E-04	-4.034E-04	-8.006E-06	7.152E-05	-4.239E-05	-7.504E-05	-3.670E-05	-6.131E-05
58 21	-6.018E-05	-1.408E-04	-1.529E-05	1.549E-04	1.974E-06	2.394E-04	1.164E-04	-2.792E-06	-2.602E-05	-9.188E-05
58 31	-4.450E-05	2.012E-05	-1.159E-04	1.069E-05	-2.684E-05	-8.449E-06	-2.999E-05	-5.629E-06	6.153E-05	4.304E-06
58 41	-6.638E-06	-1.267E-04	-1.325E-05	2.121E-05	-1.722E-05	-3.723E-05	-1.473E-05	-1.149E-05	-5.124E-06	-2.021E-05
58 51	1.597E-04	-2.205E-05	8.102E-04	-9.013E-06	7.928E-07	-2.66[illegible]E-05	-4.486E-06	-5.066E-05	4.972E-05	3.052E-05
58 61	-4.444E-06	-9.613E-06	-1.756E-06	1.835E-06	-5.720E-06	2.037E-04	-2.967E-04	-3.140E-04	1.629E-04	-2.567E-06
58 71	-1.137E-04	2.648E-05	-2.649E-04	8.886E-03	-2.258E-04	1.542E-04	-9.999E-01	-3.788E-05	-2.430E-04	-1.858E-06
58 81	1.013E-04	-1.896E-07	-3.804E-05	5.557E-05						
59 1	8.531E-15	-2.167E-13	2.536E-14	-1.223E-13	2.556E-14	7.077E-13	1.267E-05	2.473E-05	5.856E-05	-3.321E-05
59 11	5.604E-05	5.022E-06	-8.828E-06	-4.922E-05	-7.062E-05	1.258E-04	1.354E-05	4.214E-04	1.349E-04	1.870E-04
59 21	2.015E-04	3.812E-04	1.394E-05	5.333E-06	-1.659E-04	-5.127E-05	-1.376E-05	3.700E-05	1.616E-04	-6.217E-06
59 31	1.098E-06	-2.643E-05	1.066E-04	1.516E-04	1.573E-05	1.013E-05	-5.089E-06	-3.908E-06	4.097E-06	1.616E-06
59 41	-2.051E-05	-1.188E-04	-5.174E-06	-3.019E-05	-8.594E-06	2.721E-05	2.021E-05	7.805E-06	-7.075E-07	5.984E-06
59 51	1.659E-05	-4.217E-05	7.486E-05	1.375E-05	4.003E-06	5.920E-06	5.154E-05	6.140E-05	-6.012E-05	-6.133E-06

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.48.49 CLOCK TIME
162.034 SEC. CPTIME
49041 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
59	61	-8.506E-07	-8.541E-07	6.551E-06	-7.433E-06	5.377E-06	2.093E-05	-2.929E-05	-7.450E-05	2.187E-05	2.558E-05
59	71	5.960E-05	2.242E-04	9.109E-05	1.227E-03	-3.557E-05	8.071E-05	-2.258E-05	1.000E+00	-3.330E-05	-9.184E-05
59	81	-7.315E-04	-3.937E-05	-1.492E-05	2.346E-07						
60	1	4.422E-14	-1.686E-12	1.845E-13	-1.125E-12	1.855E-13	-1.499E-11	4.737E-06	5.225E-06	-5.199E-06	1.980E-04
60	11	1.298E-05	-2.889E-05	-4.912E-05	1.437E-05	3.103E-05	-1.645E-05	1.732E-05	-1.052E-05	-2.677E-06	-1.513E-06
60	21	-4.805E-06	-1.650E-07	6.896E-07	-4.653E-05	1.788E-05	-5.243E-05	-3.906E-05	4.343E-06	1.508E-05	2.852E-05
60	31	1.364E-05	-3.142E-06	2.416E-05	-2.078E-05	5.147E-06	1.326E-06	1.045E-05	2.719E-06	-1.974E-05	-2.371E-06
60	41	7.954E-07	3.118E-05	3.751E-06	-3.630E-07	6.311E-06	6.798E-06	1.567E-06	2.501E-06	1.601E-06	5.597E-06
60	51	-4.034E-05	9.780E-06	-2.294E-04	-1.193E-08	-1.011E-06	9.125E-06	8.859E-06	4.310E-06	-3.240E-07	-1.645E-05
60	61	-8.377E-06	-2.137E-06	-3.384E-07	5.953E-07	1.834E-07	-8.003E-05	5.724E-05	5.651E-05	6.182E-06	-5.679E-06
60	71	1.039E-05	-2.316E-05	2.090E-05	2.348E-03	-1.767E-04	-1.429E-05	1.948E-04	-2.889E-05	-1.000E+00	2.630E-05
60	81	2.993E-04	9.387E-06	2.636E-05	-2.430E-05						
61	1	1.353E-15	1.383E-15	2.450E-15	3.600E-14	2.437E-15	4.174E-12	-1.343E-06	-2.126E-06	8.487E-07	-1.664E-05
61	11	-7.283E-06	2.069E-06	-1.368E-05	-9.436E-06	-1.290E-04	4.551E-05	7.686E-06	2.249E-04	7.198E-05	1.027E-04
61	21	1.122E-04	2.132E-04	8.081E-06	5.542E-06	-1.008E-04	-1.954E-05	-1.711E-05	-7.291E-06	-2.425E-05	-4.076E-06
61	31	-8.020E-07	-1.840E-05	5.505E-05	8.249E-05	4.003E-06	5.802E-06	-1.967E-06	-1.143E-06	4.408E-06	5.392E-06
61	41	4.912E-06	2.521E-05	1.639E-06	-2.759E-05	4.850E-07	5.180E-06	4.731E-06	3.272E-06	-1.932E-07	-1.130E-05
61	51	5.808E-06	-2.963E-05	2.449E-05	9.945E-06	1.123E-06	-2.335E-07	-7.385E-05	3.013E-05	-4.458E-05	-6.111E-06
61	61	1.242E-06	2.072E-07	3.031E-06	-4.743E-06	1.232E-06	-2.148E-05	-6.856E-06	2.440E-05	2.682E-06	7.798E-06
61	71	-7.249E-06	6.959E-05	3.114E-05	-5.039E-05	1.069E-05	1.575E-05	-2.241E-06	5.549E-05	2.133E-05	1.000E+00
61	81	-1.319E-04	-1.183E-04	-2.215E-05	2.196E-06						
62	1	5.612E-15	-1.818E-13	2.146E-14	-1.001E-13	2.154E-14	8.976E-13	-5.808E-07	1.012E-05	-1.069E-05	-1.411E-05
62	11	1.310E-05	1.941E-06	-3.322E-05	-6.495E-06	-3.809E-05	1.088E-05	1.873E-06	9.667E-05	3.151E-05	4.604E-05
62	21	5.030E-05	9.609E-05	3.421E-06	-1.893E-06	-4.184E-05	-3.384E-05	4.398E-06	-1.232E-06	-3.716E-06	-2.486E-06
62	31	-5.401E-07	-6.849E-06	2.400E-05	3.698E-05	5.208E-06	2.662E-06	-1.665E-06	-1.095E-06	2.469E-06	2.561E-06
62	41	3.466E-06	2.085E-05	1.551E-06	-1.295E-05	8.110E-07	6.813E-06	4.972E-06	1.883E-06	-1.416E-07	-1.679E-06
62	51	5.350E-05	-9.674E-06	1.900E-05	4.664E-06	8.328E-07	1.301E-06	-3.557E-05	1.719E-05	-2.316E-05	-2.456E-06
62	61	4.074E-07	5.937E-08	1.073E-06	-2.289E-06	1.293E-06	-3.098E-05	-4.440E-06	3.708E-05	2.035E-05	2.839E-06
62	71	7.517E-06	2.802E-05	1.159E-05	4.532E-06	3.934E-06	4.796E-06	-8.379E-07	2.017E-05	6.440E-06	1.037E-04
62	81	-1.858E-03	1.001E+00	-2.197E-05	-4.202E-06						
63	1	1.157E-14	-5.393E-13	5.417E-14	-4.250E-13	5.466E-14	-1.255E-11	3.729E-06	7.092E-06	1.831E-06	-4.367E-05
63	11	1.410E-05	6.353E-06	4.816E-06	-1.930E-05	-2.261E-05	9.686E-07	-3.593E-06	2.507E-05	8.115E-06	1.191E-05
63	21	1.366E-05	2.457E-05	7.099E-07	8.349E-06	-1.381E-05	-2.039E-06	1.082E-05	1.107E-05	-8.923E-06	3.546E-06
63	31	-2.744E-06	-1.132E-06	1.439E-06	1.411E-05	-5.706E-07	1.595E-07	-2.883E-06	-1.212E-06	3.849E-06	-3.780E-07
63	41	-5.610E-06	-3.620E-05	-2.024E-06	-4.180E-06	-2.972E-06	2.374E-06	2.128E-06	1.833E-07	-4.578E-07	-5.548E-07
63	51	9.935E-06	-3.730E-06	5.133E-05	1.295E-06	8.416E-07	4.796E-07	-1.043E-05	5.063E-06	-7.092E-06	2.073E-06
63	61	8.032E-07	-1.235E-07	2.084E-07	-1.015E-06	6.442E-07	1.183E-05	-1.185E-05	-2.160E-05	7.318E-06	5.228E-07
63	71	9.947E-06	9.049E-06	-3.662E-06	2.713E-04	-6.751E-06	3.445E-06	-1.342E-05	6.436E-06	1.749E-05	1.671E-05
63	81	1.457E-04	1.908E-05	1.000E+00	5.670E-05						
64	1	4.796E-14	-2.031E-12	2.122E-13	-1.489E-12	2.186E-13	-3.399E-11	6.943E-06	1.734E-05	-1.012E-06	6.324E-05
64	11	3.443E-05	-9.539E-06	-3.214E-05	-3.596E-05	1.068E-06	-1.944E-05	4.323E-06	2.869E-06	2.105E-06	5.001E-06
64	21	4.499E-06	1.250E-05	2.172E-07	-4.807E-05	2.449E-06	-4.147E-05	-2.747E-06	1.760E-05	-2.076E-06	7.599E-06
64	31	4.090E-06	-1.147E-06	1.025E-05	-6.775E-07	3.053E-06	4.725E-07	1.975E-06	-1.845E-07	-6.231E-06	-2.193E-06
64	41	-6.569E-06	-2.636E-05	-1.499E-07	-3.603E-06	2.785E-07	7.977E-06	4.247E-06	1.436E-06	2.729E-07	4.474E-06
64	51	-6.908E-06	4.356E-06	-5.485E-05	9.395E-07	6.017E-07	6.930E-06	-2.316E-06	7.844E-06	-7.032E-06	-6.858E-06
64	61	-5.059E-06	-2.067E-06	-3.344E-07	-7.528E-07	1.140E-06	-3.031E-05	1.034E-05	9.259E-06	1.957E-05	-3.512E-06
64	71	2.234E-05	-4.579E-06	-1.947E-06	1.769E-03	-9.840E-05	-1.425E-06	4.289E-05	-3.407E-06	-5.984E-06	-1.366E-06

MODLS RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.48.50 CLOCK TIME
162.378 SEC. CPTIME
49093 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
64	81	-3.250E-05	3.247E-06	-5.505E-05	1.000E+00						
65	1	1.427E-14	9.445E-17	-4.819E-17	-3.973E-17	-4.585E-15	-3.292E-16	-1.291E-02	-2.872E-03	1.010E+00	6.306E-04
65	11	2.935E-02	1.462E-03	4.307E-02	3.517E-05	4.376E-02	-5.959E-02	4.458E-04	1.191E-02	8.927E-03	6.106E-03
65	21	8.802E-03	2.380E-02	2.869E-03	-1.015E-03	-8.060E-03	-1.219E-03	2.680E-04	2.029E-03	2.846E-03	9.004E-05
65	31	1.596E-03	-4.792E-03	3.415E-02	4.237E-02	2.114E-03	5.589E-03	-5.860E-04	-3.314E-04	-2.658E-04	-9.895E-04
65	41	7.130E-04	-2.488E-03	-1.294E-03	1.097E-01	7.982E-03	-4.693E-02	-2.741E-02	-1.215E-02	2.465E-04	5.026E-02
65	51	-3.157E-04	1.934E-02	4.381E-04	-1.911E-03	-3.298E-05	5.210E-04	2.220E-03	1.688E-02	3.437E-02	6.229E-03
65	61	-4.699E-03	6.347E-04	1.958E-02	2.806E-03	-3.339E-04	1.246E-03	1.106E-04	1.163E-04	-2.330E-04	-1.766E-05
65	71	1.957E-04	3.146E-03	1.021E-03	4.116E-05	6.091E-04	-4.650E-03	-1.562E-03	-9.824E-03	-1.123E-03	1.175E-04
65	81	1.664E-03	2.972E-03	-5.643E-04	2.873E-04						
66	1	2.391E-16	-2.936E-15	-2.017E-17	5.585E-15	-1.087E-15	7.571E-15	-8.857E-04	3.454E-02	6.053E-04	-9.934E-01
66	11	-6.654E-04	1.468E-01	-2.430E-03	-1.284E-02	1.916E-04	1.650E-05	-1.135E-01	3.477E-03	-8.876E-04	-5.350E-04
66	21	1.735E-02	-1.050E-02	1.113E-04	1.764E-01	-5.281E-02	4.668E-02	2.434E-01	-1.374E-03	3.409E-03	-1.281E-01
66	31	-6.154E-02	2.211E-02	-1.049E-01	8.480E-02	1.845E-03	-3.743E-03	-3.571E-02	-2.902E-03	8.961E-02	2.177E-02
66	41	3.072E-02	-1.254E-02	-2.515E-02	4.232E-03	-5.780E-02	-4.3[illegible]E-03	1.352E-03	-4.686E-03	-4.513E-03	-1.832E-03
66	51	-8.362E-02	-3.251E-03	-4.456E-03	-1.289E-03	2.071E-02	2.318E-02	2.440E-04	-3.669E-04	-1.706E-02	1.473E-01
66	61	1.065E-01	4.922E-02	2.885E-03	-1.773E-03	4.422E-03	-4.042E-03	3.368E-01	-8.080E-03	-4.162E-02	-1.032E-02
66	71	-6.704E-04	-3.953E-02	5.656E-02	5.988E-03	-2.628E-02	-1.249E-02	6.396E-02	-5.172E-03	-3.665E-02	-3.565E-03
66	81	3.119E-05	-3.517E-03	-1.195E-02	1.743E-02						
67	1	3.391E-17	-3.431E-16	-4.946E-18	1.[illegible]79E-15	-2.071E-16	1.843E-15	-1.205E-04	3.589E-03	1.363E-05	1.175E-02
67	11	-8.544E-05	-2.058E-02	1.236E-03	-9.980E-01	1.671E-04	9.449E-06	-8.436E-03	5.804E-05	-3.614E-04	7.550E-04
67	21	4.701E-05	-6.579E-04	-2.398E-02	6.102E-02	-2.366E-02	2.287E-02	1.031E-01	-6.641E-04	1.457E-03	-8.306E-02
67	31	-2.874E-02	8.571E-03	-4.242E-02	3.457E-02	8.074E-04	-9.334E-04	-4.509E-03	9.587E-03	4.552E-02	1.480E-02
67	41	2.130E-02	-5.566E-03	-1.516E-02	2.076E-03	-2.655E-02	-1.002E-03	-1.[illegible]73E-03	-2.930E-04	2.256E-03	-4.171E-04
67	51	-5.990E-02	-1.154E-03	1.542E-03	1.127E-03	8.820E-04	-2.567E-02	2.203E-04	5.513E-04	-8.414E-03	6.126E-02
67	61	5.127E-02	2.599E-02	1.951E-03	1.064E-03	9.033E-04	-1.405E-03	8.936E-02	-2.647E-03	-3.377E-02	6.201E-04
67	71	-1.721E-04	-5.653E-03	1.126E-02	3.251E-03	-2.237E-02	-2.231E-03	2.557E-02	-3.312E-03	-9.349E-04	-9.026E-04
67	81	3.499E-06	-6.874E-04	-2.315E-03	-4.829E-03						
68	1	-3.087E-15	-1.276E-17	-3.618E-17	-1.317E-17	-5.158E-15	-1.170E-16	2.119E-03	2.335E-04	8.803E-03	1.051E-05
68	11	6.921E-03	3.981E-04	1.399E-02	-9.626E-05	-9.591E-01	-2.824E-01	-3.115E-05	-6.681E-02	-1.690E-02	4.970E-03
68	21	1.744E-02	4.804E-02	2.711E-03	2.515E-03	-8.239E-02	-1.501E-02	-2.122E-02	-1.624E-03	-3.940E-03	-1.447E-03
68	31	-1.508E-03	-2.510E-02	3.169E-02	5.676E-02	-2.663E-02	2.[illegible]95E-03	-6.011E-04	-3.614E-04	1.986E-03	5.133E-03
68	41	-4.381E-04	-2.498E-03	1.069E-03	-6.612E-02	3.205E-03	-2.845[illegible]02	-1.906E-02	-2.099E-03	-1.726E-04	-6.464E-02
68	51	6.280E-04	-5.956E-02	-1.309E-03	1.400E-02	6.442E-04	-1.416E-[illegible]4	8.394E-04	1.862E-02	-7.752E-02	-1.542E-02
68	61	4.463E-03	1.259E-03	5.[illegible]23E-03	-1.139E-02	-1.183E-03	-3.745E-03	1.300E-03	-1.411E-03	-3.523E-03	-2.911E-02
68	71	-8.537E-06	-6.535E-02	-2.290[illegible]-02	-2.333E-04	-4.694E-04	-1.150[illegible]-02	-5.549E-04	9.121E-05	-1.858E-03	-9.313E-03
68	81	-7.311E-04	-3.043E-03	-2.274E-03	-3.895E-04						
69	1	2.066E-16	1.238E-17	-4.185E-18	-1.966E-17	-7.891E-15	-2.367E-16	-1.908E-05	-9.806E-05	-1.165E-04	-1.043E-05
69	11	1.689E-03	4.338E-05	-1.531E-02	-6.450E-05	-5.178E-02	2.006E-01	2.514E-02	6.111E-01	1.953E-01	2.722E-01
69	21	2.947E-01	5.611E-01	2.280E-02	4.932E-03	-2.558E-01	-4.518E-02	-4.862E-02	-1.475E-03	-4.341E-03	-1.542E-03
69	31	3.511E-03	-4.868E-02	1.692E-01	2.294E-01	2.049E-02	1.766E-02	-2.704E-03	-3.078E-03	4.585E-03	1.115E-02
69	41	-6.549E-04	-5.085E-03	1.022E-03	-7.117E-02	-3.858E-03	3.521E-02	2.743E-02	1.509E-02	-2.373E-04	-1.419E-02
69	51	1.531E-03	-1.237E-01	-2.341E-03	5.231E-02	6.904E-03	6.341E-03	1.319E-02	1.691E-01	-2.080E-01	-[illegible]156E-02
69	61	4.491E-03	2.201E-03	3.092E-02	-3.548E-02	1.842E-02	-1.330E-02	-1.283E-03	-7.675E-03	-3.436E-03	-2.213E-02
69	71	8.0[illegible]4E-04	-1.033E-01	-4.375E-02	-5.167E-04	-2.747E-03	-9.939E-03	-4.714E-03	-1.993E-02	-5.846E-04	-1.607E-02
69	81	4.661E-05	-7.641E-03	-2.256E-03	-3.893E-04						

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELAG AND MODEL86

19.48.50 CLOCK TIME
162.754 SEC. CPTIME
49145 SEC. PPTIME

MODES	(84 X 84)	/OUTPUT, CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
70	1	2.133E-16	1.462E-18	1.428E-18	-3.210E-19	-9.179E-17	-5.315E-18	-1.281E-04	-1.788E-05	-1.186E-04	-1.153E-06
70	11	-1.956E-04	-1.263E-05	-9.563E-04	-1.166E-06	-2.039E-03	4.074E-03	-5.828E-05	-1.573E-03	-1.539E-03	-2.263E-03
70	21	-2.902E-03	-8.136E-03	-1.362E-03	8.928E-04	-7.211E-03	-2.744E-03	-9.998E-03	-1.1.6E-02	9.984E-01	3.393E-03
70	31	4.750E-03	9.427E-03	3.522E-02	3.205 02	2.305E-02	3.147E-03	-3.014E-04	-4.622E-04	-1.952E-04	-6.317E-04
70	41	1.707E-04	-1.867E-06	-4.005E-04	2.515E-02	-9.734E-04	1.064E-02	7.828E-03	1.662E-03	4.447E-05	2.236E-02
70	51	-2.479E-05	3.991E-03	1.312E-04	1.872E-03	5.911E-04	7.768E-04	1.365E-03	1.454E-02	2.301E-05	6.750E-04
70	61	-9.375E-04	-4.964E-05	3.085E-03	-6.785E-04	2.162E-03	-3.736E-04	-4.126E-04	-4.135E-04	4.412E-04	2.982E-03
70	71	6.444E-05	4.614E-03	8.955E-04	3.884E-06	-1.246E-04	1.294E-03	-3.884E-04	-2.298E-03	2.786E-04	4.679E-04
70	81	2.302E-04	7.148E-05	2.350E-04	5.738E-05						
71	1	4.194E-19	-5.184E-18	-5.466E-20	1.417E-17	-1.553E-18	-5.754E-16	-1.328E-06	4.054E-05	2.019E-07	1.100E-04
71	11	-8.090E-06	1.258E-04	-1.879E-06	5.598E-05	-5.414E-07	4.995E-06	-2.396E-03	8.689E-05	2.057E-05	-2.891E-05
71	21	1.779E-04	-7.132E-05	8.551E-04	-3.979E-03	1.299E-03	-1.140E-03	-7.336E-03	8.533E-05	-1.224E-04	4.790E-03
71	31	2.277E-03	-1.215E-03	5.724E-03	-4.633E-03	-5.955E-05	4.736E-04	5.499E-03	3.305E-03	-5.305E-03	8.939E-04
71	41	2.277E-03	9.626E-04	-3.268E-03	-2.115E-05	-7.594E-03	5.702E-04	-3.175E-03	2.227E-03	1.836E-03	5.022E-04
71	51	-1.955E-01	1.673E-02	-9.783E-01	-2.950E-03	7.728E-03	8.165E-02	-1.638E-04	-1.378E-03	1.780E-03	-1.646E-02
71	61	-2.370E-02	-1.303E-02	-1.081E-03	-1.183E-03	2.327E-04	5.463E-04	-2.776E-02	5.870E-04	4.196E-03	4.983E-04
71	71	5.583E-05	2.164E-03	-3.180E-03	1.403E-04	2.334E-03	6.630E-04	-4.037E-03	3.945E-04	1.514E-03	1.930E-04
71	81	-1.124E-06	1.642E-04	4.940E-04	-5.507E-04						
72	1	2.009E-17	1.010E-19	7.503E-20	2.577E-20	1.860E-17	2.975E-19	-1.228E-05	-1.380E-06	-3.817E-05	-9.466E-08
72	11	-2.399E-05	-1.296E-06	-4.025E-05	4.081E-08	-6.235E-05	-4.491E-05	-1.186E-05	-2.686E-04	-9.224E-05	2.016E-05
72	21	8.634E-05	2.636E-04	1.269E-05	3.651E-05	-9.447E-04	-1.995E-04	-2.948E-04	-4.718E-05	-9.426E-05	-2.474E-05
72	31	-4.177E-05	-4.571E-04	3.637E-04	8.125E-04	-5.847E-04	-6.621E-06	-1.006E-05	-1.131E-05	7.984E-05	2.225E-04
72	41	-3.693E-05	-3.441E-05	9.422E-05	-7.645E-03	-2.181E-04	8.936E-04	4.628E-04	7.338E-04	-3.398E-05	-1.004E-02
72	51	2.424E-04	-2.677E-02	-5.986E-04	1.393E-02	1.147E-03	2.803E-04	9.963E-01	-3.380E-02	7.192E-02	8.032E-03
72	61	-1.938E-03	-2.043E-04	1.160E-03	3.313E-03	-2.620E-04	7.750E-04	-7.343E-05	1.694E-04	2.378E-04	1.562E-03
72	71	1.829E-07	4.484E-03	1.587E-03	1.737E-05	6.632E-05	4.591E-04	1.741E-06	-2.209E-04	4.788E-05	5.050E-04
72	81	8.527E-05	2.722E-04	9.046E-05	2.756E-05						
73	1	-9.888E-20	-8.746E-20	-9.542E-21	2.347E-18	-3.278E-19	1.484E-17	-1.251E-07	3.285E-06	4.128E-09	1.064E-05
73	11	3.684E-08	-9.149E-06	1.304E-07	8.147E-06	4.577E-08	-3.265E-07	2.806E-05	-7.310E-07	-6.631E-08	-2.187E-06
73	21	8.217E-06	-1.714E-08	1.131E-04	-1.921E-04	9.660E-05	-1.133E-04	-4.487E-04	2.971E-06	-7.347E-06	3.813E-04
73	31	1.658E-04	-4.741E-05	2.464E-04	-2.002E-04	-4.170E-06	1.583E-06	-7.117E-05	-1.916E-04	-4.698E-04	-1.953E-04
73	41	-3.048E-04	4.831E-05	2.434E-04	-2.857E-05	4.565E-04	-7.678E-06	8.983E-05	-5.916E-05	-1.570E-04	-4.763E-06
73	51	3.071E-03	1.099E-05	-2.895E-04	-1.419E-04	4.511E-04	3.630E-03	-1.477E-05	-1.368E-04	3.431E-04	-2.433E-03
73	61	-3.001E-03	-1.447E-03	-1.249E-04	-1.304E-04	5.143E-06	4.565E-05	1.672E-03	1.798E-04	1.519E-02	-1.911E-03
73	71	-1.445E-05	-1.936E-03	-4.568E-03	9.987E-01	-5.000E-02	8.668E-04	1.137E-02	-1.652E-03	3.994E-03	1.008E-04
73	81	-1.555E-06	-9.253E-06	-6.684E-04	-4.572E-03						
74	1	-1.599E-18	-1.034E-20	7.081E-21	4.750E-21	3.611E-19	3.593E-20	9.690E-07	1.272E-07	2.944E-06	1.265E-08
74	11	1.883E-06	1.017E-07	4.341E-06	5.086E-09	9.003E-06	-1.162E-05	2.332E-07	6.175E-06	4.328E-06	2.038E-06
74	21	3.765E-06	1.244E-05	2.399E-06	-1.008E-06	-1.050E-05	-1.922E-06	-9.534E-07	2.731E-06	3.662E-06	-1.366E-07
74	31	1.740E-06	-1.040E-05	5.013E-05	6.630E-05	-1.166E-05	1.002E-05	-1.055E-06	-2.958E-07	-6.194E-07	-2.251E-06
74	41	1.764E-06	-6.798E-06	-3.352E-06	3.102E-04	3.012E-05	-1.940E-04	-1.214E-04	-5.235E-05	8.857E-07	1.452E-04
74	51	-1.607E-06	9.410E-05	1.935E-06	-2.354E-05	-3.492E-06	-1.217E-06	5.247E-06	1.245E-05	2.415E-04	4.208E-05
74	61	-2.876E-05	4.888E-06	1.243E-04	3.069E-05	-2.096E-05	1.660E-05	8.022E-06	1.117E-05	-1.186E-05	-5.762E-05
74	71	5.941E-07	-4.411E-06	2.260E-05	1.569E-06	3.215E-05	-2.609E-04	-6.314E-05	-4.802E-04	-2.470E-04	-1.265E-04
74	81	-1.000E+00	-1.968E-03	1.750E-04	-4.079E-05						
75	1	-4.058E-14	5.422E-16	3.100E-16	-5.586E-16	-7.337E-15	1.473E-16	-1.012E+00	1.408E-04	-3.815E-02	2.071E-03
75	11	-1.472E-02	-4.378E-03	-1.554E-02	4.195E-04	-2.028E-02	-2.821E-03	-1.218E-03	-7.787E-03	-3.528E-03	4.920E-03

MODEL RUN WITH LANDER AND TWO ... PAYLOADS
USE FOR IMPEDANCE STUDY MODE ... AND MODE 86

... SO CLOCK TI
193.132 SEC. CPTI
49145 SEC. PPTI

MODES	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
75	21	6.097E-03	1.282E-02	1.721E-03	-5.909E-03	-8.141E-03	-4.807E-03	-1.359E-02	-2.493E-04	-4.348E-03	6.452E-...
75	31	2.403E-03	7.563E-03	-1.911E-02	-3.661E-02	4.281E-02	8.777E-03	-2.406E-03	-2.954E-03	-1.900E-03	2.177E-...
75	41	-6.185E-03	-1.942E-03	2.931E-03	2.811E-02	1.401E-02	-3.970E-02	-3.538E-02	-2.111E-02	1.482E-04	3.234E-03
75	51	9.804E-03	5.491E-02	-1.683E-04	-2.692E-03	6.769E-04	8.858E-03	2.494E-03	-1.102E-02	-2.895E-02	-8.659E-...
75	61	-5.539E-03	-2.754E-03	-3.819E-03	9.419E-03	3.037E-03	-1.446E-03	3.488E-02	-1.161E-03	2.034E-02	-5.889E-03
75	71	-1.707E-04	-4.851E-03	-5.467E-03	-1.268E-03	-3.597E-03	-2.561E-04	-3.326E-03	6.766E-03	-2.780E-03	-1.187E-03
75	81	-6.085E-04	-6.625E-04	3.454E-03	6.547E-03						
76	1	-1.247E-15	-7.208E-15	-4.145E-17	6.361E-15	1.159E-15	-1.307E-14	-2.658E-04	-1.009E+00	-4.557E-03	-4.735E-02
76	11	-2.539E-03	7.118E-02	-3.674E-03	-5.868E-03	-3.838E-03	8.503E-03	2.724E-02	-1.806E-03	-1.954E-03	-2.158E-03
76	21	3.392E-03	-7.944E-03	-4.122E-02	1.222E-01	-4.382E-02	3.655E-02	1.865E-01	-1.548E-03	2.085E-03	-1.027E-01
76	31	-5.036E-02	1.107E-02	-6.060E-02	4.265E-02	1.283E-03	8.682E-04	1.594E-02	3.318E-02	6.228E-02	3.452E-02
76	41	5.333E-02	-9.359E-03	-5.102E-02	7.940E-03	-1.176E-01	-1.181E-02	-2.180E-02	2.505E-03	1.591E-03	-5.108E-03
76	51	-1.676E-01	-9.243E-04	1.081E-02	2.184E-03	-5.475E-04	-1.474E-01	-3.848E-04	3.512E-03	2.284E-03	7.097E-02
76	61	1.050E-01	4.578E-02	3.494E-0...	2.904E-03	4.006E-04	-1.304E-03	1.153E-01	-4.306E-03	-8.091E-03	-1.418E-02
76	71	-2.552E-04	-2.136E-03	2.736E-03	8.737E-03	-3.820E-03	-1.168E-02	2.050E-02	6.640E-03	-4.160E-03	-1.116E-01
76	81	-3.634E-05	4.342E-03	2.861E-03	1.036E-02						
77	1	-5.076E-15	4.811E-17	-2.221E-16	-8.654E-17	1.910E-14	1.281E-15	3.303E-03	2.210E-04	2.707E-02	-4.386E-03
77	11	-9.815E-01	-4.546E-02	-1.032E-01	1.008E-03	-7.377E-02	2.078E-01	-2.322E-03	-2.422E-03	-1.485E-02	-4.158E-02
77	21	-4.239E-02	-9.710E-02	-3.671E-03	-5.538E-03	-1.381E-03	-2.894E-03	-1.590E-02	-6.340E-04	-2.876E-03	3.015E-03
77	31	-1.418E-03	-1.223E-02	-3.283E-02	-3.173E-02	-3.834E-02	1.602E-03	-1.022E-03	1.463E-04	-1.520E-03	7.955E-04
77	41	-2.960E-03	-2.278E-03	2.215E-03	2.284E-02	2.096E-02	-1.203E-01	-7.362E-02	-1.802E-02	-1.582E-04	-8.706E-02
77	51	7.186E-03	-7.135E-02	-3.099E-03	-8.856E-03	-6.186E-03	-5.688E-04	-1.236E-02	-1.218E-01	7.720E-02	4.834E-03
77	61	-4.133E-03	-5.147E-04	7.246E-03	1.510E-02	-2.982E-02	7.548E-03	7.358E-02	8.044E-03	-2.060E-03	-1.176E-02
77	71	-7.968E-04	-8.061E-03	-3.805E-03	-7.896E-04	-2.736E-03	-7.666E-03	1.156E-02	5.784E-03	-1.591E-03	-1.601E-03
77	81	-3.099E-04	2.081E-03	2.845E-03	7.084E-03						
78	1	-2.630E-15	-8.820E-18	1.271E-16	8.685E-18	-1.712E-14	-9.172E-16	2.285E-03	1.893E-04	1.206E-02	1.079E-03
78	11	3.079E-02	2.688E-04	-9.414E-01	-1.534E-03	8.285E-02	-3.471E-01	-3.854E-04	-3.902E-02	4.365E-03	4.681E-02
78	21	5.939E-02	1.382E-01	6.389E-03	3.888E-03	-6.387E-02	-1.071E-02	-6.537E-03	-6.578E-04	-2.800E-03	-4.950E-04
78	31	1.878E-03	4.629E-03	3.964E-02	4.020E-02	7.498E-02	1.036E-02	-1.587E-03	-2.302E-03	3.111E-03	6.116E-03
78	41	-1.764E-03	-2.132E-04	-4.778E-05	-4.239E-02	-1.159E-02	6.806E-02	4.925E-02	8.946E-03	1.081E-04	5.357E-02
78	51	-1.448E-03	6.301E-02	2.588E-03	2.511E-02	8.055E-03	6.021E-03	1.693E-01	1.428E-01	-1.746E-01	-2.287E-02
78	61	4.322E-03	-1.181E-03	-1.622E-03	-9.540E-03	2.488E-04	-1.187E-02	-8.383E-02	-7.834E-03	1.415E-02	3.927E-03
78	71	7.938E-04	-1.230E-02	-1.451E-02	1.184E-04	1.185E-03	8.017E-03	-1.804E-02	-3.024E-04	5.550E-03	-8.515E-04
78	81	-5.396E-04	-4.416E-03	6.107E-04	-5.997E-03						
79	1	-3.009E-18	-2.894E-17	1.235E-16	2.071E-17	-1.351E-16	-2.594E-15	1.629E-06	1.360E-04	1.908E-05	3.091E-04
79	11	8.842E-06	4.647E-04	-1.961E-04	9.338E-05	-4.876E-04	2.292E-03	-1.233E-02	1.025E-03	-1.465E-04	-1.726E-03
79	21	-4.420E-03	-7.305E-03	-1.872E-02	-1.715E-01	7.722E-02	-9.254E-01	3.268E-01	-1.378E-03	1.022E-03	-1.789E-02
79	31	-6.342E-03	6.604E-03	-1.311E-02	1.807E-02	7.030E-03	-6.185E-04	-1.460E-02	-1.110E-02	-1.605E-03	-4.631E-03
79	41	-7.655E-03	2.420E-04	3.617E-03	-2.288E-03	-3.532E-03	6.426E-03	3.060E-03	8.918E-04	-1.436E-05	4.546E-03
79	51	-6.342E-03	5.240E-01	-2.004E-03	1.786E-03	-3.610E-03	-3.114E-02	8.669E-04	9.447E-03	-4.642E-03	-1.522E-02
79	61	-4.983E-03	-5.937E-03	-7.254E-04	-9.212E-04	1.353E-03	-6.660E-05	-1.739E-02	2.987E-04	2.104E-03	1.211E-03
79	71	7.951E-05	-1.627E-03	-2.054E-03	3.839E-04	3.162E-04	1.555E-03	-3.200E-03	-4.128E-04	9.220E-04	-7.178E-05
79	81	-8.314E-06	-7.518E-04	-7.766E-05	-1.261E-03						
80	1	-6.886E-17	-8.624E-19	-8.957E-19	1.788E-18	9.461E-17	-2.457E-16	3.969E-05	1.151E-05	1.411E-04	1.983E-05
80	11	8.550E-05	9.880E-05	2.992E-04	4.506E-06	7.282E-04	-1.662E-03	-1.304E-03	3.368E-04	5.374E-04	1.327E-03
80	21	1.511E-03	4.247E-03	-3.386E-04	-3.712E-03	3.558E-03	1.144E-03	-3.407E-03	-8.997E-01	-1.055E-02	-3.943E-04
80	31	-2.743E-04	-4.261E-04	-1.362E-02	-1.193E-02	2.137E-04	1.132E-03	-2.317E-03	-1.684E-03	-5.044E-04	-4.277E-04

MODL3 RUN WITH LANDER AND TWO FAKE PAYLOADS
USE FOR IMPEDANCE STUDY MODELA6 AND MODELB6

19.48.50 CLOCK TIME
163.504 SEC. CPTIME
49197 SEC. PPTIME

MODES	(84 x 84)	/OUTPUT/ (1)	(2)	CONTINUED (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
80	41	-2.068E-03	-4.081E-04	1.208E-03	3.925E-03	3.159E-03	-1.182E-02	-7.868E-03	-2.571E-03	5.627E-05	-5.759E-03
80	51	9.407E-04	-1.273E-03	-6.445E-04	-5.057E-04	-1.074E-03	-4.092E-03	-5.763E-04	-7.239E-03	3.106E-03	-2.264E-03
80	61	-1.354E-03	-7.644E-04	1.826E-04	1.288E-03	-1.505E-03	3.780E-04	3.644E-03	3.230E-04	1.163E-03	-7.949E-04
80	71	-3.911E-05	-9.259E-04	-7.706E-04	-5.391E-05	-2.722E-04	-2.176E-04	3.137E-05	5.659E-04	-7.606E-05	-1.490E-04
80	81	-3.612E-05	-2.423E-05	2.926E-04	4.834E-04						
81	1	1.750E-17	1.695E-17	-1.045E-18	8.718E-19	1.096E-16	-7.981E-17	-1.179E-05	-4.829E-05	-4.423E-05	-2.396E-05
81	11	-5.953E-05	3.425E-04	1.056E-04	8.890E-06	2.582E-04	-1.496E-03	-2.282E-03	-3.420E-04	8.279E-05	8.554E-04
81	21	2.173E-03	3.028E-03	1.266E-03	6.546E-03	-3.993E-03	7.730E-04	8.826E-03	-1.319E-04	-8.147E-05	-5.040E-03
81	31	-6.473E-03	2.184E-03	-2.122E-03	8.702E-03	1.993E-02	3.319E-03	1.862E-03	4.558E-03	2.342E-02	3.770E-02
81	41	1.712E-01	9.795E-01	5.274E-02	8.976E-03	6.365E-02	-2.137E-02	-7.499E-03	-1.625E-04	1.424E-03	-1.204E-02
81	51	3.025E-02	-1.107E-02	-5.870E-03	-1.641E-03	-7.153E-03	-1.053E-02	-1.907E-03	-1.602E-02	1.775E-02	-1.320E-02
81	61	-1.334E-02	-2.563E-03	5.698E-04	2.005E-03	-3.721E-03	1.324E-03	9.295E-04	1.146E-03	2.965E-03	-1.428E-03
81	71	-4.699E-05	-3.012E-03	-2.706E-03	-5.107E-04	-3.975E-04	2.877E-05	-9.974E-04	1.024E-03	3.106E-04	-3.681E-04
81	81	3.075E-05	-3.198E-04	5.774E-04	4.695E-04						
82	1	-6.377E-18	-6.033E-20	1.286E-19	-4.196E-20	-2.570E-17	4.442E-17	4.266E-06	9.721E-08	1.379E-05	-1.318E-04
82	11	1.716E-05	-1.626E-05	-2.479E-05	3.348E-07	-5.536E-05	3.222E-04	1.168E-04	1.426E-04	3.201E-06	-1.523E-04
82	21	-2.292E-04	-6.176E-04	5.995E-05	6.740E-05	6.634E-04	9.934E-05	1.552E-04	1.005E-05	4.272E-05	9.881E-05
82	31	4.331E-05	3.967E-05	-5.751E-04	-5.968E-04	-1.116E-03	-2.274E-04	-2.203E-04	-2.160E-04	-2.777E-04	-3.669E-04
82	41	-3.042E-04	5.218E-05	3.120E-04	1.362E-03	7.658E-04	-2.158E-03	-1.233E-03	-2.898E-04	7.732E-06	-1.171E-03
82	51	1.088E-03	-2.390E-03	-5.537E-04	-2.249E-03	-1.315E-03	-3.710E-03	-1.503E-03	-1.371E-02	2.321E-02	-1.441E-03
82	61	-5.814E-03	-3.263E-03	-8.000E-04	2.009E-03	-6.557E-03	-9.997E-01	-7.113E-03	-1.055E-03	6.341E-04	-1.872E-04
82	71	5.447E-05	-1.327E-03	-1.218E-03	3.831E-05	4.429E-05	2.130E-04	-8.061E-04	8.550E-05	3.233E-04	-8.153E-05
82	81	-3.857E-05	-1.525E-04	7.252E-05	-1.873E-04						
83	1	-2.236E-18	-6.968E-19	2.143E-19	3.629E-20	-2.087E-17	7.534E-17	1.751E-06	1.487E-06	5.617E-06	-1.338E-06
83	11	8.193E-06	-3.858E-05	-2.070E-05	6.822E-08	-4.810E-05	2.501E-04	2.246E-04	3.963E-05	-2.204E-05	-1.437E-04
83	21	-1.902E-04	-4.475E-04	1.175E-04	-1.677E-05	2.400E-04	-3.223E-05	-1.528E-04	7.745E-07	9.909E-06	2.361E-04
83	31	1.608E-04	-9.670E-05	-2.161E-04	-2.361E-04	-8.142E-04	-1.178E-04	-3.657E-04	-4.075E-04	-4.198E-04	-4.198E-04
83	41	-6.239E-04	4.948E-05	6.426E-04	2.972E-04	1.512E-03	-1.710E-03	-8.663E-04	-1.097E-04	2.828E-05	-1.717E-03
83	51	2.393E-03	-2.820E-03	-7.362E-04	-4.442E-04	-1.201E-03	-3.367E-03	-6.214E-04	-5.320E-03	6.625E-03	-4.155E-03
83	61	-4.326E-03	-2.161E-03	2.396E-04	6.437E-04	-2.151E-03	1.160E-03	-8.991E-03	-1.000E+00	-6.046E-03	5.642E-04
83	71	1.495E-04	1.682E-03	1.391E-03	3.641E-04	5.458E-05	-2.323E-04	6.342E-04	-1.490E-04	-1.478E-04	7.994E-05
83	81	-2.430E-05	1.285E-04	-8.142E-05	3.748E-05						
84	1	4.426E-19	-1.844E-20	1.604E-20	-6.021E-21	-1.470E-18	-2.064E-18	-2.300E-07	2.806E-08	-7.825E-07	1.175E-07
84	11	-4.022E-07	2.572E-07	-2.646E-06	4.468E-09	-5.908E-06	1.849E-05	-1.641E-06	-1.860E-07	-3.170E-06	-1.015E-05
84	21	-1.297E-05	-2.901E-05	-8.421E-06	-9.039E-06	6.303E-07	-5.614E-08	-1.039E-05	-2.671E-07	-1.911E-06	-2.787E-06
84	31	-1.351E-06	-7.949E-06	-2.534E-05	-2.963E-05	-2.881E-05	2.568E-06	9.212E-06	1.065E-05	7.044E-06	7.335E-06
84	41	6.394E-06	-4.366E-05	-3.142E-06	3.798E-05	3.277E-05	-1.828E-04	-1.195E-04	-3.266E-05	1.041E-06	-1.495E-04
84	51	1.668E-05	-1.490E-04	-5.545E-06	-2.771E-05	-1.408E-05	2.495E-05	-3.487E-05	-3.770E-04	2.457E-04	7.048E-05
84	61	2.239E-05	4.161E-05	2.959E-05	7.376E-05	-1.237E-04	3.930E-05	1.551E-03	1.200E-04	1.334E-05	-1.548E-03
84	71	1.000E+00	5.111E-04	1.868E-04	1.648E-05	7.346E-05	1.641E-04	-1.877E-04	-1.028E-04	2.287E-05	1.868E-05
84	81	2.641E-06	-2.081E-05	-3.140E-05	-7.408E-05						

END OF WRITE.

MODE1	(21 x 84)	/OUTPUT/ (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1	4.852E-02	-5.205E-03	-3.815E-03	8.449E-03	-1.456E-03	7.376E-04	7.384E-03	4.268E-04	7.506E-03	1.559E-03

APPENDIX F

CROSS ORTHOGONALITY CHECKS

Table F-1. Check orthogonality of baseline modal modes
with respect to perturbed system mass matrix

MPROD	(84 X 84)	/OUTPUT/ (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1	1.004E+00	1.199E-03	-1.588E-05	-1.714E-04	-2.109E-03	-9.953E-06	1.310E-03	2.503E-04	-7.331E-04	-4.673E-03
1	11	-6.741E-03	1.385E-04	-3.482E-05	-7.973E-05	-5.453E-03	-3.364E-03	1.080E-05	2.903E-03	3.297E-03	4.040E-04
1	21	-9.108E-04	1.727E-03	1.528E-03	3.602E-03	7.011E-05	-1.186E-04	2.144E-04	-9.912E-04	-2.420E-04	-8.313E-06
1	31	1.373E-05	-2.325E-04	7.975E-04	4.816E-04	-2.842E-04	1.478E-04	-6.328E-05	-1.206E-05	3.476E-06	1.564E-05
1	41	8.345E-05	-6.874E-06	8.657E-06	9.930E-04	-8.584E-06	-1.452E-05	-1.318E-05	-7.902E-05	-4.336E-07	6.662E-04
1	51	-6.197E-05	1.224E-03	-4.671E-04	4.005E-04	2.613E-05	-8.025E-05	-1.213E-03	1.917E-03	2.109E-04	-5.179E-04
1	61	4.871E-03	-5.830E-04	-2.870E-04	3.786E-04	6.615E-03	-1.662E-04	3.480E-04	-1.116E-03	2.505E-04	2.748E-05
1	71	4.116E-04	1.509E-03	6.450E-04	-6.132E-07	1.007E-05	1.889E-04	7.383E-05	1.454E-04	1.057E-05	2.350E-04
1	81	1.007E-04	1.237E-03	3.728E-05	1.223E-05						
2	1	1.199E-03	1.003E+00	3.957E-05	1.373E-04	1.771E-03	6.831E-06	4.824E-04	-2.289E-03	1.105E-03	-5.066E-03
2	11	-4.985E-03	-8.973E-05	1.365E-04	9.345E-06	1.653E-03	-5.197E-03	-5.210E-05	-3.384E-03	-3.827E-03	-1.191E-03
2	21	-5.638E-04	-2.232E-03	-2.087E-03	-5.892E-03	-2.565E-04	2.424E-04	1.634E-03	1.025E-04	-8.642E-04	-2.350E-04
2	31	1.353E-04	-1.853E-04	1.852E-03	7.800E-04	3.461E-03	5.614E-04	3.870E-05	1.505E-05	-5.655E-05	-1.347E-04
2	41	-3.130E-05	1.202E-04	1.222E-04	9.581E-04	2.927E-04	3.112E-04	2.072E-04	5.131E-05	2.620E-06	8.811E-04
2	51	3.204E-04	1.904E-04	-5.515E-05	-7.927E-05	-2.749E-05	2.610E-04	6.775E-04	7.624E-06	4.401E-05	-2.062E-04
2	61	3.018E-03	-3.718E-04	1.181E-04	-4.492E-05	5.535E-03	7.940E-05	3.541E-04	9.666E-04	4.376E-04	-2.318E-05
2	71	1.290E-04	1.863E-04	4.833E-05	8.326E-06	-3.041E-05	3.815E-05	3.984E-05	-1.603E-04	-2.987E-06	9.424E-06
2	81	9.012E-06	-1.096E-03	1.649E-05	3.049E-05						
3	1	-1.588E-05	3.957E-05	1.000E+00	9.885E-04	-3.528E-05	5.463E-05	4.402E-04	3.175E-04	1.353E-03	1.038E-04
3	11	-3.447E-05	-1.734E-03	2.021E-04	2.062E-03	2.957E-04	-9.770E-05	1.554E-04	-7.672E-05	-4.270E-05	-7.451E-04
3	21	7.332E-04	-7.401E-06	-4.655E-05	6.159E-05	8.507E-05	-5.856E-04	2.767E-04	-4.058E-04	7.912E-04	4.733E-04
3	31	2.274E-04	5.843E-05	-2.725E-04	3.958E-04	9.140E-05	4.747E-05	7.942E-06	9.010E-05	3.179E-05	3.550E-04
3	41	1.046E-04	-1.484E-04	-1.084E-04	-6.620E-05	-1.912E-04	2.249E-04	1.312E-04	4.850E-05	2.809E-06	1.399E-04
3	51	-3.963E-04	9.369E-05	1.567E-04	-9.104E-06	4.508E-05	-4.656E-05	2.193E-04	-8.457E-05	-6.066E-04	-4.763E-04
3	61	8.626E-04	-2.636E-04	-2.592E-05	-1.718E-05	6.182E-04	3.070E-05	1.632E-04	-7.115E-04	-1.281E-03	2.110E-04
3	71	4.659E-05	1.253E-04	-1.781E-04	4.515E-05	1.393E-04	5.336E-05	-2.677E-04	7.656E-06	1.026E-04	1.385E-05
3	81	6.429E-06	-1.959E-05	3.197E-05	-4.537E-05						
4	1	-1.714E-04	1.373E-04	9.885E-04	1.006E+00	-2.065E-04	3.637E-04	6.065E-04	1.202E-03	2.036E-03	2.051E-04
4	11	3.179E-05	-1.768E-02	2.621E-03	9.331E-03	7.434E-04	-1.321E-04	2.567E-04	-3.536E-04	-3.297E-04	-1.150E-03
4	21	8.777E-04	-1.674E-04	-2.071E-04	-2.323E-04	3.775E-04	-1.641E-03	7.581E-04	-5.026E-04	2.597E-03	1.567E-03

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.84.20 CLOCK TIME
25.000 SEC. CPTIME
5281 SEC. PPTIME

MPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
4	31	-7.457E-04	2.171E-04	-7.508E-04	1.300E-03	2.760E-04	7.177E-05	3.122E-05	2.125E-04	1.801E-04	1.208E-03
4	41	3.787E-04	-5.649E-04	-4.162E-04	-1.865E-04	-7.662E-04	3.855E-04	2.370E-04	8.956E-05	-1.963E-05	1.761E-04
4	51	-1.676E-03	1.832E-05	1.645E-04	-6.397E-05	1.097E-04	-4.534E-04	5.234E-04	-4.495E-04	-2.458E-03	-2.339E-03
4	61	.442E-02	-1.779E-03	-1.705E-04	1.365E-04	1.131E-02	-6.787E-05	-2.133E-04	-1.490E-04	-3.714E-03	8.355E-04
4	71	9.271E-05	3.606E-04	-5.589E-04	7.377E-04	4.415E-04	1.426E-04	-8.889E-04	5.408E-05	2.736E-04	3.896E-05
4	81	2.778E-05	-1.063E-04	1.117E-04	-6.096E-05						
5	1	-2.109E-03	1.771E-03	-3.528E-05	-2.065E-04	1.003E+00	-1.572E-05	-3.482E-04	-1.047E-03	6.331E-04	5.394E-04
5	11	1.048E-03	1.252E-03	-1.295E-04	-6.960E-04	6.386E-03	-1.431E-05	-8.638E-05	-4.976E-03	-5.639E-03	-9.410E-04
5	21	3.573E-04	-3.131E-03	-2.862E-03	-7.495E-03	-2.432E-04	2.528E-04	1.146E-03	5.155E-04	-5.570E-04	-2.095E-04
5	31	1.092E-04	3.103E-05	7.312E-04	1.280E-04	2.854E-03	3.517E-04	9.020E-05	-1.304E-05	-2.892E-05	-1.606E-04
5	41	-9.405E-05	9.647E-05	7.816E-05	5.327E-05	1.922E-04	2.243E-04	1.696E-04	8.944E-05	2.609E-06	2.102E-04
5	51	2.827E-04	-8.238E-04	3.815E-04	-3.907E-04	-5.712E-05	1.518E-04	1.555E-03	-1.574E-03	1.221E-06	3.467E-04
5	61	-2.566E-03	2.778E-04	3.615E-04	-3.536E-04	-1.801E-03	2.072E-04	-1.268E-04	4.962E-04	3.330E-04	-9.527E-05
5	71	-2.217E-04	-1.100E-03	-4.263E-04	-5.660E-05	-6.548E-05	-1.242E-04	1.972E-05	-2.673E-04	-2.995E-05	-1.852E-04
5	81	-7.996E-05	-1.658E-03	-2.914E-05	9.535E-06						
6	1	-9.953E-06	6.831E-06	5.463E-05	3.637E-04	-1.572E-05	1.000E+00	-3.964E-06	-5.359E-05	-2.958E-05	-3.372E-05
6	11	3.101E-05	-1.263E-03	1.455E-04	-2.566E-04	1.947E-05	1.116E-06	9.627E-05	-3.300E-05	-4.166E-05	2.902E-04
6	21	-2.118E-03	-4.497E-05	-2.935E-05	-8.065E-05	-2.403E-06	-3.474E-06	1.142E-04	-5.222E-04	-1.148E-05	4.188E-05
6	31	-1.904E-05	1.494E-06	6.561E-06	5.014E-05	-1.853E-06	3.125E-06	1.46[illegible]-06	3.389E-07	1.454E-05	6.081E-05
6	41	2.104E-05	-2.873E-05	-1.558E-05	6.388E-05	-2.549E-05	-3.124E-05	-2.65[illegible]05	-6.490E-06	9.779E-07	4.796E-05
6	51	2.703E-05	1.084E-04	-3.035E-04	1.792E-05	1.159E-05	8.325E-05	-1.450E-04	4.780E-04	2.890E-04	6.917E-04
6	61	-1.602E-02	1.065E-03	1.398E-04	-2.267E-04	-1.278E-02	1.130E-04	-1.753E-04	-1.598E-03	-7.682E-04	1.515E-04
6	71	-1.526E-05	-1.192E-05	-1.205E-04	1.429E-03	-1.644E-04	1.697E-05	-1.150E-04	1.161E-05	4.982E-05	-1.619E-06
6	81	2.174E-06	-7.629E-06	1.574E-05	-1.612E-05						
7	1	1.310E-03	4.824E-04	4.402E-04	6.065E-04	-3.482E-04	-3.984E-06	1.000E+00	-9.885E-05	1.153E-05	-1.044E-03
7	11	-1.170E-03	2.218E-04	-2.173E-04	-7.224E-05	-9.540E-04	-6.034E-04	1.495E-05	1.133E-04	9.249E-05	-8.081E-05
7	21	-1.658E-04	-9.201E-05	-2.018E-04	-8.218E-04	4.596E-05	-5.077E-04	7.045E-04	-1.525E-05	5.798E-04	3.534E-04
7	31	-1.795E-04	1.595E-05	4.023E-04	4.601E-04	3.163E-04	-2.715E-04	-5.520E-05	-6.016E-05	1.181E-04	2.429E-04
7	41	1.780E-04	-2.055E-04	-2.109E-04	4.309E-04	-5.772E-04	-3.469E-04	-1.124E-04	-6.168E-05	-1.168E-05	-4.577E-05
7	51	-7.221E-04	-1.565E-04	-7.567E-05	1.787E-04	2.459E-05	-6.386E-04	-8.040E-04	1.109E-03	-1.986E-04	-5.932E-04
7	61	7.707E-04	-3.175E-04	-2.052E-05	6.790E-05	1.162E-03	-1.328E-04	1.730E-04	-3.922E-05	-1.872E-04	-8.393E-05
7	71	9.209E-05	1.734E-04	7.265E-05	-3.283E-05	1.608E-05	3.707E-05	7.285E-06	-4.134E-05	2.234E-05	2.821E-05
7	81	6.402E-06	4.963E-06	-9.959E-06	-3.585E-05						
8	1	2.503E-04	-2.289E-03	3.175E-04	1.202E-03	-1.047E-03	-5.359E-05	-9.885E-05	1.000E+00	1.575E-04	-1.548E-04
8	11	-2.959E-04	-2.674E-03	3.348E-04	1.577E-03	-1.755E-03	5.273E-04	1.740E-05	3.377E-04	2.174E-04	-2.073E-04
8	21	1.806E-04	-1.558E-04	-2.071E-04	-1.146E-03	1.916E-05	-5.574E-04	2.717E-04	-8.903E-05	9.210E-04	4.491E-04
8	31	-1.765E-04	1.938E-04	4.795E-04	6.366E-04	-3.005E-04	-4.099E-04	4.526E-05	6.349E-05	2.094E-05	3.101E-04
8	41	7.065E-05	-1.705E-04	-1.369E-04	4.645E-04	-5.716E-04	-1.778E-03	-1.087E-03	-3.085E-04	-6.585E-07	-1.133E-03
8	51	-5.494E-04	-7.861E-04	-5.249E-05	1.554E-04	1.196E-04	-1.651E-04	-1.816E-03	1.110E-03	-4.244E-04	-5.507E-04
8	61	2.421E-03	-3.210E-04	5.088E-05	2.830E-04	1.862E-03	-4.320E-04	1.562E-04	-1.232E-04	5.001E-04	2.330E-04
8	71	-1.678E-04	1.313E-05	-1.613E-04	6.601E-05	5.512E-05	-8.911E-05	-1.904E-05	1.283E-04	1.379E-05	-1.259E-05
8	81	4.505E-05	6.343E-06	8.176E-05	1.306E-04						
9	1	-7.331E-04	1.105E-03	1.353E-03	2.036E-03	6.331E-04	-2.958E-05	1.153E-05	1.575E-04	1.000E+00	-4.321E-04
9	11	-4.222E-04	2.998E-04	-5.828E-04	9.423E-06	1.563E-03	-9.310E-04	-3.821E-04	-8.057E-04	-8.000E-04	-1.658E-04
9	21	-5.218E-05	-2.621E-04	-2.467E-04	1.490E-05	5.606E-04	-1.401E-03	4.570E-04	-7.903E-05	2.258E-03	1.248E-03
9	31	-6.274E-04	3.793E-05	-5.960E-04	7.717E-04	5.654E-04	6.390E-04	7.194E-05	-2.180E-04	4.320E-04	7.456E-04
9	41	3.981E-04	-6.882E-04	-6.305E-04	-5.747E-05	-1.349E-03	8.960E-04	6.761E-04	3.709E-05	-1.440E-05	7.643E-04

Table F-1. (Continued)

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.21 CLOCK TIME
25.380 SEC. CPTIME
5333 SEC. PPTIME

MPROD	(84 X 84)	/OUTPUT/ CONTINUED								
	, 1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
9	51	-2.077E-03	6.519E-04	1.962E-04	-1.355E-04	-6.403E-05	-1.850E-03	1.197E-03	-1.231E-03	-1.020E-03	-1.310E-03
9	61	1.210E-04	-5.695E-04	-1.335E-05	-9.742E-05	3.297E-04	2.091E-04	-3.087E-06	1.240E-04	-1.941E-03	2.418E-04
9	71	2.747E-04	9.069E-05	-7.139E-05	-7.239E-05	5.040E-05	2.336E-04	-3.926E-04	-1.233E-04	7.780E-05	2.553E-05
9	81	-8.073E-05	-1.676E-04	-2.846E-05	-1.629E-04						
10	1	-4.673E-03	-5.066E-03	1.038E-04	2.051E-04	5.394E-04	-3.372E-05	-1.044E-03	-1.548E-04	-4.321E-04	9.996E-01
10	11	-1.336E-03	6.268E-05	-5.130E-05	-1.275E-05	-9.761E-04	-2.759E-04	-1.180E-04	-8.868E-04	-1.235E-03	-1.293E-04
10	21	-8.998E-05	-5.504E-04	-3.341E-04	-5.732E-04	3.765E-05	-5.965E-05	-1.767E-03	-4.393E-04	8.420E-04	5.865E-05
10	31	4.069E-05	7.247E-04	-5.050E-04	-5.992E-04	4.476E-04	-1.154E-03	-4.293E-05	-3.000E-05	3.447E-05	-4.918E-06
10	41	-1.388E-04	-6.832E-05	-1.082E-04	-4.052E-03	-1.519E-04	-5.781E-04	-3.522E-04	1.363E-04	-1.373E-05	-3.521E-03
10	51	-2.133E-04	-3.017E-03	2.515E-04	-4.744E-04	2.726E-06	-1.618E-04	-2.406E-04	-2.776E-03	-6.095E-04	1.361E-04
10	61	-1.191E-04	-1.210E-05	-1.182E-04	-4.076E-04	1.816E-04	-2.173E-04	-1.652E-06	3.367E-05	3.524E-04	-2.148E-04
10	71	-8.361E-04	-2.406E-03	-8.218E-04	-2.723E-05	-3.713E-05	-3.516E-04	9.087E-05	1.719E-04	-5.005E-05	-3.442E-04
10	81	-1.583E-04	-1.322E-04	-7.239E-05	-8.280E-06						
11	1	-6.741E-03	-4.985E-03	-3.447E-05	3.779E-05	1.048E-03	3.101E-05	-1.170E-03	-2.959E-04	-4.222E-04	-1.336E-03
11	11	9.970E-01	-3.982E-05	6.901E-06	1.287E-05	-3.922E-04	-1.885E-03	4.455E-05	-1.324E-03	-1.659E-03	-2.304E-04
11	21	-2.153E-04	-4.563E-04	-1.935E-04	4.803E-04	-6.344E-06	8.735E-05	-2.215E-03	-6.792E-04	6.365E-04	-7.684E-05
11	31	8.319E-05	6.372E-04	-5.952E-04	-6.814E-04	7.964E-04	-5.842E-04	-1.222E-05	-6.626E-06	7.695E-06	-9.363E-05
11	41	-2.186E-04	-2.088E-05	-5.700E-05	-5.017E-03	1.473E-04	5.498E-04	1.997E-04	2.406E-04	-1.035E-05	-3.153E-03
11	51	-1.342E-05	-2.232E-03	3.086E-04	-6.374E-04	-5.549E-05	6.229E-05	1.109E-03	-4.435E-03	-8.746E-04	1.911E-04
11	61	6.227E-04	-9.942E-05	-3.147E-04	-5.856E-04	1.457E-03	1.267E-04	-1.067E-04	-2.836E-05	-2.351E-04	-5.777E-05
11	71	-9.120E-04	-2.785E-03	-1.001E-03	-4.024E-06	-2.899E-05	-3.244E-04	-6.761E-05	2.254E-04	-4.225E-05	-3.947E-04
11	81	-2.170E-04	-1.103E-04	-8.204E-05	-4.103E-05						
12	1	1.385E-04	-8.973E-05	-1.734E-03	-1.768E-02	1.252E-03	-1.263E-03	2.218E-04	-2.674E-03	2.998E-04	6.268E-05
12	11	-3.982E-05	9.965E-01	3.446E-03	2.135E-04	-1.894E-05	1.646E-05	-5.267E-03	-2.926E-05	-1.382E-04	7.447E-04
12	21	3.577E-04	-8.220E-05	8.579E-04	-3.842E-04	-1.367E-03	1.142E-02	-4.054E-03	6.068E-05	-1.788E-02	-9.896E-03
12	31	4.718E-03	-1.569E-03	4.444E-03	-8.813E-03	-1.185E-04	1.512E-04	-2.363E-04	-1.980E-03	-5.279E-04	-7.395E-03
12	41	-2.091E-03	3.116E-03	2.292E-03	3.455E-04	4.737E-03	-3.608E-04	-3.592E-05	-2.546E-04	-7.034E-05	-1.433E-04
12	51	8.418E-03	-3.093E-04	-1.667E-06	-2.068E-05	-1.107E-03	7.578E-04	4.005E-05	-1.530E-03	1.208E-02	9.202E-03
12	61	2.812E-03	4.157E-03	2.501E-04	2.215E-05	2.511E-03	2.523E-04	-7.502E-04	2.905E-04	2.458E-02	-4.766E-03
12	71	-4.967E-04	-2.548E-03	3.878E-03	-2.310E-04	-3.079E-03	-8.345E-04	5.364E-03	-5.284E-04	-2.036E-03	-2.592E-04
12	81	-2.408E-04	-5.619E-07	-8.184E-04	5.662E-04						
13	1	-3.482E-05	1.365E-04	2.021E-04	2.621E-03	-1.295E-04	1.455E-04	-2.173E-04	3.348E-04	-5.828E-04	-5.130E-05
13	11	6.901E-06	3.446E-03	9.989E-01	-1.566E-03	7.675E-06	-1.034E-05	9.888E-04	-8.900E-06	3.131E-06	6.698E-05
13	21	2.163E-04	1.797E-05	-1.633E-04	7.549E-05	2.021E-04	-1.980E-03	6.536E-04	2.875E-04	3.144E-03	1.701E-03
13	31	-8.133E-04	2.746E-04	-7.789E-04	1.529E-03	3.031E-05	-2.442E-05	4.217E-05	3.677E-04	6.500E-05	1.256E-03
13	41	3.454E-04	-5.140E-04	-3.799E-04	-7.594E-05	-7.966E-04	8.288E-05	1.485E-05	5.127E-05	1.905E-05	2.419E-05
13	51	-1.396E-03	3.628E-05	2.981E-05	-7.608E-06	1.988E-04	-8.330E-05	4.021E-05	1.573E-04	-2.116E-03	-1.682E-03
13	61	2.404E-03	-8.933E-04	-6.675E-05	3.687E-05	1.927E-03	-6.225E-05	1.842E-04	5.725E-04	-4.118E-03	7.550E-04
13	71	9.536E-05	4.487E-04	-6.553E-04	-4.616E-04	5.774E-04	1.425E-04	-8.946E-04	8.496E-05	3.558E-04	4.470E-05
13	81	4.096E-05	-2.039E-06	1.394E-04	-1.100E-04						
14	1	-7.973E-05	9.345E-06	2.062E-03	9.331E-03	-6.960E-04	-2.568E-04	-7.224E-05	1.577E-03	9.423E-06	-1.275E-05
14	11	1.287E-05	2.135E-04	-1.566E-03	1.001E+00	8.701E-06	-7.550E-06	3.348E-03	2.116E-05	9.590E-05	-5.479E-04
14	21	-6.404E-05	9.313E-05	-6.688E-04	2.821E-04	-5.334E-06	-6.932E-03	2.225E-03	5.716E-05	9.986E-03	5.114E-03
14	31	-2.469E-03	9.161E-04	-2.533E-03	5.009E-03	6.549E-05	-8.275E-05	1.701E-04	1.716E-03	-3.417E-04	3.633E-03
14	41	7.822E-04	-1.133E-03	-8.468E-04	-1.690E-04	-2.090E-03	2.204E-04	-1.156E-04	2.325E-04	2.367E-04	8.306E-05
14	51	-2.718E-03	1.438E-04	-9.348E-05	-9.225E-05	9.136E-04	1.380E-03	3.555E-05	6.238E-04	-5.849E-03	-4.047E-03
14	61	7.502E-04	-1.800E-03	-9.743E-05	-1.126E-04	6.944E-04	-1.878E-04	3.184E-04	-8.292E-05	-1.048E-02	1.437E-03

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.21 CLOCK TIME
25.735 SEC. CPTIME
5385 SEC. PPTIME

MPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
14	71	4.518E-04	1.672E-03	-2.329E-03	6.455E-05	8.811E-04	5.166E-04	-2.489E-03	1.973E-04	1.585E-03	1.450E-04
14	81	1.460E-04	1.430E-06	4.977E-04	-8.097E-04						
15	1	-5.453E-03	1.653E-03	2.957E-04	7.694E-04	6.386E-03	1.947E-05	-9.540E-04	-1.755E-03	1.563E-03	-9.761E-04
15	11	-3.922E-04	-1.894E-05	7.675E-06	8.701E-06	1.009E+00	-3.447E-03	-1.647E-04	-7.789E-03	-8.759E-03	-1.600E-03
15	21	5.442E-04	-4.466E-03	-3.800E-03	-8.445E-03	-8.601E-05	6.163E-05	-9.899E-04	2.951E-04	5.982E-04	9.627E-06
15	31	1.218E-06	8.478E-04	-1.310E-03	-1.048E-03	5.418E-03	1.012E-05	2.939E-04	-5.893E-05	6.527E-05	-6.398E-05
15	41	-2.174E-04	-2.042E-05	-6.146E-05	-1.863E-03	-1.072E-04	-2.187E-04	-4.697E-05	1.590E-04	-6.632E-06	-1.374E-03
15	51	-1.243E-04	-3.492E-03	9.055E-04	-1.230E-03	-1.252E-04	-1.221E-04	3.847E-03	-5.553E-03	-1.037E-03	9.059E-05
15	61	-1.461E-03	5.412E-05	8.419E-04	-1.011E-03	3.447E-05	3.399E-04	-2.856E-04	1.289E-03	-3.411E-05	-1.591E-04
15	71	-1.047E-03	-3.974E-03	-1.583E-03	-1.818E-05	-7.342E-05	-5.246E-04	-1.433E-04	-5.328E-04	-6.033E-05	-6.223E-04
15	81	-2.513E-04	-2.369E-03	-1.114E-04	-2.296E-05						
16	1	-3.364E-03	-5.197E-03	-9.770E-05	-1.321E-04	-1.431E-05	1.116E-06	-6.034E-04	5.273E-04	-9.310E-04	-2.759E-04
16	11	-1.885E-03	1.646E-05	-1.034E-05	7.550E-06	-3.447E-03	1.000E+00	4.020E-05	1.450E-03	1.440E-03	3.963E-04
16	21	-3.033E-04	9.586E-04	1.082E-03	3.473E-03	9.166E-05	3.869E-05	-3.028E-03	-1.005E-03	8.708E-04	-8.532E-05
16	31	1.020E-04	9.610E-04	-1.440E-03	-1.296E-03	-6.205E-04	-1.855E-03	-6.835E-06	-8.546E-06	-1.640E-05	-7.616E-05
16	41	-1.774E-04	1.558E-05	-4.039E-05	-2.178E-03	-3.654E-04	-2.799E-03	-1.836E-03	-4.684E-04	-5.415E-06	-3.496E-03
16	51	-3.283E-06	-1.757E-03	-3.989E-05	-7.264E-05	6.229E-05	1.052E-04	-1.350E-03	-1.452E-03	-3.970E-04	1.546E-04
16	61	7.717E-04	-4.747E-06	-1.225E-05	-1.250E-04	7.411E-04	-4.017E-04	8.090E-05	-5.852E-04	1.468E-04	-1.877E-04
16	71	-1.204E-03	-2.591E-03	-7.574E-04	-4.754E-06	2.555E-05	-6.684E-04	4.251E-05	3.058E-04	-1.340E-04	-3.443E-04
16	81	-3.640E-05	7.891E-04	-1.245E-04	-1.573E-05						
17	1	1.080E-05	-5.210E-05	1.554E-04	2.567E-04	-8.638E-05	9.627E-05	1.495E-05	1.740E-05	-3.821E-04	-1.180E-04
17	11	4.455E-05	-5.267E-03	9.888E-04	3.348E-03	-1.647E-04	4.020E-05	9.999E-01	5.679E-05	4.674E-05	2.850E-04
17	21	-1.105E-03	2.405E-07	3.596E-05	-4.901E-05	-3.379E-05	2.671E-04	-2.621E-05	-2.369E-04	-4.730E-04	-2.280E-04
17	31	1.127E-04	-4.276E-05	1.709E-04	-1.526E-04	-6.301E-05	-1.078E-05	-6.494E-06	-2.844E-05	-2.311E-05	-1.453E-04
17	41	-4.793E-05	7.853E-05	6.951E-05	9.494E-05	1.434E-04	-9.640E-05	-7.232E-05	-2.236E-05	1.918E-06	1.022E-05
17	51	3.218E-04	1.120E-04	-1.202E-04	4.463E-05	-4.681E-06	1.807E-04	-2.213E-04	4.446E-04	5.768E-04	8.458E-04
17	61	-1.270E-02	9.913E-04	1.108E-04	-1.570E-04	-1.028E-02	8.449E-05	2.015E-04	-1.153E-03	5.091E-05	-2.517E-06
17	71	-2.524E-05	-2.856E-05	1.010E-05	1.350E-03	-2.526E-04	-9.168E-06	5.687E-05	9.613E-06	-3.543E-06	-1.803E-06
17	81	2.566E-06	1.292E-05	-2.370E-06	9.541E-07						
18	1	2.903E-03	-3.384E-03	-7.672E-05	-3.536E-04	-4.976E-03	-3.300E-05	1.133E-04	3.377E-04	-8.057E-04	-8.868E-04
18	11	-1.324E-03	-2.926E-05	-8.900E-06	2.116E-05	-7.789E-03	1.450E-03	5.679E-05	1.004E+00	4.366E-03	6.421E-04
18	21	-4.061E-04	1.838E-03	1.320E-03	1.163E-03	-1.373E-04	-6.521E-05	2.107E-03	2.436E-04	-5.394E-04	2.024E-05
18	31	6.952E-05	-6.006E-04	3.407E-03	1.921E-03	-3.142E-03	-7.672E-04	-3.723E-04	5.301E-05	-6.252E-05	8.924E-05
18	41	2.132E-04	-1.211E-05	1.111E-05	1.070E-03	-1.508E-04	-1.155E-03	-8.561E-04	-4.140E-04	3.659E-06	-2.554E-04
18	51	5.803E-06	2.956E-03	-7.810E-04	1.340E-03	1.801E-04	1.020E-04	-4.936E-03	5.335E-03	8.528E-04	-1.637E-04
18	61	1.422E-03	-1.568E-04	-9.340E-04	9.978E-04	1.141E-03	-5.781E-04	4.308E-04	-3.817E-04	6.182E-05	7.461E-05
18	71	5.144E-04	2.859E-03	1.269E-03	2.985E-05	8.523E-05	2.300E-04	1.605E-04	7.009E-04	1.535E-06	4.725E-04
18	81	2.362E-04	9.628E-04	5.501E-05	8.558E-06						
19	1	3.297E-03	-3.827E-03	-4.270E-05	-3.297E-04	-5.639E-03	-4.166E-05	9.249E-05	2.174E-04	-8.000E-04	-1.235E-03
19	11	-1.659E-03	-1.382E-04	3.131E-06	9.590E-05	-8.759E-03	1.440E-03	4.674E-05	4.366E-03	1.005E+00	6.146E-04
19	21	-4.421E-04	1.817E-03	1.222E-03	4.226E-04	-1.835E-04	-9.257E-05	2.733E-03	3.757E-04	-6.499E-04	4.090E-05
19	31	7.786E-05	-7.221E-04	4.254E-03	2.400E-03	-3.372E-03	-8.760E-04	-4.418E-04	5.987E-05	-6.817E-05	1.165E-04
19	41	2.609E-04	-2.358E-05	4.252E-06	1.273E-03	-1.956E-04	-1.333E-03	-9.875E-04	-4.831E-04	4.041E-06	-2.787E-04
19	51	-2.495E-05	3.483E-03	-8.943E-04	1.575E-03	2.113E-04	9.218E-05	-5.778E-03	6.254E-03	9.835E-04	-2.244E-04
19	61	1.730E-03	-2.071E-04	-1.098E-03	1.166E-03	1.521E-03	-6.755E-04	5.189E-04	-3.279E-04	4.804E-05	8.652E-05
19	71	6.076E-04	3.346E-03	1.484E-03	3.693E-05	9.932E-05	2.730E-04	1.837E-04	8.162E-04	3.206E-06	5.525E-04
19	81	2.748E-04	9.346E-04	6.352E-05	6.644E-06						

Table F-1. (Continued)

RUN NO ORBR3R PAGE NO. 5

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.21 CLOCK TIME
26.104 SEC. CPTIME
5437 SEC. PPTIME

MPROD	(84 X 84)	(1)	/OUTPUT/ (2)	CONTINUED (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20	1	4.040E-04	-1.191E-03	-7.451E-04	-1.150E-03	-9.410E-04	2.902E-04	-8.081E-05	-2.073E-04	-1.658E-04	-1.293E-04
20	11	-2.304E-04	7.447E-04	6.698E-05	-5.479E-04	-1.600E-03	3.963E-04	2.850E-04	6.421E-04	6.146E-04	1.000E+00
20	21	7.414E-05	1.683E-04	1.367E-04	-3.529E-04	-2.111E-04	7.738E-04	1.480E-04	1.177E-04	-1.219E-03	-5.576E-04
20	31	3.061E-04	-1.507E-04	1.010E-03	1.411E-05	-5.687E-04	-1.854E-04	-4.648E-05	2.426E-05	-1.355E-04	-3.029E-04
20	41	-1.316E-04	2.434E-04	2.581E-04	4.070E-04	5.714E-04	-7.614E-04	-5.805E-04	-1.549E-04	8.403E-06	-3.250E-04
20	51	9.658E-04	3.139E-04	-1.992E-04	2.334E-04	8.860E-05	1.110E-03	-1.220E-03	1.174E-03	3.954E-04	4.357E-04
20	61	1.621E-03	6.948E-05	-1.275E-04	2.517E-04	1.318E-03	-1.910E-04	6.845E-05	9.979E-05	9.854E-04	3.285E-06
20	71	-3.699E-05	4.081E-04	2.059E-04	-1.451E-04	3.403E-06	-5.260E-05	1.657E-04	1.656E-04	-4.419E-05	5.908E-05
20	81	6.603E-05	1.074E-04	3.716E-05	9.902E-05						
21	1	-9.108E-04	-5.638E-04	7.332E-04	8.777E-04	3.573E-04	-2.118E-03	-1.658E-04	1.806E-04	-5.218E-05	-8.996E-05
21	11	-2.153E-04	3.577E-04	2.163E-04	-6.404E-05	5.442E-04	-3.033E-04	-1.105E-03	-4.061E-04	-4.421E-04	7.414E-05
21	21	1.000E+00	-1.346E-04	-1.518E-04	2.094E-04	-2.910E-04	-1.091E-03	-4.353E-04	-8.608E-05	1.315E-03	2.224E-04
21	31	-1.186E-04	2.321E-04	-6.515E-04	2.085E-04	2.464E-04	2.520E-04	1.492E-04	4.850E-04	-3.908E-04	-1.238E-04
21	41	-2.779E-04	3.133E-04	1.735E-04	-3.014E-04	-1.437E-04	-1.134E-04	-5.236E-05	-1.564E-05	3.264E-06	-3.000E-04
21	51	-3.374E-04	-4.506E-04	2.241E-04	-1.735E-04	-2.831E-04	-1.985E-03	4.357E-04	-1.376E-03	7.959E-04	4.003E-04
21	61	1.967E-04	4.021E-04	1.543E-04	-1.090E-05	3.783E-04	-1.018E-05	-1.305E-04	5.699E-05	9.996E-04	-5.868E-05
21	71	-1.856E-04	-2.760E-04	-1.111E-04	-7.993E-05	-2.692E-05	-1.233E-04	1.585E-04	2.500E-05	-2.721E-05	-4.971E-05
21	81	1.725E-05	-4.263E-05	2.982E-05	9.462E-05						
22	1	1.727E-03	-2.232E-03	-7.401E-06	-1.674E-04	-3.131E-03	-4.497E-05	-9.201E-05	-1.558E-04	-2.621E-04	-5.504E-04
22	11	-4.563E-04	8.220E-05	1.797E-05	9.313E-05	-4.466E-03	9.586E-04	2.405E-07	1.838E-03	1.817E-03	1.683E-04
22	21	-1.346E-04	1.001E+00	1.867E-04	-1.385E-03	-1.710E-04	-2.796E-05	2.114E-03	4.733E-04	-5.039E-04	1.162E-05
22	31	6.095E-05	-4.876E-04	3.004E-03	1.675E-03	-1.713E-03	-4.875E-04	-2.760E-04	4.510E-05	-5.255E-05	6.272E-05
22	41	1.599E-04	-2.099E-06	1.526E-05	8.644E-04	-9.656E-05	-8.033E-04	-5.985E-04	-2.952E-04	3.199E-08	-1.170E-04
22	51	2.130E-05	2.163E-03	-4.965E-04	9.719E-04	1.297E-04	7.564E-05	-3.537E-03	3.869E-03	6.510E-04	-7.304E-05
22	61	3.791E-04	-5.781E-05	-6.585E-04	7.089E-04	2.835E-04	-4.051E-04	3.322E-04	5.912E-05	6.145E-05	5.556E-05
22	71	3.773E-04	2.050E-03	9.039E-04	3.035E-05	5.679E-05	1.692E-04	1.167E-04	4.901E-04	1.843E-06	3.360E-04
22	81	1.674E-04	2.097E-04	4.156E-05	8.723E-06						
23	1	1.528E-03	-2.087E-03	-4.655E-05	-2.071E-04	-2.862E-03	-2.935E-05	-2.018E-04	-2.071E-04	-2.467E-04	-3.341E-04
23	11	-1.935E-04	8.579E-04	-1.633E-04	-6.688E-04	-3.800E-03	1.082E-03	3.596E-05	1.320E-03	1.222E-03	1.367E-04
23	21	-1.518E-04	1.867E-04	9.999E-01	-2.291E-03	-1.933E-04	-4.749E-05	2.342E-03	5.990E-04	-4.980E-04	3.913E-05
23	31	4.984E-05	-5.006E-04	3.151E-03	1.781E-03	-1.481E-03	-4.529E-04	-2.753E-04	4.643E-05	-4.738E-05	8.447E-05
23	41	1.699E-04	-1.386E-05	6.985E-06	8.826E-04	-1.052E-04	-7.593E-04	-5.688E-04	-2.848E-04	3.456E-06	-7.795E-05
23	51	-4.126E-06	2.136E-03	-4.804E-04	9.518E-04	1.319E-04	8.578E-05	-3.441E-03	3.787E-03	5.810E-04	-1.337E-04
23	61	1.014E-03	-1.165E-04	-6.501E-04	7.017E-04	7.649E-04	-3.976E-04	2.192E-04	1.688E-04	3.460E-06	6.292E-05
23	71	3.787E-04	2.015E-03	8.763E-04	-9.045E-05	8.209E-05	1.714E-04	9.902E-05	4.735E-04	6.061E-06	3.287E-04
23	81	1.626E-04	1.323E-05	4.228E-05	6.760E-06						
24	1	3.602E-03	-5.892E-03	6.159E-05	-2.323E-04	-7.495E-03	-8.065E-05	-8.218E-04	-1.146E-03	1.490E-05	-5.732E-04
24	11	4.803E-04	-3.842E-04	7.549E-05	2.821E-04	-8.445E-03	3.473E-03	-4.901E-05	1.163E-03	4.226E-04	-3.529E-04
24	21	2.094E-04	-1.385E-03	-2.291E-03	9.876E-01	-7.440E-04	-3.830E-05	8.497E-03	2.359E-03	-1.893E-03	6.451E-05
24	31	1.999E-04	-1.640E-03	1.083E-02	6.004E-03	-3.133E-03	-1.237E-03	-8.532E-04	1.334E-04	-1.506E-04	2.226E-04
24	41	5.238E-04	-2.184E-05	4.099E-05	2.850E-03	-2.755E-04	-2.240E-03	-1.683E-03	-8.549E-04	1.113E-05	-1.092E-04
24	51	7.372E-05	6.506E-03	-1.206E-03	2.892E-03	3.999E-04	3.002E-04	-1.034E-02	1.149E-02	1.920E-03	-1.600E-04
24	61	-3.952E-04	-6.679E-05	-1.906E-03	2.054E-03	-5.984E-04	-1.153E-03	8.003E-04	7.352E-04	6.501E-05	1.765E-04
24	71	1.135E-03	5.969E-03	2.606E-03	7.611E-05	1.608E-04	5.139E-04	3.164E-04	1.387E-03	1.550E-05	9.700E-04
24	81	4.783E-04	-1.086E-03	1.244E-04	1.930E-05						
25	1	7.011E-05	-2.565E-04	8.507E-05	3.775E-04	-2.432E-04	-2.403E-06	4.596E-05	1.916E-05	5.606E-04	3.765E-05
25	11	-6.344E-06	-1.367E-03	2.021E-04	-5.334E-06	-8.603E-05	9.166E-05	-3.379E-05	-1.373E-04	-1.835E-04	-2.111E-04

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.21 CLOCK TIME
26.476 SEC. CPTIME
5485 SEC. PPTIME

MPROD	(84 X 84)	/OUTPUT/ CONTINUED								
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
25	21	-2.910E-04	-1.710E-04	-1.933E-04	-7.440E-04	1.000E+00	-6.559E-05	4.189E-04	-1.212E-04	-4.550E-05	3.457E-05
25	31	-6.499E-06	-5.611E-05	4.289E-04	2.759E-04	-9.884E-06	-2.908E-05	-2.822E-05	1.357E-05	-4.496E-06	3.487E-05
25	41	2.539E-05	-1.186E-05	-7.432E-06	8.978E-05	-2.871E-05	-6.548E-05	-5.137E-05	-2.690E-05	9.047E-07	-6.092E-06
25	51	-4.942E-05	2.056E-04	-1.056E-04	8.379E-05	1.474E-05	-1.025E-05	-3.132E-04	3.093E-04	-5.823E-05	-1.723E-04
25	61	2.333E-03	-1.934E-04	-8.647E-05	1.003E-04	1.928E-03	-5.726E-05	-2.056E-04	-2.159E-04	-6.094E-05	1.584E-05
25	71	4.277E-05	2.139E-04	7.211E-05	7.504E-05	1.932E-07	2.165E-05	-7.793E-06	4.659E-05	1.253E-05	3.339E-05
25	81	1.701E-05	-1.018E-04	8.140E-06	-5.336E-06						
26	1	-1.186E-04	2.424E-04	-5.856E-04	-1.641E-03	2.528E-04	-8.474E-05	-5.077E-04	-5.574E-04	-1.401E-03	-5.965E-05
26	11	8.735E-05	1.142E-02	-1.980E-03	-6.932E-03	6.163E-05	3.869E-05	2.671E-04	-6.521E-05	-9.257E-05	7.738E-04
26	21	-1.091E-03	-2.796E-05	-4.749E-05	-3.830E-05	-6.559E-05	1.000E+00	-4.350E-05	2.950E-04	6.938E-06	-3.282E-05
26	31	1.655E-05	-1.358E-05	3.190E-05	1.595E-05	-2.318E-05	5.168E-05	7.846E-06	3.030E-05	-3.287E-05	-3.045E-05
26	41	-2.747E-05	4.113E-05	4.000E-05	4.250E-05	8.015E-05	1.799E-05	-6.312E-06	-4.905E-06	1.716E-06	7.011E-05
26	51	1.616E-04	1.427E-04	-7.635E-04	7.489E-06	-1.726E-05	4.328E-05	-2.413E-05	1.877E-04	3.335E-04	5.489E-04
26	61	-9.525E-03	6.915E-04	7.936E-05	-1.329E-04	-7.442E-03	8.348E-05	1.314E-05	3.317E-05	-1.643E-04	3.905E-05
26	71	-1.310E-05	-1.401E-05	-1.591E-05	-3.078E-04	7.542E-05	-4.746E-06	-1.632E-05	1.066E-05	-8.851E-06	-7.705E-07
26	81	5.006E-07	-1.475E-05	1.078E-06	1.483E-05						
27	1	2.144E-04	1.634E-03	2.767E-04	7.581E-04	1.146E-03	1.142E-04	7.045E-04	2.717E-04	4.570E-04	-1.767E-03
27	11	-2.215E-03	-4.054E-03	6.536E-04	2.225E-03	-9.899E-04	-3.028E-03	-2.621E-05	2.107E-03	2.733E-03	1.480E-04
27	21	-4.353E-04	2.114E-03	2.342E-03	8.497E-03	4.189E-04	-4.350E-05	9.961E-01	-1.349E-03	8.856E-04	2.911E-05
27	31	-1.040E-04	6.395E-04	-4.300E-03	-2.355E-03	2.324E-04	2.123E-04	2.704E-04	-8.296E-05	9.335E-05	-3.049E-05
27	41	-1.411E-04	-5.208E-05	-7.239E-05	-1.063E-03	-3.980E-05	5.926E-04	4.768E-04	2.566E-04	-5.789E-06	-1.516E-04
27	51	-2.185E-04	-2.149E-03	1.793E-04	-8.942E-04	-1.085E-04	-1.580E-04	3.038E-03	-3.519E-03	-8.415E-04	-3.782E-04
27	61	5.294E-03	-4.513E-04	5.114E-04	-5.531E-04	4.988E-03	2.736E-04	-8.446E-05	-5.352E-05	1.991E-05	-7.064E-05
27	71	-3.372E-04	-1.747E-03	-7.490E-04	1.337E-04	-8.018E-05	-1.520E-04	-9.106E-05	-3.965E-04	-1.588E-06	-2.789E-04
27	81	-1.383E-04	1.262E-03	-4.082E-05	-1.699E-05						
28	1	-9.912E-04	1.025E-04	-4.058E-04	-5.026E-04	5.155E-04	-5.222E-04	-1.525E-05	-8.903E-05	-7.903E-05	-4.393E-04
28	11	-6.792E-04	6.068E-05	2.875E-04	5.716E-05	2.951E-04	-1.005E-03	-2.369E-04	2.436E-04	3.757E-04	1.177E-04
28	21	-8.608E-05	4.733E-04	5.990E-04	2.359E-03	-1.212E-04	2.950E-04	-1.349E-03	9.997E-01	-3.197E-04	-3.935E-04
28	31	1.892E-04	8.523E-05	-9.903E-04	-7.487E-04	4.595E-05	5.016E-04	1.502E-04	1.672E-04	-2.149E-04	-3.348E-04
28	41	-2.958E-04	3.305E-04	3.003E-04	-3.397E-04	6.318E-04	3.386E-04	1.200E-04	4.409E-05	-1.477E-07	1.537E-04
28	51	7.586E-04	-7.575E-05	9.875E-05	-3.031E-04	-1.716E-04	-3.978E-05	1.305E-03	-1.746E-03	3.863E-04	6.225E-04
28	61	2.458E-04	2.581E-04	1.290E-04	-1.426E-04	4.995E-04	1.914E-04	-1.061E-04	4.845E-05	4.645E-04	-1.407E-05
28	71	-1.467E-04	-4.216E-04	-1.823E-04	3.578E-06	-3.152E-05	-7.893E-05	5.029E-05	-4.288E-05	-1.373E-05	-6.860E-05
28	81	-1.674E-05	2.734E-04	1.048E-05	4.514E-05						
29	1	-2.420E-04	-8.642E-04	7.912E-04	2.597E-03	-5.570E-04	-1.148E-05	5.798E-04	9.210E-04	2.258E-03	8.420E-04
29	11	6.365E-04	-1.788E-02	3.144E-03	9.986E-03	5.982E-04	8.708E-04	-4.730E-04	-5.394E-04	-6.499E-04	-1.219E-03
29	21	1.315E-03	-5.039E-04	-4.980E-04	-1.893E-03	-4.550E-05	6.938E-06	8.856E-04	-3.197E-04	9.997E-01	-1.397E-05
29	31	3.034E-05	-1.354E-04	8.628E-04	4.767E-04	-4.815E-05	1.644E-06	-4.686E-05	2.563E-05	-2.442E-05	7.652E-06
29	41	1.773E-05	1.713E-05	2.106E-05	1.401E-04	2.228E-05	-8.136E-05	-7.623E-05	-4.739E-05	-1.327E-06	-1.172E-05
29	51	-5.987E-05	3.440E-04	1.460E-04	1.407E-04	1.302E-05	-5.864E-05	-4.154E-04	1.739E-04	-2.963E-04	-7.013E-04
29	61	1.453E-02	-9.853E-04	-2.387E-04	3.353E-04	1.111E-02	-1.609E-04	-2.706E-04	-3.494E-04	2.229E-04	-1.544E-05
29	71	8.127E-05	4.065E-04	1.570E-04	5.909E-04	-1.101E-04	3.639E-05	3.227E-05	7.982E-05	2.577E-05	6.093E-05
29	81	3.343E-05	-2.973E-04	1.743E-05	-1.231E-05						
30	1	-8.313E-06	-2.350E-04	4.733E-04	1.567E-03	-2.095E-04	4.188E-05	3.534E-04	4.491E-04	1.248E-03	5.865E-05
30	11	-7.664E-05	-9.896E-03	1.701E-03	5.114E-03	9.627E-06	-8.532E-05	-2.280E-04	2.024E-05	4.090E-05	-5.576E-04
30	21	2.224E-04	1.162E-05	3.913E-05	6.451E-05	3.457E-05	-3.282E-05	2.911E-05	-3.935E-04	-1.397E-05	1.000E+00
30	31	-9.635E-06	8.534E-06	-3.828E-05	1.412E-06	1.495E-05	7.235E-06	2.943E-06	-2.848E-06	1.018E-05	2.547E-05

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.22 CLOCK TIME
26.825 SEC. CPTIME
5485 SEC. PPTIME

MPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
30	41	7.659E-06	-1.737E-05	-1.497E-05	-5.100E-05	-2.845E-05	1.464E-05	1.163E-05	3.333E-06	-1.914E-06	-3.513E-05
30	51	-1.104E-04	-6.774E-05	2.001E-05	-2.547E-05	-9.758E-07	-6.129E-05	9.106E-05	-2.534E-04	-2.918E-04	-4.499E-04
30	61	7.829E-03	-5.735E-04	-6.978E-05	1.081E-04	6.186E-03	-5.760E-05	-2.184E-04	-3.161E-04	2.414E-05	1.396E-06
30	71	8.002E-06	2.864E-05	-9.602E-06	4.256E-04	-7.200E-05	6.508E-06	-1.156E-05	2.520E-07	1.929E-05	2.704E-06
30	81	2.609E-06	5.995E-06	5.857E-06	-1.177E-05						
31	1	1.373E-05	1.353E-04	-2.274E-04	-1.457E-04	1.092E-04	-1.904E-05	-1.795E-04	-1.765E-04	-6.274E-04	4.069E-05
31	11	8.319E-05	4.718E-03	-8.133E-04	-2.469E-03	1.218E-06	1.020E-04	1.127E-04	6.952E-05	7.786E-05	3.061E-04
31	21	-1.186E-04	6.095E-05	4.984E-05	1.999E-04	-6.499E-06	1.655E-05	-1.040E-04	1.892E-04	3.034E-05	-9.635E-06
31	31	1.000E+00	7.229E-06	-9.324E-05	-5.769E-05	-5.070E-05	-6.486E-08	4.007E-06	3.384E-07	-3.433E-06	-1.244E-05
31	41	-6.187E-06	7.273E-06	5.634E-06	1.084E-05	1.224E-05	6.647E-06	5.434E-06	3.930E-06	9.948E-07	2.033E-05
31	51	4.742E-05	-9.259E-06	-2.047E-05	-6.610E-06	-1.418E-06	2.773E-05	1.813E-05	5.357E-05	1.177E-04	1.978E-04
31	61	-3.397E-03	2.521E-04	4.246E-05	-5.703E-05	-2.718E-03	3.034E-05	3.305E-05	2.611E-04	-4.036E-06	-3.782E-06
31	71	-7.446E-06	-4.039E-05	-6.778E-06	-2.320E-04	3.717E-05	-5.029E-06	4.724E-06	-8.593E-06	-9.346E-06	-5.743E-06
31	81	-3.615E-06	3.735E-05	-3.427E-06	5.407E-06						
32	1	-2.325E-04	-1.853E-04	5.843E-05	2.171E-04	3.105E-05	1.494E-06	1.595E-05	1.938E-04	3.793E-05	7.247E-04
32	11	6.372E-04	-1.569E-03	2.746E-04	9.161E-04	8.478E-04	9.610E-04	-4.276E-05	-6.006E-04	-7.221E-04	-1.507E-04
32	21	2.321E-04	-4.876E-04	-5.006E-04	-1.640E-03	-5.611E-05	-1.358E-05	6.395E-04	8.523E-05	-1.354E-04	8.534E-06
32	31	7.229E-06	9.999E-01	5.600E-04	3.184E-04	5.194E-05	-4.687E-06	-3.061E-05	7.467E-06	-6.127E-06	1.361E-05
32	41	2.244E-05	-8.085E-07	2.838E-06	1.477E-04	-4.235E-06	-4.310E-05	-3.500E-05	-2.296E-05	4.267E-07	4.651E-05
32	51	-2.039E-06	2.098E-04	1.771E-05	8.609E-05	1.247E-05	8.138E-06	-2.666E-04	3.119E-04	2.768E-05	-4.496E-05
32	61	1.111E-03	-5.956E-05	-5.739E-05	7.833E-05	5.965E-04	-3.412E-05	-3.456E-05	-1.704E-04	5.025E-06	5.507E-06
32	71	3.995E-05	1.738E-04	6.953E-05	2.103E-05	3.424E-07	1.802E-05	6.168E-06	2.978E-05	3.499E-06	2.611E-05
32	81	1.262E-05	-2.507E-04	4.901E-06	-5.993E-07						
33	1	7.975E-04	1.852E-03	-2.725E-04	-7.508E-04	7.312E-04	6.561E-06	4.023E-04	4.795E-04	-5.960E-04	-5.050E-04
33	11	-5.952E-04	4.444E-03	-7.789E-04	-2.533E-03	-1.310E-03	-1.440E-03	1.709E-04	3.407E-03	4.254E-03	1.010E-03
33	21	-6.515E-04	3.004E-03	3.151E-03	1.083E-02	4.289E-04	3.190E-05	-4.300E-03	-9.903E-04	8.628E-04	-3.828E-05
33	31	-9.324E-05	5.600E-04	9.951E-01	-2.653E-03	-8.921E-04	3.536E-04	2.914E-04	-4.514E-05	4.614E-05	-8.907E-05
33	41	-1.745E-04	1.790E-05	-2.377E-06	-6.210E-04	9.935E-05	7.207E-04	5.441E-04	2.568E-04	-2.104E-06	3.099E-04
33	51	2.486E-05	-1.733E-03	1.511E-04	-8.331E-04	-1.270E-04	-8.723E-05	3.037E-03	-3.024E-03	-3.796E-04	2.200E-04
33	61	-3.103E-03	2.633E-04	6.047E-04	-6.016E-04	-2.484E-03	3.698E-04	-1.408E-04	-1.177E-04	-4.777E-05	-3.287E-05
33	71	-2.255E-04	-1.401E-03	-6.288E-04	-1.006E-04	-2.951E-05	-1.022E-04	-8.524E-05	-4.035E-04	-3.693E-06	-2.273E-04
33	81	1.164E-04	1.720E-03	-2.822E-05	1.333E-06						
34	1	4.816E-04	7.800E-04	3.958E-04	1.300E-03	1.280E-04	5.014E-05	4.801E-04	6.366E-04	7.717E-04	-5.992E-04
34	11	-6.814E-04	-8.813E-03	1.529E-03	5.009E-03	-1.048E-03	-1.296E-03	-1.526E-04	1.921E-03	2.400E-03	1.411E-05
34	21	2.085E-04	1.675E-03	1.781E-03	6.004E-03	2.759E-04	1.595E-05	-2.355E-03	-7.487E-04	4.767E-04	1.412E-06
34	31	-5.769E-05	3.184E-04	-2.653E-03	9.986E-01	-4.141E-04	1.778E-04	1.563E-04	-3.448E-05	3.985E-05	-2.703E-05
34	41	-8.501E-05	-1.214E-05	-2.201E-05	-4.341E-04	1.293E-05	3.835E-04	2.941E-04	1.374E-04	-4.798E-06	7.595E-05
34	51	1.368E-04	-1.025E-03	1.636E-04	-4.684E-04	-6.962E-05	-1.382E-04	1.704E-03	-1.961E-03	-5.924E-04	-5.217E-04
34	61	9.748E-03	-6.937E-04	2.117E-04	-1.615E-04	7.808E-03	1.080E-04	-1.409E-04	-1.565E-05	1.045E-04	-3.186E-05
34	71	-1.151E-04	-7.139E-04	-3.288E-04	1.784E-04	-6.053E-05	-5.215E-05	-4.574E-05	-2.076E-04	1.143E-05	-1.173E-04
34	81	-5.854E-05	9.384E-04	-1.055E-05	-8.512E-06						
35	1	-2.842E-04	3.461E-03	9.140E-05	2.760E-04	2.854E-03	-1.853E-06	3.163E-04	-3.005E-04	5.654E-04	4.476E-04
35	11	7.964E-04	-1.185E-04	3.031E-05	6.549E-05	5.448E-03	-6.205E-04	-6.301E-05	-3.142E-03	-3.372E-03	-5.687E-04
35	21	2.464E-04	-1.713E-03	1.481E-03	-3.133E-03	-9.884E-06	-2.318E-05	2.324E-04	4.595E-05	-4.815E-05	1.495E-05
35	31	-5.070E-05	5.194E-05	-8.921E-04	-4.141E-04	1.002E+00	7.471E-04	1.861E-04	-1.954E-05	2.861E-05	-1.604E-05
35	41	-4.281E-05	9.316E-06	1.029E-05	6.880E-04	8.007E-05	7.561E-04	5.639E-04	1.921E-04	9.627E-07	1.124E-03
35	51	-7.996E-06	-7.832E-04	3.482E-04	-5.444E-04	-9.096E-05	-8.712E-05	2.490E-02	-1.800E-03	-2.533E-04	-6.821E-06

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.22 CLOCK TIME
27.173 SEC. CPTIME
5569 SEC. PPTIME

MPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
35	61	-7.269E-04	5.508E-05	5.257E-04	-3.935E-04	-3.932E-04	3.278E-04	-1.792E-04	8.400E-05	-5.053E-05	2.843E-07
35	71	5.541E-06	-7.434E-04	-4.056E-04	-5.797E-06	-4.036E-05	-2.788E-06	-8.845E-05	-4.315E-04	1.761E-05	-1.429E-04
35	81	-7.870E-05	-9.112E-04	-4.290E-06	3.532E-07						
36	1	1.478E-04	5.614E-04	4.747E-05	7.177E-05	3.517E-04	3.125E-06	-2.715E-04	-4.099E-04	6.390E-04	-1.154E-03
36	11	-5.842E-04	1.512E-04	-2.442E-05	-8.275E-05	1.012E-05	-1.855E-03	-1.078E-05	-7.672E-04	-8.760E-04	-1.854E-04
36	21	2.520E-04	-4.875E-04	-4.529E-04	-1.237E-03	-2.908E-05	5.168E-05	2.123E-04	5.016E-04	1.644E-06	7.235E-06
36	31	-6.486E-08	-4.687E-06	3.536E-04	1.778E-04	7.471E-04	1.000E+00	6.255E-06	-5.034E-06	5.134E-06	3.267E-06
36	41	7.397E-06	-6.170E-06	-6.375E-06	8.996E-05	-1.503E-05	2.529E-05	2.404E-05	5.874E-06	-2.726E-08	7.613E-05
36	51	-2.670E-05	-2.715E-05	1.032E-04	-1.405E-05	1.347E-06	-7.297E-06	1.058E-04	-5.217E-05	-3.836E-05	-6.997E-05
36	61	2.192E-04	-6.317E-05	2.473E-05	-2.138E-05	6.998E-04	7.392E-06	-5.270E-05	6.849E-04	1.772E-05	-2.917E-06
36	71	3.331E-06	-3.728E-05	-1.901E-05	-1.007E-05	-1.986E-06	1.465E-08	-3.664E-06	-2.820E-05	7.147E-08	-7.809E-06
36	81	-3.764E-06	-3.866E-04	-2.541E-07	7.993E-08						
37	1	-6.328E-05	3.870E-05	7.942E-06	3.122E-05	9.020E-05	1.461E-06	-5.520E-05	4.526E-05	7.194E-05	-4.293E-05
37	11	-1.222E-05	-2.363E-04	4.217E-05	1.701E-04	2.939E-04	-6.835E-06	-6.494E-06	-3.723E-04	-4.418E-04	-4.648E-05
37	21	1.492E-04	-2.760E-04	-2.753E-04	-8.532E-04	-2.822E-05	7.846E-06	2.704E-04	1.502E-04	-4.686E-05	2.943E-06
37	31	4.907E-06	-3.061E-05	2.914E-04	1.563E-04	1.861E-04	6.255E-06	1.000E+00	1.293E-06	-1.346E-06	4.002E-06
37	41	1.056E-06	-1.193E-06	-2.343E-07	5.703E-05	-4.623E-06	-1.703E-05	-1.247E-05	-8.221E-06	6.414E-08	1.614E-05
37	51	-5.155E-06	6.680E-05	2.249E-05	2.951E-05	4.838E-06	1.730E-06	-8.775E-05	1.023E-04	3.650E-06	-3.029E-05
37	61	4.171E-04	-3.583E-05	-1.888E-05	2.322E-05	3.872E-04	-1.280E-05	-2.222E-05	7.034E-05	1.235E-05	-2.159E-07
37	71	1.155E-05	4.899E-05	2.126E-05	-1.812E-05	3.429E-06	4.634E-06	2.994E-06	7.741E-06	3.788E-08	7.154E-06
37	81	3.581E-06	-1.516E-04	1.162E-06	2.505E-07						
38	1	-1.206E-05	1.505E-05	9.010E-05	2.125E-04	-1.304E-05	3.389E-07	-6.016E-05	6.349E-05	-2.180E-04	-3.000E-05
38	11	-6.626E-06	-1.980E-03	3.677E-04	1.716E-03	-5.893E-05	-8.546E-06	-2.844E-05	5.301E-05	5.987E-05	2.426E-05
38	21	4.850E-04	4.510E-05	4.643E-05	1.334E-04	1.357E-05	3.030E-05	-8.296E-05	1.672E-04	2.563E-05	-2.848E-06
38	31	3.384E-07	7.467E-06	-4.514E-05	-3.448E-05	-1.954E-05	-5.034E-06	1.293E-06	1.000E+00	4.253E-06	-7.897E-06
38	41	-1.673E-06	-2.586E-06	-4.596E-06	-4.171E-05	-8.373E-06	6.088E-06	7.899E-06	2.156E-06	-1.748E-06	-3.253E-05
38	51	-4.817E-05	-5.951E-05	3.109E-05	-1.414E-05	-3.565E-06	-3.936E-05	6.351E-05	-1.886E-04	-1.509E-04	-2.746E-04
38	61	5.557E-03	-3.846E-04	-4.692E-05	7.505E-05	4.370E-03	-3.850E-05	1.051E-04	4.216E-04	1.537E-04	-2.565E-05
38	71	1.318E-06	-3.943E-08	1.535E-05	-3.011E-04	3.946E-05	-3.747E-06	1.497E-05	-1.821E-06	-6.042E-06	-5.928E-07
38	81	-2.389E-07	2.274E-05	-1.214E-06	2.556E-06						
39	1	3.476E-06	-5.655E-05	3.179E-05	1.801E-04	2.892E-05	1.454E-05	1.181E-04	2.094E-05	4.320E-04	3.447E-05
39	11	7.695E-06	-5.279E-04	6.500E-05	-3.417E-04	6.527E-05	-1.640E-05	-2.311E-05	-6.252E-05	-6.817E-05	-1.355E-04
39	21	-3.908E-04	-5.255E-05	-4.738E-05	-1.506E-04	-4.496E-06	-3.287E-05	9.335E-05	-2.149E-04	-2.442E-05	1.018E-05
39	31	-3.433E-06	-6.127E-06	4.614E-05	3.985E-05	2.861E-05	5.134E-06	-1.346E-06	4.253E-06	1.000E+00	1.499E-05
39	41	5.135E-06	-3.860E-06	-1.080E-06	2.813E-05	-2.604E-06	-3.226E-06	-4.691E-06	-1.640E-06	8.889E-07	2.128E-05
39	51	1.148E-05	4.053E-05	-6.786E-05	8.622E-06	3.361E-06	1.882E-05	-4.193E-05	1.189E-04	6.451E-05	1.382E-04
39	61	-3.193E-03	2.115E-04	2.514E-05	-4.176E-05	-2.510E-03	2.071E-05	-1.329E-04	-4.078E-04	-1.412E-04	2.597E-05
39	71	1.319E-06	9.467E-06	-1.598E-05	3.686E-04	-5.023E-05	5.409E-06	-1.823E-05	2.300E-06	1.010E-05	1.587E-06
39	81	9.982E-07	-2.945E-05	2.643E-06	-4.845E-06						
40	1	1.564E-05	-1.347E-04	3.550E-04	1.208E-03	-1.606E-04	6.081E-05	2.429E-04	3.101E-04	7.456E-04	-4.916E-06
40	11	9.363E-05	-7.395E-03	1.256E-03	3.633E-03	-6.398E-05	-7.616E-05	-1.453E-04	8.924E-05	1.165E-04	-3.029E-04
40	21	-1.238E-04	6.272E-05	8.447E-05	2.226E-04	3.487E-05	-3.045E-05	-3.049E-05	-3.348E-04	7.652E-06	2.547E-05
40	31	-1.244E-05	1.361E-05	-8.907E-05	-2.703E-05	-1.604E-05	3.267E-06	4.002E-06	-7.897E-06	1.499E-05	1.000E+00
40	41	1.005E-05	-2.206E-05	-1.870E-05	-4.666E-05	-3.337E-05	1.589E-05	1.385E-05	4.267E-06	-2.281E-06	-2.457E-05
40	51	-1.022E-04	-6.007E-05	-2.298E-05	-2.513E-05	-1.506E-06	-5.277E-05	8.006E-05	-1.761E-04	-2.158E-04	-3.015E-04
40	61	4.640E-03	-3.580E-04	-3.886E-05	5.781E-05	3.676E-03	-3.182E-05	-1.509E-04	-3.672E-04	-6.816E-05	1.984E-05
40	71	3.465E-06	1.103E-05	-2.334E-05	.380E-04	-6.305E-05	6.521E-06	-2.484E-05	-9.987E-07	1.866E-05	5.683E-07

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.22 CLOCK TIME
27.539 SEC. CPTIME
5565 SEC. PPTIME

MPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40	81	1.136E-06	4.114E-05	5.486E-06	-9.843E-06						
41	1	8.345E-05	-3.130E-05	1.046E-04	3.787E-04	-9.405E-05	2.104E-05	1.780E-04	7.065E-05	3.981E-04	-1.388E-04
41	11	-2.186E-04	-2.091E-03	3.454E-04	7.822E-04	-2.174E-04	-1.774E-04	-4.793E-05	2.132E-04	2.609E-04	-1.316E-04
41	21	-2.779E-04	1.599E-04	1.699E-04	5.238E-04	2.535E-05	-2.747E-05	-1.411E-04	-2.958E-04	1.773E-05	7.659E-06
41	31	-6.187E-06	2.244E-05	-1.745E-04	-8.501E-05	-4.281E-05	7.397E-06	9.056E-06	-1.673E-06	5.135E-06	1.005E-05
41	41	1.000E+00	-6.122E-06	-4.667E-06	-3.282E-05	-5.230E-06	1.799E-05	1.274E-05	6.531E-06	-3.761E-07	-9.167E-07
41	51	-1.764E-05	-4.405E-05	-4.363E-05	-2.437E-05	-3.078E-06	-8.961E-06	7.354E-05	-7.039E-05	-3.078E-05	-2.388E-06
41	61	-4.962E-04	1.787E-05	1.545E-05	-2.267E-05	-3.206E-04	1.133E-05	-5.461E-05	-3.794E-04	-8.320E-05	1.640E-03
41	71	-6.254E-06	-2.906E-05	-2.842E-05	3.041E-04	-4.399E-05	8.733E-07	-1.606E-05	-6.629E-06	9.110E-06	-4.548E-06
41	81	-1.958E-06	9.904E-05	1.705E-06	-4.755E-06						
42	1	-6.874E-06	1.202E-04	-1.484E-04	-5.649E-04	9.647E-05	-2.873E-05	-2.055E-04	-1.705E-04	-6.882E-04	-6.832E-05
42	11	-2.088E-05	3.116E-03	-5.140E-04	-1.133E-03	-2.042E-05	1.558E-05	7.853E-05	-1.211E-05	-2.368E-05	2.434E-04
42	21	3.133E-04	-2.099E-06	-1.386E-05	-2.184E-05	-1.186E-05	4.113E-05	-5.208E-05	3.305E-04	1.713E-05	-1.737E-05
42	31	7.273E-06	-8.085E-07	1.790E-05	-1.214E-05	9.316E-06	-6.170E-06	-1.193E-06	-2.586E-06	-3.860E-06	-2.206E-05
42	41	-6.122E-06	1.000E+00	5.007E-06	-6.850E-06	8.396E-06	-4.736E-06	-1.180E-06	-5.251E-07	-4.262E-08	-1.261E-05
42	51	1.478E-05	-1.768E-05	4.130E-05	-4.361E-07	-2.177E-06	-1.532E-06	5.935E-06	-4.619E-05	3.861E-07	-4.729E-05
42	61	1.595E-03	-9.616E-05	-1.320E-05	2.283E-05	1.285E-03	-1.241E-05	1.082E-04	6.381E-04	1.485E-04	-3.020E-05
42	71	-1.158E-06	-8.535E-06	2.282E-05	-4.993E-04	7.018E-05	-6.535E-06	2.364E-05	-1.368E-06	-1.484E-05	-1.172E-06
42	81	-1.090E-06	7.299E-07	-3.995E-06	7.358E-06						
43	1	8.657E-06	1.222E-04	-1.084E-04	-4.162E-04	7.816E-05	-1.558E-05	-2.109E-04	-1.369E-04	-6.305E-04	-1.082E-04
43	11	-5.700E-05	2.292E-03	-3.799E-04	-8.468E-04	-6.146E-05	-4.039E-05	6.951E-05	1.111E-05	4.252E-06	2.581E-04
43	21	1.735E-04	1.516E-05	6.985E-06	4.099E-05	-7.432E-06	4.000E-05	-7.239E-05	3.003E-04	2.106E-05	-1.497E-05
43	31	5.634E-06	2.838E-06	-2.377E-06	-2.201E-05	1.029E-05	-6.375E-06	-2.343E-07	-4.696E-06	-1.080E-06	-1.870E-05
43	41	-4.667E-06	5.007E-06	1.000E+00	-1.517E-05	1.996E-06	-2.725E-06	1.064E-06	3.596E-07	-3.145E-07	-1.694E-05
43	51	-9.473E-07	-3.006E-05	1.597E-05	-6.656E-06	-2.639E-06	-8.324E-06	1.942E-05	-6.927E-05	-2.823E-05	-8.351E-05
43	61	2.034E-03	-1.348E-04	-1.609E-05	2.672E-05	1.654E-03	-1.574E-05	4.607E-05	6.002E-04	1.290E-04	-2.914E-05
43	71	-1.260E-06	-9.767E-06	1.705E-05	-4.268E-04	6.017E-05	-5.586E-06	1.861E-05	-1.950E-06	-1.182E-05	-1.496E-06
43	81	-1.149E-06	1.033E-05	-3.160E-06	5.628E-06						
44	1	9.930E-04	9.581E-04	-6.620E-05	-1.865E-04	5.327E-05	6.388E-05	4.309E-04	4.645E-04	-6.747E-05	-4.052E-03
44	11	-5.017E-03	3.455E-04	-7.594E-05	-1.690E-04	-1.863E-03	-2.178E-03	9.494E-05	1.070E-03	1.273E-03	4.070E-04
44	21	-3.014E-04	8.644E-04	8.826E-04	2.850E-03	8.978E-05	4.250E-05	-1.063E-03	-3.397E-04	1.401E-04	-5.100E-05
44	31	1.084E-05	1.477E-04	-6.210E-04	-4.341E-04	6.880E-04	8.990E-05	5.703E-05	-4.171E-05	2.713E-05	-4.666E-05
44	41	-3.282E-05	-6.850E-06	-1.517E-05	9.998E-01	-7.835E-06	1.050E-04	8.872E-05	3.802E-05	-4.899E-06	-3.964E-05
44	51	-8.874E-05	-3.558E-04	-1.610E-04	-1.629E-04	-3.547E-05	-9.912E-05	5.114E-04	-6.481E-04	-2.428E-04	-3.719E-04
44	61	3.771E-03	-4.564E-04	3.032E-05	-7.670E-05	5.280E-03	1.310E-05	5.100E-05	2.780E-05	1.335E-04	-2.342E-05
44	71	-4.354E-05	-2.225E-04	-8.323E-05	-4.038E-05	-5.840E-06	-2.163E-05	495E-06	-5.285E-05	-4.859E-06	-3.449E-05
44	81	-1.148E-05	9.101E-04	-6.481E-06	1.180E-06						
45	1	-9.584E-06	2.927E-04	-1.912E-04	-7.662E-04	1.922E-04	-2.549E-05	-5.772E-04	-5.716E-04	-1.349E-03	-1.519E-04
45	11	1.473E-04	4.737E-03	-7.966E-04	-2.090E-03	-1.072E-04	-3.654E-04	1.434E-04	-1.508E-04	-1.956E-04	5.714E-04
45	21	-1.437E-04	-9.656E-05	-1.052E-04	-2.755E-04	-2.871E-05	8.015E-05	-3.980E-05	6.318E-04	2.228E-05	-2.845E-05
45	31	1.224E-05	-4.235E-06	9.935E-05	1.293E-05	8.007E-05	-1.503E-05	-4.623E-06	-8.373E-06	-2.604E-06	-3.334E-05
45	41	-5.230E-06	8.396E-06	1.996E-06	-7.835E-06	1.000E+00	-1.648E-05	-5.720E-06	-2.576E-06	-1.135E-07	-2.865E-05
45	51	2.618E-07	-3.495E-05	-3.080E-05	-6.624E-06	-3.431E-06	-8.914E-06	2.536E-08	-7.365E-05	-3.226E-05	-1.236E-04
45	61	3.127E-03	-2.029E-04	-2.813E-05	4.721E-05	2.505E-03	-2.904E-05	1.783E-05	1.234E-03	2.167E-04	-4.554E-05
45	71	2.099E-07	-6.835E-06	3.404E-05	-7.711E-04	1.096E-04	-8.684E-06	3.259E-05	-1.237E-06	-2.042E-05	-1.019E-06
45	81	-1.238E-06	-1.146E-04	-5.362E-06	9.680E-06						

17.54.22 CLOCK TIME
27.893 SEC. CPTIME
5621 SEC. PPTIME

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

MPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
46	1	-1.452E-05	3.112E-04	2.249E-04	3.855E-04	2.243E-04	-3.124E-05	-3.469E-04	-1.776E-03	8.960E-04	-5.781E-04
46	11	5.498E-04	-3.608E-04	8.288E-05	2.204E-04	-2.187E-04	-2.799E-03	-9.640E-05	-1.155E-03	-1.333E-03	-7.614E-04
46	21	-1.134E-04	-8.033E-04	-7.593E-04	-2.240E-03	-6.548E-05	1.799E-05	5.926E-04	3.386E-04	-6.136E-05	1.464E-05
46	31	6.647E-06	-4.310E-05	7.207E-04	3.835E-04	7.561E-04	2.529E-05	-1.703E-05	6.088E-06	-3.226E-06	1.589E-05
46	41	1.799E-05	-4.736E-06	-2.725E-06	1.050E-04	-1.648E-05	1.000E+00	-2.703E-05	-1.392E-05	1.004E-06	2.607E-05
46	51	-8.307E-06	1.033E-04	1.264E-04	5.238E-05	1.371E-05	1.562E-05	-1.377E-04	1.785E-04	2.505E-05	5.456E-06
46	61	-5.020E-04	2.562E-05	-1.242E-05	1.652E-05	-3.228E-04	-1.100E-05	1.847E-04	9.820E-04	-1.450E-05	4.065E-06
46	71	1.246E-05	4.939E-05	1.827E-05	2.101E-05	-1.982E-06	3.431E-06	-4.565E-07	6.016E-06	1.290E-06	7.072E-06
46	81	4.354E-06	-8.469E-04	2.108E-06	-8.108E-07						
47	1	-1.318E-05	2.072E-04	1.312E-04	2.370E-04	1.696E-04	-2.659E-05	-1.124E-04	-1.087E-03	6.761E-04	-3.522E-04
47	11	1.997E-04	-3.592E-05	1.485E-05	-1.156E-04	-4.697E-05	-1.836E-03	-7.232E-05	-8.561E-04	-9.875E-04	-5.805E-04
47	21	-5.236E-05	-5.985E-04	-5.688E-04	-1.683E-03	-5.137E-05	-6.312E-06	4.738E-04	1.200E-04	-7.623E-05	1.163E-05
47	31	5.434E-06	-3.500E-05	5.441E-04	2.941E-04	5.639E-04	2.404E-05	-1.247E-05	7.899E-06	-4.691E-06	1.385E-05
47	41	1.274E-05	-1.180E-06	1.064E-06	8.872E-05	-5.720E-06	-2.703E-05	1.000E+00	-1.051E-05	1.151E-06	2.976E-05
47	51	9.443E-06	9.273E-05	8.544E-05	4.253E-05	1.053E-05	2.088E-05	-1.133E-04	1.707E-04	5.201E-05	6.143E-05
47	61	-1.520E-03	9.647E-05	2.062E-05	-3.961E-06	-1.096E-03	4.050E-07	9.044E-05	4.574E-04	-3.573E-05	7.590E-06
47	71	8.994E-06	3.694E-05	1.138E-05	9.762E-05	-1.350E-05	4.681E-06	-2.027E-06	4.081E-06	1.930E-06	5.351E-06
47	81	3.268E-06	-5.819E-04	1.679E-06	-9.835E-07						
48	1	-7.902E-05	5.131E-05	4.850E-05	8.956E-05	8.944E-05	-6.490E-06	-6.168E-05	-3.085E-04	3.709E-05	1.363E-04
48	11	2.406E-04	-2.546E-04	5.127E-05	2.325E-04	1.590E-04	-4.684E-04	-2.236E-05	-4.140E-04	-4.831E-04	-1.549E-04
48	21	-1.564E-05	-2.952E-04	-2.848E-04	-8.549E-04	-2.690E-05	-4.905E-06	2.566E-04	4.409E-05	-4.739E-05	3.333E-06
48	31	3.930E-06	-2.296E-05	2.568E-04	1.374E-04	1.921E-04	5.874E-06	-8.221E-06	2.156E-06	-1.640E-06	4.267E-06
48	41	6.531E-06	-5.251E-07	3.596E-07	3.802E-05	-2.576E-06	-1.392E-05	-1.051E-05	1.000E+00	1.141E-07	7.590E-06
48	51	-1.713E-06	4.499E-05	4.374E-05	2.152E-05	3.932E-06	1.925E-06	-5.726E-05	6.057E-05	3.103E-06	-1.347E-05
48	61	3.360E-04	-1.859E-05	-1.212E-05	1.694E-05	2.014E-04	-7.427E-06	4.511E-05	3.408E-05	6.299E-06	-4.768E-07
48	71	5.844E-06	2.530E-05	1.107E-05	-2.984E-05	5.096E-06	2.148E-06	1.442E-06	4.361E-06	-8.053E-08	3.572E-06
48	81	2.019E-06	-2.597E-04	7.315E-07	2.765E-08						
49	1	-4.336E-07	2.620E-06	2.809E-06	-1.863E-05	2.609E-06	9.779E-07	-1.168E-05	-6.585E-07	-1.440E-05	-1.373E-05
49	11	-1.035E-05	-7.034E-05	1.905E-05	2.367E-04	-6.632E-06	-5.415E-06	1.918E-06	3.659E-06	4.041E-06	8.403E-06
49	21	3.264E-06	3.199E-06	3.456E-06	1.113E-05	9.047E-07	1.716E-06	-5.789E-06	-1.477E-07	-1.327E-06	-1.914E-06
49	31	9.948E-07	4.267E-07	-2.104E-06	4.798E-06	9.627E-07	-2.726E-08	6.414E-08	-1.748E-06	8.889E-07	-2.281E-06
49	41	-3.761E-07	-4.262E-08	-3.145E-07	4.899E-06	-1.135E-07	1.004E-06	1.151E-06	1.141E-07	1.000E+00	-3.289E-06
49	51	-3.402E-06	-5.340E-06	4.233E-06	-1.629E-06	-9.700E-07	-4.914E-06	6.664E-06	-1.847E-05	-1.041E-05	-2.147E-05
49	61	4.706E-04	-6.184E-05	-4.102E-06	6.005E-06	3.680E-04	-2.666E-06	1.994E-05	-3.011E-05	1.563E-05	-2.960E-06
49	71	-1.161E-07	-9.717E-07	1.611E-06	-4.305E-05	5.952E-06	-5.573E-07	1.814E-06	-1.660E-07	-9.345E-07	-1.797E-07
49	81	-1.198E-07	2.919E-06	-2.598E-07	3.739E-07						
50	1	8.662E-04	8.811E-04	1.399E-04	1.761E-04	2.102E-04	4.796E-05	-4.577E-05	-1.133E-03	7.643E-04	-3.521E-03
50	11	-3.153E-03	-1.433E-04	2.419E-05	8.306E-05	-1.374E-03	-3.496E-03	1.022E-05	-2.554E-04	-2.787E-04	-3.250E-04
50	21	-3.000E-04	-1.170E-04	-7.795E-05	-1.092E-04	-6.092E-06	7.011E-05	-1.516E-04	1.537E-04	-1.172E-05	-3.513E-05
50	31	2.033E-05	4.651E-05	3.099E-04	7.595E-05	1.124E-03	7.613E-05	1.614E-05	-3.253E-05	2.128E-05	-2.457E-05
50	41	-9.167E-07	-1.261E-05	-1.698E-05	-3.964E-05	-2.865E-05	2.607E-05	2.976E-05	7.590E-06	-3.289E-06	1.000E+00
50	51	-8.462E-05	-1.098E-04	-4.052E-05	-4.709E-05	-1.080E-05	-6.129E-05	1.530E-04	-2.092E-04	-1.470E-04	-2.826E-04
50	61	2.356E-03	-3.221E-04	-9.237E-06	-2.226E-05	3.618E-03	-1.186E-05	1.859E-04	9.674E-04	6.055E-05	-7.211E-06
50	71	-1.003E-05	-6.206E-05	-2.538E-05	2.268E-06	-3.621E-06	-5.095E-06	-3.911E-06	-1.924E-05	1.787E-07	-1.014E-05
50	81	-4.818E-06	-2.939E-05	-5.414E-07	-5.296E-07						
51	1	-6.197E-05	3.204E-04	-3.963E-04	-1.676E-03	2.827E-04	2.703E-05	-7.221E-04	-5.494E-04	-2.077E-03	-2.133E-04
51	11	-1.342E-04	3.418E-03	-1.396E-03	-2.718E-03	-1.243E-04	-3.283E-06	3.218E-04	5.803E-06	-2.495E-05	9.858E-04

17.54.23 CLOCK TIME
28.243 SEC. CPTIME
5669 SEC. PPTIME

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

MPROD	(84 * 84) (1)	/OUTPUT/ (2)	CONTINUED (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
51 21	-3.374E-04	2.150E-05	-4.126E-06	7.372E-05	-4.942E-05	1.616E-04	-2.185E-04	7.566E-04	-5.987E-05	-1.104E-04
51 31	4.742E-05	-2.039E-06	2.486E-05	-1.368E-04	-7.956E-06	-2.670E-05	-5.155E-06	-4.817E-05	1.148E-05	-1.022E-04
51 41	-1.764E-05	1.478E-05	-9.473E-07	-8.874E-05	2.618E-07	-8.307E-06	9.443E-06	-1.713E-06	-3.402E-06	-8.462E-05
51 51	1.000E+00	-1.145E-04	-5.593E-05	-3.330E-05	1.740E-05	-5.453E-05	6.884E-05	-2.673E-04	-9.114E-05	-2.849E-04
51 61	6.863E-03	-4.574E-04	-6.017E-05	8.745E-05	5.499E-03	-5.082E-05	6.769E-05	1.232E-03	3.804E-04	-8.370E-05
51 71	-8.510E-06	-4.216E-05	4.430E-05	-1.429E-03	2.042E-04	1.864E-03	5.420E-05	-1.619E-06	-3.357E-05	-6.419E-06
51 81	-4.661E-06	1.890E-05	-9.544E-06	1.531E-05						
52 1	1.324E-03	1.904E-04	9.369E-05	1.832E-05	-8.238E-04	[illegible]E-04	-1.565E-04	-7.861E-04	6.519E-04	-3.017E-03
52 11	-2.232E-03	-3.093E-04	3.628E-05	1.438E-04	-3.492E-03	-[illegible]7E-07	1.120E-04	2.956E-03	3.481E-03	3.139E-04
52 21	-4.506E-04	2.163E-03	2.136E-03	6.506E-03	2.056E-04	1.427E-04	-2.149E-03	-7.575E-05	3.440E-04	-6.774E-05
52 31	-9.259E-06	2.098E-04	-1.733E-03	-1.025E-03	-7.832E-04	-2.715E-05	6.880E-05	-5.951E-05	4.053E-05	-6.007E-03
52 41	-4.405E-05	-1.768E-05	-3.008E-05	-3.558E-04	-3.495E-05	1.033E-04	9.273E-05	4.499E-05	-5.340E-06	-1.098E-04
52 51	-1.145E-04	9.906E-01	-5.184E-05	-1.609E-04	-2.666E-05	-8.513E-05	4.823E-04	-6.356E-04	-2.199E-04	-2.515E-04
52 61	2.616E-03	-2.865E-04	4.287E-05	-6.804E-05	3.059E-03	1.608E-05	1.275E-04	1.121E-03	-2.585E-05	2.614E-06
52 71	-3.848E-05	-1.722E-04	-8.553E-05	2.838E-05	-1.827E-06	-1.276E-05	-2.351E-05	-3.068E-05	7.011E-06	-2.348E-05
52 81	-1.295E-05	1.342E-03	-1.618E-06	-3.160E-06						
53 1	-4.671E-04	-5.5[illegible]E-05	1.567E-04	1.645E-04	3.815E-04	-3.035E-04	-7.567E-05	-5.249E-05	1.982E-04	2.515E-04
53 11	3.086E-04	-1.667E-06	2.981E-05	-9.348E-05	9.055E-04	-3.989E-05	-1.202E-04	-7.810E-04	-8.943E-04	-1.992E-04
53 21	2.241E-04	-4.965E-04	-4.804E-04	-1.206E-03	-1.056E-04	-1.535E-04	1.793E-04	9.675E-05	1.460E-04	2.001E-05
53 31	-2.047E-05	1.771E-03	1.511E-04	1.636E-04	3.482E-04	1.032E-04	2.249E-05	8.109E-05	-6.786E-05	-2.298E-05
53 41	-4.363E-05	4.130E-05	1.597E-05	-1.610E-04	-3.080E-05	1.264E-04	8.544E-05	4.334E-05	4.233E-06	-4.052E-05
53 51	-5.593E-05	-5.184E-05	1.000E+00	-6.997E-05	-2.413E-05	-1.741E-04	2.391E-04	-4.473E-04	5.310E-05	9.494E-05
53 61	-7.388E-04	1.149E-04	3.385E-05	-7.807E-06	-6.173E-04	2.733E-07	-7.985E-05	1.238E-04	-1.614E-04	3.682E-06
53 71	-2.247E-05	-7.641E-05	-7.820E-05	2.561E-05	-2.286E-06	4.040E-06	-2.178E-05	1.670E-05	3.260E-05	-6.887E-06
53 81	-9.109E-06	-[illegible].9885E-04	1.053E-05	-1.381E-05						
54 1	4.005E-04	-7.927E-05	-9.104E-06	-6.397E-05	-3.907E-04	1.792E-05	1.767E-04	1.554E-04	-1.355E-04	-4.744E-04
54 11	-6.774E-04	-2.068E-05	-7.608E-06	-9.225E-05	-1.230E-03	-7.264E-05	4.463E-05	1.340E-03	1.575E-03	2.334E-04
54 21	-1.735E-04	9.719E-04	9.518E-04	2.892E-03	8.379E-05	7.489E-06	-8.942E-04	-3.031E-04	1.407E-04	-2.547E-05
54 31	-6.610E-06	8.609E-05	-8.331E-04	-4.684E-04	-5.444E-04	-1.405E-05	2.951E-05	-1.414E-05	8.622E-06	-2.513E-05
54 41	-2.437E-05	-4.361E-07	-6.656E-06	-1.629E-04	-6.624E-06	5.238E-05	4.253E-05	2.152E-05	-1.629E-06	-4.709E-05
54 51	-3.330E-05	-1.609E-04	-6.997E-05	9.999E-01	-1.561E-05	-4.614E-05	2.117E-04	-2.831E-04	-5.965E-05	-4.419E-05
54 61	5.639E-04	-5.246E-05	2.376E-05	-2.931E-05	5.847E-04	1.224E-05	2.258E-05	2.514E-05	-3.699E-05	2.746E-06
54 71	-1.649E-05	-6.896E-05	-3.827E-05	1.818E-05	-7.036E-07	-4.297E-06	-1.130E-05	-8.853E-06	5.434E-06	-8.769E-06
54 81	-5.387E-06	6.113E-04	9.500E-08	-2.398E-06						
55 1	2.613E-05	-2.749E-05	4.508E-05	1.097E-04	-5.712E-05	1.159E-05	2.459E-05	1.196E-04	-6.403E-05	2.726E-06
55 11	-5.549E-05	-1.107E-03	1.988E-04	9.136E-04	-1.252E-04	6.229E-05	-4.631E-06	1.801E-04	2.113E-04	8.860E-05
55 21	-2.831E-04	1.297E-04	1.319E-04	3.999E-04	1.474E-05	-1.726E-05	-1.085E-04	-1.716E-04	1.302E-05	-9.758E-07
55 31	1.418E-06	1.247E-05	-1.270E-04	-6.962E-05	-9.036E-05	1.347E-06	4.838E-06	-3.565E-06	3.361E-06	-1.506E-06
55 41	-3.078E-06	-2.177E-06	-2.639E-06	-3.547E-05	-3.431E-06	1.371E-05	1.053E-05	3.932E-06	-9.700E-07	-1.080E-05
55 51	-1.740E-05	-2.666E-05	-2.413E-05	-1.561E-05	1.000E+00	-2.586E-05	4.800E-05	-7.599E-05	-2.625E-05	-2.963E-05
55 61	5.294E-04	-3.749E-05	-1.080E-06	9.559E-07	3.887E-04	2.119E-06	7.158E-05	-5.035E-04	-3.018E-05	5.037E-06
55 71	-2.486E-06	-9.434E-06	1.113E-05	7.[illegible]17E-05	-8.942E-06	6.142E-07	-6.922E-06	-3.431E-07	4.473E-06	-1.185E-06
55 81	-7.700E-07	8.809E-05	9.791E-07	-2.3[illegible]06						
56 1	-8.025E-05	2.610E-04	-4.656E-05	-4.534E-04	1.518E-04	8.325E-05	-6.386E-04	-1.651E-04	-1.850E-03	-1.618E-04
56 11	6.229E-05	7.578E-04	-8.330E-05	1.380E-03	-1.221E-04	1.052E-04	1.807E-04	1.020E-04	9.218E-05	1.110E-03
56 21	-1.985E-03	7.564E-05	8.578E-05	3.002E-04	-1.025E-05	4.328E-05	-1.580E-04	-3.978E-05	-5.864E-05	-6.129E-05
56 31	2.773E-05	8.136E-06	-8.723E-05	1.392E-04	-8.712E-05	-7.297E-06	1.730E-06	-3.936E-05	1.882E-05	-5.277E-05

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.23 CLOCK TIME
28.621 SEC. CPTIME
5717 SEC. PPTIME

MPROD	(84 X 84)	/OUTPUT/ CONTINUED								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
56	41	-8.961E-06	-1.532E-06	-8.324E-06	-9.912E-05	-8.914E-06	1.562E-05	2.088E-05	1.925E-06	-4.914E-06	-6.129E-05
56	51	-5.453E-05	-8.513E-05	-1.741E-04	-4.614E-05	-2.586E-05	9.999E-01	1.131E-04	-2.623E-04	-9.366E-05	-1.954E-04
56	61	4.257E-03	-2.918E-04	-3.795E-05	4.353E-05	3.311E-03	-1.346E-05	4.096E-04	-1.546E-03	6.809E-06	-1.955E-05
56	71	-7.086E-06	-2.902E-05	-5.692E-06	-3.827E-04	5.904E-05	-4.893E-06	3.183E-06	6.001E-07	-1.957E-06	-4.266E-06
56	81	-2.907E-06	7.371E-05	-1.432E-06	-5.740E-07						
57	1	-1.213E-03	6.775E-04	2.193E-04	5.234E-04	1.555E-03	-1.450E-04	-8.040E-04	-1.816E-03	1.197E-03	-2.408E-04
57	11	1.109E-03	4.005E-05	4.021E-05	3.555E-05	3.847E-03	-1.350E-03	2.213E-04	-4.936E-03	-5.778E-03	-1.220E-03
57	21	4.357E-04	-3.537E-03	-3.441E-03	-1.034E-02	-3.132E-04	-2.413E-05	3.038E-03	1.305E-03	-4.154E-04	9.106E-05
57	31	1.813E-05	-2.666E-04	3.037E-03	1.704E-03	2.490E-03	1.058E-04	-8.775E-05	6.351E-05	-4.193E-05	8.006E-05
57	41	7.354E-05	5.935E-06	1.942E-05	5.114E-04	2.536E-08	-1.377E-04	-1.133E-04	-5.726E-05	6.664E-06	1.530E-04
57	51	6.084E-05	4.823E-04	2.391E-04	2.117E-04	4.800E-05	1.131E-04	9.994E-01	1.833E-04	1.556E-04	6.971E-05
57	61	-1.526E-03	9.727E-05	-6.875E-05	8.123E-05	-8.756E-04	-4.599E-05	3.851E-05	1.184E-03	1.266E-04	-1.173E-05
57	71	4.448E-05	1.786E-04	9.784E-05	-1.364E-05	-8.954E-06	1.260E-05	3.399E-05	2.305E-05	-1.171E-05	2.206E-05
57	81	1.309E-05	-2.199E-03	1.614E-06	5.527E-06						
58	1	1.917E-03	7.824E-06	-8.457E-05	-4.495E-04	-1.574E-03	4.780E-04	1.109E-03	1.110E-03	-1.231E-03	-2.776E-03
58	11	-4.435E-03	-1.530E-03	1.573E-04	6.238E-04	3.553E-03	-1.452E-03	4.446E-04	5.335E-03	6.254E-03	1.174E-03
58	21	-1.376E-03	3.869E-03	3.787E-03	1.149E-02	3.093E-04	1.877E-04	-3.519E-03	-1.746E-03	1.739E-04	-2.534E-04
58	31	5.357E-05	3.119E-04	-3.024E-03	-1.961E-03	-1.800E-03	-5.217E-05	1.023E-04	-1.886E-04	1.189E-04	-1.761E-04
58	41	-7.039E-05	-4.619E-05	-6.927E-05	-6.481E-04	-7.365E-05	1.785E-04	1.707E-04	6.057E-05	-1.847E-05	-2.092E-04
58	51	-2.673E-04	-6.356E-04	-4.473E-04	-2.831E-04	-7.599E-05	-2.623E-04	7.833E-04	9.989E-01	-3.696E-04	-4.293E-04
58	61	3.783E-03	-4.570E-04	5.132E-05	-1.157E-04	4.228E-03	4.267E-05	2.130E-04	-1.059E-03	-3.702E-04	5.734E-05
58	71	-5.408E-05	-2.237E-04	-1.707E-04	1.887E-04	1.165E-05	-7.702E-06	-9.858E-05	-2.986E-05	3.794E-05	-2.947E-05
58	81	-1.638E-05	2.491E-03	5.429E-06	-1.695E-05						
59	1	2.109E-04	4.401E-05	-8.066E-04	-2.458E-03	1.221E-06	2.690E-04	-1.986E-04	-4.244E-04	-1.020E-03	-6.095E-04
59	11	-8.746E-04	1.208E-02	-2.116E-03	-5.849E-03	-1.037E-03	-3.970E-04	5.768E-04	8.528E-04	9.835E-04	3.954E-04
59	21	7.959E-04	6.510E-04	5.810E-04	1.920E-03	-5.823E-05	3.335E-04	-8.415E-04	3.863E-04	-2.963E-04	-2.918E-04
59	31	1.177E-04	2.768E-05	-3.796E-04	-5.924E-04	-2.533E-04	-3.836E-05	3.650E-06	-1.509E-04	6.451E-05	-2.158E-04
59	41	-3.078E-05	3.861E-07	-2.823E-05	-2.428E-04	-3.226E-05	2.505E-05	5.201E-05	3.103E-06	-1.041E-05	-1.470E-04
59	51	-9.114E-05	-2.199E-04	5.310E-05	-5.965E-05	-2.625E-05	-9.366E-05	1.556E-04	-3.696E-04	9.999E-01	-2.287E-04
59	61	3.971E-03	-3.225E-04	-2.745E-05	7.482E-06	3.497E-03	-1.903E-05	9.353E-05	1.453E-03	1.135E-04	-4.586E-05
59	71	-2.977E-05	-1.108E-04	-2.700E-05	-1.504E-03	2.427E-04	-2.082E-05	3.270E-06	-2.438E-07	-1.625E-05	-1.634E-05
59	81	-9.367E-06	4.006E-04	-5.316E-06	8.847E-06						
60	1	-5.179E-04	-2.062E-04	-4.763E-04	-2.339E-03	3.467E-04	6.917E-04	-5.932E-04	-5.507E-04	-1.310E-03	1.361E-04
60	11	1.911E-04	9.202E-03	-1.682E-03	-4.047E-03	9.059E-05	1.546E-04	8.458E-04	-1.637E-04	-2.244E-04	4.357E-04
60	21	4.003E-04	-7.304E-05	-1.337E-04	-1.600E-04	-1.723E-04	5.489E-04	-3.782E-04	6.225E-04	-7.013E-04	-4.499E-04
60	31	1.978E-04	-4.496E-05	2.200E-04	-5.217E-04	-6.821E-06	-6.997E-05	-3.029E-05	-2.746E-04	1.382E-04	-3.015E-04
60	41	-2.388E-06	-4.729E-05	-8.351E-05	-3.719E-04	-1.236E-04	5.456E-06	6.143E-05	-1.347E-05	-2.147E-05	-2.826E-04
60	51	-2.849E-04	-2.515E-04	9.494E-05	-4.419E-05	-2.963E-05	-1.954E-04	6.971E-05	-4.293E-04	-2.287E-04	9.996E-01
60	61	5.408E-03	-4.772E-04	-7.514E-05	2.605E-05	4.179E-03	-3.598E-05	1.213E-04	1.104E-03	-3.030E-04	2.316E-05
60	71	-4.845E-06	-1.390E-04	-1.172E-04	-1.395E-03	2.717E-04	-1.568E-05	-8.430E-05	2.525E-05	2.172E-05	-2.287E-05
60	81	-1.093E-05	-5.729E-05	6.319E-06	-8.071E-06						
61	1	4.871E-03	3.018E-03	8.626E-04	1.442E-02	-2.566E-03	-1.602E-02	7.707E-04	2.421E-03	1.210E-04	-1.191E-04
61	11	6.217E-04	2.812E-03	2.404E-03	7.502E-04	-1.461E-03	7.717E-04	-1.270E-02	1.422E-03	1.730E-03	1.621E-03
61	21	1.967E-04	3.791E-04	1.014E-03	-3.952E-04	2.333E-03	-9.525E-03	5.294E-03	2.458E-04	1.453E-02	7.829E-03
61	31	-3.397E-03	1.111E-03	-3.103E-03	9.748E-03	-7.269E-04	2.192E-04	4.171E-04	5.557E-03	-3.193E-03	4.640E-03
61	41	-4.962E-04	1.595E-03	2.034E-03	3.771E-03	3.127E-03	-5.020E-04	-1.520E-03	3.360E-04	4.706E-04	2.356E-03
61	51	6.863E-03	2.616E-03	-7.388E-04	5.639E-04	5.294E-04	4.257E-03	-1.526E-03	3.783E-03	3.971E-03	5.408E-03

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.23 CLOCK TIME
28.993 SEC. CPTIME
5769 SEC. PPTIME

MPROD	(84 X 84)	(1) /OUTPUT/	(2) CONTINUED	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
61	61	1.001E+00	3.137E-03	2.321E-04	9.126E-04	2.164E-03	-2.484E-04	-1.434E-04	3.071E-05	1.529E-02	-2.508E-03
61	71	3.661E-04	9.408E-04	3.211E-03	-5.054E-04	-1.657E-03	-2.645E-04	3.236E-03	-2.933E-04	-1.258E-03	1.99CE-04
61	81	5.965E-05	2.460E-04	-3.821E-04	5.127E 04						
62	1	3.830E-04	-3.718E-04	-2 636E-04	-1.779E-03	2.778E-04	1.065E-03	-3.175E-04	-3.210E-04	-5.695E-04	-1.210E-05
62	11	-9.942E-05	4.157E-03	-8.933E-04	-1.8C0E-03	5.412E-05	-4.747E-06	9.913E-04	-1.568E-04	-2.071E-04	6.948E-05
62	21	4.021E-04	-5.781E-05	-1.165E-04	-6.679E-05	-1.934E-04	6.915E-04	-4.513E-04	2.581E-04	-1 853E-04	-5.735E-04
62	31	2.521E-04	-5.956E-05	2.633E-04	-6.937E-04	5.508E-05	-6.317E-05	-3.583E-05	-3.846E-04	1 115E-04	-3.580E-04
62	41	1.787E-05	-9.616E-05	-1.348E-04	-4.564E-04	-2.029E-04	2.562E-05	9.647E-05	-1.859E-05	-3. C4E-05	-3.221E-04
62	51	-4.574E-04	-2.865E-04	1.149E-04	-5.246E-05	-3.749E-05	-2.918E-04	9.727E-05	-4.570E-04	-3.225E-04	-4.772E-04
62	61	3.137E-03	9.996E-01	-6.248E-05	-2.913E-05	2.406E-03	-1.190E-05	1.535E-04	4.626E-04	-8.432E-04	1.218E-04
62	71	-5.638E-05	-1.516E-04	-2.137E-04	-6.989E-04	2.140E-04	-1.513E-06	-1.889E-04	3.397E-05	8.885E-05	-2.602E-05
62	81	-1.094E-05	-3.034E-05	1.995E-05	-2.855E-05						
63	1	-2.870E-04	1.181E-04	-2.592E-05	-1.705E-04	3.615E-04	1.398E-04	-2.052E-05	5.088E-05	-1.335E-05	-1.182E-04
63	11	-3.147E-04	2.501E-04	-6.675E-05	-9.743E-05	8.419E-04	-1.225E-05	1.108E-04	-9.340E-04	-1.098E-03	-1.275E-04
63	21	1.543E-04	-6.585E-04	-6.501E-04	-1.906E-03	-8.647E-05	7.936E-05	5.114E-04	1.290E-04	-2.387E-04	-6.978E-05
63	31	4.246E-05	-5.739E-05	6.047E-04	2.117E-04	5.257E-04	2.473E-05	-1.888E-05	-4.692E-05	-2.514E-05	-3.886E-05
63	41	1.545E-05	-1.320E-05	-1.609E-05	3.032E-05	-2.813E-05	-1.242E-05	2.082E-08	-1.212E-05	-4.102E-06	-9.237E-06
63	51	-8.017E-05	4.287E-05	3.385E-05	2.376E-05	-1.080E-06	-3.795E-05	-6.875E-05	5.132E-05	-2.743E-05	-7.514E-05
63	61	2.321E-04	-8.248E-05	1.000E+00	5.118E-06	4.002E-04	-7.479E-06	-1.091E-05	-9.120E-05	-1.134E-04	1.821E-05
63	71	1.765E-09	6.586E-06	-1.903E-05	-4.809E-05	2.189E-05	2.582E-06	-2.470E-05	6.443E-06	9.738E-06	-5.786E-07
63	81	3.537E-07	-3.228E-04	3.389E-06	-4.124E-06						
64	1	3.736E-04	-4.492E-05	-1.718E-05	1.365E-04	-3.536E-04	-2.267E-04	6.790E-05	2.830E-04	-9.742E-05	-4.076E-04
64	11	-5.856E-04	2.215E-05	3.887E-05	1 126E-04	-1.011E-03	-1.250E-04	-1.570E-04	9.978E-04	1.186E-03	2.517E-04
64	21	-1.090E-05	7.089E-04	7.017E-04	2.054E-03	1.003E-04	-1.329E-04	-5.031E-04	-1.426E-04	3.353E-04	1.081E-04
64	31	-5.705E-05	7.833E-05	-6.016E-04	-1.615E-04	-3.935E-04	-2.138E-05	2.322E-05	7.505E-05	-4.176E-05	5.781E-05
64	41	-2.267E-05	2.283E-05	2.672E-05	-7.670E-05	4.721E-05	1.652E-05	-3.961E-06	1.694E-05	6.005E-06	-2.226E-05
64	51	8.745E-05	-6.804E-05	-7.807E-06	-2.931E-05	9.559E-07	4.353E-05	8.123E-05	-1.157E-04	7.482E-06	2.605E-05
64	61	9.126E-04	-2.913E-05	5 118E-06	1 000E+00	8.922E-04	-2.546E-06	4.368E-06	-1.463E-04	2.416E-04	-4.215E-05
64	71	-6.785E-06	2.749E-05	3.232E-05	-3.714E-05	-2.109E-05	-8.547E-06	4.784E-05	-5.682E-06	-1.873E-05	-2.066E-06
64	81	-2.077E-06	4.454E-04	-6.872E-06	7.169E-06						
65	1	6.615E-03	5.535E-03	6.182E-04	1.131E-02	-1.801E-03	-1.278E-02	1.162E-03	1.862E-03	3.297E-04	1.816E-04
65	11	1.457E-03	2.511E-03	1.927E-03	6.944E-04	3.447E-05	7.411E-04	-1.028E-02	1.141E-03	1.521E-03	1.318E-03
65	21	3.783E-04	2.935E-04	7.649E-04	-5.984E-04	1.928E-03	-7.442E-03	4.988E-03	4.995E-04	1.111E-02	6.186E-03
65	31	-2.718E-03	5.965E-04	-2.494E-03	7.808E-03	-3.932E-04	6.998E-04	3.872E-04	4.370E-03	-2.510E-03	3.676E-03
65	41	-3.206E-04	1.285E-03	1.654E-03	5.280E-03	2.505E-03	-3.228E 04	-1.096E-03	2.014E-04	3 680E-04	3.618E-03
65	51	5.499E-03	3.059E-03	-6.173E-04	5.847E-04	3.887E-04	3.311E-03	-8.756E-04	4.228E-03	3.497E-03	4.179E-03
65	61	2 164E-03	2.406E-03	4.002E-04	8.922E-04	1.003E+00	-1.281E-04	-1.055E-04	2.487E-04	1.252E-02	-1.973E-03
65	71	6.655E-04	1.697E-03	2.966E-03	-5.800E-04	-1.290E-03	-8.479E-05	2.614E-03	-4.259E-04	-1.038E-03	2.907E-04
65	81	1 140E-04	1.247E-04	-2.932E-04	4.461E-04						
66	1	-1.662E-04	7.940E-05	3 070E-05	-6.787E-05	2.072E-04	1.130E-04	-1.328E-04	-4.320E-04	2.091E-04	-2.173E-04
66	11	1.267E-04	2.523E-04	-6.225E-05	-1.878E-04	3.299E-04	-4 017E-04	8 449E-05	-5 781E-04	-6.755E-04	-1.910E-04
66	21	-1.018E-05	-4.051E-04	-3 976E-04	-1 153E-03	-5 726E-05	8.348E-05	2.736E-04	1.914E-04	-1.609E-04	-5 760E-05
66	31	3.034E-05	-3 412E-05	3.696E-04	1.080E-04	3.278E-04	7.392E-06	-1.280E-05	-2 850E-05	2.071E-05	-3.182E-05
66	41	1 133E-05	-1.241E-05	-1.574E-05	1.310E-05	-2.904E-05	-1.100E-05	4.050E-07	-7.427E-05	-2.666E-06	-1.186E-05
66	51	-5.082E-05	1.608E-05	2.733E-07	1.224E-05	2.119E-05	-1.346E-05	-4.599E-05	4.267E-05	-1 903E-05	-3.598E-05
66	61	-2.484E-04	-1.190E-05	-7.479E-06	-2.546E-06	-1.281E-04	1.000E+00	3.525E-05	4.066E-04	-1.038E-04	1.878E-05
66	71	-2.174E-06	-1.671E-06	-2 072E-05	-1.411E-05	1.406E-05	1.928E-06	-2.218E-05	4.700E-06	8.519E-06	-1.218E-06

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.23 CLOCK TIME
29.354 SEC. CPTIME
5817 SEC. PPTIME

MPROD	(84 X 84)	/OUTPUT/ CONTINUED								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
66	81	-6.269E-08	-2.731E-04	3.318E-06	-2.996E-06					
67	1	3.480E-04	3.541E-04	1.632E-04	-2.133E-04	-1.268E-04	-1.753E-04	1.730E-04	1.562E-04	-3.087E-06	-1.652E-06
67	11	-1.067E-04	-7.502E-04	1.642E-04	3.184E-04	-2.856E-04	8.090E-05	2.015E-04	4.308E-04	5.189E-04	6.845E-05
67	21	-1.305E-04	3.322E-04	2.192E-04	8.003E-04	-2.056E-04	1.314E-05	-8.446E-05	-1.061E-04	-2.706E-04	-2.184E-04
67	31	3.305E-05	-3.456E-05	-1.408E-04	-1.409E-04	-1.792E-04	-5.270E-05	-2.222E-05	1.051E-04	-1.329E-04	-1.509E-04
67	41	-5.461E-05	1.082E-04	4.607E-05	5.100E-05	1.783E-05	1.847E-04	9.044E-05	4.511E-05	1.994E-05	1.859E-04
67	51	6.769E-05	1.275E-04	-7.985E-05	2.258E-05	7.158E-05	4.096E-04	3.851E-05	2.130E-04	9.353E-05	1.213E-04
67	61	-1.434E-04	1.535E-04	-1.091E-05	4.368E-06	-1.058E-04	3.525E-05	1.000E+00	-2.448E-04	3.497E-04	6.233E-05
67	71	-6.193E-05	-4.261E-05	-3.360E-05	1.065E-04	-3.529E-05	-2.877E-05	2.747E-05	4.219E-05	-1.301E-05	-9.182E-06
67	81	6.512E-06	1.748E-04	2.144E-05	4.607E-05						
68	1	-1.116E-03	9.666E-04	-7.115E-04	-1.490E-04	4.862E-04	-1.598E-03	-3.922E-05	-1.232E-04	1.240E-04	3.367E-05
68	11	-2.836E-05	2.905E-04	5.725E-04	-8.292E-05	1.289E-03	-5.852E-04	-1.153E-03	-3.817E-04	-3.279E-04	9.979E-05
68	21	5.699E-05	5.912E-05	1.688E-04	7.352E-04	-2.159E-04	3.317E-05	-5.352E-05	4.845E-05	-3.494E-04	-3.161E-04
68	31	2.611E-04	-1.704E-04	-1.177E-04	-1.565E-05	8.400E-05	6.849E-04	7.034E-05	4.216E-04	-4.078E-04	-3.672E-04
68	41	-3.794E-04	6.381E-04	6.002E-04	2.780E-05	1.234E-03	9.820E-04	4.574E-04	3.408E-05	-3.011E-05	9.674E-04
68	51	1.232E-03	1.121E-03	1.238E-04	2.514E-05	-5.035E-04	-1.546E-03	1.184E-03	-1.059E-03	1.453E-03	1.104E-03
68	61	3.071E-05	4.626E-04	-9.120E-05	-1.463E-04	2.487E-04	4.066E-04	-2.448E-04	1.000E+00	6.188E-04	-2.758E-04
68	71	7.740E-05	3.439E-04	3.286E-04	-1.081E-05	1.943E-05	-5.739E-05	2.079E-04	-7.050E-05	-7.908E-05	4.014E-05
68	81	6.099E-05	-5.235E-05	-5.045E-05	1.699E-05						
69	1	2.505E-04	4.376E-04	-1.281E-03	-3.714E-03	3.330E-04	-7.682E-04	-1.872E-04	5.001E-04	-1.941E-03	3.524E-04
69	11	-2.351E-04	2.458E-02	-4.118E-03	-1.348E-02	-3.411E-05	1.468E-04	5.091E-05	6.182E-05	4.804E-05	9.854E-04
69	21	9.996E-04	6.145E-05	3.450E-06	6.501E-05	-6.094E-05	-1.643E-04	1.991E-05	4.645E-04	2.229E-04	2.414E-05
69	31	-4.036E-06	5.025E-06	-4.777E-05	1.045E-04	-5.053E-05	1.772E-05	1.235E-05	1.537E-04	-1.412E-04	-6.816E-05
69	41	-8.320E-05	1.485E-04	1.290E-04	1.335E-04	2.167E-04	-1.450E-05	-3.573E-05	6.299E-06	1.563E-05	6.055E-05
69	51	3.804E-04	-2.585E-05	-1.614E-04	-3.699E-05	-3.018E-05	6.809E-05	1.266E-04	-3.702E-04	1.135E-04	-3.030E-04
69	61	1.529E-02	-8.432E-04	-1.134E-04	2.416E-04	1.252E-02	-1.038E-04	3.497E-04	6.188E-04	1.002E+00	-3.445E-04
69	71	2.374E-05	9.781E-06	3.049E-04	3.808E-03	4.595E-04	-5.264E-05	3.042E-04	-3.190E-05	-1.518E-04	3.581E-06
69	81	-3.575E-06	2.916E-05	-4.369E-05	6.646E-05						
70	1	2.748E-05	-2.318E-05	2.110E-04	8.355E-04	-9.527E-05	1.515E-04	-8.393E-05	2.330E-04	2.418E-04	-2.148E-04
70	11	-5.777E-05	-4.766E-03	7.550E-04	1.437E-03	-1.591E-04	-1.877E-04	-2.517E-06	7.461E-05	8.652E-05	3.285E-06
70	21	-5.868E-05	5.556E-05	6.292E-05	1.765E-04	1.584E-05	3.905E-05	-7.064E-05	-1.407E-05	-1.544E-05	1.396E-06
70	31	-3.782E-06	5.507E-06	-3.287E-05	-3.186E-05	2.843E-07	-2.917E-06	-2.159E-07	-2.565E-05	2.597E-05	1.984E-05
70	41	1.640E-05	-3.020E-05	-2.614E-05	-2.342E-05	-4.554E-05	4.065E-06	7.590E-06	-4.768E-07	-2.950E-06	-7.211E-06
70	51	-8.370E-05	2.414E-06	3.682E-06	2.746E-06	5.037E-06	-1.955E-05	-1.173E-05	5.734E-05	-4.586E-05	2.316E-05
70	61	-2.508E-03	1.218E-04	1.821E-05	-4.215E-05	-1.973E-03	1.878E-05	8.233E-05	-2.758E-04	-3.445E-04	1.000E+00
70	71	-2.165E-06	7.083E-06	-5.827E-05	6.688E-04	-7.363E-05	1.127E-05	-6.429E-05	6.563E-06	2.991E-05	7.452E-07
70	81	1.494E-06	2.479E-05	9.156E-06	-1.222E-05						
71	1	4.116E-04	1.290E-04	4.659E-05	9.271E-05	-2.217E-04	-1.526E-05	9.209E-05	-1.678E-04	2.747E-04	-8.361E-04
71	11	-9.120E-04	-4.967E-04	9.536E-05	4.518E-04	-1.047E-03	-1.204E-03	-2.524E-05	5.144E-04	6.076E-04	-3.699E-05
71	21	-1.856E-04	3.773E-04	3.787E-04	1.135E-03	4.277E-05	-1.310E-05	-3.372E-04	-1.467E-04	8.127E-05	8.002E-06
71	31	7.446E-06	3.995E-05	-2.255E-04	-1.151E-04	5.541E-06	3.331E-06	1.155E-05	1.318E-06	1.319E-06	3.465E-06
71	41	-6.254E-06	-1.153E-06	-1.260E-06	-4.354E-05	2.099E-07	1.246E-05	8.994E-06	5.844E-06	-1.161E-07	-1.003E-05
71	51	-8.510E-06	-3.848E-05	-2.247E-05	-1.649E-05	-2.486E-06	-7.086E-06	4.448E-05	-5.408E-05	-2.977E-05	-4.845E-05
71	61	3.661E-04	-5.638E-05	1.765E-09	-6.785E-06	6.655E-04	-2.174E-06	-6.193E-05	7.740E-05	2.374E-05	-2.165E-06
71	71	1.000E+00	1.586E-06	3.220E-06	6.693E-05	-1.302E 05	8.697E-07	3.112E-06	-1.371E-06	-2.937E-07	1.191E-06
71	81	2.745E-07	1.709E-04	-1.461E-07	5.950E-08						

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.24 CLOCK TIME
29.687 SEC. CPTIME
5817 SEC. PPTIME

MPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
72	1	1.509E-03	1.863E-04	1.253E-04	3.606E-04	-1.100E-03	-1.192E-05	1.734E-04	1.313E-05	9.069E-05	-2.406E-03
72	11	-2.785E-03	-2.548E-03	4.487E-04	1.672E-03	-3.974E-03	-2.591E-03	-2.856E-05	2.859E-03	3.346E-03	4.081E-04
72	21	-2.760E-04	2.050E-03	2.015E-03	5.969E-03	2.139E-04	-1.401E-05	-1.717E-03	-4.216E-04	4.065E-04	2.864E-05
72	31	-4.039E-05	1.738E-04	-1.401E-03	-7.139E-04	-7.434E-04	-3.728E-05	4.899E-05	-3.943E-08	9.467E-06	1.103E-05
72	41	-2.906E-05	-8.535E-06	-9.767E-06	-2.225E-04	-6.835E-06	4.939E-05	3.694E-05	2.530E-05	-9.717E-07	-6.286E-05
72	51	-4.216E-05	-1.722E-04	-7.641E-05	-6.896E-05	-9.434E-06	-2.902E-05	1.786E-04	-2.237E-04	-1.108E-04	-1.390E-04
72	61	9.408E-04	-1.516E-04	6.586E-06	-2.749E-05	1.697E-03	-1.671E-06	-4.261E-05	3.439E-04	9.781E-06	7.083E-06
72	71	1.586E-06	1.000E+00	3.530E-06	3.377E-04	-5.409E-05	5.346E-06	-1.534E-06	2.445E-06	4.806E-06	6.780E-06
72	81	1.980E-06	1.143E-03	1.174E-06	-1.677E-06						
73	1	6.250E-04	4.833E-05	-1.781E-04	-5.589E-04	-4.263E-04	-1.205E-04	7.265E-05	-1.613E-04	-7.139E-05	-8.218E-04
73	11	-1.001E-03	3.878E-03	-6.553E-04	-2.329E-03	-1.583E-03	-7.574E-04	1.010E-05	1.269E-03	1.484E-03	2.059E-04
73	21	-1.111E-04	9.039E-04	8.763E-04	2.606E-03	7.211E-05	-1.591E-05	-7.490E-04	-1.823E-04	1.570E-04	-9.602E-06
73	31	-6.778E-06	6.353E-05	-6.288E-04	-3.288E-04	-4.066E-04	-1.901E-05	2.126E-05	1.535E-05	-1.598E-05	-2.334E-05
73	41	-2.842E-05	2.282E-05	1.705E-05	-8.323E-05	3.404E-05	1.827E-05	1.138E-05	1.107E-05	1.611E-06	-2.538E-05
73	51	4.430E-05	-8.553E-05	-7.820E-05	-3.827E-05	-1.113E-04	5.692E-06	9.784E-05	-1.707E-04	-2.700E-05	-1.172E-04
73	61	3.211E-03	-2.197E-04	-1.903E-05	3.232E-05	2.966E-03	-2.072E-05	-3.360E-05	3.286E-04	3.049E-04	-5.827E-05
73	71	3.220E-06	3.530E-06	1.000E+00	-5.245E-04	5.760E-05	-7.541E-06	5.255E-05	-3.568E-06	-2.459E-05	2.868E-06
73	81	-2.186E-07	5.210E-04	-7.490E-06	1.059E-03						
74	1	-6.132E-07	8.326E-06	4.515E-05	7.377E-04	-5.650E-05	1.429E-03	-3.283E-05	6.601E-05	-7.239E-05	-2.723E-05
74	11	-4.024E-06	-2.310E-04	-4.616E-04	6.455E-05	-1.818E-05	-4.754E-06	1.350E-03	2.985E-05	3.693E-05	-1.451E-04
74	21	-7.993E-05	3.035E-05	-9.045E-05	7.611E-05	7.504E-05	-3.078E-04	1.337E-04	3.578E-06	5.909E-04	4.256E-04
74	31	-2.370E-04	2.103E-05	-1.006E-04	1.784E-04	-5.797E-06	-1.007E-05	-1.812E-05	-3.011E-04	3.686E-04	4.380E-04
74	41	3.041E-04	-4.993E-04	-4.268E-04	-4.038E-05	-7.711E-04	2.101E-05	9.762F-05	-2.984E-05	-4.305E-05	2.268F-06
74	51	-1.429E-03	2.858E-05	2.561E-05	1.818E-05	7.173E-05	-3.827E-04	-1.364E-05	1.887E-04	-1.504E-03	-1.395E-03
74	61	-5.054E-04	-6.989E-04	-4.809E-05	-3.714E-05	-5.800E-04	-1.411E-05	1.065E-04	-1.081E-05	-3.808E-03	6.688E-04
74	71	6.693E-05	3.377E-04	-5.245E-04	1.000E+00	4.557E-04	1.187E-04	-8.015E-04	8.391E-05	2.838E-04	4.153E-05
74	81	3.332E-05	9.824E-06	9.334E-05	-1.105E-04						
75	1	1.007E-05	-3.041E-05	1.393E-04	4.415E-04	-6.548E-05	-1.644E-04	1.608E-05	5.512E-05	5.040E-05	-3.713E-05
75	11	-2.899E-05	-3.079E-03	5.774E-04	8.811E-04	-7.342E-05	2.555E-05	-2.526E-04	8.523E-05	9.932E-05	3.403E-06
75	21	-2.692E-05	5.679E-05	8.209E-05	1.688E-04	1.932E-07	7.542E-05	-8.018E-05	-3.152E-05	-1.101E-04	-7.200E-05
75	31	3.717E-05	3.424E-07	-2.951E-05	-6.053E-05	-4.036E-05	-1.986E-06	3.429E-06	3.946E-05	-5.023E-05	-6.305E-05
75	41	-4.399E-05	7.018E-05	6.017E-05	-5.840E-06	1.096E-04	-1.982E-06	-1.360E-05	5.096E-06	5.952E-06	-3.621E-06
75	51	2.042E-04	-1.823E-06	-2.286E-06	-7.036E-07	-8.942E-06	5.904E-05	-8.954E-06	1.165E-05	2.423E-04	2.717E-04
75	61	-1.657E-03	2.140E-04	2.189E-05	-2.109E-05	-1.290E-03	1.406E-05	-3.529E-05	1.943E-05	4.595E-04	-7.363E-05
75	71	-1.302E-05	-5.409E-05	5.760E-05	4.557E-04	9.999E-01	-1.370E-05	1.027E-04	-1.069E-05	-3.159E-05	-6.603E-06
75	81	-4.847E-06	4.160E-05	-1.092E-05	1.191E-05						
76	1	1.889E-04	3.815E-05	5.336E-05	1.426E-04	-1.242E-04	1.697E-05	3.707E-05	-8.911E-05	2.336E-04	-3.516F-04
76	11	-3.244E-04	-8.345E-04	1.425E-04	5.166E-04	-5.246E-04	-6.684E-04	-9.168E-06	2.300E-04	2.730E-04	-5.260E-05
76	21	-1.233E-04	1.692E-04	1.714E-04	5.139E-04	2.165E-05	-4.746E-06	-1.520E-04	-7.893E-05	3.639E-05	6.508E-06
76	31	-5.029E-06	1.802E-05	-1.022E-04	-5.215E-05	-2.788E-06	1.465E-05	4.634E-06	-3.747E-06	5.409E-06	6.521E-06
76	41	8.733E-07	-6.535E-06	-5.586E-06	-2.163E-05	-8.684E-06	5.431E-06	4.681E-06	2.148E-06	-5.573E-07	-5.095E-06
76	51	-1.864E-05	-1.276E-05	4.040E-06	-4.297E-06	6.142E-07	-4.893E-06	1.260E-05	-7.702E-06	-2.062E-05	-1.568E-05
76	61	-2.645E-04	-1.513E-06	2.582E-06	-8.547E-06	-8.479E-05	1.928E-06	-2.877E-05	-5.739E-05	-5.264E-05	1.127E-05
76	71	8.697E-07	5.346E-06	-7.541E-06	1.187E-04	-1.370E-05	1.000E+00	-1.021E-05	1.105E-06	5.032E-06	1.200E-06
76	81	6.568E-07	4.939E-05	1.615E-06	-2.082E-06						
77	1	7.383E-05	3.984E-05	-2.677E-04	-8.889E-04	1.972E-05	-1.150E-04	7.285E-06	-1.904E-05	-3.926E-04	9.087E-05
77	11	-6.761E-05	5.364E-04	3.946E-04	-2.489E-03	-1.433E-04	4.251E-05	5.687E-05	1.605E-04	1.837E-04	1.657E-04

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.24 CLOCK TIME
30.035 SEC. CPTIME
5881 SEC. PPTIME

MPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
77	21	1.585E-04	1.167E-04	9.902E-05	3.164E-04	-7.793E-06	-1.832E-05	-9.106E-05	5.029E-05	3.227E-05	-1.156E-05
77	31	4.724E-06	6.168E-06	-8.524E-05	-4.574E-05	-5.845E-05	-3.664E-06	2.994E-06	1.497E-05	-1.823E-05	-2.484E-05
77	41	-1.606E-05	2.364E-05	1.861E-05	-1.495E-06	3.259E-05	-4.565E-07	-2.027E-06	1.442E-06	1.814E-06	-3.911E-06
77	51	5.420E-05	-2.351E-05	-2.178E-05	-1.130E-05	-6.922E-06	3.183E-06	3.399E-05	-9.858E-05	3.270E-06	-8.430E-05
77	61	3.236E-03	-1.889E-04	-2.470E-05	4.784E-05	2.614E-03	-2.218E-05	2.747E-05	2.079E-04	3.042E-04	-6.429E-05
77	71	3.112E-06	-1.534E-06	5.255E-05	-8.015E-04	1.027E-04	-1.021E-05	1.000E+00	-4.518E-06	-2.705E-05	2.710E-07
77	81	-9.355E-07	6.429E-05	-7.971E-06	1.151E-05						
78	1	1.454E-04	-1.603E-04	7.656E-06	5.408E-05	-2.673E-04	1.161E-05	-4.134E-05	1.283E-04	-1.233E-04	1.719E-04
78	11	2.254E-04	-5.284E-04	8.496E-05	1.873E-04	-5.328E-04	3.058E-04	9.613E-06	7.009E-04	8.162E-04	1.656E-04
78	21	2.500E-05	4.901E-04	4.735E-04	1.387E-03	4.659E-05	1.066E-05	-3.965E-04	-4.288E-05	7.982E-05	2.520E-07
78	31	-8.593E-06	2.978E-05	-4.035E-04	-2.076E-04	-4.315E-04	-2.820E-05	7.741E-06	-1.821E-06	2.300E-06	-9.987E-07
78	41	-6.629E-06	-1.368E-06	-1.950E-06	-5.285E-05	-1.237E-06	6.016E-06	4.681E-06	4.361E-06	-1.660E-07	-1.924E-05
78	51	-1.919E-06	-3.068E-05	1.670E-05	-8.853E-06	-3.431E-07	6.001E-07	2.305E-05	-2.986E-05	-2.438E-07	2.525E-05
78	61	-2.933E-04	3.397E-05	6.443E-06	-5.632E-06	-4.259E-04	4.700E-06	4.219E-05	-7.050E-05	-3.190E-05	6.563E-06
78	71	-1.371E-06	2.445E-06	-3.568E-06	8.391E-05	-1.069E-05	1.105E-06	-4.518E-06	1.000E+00	2.621E-06	1.378E-06
78	81	4.833E-07	2.737E-04	6.740E-07	-9.790E-07						
79	1	1.057E-05	-2.987E-06	1.026E-0	*.736E-04	-2.995E-05	4.982E-05	2.234E-05	1.379E-05	7.780E-05	-5.005E-05
79	11	-4.225E-05	-2.036E-03	3.558E-04	1.585E-03	-6.033E-05	-1.340E-04	-3.543E-06	1.535E-06	3.206E-06	-4.419E-05
79	21	-2.721E-05	1.843E-06	6.061E-06	1.550E-05	1.253E-05	-8.851E-06	-1.588E-06	-1.373E-05	2.577E-05	1.929E-05
79	31	-9.346E-06	3.499E-06	-3.693E-06	1.143E-05	1.761E-05	7.147E-08	3.788E-08	-6.042E-06	1.010E-05	1.866E-05
79	41	9.110E-06	-1.484E-05	-1.162E-05	-4.859E-06	-2.042E-05	1.290E-06	1.950E-06	-8.053E-08	-9.345E-07	1.787E-07
79	51	-3.357E-05	7.011E-06	3.260E-05	5.434E-06	4.473E-06	-1.957E-06	-1.171E-05	3.794E-05	-1.625E-05	2.172E-05
79	61	-1.258E-03	6.885E-05	9.738E-06	-1.873E-05	-1.038E-03	8.519E-06	-1.301E-05	-7.908E-05	-1.518E-04	2.991E-05
79	71	-2.937E-07	4.806E-06	-2.459E-05	2.838E-04	-3.159E-05	5.032E-06	-2.705E-05	2.621E-06	1.000E+00	5.164E-07
79	81	7.689E-07	-1.019E-05	3.953E-06	-5.535E-06						
80	1	2.350E-04	9.424E-06	1.385E-05	3.896E-05	-1.852E-04	-1.619E-06	2.821E-05	-1.259E-05	2.553E-05	-3.442E-04
80	11	-3.947E-04	-2.592E-04	4.470E-05	1.450E-04	-6.223E-04	-3.443E-04	-1.803E-06	4.725E-04	5.525E-04	5.908E-05
80	21	-4.971E-05	3.360E-04	3.287E-04	9.700E-04	3.339E-05	-7.705E-07	-2.789E-04	-6.860E-05	6.093E-05	2.704E-06
80	31	-5.743E-06	2.611E-05	-2.273E-04	-1.173E-04	-1.429E-04	-7.809E-06	7.154E-06	5.928E-07	1.587E-06	5.683E-07
80	41	-4.548E-06	-1.172E-06	-1.496E-06	-3.449E-05	-1.019E-06	7.072E-06	5.351E-06	3.572E-06	-1.797E-07	-1.014E-05
80	51	-6.419E-06	-2.348E-05	-6.887E-06	-8.769E-06	-1.185E-06	-4.266E-06	2.206E-05	-2.947E-05	-1.634E-05	-2.287E-05
80	61	1.990E-04	-2.602E-05	-5.786E-07	-2.066E-06	2.907E-04	-1.218E-06	-9.182E-06	4.014E-05	3.581E-06	7.452E-07
80	71	1.191E-06	6.780E-06	2.868E-06	4.153E-05	-6.603E-06	1.200E-06	2.710E-07	1.378E-06	5.164E-07	1.000E+00
80	81	6.120E-07	1.894E-04	2.004E-07	-1.169E-07						
81	1	1.007E-04	9.012E-06	6.429E-06	2.778E-05	-7.996E-05	2.174E-06	6.402E-06	4.505E-05	-8.073E-05	-1.583E-04
81	11	-2.170E-04	-2.408E-04	4.096E-05	1.460E-04	-2.513E-04	-3.640E-05	2.566E-06	2.362E-04	2.748E-04	6.603E-05
81	21	1.725E-05	1.674E-04	1.626E-04	4.783E-04	1.701E-05	5.006E-07	-1.383E-04	-1.674E-05	3.343E-05	2.609E-06
81	31	-3.615E-06	1.262E-05	-1.164E-04	-5.854E-05	-7.870E-05	-3.764E-06	3.581E-06	-2.389E-07	9.982E-07	1.136E-06
81	41	-1.958E-06	-1.090E-06	-1.149E-06	-1.748E-05	-1.238E-06	4.354E-06	3.268E-06	2.019E-06	-1.198E-07	-4.818E-06
81	51	-4.661E-06	-1.295E-05	-9.109E-06	-5.387E-06	-7.700E-07	-2.907E-06	1.309E-05	-1.638E-05	-9.367E-06	-1.093E-05
81	61	5.965E-05	-1.094E-05	3.537E-07	-2.077E-06	1.140E-04	-6.269E-08	6.512E-06	6.099E-05	-3.575E-06	1.494E-06
81	71	2.745E-07	1.980E-06	-2.186E-07	3.332E-05	-4.847E-06	6.568E-07	-9.355E-07	4.833E-07	7.689E-07	6.120E-07
81	81	1.000E+00	1.142E-04	2.103E-07	-2.535E-07						
82	1	1.237E-03	-1.096E-03	-1.959E-05	-1.063E-04	-1.658E-03	7.629E-06	4.963E-06	6.343E-06	-1.676E-04	-1.322E-04
82	11	-1.103E-04	-5.619E-07	-2.039E-06	1.430E-06	-2.369E-03	7.891E-04	1.292E-05	9.628E-04	9.346E-04	1.074E-04
82	21	-4.263E-05	2.097E-04	1.323E-05	1.086E-03	-1.018E-04	-1.475E-05	1.262E-03	2.734E-04	-2.973E-04	5.995E-06
82	31	3.735E-05	-2.507E-04	1.720E-03	9.384E-04	-9.112E-04	-3.866E-04	-1.516E-04	2.274E-05	-2.945E-05	4.114E-05

Table F-1. (Continued)

17.54.24 CLOCK TIME
NEW FREQ AND MODES FROM SELECTED MODES FORCE COEFFICIENTS FORMED 30.382 SEC. CPTIME
5917 SEC. PPTIME

MPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
82	41	9.904E-05	7.299E-07	1.033E-05	9.101E-04	-1.146E-04	-8.469E-04	-5.819E-04	-2.597E-04	2.919E-06	-2.939E-05
82	51	1.890E-05	1.342E-03	-2.988E-04	6.113E-04	8.809E-05	7.371E-05	-2.199E-03	2.491E-03	4.006E-04	-5.729E-05
82	61	2.460E-04	-3.034E-05	-3.228E-04	4.454E-04	1.247E-04	-2.731E-04	1.748E-04	-5.235E-05	2.516E-05	2.479E-05
82	71	1.709E-04	1.143E-03	5.210E-04	9.824E-06	4.160E-05	4.939E-05	6.429E-05	2.737E-04	-1.019E-05	1.894E-04
82	81	1.142E-04	1.000E+00	1.644E-05	4.757E-06						
83	1	3.728E-05	1.649E-05	3.197E-05	1.117E-04	-2.914E-05	1.574E-05	-9.959E-06	8.176E-05	-2.846E-05	-7.239E-05
83	11	-8.204E-05	-8.184E-04	1.294E-04	4.977E-04	-1.114E-04	-1.245E-04	-2.370E-06	5.501E-05	6.352E-05	3.716E-05
83	21	2.982E-05	4.156E-05	4.220E-05	1.244E-04	8.140E-06	1.078E-06	-4.082E-05	1.048E-05	1.743E-05	5.857E-06
83	31	-3.427E-06	4.901E-06	-2.822E-05	-1.055E-05	-4.290E-06	-2.541E-07	1.162E-06	-1.214E-06	2.643E-06	5.486E-06
83	41	1.705E-06	-3.995E-06	-3.160E-[illegible]	-6.481E-06	-5.362E-06	2.108E-06	1.679E-06	7.315E-07	-2.598E-07	-9.414E-07
83	51	-9.544E-06	-1.618E-06	[illegible]053E-05	9.500E-08	9.791E-07	-1.432E-06	1.614E-06	5.429E-06	-5.316E-06	6.319E-06
83	61	-3.821E-04	1.995E-05	3.389E-06	-6.872E-06	-2.932E-04	3.318E-06	2.144E-05	-5.045E-05	-4.369E-05	9.156E-06
83	71	-1.461E-07	1.174E-06	-7.490E-06	9.334E-05	-1.092E-05	1.615E-06	-7.971E-06	6.740E-07	3.953E-06	2.004E-07
83	81	2.103E-07	1.644E-05	1.000E+00	-1.573E-06						
84	1	1.223E-05	3.049E-05	-4.537E-05	-6.096E-05	9.535E-06	-1.612E-05	-3.585E-05	1.306E-04	-1.629E-04	-6.280E-06
84	11	-4.103E-05	5.662E-04	-1.100E-04	-8.097E-04	-2.296E-05	-1.573E-05	9.541E-07	8.558E-06	6.644E-06	9.902E-05
84	21	9.462E-05	8.723E-06	5.760E-06	1.930E-05	-5.336E-06	1.463E-05	-1.699E-05	4.514E-05	-1.231E-05	-1.177E-05
84	31	5.407E-06	-5.993E-07	1.333E-06	-8.512E-06	3.532E-07	7.993E-08	2.505E-07	2.556E-06	-4.845E-06	-9.843E-06
84	41	-4.755E-06	7.358E-06	5.628E-06	1.180E-06	9.680E-06	-8.108E-07	-9.835E-07	2.765E-08	3.739E-07	-5.296E-07
84	51	1.531E-05	-3.160E-06	-1.381E-05	-2.398E-06	-2.329E-06	-5.740E-07	5.527E-06	-1.695E-05	8.847E-06	-8.071E-06
84	61	5.127E-04	-2.855E-05	-4.124E-06	7.169E-06	4.461E-04	-2.996E-06	4.607E-05	1.699E-05	6.646E-05	-1.222E-05
84	71	5.950E-08	-1.677E-06	1.059E-05	-1.105E-04	1.191E-05	-2.082E-06	1.151E-05	-9.790E-07	-5.535E-06	-1.169E-07
84	81	-2.535E-07	4.757E-06	-1.573E-06	1.000E+00						

END OF WRITE.

Table F-2. Check orthogonality of baseline modal modes with respect to perturbed system stiffness matrix

KPROD	(84 X 84)	/OUTPUT/ (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1	1.729E-11	-3.444E-11	1.646E-13	-1.261E-12	-4.000E-11	-4.773E-13	1.683E-11	-8.897E-13	-7.443E-12	-1.011E-11
1	11	1.667E-11	-1.938E-11	-1.993E-11	-7.414E-12	-9.729E-11	4.570E-11	3.090E-10	3.250E-11	3.048E-11	-3.373E-11
1	21	-6.51[illegible]12	1.444E-11	-7.335E-11	-5.436E-11	-1.884E-10	-1.183E-10	2.463E-11	2.496E-11	2.081E-11	-6.377E-11
1	31	-1.1[illegible]11	5.341E-12	3.435E-11	-1.200E-11	-8.235E-12	-5.124E-11	-4.246E-12	1.329E-11	-1.344E-11	-1.764E-11
1	41	-1.[illegible]	9.503E-13	-2.950E-11	1.650E-11	-1.560E-10	-6.147E-11	-8.154E-12	-1.436E-11	-1.472E-11	-5.186E-11
1	51	-1.239E-10	-6.945E-11	6.859E-12	2.618E-11	-3.363E-11	-2.365E-10	-1.044E-10	1.326E-10	-1.309E-10	-1.711E-10
1	61	6.194E-12	-1.293E-10	-6.798E-12	-6.187E-12	-2.617E-11	-1.894E-11	1.726E-11	-4.399E-12	-6.025E-10	-1.184E-10
1	71	-3.049E-11	-2.225E-10	-1.812E-10	6.479E-12	2.732E-11	5.651E-12	-4.087E-11	-1.801E-11	9.382E-11	-1.938E-11
1	81	-2.353E-11	9.398E-13	6.087E-13	-7.473E-11						
2	1	3.444E-11	-3.664E-12	6.453E-14	6.448E-13	2.047E-11	6.375E-13	2.377E-12	2.807E-12	8.572E-12	3.509E-12
2	11	-2.900E-12	4.457E-11	4.458E-11	1.723E-11	4.328E-11	-1.957E-11	-6.974E-10	-1.636E-11	-1.723E-11	8.204E-11
2	21	1.503E-11	-3.955E-11	1.493E-10	-5.739E-12	4.182E-10	2.648E-10	-5.295E-12	-4.199E-11	-5.182E-11	1.430E-10
2	31	2.836E-11	3.159E-12	-3.474E-11	3.599E-11	7.094E-12	1.325E-11	-2.644E-12	-2.844E-11	2.737E-11	4.269E-11
2	41	8.656E-12	2.104E-13	6.616E-11	-6.165E-12	3.362E-10	2.193E-11	-4.064E-11	2.711E-11	3.296E-11	2.281E-11
2	51	2.776E-10	3.172E-11	-2.751E-11	-3.611E-11	8.642E-11	5.433E-10	5.074E-11	-9.639E-11	3.207E-10	3.827E-10
2	61	-4.686E-12	2.936E-10	2.286E-11	2.523E-11	5.727E-11	3.419E-12	-1.976E-11	5.138E-12	1.453E-09	2.422E-10
2	71	6.201E-11	5.104E-10	4.221E-10	-1.548E-11	-6.208E-11	-2.395E-11	1.163E-10	4.035E-11	-2.159E-10	4.417E-11
2	81	5.847E-11	8.625E-13	-2.238E-12	1.742E-10						
3	1	1.646E-13	6.453E-14	-5.998E-12	-7.781E-12	6.422E-13	-5.021E-12	7.030E-12	2.382E-10	1.150E-10	1.690E-10

Table F-2. (Continued)

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.24 CLOCK TIME
30.739 SEC. CPTIME
5965 SEC. PPTIME

KPROD	(84 X 84) (1)	/OUTPUT/ (2)	CONTINUED (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
3	11	-1.257E-10	4.553E-09	4.531E-09	1.766E-09	-1.644E-10	-3.939E-11	-7.088E-08	-3.597E-10	-6.532E-10	8.467E-09
3	21	1.481E-09	-4.236E-09	1.477E-08	-3.696E-09	4.229E-08	2.685E-08	4.136E-10	-4.008E-09	-5.276E-09	1.450E-08
3	31	2.980E-09	6.512E-10	-2.109E-09	4.095E-09	1.715E-10	-6.489E-10	-4.323E-10	-2.858E-09	2.706E-09	4.367E-09
3	41	9.445E-10	6.049E-11	6.722E-09	4.522E-10	3.364E-08	-1.396E-09	-6.173E-09	2.333E-09	3.343E-09	-1.942E-10
3	51	2.817E-08	6.359E-10	-3.106E-09	-3.107E-09	9.018E-09	5.535E-08	3.626E-10	-5.312E-09	3.316E-08	3.884E-08
3	61	-2.624E-10	2.988E-08	2.497E-09	2.990E-09	5.770E-09	-6.462E-10	-1.562E-09	4.018E-10	1.504E-07	2.424E-08
3	71	6.011E-09	5.193E-08	4.309E-08	-1.613E-09	-6.367E-09	-2.736E-09	1.240E-08	4.200E-09	-2.206E-08	4.474E-09
3	81	6.067E-09	1.580E-10	-1.920E-10	1.794E-08						
4	1	-1.261E-12	6.448E-13	-7.781E-12	9.221E-12	1.484E-12	-5.896E-12	8.756E-12	2.915E-10	1.426E-10	2.094E-10
4	11	-1.559E-10	5.642E-09	5.615E-09	2.188E-09	-2.024E-10	-4.945E-11	-8.783E-08	-4.461E-10	-8.098E-10	1.049E-08
4	21	1.835E-09	-5.249E-09	1.831E-08	-4.579E-09	5.240E-08	3.327E-08	5.116E-10	-4.966E-09	-6.540E-09	1.797E-08
4	31	3.693E-09	8.066E-10	-2.613E-09	5.074E-09	2.125E-10	-8.033E-10	-5.356E-10	-3.542E-09	3.353E-09	5.411E-09
4	41	1.170E-09	7.567E-11	8.331E-09	5.603E-10	4.169E-08	-1.729E-09	-7.650E-09	2.891E-09	4.142E-09	-2.398E-10
4	51	3.491E-08	7.890E-10	-3.849E-09	-3.851E-09	1.118E-08	6.860E-08	4.509E-10	-6.584E-09	4.109E-09	4.813E-08
4	61	-3.252E-10	3.703E-08	3.094E-09	3.706E-09	7.150E-09	-8.004E-10	-1.936E-09	4.980E-10	1.864E-07	3.004E-08
4	71	7.449E-09	6.435E-08	5.340E-08	-1.999E-09	-7.890E-09	-3.390E-09	1.536E-08	5.205E-09	-2.733E-08	5.544E-09
4	81	7.518E-09	1.958E-10	-2.379E-10	2.223E-08						
5	1	-4.000E-11	2.047E-11	6.422E-13	1.484E-12	4.848E-11	1.431E-12	-5.004E-12	-7.529E-11	-3.541E-11	-5.392E-11
5	11	3.788E-11	-1.440E-09	-1.432E-09	-5.584E-10	9.360E-11	-6.390E-12	2.241E-08	1.012E-10	1.956E-10	-2.678E-09
5	21	-4.682E-10	1.341E-09	-4.666E-09	1.199E-09	-1.337E-08	-8.485E-09	-1.420E 10	1.264E-09	1.667E-09	-4.586E-09
5	31	-9.422E-10	-2.091E-10	6.547E-10	-1.299E-09	-4.989E-11	2.262E-10	1.388E-10	9.035E-10	-8.552E-10	-1.382E-09
5	41	-3.000E-10	-1.886E-11	2.124E-09	-1.521E-10	-1.063E-08	4.724E-10	1.968E-09	-7.346E-10	-1.057E-09	8.400E-11
5	51	-8.904E-09	-1.750E-10	9.850E-10	9.768E-10	-2.853E-09	-1.750E-08	-7.001E-11	1.634E-09	-1.049E-08	-1.228E-08
5	61	8.079E-11	-9.447E-09	-7.909E-10	-9.488E-10	-1.823E-09	2.135E-10	4.894E-10	-1.259E-10	-4.758E-08	-7.658E-09
5	71	-1.898E-09	-1.642E-08	-1.362E-08	5.103E-10	2.013E-09	8.674E-10	-3.925E-09	-1.328E-09	6.974E-09	-1.414E-09
5	81	-1.519E-09	-5.064E-11	6.065E-11	-5.672E-09						
6	1	-4.772E-13	6.375E-13	-5.021E-12	-5.896E-12	1.431E-12	3.975E-10	-6.034E-11	-2.096E-09	-1.005E-09	-1.478E-09
6	11	1.093E-09	-3.981E-08	-3.959E-08	-1.544E-08	1.439E-09	3.441E-10	6.196E-07	3.144E-09	5.709E-09	-7.401E-08
6	21	-1.295E-08	3.703E-08	-1.291E-07	3.231E-08	-3.697E-07	-2.346E-07	-3.637E-09	3.504E-08	4.603E-08	-1.268E-07
6	31	-2.602E-08	-5.697E-09	1.845E-08	-3.583E-08	-1.499E-09	5.674E-09	3.780E-09	2.500E-08	-2.367E-08	-3.821E-08
6	41	-8.274E-09	-5.004E-10	-5.874E-08	-3.952E-09	-2.940E-07	1.220E-08	5.396E-08	-2.039E-08	-2.922E-08	1.697E-09
6	51	-2.462E-07	-5.560E-09	2.715E-08	2.716E-08	-7.884E-08	-4.838E-07	-3.164E-09	4.644E-08	-2.898E-07	-3.395E-07
6	61	2.293E-09	-2.612E-07	-2.183E-08	-2.614E-08	-5.043E-08	5.650E-09	1.365E-08	-3.511E-09	-1.315E-06	-2.119E-07
6	71	-5.256E-08	-4.540E-07	-3.767E-07	1.410E-08	5.566E-08	2.391E-08	-1.084E-07	-3.671E-08	1.928E-07	-3.911E-08
6	81	-5.303E-08	-1.381E-09	1.680E-09	-1.586E-07						
7	1	1.683E-11	2.377E-11	7.030E-12	8.756E-12	-5.004E-12	-6.034E-11	1.171E+02	1.126E-02	-9.323E-02	1.047E+00
7	11	1.323E+00	-8.338E-02	1.694E-01	-2.418E-02	5.764E-01	9.044E-01	4.834E-02	3.188E-01	5.053E-01	3.976E-02
7	21	7.170E-04	-5.121E-02	-1.319E-01	-7.197E-01	-9.355E-02	2.798E-01	4.613E-01	1.520E-01	-7.287E-01	-3.230E-01
7	31	1.181E-01	3.813E-01	-1.440E+00	-1.215E+00	1.289E+00	-2.288E+00	-4.692E-01	1.223E-01	-1.485E-01	-8.525E-02
7	41	1.315E-01	2.965E-01	1.543E-01	-1.530E+00	7.507E-01	2.131E+00	1.861E+00	1.135E+00	-8.801E-03	2.312E-01
7	51	4.760E-01	-3.040E+00	3.687E-02	-1.554E-01	3.684E-02	4.349E-01	5.428E-01	1.590E+00	4.467E-01	2.669E-01
7	61	7.152E-02	1.253E-01	2.171E-01	-5.089E-01	6.484E-02	-1.797E-01	4.535E-02	-3.178E-03	-1.936E+00	-1.113E+00
7	71	3.207E-01	2.553E-01	2.889E-01	9.462E-02	1.872E-01	1.538E-02	1.782E-01	-3.707E-01	1.570E-01	6.417E-02
7	81	3.475E-02	3.126E-02	-1.882E-01	-3.613E-01						
8	1	-8.897E-13	2.807E-12	2.382E-10	2.915E-10	-7.529E-11	-2.096E-09	1.126E-02	2.083E+02	-2.076E-02	9.541E-02
8	11	2.131E-01	2.740E+00	-5.650E+00	5.840E-01	6.781E-01	-1.571E-01	-2.563E+00	-1.006E-01	9.253E-02	-2.148E-01
8	21	-4.465E-02	1.414E-01	-5.087E-01	5.747E-01	4.092E+00	-1.180E+01	4.590E+00	-3.222E-01	1.873E+01	1.008E+01

17.54.25 CLOCK TIME
31.111 SEC. CPTIME
6013 SEC. PPTIME

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

KPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
8	31	-4.956E+00	1.088E+00	-3.604E+00	6.365E+00	2.995E-01	-1.600E-01	-7.648E-02	-1.549E+00	3.261E+00	6.187E+00
8	41	3.409E+00	-5.393E+00	-5.067E+00	-7.338E-01	-1.164E+01	1.171E+00	2.044E+00	-2.779E-01	-1.531E-01	3.905E-01
8	51	-1.664E+01	7.968E-02	9.056E-01	3.628E-01	-7.376E-02	-1.463E+01	-4.998E-01	-1.443E-01	-7.170E+00	-1.050E+01
8	61	1.190E-02	-4.383E+00	-3.126E-01	-2.409E-01	-8.834E-01	-6.660E-02	5.196E-01	-1.474E-01	-1.153E+01	8.443E-01
8	71	1.399E+00	2.225E-01	-3.096E-01	-5.804E-01	4.510E-01	1.159E+00	-2.060E+00	-6.504E-01	4.279E-01	1.106E-01
8	81	-8.295E-01	-7.316E-03	-2.753E-01	-1.031E+00						
9	1	-7.443E-12	8.572E-12	1.150E-10	1.426E-10	-3.541E-11	-1.005E-09	-9.323E-02	-2.076E-02	5.255E+02	4.990E+00
9	11	1.241E+01	-6.704E-01	6.581E-01	-1.767E-01	3.861E+01	-1.332E+01	2.842E-01	-6.720E+00	-4.247E+00	-4.730E-01
9	21	1.909E-02	3.143E+00	3.366E+00	2.129E+01	1.102E+00	8.839E-01	-6.278E-02	-1.599E-01	-3.089E+00	-3.635E-01
9	31	-5.166E-01	-3.021E+00	-9.320E+00	-3.010E+00	4.850E+00	9.127E+00	-3.701E-01	1.918E-01	1.433E-01	-1.571E-01
9	41	3.242E-01	4.552E-01	4.421E-01	-5.609E+00	5.151E+00	2.948E+01	1.747E+01	4.337E+00	3.275E-02	2.110E+01
9	51	1.325E+00	1.742E+01	1.267E+00	-1.983E+00	-1.470E+00	-5.127E-01	2.998E+01	-1.816E+01	-1.360E+00	5.730E-01
9	61	-7.265E-01	-7.419E-02	-1.754E+00	-3.733E+00	3.751E-01	7.253E+00	-2.526E+00	7.059E-01	-1.842E+01	5.167E-01
9	71	2.962E+00	2.016E+00	9.668E-01	3.815E-01	6.464E-01	1.932E+00	-2.918E+00	-1.487E+00	3.967E-01	4.015E-01
9	81	-5.273E-01	-2.629E-01	-7.272E-01	-1.799E+00						
10	1	-1.011E-11	3.509E-12	1.690E-10	2.094E-10	-5.392E-11	-1.478E-09	1.047E+00	9.541E-02	4.990E+00	5.533E+02
10	11	-1.674E+02	-1.157E+00	3.263E-01	-1.934E-01	4.786E+01	-2.194E+01	8.012E-02	-1.385E+01	-1.285E+01	-1.222E+00
10	21	-1.194E-01	3.529E-01	2.978E+00	2.635E+01	1.490E+00	7.451E-01	-1.448E+01	-3.445E+00	1.967E+00	-9.741E-02
10	31	-4.720E-01	-1.448E+00	-1.154E+01	-4.337E+00	4.102E+00	1.787E+01	2.399E+00	-3.615E-01	5.447E-01	-7.496E-01
10	41	-1.472E+00	-3.849E-01	3.872E-02	-1.170E+01	3.317E+00	2.278E+01	1.235E+01	2.406E+00	2.241E-02	1.289E+01
10	51	5.850E-01	1.575E+01	3.072E+00	-5.946E+00	-1.962E+00	-1.387E+00	3.621E+01	-4.303E+01	-5.661E+00	9.845E-01
10	61	-2.153E+00	-3.616E-01	-6.199E-01	-2.497E+00	4.194E-01	6.214E+00	-3.486E+00	8.234E-01	-2.125E+01	3.534E+00
10	71	1.065E+00	-3.039E+00	-3.604E+00	2.614E-01	2.734E-01	2.114E+00	-4.571E+00	-1.541E-02	1.420E+00	-2.012E-01
10	81	-1.155E+00	-6.544E-01	1.388E-01	-1.565E+00						
11	1	1.667E-11	-2.900E-12	-1.257E-10	-1.559E-10	3.788E-11	1.099E-09	1.323E+00	2.131E-01	1.241E+01	-1.674E+02
11	11	4.908E+02	9.022E-01	-2.419E-01	1.477E-01	-3.799E+01	1.808E+01	-5.797E-02	1.099E+01	1.018E+01	9.543E-01
11	21	-5.773E-01	-9.072E-02	-2.258E+00	-2.068E+01	-1.209E+00	-5.804E-01	1.217E+01	2.599E+00	-1.844E+00	6.895E-02
11	31	3.830E-01	8.833E-01	9.977E+00	3.960E+00	-3.238E+00	-1.398E+01	-2.120E+00	3.186E-01	-1.364E-01	6.112E-01
11	41	1.218E+00	3.108E-01	-3.326E-02	6.676E+00	-2.166E+00	-1.541E+01	-8.211E+00	-1.359E+00	-2.219E-02	-1.020E+01
11	51	-3.447E-01	-1.214E+01	-2.556E+00	4.666E+00	1.497E+00	1.076E+00	-2.792E+01	3.320E+01	4.393E+00	-6.831E-01
11	61	1.743E+00	2.591E-01	-6.520E-02	1.737E+00	-3.174E-01	-4.590E+00	2.539E+00	-6.514E-01	1.599E+01	-2.860E+00
11	71	-6.122E-01	2.676E+00	3.020E+00	-1.889E-01	-1.865E-01	-1.457E+00	3.566E+00	1.335E-01	-1.090E+00	2.092E-01
11	81	8.122E-01	5.341E-01	-1.467E-01	1.136E+00						
12	1	-1.938E-11	4.457E-11	4.553E-09	5.642E-09	-1.440E-09	-3.981E-08	-8.308E-02	2.740E+00	-6.704E-01	-1.157E+00
12	11	9.022E-01	3.981E+02	8.332E+00	-2.510E-01	-3.551E-01	1.826E-01	-4.995E+00	8.271E-02	2.121E-02	-2.683E-01
12	21	-7.781E-02	-1.233E-01	7.789E-01	-4.803E-01	1.070E-01	6.988E+00	-2.119E+00	-6.101E-02	-9.875E+00	-4.987E+00
12	31	2.405E+00	-8.636E-01	2.503E+00	-4.771E+00	-9.314E-02	-2.930E-01	-1.679E-01	-1.545E+00	2.361E-01	-3.498E+00
12	41	7.929E-01	1.173E+00	8.746E-01	2.248E-01	2.024E+00	-3.719E-01	1.954E-03	-2.294E-01	-2.039E-01	-1.880E-01
12	51	2.813E+00	-2.632E-01	8.730E-02	1.164E-01	-8.483E-01	-1.326E+00	-2.341E-01	-4.113E-01	5.866E+00	4.052E+00
12	61	2.049E-02	1.805E+00	1.027E-01	-6.752E-02	1.863E-01	1.239E-01	-2.506E-01	6.165E-02	1.370E+01	-1.627E+00
12	71	-4.140E-01	-1.641E+00	2.342E+00	-1.186E-01	-9.979E-01	-5.028E-01	2.568E+00	-2.151E-01	-1.533E+00	-1.437E-01
12	81	-1.483E-01	3.196E-03	-4.975E-01	7.384E-01						
13	1	-1.993E-11	4.458E-11	4.531E-09	5.615E-09	-1.432E-09	-3.959E-08	1.694E-01	-5.650E+00	6.581E-01	3.263E-01
13	11	-2.419E-01	8.332E+00	5.431E+02	-4.162E-01	1.377E-01	-5.344E-02	9.031E-01	8.417E-03	7.622E-02	-1.716E+00
13	21	-5.679E-01	1.456E-02	-8.899E-02	1.735E-01	-1.942E-01	-4.345E-01	-1.583E-01	1.923E+00	1.096E+00	4.456E-01
13	31	-2.240E-01	1.050E-01	-3.150E-01	5.740E-01	2.051E-02	2.244E-02	3.239E-02	3.591E-01	-1.991E-01	3.547E-01
13	41	-1.069E-02	3.326E-02	7.396E-02	-2.754E-02	1.872E-01	8.735E-02	-5.676E-02	7.232E-02	4.936E-02	6.390E-02

Table F-2. (Continued)

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.25 CLOCK TIME
31.481 SEC. CPTIME
6069 SEC. PPTIME

KPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
13	51	2.984E-01	8.627E-02	9.073E-02	-3.823E-02	1.813E-01	1.066E+00	1.591E-01	3.645E-02	-7.940E-01	-2.687E-01
13	61	-7.291E-03	-1.471E-01	-9.702E-03	1.008E-02	2.766E-01	1.281E-03	6.085E-01	-2.657E-01	-2.110E+00	2.675E-01
13	71	1.654E-02	2.980E-01	-4.412E-01	5.514E-02	1.617E-01	4.591E-02	-3.979E-01	7.019E-02	2.790E-01	2.174E-02
13	81	4.643E-02	-8.309E-04	1.08[illegible]E-01	-9.977E-02						
14	1	-7.414E-12	1.723E-11	1.766E-09	2.188E-09	-5.584E-10	-1.544E-08	-2.418E-02	5.840E-01	-1.767E-01	-1.934E-01
14	11	1.477E-01	-2.510E-01	-4.162E-01	8.483E+02	-8.045E-02	3.109E-02	-4.421E-01	2.119E-02	1.544E-02	-3.162E-01
14	21	-4.763E-02	6.360E-03	3.312E-02	-6.681E-02	-5.174E-01	1.573E+00	-6.288E-01	1.499E-01	-2.651E+00	-1.535E+00
14	31	7.032E-01	-2.142E-01	6.391E-01	-1.228E+00	-2.570E-02	-1.473E-03	-2.953E-02	-1.744E-01	-1.798E-01	-1.104E+00
14	41	-3.360E-01	4.971E-0[illegible]	3.348E-01	6.209E-02	5.877E-01	-7.358E-02	-3.543E-02	-2.214E-02	4.001E-02	-3.685E-02
14	51	1.310E+00	-5.933E-0[illegible]	-3.041E-02	-1.788E-02	-4.507E-02	4.566E-01	-4.502E-02	-1.518E-01	1.519E+00	1.202E+00
14	61	1.189E-03	5.805E-01	4.175E-02	2.004E-02	1.737E-01	1.255E-02	-6.907E-02	1.380E-02	2.401E+00	-7.908E-01
14	71	2.994E-03	-1.796E-01	3.284E-01	-5.009E-02	-5.155E-01	-6.302E-02	6.402E-01	-8.[illegible]0E-02	-7.393E-02	-2.426E-02
14	81	-2.121E-02	7.222E-04	-6.869E-02	-8.120E-02						
15	1	-9.729E-11	4.328E-11	-1.844E-10	-2.024E-10	9.360E-11	1.439E-09	5.764E-01	6.781E-01	3.861E+01	4.786E+01
15	11	-3.799E+01	-3.551E-01	1.377E-01	-8.045E-02	1.070E+03	-3.854E+01	9.262E-01	5.065E+00	7.601E+00	1.148E+01
15	21	-1.075E+01	9.375E+00	1.086E+01	4.304E+01	1.904E+00	1.273E+00	-2.040E+01	4.422E+00	5.000E+00	1.109E-02
15	31	-4.392E-01	2.091E+00	-1.463E+01	-7.688E+00	1.145E+01	5.944E+00	1.440E+00	-1.422E-01	2.739E-01	-4.222E-01
15	41	-9.504E-01	-5.235E-02	-8.002E-02	-8.716E+00	1.356E+00	1.030E+01	6.038E+00	1.761E+00	3.953E-04	3.525E+00
15	51	-2.445E-02	-5.169E-01	4.869E+00	-4.026E+00	-8.996E-01	-7.556E-01	2.076E+01	-2.390E+01	-3.437E+00	5.874E-01
15	61	-1.609E+00	7.260E-02	1.042E+00	-2.986E+00	1.475E-01	3.295E+00	1.876E+00	-1.165E+00	-7.833E+00	7.099E-01
15	71	-9.742E-01	-6.756E+00	-3.259E+00	7.274E-02	3.745E-02	1.424E-02	-1.754E+00	-1.010E+00	3.185E-01	-9.400E-01
15	81	-7.613E-01	-5.457E-01	-2.328E-01	-6.669E-01						
16	1	4.570E-11	-1.957E-11	-3.939E-11	-4.945E-11	-6.390E-12	3.441E-10	9.044E-01	-1.571E-01	-1.332E+01	-2.194E+01
16	11	1.608E+01	1.626E-01	-5.344E-02	3.109E-02	-3.854E+01	1.046E+03	-5.543E-01	-8.13[illegible]E+00	-9.975E+00	-6.046E+00
16	21	3.112E+00	-5.819E+00	-5.080E+00	-1.491E+01	-5.423E-01	-4.417E-01	3.593E-01	-4.6[illegible]8E+00	2.467E-01	-1.684E-01
16	31	3.423E-01	1.580E+00	1.301E+00	-5.197E-01	-1.351E+00	-5.171E+00	-3.588E-0[illegible]	-6.[illegible]1E-03	-7.176E-02	-2.437E-02
16	41	-1.211E-01	2.978E-02	-[illegible] 222E-02	-3.218E+00	-8.956E-01	-6.953E+00	-4.216E+00	-8.[illegible]4E-01	-1.812E-02	-7.923E+00
16	51	-5.650E-02	-5.892E+00	-1.559E+00	2.599E-01	3.016E-01	3.519E-01	-6.464E+00	2.200E+00	-1.054E-01	1.964E-01
16	61	2.783E-01	8.784E-02	7.400E-02	3.074E-02	-6.658E-02	-1.460E+00	-1.362E+00	5.393E-01	3.342E+00	-6.962E-01
16	71	-1.880E+00	-3.734E+00	-9.157E-01	-5.014E-02	-5.591E-02	-1.145E+00	6.843E-01	3.958E-01	-3.204E-01	-5.420E-01
16	81	7.036E-03	1.323E-01	-1.426E-01	2.252E-01						
17	1	3.090E-10	-6.974E-10	-7.088E-08	-8.783E-08	2.241E-08	6.196E-07	4.834E-02	-2.563E+00	2.842E-01	8.012E-02
17	11	-5.797E-02	-4.995E+00	9.031E-01	-4.421E-01	9.262E-01	-5.543E-01	1.783E+03	-3.782E+00	-8.686E+00	1.468E+02
17	21	2.860E+01	3.399E-01	-1.636E+00	-2.998E+00	-1.870E+00	-5.517E+00	4.103E+00	-1.747E+01	2.102E-02	-4.116E-01
17	31	3.402E-01	1.630E-01	2.146E-01	5.496E-01	-1.999E-01	-3.705E-01	3.471E-02	1.170E+00	-1.121E+00	-8.535E-01
17	41	-7.300E-01	1.227E+00	8.354E-01	2.846E-01	6.861E-01	-5.625E-01	-2.968E-01	-9.311E-02	-2.450E-02	-3.813E-01
17	51	5.902E-01	-4.702E-01	-8.563E-01	1.915E-01	-6.691E-01	-3.683E+00	-1.056E+00	4.589E-01	3.182E+00	1.947E+00
17	61	5.892E-02	1.470E+00	1.127E-01	1.843E-01	-3.928E+00	-1.327E-01	-3.846E+00	1.746E+00	4.138E+00	-5.740E-01
17	71	-2.056E-01	2.035E-01	6.506E-01	1.146E-02	-1.589E-01	-3.060E-01	8.345E-01	4.709E-02	-3.144E-01	1.428E-02
17	81	1.213E-01	1.544E-02	-4.774E-02	2.786E-01						
18	1	[illegible]3.250E-11	-1.636E-11	-3.597E-10	-4.461E-10	1.012E-10	3.144E-09	3.188E-01	-1.006E-01	-6.720E+00	-1.385E+01
18	11	1.099E+01	8.271E-02	8.417E-03	2.119E-02	5.065E+00	-8.137E+00	-3.762E+00	1.854E+03	-2.861E+01	-4.292E+01
18	21	1.602E+01	-2.117E+01	-2.172E+01	-7.313E+01	-2.601E+00	-2.248E-01	2.940E+01	-1.382E+00	-7.851E+00	-1.119E-01
18	31	5.876E-01	-4.076E+00	2.252E+01	1.216E+01	-1.229E+01	-3.486E+00	-1.871E+00	-2.769E-02	-9.323E-02	5.066E-01
18	41	1.219E+00	-1.526E-01	4.348E-02	7.022E+00	-4.882E-01	-5.213E+00	-3.548E+00	-1.559E+00	1.144E-02	-1.628E-01
18	51	3.487E-01	9.163E+00	-4.456E+00	4.628E+00	7.709E-01	1.368E+00	-1.780E+01	2.080E+01	2.919E+00	-5.464E-01
18	61	1.845E+00	-3.610E-01	-2.636E+00	3.299E+00	-9.778E-02	-2.142E+00	-7.949E-01	3.998E-01	1.346E+00	5.000E-02

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.25 CLOCK TIME
31.844 SEC. CPTIME
6109 SEC. PPTIME

KPROD	(84 X 84)	/OUTPUT/	CONTINUED							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
18	71	1.749E+00	8.785E+00	3.862E+00	5.682E-02	2.094E-01	6.809E-01	6.863E-01	1.713E+00	-3.060E-02	1.348E+00
18	81	7.080E-01	5.694E-01	1.800E-01	1.259E-01						
19	1	3.048E-11	-1.723E-11	-6.532E-10	-8.098E-10	1.956E-10	5.709E-09	5.053E-01	9.253E-02	-4.247E+00	-1.285E+01
19	11	1.018E+01	2.121E-02	7.622E-02	1.544E-02	7.601E+00	-9.975E+00	-8.686E+00	-2.861E+01	1.913E+03	-9.382E+01
19	21	1.333E+01	-2.572E+01	-2.578E 01	-8.714E+01	-2.650E+00	1.157E+00	3.477E+01	-4.997E-01	-1.044E+01	-3.070E-01
19	31	7.611E-01	-5.109E+00	2.735E+01	1.440E+01	-1.375E+01	-3.485E+00	-2.230E+00	-4.067E-01	1.389E-01	6.693E-01
19	41	1.599E+00	-4.328E-01	-8.376E-02	8.186E+00	-4.199E-01	-5.195E+00	-3.672E+00	-1.747E+00	1.424E-02	5.813E-01
19	51	5.641E-01	1.189E+01	-4.978E+00	5.421E+00	1.022E+00	2.701E+00	-2.006E+01	2.394E+01	2.810E+00	-8.714E-01
19	61	2.166E+00	-5.791E-01	-3.255E+00	3.859E+00	-1.439E 01	-2.304E+00	-4.570E-01	1.607E-01	2.110E-01	2.330E-01
19	71	2.247E+00	1.056E+01	4.542E+00	1.016E-01	2.776E-01	9.700E-01	5.564E-01	2.030E+00	3.691E-02	1.634E+00
19	81	7.933E-01	6.580E-01	2.070E-01	3.898E-02						
20	1	-3.373E-11	8.204E-11	8.467E-09	1.049E-08	-2.678E-09	-7.401E-08	3.976E-02	-2.148E-01	-4.730E-01	-1.222E+00
20	11	9.543E-01	-2.683E-01	-1.716E+00	-3.162E-01	1.148E+01	-6.046E+00	1.468E+02	-4.292E+01	-9.382E+01	3.529E+03
20	21	-1.953E+00	-2.011E+00	-1.931E+01	-3.651E+01	-1.600E+01	-4.439E+01	1.753E+01	6.315E+00	3.876E+01	6.990E+00
20	31	-2.912E+00	3.547E+00	1.364E+00	1.619E+01	-3.481E+00	-6.587E+00	2.624E-01	1.293E+01	-1.036E+01	-2.066E+00
20	41	-4.618E+00	8.118E+00	4.445E+00	4.165E+00	-3.003E+00	-9.429E+00	-4.929E+00	-1.475E+00	4.568E-02	-6.045E+00
20	51	-5.789E+00	-5.381E+00	1.025E+00	3.435E+00	-4.571E+00	-3.856E+01	-1.616E+01	9.864E+00	2.140E+01	7.464E+00
20	61	7.635E-01	8.064E+00	5.611E-01	1.868E+00	2.880E+00	-2.348E+00	5.939E-02	-9.570E-02	2.667E+01	-3.027E+00
20	71	-1.688E+00	3.752E+00	3.614E+00	-8.564E-01	-3.747E-01	-2.347E+00	5.086E+00	9.979E-01	-1.442E+00	3.018E-01
20	81	1.301E+00	2.166E-01	2.041E-01	2.085E+00						
21	1	-6.514E-12	1.503E-11	1.481E-09	1.835E-09	-4.682E-10	-1.295E-08	7.170E-04	-4.465E-02	1.909E-02	-1.194E-01
21	11	-5.773E-01	-7.784E-02	-5.679E-01	-4.763E-02	-1.075E+01	3.112E+00	2.660E+01	1.602E+01	1.333E+01	-1.953E+00
21	21	3.979E+03	3.323E+01	8.563E+00	3.619E+01	-2.293E+00	-9.583E+00	-5.631E-01	5.701E-01	7.258E+00	9.488E-01
21	31	-5.726E-01	5.692E-01	-1.165E+01	-2.206E+00	6.124E+00	7.301E-01	-4.385E-01	3.498E+00	-2.678E+00	-8.447E-01
21	41	-1.242E+00	2.980E+00	1.930E+00	-5.877E+00	3.862E+00	1.511E+01	9.937E+00	3.404E+00	-6.772E-02	7.005E+00
21	51	6.922E-01	5.298E-01	1.503E+00	-1.166E+00	-2.295E+00	-1.081E+01	1.257E+01	-8.209E+00	5.281E+00	3.014E+00
21	61	-3.323E-01	2.071E+00	1.156E-01	-2.200E+00	1.000E+00	2.418E+00	-1.257E+00	3.335E-01	-4.164E+00	-2.149E+00
21	71	9.375E-01	8.000E-01	1.026E+00	5.786E-02	4.030E-01	1.108E-01	2.456E-01	-1.010E+00	8.395E-02	1.324E-01
21	81	6.003E-02	8.708E-02	-4.848E-01	-7.057E-01						
22	1	1.444E-11	-3.955E-11	-4.236E-09	-5.249E-09	1.341E-09	3.703E-08	-5.121E-02	1.414E-01	3.143E+00	3.529E-01
22	11	-9.072E-02	-1.233E-01	1.456E-02	6.360E-03	9.375E+00	-5.819E+00	3.399E-01	-2.117E+01	-2.572E+01	-2.011E+00
22	21	3.323E+01	2.146E+03	-1.755E+01	-5.726E+01	-2.287E+00	-5.465E-01	2.268E+01	3.933E+00	-4.860E+00	1.319E-01
22	31	3.996E-01	-3.419E+00	1.768E+01	1.015E+01	-8.408E+00	-1.466E+00	-1.377E+00	2.702E-01	-2.766E-01	3.358E-01
22	41	1.358E-01	3.612E-02	1.282E-01	5.127E+00	-1.578E-01	-1.903E+00	-1.528E+00	-9.760E-01	484E-02	1.496E+00
22	51	1.491E-01	9.027E+00	-1.863E+00	3.557E+00	4.007E-01	1.182E-01	-1.161E+01	1.412E+01	2.525E+00	-2.141E-01
22	61	1.061E+00	-1.114E-01	-2.211E+00	2.439E+00	-3.974E-02	-1.129E+00	1.153E+00	-4.852E-01	-2.255E-01	2.084E-01
22	71	1.604E+00	7.234E+00	3.079E+00	5.191E-02	1.988E-01	7.191E-01	2.961E-01	1.342E+00	4.451E-02	1.121E+00
22	81	5.223E-01	2.595E-01	1.374E-01	-6.922E-03						
23	1	-7.335E-11	1.493E-10	1.477E-08	1.831E-08	-4.666E-09	-1.291E-07	-1.319E-01	-5.087E-01	3.366E+00	2.978E+00
23	11	-2.258E+00	7.789E-01	-8.899E-02	3.312E-02	1.086E+01	-5.080E+00	-1.636E+00	-2.172E+0	-2.578E+01	-1.931E+01
23	21	8.563E+00	-1.755E+01	2.278E+03	-5.865E+01	-1.999E+00	1.752E+00	2.087E+01	1.801E+0	-3.777E+00	2.750E-01
23	31	1.536E-01	-3.557E+00	1.839E+01	1.058E+01	-8.410E+00	-1.306E+00	-1.400E+00	1.171E-01	1.332E-01	4.649E-01
23	41	9.742E-01	-1.840E-01	-3.661E-02	5.300E+00	-3.767E-01	-1.817E+00	-1.517E+00	-9.988E-01	3.062E-02	1.715E+00
23	51	1.549E-02	9.600E+00	-1.379E+00	3.638E+00	5.685E-01	9.177E-01	-1.166E+01	1.427E+01	2.028E+00	-5.139E-01
23	61	8.895E-01	-2.990E-01	-2.296E+00	2.517E+00	3.379E-01	-1.117E+00	1.960E+00	-7.966E-01	-9.469E-01	4.003E-01
23	71	1.684E+00	7.444E+00	3.020E+00	3.680E-02	2.274E-01	8.119E-01	1.292E-01	1.408E+00	1.145E-01	1.157E+00
23	81	5.137E-01	2.018E-01	1.716E-01	-4.183E-02						

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17 54.25 CLOCK TIME
32.198 SEC. CPTIME
6109 SEC. PPTIME

KPROD	(84 X 84)	/OUTPUT/ CONTINUED									
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
24	1	-5.436E-11	-5.739E-12	-3.696E-09	-4.579E-09	1.199E-09	3.231E-08	-7.197E-01	5.747E-01	2.129E+01	2.635E+01
24	11	-2.068E+01	-4.803E-01	1.735E-01	-6.681E-02	4.304E+01	-1.491E+01	-2.998E+00	-7.313E+01	-8.714E+01	-3.651E+01
24	21	3.619E+01	-5.726E+01	-5.865E+01	2.360E+03	-6.680E+00	4.494E+00	6.883E+01	5.287E+01	-1.276E+01	7.852E-01
24	31	5.526E-01	-1.192E+01	6.077E+01	3.509E+01	-2.294E+01	-1.943E+00	-4.360E+00	4.726E-01	-5.052E-01	1.279E+00
24	41	3.003E+00	-4.416E-01	8.124E-03	1.672E+01	-7.293E-01	-2.731E+00	-3.104E+00	-2.925E+00	8.430E-02	7.969E+00
24	51	9.023E-02	3.393E+01	-2.526E-01	1.181E+01	1.582E+00	1.893E+00	-3.433E+01	4.299E+01	6.978E+00	-1.216E+00
24	61	1.794E+00	-7.016E-01	-7.639E+00	7.935E+00	6.912E-02	-2.789E+00	9.514E+00	-3.430E+00	-4.538E+00	1.488E+00
24	71	5.821E+00	2.451E+01	9.964E+00	2.309E+01	7.154E-01	2.921E+00	1.451E+01	4.522E+00	4.016E-01	3.835E+00
24	81	1.587E+00	2.787E-01	5.169E-01	-2.809E+01						
25	1	-1.884E-10	4.182E-10	4.229E-08	5.240E-08	-1.337E-08	-3.697E-07	-9.355E-02	4.092E+00	1.102E+00	1.490E+00
25	11	-1.209E+00	1.070E-01	-1.942E-01	-5.174E-01	1.904E+00	-5.423E-01	-1.870E+00	-2.601E+00	-2.650E+00	-1.600E+01
25	21	-2.293E+00	-2.287E+00	-1.999E+00	-6.660E+00	3.019E+03	4.009E+00	-2.257E+00	3.256E+01	3.440E+00	7.222E-01
25	31	-4.915E-01	-3.538E-01	2.517E+00	1.876E+00	-2.781E-01	-2.716E-01	-2.076E-01	-1.942E-01	2.485E-01	4.043E-01
25	41	4.210E-01	-5.048E-01	-4.741E-01	6.558E-01	-1.042E+00	-1.273E-01	-4.465E-02	-1.116E-01	1.804E-02	2.724E-01
25	51	-1.388E+00	1.215E+00	-6.840E-01	3.948E-01	2.186E-01	7.095E-02	-1.415E+00	1.814E+00	-5.346E-01	-9.301E-01
25	61	3.761E-02	-4.449E-01	-3.124E-01	3.067E-01	1.396E+00	-1.806E-01	-1.278E+00	3.182E-01	-7.908E-01	1.903E-01
25	71	2.662E-01	8.477E-01	2.744E-01	-2.823E-01	6.779E-02	1.874E-01	-1.177E-01	1.704E-01	5.241E-02	1.408E-01
25	81	2.021E-02	5.007E-03	2.459E-02	-5.828E-02						
26	1	-1.183E-10	2.648E-10	2.685E-08	3.327E-08	-8.485E-09	-2.346E-07	2.798E-01	-1.180E+01	8.839E-01	7.451E-01
26	11	-5.804E-01	6.968E+00	-4.045E-01	1.573E+00	1.273E+00	-4.417E-01	-5.517E+00	-2.248E-01	1.157E+00	-4.439E+01
26	21	-9.583E+00	-5.465E-01	1.752E+00	4.494E+00	4.009E+00	3.364E+03	-5.837E+01	3.607E+02	4.147E+01	4.293E+00
26	31	-4.120E+00	1.105E+00	8.005E-01	3.783E+00	-9.316E-01	-3.999E+00	-5.018E-01	-6.031E-02	3.010E-01	1.414E+00
26	41	1.456E+00	-2.199E+00	-2.460E+00	6.632E-01	-5.943E+00	-2.261E+00	-1.053E+00	7.492E-02	2.871E-01	-1.735E+00
26	51	-4.739E+00	-1.874E+00	-9.689E-01	1.259E-01	1.908E+00	5.560E+00	-3.247E+00	3.904E+00	-3.994E+00	-2.596E+00
26	61	9.068E-02	-6.450E-02	1.676E-01	6.828E-01	-6.691E+00	-8.769E-01	7.584E-01	-5.291E-01	-1.771E+00	1.351E+00
26	71	-4.964E-01	-7.243E-01	-1.380E+00	3.639E-01	-1.392E-02	4.995E-02	-7.477E-01	4.873E-01	3.766E-01	-1.058E-01
26	81	-6.615E-02	1.807E-02	3.336E-01	1.132E-01						
27	1	2.463E-11	-5.295E-12	4.136E-10	5.116E-10	-1.420E-10	-3.637E-09	4.613E-01	4.590E+00	-6.278E-02	-1.148E+01
27	11	1.217E+01	-2.149E+00	-1.583E-01	-6.288E-01	-2.040E+01	3.593E-01	1.103E+00	2.940E+01	3.477E+01	1.753E+01
27	21	-5.631E-01	2.268E+01	2.087E+01	6.883E+01	-2.257E+00	-5.837E+01	3.453E+03	-4.719E+02	-4.840E+01	-6.010E+00
27	31	5.102E+00	3.205E+00	-2.437E+01	-1.855E+01	1.158E+01	5.877E+00	2.284E+00	-1.305E-01	-1.716E-01	-2.157E+00
27	41	-2.981E+00	2.971E+00	3.260E+00	-7.711E+00	8.680E+00	4.623E+00	2.784E+00	1.257E+00	-3.475E-01	-5.740E-01
27	51	7.195E+00	-1.069E+01	-3.569E+00	-5.318E+00	-2.872E+00	-5.005E+00	1.866E+01	-2.220E+01	1.384E+00	4.243E+00
27	61	1.295E+00	6.361E-01	2.735E+00	-3.940E+00	2.701E+00	2.384E+00	-6.204E+00	8.095E-01	1.448E+00	-1.994E+00
27	71	-1.660E+00	9.602E+00	-2.601E+00	-1.659E-01	-1.193E-01	-1.162E+00	4.352E-01	-2.334E+00	-3.929E-01	-1.369E+00
27	81	-5.194E-01	2.780E-01	-5.592E-01	-1.594E-01						
28	1	3.496E-11	-4.199E-11	-4.008E-09	-4.966E-09	1.264E-09	3.504E-08	1.520E-01	-3.222E-01	-1.599E-01	-3.445E+00
28	11	1.599E+00	-6.101E-02	1.923E+00	1.499E-01	4.822E+00	-4.528E+00	-1.747E+01	-1.382E+00	-4.997E-01	6.315E+00
28	21	5.701E-01	3.933E+00	1.801E+01	5.287E+01	3.256E+01	3.507E+02	-4.719E+02	6.369E+03	3.453E+02	3.728E+01
28	31	-3.450E+01	1.110E+01	3.497E-01	2.848E+01	-1.919E+00	-3.368E+01	-3.721E+00	-1.038E+00	3.118E+00	1.073E+01
28	41	1.195E+01	-1.853E+01	-2.182E+01	3.803E+00	-5.570E+01	-1.971E+01	-7.429E+00	5.051E-02	1.886E+00	-1.658E+01
28	51	5.026E+01	-2.149E+01	-3.743E+00	1.069E+00	1.279E+01	1.992E+01	-2.686E+01	2.794E+01	-2.644E+01	-2.593E+01
28	61	1.721E+00	-3.728E+00	1.992E+00	3.772E+00	-3.319E+00	-7.466E+00	4.051E+00	-1.278E+00	4.254E+00	7.630E+00
28	71	-4.538E+00	-1.043E+01	-8.286E+00	-1.041E+00	-1.119E+00	-3.330E-01	-2.568E+00	2.605E+00	8.046E-01	-1.414E+00
28	81	-1.013E+00	4.205E-01	1.671E+00	1.521E+00						
29	1	2.081E-11	-5.182E-11	-5.276E-09	-6.540E-09	1.667E-09	4.603E-08	-7.287E-01	1.873E+01	-3.089E+00	1.967E+00
29	11	-1.844E+00	9.837E-01	[illegible]	-1.651E+00	5.002E+00	2.467E-01	2.102E+02	-7.851E+00	-1.044E+01	3.876E+01

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.26 CLOCK TIME
32.569 SEC. CPTIME
6161 SEC. PPTIME

KPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
29	21	7.258E+00	-4.860E+00	-3.777E+00	-1.276E+01	3.440E+00	4.147E+01	-4.640E+01	3.453E+02	3.722E+03	5.066E+00
29	31	-4.318E+00	2.070E-01	5.223E+00	6.633E+00	-4.801E+00	-4.619E+00	-9.103E-01	-4.133E-01	6.592E-01	1.440E+00
29	41	1.940E+00	-2.642E+00	-3.124E+00	2.208E+00	-8.357E+00	-3.235E+00	-1.238E+00	-5.088E-01	1.555E-01	-1.659E+00
29	51	-8.372E+00	2.871E-01	6.483E-01	1.564E+00	1.365E+00	-1.433E+00	-7.564E+00	7.988E+00	-1.826E+00	4.691E+00
29	61	-2.916E-01	-1.534E+00	-5.646E-01	1.071E+00	1.117E+01	1.404E+00	-1.001E+00	1.306E+00	3.022E+00	5.650E-01
29	71	9.091E-02	8.430E-01	6.463E-01	-1.256E+00	-1.636E-01	2.225E-01	2.557E-01	6.126E-01	-2.277E-01	1.890E-01
29	81	-3.691E-02	-6.227E-02	9.062E-02	2.375E-01						
30	1	-6.527E-11	1.430E-10	1.450E-08	1.797E-08	-4.586E-09	-1.268E-07	-3.230E-01	1.008E+01	-3.635E-01	-9.741E-02
30	11	6.895E-02	-4.987E+00	4.456E-01	-1.535E+00	1.109E-02	-1.584E-01	-4.116E-01	-1.119E-01	-3.070E-01	6.990E+00
30	21	9.488E-01	1.319E-01	2.750E-01	7.852E-01	7.222E-01	4.293E+00	-6.010E+00	3.728E+01	5.066E+00	4.257E+03
30	31	-5.828E-01	1.762E-01	2.244E-01	4.523E-01	7.829E-01	-4.075E-01	-5.990E-02	-3.223E-01	3.352E-01	2.055E-01
30	41	3.391E-01	-5.529E-01	-6.318E-01	3.722E-02	-1.596E+00	-2.560E-01	7.130E-02	-6.874E-02	-1.465E-02	-2.468E-01
30	51	-1.960E+00	-4.313E-01	-1.001E+00	-3.199E-02	-2.381E-03	-1.551E+00	-4.392E-01	2.570E-01	-3.436E-01	-1.348E+00
30	61	7.592E-02	-7.954E-01	-2.562E-02	-8.968E-02	7.178E+00	-1.717E-01	-3.277E+00	1.271E+00	1.160E+00	-1.269E-01
30	71	5.702E-03	-3.578E-01	1.907E-01	-8.924E-01	-1.113E-02	1.847E-02	1.856E-01	-6.318E-02	-1.605E-01	-3.311E-02
30	81	-7.122E-02	4.394E-03	-7.076E-02	2.406E-02						
31	1	-1.114E-11	2.836E-11	2.980E-09	3.693E-09	-9.422E-10	-2.602E-08	1.181E-01	-4.956E+00	-5.166E-01	-4.720E-01
31	11	3.830E-01	2.406E+00	-2.240E-01	7.032E-01	-4.392E-01	3.423E-01	3.402E-01	5.876E-01	7.611E-01	-2.912E+00
31	21	-5.726E-01	2.996E-01	1.536E-01	5.526E-01	-4.915E-01	-4.120E+00	5.102E+00	-3.450E+01	-4.318E+00	-5.828E-01
31	31	4.521E+03	-1.596E-01	-2.185E+00	-1.400E+00	-4.959E+00	-5.384E-02	2.359E-02	1.671E-01	-1.791E-01	-1.753E-01
31	41	-2.562E-01	3.800E-01	4.301E-01	-2.889E-01	1.076E+00	6.570E-02	-9.121E-02	2.474E-02	-4.284E-03	-5.154E-02
31	51	1.246E+00	3.840E-02	5.295E-01	-3.346E-02	-7.337E-02	6.300E-01	3.637E-01	-4.446E-01	3.110E-01	8.331E-01
31	61	-7.635E-02	4.198E-01	3.291E-02	-1.560E-02	-3.339E+00	1.165E-01	2.554E+00	1.157E+00	-4.451E-01	-2.193E-03
31	71	-4.058E-02	5.465E-02	-1.058E-01	3.790E-01	1.326E-02	-4.235E-02	-4.547E-02	4.869E-03	6.347E-02	-3.167E-03
31	81	3.966E-02	-1.185E-03	2.196E-02	-9.469E-03						
32	1	5.341E-12	3.159E-12	6.512E-10	8.066E-10	-2.091E-10	-5.637E-09	3.813E-01	1.088E+00	-3.021E+00	-1.448E+00
32	11	8.833E-01	-8.636E-01	1.050E-01	-2.142E-01	2.091E+00	1.580E+00	1.630E-01	-4.076E+00	-5.109E+00	3.547E+00
32	21	5.692E-01	-3.410E+00	-3.557E+00	-1.192E+01	-3.538E-01	1.105E+00	3.205E+00	1.110E+01	2.070E-01	1.762E-01
32	31	-1.596E-01	4.665E+03	-1.565E+00	-2.686E-01	-1.707E+01	-1.941E+00	-4.826E-01	3.659E-02	-5.194E-02	9.028E-02
32	41	2.305E-01	-8.300E-02	-9.228E-02	8.057E-01	-4.390E-01	-1.287E+00	-8.225E-01	3.286E-01	2.993E-03	-5.202E-01
32	51	-3.095E-01	1.441E+00	-4.035E-01	9.060E-01	1.613E-01	-9.495E-02	-3.653E+00	3.883E+00	5.526E-01	-3.257E-01
32	61	-8.271E-01	-1.803E-01	-5.018E-01	5.799E-01	1.772E+00	-4.897E-01	-1.307E+00	9.940E-01	7.071E-01	-1.543E-02
32	71	2.626E-01	1.483E+00	7.144E-01	-1.171E-01	2.185E-02	1.007E-01	1.923E-01	2.400E-01	-3.791E-02	2.327E-01
32	81	1.207E-01	1.946E-02	3.124E-02	5.106E-02						
33	1	3.435E-11	-3.474E-11	-2.109E-09	-2.613E-09	6.547E-10	1.845E-08	-1.440E+00	-3.604E+00	9.320E+00	-1.154E+01
33	11	9.977E+00	2.503E+00	-3.150E-01	6.391E-01	-1.463E+01	1.301E+00	2.146E+00	2.252E+01	2.735E+01	1.364E+00
33	21	-1.165E+01	1.768E+01	1.839E+01	6.077E+01	2.517E+00	8.005E-01	-2.437E+01	3.497E-01	5.223E+00	2.244E-01
33	31	2.185E+00	-1.565E+00	4.670E+03	-5.437E+01	-2.525E+02	-2.221E+01	1.562E+02	1.870E-01	-2.375E-01	-2.767E-01
33	41	-1.002E+00	-3.372E-02	-2.301E-01	-1.472E+01	-5.187E-01	-4.831E+00	-2.946E+00	3.116E-02	-1.251E-02	-1.143E+01
33	51	-3.027E-03	-1.159E+01	-6.065E+00	3.086E+00	-2.068E-01	4.102E-01	3.706E+00	-1.143E+01	-2.469E-00	9.042E-01
33	61	1.980E+00	5.409E-01	1.213E+00	-1.752E+00	-4.970E+00	-2.224E-01	-5.467E+00	1.799E+00	1.425E-00	-4.616E-01
33	71	-2.801E+00	-8.631E+00	-3.358E+00	2.661E-01	-1.778E-01	-1.349E+00	5.816E-02	-4.918E-01	-1.553E-01	-1.283E+00
33	81	-4.455E-01	2.537E-01	-1.700E-01	1.156E-01						
34	1	-1.200E-11	3.599E-11	4.095E-09	5.074E-09	-1.299E-09	-3.583E-08	-1.215E+00	6.365E+00	-3.010E+00	-4.337E+00
34	11	3.960E+00	-4.771E+00	5.740E-01	-1.228E+00	-7.688E+00	-5.197E-01	5.496E-01	1.216E+01	1.440E+01	1.619E+01
34	21	-2.206E+00	1.015E+01	1.058E+01	3.509E+01	1.876E+00	3.783E+00	-1.855E+01	2.848E+01	6.633E+00	4.523E-01
34	31	-1.400E+00	-2.686E-01	-5.437E+01	4.778E+03	-1.164E+01	-1.042E+01	-6.250E-01	-1.878E-01	1.257E-01	-2.225E-01

17.54.26 CLOCK TIME
32.941 SEC. CPTIME
6209 SEC. PPTIME

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

KPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
34	41	-3.799E-01	-3.288E-01	-8.353E-01	-7.551E+00	-1.330E+00	-1.962E+00	-9.740E-01	8.693E-02	-3.122E-02	-5.538E+00
34	51	-1.470E+00	-6.634E+00	-2.141E+00	-1.772E+00	-2.200E-01	-1.435E+00	2.967E+00	-7.083E+00	-1.395E+00	-7.576E-01
34	61	1.486E+00	-7.012E-01	7.149E-01	-1.292E+00	9.642E+00	-2.076E-02	-2.292E+00	6.9[illegible]E-01	2.377E+00	-4.510E-01
34	71	-1.501E+00	-5.211E+00	-1.622E+00	-7.359E-01	-1.506E-01	-7.204E-01	2.579E-01	-4.[illegible]4E-01	-2.852E-01	-7.567E-01
34	81	-3.323E-01	1.466E-01	-1.830E-01	9.939E-02						
35	1	-8.235E-12	7.094E-12	1.715E-10	2.125E-10	-4.989E-11	-1.499E-09	1.289E+00	2.995E-01	4.850E+00	4.102E+00
35	11	-3.238E+00	-9.314E-02	2.051E-02	-2.570E-02	1.145E+01	-1.351E+00	-1.999E-01	-1.229E+01	-1.375E+01	-3.481E+00
35	21	6.124E+00	-8.408E+00	-8.410E+00	-2.294E+01	-2.781E-01	-9.316E-01	1.158E+01	-1.919E+00	-4.801E+00	7.829E-01
35	31	-4.959E+00	-1.707E+01	-2.525E+02	-1.164E+02	4.213E+03	-6.185E+01	-8.677E+00	8.682E-01	-1.096E+00	1.316E-01
35	41	7.493E-02	-2.540E-01	-3.642E-01	-2.453E+01	-1.310E+00	-1.285E+01	-9.233E+00	-2.502E+00	-3.250E-02	-[illegible]125E+01
35	51	1.786E-01	4.065E+00	6.613E-01	4.733E+00	9.378E-01	1.051E+00	-2.2[illegible]7E+01	1.027E+01	1.223E+00	6.964E-01
35	61	-1.064E+00	-1.051E-01	-4.662E+00	2.411E+00	1.962E-01	-2.681E+00	2.7[illegible]6E+00	-1.075E+00	-4.925E-01	-1.578E-01
35	71	-1.332E+00	1.433E+00	1.492E+00	5.153E-02	2.735E-01	-5.018E-01	4.331E-01	2.990E+00	-1.666E-01	4.416E-01
35	81	2.972E-01	-1.554E-01	-1.028E-01	-1.115E-01						
36	1	-5.124E-11	1.325E-11	-6.489E-10	-8.033E-10	2.262E-10	5.674E-09	-2.288E+00	-1.600E-01	9.127E+00	1.787E+01
36	11	-1.398E+01	-2.930E-02	2.244E-02	-1.473E-03	5.944E+00	-5.171E+00	-3.705E-01	-3.486E+00	-3.485E+00	-6.587E+00
36	21	7.301E-01	-1.466E+00	-1.306E+00	-1.943E+00	-2.716E-01	-3.999E+00	5.877E+00	-3.368E+01	-4.619E+00	-4.075E-01
36	31	-5.384E-02	-1.941E+00	-2.221E+01	-1.042E+01	-6.185E+01	5.343E+03	-5.204E-01	3.387E-02	-6.C51E-02	-1.798E-01
36	41	-2.368E-01	1.607E-01	2.522E-01	-3.174E+00	1.034E+00	1.948E+00	8.045E-01	4.365E-02	-2.167E-02	2.920E-01
36	51	9.350E-01	3.526E+00	1.265E+01	9.875E-01	1.116E-01	4.069E-01	1.704E+00	-3.094E+00	3.582E-02	6.589E-01
36	61	4.871E-01	8.398E-02	-6.402E-01	-9.513E-02	2.708E-02	7.726E-01	1.412E+01	-4.811E+00	-2.597E+00	3.113E-01
36	71	1.317E-01	1.887E-01	-1.548E-02	6.006E-02	8.267E-02	2.185E-01	-4.546E-01	2.465E-01	1.122E-01	7.416E-02
36	81	-6.746E-02	-5.536E-01	-2.765E-02	-2.141E-01						
37	1	-4.246E-12	-2.644E-12	-4.323E-10	-5.356E-10	1.388E-10	3.780E-09	-4.692E-01	-7.648E-02	-3.701E-01	2.399E+00
37	11	-2.120E+00	-1.679E-01	3.239E-02	-2.953E-02	1.440E+00	-3.588E-01	3.471E-02	-1.871E+00	-2.230E+00	2.624E-01
37	21	-4.385E-01	-1.377E+00	-1.400E+00	-4.360E+00	-2.076E-01	-5.018E-01	2.284E+00	-3.721E+00	-9.103E-01	-5.990E-02
37	31	2.359E-02	-4.826E-01	-1.562E+00	-6.250E-01	-8.677E+00	-5.204E-01	5.537E+03	2.048E-02	-3.237E-02	-1.847E-02
37	41	1.866E-02	2.772E-02	4.393E-02	1.694E-02	9.305E-02	-7.887E-02	-1.214E-01	-9.716E-02	-2.459E-03	2.687E-02
37	51	1.362E-01	1.032E+00	2.405E+00	4.726E-01	7.806E-02	9.491E-02	-8.507E-01	7.695E-01	2.122E-01	3.159E-02
37	61	-1.194E-01	-3.783E-02	-2.311E-01	1.732E-01	6.825E-01	-2.839E-02	2.251E+00	-3.775E-01	-1.197E-01	5.015E-02
37	71	1.134E-01	5.323E-01	2.230E-01	-4.173E-03	1.448E-02	6.745E-02	-4.310E-03	1.374E-01	8.390E-03	8.752E-02
37	81	3.151E-02	6.907E-03	1.205E-02	-8.744E-03						
38	1	1.329E-11	-2.844E-11	-2.858E-09	-3.542E-09	9.035E-10	2.500E-08	1.223E-01	-1.549E+00	1.918E-01	-3.615E-01
38	11	3.186E-01	-1.545E+00	3.591E-01	-1.744E-01	-1.422E-01	-6.121E-03	1.170E+00	-2.769E-02	-4.067E-01	1.293E+01
38	21	3.498E+00	2.702E-01	1.171E-01	4.726E-01	-1.942E-01	-6.031E-02	-1.305E-01	-1.038E+00	-4.133E-01	-3.223E-01
38	31	1.671E-01	3.659E-02	1.870E-01	-1.878E-01	8.682E-01	3.387E-02	2.048E-02	5.597E+03	-1.300E-01	-2.782E-01
38	41	-1.425E-01	2.161E-01	1.628E-01	-5.500E-03	2.749E-01	-1.668E-03	7.077E-03	7.829E-03	-9.278E-03	-1.048E-02
38	51	3.125E-01	-6.252E-02	2.292E+00	1.743E-01	-3.547E-02	-1.918E-01	2.221E-02	-1.019E-01	4.223E-01	-9.030E-02
38	61	3.638E-02	-3.645E-01	-2.587E-02	-1.738E-01	7.796E+00	5.310E-02	5.932E+00	-2.325E+00	1.160E+00	-1.452E-01
38	71	-7.279E-02	-1.386E-01	1.081E-01	5.320E-02	-7.654E-02	-7.094E-02	1.980E-01	-1.654E-02	-8.446E-02	-2.000E-02
38	81	5.585E-03	7.205E-03	-1.912E-02	6.091E-02						
39	1	-1.344E-11	2.737E-11	2.706E-09	3.353E-09	-8.552E-10	-2.367E-08	-1.485E-01	3.261E+00	1.433E-01	5.447E-01
39	11	-4.364E-01	2.361E-01	-1.991E-01	-1.798E-01	2.739E-01	-7.176E-02	-1.121E+00	-9.323E-02	1.989E-01	-1.036E+01
39	21	-2.678E+00	-2.766E-01	-1.332E-01	-5.052E-01	2.485E-01	3.010E-01	-1.716E-01	3.118E+00	6.592E-01	3.352E-01
39	31	-1.891E-01	-5.194E-02	-2.375E-01	1.257E-01	-1.096E+00	-6.051E-02	-3.237E-02	-1.300E-01	5.730E+03	2.467E-01
39	41	1.680E-01	-2.587E-01	-2.219E-01	-1.159E-02	-4.304E-01	4.058E-02	4.998E-02	-1.679E-02	1.215E-03	2.890E-02
39	51	-5.510E-01	8.399E-02	-2.276E+00	-1.617E-01	1.145E-03	-1.656E-01	-2.296E-02	6.939E-02	-3.866E-01	-1.769E-01

FORM 240

17.54.26 CLOCK TIME
33.343 SEC. CPTIME
6257 SEC. PPTIME

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

KPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
39	61	-4.507E-02	1.147E-01	-5.158E-03	1.169E-01	-4.670E+00	-5.924E-02	-6.013E+00	2.287E+00	-7.787E-01	8.288E-02
39	71	8.156E-02	8.888E-02	-2.392E-02	-3.298E-01	8.256E-02	7.107E-02	-1.339E-01	1.157E-03	3.718E-02	1.754E-02
39	81	-1.759E-02	-2.535E-02	-2.327E-03	-5.277E-02						
40	1	-1.764E-11	4.269E-11	4.367E-09	5.411E-09	-1.382E-09	-3.821E-08	-8.525E-02	6.187E+00	-1.571E-01	-7.496E-01
40	11	6.112E-01	-3.498E+00	3.547E-01	-1.104E+00	-4.222E-01	-2.437E-02	-8.535E-01	5.066E-01	6.693E-01	-2.066E+00
40	21	-8.447E-01	3.358E-01	4.649E-01	1.279E+00	4.043E-01	1.414E+00	-2.157E+00	1.073E+01	1.440E+00	2.055E-01
40	31	-1.753E-01	9.028E-02	-2.767E-01	-2.225E-01	1.316E-01	-1.798E-01	-1.847E-02	-2.782E-01	2.467E-01	6.050E+03
40	41	1.632E-01	-2.877E-01	-3.167E-01	-7.925E-02	-7.418E-01	-1.166E-01	6.463E-02	-3.316E-02	-1.994E-02	-1.787E-01
40	51	-1.017E+00	-4.943E-01	-3.118E+00	-2.942E-01	-1.159E-01	-9.886E-01	4.223E-02	-1.498E-01	-2.730E-01	-9.784E-01
40	61	2.013E-01	-7.426E-01	-3.876E-03	-1.399E-01	7.113E+00	-1.369E-01	-6.555E+00	2.352E+00	8.988E-01	-1.810E-01
40	71	-7.789E-03	-3.325E-01	1.315E-01	-1.003E+00	5.506E-02	-7.653E-03	1.391E-01	-7.936E-02	-1.236E-01	-3.699E-02
40	81	-5.223E-02	4.556E-02	-6.195E-02	1.398E-02						
41	1	-1.117E-12	8.656E-12	9.445E-10	1.170E-09	-3.000E-10	-8.274E-09	1.315E-01	3.409E+00	3.242E-01	-1.472E+00
41	11	1.218E+00	-7.929E-01	-1.069E-02	-3.360E-01	-9.504E-01	-1.211E-01	-7.300E-01	1.219E+00	1.599E+00	-4.618E+00
41	21	-1.242E+00	8.358E-01	9.742E-01	3.003E+00	4.210E-01	1.456E+00	-2.981E+00	1.195E+01	1.940E+00	3.391E-01
41	31	-2.562E-01	2.305E-01	-1.002E+00	-3.799E-01	7.493E-02	-2.368E-01	1.866E-02	-1.425E-01	1.680E-01	1.632E-01
41	41	6.193E+03	-2.562E-01	-2.664E-01	-2.414E-01	-5.936E-01	-9.404E-02	3.925E-02	2.870E-02	-3.536E-04	-2.639E-01
41	51	-7.478E-01	-8.440E-01	4.164E+00	-4.999E-01	-7.670E-02	-4.325E-01	4.039E-01	-4.803E-01	-4.467E-01	-3.921E-01
41	61	5.083E-01	-1.008E-01	1.273E-01	-5.687E-02	-1.229E+00	-9.030E-02	-7.284E+00	2.516E+00	-4.342E-02	-2.411E-02
41	71	-6.391E-02	-4.367E-01	-1.356E-01	-3.674E-01	3.400E-02	-2.036E-02	-2.428E-02	-8.727E-02	-2.303E-02	-6.317E-02
41	81	-4.543E-02	1.233E-01	-2.512E-02	-1.321E-02						
42	1	9.503E-13	2.104E-13	6.049E-11	7.567E-11	-1.886E-11	-5.004E-10	2.965E-01	-5.393E+00	4.552E-01	-3.849E-01
42	11	3.108E-01	1.173E+00	3.326E-02	4.971E-01	-5.235E-02	2.978E-02	1.227E+00	-1.526E-01	-4.328E-01	8.118E+00
42	21	2.980E+00	3.612E-02	-1.840E-01	-4.416E-01	-5.048E-01	-2.199E+00	2.971E+00	-1.853E+01	-2.642E+00	-5.529E-01
42	31	3.800E-01	-8.300E-02	-3.372E-02	-3.288E-01	-2.540E-01	1.607E-01	2.772E-02	2.161E-01	-2.587E-01	-2.877E-01
42	41	-2.562E-01	6.417E+03	4.119E-01	-1.296E-02	9.245E-01	1.265E-01	-2.024E-02	3.173E-02	-1.504E-03	1.260E-01
42	51	1.124E+00	2.955E-01	3.707E+00	3.085E-01	3.174E-03	4.922E-01	1.057E-01	-9.586E-02	5.695E-01	5.896E-01
42	61	3.386E-02	1.033E-01	-3.747E-02	-9.558E-02	2.915E+00	1.738E-01	1.080E+01	-4.619E+00	3.326E-01	-4.987E-02
42	71	-4.386E-02	1.154E-01	2.047E-02	5.630E-01	-7.124E-02	-5.511E-02	7.652E-02	2.511E-02	1.061E-02	8.979E-03
42	81	4.067E-02	4.083E-02	1.740E-02	3.171E-02						
43	1	-2.950E-11	6.616E-11	6.722E-09	8.331E-09	-2.124E-09	-5.874E-08	1.543E-01	-5.067E+00	4.421E-01	3.872E-02
43	11	-3.328E-02	8.746E-01	7.396E-02	3.348E-01	-8.002E-02	-8.222E-02	8.354E-01	4.348E-02	-8.376E-02	4.445E+00
43	21	1.930E+00	1.282E-01	-3.661E-02	8.124E-03	-4.741E-01	-2.460E+00	3.260E+00	-2.182E+01	-3.124E+00	-6.318E-01
43	31	4.307E-01	-9.228E-02	-2.301E-01	-5.353E-01	-3.642E-01	2.522E-01	4.393E-02	1.628E-01	-2.219E-01	-3.167E-01
43	41	-2.664E-01	4.119E-01	7.067E+03	-9.464E-02	9.835E-01	2.209E-01	3.353E-02	3.860E-02	-6.030E-03	1.686E-01
43	51	1.169E+00	3.323E-01	4.259E+00	3.098E-01	-1.232E-04	5.157E-01	3.072E-01	-3.480E-01	5.300E-01	5.237E-01
43	61	1.382E-01	-1.195E-02	-4.142E-02	-1.487E-01	4.290E+00	2.155E-01	1.180E+01	-5.196E+00	3.530E-01	-6.229E-02
43	71	-4.683E-02	4.059E-02	1.140E-02	4.126E-01	-5.740E-02	-5.294E-02	7.474E-02	8.785E-03	2.234E-03	-3.673E-04
43	81	2.971E-02	4.630E-02	9.599E-03	2.616E-02						
44	1	1.650E-11	-6.165E-12	4.522E-10	5.603E-10	-1.52 E 10	-3.952E-09	-1.530E+00	-7.338E-01	-5.609E+00	-1.170E+01
44	11	6.676E+00	2.248E-01	-2.754E-02	6.209E-02	-8.716E+00	-3.218E+00	2.846E-01	7.042E+00	8.186E+00	4.165E+00
44	21	-5.877E+00	5.127E+00	5.300E+00	1.672E+01	6.558E-01	8.632E-01	-7.711E+00	3.808E+00	2.208E+00	3.722E-02
44	31	-2.889E-01	8.057E-01	-1.472E+01	-7.551E+00	-2.453E+01	-3.174E+00	1.694E-02	-5.500E-03	-1.159E-02	-7.925E-02
44	41	-2.414E-01	-1.296E-02	-9.464E-02	7.366E+03	-3.714E-01	-1.854E+00	-9.863E-01	1.223E-02	-3.633E-03	-3.077E+00
44	51	-3.356E-01	-5.171E+00	-1.679E+01	-2.297E+00	-5.312E-01	-7.804E-01	1.619E+00	-3.586E+00	-7.401E-01	2.193E-01
44	61	1.398E+01	-4.145E-03	5.956E-01	-1.907E-01	-8.560E-02	-2.883E-01	-6.493E+00	1.116E+00	1.628E+00	-2.601E-01
44	71	-8.516E-01	-2.630E+00	-9.546E-01	9.902E-03	-9.981E-02	-4.730E-01	2.174E-01	-2.652E-01	-1.123E-01	-4.166E-01

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.26 CLOCK TIME
33.706 SEC. CPTIME
6309 SEC. PPTIME

KPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
44	81	-1.235E-01	5.315E+00	-5.066E-02	1.303E-01						
45	1	-1.560E-10	3.362E-10	3.364E-08	4.169E-08	-1.063E-08	-2.940E-07	7.507E-01	-1.164E+01	5.151E+00	3.317E+00
45	11	-2.166E+00	2.024E+00	1.872E-01	5.877E-01	1.356E+00	-8.956E-01	6.861E-01	-4.882E-01	-4.199E-01	-3.003E+00
45	21	3.862E+00	-1.578E-01	-3.767E-01	-7.293E-01	-1.042E+00	-5.943E+00	8.680E+00	-5.570E+01	-8.357E+00	-1.596E+00
45	31	1.076E+00	-4.390E-01	-5.187E-01	-1.330E+00	-1.310E+00	1.034E+00	9.305E-02	2.749E-01	-4.304E-01	-7.418E-01
45	41	-5.936E-01	9.245E-01	9.835E-01	-3.714E-01	7.906E+03	1.388E+00	5.553E-01	1.806E-01	-1.567E-02	1.067E+00
45	51	2.943E+00	1.743E+00	1.271E+01	9.184E-01	6.561E-02	1.610E+00	1.450E+00	-1.307E+00	1.132E+00	1.325E+00
45	61	-6.468E-01	1.573E-02	-1.936E-01	-4.082E-01	8.845E+00	7.430E-01	2.961E+01	-1.428E+01	-7.659E-02	-6.791E-02
45	71	2.318E-02	2.755E-01	5.784E-02	7.645E-01	-7.174E-02	-2.087E-02	2.366E-02	1.964E-02	4.554E-02	3.532E-02
45	81	5.094E-02	-6.066E-01	1.195E-02	-1.468E-02						
46	1	-6.147E-11	2.193E-11	-1.396E-09	-1.729E-09	4.724E-10	1.220E-08	2.131E+00	1.171E+00	2.948E+01	2.278E+01
46	11	-1.541E+01	-3.719E-01	8.735E-02	-7.358E-02	1.030E+01	-6.953E+00	-5.625E-01	-5.213E+00	-5.195E+00	-9.429E+00
46	21	1.511E+01	-1.903E+00	-1.817E+00	-2.731E+00	-1.273E-01	-2.261E+00	4.623E+00	-1.971E+01	-3.235E+00	-2.560E-01
46	31	6.570E-02	-1.287E+00	-4.831E+00	-1.962E+00	-1.285E+01	1.948E+00	-7.887E-02	-1.933E-03	4.058E-02	-1.166E-01
46	41	-9.404E-02	1.265E-01	2.209E-01	-1.854E+00	1.388E+00	8.101E+03	3.254E+00	6.426E-01	-1.307E-02	4.043E+00
46	51	1.011E+00	6.375E+00	3.281E+01	2.451E+00	5.857E-01	1.083E+00	4.550E+00	-3.822E+00	1.015E-01	6.407E-01
46	61	-3.297E+00	1.360E-01	-6.676E-01	-6.043E-01	6.938E-01	1.774E+00	3.168E+01	-1.711E+01	-4.740E+00	4.129E-01
46	71	6.458E-01	7.878E-01	1.524E-01	9.785E-02	1.469E-01	5.276E-01	-8.040E-01	2.721E-03	2.004E-01	1.734E-01
46	81	-1.100E-01	-3.871E+00	-7.759E-02	-4.213E-01						
47	1	-8.154E-12	-4.064E-11	-6.173E-09	-7.650E-09	1.968E-09	5.396E-08	1.861E+00	2.044E+00	1.747E+01	1.235E+01
47	11	-8.211E+00	1.954E-03	-5.676E-02	-3.543E-02	6.038E+00	-4.216E+00	-2.968E-01	-3.548E+00	-3.672E+00	-4.929E+00
47	21	9.937E+00	-1.528E+00	-1.517E+00	-3.104E+00	-4.465E-02	-1.053E+00	2.784E+00	-7.429E+00	-1.238E+00	7.139E-02
47	31	-9.121E-02	-8.225E-01	-2.946E+00	-9.740E-01	-9.233E+00	8.045E-01	-1.214E-01	7.077E-03	4.998E-02	8.463E-02
47	41	3.925E-02	-2.024E-02	3.353E-02	-9.863E-01	5.553E-01	3.254E+00	8.323E+03	3.489E-01	-4.229E-03	2.261E+00
47	51	3.088E-01	3.773E+00	1.839E+01	1.499E+00	3.706E-01	4.984E-01	2.120E+00	-1.592E+00	4.156E-02	3.946E-01
47	61	-2.023E+00	2.704E-01	-4.198E-01	-2.181E-01	-3.100E+00	9.410E-01	1.570E+01	-9.317E+00	-3.019E+00	2.530E-01
47	71	4.287E-01	6.602E-01	1.539E-01	-1.148E-01	1.371E-01	3.327E-01	-4.924E-01	3.327E-02	1.294E-01	1.319E-01
47	81	-5.061E-02	-2.448E+00	-4.347E-02	-2.596E-01						
48	1	-1.436E-11	2.711E-11	2.333E-09	2.891E-09	-7.346E-10	-2.039E-08	1.135E+00	-2.779E-01	4.337E+00	2.406E+00
48	11	-1.359E+00	-2.294E-01	7.232E-02	-2.214E-02	1.761E+00	-8.614E-01	-9.311E-02	-1.559E+00	-1.747E+00	-1.475E+00
48	21	3.404E+00	-9.760E-01	-9.988E-01	-2.925E+00	-1.116E-01	7.492E-02	1.257E+00	5.051E-02	-5.088E-01	-6.874E-02
48	31	2.474E-02	-3.286E-01	3.116E-02	8.693E-02	-2.502E+00	4.365E-02	-9.716E-02	7.829E-03	-1.679E-02	-3.316E-02
48	41	2.870E-02	3.173E-02	3.860E-02	1.223E-02	1.806E-01	6.426E-01	3.489E-01	8.686E+03	-3.889E-04	5.614E-01
48	51	1.487E-01	1.145E+00	4.162E+00	5.028E-01	1.148E-01	2.419E-01	-8.102E-02	4.124E-01	1.117E-01	-9.907E-02
48	61	-1.686E+00	-1.411E-01	-1.909E-01	-2.743E-02	2.069E+00	1.222E-01	1.763E+00	-1.572E+00	-4.354E-01	2.079E-02
48	71	1.518E-01	4.317E-01	1.903E-01	1.370E-01	-3.444E-04	8.980E-02	-5.153E-02	5.550E-02	1.697E-02	7.426E-02
48	81	1.457E-02	-1.084E+00	-8.110E-03	-4.957E-02						
49	1	-1.472E-11	3.296E-11	3.343E-09	4.142E-09	-1.057E-09	-2.922E-08	-8.801E-03	-1.531E-01	3.275E-02	2.241E-02
49	11	-2.219E-02	-2.039E-01	4.936E-02	4.001E-02	3.953E-04	-1.812E-02	-2.450E-02	1.144E-02	1.424E-02	4.568E-02
49	21	-6.772E-02	1.484E-02	3.062E-02	8.430E-02	1.804E-02	2.871E-01	-3.475E-01	1.886E+00	1.555E-01	-1.465E-02
49	31	4.284E-03	2.993E-03	-1.252E-02	-3.122E-02	-3.250E-02	-2.167E-02	-2.459E-03	-9.278E-03	1.215E-03	-1.994E-02
49	41	-3.536E-04	-1.504E-03	-6.030E-03	-3.633E-03	-1.567E-02	-1.307E-02	-4.229E-03	-3.889E-04	8.983E+03	-1.545E-02
49	51	-2.291E-02	-3.208E-02	-2.034E-01	-1.972E-02	-1.709E-03	9.188E-03	-3.123E-03	2.185E-03	-3.275E-02	-1.153E-01
49	61	5.615E-02	-1.205E-01	-7.790E-03	-2.102E-02	1.515E+00	-2.030E-02	-7.995E-01	4.441E-01	1.309E-01	-5.604E-03
49	71	-9.342E-03	-2.440E-02	8.242E-03	3.451E-01	-6.751E-02	-4.170E-03	2.039E-02	-4.093E-04	-7.459E-03	-2.823E-03
49	81	-1.412E-03	1.585E-02	-1.782E-03	4.914E-03						

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.27 CLOCK TIME
34.052 SEC. CPTIME
6309 SEC. PPTIME

KPROD	(84 X 84)	/OUTPUT/ CONTINUED								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
50	1	-5.186E-11	2.281E-11	-1.942E-10	-2.398E-10	8.400E-11	1.697E-09	-2.312E-01	3.905E-01	2.110E+01	1.289E+01
50	11	-1.020E+01	-1.880E-01	6.390E-02	-3.685E-02	3.525E+00	-7.923E+00	-3.816E-01	-1.628E-01	5.813E-01	-6.045E+00
50	21	7.005E+00	1.496E+00	1.715E+00	7.989E+00	2.724E-01	-1.735E+00	-5.740E-01	-1.658E+01	-1.659E+00	-2.468E-01
50	31	-5.154E-02	-5.202E-01	-1.143E+01	-5.538E+00	-2.125E+01	2.920E-01	2.687E-02	-1.048E-02	2.890E-02	-1.787E-01
50	41	-2.639E-01	1.260E-01	1.686E-01	-3.077E+00	1.067E+00	4.043E+00	2.261E+00	5.614E-01	-1.545E-02	9.240E+03
50	51	8.641E-01	2.670E+00	2.579E+01	1.312E+00	3.884E-01	7.788E-01	4.898E+00	-5.724E+00	-3.034E-01	9.457E-01
50	61	1.345E+01	1.556E-01	-2.272E-01	-4.619E-01	6.298E-01	1.478E+00	3.339E+01	-1.901E+01	-3.042E+00	2.429E-01
50	71	4.088E-02	-9.263E-01	-4.724E-01	6.145E-02	6.172E-02	1.746E-01	-5.707E-01	-1.606E-01	1.054E-01	-1.087E-01
50	81	-1.774E-01	1.848E+00	-9.049E-02	-2.717E-01						
51	1	-1.239E-10	2.776E-10	2.817E-08	3.491E-08	-8.904E-09	-2.462E-07	4.760E-01	-1.664E+01	1.325E+00	4.850E-01
51	11	-3.447E-01	2.813E+00	2.984E-01	1.310E+00	-2.445E-02	-5.650E-02	5.902E-01	3.487E-01	5.641E-01	-5.789E+00
51	21	6.922E-01	1.491E-01	1.549E-02	9.023E-02	-1.138E+00	-4.739E+00	7.195E+00	-5.026E+01	-8.372E+00	-1.960E+00
51	31	1.246E+00	-3.095E-01	-3.027E-03	-1.470E+00	1.786E-01	9.350E-01	1.362E-01	3.125E-01	-5.510E-01	-1.017E+00
51	41	-7.478E-01	1.124E+00	1.169E+00	-3.356E-01	2.943E+00	1.011E+00	3.088E-01	1.487E-01	-2.291E-02	8.641E-01
51	51	1.089E+04	3.974E+00	6.246E+01	5.271E+00	1.706E+00	4.498E+00	-1.544E+00	1.534E+00	8.759E-01	-4.712E-01
51	61	3.355E-01	-2.211E+00	-4.072E-01	-9.023E-01	3.988E+01	6.911E-01	5.748E+01	-2.559E+01	1.867E+00	-1.367E-01
51	71	-1.638E-01	6.402E-02	7.191E-02	6.248E+00	-1.085E+00	-1.322E-01	3.120E-01	3.721E-02	1.410E-01	-1.035E-03
51	81	7.948E-02	6.844E-02	3.225E-02	6.958E-02						
52	1	-6.945E-11	3.172E-11	6.359E-10	7.890E-10	-1.750E-10	-5.560E-09	-3.040E+00	7.968E-02	1.742E+01	1.575E+01
52	11	-1.214E+01	-2.632E-01	8.627E-02	-5.933E-02	-5.169E-01	-5.892E+00	-4.702E-01	9.163E+00	1.189E+01	-5.381E+00
52	21	5.298E-01	9.027E+00	9.600E+00	3.393E+01	1.215E+00	-1.874E+00	-1.069E+01	-2.149E+01	2.871E-01	-4.313E-01
52	31	3.840E-02	1.441E+00	-1.189E+01	-6.634E+00	4.065E+00	3.526E+00	1.032E+00	-6.252E-02	8.399E-02	-4.943E-01
52	41	-8.440E-01	2.955E-01	3.323E-01	-5.171E+00	1.743E+00	6.375E+00	3.773E+00	1.145E+00	-3.208E-02	2.670E+00
52	51	2.974E+00	1.122E+04	2.051E+02	1.515E+01	6.060E+00	9.937E+00	1.504E+00	-3.616E+00	-1.464E+00	9.918E-01
52	61	2.866E+01	1.312E-01	7.251E-01	-1.081E+00	4.216E-01	2.033E+00	6.643E+01	-3.053E+01	-2.385E+00	2.127E-01
52	71	-6.182E-01	-3.994E+00	-1.772E+00	-1.636E-02	-4.416E-02	-1.386E-01	-6.771E-01	-8.126E-01	5.409E-02	-6.031E-01
52	81	-4.039E-01	3.763E+00	-1.414E-01	-2.242E-01						
53	1	6.859E-12	-2.751E-11	-3.106E-09	-3.849E-09	9.850E-10	2.715E-08	3.687E-02	9.056E-01	1.267E+00	3.072E+00
53	11	-2.556E+00	8.730E-02	9.073E-02	-3.041E-02	4.869E+00	-1.559E+00	-8.563E-01	-4.456E+00	-4.978E+00	1.025E+00
53	21	1.503E+00	-1.863E+00	-1.379E+00	-2.526E-01	-6.840E-01	-9.689E-01	-3.569E+00	-3.743E+00	6.483E-01	-1.001E+00
53	31	5.295E-01	-4.035E-01	-6.065E+00	-2.141E+00	6.613E-01	1.265E+01	2.405E+00	2.292E+00	-2.276E+00	-3.118E+00
53	41	-4.164E+00	3.707E+00	4.259E+00	-1.679E+01	1.271E+01	3.281E+01	1.839E+01	4.162E+00	-2.034E-01	2.579E+01
53	51	8.246E+01	2.051E+02	1.765E+04	5.202E+02	2.006E+02	3.209E+02	-3.375E+02	3.448E+02	-1.384E+01	-3.032E+01
53	61	4.135E+00	-1.144E+01	-2.489E+00	6.989E+00	-7.532E+00	-1.642E+01	2.297E+01	-5.796E+00	2.046E+01	-2.385E+00
53	71	7.127E-01	5.844E+00	5.138E+00	-6.944E-01	-5.424E-02	-9.174E-01	2.825E+00	-2.238E-01	-1.462E+00	4.896E-01
53	81	7.972E-01	-2.346E-02	-3.230E-01	9.138E-01						
54	1	2.618E-11	-3.611E-11	-3.107E-09	-3.851E-09	9.768E-10	2.716E-08	-1.554E-01	3.628E-01	-1.983E+00	-5.946E+00
54	11	4.666E+00	1.164E-01	-3.823E-02	-1.788E-02	-4.026E+00	2.599E-01	1.915E-01	4.628E+00	5.421E+00	3.435E+00
54	21	-1.166E+00	3.557E+00	3.638E+00	1.181E+01	3.948E-01	1.259E-01	-5.318E+00	1.069E+00	1.564E+00	-3.199E-02
54	31	-3.346E-02	9.060E-01	-3.088E+00	-1.772E+00	4.733E+00	9.875E-01	4.726E-01	1.743E-01	-1.617E-01	-2.942E-01
54	41	-4.999E-01	3.085E-01	3.098E-01	-2.297E+00	9.184E-01	2.451E+00	1.499E+00	5.028E-01	-1.972E-02	1.312E+00
54	51	5.271E+00	1.515E+01	5.202E+02	1.190E+04	1.762E+01	2.818E+01	-2.833E+01	2.833E+01	-1.857E+00	-2.672E+00
54	61	1.165E+01	-1.027E+00	3.110E-01	5.220E-01	-2.028E+00	-1.607E+00	-9.723E+00	4.672E-01	2.574E+00	-3.837E-01
54	71	-3.477E-01	-1.036E+00	-1.370E-01	-4.423E-01	4.058E-03	-3.258E-01	3.346E-01	-3.154E-01	-1.863E-01	-2.100E-01
54	81	-1.165E-02	1.636E+00	-6.364E-02	1.400E-01						
55	1	-3.363E-11	8.642E-11	9.018E-09	1.118E-08	-2.853E-09	-7.884E-08	3.684E-02	-7.376E-02	-1.470E+00	-1.962E+00
55	11	1.497E+00	-8.483E-01	1.813E-01	-4.507E-02	-8.996E-01	3.016E-01	-6.691E-01	7.709E-01	1.022E+00	-4.571E+00

17.54.27 CLOCK TIME
34.414 SEC. CPTIME
6373 SEC. PPTIME

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

KPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
55	21	-2.295E+00	4.007E-01	5.685E-01	1.582E+00	2.196E-01	1.908E+00	2.872E+00	1.279E+01	1.365E+00	-2.381E-03
55	31	-7.337E-02	1.613E-01	-2.088E-01	-2.200E-01	9.378E-01	1.116E-01	7.806E-02	-3.547E-02	1.145E-03	-1.159E-01
55	41	-7.670E-02	3.174E-03	-1.232E-04	-5.312E-01	6.561E-02	5.857E-01	3.706E-01	1.148E-01	-1.709E-03	3.884E-01
55	51	1.706E+00	6.060E+00	2.006E+02	1.762E+01	1.195E+04	1.143E+01	-1.228E+01	1.262E+01	-1.183E+00	-1.999E+00
55	61	1.498E+00	-1.006E+00	2.400E-02	3.344E-01	3.045E+00	-1.164E+00	-3.274E+01	1.351E+01	1.448E+00	-1.679E-01
55	71	-6.343E-02	-5.710E-02	1.619E-01	1.138E+00	-2.445E-01	-9.150E-02	2.190E-01	-4.583E-02	-9.428E-02	-2.437E-02
55	81	1.836E-02	2.572E-01	-2.184E-02	6.864E-02						
56	1	-2.365E-10	5.433E-10	5.535E-08	6.860E-08	-1.750E-08	-4.838E-07	4.349E-01	-1.463E+01	-5.127E-01	-1.387E+00
56	11	1.076E+00	-1.326E+00	1.066E+00	4.566E-01	-7.556E-01	3.519E-01	-3.683E+00	1.368E+00	2.701E+00	-3.856E+01
56	21	-1.081E+01	1.182E-01	9.177E-01	1.893E+00	7.095E-02	5.560E+00	-5.005E+00	1.992E+01	-1.433E+00	-1.551E+00
56	31	6.300E-01	-9.495E-02	4.102E-01	-1.435E+00	1.051E+00	4.069E-01	9.491E-02	-1.918E-01	-1.656E-01	-9.886E-01
56	41	-4.325E-01	4.922E-01	5.157E-01	-7.804E-01	1.610E+00	1.083E+00	4.984E-01	2.419E-01	9.188E-03	7.788E-01
56	51	4.498E+00	9.937E+00	3.209E+02	2.818E+01	1.143E+01	1.209E+04	-1.993E+01	2.109E+01	-2.822E+00	-5.145E+00
56	61	1.241E+00	-4.082E+00	-1.810E-01	2.125E-01	3.450E+01	-2.547E+00	-9.789E+01	3.973E+01	4.071E+00	-3.757E-01
56	71	-1.987E-01	-2.473E-02	4.064E-01	8.276E+00	-1.560E+00	-2.069E-01	6.444E-01	-2.415E-03	-1.655E-01	-2.659E-02
56	81	6.956E-02	1.998E-01	-1.503E-02	1.668E-01						
57	1	-1.044E-10	5.074E-11	3.626E-10	4.509E-10	-7.001E-11	-3.164E-09	5.428E-01	-4.998E-01	2.998E+01	3.621E+01
57	11	-2.792E+01	-2.841E-01	1.591E-01	-4.502E-02	2.076E+01	-6.464E+00	-1.056E+00	-1.780E+01	-2.006E+01	-1.616E+01
57	21	1.257E+01	-1.161E+01	-1.166E+01	-3.433E+01	-1.415E+00	-3.247E+00	1.866E+01	-2.686E+01	-7.684E+00	-4.392E-01
57	31	3.637E-01	-3.653E+00	3.706E+00	2.967E+00	-2.231E+01	1.704E+00	-8.507E-01	2.221E-02	-2.296E-02	4.223E-02
57	41	4.039E-01	1.057E-01	3.072E-01	1.819E+00	1.450E+00	4.550E+00	2.120E+00	-8.102E-02	-3.123E-0[illegible]	4.898E+00
57	51	-1.544E+00	1.504E+00	-3.375E+02	-2.833E+01	-1.228E+01	-1.993E+01	1.289E+04	-2.169E+01	4.447E+00	4.619E+00
57	61	-3.902E+01	2.089E+00	-1.978E+00	-1.208E+00	3.251E+00	4.501E+00	1.576E+02	-5.723E+01	-7.684E+00	1.161E+00
57	71	1.569E+00	4.396E+00	1.261E+00	4.536E-01	2.175E-01	1.189E+00	-1.173E+00	8.637E-01	4.407E-01	7.903E-01
57	81	5.896E-02	-4.986E+00	7.421E-02	-5.608E-01						
58	1	1.326E-10	-9.639E-11	-5.312E-09	-6.584E-09	1.634E-09	4.644E-08	1.590E+00	-1.443E-01	-1.816E+01	-4.303E+01
58	11	3.320E+01	-4.113E-01	3.645E-02	-1.518E-01	-2.390E+01	2.200E+00	4.589E-01	2.080E+01	2.394E+01	9.864E+00
58	21	-8.209E+00	1.412E+01	1.427E+01	4.299E+01	1.814E+00	3.904E+00	-2.220E+01	2.794E+01	7.988E+00	2.570E-01
58	31	-4.446E-01	3.883E+00	-1.143E+01	-7.093E+00	1.027E+01	-3.094E+00	7.695E-01	-1.019E-01	6.939E-02	-1.498E-01
58	41	-4.803E-01	-9.586E-02	-3.460E-01	-3.586E+00	-1.307E+00	-3.822E+00	-1.592E+00	4.124E-01	2.185E-03	-5.724E+00
58	51	1.534E+00	-3.816E+00	3.448E+02	2.833E+01	1.262E+01	2.109E+01	-2.189E+01	1.336E+04	-6.159E+00	-4.456E+00
58	61	1.196E+02	-2.804E+00	2.041E+00	3.123E+00	-5.552E+00	-5.221E+00	-2.119E+02	5.164E+01	7.685E+00	-1.421E+00
58	71	-1.715E+00	-5.240E+00	-1.445E+00	-7.206E-01	-1.742E-01	-1.319E+00	1.210E+00	-1.094E+00	-5.040E-01	-9.359E-01
58	81	-1.239E-01	9.217E+00	-1.671E-01	5.176E-01						
59	1	-1.309E-10	3.207E-10	3.316E-08	4.109E-08	-1.049E-08	-2.898E-07	4.467E-01	-7.170E+00	-1.360E+00	-5.661E+00
59	11	4.393E+00	5.866E+00	-7.940E-01	1.519E+00	-3.437E+00	-1.054E-01	3.182E+00	2.919E+00	2.810E+00	2.140E+01
59	21	5.281E+00	2.525E+00	2.028E+00	6.978E+00	-5.346E-01	-3.994E+00	1.364E+00	-2.644E+01	-1.826E+00	-3.436E-01
59	31	3.110E-01	5.526E-01	-2.465E+00	-1.395E+00	1.223E+00	3.582E-02	2.122E-01	4.223E-01	-3.866E-01	-2.730E-01
59	41	-4.467E-01	5.695E-01	5.300E-01	-7.401E-01	1.132E+00	1.015E-01	4.156E-02	1.117E-01	-3.275E-02	-3.034E-01
59	51	[illegible].759E-01	-1.464E+00	-1.384E+01	-1.857E+00	-1.183E+00	-2.822E+00	4.447E+00	-6.159E+00	1.401E+04	-1.767E+00
59	61	3.529E+01	-4.364E+00	-5.195E-01	-1.119E+00	7.187E+01	1.705E+00	1.444E+02	-5.893E+01	1.834E+00	-9.659E-02
59	71	-3.891E-01	-9.193E-01	-4.604E-01	3.954E+00	-7.281E-01	-2.194E-01	1.609E-01	-1.223E-01	5.487E-02	-1.553E-01
59	81	6.321E-03	1.587E+00	3.705E-02	5.431E-02						
60	1	-1.711E-10	3.827E-10	3.884E-08	4.813E-08	-1.228E-08	-3.395E-07	2.669E-01	-1.050E+01	5.730E-01	9.[illegible]E-01
60	11	-6.831E-01	4.052E+00	-2.687E-01	1.202E+00	5.874E-01	1.964E-01	1.947E+00	-5.464E-01	-8.714E-01	7.[illegible]E+00
60	21	3.014E+00	-2.141E-01	-5.139E-01	-1.216E+00	-9.301E-01	-2.596E+00	4.243E+00	-2.593E+01	-4.[illegible]E+00	-1.[illegible]E+00
60	31	8.331E-01	-3.257E-01	9.042E-01	-7.576E-01	6.964E-01	6.589E-01	3.159E-02	-9.030E-02	-1.[illegible]E-01	-9.784E-01

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.27 CLOCK TIME
34.762 SEC. CPTIME
8421 SEC. PPTIME

KPROD	(84 X 84)	/OUTPUT/ CONTINUED								
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
60	41	-3.921E-01	5.896E-01	5.237E-01	2.193E-01	1.325E+00	6.407E-01	3.948E-01	-9.907E-02	-1.153E-01	9.457E-01
60	51	-4.712E-01	9.918E-01	-3.032E+01	-2.672E+00	-1.999E+00	-5.145E+00	4.619E+00	-4.456E+00	-1.767E+00	1.482E+04
60	61	-3.932E+01	-1.768E+01	-2.149E+00	-5.857E+00	2.452E+02	1.701E+00	1.758E+02	-6.002E+01	7.518E+00	-7.388E-01
60	71	-2.914E-01	-5.536E-01	4.339E-01	5.091E+00	-1.318E+00	-1.662E-01	7.997E-01	2.927E-02	-1.767E-01	-3.738E-02
60	81	9.340E-03	-4.981E-01	-2.108E-02	1.168E-01						
61	1	6.194E-12	-4.686E-12	-2.624E-10	-3.252E-10	8.079E-11	2.293E-09	7.152E-02	1.190E-02	-7.265E-01	-2.153E+00
61	11	1.743E+00	2.049E-02	-7.291E-03	1.189E-03	-1.609E+00	2.783E-01	5.892E-02	1.845E+00	2.166E+00	7.635E-01
61	21	-3.323E-01	1.061E+00	8.895E-01	1.794E+00	3.761E-02	9.068E-02	1.295E+00	1.721E+00	-3.916E-01	7.592E-02
61	31	-7.635E-02	-8.271E-01	1.980E+00	1.486E+00	-1.064E+00	4.871E-01	-1.194E-01	3.638E-02	-4.507E-02	2.013E-01
61	41	5.083E-01	3.386E-02	1.382E-01	1.398E+01	-6.468E-01	-3.297E+00	-2.023E+00	-1.686E+00	5.615E-02	1.345E+01
61	51	3.355E-01	2.866E+01	4.135E+00	1.165E+01	1.498E+00	1.241E+00	-3.902E+01	1.196E+02	3.529E+01	-3.932E+01
61	61	1.124E+04	2.195E+01	9.951E+00	-1.065E+02	-1.997E+00	1.289E+01	-2.272E+01	3.641E+00	4.559E-01	-8.811E-01
61	71	-5.295E+00	-1.661E+01	-6.141E+00	-1.212E-01	-2.982E-01	-1.470E+00	-1.258E-01	-2.030E-01	-1.266E-01	-1.814E+00
61	81	-9.711E-01	2.553E-01	-2.821E-01	-5.908E-02						
62	1	-1.293E-10	2.936E-10	2.988E-08	3.703E-08	-9.447E-09	-2.612E-07	1.253E-01	-4.383E+00	-7.419E-02	-3.616E-01
62	11	2.591E-01	1.805E+00	-1.471E-01	5.805E-01	7.260E-02	8.784E-02	1.470E+00	-3.610E-01	-6.791E-01	8.064E+00
62	21	2.071E+00	-1.114E-01	-2.990E-01	-7.016E-01	-4.449E-01	-6.450E-02	6.361E-01	-3.728E+00	-1.534E+00	-7.954E-01
62	31	4.198E-01	-1.803E-01	5.409E-01	-7.012E-01	-1.051E-01	8.398E-02	-3.783E-02	-3.645E-01	1.147E-01	-7.426E-01
62	41	-1.008E-01	1.033E-01	-1.195E-02	-4.145E-03	1.573E-02	1.360E-01	2.704E-01	-1.411E-01	-1.205E-01	1.556E-01
62	51	-2.211E+00	1.312E-01	-1.144E+01	-1.027E+00	-1.006E+00	-4.082E+00	2.089E+00	-2.804E+00	-4.364E+00	-1.768E+01
62	61	2.195E+01	1.522E+04	-2.292E+00	-4.044E+00	2.597E+02	-1.012E-02	8.870E+01	-2.675E+01	8.625E+00	-9.924E-01
62	71	-1.831E-01	-4.203E-01	7.315E-01	2.090E+00	-8.905E-01	-1.694E-01	9.355E-01	-2.260E-02	-2.941E-01	-2.612E-02
62	81	-3.541E-03	3.434E-02	-6.780E-02	1.447E-01						
63	1	-6.798E-12	2.286E-11	2.497E-09	3.094E-09	-7.909E-10	-2.183E-08	2.131E-01	-3.126E-01	-1.754E+00	-6.199E-01
63	11	-6.520E-02	1.027E-01	-9.702E-03	4.175E-02	1.042E+00	7.400E-02	1.127E-01	-2.636E+00	-3.255E+00	5.611E-01
63	21	1.156E-01	-2.211E+00	-2.298E+00	-7.639E+00	-3.124E-01	1.676E-01	2.735E+00	1.992E+00	-5.646E-01	-2.562E-02
63	31	3.291E-02	-5.018E-01	1.213E+00	7.149E-01	-4.662E+00	-6.402E-01	-2.311E-01	-2.587E-02	-5.158E-03	-3.876E-03
63	41	1.273E-01	-3.747E-02	-4.142E-02	5.956E-01	-1.936E-01	-6.676E-01	-4.198E-01	-1.909E-01	-7.790E-03	-2.272E-01
63	51	-4.072E-01	7.251E-01	-2.489E+00	3.110E-01	2.400E-02	-1.810E-01	-1.978E+00	2.041E+00	-5.195E-01	-2.149E+00
63	61	9.951E+00	-2.292E+00	1.533E+04	2.540E-01	2.574E+01	-5.694E-01	-1.132E+01	8.120E+00	1.085E+00	-1.098E-01
63	71	1.796E-01	9.436E-01	5.086E-01	1.882E-01	-6.433E-02	5.897E-02	1.786E-01	1.922E-01	-3.300E-02	1.461E-01
63	81	7.569E-02	7.728E-01	1.478E-02	3.252E-02						
64	1	-6.187E-12	2.523E-11	2.990E-09	3.706E-09	-9.488E-10	-2.614E-08	-5.089E-01	-2.409E-01	-3.733E+00	-2.497E+00
64	11	1.737E+00	-6.752E-02	1.008E-02	2.004E-02	-2.986E+00	3.074E-02	1.843E-01	3.299E+00	3.859E+00	1.868E+00
64	21	-2.200E+00	2.439E+00	2.517E+00	7.935E+00	3.057E-01	6.828E-01	-3.940E+00	3.772E+00	1.071E+00	-8.968E-02
64	31	-1.560E-02	5.799E-01	-1.752E+00	-1.292E+00	2.411E+00	-9.513E-02	1.732E-01	-1.738E-01	1.169E-01	-1.399E-01
64	41	-5.687E-02	-9.558E-02	-1.487E-01	-1.907E-01	-4.082E-01	-6.043E-01	-2.181E-01	-2.743E-02	-2.102E-02	-4.619E-01
64	51	-9.023E-01	-1.081E+00	6.989E+00	5.220E-01	3.344E-01	2.125E-01	-1.209E+00	3.123E+00	-1.119E+00	-5.857E+00
64	61	-1.065E+02	-4.044E+00	2.540E-01	1.550E+04	5.246E+01	-4.472E-01	-3.616E+01	1.641E+01	2.524E+00	-3.885E-01
64	71	-4.793E-01	-1.662E+00	-4.075E-01	1.[illegible]5E-01	-2.044E-01	-2.501E-01	2.716E-01	-2.057E-01	-1.178E-01	-2.359E-01
64	81	-9.205E-02	1.650E+00	-4.979E-02	7.582E-02						
65	1	-2.617E-11	5.727E-11	5.770E-09	7.150E-09	-1.823E-09	-5.043E-08	6.484E-02	-8.834E-01	3.751E-01	4.194E-01
65	11	-3.174E-01	1.863E-01	2.766E-01	1.737E-01	1.475E-01	-6.658E-02	-3.928E+00	-9.778E-02	-1.439E-01	2.880E+00
65	21	1.000E+00	-3.974E-02	3.379E-01	6.912E-02	1.396E+00	-6.691E+00	2.701E+00	-3.319E+00	1.117E+01	7.178E+00
65	31	-3.339E+00	1.772E+00	-4.970E+00	9.642E+00	1.962E-01	2.708E-02	6.825E-01	7.796E+00	-4.670E+00	7.113E+00
65	41	-1.229E+00	2.916E+00	4.290E+00	-8.560E-02	8.845E+00	6.938E-01	-3.100E+00	2.069E+00	1.515E+00	6.298E-01
65	51	3.988E+01	4.216E-01	-7.532E+00	-2.028E+00	3.045E+00	3.450E+01	3.251E+00	-5.552E+00	7.187E+01	2.452E+02

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.27 CLOCK TIME
35.154 SEC. CPTIME
6469 SEC. PPTIME

KPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
65	61	-1.997E+00	2.597E+02	2.574E+01	5.246E+01	1.258E+01	1.568E+01	5.565E+01	-1.592E+01	-1.080E+02	1.445E+01
65	71	1.707E+00	6.938E+00	-1.012E+01	3.007E+00	6.455E+00	2.008E+00	-1.174E+01	1.130E+00	4.410E+00	5.317E-01
65	81	4.580E-01	2.005E-02	1.406E+00	-1.570E+00						
66	1	-1.894E-11	3.419E-12	-6.462E-10	-8.004E-10	2.135E-10	5.650E-09	-1.797E-01	-6.660E-02	7.253E+00	8.214E+00
66	11	-4.590E+00	1.239E-01	1.281E-03	1.255E-02	3.295E+00	-1.460E+00	1.327E-01	-2.142E+00	-2.304E+00	-2.348E+00
66	21	2.418E+00	-1.129E+00	-1.117E+00	-2.789E+00	-1.806E-01	-8.769E-01	2.384E+00	-7.466E+00	-1.404E+00	-1.717E-01
66	31	1.165E-01	-4.897E-01	-2.224E-01	-2.076E-02	-2.631E+00	7.726E-01	-2.839E-02	5.310E-02	-5.924E-02	-1.369E-01
66	41	-9.030E-02	1.738E-01	2.155E-01	-2.883E-01	7.430E-01	1.774E+00	9.410E-01	1.222E-01	-2.030E-02	1.478E+00
66	51	6.911E-01	2.033E+00	-1.642E+01	-1.607E+00	-1.164E+00	-2.547E+00	4.501E+00	-5.221E+00	1.705E+00	1.701E+00
66	61	1.289E+01	-1.012E-02	-5.694E-01	-4.472E-01	1.568E+01	1.593E+04	1.309E+02	-4.569E+01	-1.085E+00	2.622E-01
66	71	1.902E-01	3.693E-01	6.577E-02	-4.965E-02	1.707E-02	1.849E-01	-2.261E-01	8.328E-02	6.310E-02	8.037E-02
66	81	-2.416E-02	-1.078E+00	5.363E-03	-9.614E-02						
67	1	1.726E-11	-1.976E-11	-1.562E-09	-1.936E-09	4.894E-10	1.365E-08	4.535E-02	5.196E-01	-2.526E+00	-3.486E+00
67	11	2.539E+00	-2.506E-01	6.085E-01	-6.907E-02	1.876E+00	-1.362E+00	-3.846E+00	-7.949E-01	-4.570E-01	5.939E-02
67	21	-1.257E+00	1.153E+00	1.960E+00	9.514E+00	-1.278E+00	7.584E-01	-6.204E+00	4.051E+00	-1.001E+00	-3.277E+00
67	31	2.554E+00	-1.307E+00	-5.467E+00	-2.292E+00	2.706E+00	1.412E+01	2.251E+00	5.932E+00	-6.013E+00	-6.555E+00
67	41	-7.284E+00	1.080E+01	1.180E+01	-6.493E+00	2.961E+01	3.168E+01	1.570E+01	1.763E+00	-7.995E-01	3.339E+01
67	51	5.748E+01	6.643E+01	2.297E+01	-9.723E+00	-3.274E+01	-9.789E+01	1.576E+02	-2.119E+02	1.444E+02	1.758E+02
67	61	-2.272E+01	8.870E+01	-1.132E+01	-3.616E+01	5.565E+01	1.309E+02	2.751E+04	2.749E+01	-1.727E+01	1.131E+01
67	71	-3.016E+00	-9.202E+00	-7.905E+00	-1.338E+00	-6.117E-01	9.882E-01	-3.922E+00	1.621E+00	9.153E-01	-8.339E-01
67	81	-1.022E+00	1.925E+00	9.333E-01	2.756E-01						
68	1	-4.399E-12	5.138E-12	4.018E-10	4.980E-10	-1.259E-10	-3.511E-09	-3.178E-03	-1.474E-01	7.059E-01	8.234E-01
68	11	-6.514E-01	6.165E-02	-2.657E-01	1.380E-02	-1.165E+00	5.393E-01	1.746E+00	3.598E-01	1.607E-01	-9.570E-02
68	21	3.335E-01	-4.852E-01	-7.966E-01	-3.430E+00	3.183E-01	-5.291E-01	8.095E-01	-1.278E+00	1.306E+00	1.271E+00
68	31	-1.157E+00	9.940E-01	1.799E+00	6.986E-01	-1.075E+00	-4.811E+00	-3.775E-01	-2.325E+00	2.287E+00	2.352E+00
68	41	2.516E+00	-4.619E+00	-5.196E+00	1.116E+00	-1.428E+01	-1.711E+01	-9.317E+00	-1.572E+00	4.441E-01	-1.901E+01
68	51	-2.559E+01	-3.053E+01	-5.796E+00	4.671E-01	1.351E+01	3.973E+01	-5.723E+01	5.164E+01	-5.893E+01	-6.002E+01
68	61	3.641E+00	-2.675E+01	8.120E+00	1.641E+01	-1.592E+01	-4.569E+01	2.749E+01	3.312E+04	5.924E+00	-1.082E+01
68	71	5.649E+00	1.168E+01	9.827E+00	7.656E-01	8.594E-01	-1.414E-01	2.887E+00	-2.423E+00	-1.268E+00	9.690E-01
68	81	8.660E-01	-4.886E-01	-1.257E+00	-6.234E-01						
69	1	-6.025E-10	1.453E-09	1.504E-07	1.864E-07	-4.758E-08	-1.315E-06	-1.913E+00	-1.153E+01	-1.842E+01	-2.125E+01
69	11	1.599E+01	1.370E+01	-2.110E+00	2.401E+00	-7.833E+00	3.342E+00	4.139E+00	1.346E+00	2.110E-01	2.667E+01
69	21	-4.164E+00	-2.255E-01	-9.469E-01	-4.538E+00	-7.908E-01	-1.771E+00	1.448E+00	4.254E+00	3.022E+00	1.160E+00
69	31	-4.451E-01	7.071E-01	1.429E+00	2.377E+00	-4.925E-01	-2.597E+00	-1.197E-01	1.160E+00	-7.787E-01	8.988E-01
69	41	-4.342E-02	3.326E-01	3.530E-01	1.628E+00	-7.659E-02	-4.740E+00	-3.019E+00	-4.354E-01	1.309E-01	-3.042E+00
69	51	1.867E+00	-2.385E+00	2.046E+01	2.574E+00	1.448E+00	4.071E+00	-7.684E+00	7.685E+00	1.834E+00	7.518E+00
69	61	4.559E-01	8.625E+00	1.085E+00	2.524E+00	-1.080E+02	-1.085E+00	-1.727E+01	5.924E+00	2.500E+04	3.708E-01
69	71	-2.982E-01	1.047E+00	-7.052E-01	-1.585E+01	3.185E+00	-3.631E-01	-4.181E-01	3.495E-01	2.884E-01	4.428E-02
69	81	2.924E-01	3.101E-01	2.966E-01	2.694E-01						
70	1	-1.184E-10	2.422E-10	2.424E-08	3.004E-08	-7.658E-09	-2.119E-07	-1.113E+00	8.443E-01	5.167E-01	3.534E+00
70	11	-2.860E+00	-1.627E+00	2.675E-01	-7.908E-01	7.099E-01	-6.962E-01	-5.740E-01	5.000E-02	2.330E-01	-3.027E+00
70	21	-2.149E+00	2.084E-01	4.003E-01	1.488E+00	1.903E-01	1.351E+00	-1.994E+00	7.630E+00	5.650E-01	-1.269E-01
70	31	-2.193E-03	-1.543E-02	-4.616E-01	-4.510E-01	-1.578E-01	3.113E-01	5.015E-02	-1.452E-01	8.288E-02	-1.610E-01
70	41	-2.411E-02	-4.987E-02	-6.229E-02	-2.601E-01	-6.791E-02	4.129E-01	2.530E-01	2.079E-02	-5.604E-03	2.429E-01
70	51	-1.367E-01	2.127E-01	-2.385E+00	-3.837E-01	-1.679E-01	-3.757E-01	1.161E+00	-1.421E+00	-9.659E-02	-7.388E-01
70	61	-8.811E-01	-9.924E-01	-1.098E-01	-3.885E-01	1.445E+01	2.622E-01	1.131E+01	-1.082E+01	3.708E-01	2.953E+04
70	71	8.338E-03	-2.441E-01	-4.934E-02	-2.933E+01	4.931E+00	-1.047E-01	-2.578E-01	2.292E-02	-2.010E-01	-4.237E-02

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.28 CLOCK TIME
35.509 SEC. CPTIME
6521 SEC. PPTIME

KPROD	(84 X 84)	/OUTPUT/	CONTINUED							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
70	81	-5.075E-02	3.014E-04	-4.635E-03	1.483E-01					
71	1	-3.049E-11	6.201E-11	6.011E-09	7.449E-09	-1.898E-09	-5.256E-08	3.207E-01	1.399E+00	2.962E+00	1.065E+00
71	11	-6.122E-01	-4.140E-01	1.654E-02	2.994E-03	-9.742E-01	-1.880E+00	-2.056E-01	1.749E+00	2.247E+00	-1.688E+00
71	21	9.375E-01	1.604E+00	1.684E+00	5.824E+00	2.662E-01	-4.964E-01	-1.660E+00	-4.538E+00	9.091E-02	5.702E-03
71	31	.058E-02	2.626E-01	-2.801E+00	-1.501E+00	-1.332E+00	1.317E-01	1.134E-01	-7.279E-02	8.156E-02	-7.789E-03
71	41	.391E-02	-4.386E-02	-4.683E-02	-8.516E-01	2.318E-02	6.458E-01	4.287E-01	1.518E-01	-9.342E-03	4.088E-02
71	51	-1.638E-01	-6.182E-01	7.127E-01	-3.477E-01	-6.343E-02	-1.987E-01	1.569E+00	-1.715E+00	-3.891E-01	-2.914E-01
71	61	-5.295E+00	-1.831E-01	1.796E-01	-4.793E-01	1.707E+00	1.902E-01	-3.016E+00	5.649E+00	-2.982E-01	8.338E-03
71	71	3.147E+04	-8.388E-01	-3.017E-01	4.384E+00	-7.645E-01	-3.064E-02	-3.863E-02	-1.660E-01	1.453E-02	-1.193E-01
71	81	-7.597E-02	4.500E-01	-4.517E-02	-6.733E-02						
72	1	-2.225E-10	5.104E-10	5.193E-08	6.435E-08	-1.642E-08	-4.540E-07	2.553E-01	2.225E-01	2.016E+00	-3.039E+00
72	11	2.676E+00	-1.641E+00	2.980E-01	-1.796E-01	-6.756E+00	-3.734E+00	2.035E-01	8.785E+00	1.056E+01	3.752E+00
72	21	8.000E-01	7.234E+00	7.444E+00	2.451E+01	8.477E-01	-7.243E-01	-8.602E+00	-1.043E+01	8.430E-01	-3.578E-01
72	31	5.465E-02	1.483E+00	-8.631E+00	-5.211E+00	1.433E+00	1.887E-01	5.323E-01	-1.386E-01	8.888E-02	-3.325E-01
72	41	-4.367E-01	1.154E-01	4.059E-02	-2.630E+00	2.755E-01	7.878E-01	6.602E-01	4.317E-01	-2.440E-02	-9.263E-01
72	51	6.402E-02	-3.994E+00	5.844E+00	-1.036E+00	-5.710E-02	-2.473E-02	4.396E+00	-5.240E+00	-9.193E-01	-5.536E-01
72	61	-1.661E+01	-4.203E-01	9.436E-01	-1.662E+00	6.938E+00	3.693E-01	-9.202E+00	1.168E+01	1.047E+00	-2.441E-01
72	71	-8.388E-01	3.719E+04	-1.233E+00	7.427E+00	-1.411E+00	-3.896E-01	1.318E-01	-6.265E-01	-8.650E-02	-5.414E-01
72	81	-2.540E-01	1.024E+01	-1.368E-01	-1.164E-02						
73	1	-1.612E-10	4.221E-10	4.309E-08	5.340E-08	-1.362E-08	-3.767E-07	2.889E-01	-3.096E-01	9.668E-01	-3.604E+00
73	11	3.020E+00	2.342E+00	-4.412E-01	3.284E-01	-3.259E+00	-8.157E-01	6.506E-01	3.862E+00	4.542E+00	3.614E+00
73	21	1.026E+00	3.079E+00	3.020E+00	9.964E+00	2.744E-01	-1.380E+00	-2.601E+00	-8.286E+00	6.463E-01	1.907E-01
73	31	-1.058E-01	7.144E-01	-3.358E+00	-1.622E+00	1.492E+00	-1.548E-02	2.230E-01	1.081E-01	-2.392E-02	1.315E-01
73	41	-1.356E-01	2.047E-02	1.140E-02	-9.546E-01	5.784E-02	1.524E-01	1.539E-01	1.903E-01	8.242E-03	-4.724E-01
73	51	7.191E-02	-1.772E+00	5.138E+00	-1.370E-01	1.619E-01	4.064E-01	1.261E+00	-1.445E+00	-4.604E-01	4.339E-01
73	61	-6.141E+00	7.315E-01	5.086E-01	-4.075E-01	-1.012E+01	6.577E-02	-7.905E+00	9.827E+00	-7.052E-01	-4.934E-02
73	71	-3.017E-01	-1.233E+00	3.923E+04	-2.215E+00	4.265E-01	-1.658E-01	-1.613E-01	-2.418E-01	3.926E-02	-2.079E-01
73	81	-7.676E-02	5.389E+00	-1.864E-02	-1.305E-02						
74	1	6.479E-12	-1.548E-11	-1.613E-09	-1.999E-09	5.103E-10	1.410E-08	9.462E-02	-5.804E-01	3.815E-01	2.614E-01
74	11	-1.889E-01	-1.186E-01	5.514E-02	-5.009E-02	7.274E-02	-5.014E-02	1.146E-02	5.682E-02	1.016E-01	-8.564E-01
74	21	5.786E-02	6.191E-02	3.680E-02	2.309E-01	-2.823E-01	3.639E-01	-1.659E-01	-1.041E+00	-1.256E+00	-8.924E-01
74	31	3.790E-01	-1.171E-01	2.661E-01	-7.359E-01	5.153E-02	6.006E-02	-4.173E-03	5.320E-02	-3.298E-01	-1.003E+00
74	41	-3.674E-01	5.630E-01	4.126E-01	9.902E-03	7.645E-01	9.785E-02	-1.148E-01	1.370E-01	3.451E-01	6.145E-02
74	51	5.248E+00	-1.636E-02	-6.944E-01	-4.423E-01	1.138E+00	8.276E+00	4.536E-01	-7.206E-01	3.954E+00	5.091E+00
74	61	-1.212E-01	2.090E+00	1.882E-01	1.895E-01	3.007E+00	-4.965E-02	-1.338E+00	7.656E-01	-1.585E+01	-2.933E+01
74	71	4.384E+00	7.427E+00	-2.215E+00	4.265E+04	4.341E+02	-1.000E+01	-2.528E+01	4.132E+00	-1.324E+01	-5.167E-01
74	81	-1.469E-01	1.884E-01	1.367E+00	1.272E+01						
75	1	2.732E-11	-6.208E-11	-6.367E-09	-7.890E-09	2.013E-09	5.566E-08	1.872E-01	4.510E-01	6.464E-01	2.734E-01
75	11	-1.865E-01	-9.979E-01	1.617E-01	-5.155E-01	3.745E-02	-5.591E-02	-1.589E-01	2.094E-01	2.776E-01	-3.747E-01
75	21	4.030E-01	1.988E-01	2.274E-01	7.154E-01	6.779E-02	-1.392E-02	-1.193E-01	-1.119E+00	-1.636E-01	-1.113E-02
75	31	1.326E-02	2.185E-02	-1.778E-01	-1.506E-01	2.735E-01	8.267E-02	1.448E-02	-7.654E-02	8.256E-02	5.506E-02
75	41	3.400E-02	-7.124E-02	-5.740E-02	-9.981E-02	-7.174E-02	1.469E-01	1.371E-01	-3.444E-04	-6.751E-02	6.172E-02
75	51	-1.085E+00	-4.416E-02	-5.424E-02	4.058E-03	-2.445E-01	-1.560E+00	2.175E-01	-1.742E-01	-7.281E-01	-1.318E+00
75	61	-2.982E-01	-8.905E-01	-6.433E-02	-2.044E-01	6.455E+00	1.707E-02	-6.117E-01	8.594E-01	3.185E+00	4.931E+00
75	71	-7.645E-01	-1.411E+00	4.265E-01	4.341E+02	4.603E+04	1.699E+00	4.403E+00	-7.426E-01	2.224E+00	7.109E-02
75	81	7.535E-03	9.130E-01	-2.576E-01	-2.173E+00						

17.54.28 CLOCK TIME
35.841 SEC. CPTIME
6569 SEC. PPTIME

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

KPROD	(84 X 84)	/OUTPUT/ CONTINUED								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
76	1	5.651E-12	-2.395E-11	-2.736E-09	-3.390E-09	8.674E-10	2.391E-08	1.538E-02	1.159E+00	1.932E+00	2.114E+00
76	11	-1.457E+00	5.028E-01	4.591E-02	-6.302E-02	1.424E-02	-1.145E+00	-3.060E-01	6.809E-01	9.700E-01	-2.347E+00
76	21	1.108E-01	7.191E-01	8.119E-01	2.921E+00	1.874E-01	4.995E-02	-1.162E+00	-3.330E-01	2.225E-01	1.847E-02
76	31	-4.235E-02	1.007E-01	-1.349E+00	-7.204E-01	-5.018E-01	2.185E-01	6.745E-02	-7.094E-02	7.107E-02	-7.653E-03
76	41	-2.036E-02	-5.511E-02	-5.294E-02	-4.730E-01	-2.087E-02	5.276E-01	3.327E-01	8.980E-02	-4.170E-0?	1.746E-01
76	51	-1.322E-01	-1.386E-01	-9.174E-01	-3.258E-01	-9.150E-02	-2.069E-01	1.189E+00	-1.319E+00	-2.194E-01	-1.662E-01
76	61	-1.470E+00	-1.694E-01	5.897E-02	-2.501E-01	2.008E+00	1.849E-01	9.882E-01	-1.414E-01	-3.631E-01	-1.047E-01
76	71	-3.064E-02	-3.896E-01	-1.658E-01	-1.000E+01	1.699E+00	4.787E+04	-1.751E-01	-6.259E-02	-5.253E-02	-5.733E-02
76	81	-4.610E-02	-2.346E+00	-1.568E-02	1.260E-02						
77	1	-4.087E-11	1.163E-10	1.240E-08	1.536E-08	-3.925E-09	-1.084E-07	1.782E-01	-2.060E+00	-2.918E+00	-4.571E+00
77	11	3.566E+00	2.568E+00	-3.979E-01	6.402E-01	-1.754E+00	6.843E-01	8.345E-01	6.863E-01	5.564E-01	5.086E+00
77	21	2.456E-01	2.961E-01	1.292E-01	1.451E-01	-1.477E-01	-7.477E-01	4.352E-01	-2.568E+00	2.537E-01	1.656E-01
77	31	-4.547E-02	1.923E-01	5.896E-02	2.579E-01	4.331E-01	-4.546E-01	-4.310E-03	1.980E-01	-1.339E-01	1.391E-01
77	41	-2.428E-02	7.652E-02	7.474E-02	2.174E-01	2.366E-02	-8.040E-01	-4.924E-01	-5.153E-02	2.039E-02	-5.707E-01
77	51	3.120E-01	-6.771E-01	2.825E+00	3.346E-01	2.190E-01	6.444E-01	-1.173E+00	1.210E+00	1.609E-01	7.997E-01
77	61	-1.258E-01	9.355E-01	1.786E-01	2.716E-01	-1.174E+01	-2.261E-01	-3.922E+00	2.887E+00	-4.181E-01	-2.578E-01
77	71	-3.863E-02	1.318E-01	-1.613E-01	-2.528E+01	4.403E+00	-1.751E-01	5.452E+04	6.136E-02	-7.616E-02	-1.563E-02
77	81	4.486E-02	4.682E-01	5.442E-02	1.604E-01						
78	1	-1.801E-11	4.035E-11	4.200E-09	5.205E-09	-1.328E-09	-3.671E-08	-3.707E-01	-6.504E-01	-1.487E+00	-1.541E-02
78	11	1.335E-01	-2.151E-01	7.019E-02	-8.120E-02	-1.010E+00	3.958E-01	4.709E-02	1.713E+00	2.030E+00	9.979E-01
78	21	-1.010E+00	1.342E+00	1.408E+00	4.522E+00	1.704E-01	4.873E-01	-2.334E+00	2.605E+00	6.126E-01	-6.318E-02
78	31	4.869E-03	3.400E-01	-4.918E-01	-4.374E-01	2.990E+00	2.465E-01	1.374E-01	-1.654E-02	1.157E-03	-7.936E-02
78	41	-8.727E-02	2.511E-02	8.785E-03	-2.652E-01	1.964E-02	2.721E-03	3.327E-02	5.550E-02	-4.093E-04	-1.606E-01
78	51	3.721E-02	-8.126E-01	-2.238E-01	-3.154E-01	-4.583E-02	-2.415E-03	8.637E-01	-1.094E+00	-1.223E-01	2.927E-02
78	61	-2.030E-01	-2.260E-02	1.922E-01	-2.057E-01	1.130E+00	8.328E-02	1.621E+00	-2.423E+00	3.495E-01	2.292E-02
78	71	-1.660E-01	-6.265E-01	-2.418E-01	4.132E+00	-7.426E-01	-8.259E-02	8.136E-02	5.740E+04	3.411E-03	-9.540E-02
78	81	-3.860E-0?	4.245E-01	-8.422E-03	4.409E-03						
79	1	9.382E-11	-2.159E-10	-2.206E-08	-2.733E-08	6.974E-09	1.928E-07	1.570E-01	4.279E-01	3.967E-01	1.420E+00
79	11	-1.090E+00	-1.533E+00	2.790E-01	-7.393E-02	3.185E-01	-3.204E-01	-3.144E-01	-3.060E-02	3.691E-02	-1.442E+00
79	21	8.395E-02	4.451E-02	1.145E-01	4.016E-01	5.241E-02	3.766E-01	-3.929E-01	8.046E-01	-2.277E-01	-1.605E-01
79	31	6.347E-?2	3.791E-02	-1.553E-01	-2.852E-01	-1.666E-01	1.122E-01	8.390E-03	-8.446E-02	3.718E-02	-1.236E-01
79	41	-2.303E-02	1.061E-02	2.234E-03	-1 123E-01	4.554E-02	2.004E-01	1.294E-01	1.697E-02	-7.459E-03	1.054E-01
79	51	1.410E-02	5.409E-02	-1.462E+00	-1.863E-01	-9.428E-02	-1.655E-01	4.407E-01	-5.040E-01	5.487E-02	-1.767E-01
79	61	-1.266E-01	-2.941E-01	-3.300E-02	-1.178E-01	4.410E+00	6.310E-02	9.153E-01	-1.268E 00	2.884E-01	-2.010E-01
79	71	1.453E-02	-8.650E-02	3.926E-02	-1.324E+01	2.224E+00	-5.253E-02	-7.816E-02	3.411E-03	7.220E+04	-1.250E-02
79	81	-1.660E-02	-2.325E+00	-1.179E-02	7.229E-02						
80	1	-1.938E-11	4.417E-11	4.474E-09	5.544E-09	-1.414E-09	-3.911E-08	6.417E-02	1.106E-01	4.015E-01	-2 012E-01
80	11	2.093E-01	-1.437E-01	2.174E-02	-2.426E-02	-9.400E-01	-5.42UE-01	1.428E-02	1.348E+00	1.634E+00	3.018E-01
80	21	1.324E-01	1.121E+00	1.157E+00	3.835E+00	1.408E-01	-1.058E-01	-1.369E+00	-1.414E+00	1.890E-01	-3.311E-02
80	31	-3.167E-03	2.327E-01	-1 283E+00	-7.567E-01	4.416E-01	7.416E-02	8.752E-02	-? 000E-02	1.754E-02	-3.699E-02
80	41	-6.317E-02	8.979E-03	-3.673E-04	-4.166E-01	3.532E-02	1.734E-01	1.319E-01	7.426E-02	-2.823E-03	-1.087E-01
80	51	1.035E-03	-6.031E-01	4.896E-01	-2.100E-01	-2.437E-02	-2.659E-02	7.903E-01	-9.359E-01	-1.553E-01	-3.738E-02
80	61	-1 814E+00	-2.612E-02	1.461E-01	-2.359E-01	5.317E-01	8.037E-02	-8.339E-01	9.C?0E-01	4.428E-02	-4.237E-02
80	71	-1.193E-01	-5.414E-01	-2.079E-01	-5.167E-01	7.109E-02	-5.733E-02	-1.563E-02	-9.540E-02	-1.250E-02	8.382E+04
80	81	-6.148E-02	1.253E+01	-3.036E-02	2.945E-03						
81	1	-2.353E-11	5.847E-11	6.067E-09	7.518E-09	-1.919E-09	-5.303E-08	3.475E-02	-4.295E-01	-5.273E-01	-1.155E+00
81	11	8.422E-01	-1.483E-01	4.643E-02	-2.121E-02	-7.613E-01	7.036E-03	1.213E-0	7.080E-01	7.933E-01	1.301E+00

NEW FREQ AND MODES FROM SELECTED MODES
FORCE COEFFICIENTS FORMED

17.54.28 CLOCK TIME
36.19[illegible] SEC. CPTIME
[illegible] SEC. PPTIME

KPROD	(84 X 84)	/OUTPUT/ CONTINUED (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
81	21	6.003E-02	5.223E-01	5.137E-01	1.587E+00	[illegible]021E-02	-6.615E-02	-5.194E-01	-1.013E+00	-3.697E-02	-7.122E-02
81	31	3.366E-02	1.207E-01	-4.455E-01	-3.023E-01	[illegible]972E-01	-6.746E-02	3.151E-02	5.585E-03	-1.759E-02	-5.223E-02
81	41	-4.543E-02	4.067E-02	2.971E-02	-1.235E-01	5.094E-02	-1.100E-01	-5.061E-02	1.457E-02	-1.412E-03	-1.774E-01
81	51	7.948E-02	-4.039E-01	7.972E-01	-1.165E-02	1.836E-02	6.956E-02	5.896E-02	-1.239E-01	6.321E-03	9.340E-03
81	61	9.711E-01	-3.541E-03	7.569E-02	-9.205E-02	4.580E-01	-2.416E-02	-1.022E+00	8.660E-01	2.924E-01	-5.075E-02
81	71	-7.597E-02	-2.540E-01	-7.676E-02	-1.469E-01	7.535E-03	-4.610E-02	4.488E-02	-3.850E-02	-1.660E-02	-6.148E-02
81	81	9.269E+04	3.052E+01	-3.904E-02	2.755E-02						
82	1	9.398E-13	8.625E-13	1.580E-10	1.958E-10	-5.064E-11	-1.381E-09	3.126E-02	-7.316E-03	-2.629E-01	6.544E-01
82	11	5.341E-01	3.196E-03	-8.309E-04	7.222E-04	-5.457E-01	1.323E-01	1.544E-02	5.694E-01	6.580E-01	2.166E-01
82	21	-8.704E-02	2.595E-01	2.018E-01	2.787E-01	5.007E-03	1.807E-02	2.780E-01	4.205E-01	-6.227E-02	4.394E-03
82	31	-1.185E-03	-1.946E-02	2.997E-01	1.466E-01	-1.554E-01	-5.536E-01	6.907E-03	7.205E-03	-2.535E-02	4.556E-02
82	41	1.233E-01	4.083E-02	4.630E-02	5.315E+00	-6.066E-01	-3.871E+00	-2.448E+00	-1.084E+00	1.585E-02	1.848E+00
82	51	6.844E-02	3.763E+00	-2.346E-02	1.636E+00	2.572E-01	1.998E-01	-4.986E+00	9.217E+00	1.587E+00	-4.981E-01
82	61	2.553E-01	2.434E-02	7.728E-01	1.650E+00	2.005E-02	-1.078E+00	1.925E+00	-4.886E-01	3.101E-01	3.014E-04
82	71	4.500E-01	1.024E+01	5.389E+00	1.884E-01	9.130E-01	-2.346E+00	4.682E-01	4.245E-01	-2.325E+00	1.253E+01
82	81	3.052E+01	8.750E+04	1.749E+01	-3.813E+00						
83	1	6.087E-13	-2.238E-12	-1.920E-10	-2.379E-10	6.065E-11	1.680E-09	-1.882E-01	-2.753E-01	-7.272E-01	1.388E-01
83	11	-1.467E-01	-4.975E-01	1.084E-01	-6.869E-02	-2.328E-01	-1.426E-01	-4.774E-02	1.800E-01	2.070E-01	2.041E-01
83	21	-4.848E-01	1.374E-01	1.716E-01	5.169E-01	2.459E-02	3.336E-01	-5.592E-01	1.671E+00	9.062E-02	-7.076E-02
83	31	2.196E-02	3.124E-02	-1.700E-01	-1.830E-01	-1.028E-01	-2.765E-02	1.205E-02	-1.912E-02	-2.327E-03	-6.195E-02
83	41	-2.512E-02	1.740E-02	9.[illegible]89E-03	-5.066E-02	1.195E-02	-7.759E-02	-4.347E-02	-8.110E-03	-1.782E-03	-9.049E-02
83	51	3.225E-02	-1.414E-01	-3.230E-01	-6.364E-02	-2.184E-02	-1.503E-02	7.421E-02	-1.671E-01	3.705E-02	-2.108E-02
83	61	-2.821E-01	-6.780E-02	1.478E-02	-4.979E-02	1.406E+00	5.363E-03	9.333E-01	-1.257E+00	2.966E-01	-4.635E-03
83	71	-4.517E-02	-1.368E-01	-1.864E-02	1.367E+00	-2.576E-01	-1.568E-02	5.442E-02	-8.422E-03	-1.179E-02	-3.036E-02
83	81	-3.904E-02	1.749E+01	1.051E+05	1.516E-02						
84	1	-7.473E-11	1.742E-10	1.794E-08	2.223E-08	-5.672E-09	-1.568E-07	-3.613E-01	-1.031E+00	-1.799E+00	-1.565E+00
84	11	1.136E+00	7.384E-01	-9.977E-02	-8.120E-02	-[illegible].669E-01	2.252E-01	2.786E-01	1.259E-01	3.898E-02	2.085E+00
84	21	-[illegible].057E-01	-6.922E-03	-4.183E-02	-2.809E-01	-5.828E-02	1.132E-01	-1.594E-01	1.521E+00	2.375E-01	2.406E-02
84	31	-9.469E-03	5.106E-02	1.156E-01	9.939E-02	-1.115E-01	-2.141E-01	-8.744E-03	6.091E-02	-5.277E-02	1.398E-02
84	41	-1.321E-02	3.171E-02	2.616E-02	1.303E-01	-1.468E-02	-4.213E-01	-2.596E-01	-4.957E-02	4.914E-03	-2.717E-01
84	51	6.958E-02	-2.242E-01	9.138E-01	1.400E-01	6.864E-02	1.668E-01	-5.608E-01	5.176E-01	5.431E-02	1.168E-01
84	61	-5.908E-02	1.447E-01	3.252E-02	7.582E-02	-1.570E+00	-9.614E-02	2.756E-01	-6.234E-01	2.694E-01	1.483E-01
84	71	-6.733E-02	-1.164E-02	-1.305E-02	1.272E+01	-2.173E+00	1.260E-02	1.604E-01	4.409E-03	7.229E-02	2.945E-03
84	81	2.755E-02	-3.813E+00	1.516E-02	1.099E+05						