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THE UNIVERSITY OF KANSAS CENTER FOR RESEARCH, INC. 2291 Irving Hill Rd.-Campus West Lawrence, Kansas 66044

Third Progress Report on NASA Grant NSG-1046

AN ANALYTICAL STUDY OF EFFECTS OF AEROELASTICITY ON CONTROL EFFECTIVENESS

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UNIVERSITY OF KANSAS ELIGHT RESEARCH LAB KU-FRL <u>603</u>

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December 1975

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Sections.

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1. Introduction

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The purpose of this report is to inform NASA Headquarters and NASA Langley of progress made on Grant NSG-1046, "An Analytical Study of Effects of Aeroelasticity on Control Effectiveness," during the period July 1975 through December 1975. This is the unird progress report submitted to NASA on this grant.

Structural Complexity Study (Task-2) has been completed. All the wing planforms studied are described in Section 2. For all these planforms, structural influence coefficients (SIC's) were calculated by using the KU Aeroelastic (structural part) and NASTRAN-programs (ref. 1 and 2). The resulting matrices are compared with experimental results in Section 3. All data needed for the Transonic Aircraft Technology (TACT) project (Task-3) are available. At the present time, an effort is underway to understand the FLEXSTAB (ref. 3) input and output for use under this task.

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2. Description of Wings

The wings investigated herein were of either solid or built-up type construction. The solid wings are shown in figures 1 through 3 and their characteristics are given in Table 1. The built-up wings are shown in figures 4 through 10 and their characteristics are given in Table 2.

2.1 Wing Definitions for KU Aeroelastic Program

A list of input data needed by KU Program (Structural Part - ref. 1) for calculating structural influence coefficient matrix is given below to illustrate the extent of the work involved.

- a. Unit loading points location
- b. Elastic axis coordinates
- c. Bending stiffness (EI) of elastic axis segments
- d. Torsional stiffness (GJ) of elastic axis segments
- e. IASIGN array

The experimental layout provides the location for the unit loading points; whereas, the elastic axis coordinates and the EI - and GJ values for all the wings must be determined. A computer program was written to provide this information for solid wings and its basis is discussed in the Appendix. The IASIGN - array is obtained manually. The unit loading points and elastic axes for solid wings are shown in figures 11 through 13; and input data listed in Tables 3 through 5.

Calculation of the input data for all built-up wings is done manually. The unit loading points and elastic axes for these wings are shown in figures 14 through 20 and input data listed in Tables 6 through 13.

2.2 Wing Definitions for NASTRAN Program

The solid wings structural influence coefficient matrices obtained from NASTRAN are calculated by assuming the wings to be composed of several traingular and/or quadrilateral plate elements. NASTRAN does not use variable thickness plate elements and thus average thickness of the elements are employed. Figures 21 through 23 show the arrangement of elements used for solid wings.

Built-up wings 1 through 7 are modeled by using triangular and/or quadrilateral plates, shear panels and rods. The upper and lower surfaces are represented by plates, the spars and ribs by shear panels, and the flanges by rods. The unit loading points of the wings are used as grid points to define all the structural elements.

Built-up wing 8 is more complicated than the others. Its experimental data is for only one unit loading point (at the wing tip) and the presented deflections and rotations are only along the center line of the outboard section. The wing is approximated by a beam, as shown in figure 24. Its grid points, bending moment of inertias (I), and torsional constants (J) for the beam elements, are determined manually and given in Table 14.

3

3. <u>Discussion of Results</u>

Theoretical and experimental results are compared in this section. Most of the experimental results presented deflection influence coefficients (DIC's) only. The KU program, which uses slender beam method (SBM), calculates streamwise rotational influence coefficients (RIC's); whereas, the NASTRAN program, which employs the actual elastic properties of structure, calculates both DIC's and RIC's. The appropriate comparisons are made for the DIC's and RIC's. All the wings studied are discussed next.

a. <u>Solid Wing 1</u>

Experimental deflections and rotations for this wing are given for a wing-tip load of 5 pounds (ref. 4). Figure 25 shows the deflection and rotation comparison. The NASTRAN results underestimate the experimental deflections and rotations, while the SBM results exceed both the measured and NASTRAN rotations. However, the theoretical and experimental results correlate very well for this wing.

b. Solid Wing 2

Experimental deflections for this wing are known only for a unit load at point 10 (ref. 5). Figure 26 shows comparison between experimental and NASTRAN deflections for the loading mentioned above. Under this loading, NASTRAN overestimates the deflections. RIC's, obtained by SBM and NASTRAN, are compared in Table 15. The two sets of RIC's match sporidically. Therefore, no definite trend could be established for this wing.

c. Solid Wing 3

Experimental DIC's for this wing are given in ref. 6. Measured and NASTRAN - DIC's are compared in Table 16. These DIC's match very well when the deflection and loadpoints are away frum the root. SBM and NASTRAN - RIC's are compared in Table 17. These RIC's match, to some extent, when load- and rotation-points are near the elastic axis and away from root (see figure 13).

d. Built-up Wing 1

Measured and NASTRAN - DIC's for 100 pound loads are compared in Table 18. The agreement between the two is very good. SBM_and NASTRAN - RIC's for unit loads are compared in Table 19. These RIC's are in overall fair agreement.

e. Built-up Wing 2

Measured-and NASTRAN - DIC's for 100 pound loads are compared in Table 20. For most points, NASTRAN predicts lower deflections than the experiment. SBM-and NASTRAN - RIC's for unit loads are given in Table 21. The RIC's predicted by the SBM are of larger magnitude than the NASTRAN ones.

f. Built-up Wing 3

Measured-and NASTRAN - DIC's for 100 pound loads are given in Table 22. NASTRAN deflections are smaller than the experimental ones. The SBM and NASTRAN - RIC's for unit loads are given in Table 23. At most of the points, the two sets of RIC's have nearly the same magnitude.

g. Built-up Wing 4

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Measured-and NASTRAN - DIC's for 100 pound loads are given in Table 24. NASTRAN deflections are smaller than the experimental ones. The SBM-and NASTRAN - RIC's for unit loads are given in Table 25. At most of the points, SBM predicts larger rotations than NASTRAN, but the agreement between the two is fair.

h. Built-up Wing 5

Measured-and NASTRAN - DIC's for 100 pounds loads are given in Table 26. The NASTRAN deflections are smaller than the experimental ones. The SBM-and NASTRAN - RIC's for unit loads are given in Table 27. At most of the points, the two sets of RIC's have nearly the same magnitude.

i. Built-up Wing 6

Measured-and NASTRAN - DIC's for 100 pound loads are given in Table 28. The NASTRAN deflections are smaller than the experimental ones. SBM - and NASTRAN - RIC's for unit loads are given in Table 29. These RIC's match well at only a few points for which no definite trend could be established.

j. Built-up Wing 7

Measured-and NASTRAN - DIC's for 100 pound loads are given in Table 30. The NASTRAN deflections are smaller than the experimental ones, but the difference between the two is less than for Built-up Wing 6. SBM - and NASTRAN - RIC's for unit loads

are given in Table 31. These RIC's match at only a few points. No definite trend could be established for this wing also.

k. Built-up Wing 8

Experimental deflections and rotations for this wing are given for a wing-tip load of 2,500 pounds. Figure 27 shows deflection and rotation comparison. The NASTRAN deflections and rotations are larger than the experimental ones and the SBM rotations are even larger than those of NASTRAN. The overall agreement between experiment, SBM, and NASTRAN-results is fair.

4. Conclusion

In most wings studied, experimental deflections are larger than those predicted by NASTRAN. These larger experimental deflections could be due to the mechanical construction of the wings. The reasons for the NASTRAN predicted deflections to be higher than the experimental ones in two cases are discussed below.

> a. In the NASTRAN modeling of the solid cropped delta wing of aspect ratio 0.889, plate elements of large aspect ratio (2.82) have been used near the leading edge; whereas, the NASTRAN Theoretical Manual (ref. 2) suggests that aspect ratios of plate elements should be close to unity. This could not be corrected due to lack of time and may account for the difference noted.

b. In the NASTRAN modeling of the aspect ratio 4.22 builtup wing, the carry through box section at the root has been approximated by a beam, which may be an over simplification of experimental model. In making this simplification, it is possible that smaller torsional - and bending - stiffnesses have been assumed.

Rotational influence coefficients obtained by using slender beam method and NASTRAN programs do not match exactly at any particular point on all the wings studied. The smallest difference between the two sets of rotations occurs, for untapered solid- and built-up - wings of aspect

ratio between 2 and 6, when load- and rotation-points are on the elastic axis. For the load or rotation-points away from the elastic axis, this difference increases but is still reasonable. The larger difference is due to the SBM assuming the rigid links between the elastic axis endpoints and the load- and rotation-points; whereas, the NASTRAN employs the actual elastic properties of the structure.

No definite trend of agreement in RIC's of SBM and NASTRAN is established for solid wings of near unity aspect ratio and tapered built-up of aspect ratio 1.33.

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6. Appendix: Description of the Procedure Used for Calculating the Elastic Axis of Solid Wings Having Symmetrical Airfoil Sections.

Method

Elastic axis for a wing is defined by the locus of shear centers. The following definitions and assumptions are used in this Appendix for calculating shear centers, moment of inertias (I), and torsion constants (J) for solid wings.

a. Break Lines: A break line on a planform is a streamwise line which connects the leading- and trailing-edges and occurs when either the leading- or trailing-edge has a slope discontinuity. Root and tip chords are also considered as break lines. Three break lines are seen in the example presented in figure A.1, and they are $1-1^2$, $2-2^2$, and $3-3^2$.

b. The airfoil coordinates at any station, between the two break lines, are obtained by linear interpolation.

c. The center of gravity, "I," and "J" of airfoil sections are obtained by assuming the airfoil consisting of trapezoidal and triangular segments (figure A.2).

d. The distance between the center of gravity and shear center for a symmetrical section is given by (ref. 9),

$$e = \frac{(1+3\nu)}{(1+\nu)} \frac{\int_{le}^{te} t^3 dx}{\int_{le}^{te} t^3 dx}$$

where $\mathcal Y$ is the Poisson's Ratio; and x and t are as shown in





figure A.3. The e's are used along with the center of gravicy locations, to find the shear centers.





e. The elastic axis has to be perpendicular to the root chord. So, near the root it is approximated by a circular arc. The radius of this arc is equal to the distance between the trailing edge of root chord and the shear center of airfoil section obtained by drawing a perpendicular from trailing edge of the root chord to the previous elastic axis.

f. Iteration Process: This process is begun by finding the shear centers of airfoil sections at all the break lines. These shear centers are connected by straight lines, and thereby give the first approximation of the elastic axis (figure A.4). Next, the shear centers of the airfoil sections perpendicular to the first approximate elastic axis are obtained. This procedure results in a second

approximation of elastic axis (figure A.4). Further, approximations are made by calculating shear centers of airfoil sections perpendicular to previous elastic axis. When two consecutive iterations yield almost the same elastic axis location, the process is terminated.

A computer program which does the preceding will be presented in the next progress report.



Figure A.4 Example Planform - Elastic Axis Approximations

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Table 1. Characteristics of Solid Wings

Solid Wing Number	Cross-section	Thickness (Inches)	Thickness Ratio	Leading-edge sweep (deg.)	Taper Ratio	Aspect Ratio	Reference Number
1	Constant thickness	0.37		45	1.0	6.0	4
2	Constant thickness	0.532		45	0.059	0.889	5
3	Double wedge		0.02	45	0.0	1.0	6

Built-up Wings Number	Skin thickness (Inches)	Leading-edge sweep (deg.)	Taper Ratio	Aspect Ratio	Reference Number
1*	0.063	0	1.0	4.0	7
2*	0.063	45	1.0	2.0	7.
3*	0.125	· 45	1.0	2.0	7
4*	0.063	0	1.0	2.0	7
5*	0.063	30	3.0	3.0	7
6*	0.063	45	0.5	1.33	7 ` ;
7**	0.063	45	0.5	1.33	7
8*	0.050	45	1.0	4.22	8

Table 2. Characteristics of Built-up Wings

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* Spars are parallel to the leading-edge

**Spars are parallel to the trailing-edge

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Table 3 KU Program Input Data for Solid Wing 1

COORDINATES OF UNIT LOADING POINTS AND LOADING POINT ASSIGNMENT

Î	XCG	YCG	IASIGN
	INCHES	INCHES	
1	5.22590	。55180	2
2	5.38690	1.08240	3
3	5.64830	1.57140	4
4	6.00000	2.00000	5
5	10.00000	6.00000	6
6	14.00000	10.00000	7
7	18.00000	14.00000	8
8	22°00000	18,00000	9
9	26.00000	22.00000	10
0	26.39780	22,39780	11
1	26.82840	22,82840	15
2	27.33640	23.33640	13
13	28.00000	24.00000	14

COORDINATES OF ELASTIC AXIS SEGMENTS

ELASTIC AXIS TORSIONAL AND BENDING STIFFNESS

Ŧ	ΥFA	YEA	I	EI	GJ
4	INCHES	INCHES		LBomiNo**2	L8°≏IN***5
ł	5,17160	0,00000	1	°33150E+08	₀605 <u>18</u> E+08
2	5,22590	.55180	2	°56+305*08	35363E+08
3	5,38690	1.08240	3	°54900E	°50185E+08
4	5.64830	1.57140	4	°522205406	°5580E+08
5	6,00000	2,00000	5	25310E+06	°55581E+08
6	10.00000	6.00000	6	25310E+06	°55581E+08
7	14,00000	10.00000	7	°5310E+09	°55581E+08
8	18.00000	14.00000	8	25310E+06	°5558JE+08
9	22,00000	18,00000	· 9	°5310E+06	°55581F+08
10	26.00000	22.00000	10	°52220E+06	°55844464
īi	26.39780	22.39780	11	°56600E+06	₀25925E+0A
12	26.82840	22.82840	12	28920E+06	.33474E+0A
13	27.33640	23,33640	13	°33150E+00	₀50798E+08
14	28.00000	24.00000			

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Table 4 KU Program Input Data for Solid Wing 2

COORDINATES OF UNIT LOADING POINTS AND LOADING POINT ASSIGNMENT

XCG	YCG	IASIGN
INCHES	INCHES	
7。75000	5.00000	3
15.25000	5.00000	4
22.75000	5.00000	6
30.25000	5.00000	7
15.25000	12,50000	8
22.75000	12.50000	ġ.
30,25000	12,50000	10
22.75000	20.00000	11
30,25000	20.00000	12
30.25000	27.50000	13
	xCG INCHES 7.75000 15.25000 22.75000 30.25000 22.75000 30.25000 22.75000 30.25000 30.25000 30.25000	xCGYCGINCHESINCHES7.750005.0000015.250005.0000022.750005.0000030.2500012.5000022.7500012.5000022.7500012.5000030.2500012.5000030.2500020.0000030.2500020.0000030.2500020.0000030.2500027.50000

COORDINATES OF ELASTIC AXIS SEGMENTS

1

ELASTIC AXIS TORSIONAL AND BENDING STIFFNESS

I	XEA	YEA	I	EI	GJ
	INCHES	INCHES		LB1N.**2	LBIN.**2
1	21.00001	0.00000	1	°43584E+01	.69001E+10
2	21,06328	1.28100	2	39889E+ 07	°20215156+10
3	21.25247	2.54952	3	°31358E+01	°385225E+10
4	21.56573	3,79323	4	°32404E+02	.33415E+10
5	22.00002	5.00002	5	₀34437E+07	.30602E+10
6	22.10000	5.24163	6	°35408E+01	.26405E+10
7	23.20000	7。89997	7	°30460E+02	°51503E+J0
8	23.66000	9.01164	8	°58540E+02	.17081E+10
9	24.72000	11.57331	9	°515154+02	.12041E+10
10	25.84000	14.27998	10	°51564E+04	.74541E+09
11	27.40000	18.04998	11	017434E+07	°40445E+08
12	28,50000	20.70832	12	.11959E+07	•16923E+09
13	31.20000	27,23333	13	₀54753E+06	.20775E+08
14	33,00000	31,58333] 4	°546+3546	₀17487E ♦07
15	33.00000	31.80000	15	26864E +06	.15533E+07
16	33.00000	32,00000			

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Table 5 KU Program Input Data for Solid Wing 3

COORDINATES OF UNIT LOADING POINTS AND LOADING POINT ASSIGNMENT

I	XCG	YCG	IASIGN .
-	INCHES	INCHES	
1	1.05000	.50000	2
Ż	2.15000	° 20000	2
3	3.25000	°20000	3
4	4.35000	° 20000	4
5	5.45000	~5000 0	6
6	1.95000	1.50000	4
7	2.85000	1.50000	5
8	3.75000	1.50000	7
9	4.65000	1.50000	8
10	5,55000	1,50000	10
11	2.85000	2.50000	9
12	3.55000	2.50000	10
13	4.25000	2.50000	11
14	4.95000	2.50000	12
15	5.65000	2.50000	13
16	3.75000	3,50000	13
17	4.25000	3.50000] 4
18	4.75000	3,50000	15
19	5.25000	3.50000	16
20	5.75000	3,50000	17
21	4.65000	4.50000	18
22	4.95000	4.50000	19
23	5.25000	4.50000	20
24	5.55000	4.50000	51
25	5.85000	4.50000	22
26	5.55000	5.50000	23
27	5.75000	5.50000	24
28	5,95000	5.50000	25

Table 5 (Continued) KU Program Input Data for Solid Wing 3

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COORDINATES OF ELASTIC AXIS SEGMENTS ELASTIC AXIS TORSIONAL AND BENDING STIFFNESS

Y	<u> </u>	YEA	1	E 1	່ວປ
	INCHES	INCHES	,	L8°~1N°&45	LH1N.**?
1	3.42698	0,70000	1	₀55427E+04	°28282404
5	3.44276	<u>。28452</u>	2	.43128E+04	₀35874E+07
3	3,48991	° 26226	3	°34584€+04	°54510E+02
4	3.56784	.83966	4	°5424085€+04	22355E+07
5	3.67561	1.10346	5	°558846404	₀18941E+07
6	3.77190	1.30630	6	₀19626E+04	°19545E+01
7	3,84617	1.46276	7	.15715E+ 04	•13006E+07
8	4.01756	1.82381	8	.12407E+04	°10598E+01
9	4.07469	1.94416	9 9	.10300E+04	.85245E+06
10	4.20038	2.20894	10	.77968E+ 03	°94256E+08
11	4.32607	2.47371	11	°24445F+03	₀47543t+06
12	4.45747	2.75052	15	°3∂349E+03	•32563E+06
13	4.62315	3.09954	13	°5435602°	°55455E+09
]4	4.70884	3.28006	14	°50420E+03	°196556+06
15	4.80597	3.48466	15	₀14925E+03	.12352E+06
16	4.89738	3.67722	16	₀10629E +03	₀87968E+05
17	4.99450	3,88182	17	.63475E+ 02	°25355+02
18	5.17160	4.25491	18	35063€ +02	.29018E+05
19	5.22873	4.37526	19	°50100E+05	°51600E+02
50	5.28587	4。49561	20	.18978E+ 02	.1570hE+05
21	5,34300	4,61596	21	°13456E+05	₀11111E+05
22	5.40013	4.73631	22	°24235+01	.47548E+04
23	5.72577	5.42231	23	.36839E+00	₀30488E∘03
24	5.76576	5.50656	24	.19594E+00	°19519E+03
25	5,80004	5,57877	25	.85653E-01	.70886E+02
26	5.85717	5.69912	26	.17691E-01	.14642E+02
27	6.00000	6.00000			

Table 6 KU Program Input Data for Built-up Wing 1

COORDINATES OF UNIT LOADING POINTS AND LOADING POINT ASSIGNMENT

î	XCG	YCG	IASIGN
	INCHES	INCHES	
1	0.00000	30,00000	4
2	3,75000	30.00000	4
3	7.50000	30.00000	4
4	11.25000	30,00000	4
5	15.00000	30,00000	4
6	0.00000	20.00000	3
7	3.75000	20.00000	3
8	7.50000	20.00000	3
9	11.25000	20.00000	3
0	15.00000	20°0000	3
11	0.00000	10.00000	2
12	3.75000	10.00000	5
13	7.50000	10.00000	2
4	11.25000	10,00000	2
15	15.00000	10.00000	2

COORDINATES OF ELASTIC AXIS SEGMENTS ELASTIC AXIS TORSIONAL AND BENDING STIFFNESS

I	XEA	YEA	I	EI	GJ
	INCHES	INCHES		LBIN.**2	L8°=1N°+*5
1	7.50000	0.00000	1	°62140E+02	。64564E+07
Ż	7.50000	10,00000	2	°62140E+01	°64264E+02
3	7.50000	20.00000	3	₀65140E+07	₀64564E+07
4	7.50000	30,00000			

Table 7 KU Program Input Data for Built-up Wing 2

COORDINATES OF UNIT LOADING POINTS AND LOADING POINT ASSIGNMENT

I	XCG	YCG	IASIGN
	INCHES	INCHES	
1	21°51000	21.21000	12
2	26,51000	51°51000	15
3	31,81000	21°51000	16
4	37.11000	21.21000	16
5	42.41000	21.21000	16
6	14.14000	14.14000	9
7	19.44000	14.14000	10
8	24.74000	14.14000	11
9	30.04000	14.14000	13
10	35,34000	14.14000	15
11	7。07000	7.07000	4
12	12.37000	7.07000	5
13	17.67000	7。07000	6
14	22.97000	7.07000	7
15	28,27000	7.07000	8

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Table 7 (Continued) KU Program Input Data for Built-up Wing 2

COORDINATES OF ELASTIC AXIS SEGMENTS

ELASTIC AXIS TORSIONAL AND BENDING STIFFNESS

I	XEA	YEA
	INCHES	INCHES
1	13.70000	0.00000
2	13.84000	1。46000
3	14.27000	2.87000
4	14.96000	4.17000
5	15,90000	5.30000
6	17.67000	7.07000
7	19,44000	8,84000
8	20.32000	9.72000
9	25°03000	11,49000
10	22.97000	12.37000
11	24,74000	14,14000
12	26.51000	15,90000
13	27.56000	16,95000
14	28.71000	18.10000
15	30.05000	19,63000
16	31.81000	21,21000

I	EI	GJ
-	LBo-INo##2	LH0-IN0##2
1	82573E+07	.77256E+08
2	°13181E+01	°51108E+08
З	₀67993E+07	°84A4E+02
4	₀65669E+07	°66101E+02
5	₀65140E+07	₀64564 <u>5</u> +07
6	°62140E+02	。64564E+07
7	°62140E+02	₀6456≤F÷07
8	°62140E+01	₀64564E+C7
9	°62140E+02	₀64564E+07
10	.65140E+07	。64564E+07
11	。65140E+07	₀64564E+07
12	。65669E+07	°0210F+02
13	.67993E+07	₀68096E+07
14	.73187E+07	"74531E+07
15	\$2573E+07	°80121E+02

Table 8 KU Program Input Data for Built-up Wing 3

COORDINATES OF UNIT LOADING POINTS AND LOADING POINT ASSIGNMENT

ĩ	XCG	YCG	IASIGN
	INCHES	INCHES	
1	21°51000	21,21000	12
2	26.51000	21°51000	15
3	31.81000	21.21000	16
4	37.11000	21°51000	16
5	42.41000	21°51000	16
6	14.14000	14.14000	9
7	19.44000	14.14000	10
8.	24.74000	14.14000	11
9	30.04000	14.14000	13
10	35.34000	14.14000	15
11	7.07000	7.07000	4
12	12.37000	7.07000	5
13	17,67000	7,07000	6
14	22.97000	7.07000	7
15	28,27000	7.07000	8

and the second	<mark>、第4前元は4月</mark> Connets 12月	<u> (((((((((((((((((((</u>			9-11-1		a second and a second as	()	i i i i i i i i i i i i i i i i i i i	ai (*				(1
	• •	.,	Table	8 (Continu	ied) KU P	Program Inp	ut Data	for Bu	ilt-up Wing	3				
c	OORDINAT	ES OF	ELASTI	C AXIS SI	EGMENTS	E	LASTIC	AXIS	TORSIONAL	_ AND	BENDING	STIFFNE	SS.	
	I		XEA	YEA			I		E	ĩ		ნქ		

1 2

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11

12

13

14

15

INCHES

0.00000

1.46000

2.87000

4.17000

5,30000

7.07000

8.84000

9.72000

11.49000

12.37000

14.14000

15.90000

16,95000

18.10000

19,63000

21.21000

INCHES

13.70000

13.84000

14.27000

14.96000

15,90000

17.67000

19.44000

20.32000

SS°00000

22.97000

24.74000

26.51000

27.56000

28.71000

30.05000

31.81000

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3

4

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10

11

12

13

14

15

16

26

LH.-IN.**2

.14170E+09

.38508E+08

.15920E+08

.12131E+08

.11846E+08

.11846E+08

.11846E+08

·11846E+08

.11846L+08

.11846E+08

.11846E+08

.11973E+08

.12533E+08

.13787E+08

.16061E+08

eria mendika di samala karkini diriki Misir Misir Misir di Kar

LB.#IN.**2

.17362E+08

.15270E+08

.14113E+08

.13595E+08

.13477E+08

.13477E+08

a13477E+08

.13477L+08

.13477E+08

.13477E+08

.13477E+08

.13595E+08

.14113E+08

.15270E+08

.17362E+08

Table 9 KU Program Input Data for Built-up Wing 4

COORDINATES OF UNIT LOADING POINTS AND LOADING POINT ASSIGNMENT

I	XCG	YCG	IASIGN
	INCHES	INCHES	
1	0.00000	15.00000	4
2	3.75000	15.00000	4
3	7.50000	15.00000	4
4	11.25000	15,00000	4
5	15.00000	15.00000	4
6	0.00000	10.00000	3
7	3.75000	10.00000	3
8	7.50000	10.00000	3
9	11.25000	10.00000	3
10	15.00000	10.00000	3
11	0.00000	5.00000	2
12	3.75000	5,00000	2
13	7.50000	5.00000	2
14	11.25000	5.00000	2
15	15,00000	5,00000	2

COORDINATES OF ELASTIC AXIS SEGMENTS

ELASTIC AXIS TORSIONAL AND BENDING STIFFNESS

I	XEA	YEA	I	EI	GJ
	INCHES	INCHES		L8°~1N°**5	L8IN.**2
1	7.50000	0.0000	1	₀65140E+07	₀64564t+07
2	7.50000	5,00000	2	"65140E+07	₀64564E+07
3	7.50000	10.00000	3	₀65140E+07	。64564E+07
<u>,</u>	7 50000	15 00000			

Table 10 KU Program Input Data for Built-up Wing 5

COORDINATES OF UNIT LOADING POINTS AND LOADING POINT ASSIGNMENT

ĩ	XCG	YCG	IASIGN
	INCHES	INCHES	
1	15,00000	25.98000	16
2	19.33000	25.98000	19
3	23.66000	25,98000	20
4	27.99000	25,98000	50
5	32,32000	25,98000	50
6	10.00000	17.32000	11
7	14.33000	17,32000	12
8	18.68000	17.32000	13
9	22.99000	17.32000	14
10	27.32000	17.32000	15
11	5.00000	8,66000	б
12	9.33000	8.66000	7
13	13.66000	8.66000	8
14	17.99000	8.66000	9
15	22.32000	8,66000	10

Table 10 (Continued) KU Program Input Data for Built-up Wing 5

COORDINATES OF ELASTIC AXIS SEGMENTS

ELASTIC AXIS TORSIONAL AND BENDING STIFFNESS

I	XEA	YEA
	INCHES	INCHES
1	9.82000	0,00000
S	9.88000	.98000
3	10.08000	1.94000
4,	10.39000	2.87000
5	10.83000	3,75000
6	11.50000	4.91000
7	12,58000	6,79000
8	13.66000	8.66000
9	14.74000	10,54000
10	15.82000	12.41000
11	16,50000	13,57000
12	17,58000	15.45000
13	18.66000	17.32000
14	19.74000	19,20000
15	20.82000	21.07000
16	21.50000	22.23000
17	21.99000	23.09000
18	22.50000	23,97000
19	23,05000	24,92000
20	22 66000	25 08000

I	EÎ	GJ
	LB0-IN0*#2	L8°≈IN°**5
1	°11820E+01	₀15811E+08
2	₀68472E+07	₀89948E+07
3	₀66383E÷07	₀69476E+07
4	₀65385E+07	。65051E+07
5	°62140E+01	₀64564E+07
6	₀65140E+07	。64564E+07
7	°62140E+02	₀64564E+07
8	°62140E+02	₀64564E+07
9	°62140E+02	₀64564E≠07
10	.65140E+07	。64564E+07
11	°62140E+02	₀64564E+07
12	.65140E+07	64564E+07
13	.65140E +07	°64264E+02
14	.65140E+07	。64564E+07
15	°62140E+02	₀64564E+07
16	°62382E+02	.64864E+07
17	₀66383E + 07	.66098E+07
18	。68472E+07	.68685E+07
19	"71856E+07	.72870E+07

สร้านสังคัญ ระวงนี้สุดกับกลายสีไม่ไปสาว

Table 11 KU Program Input Data for Built-up Wing 6

COORDINATES OF UNIT LOADING POINTS AND LOADING POINT ASSIGNMENT

I	XCG	YCG	IASIGN
	INCHES	INCHES	
1	21.21000	21.21000	13
2	26.51000	21.21000]4
3	31.81000	21°51000	<u>1</u> 4
4	37.11000	21.21000	14
5	42.41000	21,21000	14
6	14.14000	14.14000	8
7	19.44000	14.14000	9
8	24.74000	14.14000	10
9	30,04000	14.14000	11
10	35.34000	14.14000	12
11	42.41000	14.14000	13
12	7.07 000	7.07000	3
13	12.37000	7.07000	4
14	17.67000	7.07000	5
15	22.97000	7.07000	6
16	28.27000	7.07000	7
17	35.34000	7.07000	9
18	42.41000	7.07000	10

Table 11 (Continued) KU Program Input Data for Built-up Wing 6

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COORDINATES OF ELASTIC AXIS SEGMENTS

ELASTIC AXIS TORSION'L AND BENDING STIFFNESS

ĩ	XEA	YEA
	INCHES	INCHES
1	25,95000	0.00000
2	26,05000	1,75000
3	26°33000	3.50000
4	26.48000	4.13000
5	26.68000	4.75000
6	26,98000	5.75000
7	27.68000	7.38000
8	28.00000	8,38000
9	28.80000	10.25000
0	29.75000	12,30000
11	30.45000	14.00000
15	31.25000	15,75000
13	31.58000	16.75000
4	31.81000	21.21000

Εĭ	GJ
LB1N.**2	1.8°-1N°+45
015574E+08	.40195F÷09
.14360E+08	°14021F+03
"13719E +08	°2205+08
°13439E+08	₀37059E+ÓR
.13158E+08	°55310F+08
.12717E+0B	.15207E+08
°15520E+08	.14067E+08
°1182∂E+08	.13512E+08
₀11154E+08	.12659E+08
.10464E+08	.11817E+08
°99140E+02	.11104E+08
°94850E+02	.10555E+08
₀88450E+07	<u>98650E+07</u>

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Table 12 KU Program Input Data for Built-up Ming 7

COORDINATES OF UNIT LOADING POINTS AND LOADING POINT ASSIGNMENT

XCG	YC6	IASIGN
INCHES	INCHES	
21.21000	21°51000	10
26.51000	21.21000	11
31.81000	21.21000	11
37.11000	21,21000	11
42.41000	21°51000	11
14.14000	14,14000	6,
51°51000	14.14000	7
26.51000	14.14000	8
31.81000	14.14000	9
37.11000	14.14000	10
42.41000	14.14000	11
7.07000	7,07000	2
14.14000	7.07000	3
21°51000	7.07000	4
26.51000	7.07000	5
31,81000	7,07000	6
37.11000	7.07000	7
42.41000	7.07000	8
	XCG INCHES 21.21000 26.51000 31.81000 37.11000 42.41000 21.21000 26.51000 31.81000 37.11000 42.41000 7.07000 14.14000 21.21000 26.51000 31.81000 37.11000 42.41000	XCGYCGINCHESINCHES21.2100021.2100026.5100021.2100031.8100021.2100037.1100021.2100042.4100021.2100014.1400014.1400021.2100014.1400026.5100014.1400031.8100014.1400037.1100014.1400042.4100014.1400026.5100014.1400037.1100014.140007.070007.0700014.140007.0700031.810007.0700031.810007.0700031.810007.0700031.810007.0700037.110007.0700037.110007.0700042.410007.07000
Table 12 (Continued) KU Program Input Data for Built-up Wing 7

COORDINATES OF ELASTIC AXIS SEGMENTS

ELASTIC AKIS TORSIONAL AND BENDING STIFFNESS

I	XEA	YEA
	INCHES	INCHES
1	26,13000	0.00000
2	26.30000	2,55000
3	26.55000	3.75000
4	27.00000	5.25000
5	27.55000	6,75000
6	28.33000	8.63000
7	29.25000	11.00000
8	29,95000	12.80000
9	30.68000	14,58000
10	31.63000	17.00000
11	31,81000	21.21000

I	EI	GJ
	LB.=IN.**2	L8.=IN.**2
1	a15373E+08	₀32579E+09
2	.14032E+08	.82452E+08
3	.13301E+08	°35430E+08
4	°15005E+08	\$16955E+08
5	.12005E+08	.13964E+08
6	°11389E+08	.13197E+08
7	\$10721E+08	•12323E+08
8	.10156E+08	₀11592E+0∂
9	°94020E+02	.10680E+08
10	°86420E+02	°7440F+07

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Table 13 KU Program Input Data for Built-up Wing 8

COORDINATES OF UNIT LOADING POINTS AND LOADING POINT ASSIGNMENT

I	XCG	YCG	IASIGN
	INCHES	INCHES	
1	94.70000	88,50000	14
S	88.40000	85°50000	13
3	82.10000	75,90000	12
4	75.80000	69.60000	11
5	69.50000	63,30000	10
6	63.20000	57.00000	9
7	56,90000	50.70000	8
8	50.60000	44.40000	7
9	44,30000	38,10000	6
10	38.00000	31.80000	5
11	31.80000	25,60000	4

COORDINATES OF ELASTIC AXIS SEGMENTS

ELASTIC AXIS TORSIONAL AND BENDING STIFFNESS

1	XFA	YEA	1	EI	GJ
-	INCHES	INCHES		L8°-1N°**5	LB°-IN°**5
1	28,20000	0.00000	1	.14190E+10	°80000E+34
2	28,60000	8,00000	2	.12870E+10	°R0000E+34
3	30,00000	15,00000	3	.11170E+10	.60110E+09
4	34,00000	25,00000	4	094710E+09	s55550E+09
5	40,00000	34,00000	5	°94110E+03	•20960E+09
6	44.30000	38,10000	6	°94110E+09	.50960E+09
7	50.60000	44,40000	7	.94710E+09	•20960E+04
Å	56.90000	50.70000	8	°94110E+09	°20800E+08
ŭ	63-20000	57.00000	9	.94710E+09	°20800F+08
10	69.50000	63,30000	10	94710E+09	₀50960E+09
11	75.80000	69,60000		94710E+09	s50960E+09
ĵĵ	82.10000	75,90000	12	.94710E+09	.50960E+09
13	88.40000	82.20000	13	.94710E+09	.50960E+09
14	94.70000	88.50000			

Table 14 Details of Beam Elements Used in NASTRAN Modeling of Built-up Wing 8

FND-POINT	х	Y	BEAM ELEMENT	MOM, OF INFRIA	TORS. CONSTANT
	INCHES	INCHES		INCHES##4	INCHES##4
1	21° 5	0.0	1- 2	135.15	2.0E+27
5	21.2	5.0	2-3	122.58	2.0E+27
3	51.5	15.0	3- 4	106.39	150.267
4	31.8	25.6	4 - 5	05.06	127.400
5	38.0	31.8	5- 6	90.20	127.400
6	44.3	38.1	6- 7	90.20	127.400
7	50.6	4404	7- A	90.20	127.400
8	56.9	50.7	8- 9	05.00	127.400
9	63.2	57.0	9-10	0.20	127.400
10	69.5	63.3	10-11	90.20	127.400
11	75.8	69.6	11-12	90.20	127.400
12	82.1	75.9	12-13	90°50	127.400
13	88.4	82.2	13-14	90.20	127.490
14	0/ 7	00 E			

ORIGINAL PAGE 18. OF POOR QUALITY Table 15 KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR SOLID WING 2 (ALL ROTATIONS ARE HASED ON A 1LR. LOAD) 1000 AF POINT 1 1000 AF POINT 1 1000 AF POINT 1 1000 AF POINT 2 1000 AF POINT 3 1000 AF POINT 4 1000 AF P				Anna ann an Ann	Crowing,	Bratan B	innord	Anton yester and a solution of the second se	States and	and		Constanting Constanting Constanting	Salastan Salastan Salastan Salastan	Greaterst Greaterst	Current of the second s	unerses Energies		9 A			Printer and	
ORIGINAL PAGE 18 OF POOR GDALTTY Table 15 Table 15 KU - AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR SOLID WING 2 (ALL ROTATIONS AT (ALL ROTATIONS AT 11322E-05 NOTATIONS AT 11322E-05 COOR COLL ROTATIONS AT 11322E-05 NOTATIONS AT 11322E-05 NOTATIONS AT 11322E-05 NOTATIONS AT 11322E-05 COOR COLL ROTATIONS AT 11322E-05 NOTATIONS AT 11302E-05 NOTATIONS AT 114902E-05 NOTATIONS AT 114902E-05 NOTATIONS AT 114902E-05 LOAD AT POINT 2 ************************************										4			<u></u>								i	
KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR SOLID WING 2 (ALL ROTATIONS ARE BASED ON A 1LB. LOAD) COMPARE BASED ON A 1LB. LOAD) LOAD AT POINT 1		ORIGIN OF POC	al Pa Dr Qua	ge 15. Alfiyi					-	Table]	5									•		
LOAD AT POINT 1 1 000000000000000000000000000000000000			4 1 1	КU	- AND	NASTRAN	I≖ RO1 (ALL	ROTATION	AL IN Ions	FLUENC Are ba	CE COEF	FICIE V a 1L	NTS FO B. Loa	R SOLI D)	ED WIN	G 2						
ROTATIONS AT		:							LO	AD AT PO												
ROTATIONS AT 1 2 3 4 5 6 7 # KU 1601¥E-06 18071E-06 18071E-06 18071E-06 18071E-06 18071E-05 .14001E-05 .13501E-05 .16071E-05 .51250E-06 .51250E-06 .51250E-06 .51250E-06 <td>-</td> <td>ROTATIONS KU NASTRAN ROTATIONS KU NÁSTRAN</td> <td>ат Ат</td> <td>9902 .1133 9902 .1490</td> <td>1 22E-07 32E-05 9 22E-07)2E-05</td> <td>99022 18715 99022 .16704</td> <td>2 £⇔07 £⇔05 10 £~07 £⇔05</td> <td>9902 .3214</td> <td>3 2E-07 3E-06</td> <td>- ,991 ,25</td> <td>4 022E-07 231E-06</td> <td>∞。99 。25</td> <td>5 022€-07 922€⇔05</td> <td>⊳,99 ,13</td> <td>6 022E-07 619E-05</td> <td>。9 。9</td> <td>19022E-07 8179E-00</td> <td>, ,</td> <td>99022E .19334E</td> <td>8 -07 -05</td> <td></td>	-	ROTATIONS KU NASTRAN ROTATIONS KU NÁSTRAN	ат Ат	9902 .1133 9902 .1490	1 22E-07 32E-05 9 22E-07)2E-05	99022 18715 99022 .16704	2 £⇔07 £⇔05 10 £~07 £⇔05	9902 .3214	3 2E-07 3E-06	- ,991 ,25	4 022E-07 231E-06	∞。99 。25	5 022€-07 922€⇔05	⊳,99 ,13	6 022E-07 619E-05	。9 。9	19022E-07 8179E-00	, ,	99022E .19334E	8 -07 -05		
ROTATIONS AT 1 2 3 4 5 6 7 8 NASTRAN 16012E-06 18071E-06 18071E-06 18071E-06 18071E-06 18071E-05 .12854E-05 .12854E-05 12854E-05 51250E-06 51250E-06 51250E-05 12805E-05 10							_															
NOTATIONS AT 16015E-06 18071E-06 18071E-05 .14990HE-05 .18071E-05 .14990HE-05 .18071E-06 .18071E-06 .18071E-06 .18071E-06 .18071E-06 .12001E-07 .12051E-05 .12001E-07 .12001E-07 .1520E-06 .15250E-06 .15250E-06 .15250E-06 51250E-06 51250E-06 51250E-06 51250E-06 51250E-06 51250E-06 51250E-05 306552E-06 36552E-06 305552E-06 305552E-06 305552E-06 305552E-06 305552E-06 305552E-06 305552E-06 305552E-06 305552E-05 305552E-05 305552E-05					•				60 60	AU AI P 00000000	0400000		E		,			,				
LOAD AT POINT 3 reconserveres LOAD AT POINT 3 reconserveres S 6 7 8 ROTATIONS AT KU		KU NASTHAN HOTATIONS KU NASTRAN	AT	160) 106) 1407 .1553	15E-06 12E-05 9 71E-06 39E-05	18071 90396 18071 .16562	E-06 E-07 10 E-06 E-05	1807 .1285	1E-06 4E-05	18 .42	071E-06 836E-06	∞.18 ,32	071E-06 344E-06	18 .14	071£-05 90#E-05	- o 1 - 1	8071E-04 3501E-05	5	180716 -152976	-06	. <u></u>	
ROTATIONS AT 1 2 3 4 5 6 7 8 NASTRAN =.62302E-06 51250E-06 36552E-00 36552E-00 36552E-06 36523E-05 36523E-05 36523E-05 365243E-05 365243E-05 365243E-05 365243E-05 36243E-05 365243E-05 23358E-05 27624E-05 27624E-05 27624E-05									LO.	AD AT P	DINT 3											
LOAD AT POINT 4 CODE CODE <thcode< th=""> CODE <thcode< t<="" td=""><td></td><td>ROTATIONS Ku Nastran Rotations Ku Nastpan</td><td>ат Ат</td><td>2212 623(5125 .3435</td><td>1 29E-06 2E-06 9 50E-06 56E-06</td><td>39785 12682 51250 .98700</td><td>2 E=06 E=05 10 E=06 E=07</td><td>⇔₀5125 ∞₀9321</td><td>08- 3 0E-06 8E-07</td><td>0000000 ≂051; 012</td><td>0000000 4 250E∞06 121E∞05</td><td>~,51 ⇒,12</td><td>5 250€`\\. 805E=05</td><td>51 38</td><td>6 250E-06 142E-06</td><td>° ۵5 ۵7</td><td>1250F-04 5668E-04</td><td>, , ,</td><td>512506 365528</td><td>8 -60 -900</td><td>- </td></thcode<></thcode<>		ROTATIONS Ku Nastran Rotations Ku Nastpan	ат Ат	2212 623(5125 .3435	1 29E-06 2E-06 9 50E-06 56E-06	39785 12682 51250 .98700	2 E=06 E=05 10 E=06 E=07	⇔₀5125 ∞₀9321	08- 3 0E-06 8E-07	0000000 ≂051; 012	0000000 4 250E∞06 121E∞05	~,51 ⇒,12	5 250€`\\. 805E=05	51 38	6 250E-06 142E-06	° ۵5 ۵7	1250F-04 5668E-04	, , ,	51250 6 365528	8 -60 -900	- 	
Bobsersesses ROTATIONS AT 1 2 3 4 5 6 7 9 KU =.28242E=06 61498E=06 =.11275E=05 +.16243E=05 16243E=05 16243E=05 16243E=05 16243E=05 16243E=05 16243E=05 16243E=05 16243E=05 16243E=05 27629E=05 NASTRAN 9 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 <th 10<="" <="" td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>LO</td><td>AD AT P</td><td>DINT 4</td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td></th>	<td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>LO</td> <td>AD AT P</td> <td>DINT 4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td>									LO	AD AT P	DINT 4							-			
		ROTATIONS KU Nastran Rotations Ku Nastran	AT	2824 +.2281 1624 2732	1 42E⇔06 71E⇒06 9 43E=05 29E=05	61498 37590 16243 28255	2 E=06 10 E=05 E=05	-₀1127 -₀1668	40 3 55≠05 156=05	∝.16 ~.11	¢6000000 4 243E∞05 024E∞05	~,16 ~,18	5 243E+05 307E+05		6 243E-05 1358E-05	⇔°1 ⇔°5	.6243E-0! 1784E-0!	7	162431 276291	8 -05 -05		

				<u> </u>	•			
			Table	15 (Continued)	2			
	KU- ANI	D NASTRAN- R (AL	QTATIONAL II L ROTATIONS	ARE BASED O	FFICIENTS FO N A 1LB. LOA	R SOLID WIN	G 2	· · · · · · · ·
				D AN POINT 5				
ROTATIONS AT KU Nastran a Rotations at Ku Nastran	1 62112E-06 26062E-05 9 30030E-05 .78994E-05	2 *.12514E=05 .89955E=04 10 30030E=05 .86543E=05	3 20339E-05 .15881E-05	4 29157E-05 .18621E-05	5 ~。30030E=05 ,19561E=05,	6 ⇔.30030E=05 .59202E=05	7 ∞。30030E-05 。58612E-05	8 \$0,30030E=05 0,79324E+05
			LOA ooo	D AT POINT 5				
ROTATIONS AT KU NASTRAN Rotations at Ku Nasthan	1 68225E-06 20794E-05 9 55812E-05 .20658E+05	2 ~.14686E=05 ~.15750E=05 10 ~.55812E=05 .11801E=05	3 ∽。26489E~05 ∽,54737E~06	4 ∞.45021£⇔05 .12831E=05	5 -,50261E-05 -,59244E-05	6 ⇔₀55812E⇔05 ⇔₀17755E≈05	7 =,55812F-05 .31684E=05	8 ∞。55812E∞05 ∞.17714E∞05
			10A 890	D AT POINT 7				
ROTATIONS AT Ku Nastran Rotations at Ku Nastran	1 74338E-06 10859E-05 9 93719E-05 11845E-04	2 16857E-05 20847E-05 10 93719E-05 13082E-04	3 	4 ∝₀609855≏05 ∞₀220955⇔05	5 704925=05 82982E=05	6 ∝₀86899E∞05 ∝₀97454€∽05	7 =,93719E-05 =,79953E=05	B -,93719E=05 -,12910E=04
		. 	LOA • • • • • •	D AT POINT 8				
HOTATIONS AT KU NASTRAN Rotations at KU NASTRAN	1 11432E-05 28553E-05 9 17644E-04 .52026E-05	2 25393E-05 24956E-05 10 17644E-04 .51351E-05	3 ⇔。47854E=05 ⇔。11519E=05	4 . ,89664E=05 .15177E=05	5 ∝。10535F=04 ∞。11177E=04	6 13685E-04 28191E-05	7 16155E-04 .37445E-05	8 17644E-04 35560E-05

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G-110000-11 E-1-2-12-1 Balina (and Dimming and

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KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR SOLID WING 2 (ALL ROTATIONS ARE BASED ON A 1LB, LOAD)

			LOA 000	D AT POINT 9				
OTATIONS AT U A MASTRAN OTATIONS AT U MASTRAN	1 12044E-05 21237E-05 9 25114E-04 21309E-04	2 ~.27564E=05 ~.35496E=05 10 ~.25114E=04 ~.25587E=04	3 ∞₀54004E⇔05 ∽₀40018E≏05	4 ∝。10553E∞04 ∝。23442E∞05	5 ∝。12558€⇔04 ⇔。15192€=04	- - - ∞,16793E=04 - ∞,14030E=04	7 ⇔。205588=04 ∞。107518=04	8 ∽。24185E-04 ≃。25933E-04
			LOA	D AT POINT 10				
RUTATIONS AT KU JASTRAN ROTATIONS AT KU JASTRAN	1 	2 382726-05 49720E-05 10 53392E-04 37321E-04	3 ≈₀75360E⇔05 ≈₀49271E≃05	4 15017E-04 18027E-05	5 18068E=04 21489E=04	6 ∝。24897E∞04 ⇔。18313E⇔04	7 =,31743E=94 =,11047E=04	8 404346-04 377046+04

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R.M.S. OF DIFFERENCES = .66216E-06

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MAXIMUM ERROR = 026913E=05

Table	16
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EXPERIMENTAL AND NASTRAN DEFLECTION INFLUENCE COEFFICIENTS FOR SOLID WING 3 (ALL DEFLECTIONS ARE BASED ON A 1.0LB, LOAD)

			LOAI	DAT POINT 1				
DEFL AT	1	2	3	4	5	6	7	8
EXP.	4310E-03	₀7900E⊶04	.7900E-04	.5500E-04	.3400E-94	.1590E-03	.1020E-03	09000E=04
NASTRAN	a1115E-03	.7222E-05	.7314E+06	-,4564E-05	-,8279E-06	.6435E-04	.9072E-05	.1158E-05
DEFL. AT	9	10	11	12	13	14	15	15
EXP,	₅\$600E⇔04	₀4500E∞04	· .1020E-03	₀1240E∞03	°0100E≈04	.6800€−04	.3400E-04	.9900E-04
NASTRAN	-,2526E-05	∞.5026E+05	₀8532E~05	-1413E-05	∞ ₀2508E=05	5852E-05	8966E-05	-,23896-05
DEFL. AT	17	18	19	20	21	22	23	24
EAP.	°9100E≁04	₀6200E-04	.7500E-04	•3000E-04	₀8400E≏04	.1210E-03	.8700E-04	.9100F- 04
NASTRAN	4890E-05	≈ ₀7355£ + 05	⊷。97ಪ9E⇔05	~01221E-04	⇔₀9433E≃05	1090E-04	1237E-04	⇒.1384€-04
DEFL. AT	25	26	27	28				
EXP.	°4100E-04	.1000E-03	.1000E-03	₀1000E-03				
NASTRAN	1531E-04	⇔.1642E-04	1740E-04	⊳ •1838E≖04				
			LOAI	DAT POINT 2				
NFE) . A7	1	\$	3	A	E	4	7	4
FIP.	-7900F-0Å	.11306-03	.68005=04	.70005.04	57005-04	17005-02'	17605-03	10205.03
NACTRAN	72225-05	- 15225-04	34225-05	30265-06	- 13315-05	81700C-05	313300-03	10606-00
DEEL, AT	6/122C-03	819224#V4 10	2422405	10	13	8400VC=V4	¢20046#04	610346404
FXP.	-9100E=04	.9100F#06	.1590F-03	.1950F-03	13605-03	19	10205-02	16005-03
NASTRAN	-3588E-05	9.4175F+05	-38455-04	2588F=04	.1632F=04	76525-05	- Q816E-05	31406-04
DEFL. AT	17	18	19	20	21	•1056~05 22	-270102-00	24 24
EXP.	1850E-03	1420E-03	1420E-03	.1200E-03	. 1660E=03	.1660E=03	.1550E=03	.2500F-03
NASTRAN	2458E-04	.1806E-04	.1163E-04	-5180E-05	2715E-04	2325E=04	1937E-04	15446-04
DEFL. AT	25	26	27	28				
EXP.	1500E-03	.2000E-03	.2000E-03	3000E-03				
NASTRAN	.1161E-04	.2319E-04	.2060E-04	.1801E-04				
			LOA	DAT POINT 3				
0.001 A.*	•	-	000		-	_	-	
UEFLO AL		(000- 0)	3	4	5	6	<i>r</i>	8
	0/9UUE-04	0890E-04	,91002004	°1050£≏03	09100E-04	,1240E-03	.1700E-03	.14705-03
NADINAN DEEL AT	013145-00	03422t 005	01063E=04	a4912c+05	01390E-05	·2122E-04	°3412E∞04	.3501E-04
UCFLO AI	1470E 03	1U 17005 00	50/0F 02	51 555 55	13	14	15	16
5.4 P 0 0 0 0	·[4/02-03	01/UUL⊕US	2040E=03	. 02150£=0J	0204UL+03	.1920E-03	.1820E-03	.2830E+03
NASIKAN Deel Na	·28//E=04	02035E=04	004105-04	0634/E+04	.6UU6L-04	₀5552t=04	°265050€	°6510E-04
UEFLO AL	1/	18	19	20	21	52	23	24
5.450 NIX 8 9 13 A M	0201UE=U3	02950E-03	02920E⇔U3	.2000E=03	.3100E-03	.3500L+03	.3000E-03	.3500E-03
NADIRAN Deel at	8873UE=04	00J2E=04	₀8324E=U4	.8011t-04	₀1166E=03	.1148E-03	•1130E-03	.1112E-03
NCTED AL	25	20	27	28				
6 AF 0 NACTOAN	03400E+03	.2800E=03	.4000E-03	.4250E-03				
NAMICAN	01094E-03	₀1410E∞03	,1398E-03	₀1386E⇔03				4

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EXPERIMENTAL- AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR SOLID WING 3 (ALL DEFLECTIONS ARE BASED ON A 1.0LB. LOAD)

				LOA(8444) AT POINT 4				
DEFL. AT		1	2	3	4	5	6	7	8
EXP.		.5600E-04	°4600€⇔04	01020E-03	₀1590E=03	₀1360E∽03	°400€-04	.1130E-03	₀1700E-03
NASTRAN	٨	∽ ₀4564Ë - 06	₀3026E=06	.4912E∞05	.2890E-04	₀1876E∞04	°1031E-05	₀1663E-04	₀4564E∞04
DEFL. AT	-	9	10	- 11	12	13 •	14	15	16
EXP.		.2490E-03	°5450E-03	.1920E-03	°55220€≁03	°1400E-03	₀3400E∞03	₀3630E ⊷03	.3200E-03
NASTRAN		.7903E+04	.1032E-03	°3824E∞0¢	₀6843E-04	₀9664E~04	₀1249E-03	■1540E=03	≈107 9€+03
DEFL. AT		. 17	18	19	20	51	55	23	24
EXP.		.3510E-03	.3780E-03	.4120E-03	.4200E+03	₽4420E-03	.4540E≁03	~4000E-03	.4400E-03
NASTRAN		.1288E-03	"1495E-03	.1701E-03	₀1909E=03	₀1778E+03	₀1903E-03	.2027E-03	.2151F-03
DEFL. AT		25	26	27	28				
EAP.		.5500E-03	.30002-03	.6000E-03	•4500E-03				
NASTRAN		.2275E-03	₀2476E-03	2559E-03	₀2541E=03				
				LOA	AT POINT 5				
				0404	*****				
DEFL. AT		1	5	3	4	5	6	7	8
ΕχΡ,		₀3400E+04	₀5700E∞04	°3100E⇔04	₀1360E+03	₀6590E-03	.4500E-04	₀7900E⊷04	.1300E-03
NASTRAN		- ₀8279E -06	1331E-05	₀1590E-05	₀1876E=04	°3549E-03	1240E-04	4136E-05	°5845£−04
DEFL. AT		9	10	11	12	. 13	14	15	16
ЕДР.		°5450E-03	•4650E=03	°2000E-04	₀1360E-03	°5380E-03	.2950E−03	₀4080E∞03	.19508-03
NASTRAN		₀1105E-03	.3459E≈03	1661E-04	₀2471E-04	₀8242E~04	.1532E-03	.2363E-03	.3764E∞04
DEFL. AT		17	18	19	20	21	55	53	24
ERP.		.2570E-03	°5800E-03	.3550E-03	.4000E-03	°3330E-03	.3300E-03	.3900E-C3	.3800£-03
NASTRAN		.8136E-04	₀1264E=03	.1727E~03	°5188E-03	₀1093E=03	₀1363E-03	.1634E-03	.1906E−03
DEFL. AT		25	26	27	28	•		-	
EXPo		.4200E-03	.4600E-03	.4600E-03	₀4700E∞03				
NASTRAN		₀2177E∞03	₀1808E-03	01988E≏03	2168E-03	*			
			· •						
				0000	2000000000000000 2 21 20101 0		[,] 'b',		
DEFL. AT		1	2	3	4	- 5	6	7	8
EXP.		₀1590 ξ ≖03	°1400E∼03	°1540E-03	•7900E-04	°4200E⇔04	°1043E⇔05	.3740E-03	°550E-03
NASTRAN		₀6435E ~ 04	₀4660E-04	°5155E-04	.1031E-05	1240E-04	°6842€−03	₀2278E⇔03	.1016E-03
DEFL. AT		9	10	11	12	13	14	15	15
EXP.		₀1360E-03	₀450CE⇔04	°210€⇔03	, ₀4070E-03	.3180E-03	₀2000E-03	.1240E−03	.4780E+03
NASTRAN		₀2522E-04	4321E-04	.4261E-03	°5321E-03	.1421E-03	₀6048E-04	⇔.2002E+04	.2816E-03
DEFL. AT		17	18	19	20	21	+ 22	23	24
ExP.		a4000E→03	₀3630E+03	2600E-03	.1360E-03	.4530E-03	.4500E-03	.3000E-03	.3000E+03
NASTRAN		.2146E-03	.1529E-03	.9207E-04	₀3139E-04	°5311E-03	₀1944E=03	■1578E=03	.1212E-03
DEFL. AT		25	26	27	28				
ΕχΡ.		°3400E−03	.7000E-03	°50E-03	°2200F-03				
NASTRAN		₀8453E-04	.1865E-03	.1620E-03	₀1376E-03				•

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EXPERIMENTAL- AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR SOLID WING 3 (ALL DEFLECTIONS ARE BASED ON A 1.0LB. LOAD)

			LOAD	AT POINT ?				
			0 0 0 0	000000000000000				
DEFL, AT	1	2	3	4	5	6	7	8
EXP.	°1050€⇔03	₀1360E∞03	.1700E-03	₀1130E-03	0.7900E-04	₀3740E-03	°4310E-03	₀3740E∽03
NASTRAN	₀9072E-05	°5664E≃04	3415E-04	₀1663E=04	-04136E-05	.2278E-03	.2712E-03	2056E-03
DEFL. AT	9	10	11	12	13	14	15	16
ЕдР	°50€-03	.2040E-03	.7370E-03	.6460E-03	•5780E-03	.4990E+03	.4650E-03	.8450E-03
NASTRAN	.1306E-03	.4811E-04	.5437E-03	.4573E-03	3740E-03	2935E-03	.20878-03	.6504E-03
DEFL. AT	17	18	19	20	21	22	23	24
EXP.	-8070E-03	.7900E-03	.7100E-03	6900E-03	~1000E-02	~9500E-03	-9600E-03	.8900E-03
NASTRAN	-5871E+03	.5265E-03	-4664E=03	-4058E=03	~7485E+03	-7121E=03	-6760E=03	-5398E+03
DEFL. AT	25	26	27	28	07.000	0.1514 05	00.000 00	
FXP.	-9500F=03	.1150E+02	-1120E-02	.1050E-02				
MASTRAN	6037F-03	84015-02	8240F-03					
10-31 A-N	80031L-03	00431C=02	00247C-VJ	10000E-03				
			1.045					
			LURL Dead	000000000000000				
DEFT AT	1	2		A	E		•	u
FTP.	00005-04	10205-03	14705-03	17005-07	13605-03	22605-42	77405.07	0
MACTOOM	11605-04	17545.04	0141VE-04	81700E=03	01300E=03	0220UE=03	0314VE=UJ	*4340C-03
0651 AT	01120500	**************************************	0320IC=04	04304E=U4	02842EBV4	*1010E=03	°5028F=03	62930E+U3
UEFLO AL EVE	. 7	10305 03	11			14	15	15
EAPO	.481VE-U3	.4870E-03	.7270E=U3	.8160E=03	09180E-03	8730E-03	.9070E-03	.1250E-02
NASTRAN	.3072E=03	¢2785E=03	s057€≈03	•2890E-03	₀6262E=03	.6433E-03	₀6497E-03	°A34E−03
DEFLO AT	17	18	19	20	21	22	21	24
ERP.	·1185E-02	.1229E-02	.1270E-02	.1380E-02	≥1634E=02	.1650E-02	•1645E≁02	.16408-02
NASTRAN	°626603	₀9778E-03	• •9937E-03	₀1009E-02	° °1312E∞05	.1328E-02	.1338E-02	.1348E-02
DEFL. AT	25	26	27	28				
EXP.	₀1724E-02	°100E-05	°5000E-05	°5000E-05				
NASTRAN	°1328E-05	°1663E-05	°1100E-05	•1707E∞02				
			•					
			LOAD	AT POINT 9				
DEFL. AT	1	2	3	Δ	5	4	7	Q
ENP.	.5600F=04	.91006-04	.1470Fa03	- 200 - 300 AC	、マアウルデールマ	13605-03	29545-43	
NASTRAN	- 25265-05	35905-05	29776~04	70025-04	057201-03 11055-03	012005-04	12065 43	34010(-03
DEEL AT	-625600-05	10	320110-04	13036-04	01102-03	0ZJEEC=04	013002=03	.JUICE-UJ
FHD.	- 7440E-43	10805-03	41 67005-07	30605.07	10435-03	14	15	10
MACTOAN	0/40VE-VJ EE7EE_07	0100764V2 73006-03	07/00C-UJ	a/8402≠03 . 5///5 03	010965-06	*15ASE=05	a1543E=02	.1220E-02
	000/06=03	0/JYZE=UJ	633332E⇒03	· .5044E=UJ	°RADOF=03	.1052E+02	.1302E≁02	•9749E=03
DEPLO AI	1/	18	19	20	21	55	23	24
LAMO	·1424E-02	.1061E-02	₀1665L+02	°1820E+05	°1819E-05	.1965E-02	°5190E-05	°5300E-05
NASTRAN	°1190E-05	•1341E-02	₀1523E-02	.1706E-02	°J9936∞05	.1773E-02	.1882E-02	°JAAJE-05
DEFL. AT	25	26	27	28				

°5200E-05

.2495E-02

EXP.

NASTRAN

\$380E-02

.2100E-02

.2560E-02

-2350E-02

.2800E-02

.24221-02

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EXPERIMENTAL- AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR SOLID WING 3 (ALL DEFLECTIONS ARE BASED ON A 1.0LB. LOAD)

			LOAD	AT POINT 10				
DEEL AT	1	2	2	Λ Λ	5	¢	7	a
ERP	.4500E=04	_9100F=04	.1700F+03	.2720E=07	.4450F=03	. 45008-04	20605-02	ር አይኖስፍ- ሰን
NASTRAN	= 5026F=05	- 4175F=05	2035F=04	10325-03	- 34595-03	- 4321E-04	62040C=03	07655-03
DEFL AT	0	10		12	834372-03	0,43212=04	94011C-04	0E105E403
FxP.	-1009E=02	25685-02	32805-03	4490F-03	11115-03	14665-03	22265.02	11265 02
NASTRAN	.7392F=03	2242Em02	94095-04	.41095-03	011116-02	16125-02	22305-02	01169E=VC
DEEL AT	17	10	10	041072-03	800JJL-03	01412C-012	022116402	0123VE-03
FXP.	14005-02	17605-02	21005-02	24045-02	10495-00	51125-03	22005 22	24
NASTRAN	-10995-02	14655-03	19645-02	24745442	15765-02	• C1 (CC=UC	*2290E=02	0201VL=U2 30566 A3
	010000-05	1403L-D2	010246-05	\$2233L=U2	913105-02	*10A5C-05	•2V28E=U2	a2200E=02
	27205-07	20	20105-02	20				
	021305-V2	233UE=U2	- 3VIUE-V2	•3IUUE≈UZ				
WHO I KHN	02482E=V2	·2425E-02	.25/5C-V2	\$7725E-02				
					•		•	
			10AD 9800	AT POINT 11				
DEFL. AT	1	2	3	4	5	6	7	8
EXP.	°1050E-03	°1280E−03	°5040E-03	.1920E-03	°2000F-04	5210E −03	₀7370E-03	.7270F-03
NASTRAN	°82355-02	°3842€∞04	.6416E-04	₀3957E=04	1661E-04	.4261E-03	5437E-03	-50571-03
DEFL. AT	9	10	11	12	13	14	15	16
EXP.	₀5780E-03	°3580E-03	2676E-02	.1700E-02	.1360E-02	.1156E-02	.8730E-03	2305E-02
NASTRAN	°3322€+03	.9409E-04	2007E-02	-1421E-02	a1117E-02	-8420E-03	-5481E=03	-2208F-02
DEFL. AT	17	18	19	20	-1	22	23	24
EXP.	°5120E-05	₀1904E-02	₀1685E-02	-1520E-02	-2638E-02	2560E-02	2490F-02	-235aF=02
NASTRAN	°1871E-05	.1654E-02	.1427E-02	.119AE-02	2418E-02	2277E-02	2139E-02	-2002E+02
DEFL. AT	25	26	27	28				
EXP.	°5180E-05	.2700E-02	~2870E~02	2750E-02				
NASTRAN	-1864E-02	.2708E-02	.2616E-02	2524E-02				
		•	LOAD	AT POINT 12		-		
			0000	00000000000000	,			
DEFL: AT	1	5	3	4	5	. 6	7	8
EXP.	°1540E-03	°1629E∞03	°5120E−03	°55405-03	a1360E∞03	.4070E-03	~6460E=03	.8160E-03
NASTRAN	₀1413E-05	2588E-04	6347E-04	.6843E-04	2471E-04	2371E-03	-4573E-03	5890F-03
DEFL, AT	9	10	11	12	13	14	15	16
EXP.	.7840E-03	.6690E-03	.1700E-02	1859E-02	.1799E-02	1700E-02	-1587F-02	-245PE+02
NASTRAN	.5644E-03	.4109E-03	.1421E-02	₀1586E∞02	-1535E-02	-1416E-02	1254F=02	.27336-02
DEFL. AT	17	18	19	20	21	22	ງ <u>າ</u> ເປັນເຼັນໄ	24
EXP.	2850E-02	2810E-02	.2730E-02	.2650F=02	.3888F-02	.3760E+02	. 37505-02	.37008-02
NASTRAN	~2635F-02	2531F-02	2426F=02	.2317F_02	, 3661F_02	35845-03	35336-02	1000000000 100000000000000000000000000
DEFL. AT	220000 01	262216-06	06-104-VE 77	20-2136-05	00001C=02	0000L+V2	• 3 7 C C = V C	● 3 4 2 € 2 4 9 €
EsP.	- 3720F - 02	.47208-02	4560E-02	4680E-02				
NASTRAM	- 33645-02	./~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	45100C-02	040VUL-VZ				
A 4 5 7 20 8 10 10 10 10 10	0.3.3776-746	64 J J J C W U E	AGD176-U7	5 45 HE J 11 E 17 17 /				

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EXPERIMENTAL - AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR SOLID WING 3 (ALL DEFLECTIONS ARE BASED ON A 1.0LB. LOAD)

			LOAD	D AT POINT 13				
0661 44	9	3	0000	00000000000000000000000000000000000000	e			
SAD ACLEO NI	0100F-04	17405-07	20605-03	17005-03	2280F-02	318/5-03	67805-02	0 01906_03
MACTDAN		16338-04	32040L-03	0464E-04	8262E-04	14215-03	37405-03	6262E-03
DEEL. AT	002500C-05	1035500	200000-04	12	802420-00	14214-05	15	07,02C-03
FxP.	.1042F=02	111148-02	.13605+02	17995-02	.20635-02	2301F=03	24735-02	. 307HE-02
NASTRAN	.8060F+03	_A&55F=03	.1117E+02	.1535F-02	1867E=02	.20725-02	.2200F=02	29306+02
DEEL AT	17	18	19	20	21	22	23	24
FXP.	-3360E-02	-3580F=02	.3674F=02	. 37555-02	.4730F-02	-50006-02	-51108-02	-5200F+02
NASTRAN	-3169E=02	-3357F-02	3524F-02	.36825-02	-4691E=02	4800E-02	-4906E=02	.50125-02
DEEL AT	25	26	27	28		140002 02	14.2000.000	0
FxP.	-5215F-02	-6400F=02	-6450E-02	-65005-02				
NASTRAN	.5118E-02	.6404E-02	.6476E-02	+6548F-02				
			LOAD) AT POINT 14				
			0000					
DEFL. AT	1	2	3	4	5	6	7	8
EXP.	.6800E-04	₀1360E-03	°1650E-03	.3400E-03	₀2950E-03	°5000E~03.	↓499(E=03	.8730E-03
NASTRAN	~.5852E+05	, 7652E∞05	₀5552E=04	₀1249E-03	₀1532E-03	.6048E-04	2935E+03	.6433E-03
DEFL. AT	. 9	10	11	12	13	14	15	16
EXP.	.1292E-02	₀1666E~02	.1156E-02	₀1700E-02	°5301E-05	°3065E-05	3662E-02	.3035E-02
NASTRAN	a1052E-02	.1412E-02	.8420E-03	.1416E-02	°5045505°	.2817E-02	.3495E-02	,2803E-02
DEFL. AT	17	18	19	20	21	22	23	24
EXPo	°3682E-05	.4190E-02	. °4100E-05	₀5385E ~ 02	°20-3925°	\$5800E-02	.6140E−02	.6490E-02
NASTRAN	.3430E+02	.4046E-02	₀4659E-02	.5281E-02	°2344E-05	₀5721E-02	₀6094E-02	.6467E+02
DEFL. AT	25	26	27	28				
EXP.	°993E-05	.7600E-02	°8130E-05	. 8160E ∞02				
NASTRAN	₀6840E-02	₀7905E-02	°8124E-05	₀8403E=02				
			LOAD	D AT POINT 15				
	•		0000	00000000000000	-	,		
UCTLO AT		2	10005 00			6	۲ ۲	8
CAP o	03400E⇒04	°10506-03	01820E=03	0303UE=U3	₀4080E=03	01240E-03	.4650E=03	.9070E+03
NASTRAN DECL AT	0°8400F003	- AG105-00	050296=04	01540E-03	02303E=U3	2002L-04	.2087E-03	.549/E=03
DEFLO AL	15425-03	10	11	16076 02	13	14	15	16
	01343E++U2	°5330E⇔05	8730E=U3	. 158/E=V2	024/3E+U2	• 3662E∞02	0075t-02	*51A0F-05
NABIRAN DEEL AT	01JUZE#02	0261/E-U2	•24812⇔N3	01220F-05	°5500r-05	.3495t=02	.0115E-02	•2424E-05
UCPLO AI	20255 22	13500 00	19 50005 00	20	21	22	23	
5.8 F 0 118 C 7 (3 A M	50+3666 e	04750E→02	0000t=02	+0810E-02	0001/E∞02	₀6350L=02	.0990E-02	.7550F-02
NADIKAN DECL AT	03020E-02	°42115⇔05	*20AAF=05	07065t-02	°204495°	₀6165t÷02	°0-36889°	"7536E-02
DEFL, AI	25	26	27	28				
LAP.	.81AUL-02	.8450E=02	09100E-02	a97005-02				
NASTRAN	°85568°05	₀8647E−02	. 9095E−02	₀9544E-02				

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EXPERIMENTAL- AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR SOLID WING 3 (ALL DEFLECTIONS ARE BASED ON A 1.0LB. LOAD)

				LOAD	AT POINT 16				
		-	-	0000	*****	_			
DEFL. AT		1	2	3	4	5	6	7	8
t AP a		-9900E-04	.º ¥600E∞03	.28302-03	•3200E=03	°1920E∽03	°4780E-03	.8450E-03	.1250E-02
NASIKAN	à	=°5384F=02	.31402-04	09210E-04	.1079E+03	03764E=04	°5816E-03	.6504E-0	.9374E≠03
VEFLO AL		10005 A3	10		12	13	14	15	15
5.4Fa MACTOAN		0162VE=VC	01125E-U2	°5302F⇒05	05A2RF⇔05	03078E=02	.3035E-02	.2790E~02	°010E-05
NASIKAN Deel Ay		07/47E-U3	012302-03	°55086-05	02733E+02	°5430F-05	.2803E-02	°5458€⊷05	s6676E=02
UEFLO AI		11	18	19	20	21	22	23	24
		-6090E-02	\$5800E-02	.5480E-02	°2110E+05	\$585E=U2	.H490E=02	.8500E→02	\$300E-02
NASIRAN		00134E+0C	.5794E-02	.5420E-02	.5015E-02	°4551E-05	.8884E=02	.8610E-02	.8347E=02
ULIL AT		25	26	27	28				
EXP.		*8010E-05	.10602-01	.1080E-01	.1300E-01				
NASTRAN		°8085E-05	.1148E−01	°1158E-01	•1111E-01				
				LOAD	AT POINT 17				
		,	2		, 000000000000000000000000000000000000	~		-	
		91005-04	10505.03	26105-03	4 55165 03	25205.03	6		8
NACTOAN		- 40005-06	3105VE=V3	8030F-04	· 3510E=V3	012/E 0/	.4000E+03	-8070E-03	.1105E-02
DEEL AT		0,40,000	024302004	093UC=04	*1588E=V3	°9130E=04	·2146E#03	.5871E-03	a9599E=03
FAD MI		14345-03	14005 00	21505 02		13	14	15	16
6489 MA890AM	•	01424C=UZ	01400E=02	4215UE=U2	·2850E-02	\$3300E=02	.3685E-02	-38351-02	*20A0F-05
NADIRAN Orei ar		•1160E-02	0 IU88E+U2	°19AIF=05	·2635E=02	03169E=02	·3430E=02	.3420E-02	•0134£=02
CCFLA AI		1/	18	19	20	21	55	23	24
C 7 P .		.6652E-02	.6740E-02 ·	.6940E-02	.6975E-02	.1033E-01	.1020E-01	.1040E=01	■1050E=01
NASINAN Deti at		.0024E+U2	-080/E-02	.08522-02	°919E-05	01077E-01	.1078E-01	.1078E-01	.1078E-01
DEFLO AT		25	26	27	28				
LAP .		.1065E-01	-1390E-01	.1490E-01	.1400E-01				
NASTRAN		°107/E≠01	₀1477E=01	•1477E-01	•1478E−01				
				LOAD	AT POINT 18				
				0000	0000000000000000				•
DEFL. AT		1	2	3	4	5	6	7	ե
EXP.		°9500E+04	°1450E-03	°50€~03	.3780E-03	°5900E=03	₀3630E-03	°400€−03	+1229E-02
NASTRAN		∞°43225€~02	₀1806E∞04	。8632€ ⇔04	a1495E-03	.1264E-03	.1529E-03	5265E-03	.9778E-03
DEFL. AT		9	10	11	12	13	14	15	16
EXP.		.166lE-02	.1760E-02	.1904E-02	- 2810E-02	-3580E-02	4190E=02	4750F+02	.58005+02
NASTRAN		-1341E-02	.1465E-02	1654E-02	.25318=02	-3357E∞02	.40468002	-45118-02	.57946-02
DEFL. AT		17	18	14	20	21	° 75	27416-06	20174LHUL 24
EXP.		6740E-02	.7620E-02	.8313E+02	_8880F=02	.11416-01	-1185F-01	12345-01	10685-01
NASTHAN		6807E-02	.7681E-02	.83756-02	. BQ42F=02	.11905-01	12618-01	616076-VI 19686-01	122000-01 122000-01
OFFL AT		25	26	300,0C-0C 97	00746540 6 30	01120F-01	01241C-V1	*1200C#V1	•10000-01
EXP.		-1320F-01	16905-01	16505-01	16005-01				
MASTRAN		-13778-01	17045.01	10205-01	100VC VI				
		910//6441	01170C=V1	010C0C°V1	9100AC=A1				

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EXPERIMENTAL- AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR SOLID WING 3 (ALL DEFLECTIONS ARE BASED ON A 1.0LB. LOAD)

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			LOAC	AT POINT 19				
		-	6844	6000000000000	_		_	
ULFLO AI		Z	3	4	5	6	7	٩
	07500E=04	01420E=03	02420E=03	•4120E-03	.J550E-03	°500E∞03	.7100E-03	-1520E-05
NASIKAN	="A19AF=02	01103E=04	°A354F⇔04	.1701E=03	°1151E-03	.9207E-04	₀4664E-03	.9y37E-03
DEFLA AL	9	. 10	11	12	13	14	15	16
CAM [®]	.100DE-02	.2100E-02	.]685E-02	.2730E-02	₀3674E-02	.4760E-02	-5800F-02	.5480E-02
NASIKAN DEL AT	01523E+U2	•1829E=UZ	.142/E=02	-2426E-02	03524E=U2	.4659E-02	₀5699E-02	·20+ 450
ULFL. AT	11	18	19	20	21	22	23	24
EXPo	°040E-05	.8313E-02	.9797E-02	•1092E⊷01	°11∂2E⊸01	.1320E-01	.14302-01	1526E+01
NASTRAN	₀6852E+02	.8375£ −0≥	°06656-05	°1125E-01	₀1252E-01	.1367E−01	.1479£-0l	.1590€=01
DEFL. AT	25	- 26	27	28				
Ere°	.1600E-01	.1900E-01	°1820E→01	.1900E-01				
NASTRAN	.1701E-01	.2069E+01	"2145E-01	•5551E-01				
			LOAD	AT POINT 20				
	,	•	vood 		-			
DELE NI	20005.04		3	4	5	6		H
5.45 5 13.5 m	0.3VUVE=V4	a1200E=03	.2000E-03	.4200E-03	.4000E=03	°1360€-03	•6900E-03	-1380E-02
NASISAN Dati At	~~1221E~U4	•5180E-05	.8011E-03	°1404E=03	₀2189E=03	∘3139E-04	.4058E−03	.1009E-02
DEFLS AT	9	10	11	12	13	14	15	16
EAP.	\$1950E=02	.2494E-02	.1520E-02	-2650E-0?	.3755E-02	° 2382E−05	.6H10Ĕ−02	•2110E-05
NASTRAN	-1706E=0Z	.2253E-02	01198E-02	°5313E-05	°3085E→05	.5281E-02	.7065€-02	.50158-02
DEPLO AT	17	18	19	20	21	22	23	24
L AP o	°942E-05	.8B80E-02	_1092E=01	.1560E⊷01	°1200E-01	-1365E-01	.1535£-01	.1670L-01
NASTRAN	•6816E~02	₀8942E~02	.1152E-01	₀1556E∽01	°1501E-01	.1444E-01	.1632E-01	.1823E-01
DEFL. AT	25	26	27	28				
Exp.	°1820E-01	.2030E-01	°5160E-01	°5300E-01				
NASTRAN	°505∂E=01	.2253E-01	.2377E-01	°501E-01				
			LOAD	AT POINT 21				
	•		0 Q Q Q	89988888888888				
DEFL: AT	. 1	2	3	4	5	6	7	Ĥ
EXP.	8400E-04	₀1660E≏03	°3100E⇔03	°4450E-03	°3330E-03	.4530E+03	-1000E-02	-1636E-02
NASTRAN	⇔₀9433E-05	₀2715E-04	.11662-03	₀1778E-03	-1093E-03	-2311E-03	.7485F=03	-1317E-02
DEFL. AT	9	10	11	12	13	14	15	16
ЕдР.	°1019E∞05	.1848E-02	°5638€~05	3886E-02	-4730E-02	-5366E-02	-5617E-02	.85856-02
NASTRAN	-1663E-02	.1576E-02	.2416E-02	-3651E=02	.4691E=02	.5344Fen?	-54785-02	.02215-02
DEFL. AT	17	18	19	20	21	200446 02	327106-02	19761E-96 197
EXP.	-1033E-01	.11418-01	.1195F-01	.12006.01	.23636-01	22756-01	22765-01	24
NASTRAN	.1077F=01	_1190F=01	1252E=01	-12616-01	34345-01	52136-01 34345-01	0FEIDEFU1 0400501	*22112=91
DEFL AT	28	241/06-01	016JEC-V1 27	912016-01	054542401	• C • C 4 C • ()	°€4632#V1	• 24 V21 = 41
EAP.	2255FF-01	39578-01	23005-01	24005 01				
NASTRAN	23635-01	37005-01	3757501	0J4UUC=V1 0304C A1				
	953035-01	0つ 1 アリビー ひる	02121E.0A7	03/2020Ul				

				<u> </u>				
			Table 1	6 (Continued)				
	EXPERIMENTAL	- AND NASTRA	ANG DEFLECTI	ON INFLUENCE	COEFFICIEN	IS FOR SOLID	WING 3	
		(ALL D	DEFLECTIONS	ARE BASED ON	A. 1. 0LB. LC	DAD)		
			LOAD	AT POINT 22				
		A	0000	1004000000000	e		-	43
ELP.	1210F=03	~1660F=03	.35005-03	4 .4548F=03	.3300F=03	.4500F⇔03	,45005-03	0 .16508-02
NASTRAN	1090E-04	2325E-04	.1148E=03	.1903E=03	.1363E-03	a1944E=03	07121E-03	a1328E=02
DEFL. AT	9	. 10	11	12	13	14	15	16
EXP.	.1965E-02	.2112E-02	02560E∞02	.3760E - 02	.5000E∞02	.5800E-02	₀6350E-02	.8440F.=02
DEFLA AT	01//JE=UZ 17	01892€⇒UZ 19	\$ 26 772+V2	033862-02 20	048V0L⇔V2 21	0215-05°	0105E-02	₀8684L=92 2x
EXP	.1020E+01	.1185E-01	.1320E-01	₀1365E≁01	2275E-01	.2350E-01	.2472E-01	.25306-01
NASTRAN	.1078E-01	.1241E-01	.1367E+01	.1444E-01	.2424E-01	.2558E-01	.2650E-01	.27172-01
DEFL. AT	25	26	27	28				
EXP. NACTOAN	•2530E=01 27528-01	₀3855t±01 ∧2055=01	.3800E~01 	₀3900E+01				
1941 (214) (24) (24)	°Cintr=∩†	***********	04340C#NI	04330E=U1				
			CAD	AT POINT 23				
DEFL. AT	1	2	4 1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	5	£	7	м
EAPo	.8700E-04	.1550E-03	₀3000E~03	.4800E-03	°3800E≈03	.3000E-03	.9600€-03	.1645E-02
NASTRAN	1237E-04	.1937E -04	.1130€-03	₀2027E+03	₀1634E=03	.1578E-03	.6760E-03	.1338E-02
DEFL. AT	9	10	11	12	13	14	15	16
ЕДР. Настран	•2160t-02	₀2290E∝02	02490E+02	₀3750E-02	•5110E-02	.6140E+02	.6990E-02	.8500E-02
DEFL. AT	0]002C~VZ 17	02020E=V2 1A	10	033222-02	047UDC#UZ	•0074C=Q2 22	00349E-02 21	00010t+02
EXP.	.1040E-01	.1239E-01	.1430E-01	.1535E∞01	.2275E-01	2472E-01	.2493E-01	.2690E-01
NASTRAN	.1078E-01	.1288E-01	.1479E-01	.1632E-01	.2423E-01	.2650E-01	.2857E-01	.3036E-01
DEFL. AT	25	26	27	28				
242° Мастрам	3040E∞01	04450E←01	.4340E=01	•4350E∞01				
MAJINAN	021205-01	04111C=01	847V0C=V1	020315#NT				•
		-	1 ** **	AT BOTHT 94				
		·	LUAL 8494	/ MI TUINE 24				
DEFL. AT	1	2	3	4	5	6	7	8
ERP.	9100E-04	.2500E-03	.3500E-03	.4900E-03	。3800E=03	.3000E→03	°8600E-03	.1640E-02
NASTRAN	1384E-04	.1549E-04	.1112E-03	°51216-03	01906E=03	°1515E-03	.6398E-03	.1348E-02
UEPLO AT	22015-02	10 26105-02	21605-02	37005-00	13	14	15	16 63045 03
NASTRAN	.1991F-02	2255F=02	.2002F-02	, s3100C=V2 ,3458F=02	05200EPU2	0047UC-U/ .6467F-02	₀/7770E=02 、7536F=02	503000 0−02 103676482
DEFL. AT	17	18	19	20	21	22	23	24
EXP.	.1050E-01	.1268E-01	.1526E-01	₀1670E-01	.2277E-01	.2530E-01	.2690E-01	.314HE-01
NASTRAN	.1078E-01	.1333€-01	.1590E+01	.1823E-01	•2402E=01	.2712E-01	·3036E-01	.336sE+01
DEFL. AT	25	26	27	28				
2XP . MACTOAN	•3520E=01	-4680E-01	.4850E-01	-5000E-01				
MAPIKAN	₀J082E=01	°2182C→01	°2400r⊷nJ	09/44L-V]				

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	OF POOR OHAI	TTY						
	OF ROOMS GOINT	22 A AI	Table 16	(Continued)				
	EXPERIMENTAL-	AND NASTRA	N- DEFLECTION	INFLUENCE	COEFFICIEN	TS FOR SOLID	WING 3	
			CPLECIIUNS AP	C BASED UN	A 100LD. L	UAUI		
			LOAU /	41 POINT 25				
DEFL: AT	1	2	3	4	5	6	7	8
EXP.	°9100E-04	.1500E-03	.3400E-03	•5500E=03	.4200E-03	-3400E-03	°∂200E-03	.1724E-02
NASTRAN 0	⇒.1531E=04	01161E=04	.1094E-03	.2275E-03	\$2177E-03	.8453E-04	.6037E-0.3	.135BE.02
EXP.	-238AF=02	27305-02	11 21985-02	12	[3 62166-02	- 14 64035-03	15	16
NASTRAN	.2100E-02	.2482E-02	1864E+02	3394F≈02	5118E⇔02	.6840E=02	.8226F-02	.8042E-02
DEFL. AT	17	18	19	20	21	22	23	24
ЕдР.	.1065E-01	.1320E-01	.1600E-01	⊳1850E-01	°5522°°	.2630E-01	.3040E-01	.35208+01
NASTRAN	.1077E-01	₀1377E-01	.1701E-01	.2029E-01	.2363E=01	.2752E-01	.3140E-01	₀ 3652£-01
EXP.	25 .4300F=01	40005-01	53305-01	28				
NASTRAN	.4316E-01	-5498E-01	.5957E-01	**************************************				
			•					
			LOAD A	T POINT 26				
•			80888	00000000000				
DEFL. AT	1	2	3	4	5	6	7	8
EAP.	.1000E-03	2000E-03	.2800E-03	.3000E-03	°4600E-03	.7000E-03	.1150E−02	.1400E-02
DEEL AT	= 01042C+U4	°531AF→00	.1410E-03	•2476E-03	.1808E-03	₀1865E-03	.8491E-03	■1693E=02
EXP.	- 2560E-02	.2550F+02	.2700E=02	1C .47205-02	- 64001-02	14 76005-03	15	16
NASTRAN	.2350E-02	2425E-02	\$2708E-02	+555E+02	6404E-02	.7905E⇔02	-8647E-02	.1168E=01
DEFL. AT	17	18	19	20	21	22	23	24
EXP.	.1390E-01	.1690E-01	.1900E-01	.2030E-01	.3857E-01	.3855E-01	.4450E−01	.4680E-01
NASIKAN Deel. At	₀]477E=0]	.1796E≁01	.2069E-01	.2253E-01	₀3790E-01	•4295E=01	.4771E-01	. 5185E − 01
	-4900F+01	20 .1240F400	12705400	12855.00				
NASTRAN	₀5498E+01	.1469E+00	.1501E◆00	<pre>>1205€*00</pre>				
			LOAD /	T POINT 27				
8651 A.P		-	000000	00000000000	_		-	•
DEFLO AJ Fid.	1 10005-02	20005-02	40005-03	4	5	6	7	8
NASTRAN	-1740E-04	2000E003	.1394F⇔N3	00002≈03 2559F∞03	04600E=03	02950£⇔03 1620€-02	01120E≈02	•2000€⇔02
DEFL. AT	9	10	11	12	13	10505-03	002972903	16
EXP.	°5800E-05	.3010E-02	.2870E-02	.4560€-02	.6450E+02	.8130E-02	.9100E-02	.1080E-01
NASTRAN	.2422E-02	.2575E-02	. ₀2616E-02	.4512E-02	.6476E∞02	₀8154E-02	.9095E-02	.1129E-01
UEFL. AT	17	18	19	20	51	• 22	23	24
С.4.8° 0 NASTRAM	01490E-01 14775-41	.1050E⇔01 1050E=01	01950E-01	2160€+01	2390E-0]	.3800E-01	.4340E-01	.4850E-01
DEFL, AT	ataiit=01 25	510CPC#V1 26	021492-VI 27	023112-V1 98	0312(Fe01	a43/6t=01	.4906E-01	.540ct-01
ExP.	.53208-01	\$1270E+00	-1411E+00	.1480E.00				
NASTRAN	.5957E-01	.1501E+00	.1612E+00	₀1693E+00				

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				Table	16 (Cor	ntinued)				1

EXPERIMENTAL = AND NASTRAN = DEFLECTION INFLUENCE COEFFICIENTS FOR SOLID WING 3 (ALL DEFLECTIONS ARE BASED ON A 1.0LB. LOAD)

			LOAU 4004	AT POINT 28					_
DEFL. AT	1	2	3	4	5	6	7	8	_
ЕХР.	°1000E~03	°3000E-03	,4250E-03	°4200E-03	°4400E≈03	.5500E∞03	°1020E≁05	2000E-02	
NASTRAN	1838E-04	1801E-04	.1386E-03	.2641E-03	.2168E-03	a1376E=03	.8008E-03	,1707E-02	1
DEFL。 AT	9	10	11	12	13	14	15	16	<i>i</i>
EXP.	.2500E-02	.3100E-02	°54205°5°5°5°5°5°5°5°5°5°5°5°5°5°5°5°5°5°5°	°4600E≁05	°9200€∞05°°	.8160E-02	\$700E-02	.13005-01	ł
NASTRAN	2495E-02	°545E-05	.2524E-02	.4470E-02	₀6548E-02	.8403E-02	°A24€-05	.1111€-01	l
DEFL。 AT	17	16	19	20	21	22	23	23	ł
EXP.	a1400E-01	.1600E-01	1900E-01	°5300€−01	°3400E-01	.3900E-01	.4350E-01	_5600F+01 [/]	[
NASTRAN	.1478E-01	.1860E-01	°5551F-01	.2501E-01	.3726E-01	.4356L-01	.5037E-01	5744E-01	
DEFL. AT	25	26	27	28					ŝ
ExP.	.5600E−01	.1285E+00	.1480E+00	.1741€+00					
NASTRAN	.6419E=01	1496F+00	1697F+00	-1906F+00				:	1

R.M.S. OF DIFFERENCES = .94925E-04

MAXIMUM ERROR = .31946E-03

ORIGINAL PAGE IS OF POOR QUALITY

.60508E-05

.60289E-05

,60310E-05

NASTRAN

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Table 17

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KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR SOLID WING 3 (ALL ROTATIONS ARE BASED ON A 1LB. LOAD)

			LOA	O AT POINT 1				
ROTATIONS AT	1	2	3	4	5	6	7	8
KU	51169E-06	51169E-06	-s51169E+06	⇔₀51169E∞06	51169E-06	51169E-06	51169E-06	∞₀51169£⊶Co
NASTRAN	.3837E⇔03	22874E-04	.17071E-05	.74683E-06	20637E-07	.12787E-03	.15471E-(4	\$1455E-05
RUTATIONS AT	9	10	11	12	13	14	15	16
KU	51169E-06		51169E-06	∞•21169E≏06	- ₀51169E-06	- ∘ 51169€-06	- .51169E-O C	51169E-06
NASTRAN	.33503E-05	.24246E-05	.16237E-04	₀64597E⊷05	S0699€∽05	45586E-05	.44386E-05	"S1338E-05
ROTATIONS AT	17	18	19	20	21	55	23	24
ະບ	51169E-06	51169E-06	51169E+06	51169E-06	51169E-06	-,51169E-06	51169E-06	51169E-06
NASTRAN	₀49490E-05	.49010E-05	。48468F-05	₀48517E-05	.48761E-05	.48971E-05	.48974F-05	°48747E-02
RUTATIONS AT	25	26	27	28				
κu	-,51169E-06	51169E-06	51169E-06	51169E+06				
NASTRAN	.49017E-05	.49047E-05	.49044E-05	.49038E-05				
			LOA	D AT POINT 2				
				0000000000000000				
HOTATIONS AT	1	2	3	4	5	6	7	н
KU	74423E-06	∽ ₀74423E − 06	~.74423E-06	74423E-06	74423E-06	74423E-06	- .7 4423E-06	74423E-06
NASTRAN	79917E-05	₀73521E~05	₀67898E =05	.20722E-05	.11386E=05	°128999E-04	.20693E≁04	.11188E-04
ROTATIONS AT	9	10	11	12	13	14	15	16
KU	∽₀74423E-06	74423E-06	-,74423E-06	-•74423E-06	- .7 4423E⇔06	74423Ľ-06	-•24453E-06	-,74423E-06
NASTRAN .	°ð1329E-02	.86761E-05	°51512e-04	₀15038E ∞04	.12683E⊳04	₀12233€-04	°15944E-04	.14082E-04
ROTATIONS AT	17	18	19	50	21	22	23	24
សម	74423E-06	74423E-06	74423E-06	74423E-06	74423E-06	74423E-06	-,74423E-06	74423F-00
NASTRAN	.13232E-04	\$12918E-04	.12863E+04	012946E-04	.13022E+04	.12965E-04	₀12941E-04	.12939L-04
ROTATIONS AT	25	26	27	28 -				
KU	~ ₀74423E-06	∞.74423E+06	⇔ .74423E+06	∽₀74423E-06				
NASTRAN	.12947E-04	.12963E-04	.12962E+04	.12963E-04				
		•	. 104					
			007					
ROTATIONS AT	1	2	3	A	G	6	. 7	, ,
	- 97677F=06	- 97677F- 16	- 13754F-06	- 13750F-05	_ 137605_0¢	- 137505-05	- 137505-05	- 137505-05
MASTRAN	- 162055-05	- 442425-05	- 303436-05	475015 05	336065-05	134305-04	= 01 0 C 0 C	-0131372-03 460605 05
DOTATIONS AT	~~!!!!	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	0°545455000	\$01201E#02	°250405-03		=00000E=V3	************
8018130N3 AT	- 137505-05	- 137505 05	- 177505-05	133505 05	13	19		10
MACTDAN	-0101076-00	107000.04	- 33074E-AF		90131375903 600965 05	-013/375905 -04/36 AF	-0131375403 706075 AF	a 12/245-02
UNTATIONS AT	17 17	64VI2CC=V4	-0CJUI4C905	**************************************	037V/35=05	*0A00%E=02	01000VC=00	-73417L-VD
401 1007411003 41	_ 12760F_45	10 - 197605 AF	197605.05	20 1075.05	137605 00	• 22	23	24
NV NAC 70 ANI	-013737C-V3 501015 05	-013/372-V3	-013137E-02	₩013(57E-U5	⇒.107C-U5	+.13/59E+05	=.13/39t.+05	13/371-03
NHJIRHN Datartans af	°241916-02	₀0U725L=U5	+02708L-05	*02069E+05	°0050AF-02	.60384E∞05	°00537-02	•00697L-05
MUTATIONS AT	25	26	27	28				
5 L L	a.14/5¥Fa055							

.60311E+05

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Table 17 (Continued) KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR SOLID WING 3 (ALL ROTATIONS ARE BASED ON A 1LB. LOAD) LOAD AT POINT & 000000000000000000 ROTATIONS AT 2 3 4 5 -12093E-05 ○.12093E⇒05 ∞,36829E+05 KU -44426E-05 -.44426E+05 ~.44426E~05 -- 44426E-05 -- 46626F-05 NASTRAN -.21231E-06 -.17846E-05 ∞.90653E+05 -.28462E-04 a19314E=04 -.98321E-05 -. 25623E-04 -. 36968E-04 ROTATIONS AT Q 10 11 12 13 14 15 16 KU ~~ 44426E-05 -.44426E-05 -.44426E-05 -.44426E-05 ~.44426E-05 +,44426E-05 --44426E-05 NASTRAN -.34798E-04 -.41290E-04 ~~22595E-04 ~~40589E-04 -.40210E-04 -.40577E-04 --43181E-04 -.42180E-04 ROTATIONS AT 17 18 19 20 51 22 23 24 ĸu -- 44426E-05 -- 44426F-05 -.44426E-05 -,44426E-05 -.44426E-05 -,44426E+05 -.444252-05 NASTRAN --41436E-04 -.41287E-04 -.41405E-04 -.41776E-04 -.41477E-04 -41364E-04 -.41339E-04 -.41346E-04 ROTATIONS AT 25 - 26 27 28 KU -.44426E-05 --- 44426E-05 -.44426E-05 ⊷.44426E-05 NASTRAN -.41344E-04 -.41335E+04 -.41335E-04 --41337E-04 LOAD AT POINT 5 ROTATIONS AT 2 3 ۵ ĸu -.14418E-05 -.144188-05 ~.59898E-05 -.13692E-04 ⇒.28388E-04 ~.13692E-04 -.23834E-04 -.283688-04 NASTRAN ~79586E~06 -.34627E-06 ⊷.68216E=05 -.353868-04 -.64744E-03 ~.69235E-06 -.20042E-04 -.553621-04 ROTATIONS AT 10 11 12 13 14 15 10 -.28388E-04 RU -.283885-04 -.28388E-04 -.283888-04 -.28388E-04 -.28388E-04 -.28388E-04 -.2838AE+04 NASTRAN -.13999E-03 -.385288-03 -44771E-04 -. 72643E-04 -.11109E-03 -.11831E-01 --- 862328-44 ROTATIONS AT 17 18 19 20 21 22 - 23 24 ~.28388E-04 --28388E-04 KU --,28388E+04 -.28388E-04 ∞.28388E=04 -.28388E-D4 -.283885+04 -.283885-04 NASTRAN -.88805E-04 ⇒.91503E-04 -.93149E-04 -.90197E-04 -.89551E-04 -.90054E+04 -.90516E-04 --- YO647E-04 ROTATIONS AT 25 26 27 28 KU . -.283888-04 -.28388E-04 -.28388E-04 -.28388E-04 NASTRAN -.90244E-04 ~.90031E-04 -.90087E+04. ~.90092E-04 LOAD AT POINT 6 ****** ROTATIONS AT З -.35416E-05 ĸυ ~.35416E-05 -.12257E-04 -.19699E-04 --- 19699E-04 -19699E-04 -.19699E-04 -.19699E-04 MASTRAM ~.26881E-04 .26976E-04 .24128E-04 a18507E=04 .90252E⇔0S °15402E-03 °558282° .944956-04 POTATIONS AT 0 3.0 11 12 13 14 15 16 X11 -.196998-04 -.19699E-04 -.19699E-04 -.19699E-04 -19699E-04 -.19699E-04 -.19699E-04 -.19699E-04 NASTRAN *0-311208° .76775E-04 .42008E-03 -16123E-03 .12077E-03 .11449E-03 .11775E-03 .14575E-03 ROTATIONS AT 17 18 19 20 21 22 23 24 ĸu -.19699E-04 -- 19699E-04 -.19699E-04 -.19699E+04 -.19699E-04 -- 19699E-04 -.19699E-04 -. 195998-04 NASTRAN .12563E-03 ·15555E-03 .12129E-03 .12178E-03 .12265E-03 .12209E+03 .122075-03 -15502F-03 POTATIONS AT 25 26 27 28 -.19699E-04 ĸu -.19699E-04 -.19699E-04 -.19699E-04 NASTRAN \$12215E-03 .12224E-03 .12227E-03 .12227E-03

962-049 Het-049	pinisiint heeseere	€neppene €neppene	Entrations Entrations	a antos seras V Carro Antos V	1989-1994-14 1979-1994-19	California California Parataria		b consid	() () 	(territoria) (territoria)	, ,	<u>Jänni</u>		((jenilist)		() (1) (1) (1) (1) (1) (1) (1) (1) (1) (
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			··· ·					o Lutra	NEMOE	COESE	ያድዝፍልተ	5 F08	501 10	WING	з				
			KU= /	AND N	ASTRAN	- ROT# (ALL F	ATIONAL Rotatic	. INPL)NS AR	E BASE	D ON	A 1LB.	LOAD							
								LOAD) AT POI	NT 7									
ROTAT	10NS A	7 ·		1		2		3	1000000000	4		5		6		7		8	
KU		-	37318E	~05	37318	E=05	14145	E-04	2726	6E-04	-,3484	1E=04	÷ 2720	56E-04	- .348	41E-04	⇔.346 	341E=04	
ROTAT	AN IONS A	r	-010202E	U4 9	- 10085	10	.84234	11	02675	cc∞v4 12	012130	13	⇔°102,	14	0348	osc-us 15	004(15	
KŲ		•	34841E	-04	-,3484]	E-04	⇔₀3484ì	E=04	3484	1E-04	-,3484	1E-04	3484	1E-04	348	41F-04	346	341E-04	
NASTR	AN	•	.87183E	-04	.10129	E-03	.11162	2-03	o1242	2E-03	.1144	1E-03	.116	78E-03	.127	11E-03	.136)72E-03 24.	
KU	1002 A	ŀ	34841E	-04	34841	E=04	34841	E-04	3434	1E-04	-,3484	1E=04	3484	1E-04	-,348	41E-04	34F	141E=04	
NASTH	AN	_	.12283E	-03	.12020	E-03	.12053	F-03	.1217	3E=03	.1216	1E-03	·)20	73E-03	120ء	48E-03	.120)25E-03	
ROTAT	IONS A	Т	- 34841F	25 -04		26 F_04	34841	27 F-04	. 3484	28									
NASTR	AN		.12050E	~03	.12059	E=03	.12059	Ę. 13	.1206	1E-03									
								LOAD) AT POI	NT 8									
ROTAT	TONS A	r		1		2		3 000		6000V 4		5		6		7		8	
KU		-	39221E	-05	39221	E⇔05	16032	E-04	3483	4E-04	-,6743	5E-04	348	34E+04	557	55E-04	÷.704	14E-04	
NASTR	AN TONS A	r	∽₀76848E	-05 0	17253	E⇔04 10	22990	E⇔04 11	·1012	4E-04	,32429	9E-04	-,1036	58E-03	-,118	83E-03	-,569	14E-04	
KU	TON2 M	L	70414E	-04	70414	E~04	70414	E-04	7041	4E-04	70414	\$E-04	704)	45-04	704	146-04	704	148-04	
NASTR.	AN		013686E	-04	\$2591	E-04	16156	E-03	7684	7E-04	3472	1E-04	1654	8E-04	-,473	90E-05	517	109E-04	
RUTAT	IONS A	ſ	70414F	17 -04	e.70414	18 · Fa04	- 70414	19 E+04		20 48-04	70414	21 4E=04	e.7041	22 45+04	704	23 14F+04	704	24	
NASTR	AN		39085E	-04	33158	E=04	30794	E=04	3148	0E-04	- 35031	8E-04	3421	37E-04	337	76E-04	=.336	51E=04	
ROTAT	IONS A	r		25	70.00	26		27		28									
NASTR	AN		33982E	-04 -04		E=04 E=04	34387	E=04	= 07U41 = 03439	42-04 0E-04									
			• • • • • • • • •	-															
								LOAD) AT POI	NT 9									
ROTAT	BONS AT	ז		1		2		3	· · · · · · · ·	4		5		6		7		8	
KU MAGRE	A.n.		+.41124E	-05	41124	E⇔05		E=04	~.4240) 50(0)	26-04	1046	7E-03	⊳.4241	28-04	766	70E-04	152	234E-03	
ROTAT	AN Ions ai	r	********	9 9	e ^c 1370U	10	~°34522	11	· • • • • • • • • • • • • • • • • • • •	12	023010	25-V9 13	-01900	185-04 14	-°120	82E-03 15	° • 2 3 1	16	
KU			14201E	-03	142010	E-03	14201	E-03	1420	1E-03	1420	1E-03	142)1E=03	142	01E-03	142	201E-03	
NASTR	AN Tone At	•	29442E	-03	15177	E-03	30781	E-03	3408	9E-03	3474	48-03	3549	54E-03	370	65E-03	-,371	714E=03	
KU	TON2 N	:	14201E	-03	14201	18 E=03	-,14201	E=03	-,1420	20 1E=03	1420	21 1E=03	1620	22 11E-03	142	016-03	142	24 2018-03	
NASTR	AN		+.36416E	-03	36249	E-03	36434	E-03	3694	7E-03	- 3655	9E-03	- 363	78E-03	- 363	44E-03	+. 36	3555-03	
ROTAT	IONS AT	r	1/	25	1/00-	26	1.000	27		28									
NASTR	AN		14201E	-03 -03		c≈v3 E=03	14201	E~03 E~03	⊷.1420 ⇔.3634	15=03 26=03								()	
			0000010	~~	020240													<u>ບ</u> າ 	

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KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR SOLID WING 3 (All Rotations are based on a 1LB. Load)

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	•		LOA	D AT POINT 10			r	
ROTATIONS AT	1	2	3	4	5	6	7	8
ĸu	43026E-05	43026E-05	- 。19807E ⇔04	49970E-04	14191E-03	- <u>499705-04</u>	∞ ₀97584E∞04	- <u>0</u> 17426E-03
NASTRAN	.23277E-05	-080722E-05	47625E-04	-012440E-03	-,32795E-03	∞°43401E≈04	- <u>.</u> 17085E-03	-,34979£-03
ROTATIONS AT	9	. 10	11	12	13	14	15	16
KU	-,23625E-03	∽。26098E≏03	25015E-03	26098E-03	∞ 26098E∞03	-•2609CE-03	-,26098E+03	200406-03
NASTRAN	74102E-03	27732E-02	36430E-03	53987E-03	∼.70417E-03	~ ₀93585⊦∞03	13447E-02	71493E-03
ROTATIONS AT	17	18	19	20	21	22	23	24
ĸu	~₀26098E -03	26098E-03	26098E-03	26098E-03	-,26098E-03	-,26098E-03	26098E-03	- <u>26098E-03</u>
NASTRAN	-,74318E∞03	76564E-03	- .79141E-03	78234E-03	⇔.75232E-03	∞₀75317£-03	š12439F=03	75+18E-03
ROTATIONS AT	25	26	27	28				
KU	26098E-03	26098E-03	- <u>。</u> 26098E-03	26098E-03		•		
NASTRAN	75312E-03	-,75056E-03	-,75107E-03	75127E-03				
			LOA	D AT POINT 11				
		2	1944 7	<i></i>	5		7	L.
NUTATIONS AF	(53)65 46		377535 0/	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	120505-02	628025-04		- 162025 04
NU NAC T O (N	CU-3011C0.~	-,05/158005	₩ ₀ 2(/)222004 326135.05	-02/UJE+V4 67/535 04	a°134205 = 01	- 343485-03		-alocvar-03
NASTRAN	30/202-04	-,344032=04	e°132135e02	00/053E≈04	· 20081C=V4	°.242486=U3	⇒,41J⊃4E=04	0132C/L=U3
ROTATIONS AT	9			102215 43				107011 40
KU	195466-03	19/31E=03	-19/31E-U3	= 19731E=03	202/06.02	+.19/31C+03	₩019/31E=03	-019/310-03
NASINAN Rotifian	•24115E=03	.30001E-03	010140E-02	⇒33J02E=V3	₀39 <u>2</u> 40 € ⁴ ,	403/1E-03	°44214F=03	*40//2C=03
RUIALIUNS AL		100010 00	\$07215 02		107216 02	107315 03	107315 04	- 117416 03
RU	~,I9/31E+U3		∞,19/312+U3	19/31E-U3	0140E 03	= 19/31E=U3	*2001E 00	
NASTRAN	-50475E-03	₀45730E⇔03	°42410F-03	04623/E-03	048100E⇔UJ	**********	043884E-UJ	042450E=U2
ROTATIONS AT	25	26	12	28				
ĸIJ	19731E=03	=.19731E=03	-,19/31E-03	19731E=03				
NASTRAN	°4245-03	₀46092E=03	a46132E-03	₀45153E=03				
		•	LOA	D AT POINT 12				
			994	000000000000000				
ROTATIONS AT	1	2	3	4	5	6	7	8
ĸu	-67195E-05	67195E-05	29220E-04	-。68589E≃04	∞ .16855E -03	68589E-04	12253E-03	20241€+03
NASTRAN	⇒.17835E~04	35378E-04	-,32352E-04	.30402E-04	₀69351E∽0¢	-₀24851E+03	- ₀21897£ ←03	57477E-04
ROTATIONS AT	9	10	11	12	13	14	15	16
KU	-«26876E-03		28451E-03	30022E-03	~,30022E-03	30022E-03	30022E-03	30022E-03
NASTRAN	,11025E-03	23759E-03	-,41579E-03	31672E-04	.14251E-03	20082E-03	°54633E-03	.17510E+03
ROTATIONS AT	17	18	19	20	21	22	23	24
ĸu	30022E-03	30022E-03	30022E-03	30022E-03	-,30022E-03	300228-03	300225-03	300275-03
NASTRAN	20842E-03	20734E-03	21669E-03	.23083E+03	21984E=03	21450E-03	.21243E+0J	.212845-03
ROTATIONS AT	25	26	27	28	******			
Ku	30022F-03	30022F-03	30922E-03	30022E=03				
MASTRAN	-21267F+03	.212365-03	21215F=03	.21228F=03				

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KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR SOLID WING 3 (ALL ROTATIONS ARE BASED ON A 1LB. LOAD)

4-6-4-5

			LOA	D AT POINT 13					
ROTATIONS AT	1	2	3	4	5	6	7	FA	
(U	~.68674E~05	∞,68674E⇔05		74475E-04	-,19751E-03	- 744758-04	a.13880F-03	- 242795-03	·····
NASTRAN 0	11300E=04	32130E-04	52107E-04	- 88329E-05	63915E-04.	=_21617E=03		- 25320F=03	
ROTATIONS AT	9	10	11	12	13	14	15	16	
(U	34206E-03	42424E-03	37170E-03	42424E-03	-,44640E-03	44640E-03	44640F-03	44640F-03	
NASTRAN	13127E-03	s2378E∞04	6289]E-03	54734E-03	-,38029E-03	27524E-03	14523E=03	550126-03	
ROTATIONS AT	17	18	19	20	21	22	23	24	
KU	44640E-03	44640E-03	44640E-03	44640E-03	-44640E-03	-44640E-03	446405-03		
VASTRAN	40953E-03	+.34890E-03	-,32456E-03	31778E-03	36927E-03	35835E-03		- 3516HF-03	
TA ZNOITATIONS AT	25	26	27	28	• • • • • • •		100000.00	1001001 00 1	
<u< td=""><td>-,44640E-03</td><td>44640E-03</td><td>44640E-03</td><td>44640E-03</td><td></td><td></td><td></td><td></td><td></td></u<>	-,44640E-03	44640E-03	44640E-03	44640E-03					
ASTRAN	35407E-03	35974E-03	-,35950E-03	359562-03					
			LOA	D AT POINT 14 Secondoses					
ROTATIONS AT	1	2	3	4	5	6	7	н :	
(U	701548-05	-₀70154E∞05	32156E-04	80361E-04	-。22648E-03	80361E-04	-₀15507E-03	283188-03	
ASTRAN	57070E-05	28263E-04	69161E-04	55200E-04	₀41887E=04	18437E-03	∽ ₀33488E-03	43270E-03	
TATIONS AT	9	10	11	12	13	14	15	16	
ເບ	41536E-03	54827E-03	45890E-03	54827E-03	61908E-03	∞.65t99E-03	65099E-03	65099E-03	
ASTRAN	45867E-03	- .30518E-03	75535E-03	-•87649E-03	9 9782E-03	∽₀1095 4 ξ-02	90276E-03	12655E-02	
ROTATIONS AT	17	18	19	20	21	22	23	24	
(U	- <u>。65099E-03</u>	65099E-03	65099E-03	⊷ ₀65099£∞03	-,65099E-03	65099E-03	65099E-03	650996-03 ~	-
ASTRAN	12437E-02	12233E-02	12323E-02	12709E-02	+.12674E-02	12481E-02	12425E-02	12430E-02	
OTATIONS AT	25	26	27	28					
(U	∞.65099€-03	65099E-03	65099E-03	~.65099E-03					
ASTRAN	124625-02	12457E-02	e.12451E=02	-12054E-02					

LO	AD	ΑT	POI	NT	15
40	800	0.01	0000	***	1 1 0 0

ROTATIONS AT	1	2	3	4	5	6	7	ß
KU	71634E-05	-₀71634E∞05	33624E+04	86248E-04	25544E-03	-,86248E-04	17134E-03	⇔.32356E-03
NASTRAN	16123E-06	23898E-04	- .85445E-0 4	10764E-03	56171E-05	⇔,14813E-03	373. E-03	60672E-03
ROTATIONS AT	Q	10	11	12	13	14	15	16
ĸu	~ ₀48866E→03	67229E-03	⇔,54609E+03	07229E-03	⇔,79175E∞03	89269E-03	-,93267E-03	93267E-03
NASTRAN	85462E-03	11578E-02	-,84788E-03	11721E-02	#.15412E-02	22804E-02	53970E-02	15545E-02
ROTATIONS AT	17	18	19	. 20	21	22	23	24
KU	932678-03	93267E-03	-,93267E-03	93267E=03	93267E-03	93267E-03	932678-03	+.93267E-03
NASTRAN	20959E-02	22709E-02	-,25102E-02	28967E-02	23001E-02	22818E-02	22827E-02	22959E-02
ROTATIONS AT	25	26	27	28	• • • • • • •			
KU -	93267E-03	93267E-03	93267E-03	93267E-03		•		
NASTRAN	22780E-02	22432E-02	-22432E-02	-22450F-02				

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KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR SOLID WING 3 (ALL ROTATIONS ARE BASED ON A ILB. LOAD)

LOAD AT POINT 16 00000000000000000

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ROTATIONS AT KU NASTRAN ROTATIONS AT KU NASTRAN ROTATIONS AT KU NASTRAN ROTATIONS AT KU NASTRAN	1 96014E-05 21951E-04 9 53164E-03 .12420E-03 17 10571E-02 .25 10571E-02 .88945E-03	2 +.96014E+05 +.52940E-04 10 72925E+03 .44657E+03 18 +.10571E+02 .70821E+03 26 10571E-02 .92390E+03	3 43247E-04 58793E-04 11 59291E-03 10032E-02 19 10571E-02 .78570E-03 27 10571E-02 .91916E-03	4 10571E-03 .40128E-04 12 72925E-03 53184E-03 20 10571E-02 .87803E-03 28 10571E+02 .92182E-03	5 28621E-03 .11971E-03 86211E-03 32340E-04 21 10571E-02 .13307E-02	6 10571E-03 38645E-03 14 98207E-03 .38540E-03 22 10571E-02 .95853E-03	7 19861E-03 40936E-03 15 10571E-02 .67860E-03 23 10571E-02 .88428E-03	8 35748E-03 19778E-03 16 10571E-02 .11515E-02 24 10571E-02 .87851E-03
NASTRAN	.88945E-03	.92390E-03	091916E-03	.92182E-03				

LOAD AT POINT 17 **************

ROTATIONS AT	1	5	3	4	5	6	7 '	н
KU	970712-05	-₀97071E-05	44296E-04	10991E-03	30690E-03	10991E-03	-,21023E-03	38633E-03
NASTRAN	17198E-04	- .50178E-0 4	72942E-04	₀99841E-05	.ll467E∞03	35414E-03	45502E-03	34377E-03
ROTATIONS AT	9	10	11	12	13	14	15	16
KU	58400E-03	81783E-03	65519E-03	81783E-03	98545E-03	11547E-02	-,13205E-02	13205E-02
NASTRAN	83806E-04	.26604E-03	11569E-02	93589E-03	57072E-03	17135E-03	.19440E-03	13143E+02
ROTATIONS AT	17	18	19	20	- 'c1 '	22	23	24
KU -	13523E-02	13523E-02	∽.13523E+02	135238-02	-,13523E-02	13523E-02	13523E-02	+.13523E-02
NASTRAN	60471E-03	18344E-03	.10814E-04	₀14258E+03	72744E-04	69624E-05	47332E-05	.33330E-05
ROTATIONS AT	25	26	27	28	-		-	
KU	13523E-02	13523E-02	13523E-02	13523E-02				
NASTRAN	-22023E-04	-13415E-04	19261E-04	20021E-04				

05	-,45344E-04	•••	11412E-	-03	∞ <u>₀</u> 3275'
5	3			4	
	000	0000	****	6 G G	•
	LOA	D AT	POINT	18	

ROTATIONS AT	1	2	3	4	5	6	7	8
KU		∞ 。98128E∞05	-,45344E-04	11412E-03	∞.32759E~03	11412E-03	~₀22185 £∞03	-,41518E-03
NASTRAN	- .12939E-0 4	47347E-04	86340E+04	⇔•21206E-04	.10812E ⇔03	32773E-03	- . 49288E-03	48363E-03
ROTATIONS AT	9	10	11	12	13	14	15	16
KU	-,63636E-03	- ° 80645E-03	71747E-03	90642E-03	-,11088E=02	13274E-02	15839E-02	15834E-02
NASTRAN	30144E-03	.6]084E-04	12424E-02	12363E-02	10965E-02	84601E-03	∝ .46850E∞03	21245E-02
ROTATIONS AT	17	18	19	20	21	22	23	24
KŲ	16839E-02	17328E-02	17328E-02	17328E-02	17328E-02	17328E-02	17328E-02	17328E-02
NASTRAN	19064E-02	15654E-02	-,12356E-02	10458E-02	17925E-02	-,16115E-02	15223E-02	148738-02
RUTATIONS AT	25	26	27	28				
KU	17328E+02	17328E-02	17328E-02	17328E-02				
NASTRAN	14015E-02	159948-02	15954E-02	15960E-02				

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KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR SOLID WING 3 (ALL ROTATIONS ARE BASED ON A 118. LOAD)

			L0/	AT POINT 19				
ROTATIONS AT	,	•	506	100000000000000	_			
KU	99185E-05	۲ ۵.991255-05	ጋ 	4 	5 - 24020E A2	6	7	B.
NASTRAN	875788-05		- 667472-04	- 531A9E.04	0,34828E0UJ	11832£⇔03	23347E-03	44402E+03
ROTATIONS AT	9	10	-0004475-04	13	°10A7€⊳03	~~JUZ12E+U3	∞°2898E~03	62112E-03
KU	-,68371E-03	-,99501E-03	77976F-03		- 123215-02	150005-00	104700 00	18
NASTRAN	5/802E-03	16042E-03	13256E-02	=.15100F=02	-16078F-02	- 15001F-02	- 131605-03	- 373800 A3
ROTATIONS AT	17	18	19	20	21-0100101-01	-0137716-02	-13109C=U2	< / 30 %t ~ UZ
KU	20155E-02	21667E-02	- 22272E-02	22272E-02	₩.22272F=02	22272F-02	- 22272F-A2	
NASTRAN	29433E-02	31503E-02	32743E-02	=.29189E-02		- 377216-02	- 370935-02	- 360H0E 02
ROTATIONS AT	25	26	27	28	0001072-02	-0011616-05	-011003E+VE	-,304405=05
KU	- 22272F-02	22272E-02	22272E-02	=.22272F=02		•		
NASTRAN	37392E-02	37969E-02	37814E-02	37799E-02				
			LOA	O AT POINT 20				
	_	_	000	000000000000000000000000000000000000000				
RUTATIONS AT	1	2	3	4	5	6.	7	8
R() NAC 20 844	○.10024E=04	10024E-04	47441E-04	12253E-03	~ ₀36897E⇔03	⇔°1552£°03	24509E-03	47287£-03
NASIRAN	~.45838£+05	41593E-04	11257E-03	●。85395E-04	.93675E⊷04	-°55411E-03	- . 56382E-03	75935E-03
RUTATIONS AT	9 7/2077 03	10	11	12	13	14	15	16
NU	~₀/4I0/E≠U3	10836E~02	842042-03	10836E-02	13555E-02	16727E-02	21107E-02	21107E-02
NASIRAN Nasariana ay	=,16003E=03	39024E-03	+.14026E-02	17780E-02	=.21209E=	24278E-02	-₀25767E-02	32975E-02
RUTATIONS AT		18	19	20	- 21	. 22	23	24
40 NAC 70 AN	- 23471E+UZ	-058001F+05	279318-02	28794E-02	28794E-02	⇔₀28794E-02	28794E-02	- .28794F-02
NASIKAN Gotatione ar	a,389/4E-02	++46232E+02	="2400\F~05	10431E-01	-,60112E-02	≈.61967E ∞02	63024E-02	- ,65216E-02
RUTATIONS AT	23	20	27	28				
	0028194E0U2	28794E-02	⇔°591A4F+05	28794E-02				
(443 L H H H	**!!?QIC*U2	~102318L-02	≈°01304F∞05	+.D1906E-02				
		•	LOA	D AT POINT 21				
			000	000000000000000	•			
ROTATIONS AT	1	5	3	4	5	6	7	8
KŲ	12631E-04	12631E-04	- .587 42E-04	- 14871E-03	∽,43284E-03	14871E-03	⊳ ₀29095E~03	⇔.55294E⇔03
NASTRAN	∞.19183E -04	∽ ₀66065E-04	-,10608E-03	.69676E-05	,17048E-03	-₀46724E-03	- ° 00121E-03	55908E-03
ROTATIONS AT	9	10	11	12	13	14	15	16
KU	86783F-03	-°15853E-05	- . 98850E-03	'=•12823£-02	►.16232E=02	∞.20383E-02	∞.26566E-02	-,26566E-02
NASTRAN	-,17922E+03	₀40999E-03	- . 17951E-02	+ ,16744E-02	- <u>.</u> 12464E-02	∞.58498E-03	°55024603	34425E-02
ROTATIONS AT	17	18	19	20	21	22	23	24
(U	-,30283E-02	34851E+02	-,39398E-02	44172E-02	49829E-02	49829E-02	49829E-02	49829E-02
NASTRAN	27407E-02	17813E+02	∽₀70197E ∞03	.28046E-03	25091E-03	27928E-03	.39914E-03	.10955E-02
ROTATIONS AT	25	26	27	26				
(U	-,49829E-02	49829E-02	∞.49829E ~02	49829E-02				
MACTOAN	155125-02	172016-02	157175-02	152905-02				

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KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR SOLID WING 3 (ALL ROTATIONS ARE BASED ON A ILB. LOAD)

			LO	AU AI POINT 22				
DATATIONS AT	,	-	000	, 0000000000000	-		_	
KUTATIONS AT	- 12695E-04	- 126055-0A	- 503715-04	4 - 161346.03	5	6 1510/5 40	7 203005 00	8
NASTRAN			- 11610E-04	₩010124E6V3	+044323E4V3	●015124K=03	29/92L-03	57025E-03
ROTATIONS AT		-0043476-04	-9114105-03	12	0100325003	°°421505403	š08310F*03	+0043136-03
KU	- 89924F=03	- 13355F-02	-10259F-02	a.13355F-02	16972F-02	- 21419E-02	- 201465-02	- 26144E VJ
NASTRAN	311305-03	-29161F-03	- 18395F=02		-15680F=02	- 10176E-02	- 2008/E-02	- 202275 02
ROTATIONS AT	17	18	-9100105-05	-0104722-02	200001005		⇒°CAADIC=A3	-*343215-05
Ku	32273E-02	+-374558+02	- 42793F-02	=.48750F=02	-58016F=02	- 589775-02	- 540775-07	- 500775-03
NASTRAN	+.35673E+02	-,29219E+02	-20596E-02	=.10643E=02	-,52134F-02		= 25202E=02	- 161548-02
RUTATIONS AT	25	26	27	28	0-620.4 05			-0101046-05
KU	58977E-02	58977E-02	- 58977E-02	58977E-02				
NASTRAN	97584E-03	16160E-02	15142E-02	14966E-02			-	
			L04	AD AT POINT 23				
			904	10000000000000				
HUTATIONS AT	1	2	3	4	5	6.	7	8
KU	12758E-04	12758E-04	∽。60000E-04	15376E-03	⇔°42101E-03	15376E-03	304898-03	-,58756E-03
NASTRAN	14132E-04	- . 62638E-04	-₀12207E-03	-₀30678E-04	.16325E÷03	43574E-03	∞.70563E+03	72668E-03
ROTATIONS AT	9	10	11	12	13	14	15	16
ĸIJ	93065E-03	13886E-02	10632E-02	13886E-02	17712E-02	22454E-02	29727E-02	29727E-02
NASTRAN	44380E-03	.17156E-03	18870E-02	-°50180E-05	18853E-02	14508E-02	64194E-03	431802-02
HOTATIONS AT	17	18	19	20	21	22	23	24
RU NACTONI	≈.34262E÷02	-,40059E-02	46189E-02	53327E-02	66202E-02	69271E-02	70477E-02	70477E-02
NASIRAN DOTITIONO AT	45464E-05	40409E+02	349376-02	°₀25647E=02	78112E-02	~.72818E+02	64584E-02	55185E-02
RUTATIONS AT	25	26	27	28				
RU	/US//E-U2	+.10477E+02	/04//E-02					
NASTRAG	4/0242402	÷₀68803t≈02	~.0010VL-V2	~.04YJUE+U2				
			LOA	AT POINT 24				
· · · · · · · · · · · · · · · · · · ·		•	000	000000000000000000				
ROTATIONS AT	1	2	3	4	- 5	. 6	7	8
KU	~.12822E-04	12822E-04	-,60629E-04	⇔.15628E-03	-,47008E-03	∽°12058E~03	31187E-03	∞。60486€∞03
NASTRAN	11613E-04		13002E-03	∞.49576E.04	,15938E-03	. ∞ ,42024E -03	72751E-03	⇔₀81004E-03
ROTATIONS AT	9	10	11	12	13	14	15	16
RU	-,96207E+03	1441PE-02	⇒,11006E~02	~.14418E-02	-s18452E=02	23490E-02	31307E-02	31307E-02
NASIHAN	5/6802-03	.50145E-U4	~°IA323F-05	21879E-02	-°55003F-05	-018877E-02	⇔•10788E≈02	-046994E-02
RUIATIONS AT	17	18	19	20	21	22	23	24
RU	⇒.36252t=02	=,42662E+02	495852-02	57905E-02	-,74389E-02	~.79565E~02	83602E-02	85144E+02
NASIRAN	49959E-02	513836-02	-,49852E-02	41914E-02	⇔.10053E⇔01	10590E-01	∞.10969E-01	11027E-01
HUTATIONS AT	25	26	27	28				
KU	85144E-02	85144E-02	-085144E-02	∞.85144E=02				
NASTRAN	10026E-01	≈.14152E=01	13978E-01	13848E-01		•		

ORIGINAL PAGE S OF POOR QUALITY

Table 17 (Continued)

KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR SOLID WING 3 (ALL ROTATIONS ARE BASED ON A ILB. LOAD)

Operations AT 12885-04 12885-04 12885-04 12885-04 12885-04 12885-04 12885-04 12885-04 12885-04 12885-04 12885-04 12885-04 12885-04 12885-04 12885-04 12885-04 12885-04 12885-04 12886-03 15880-03 31842-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 893471-03 915171-02 923277-03 915171-02 923477-03 915171-02 923477-03 915171-02 915171-02 915171-02 915171-02 915171-02 915171-02 915171-02 915171-02 915171-02 915171-02 915171-02 915171-02 915171-01 915171-02 915171-01 915171-02 915171-02<				LOA	AT POINT 25					
NOTATIONS AT - 12805-0412805-04012805-04012805-04055080-03048249E-03048249E-03048249E-03048249E-03048249E-03048249E-03048249E-03048249E-03048249E-03048249E-03048249E-03048249E-03048249E-03048249E-03048249E-03048249E-03048249E-03048249E-03048249E-03048249E-0202595E-0202585E-0202585E-02052868E-0202585E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-02052868E-0115608E-0116418E-0116418E-0116418E-0116418E-0116418E-0115608E-0122903E-01232552E-0115528E-0117704E-0115608E-0122903E-01232552E-0115528E-0117704E-0115608E-0122903E-01232552E-0115628E-0117704E-01232552E-0115608E-0122903E-01232552E-0115608E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0305532E-0				000	646666666666666666666666666666666666666					
KU12865E-0412865E-0412865E-0461276E-03682646E-0368264E-03682217E-03 MASTRAM9927E-0559221E-021992E-0368464E-0412557E-03640243E-0362217E-03 MASTRAM99348E-03144045E-0211380E-0214449E-0221356E-0224526E-0215176E-0255771E-02 MASTRAM70973E-0314045E-0119856E-0222356E-02225171E-0222527E-0215176E-0255771E-02 MASTRAM56915E-02662366E-025591E-0262365E-02225171E-02225771E-0255771E-02 MASTRAM56915E-02662366E-025591E-0262755E-0282575E-0282575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0280575E-0385202E-0385202E-0385757E-0280575E-0280575E-0280575E-0385202E-0385755E-0385202E-0385755E-0385202E-0385757E-0280575E-0385202E-0385755E-0385202E-0385755E-0385202E-0385755E-03 -	ROTATIONS AT	1	2	3	4	5	6	7	8	
NASTRAM90927E-0559221E-0413798E-0368464E-04 .15557E-03646473E-037991E-0389347E-03 16 HOTATIONS AT90934E-0314649E-0211308E-0214649E-0219192E-0282656E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232868E-0232876E-033073E-033675E-0231772E-0231772E-0231772E-02110716E-01 NASTRAN38242E-02462346E-025298E-0262356E-0262356E-02312093E-01313721E-01315428E-01110716E-01 NASTRAN326368E-0132803E-0132353E-0132353E-01313721E-01315428E-01317704E-01 NASTRAN326368E-0132903E-0132353E-0132353E-0132532E-0390532E-0390532E-0391667E-03 HOTATIONS AT31695E-04315661E-04315277E-0331737E-03355320E-0390532E-0391667E-03 HOTATIONS AT129040E-0231786E-03327122C-0228687E-04322684E-0359532E-0390532E-0391667E-03 HOTATIONS AT129040E-0231786E-03327122C-0228687E-04325842E-02317084E-0390532E-0391667E-03 HOTATIONS AT129040E-0231786E-03327122C-0228687E-04318736E-0232035E-0224551E-02 HOTATIONS AT12040E-0231786E-03327102C-0228687E-04317054E-0232005E-0390537E-02 HOTATIONS AT5030E-0260398E-0242561E-02326842E-02317084E-0232005E-0390537E-02 HOTATIONS AT12040E-0231786E-03327102C-0228687E-04318736E-01317978E-0232045E-0232045E-03 HOTATIONS AT12040E-0231786E-0335936E-0245096E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0116039E-0230304E-0230304E	KU	~.]2885E-04	12885E-04	61258E-04	15880E-03	- ₀48249E-03	⇔.15880E-03	31884£-03	-,62217E≈03	
A0TATIONS AT 9 -10 11 12 13 14 15 16 KU	NASTRAN	- <u>\$90927E-05</u>	59221E-04	13798E-03	68464E-04	°1222403	⇔₀40473E-03	74941E-03	89347E-03	
KU	ROTATIONS AT	9	10	- 11	12	13	14	15	16	
NASTRAN70973E-0370550E-0419836E-0225171E-0222557E-0215176E-0255771E-02 RUTATIONS AT	KU	~ . 99348E-03	14949E-02	11380E-02	14949E-02	19192E-02	24526E-02	~.32888F-02	►.32888E-02	
ROTATIONS AT	NASTRAN	70973E-03	70550E-04	19836E-02	23568E-02	-,25171E-02	- . 23257E-02	~ ₀15176E-02	50771E-02	
KU 38242E-02 45266E-02 52981E-02 62575E-02 80858E-02 9677E-02 10216E-01 NASTMAN 55915E-02 62345E-02 62345E-01 10418E-01 10716E-01 NASTMAN 55915E-02 62345E-02 62345E-01 10418E-01 10716E-01 NASTMAN 24366E-01 10418E-01 10418E-01 10418E-01 107172E-03 NASTMAN 24366E-01 22903E-01 23753E-01 357947E-03 91972E-03 36329E-03 90532E-03 NASTMAN 15661E-04 15661E-04 15671E-03 26827E-04 .22942E-02 30945E-03 90532E-03 90575E-02 916364E-01 91	ROTATIONS AT	17	18	19	20	21	22	23	24	
NASTRAN -,56915E-02 -,62346E-02 -,62755E-02 -,12093E-01 -,13721E-01 -,15428E-01 -,17704E-01 POTATIONS AT -,10418E-01 -,10418E-01 -,10418E-01 -,20418E-01 -,23935E-01 LOAD AT POINT 26 000000000000000 HOTATIONS AT -1 2 2 3 4 -,19172E-03 -,319329E-03 -,319329E-03 -,74801E-03 NASTRAN -,16950E-04 -,79074E-04 -,15277E-03 -,26827E-04 .,22264E-03 -,55320E-03 -,90532E-03 -,9167E-03 NOTATIONS AT -1 2 2 3 4 -,19172E-03 -,218329E-03 -,90532E-03 -,9167E-03 NASTRAN -,16950E-04 -,79074E-04 -,15277E-03 -,26827E-04 .,22264E-03 -,55320E-02 -,90532E-03 -,9167E-03 NOTATIONS AT -1 2 2 3 4 -,19172E-02 -,28842E-02 -,20045E-02 -,20045E-02 -,42561E-02 -,20045E-03 -,004757E-02 -,20045E-03 -,004757E-02 -,20045E-03 -,004757E-02 -,20045E-02 -,20045E-03 -,004757E-02 -,20410E-01 -,20410E-01 -,20410E-01 -,20410E-01 -,20410E-01 -,20410E-01 -,20410E-01 -,212506E-01 -,2153040E-03 -,58775E-03 -,59794E-03 -,58775E-03 -,59794E-03 -,58775E-03 -,59794E-03 -,58775E-03 -,59794E-03 -,58775E-03 -,59794E-03 -,575994E-03 -,575994E-03 -,575994E-03 -,58775E-03 -,58775E-03 -,58775E-03 -,58775E-03 -,58775E-03 -,58775E-03 -,59794E-03 -,58775E-03 -,58775E-03 -,58775E-03 -,59946E-03 -,57594E	ĸu	38242E-02	-,45266E-02	52981E-02	⊳ ₀62483€∘02	- .82575E-02	~ .89859E-02	967272-02	10216E-01	
ROTATIONS AT 25 26 27 28 KU -,10418E-01 -,10418E-01 -,10418E-01 -,23908E-01 -,23958E-01 NASTHAN -,24364E-01 -,22903E-01 -,239056E-01 -,23953E-01 -,23953E-01 HOTATIONS AT 1 2 -,76237E-04 -,19172E-03 -,919172E-03 -,90532E-03 -,9053E-02 -,22561E-02 -,21651E-02 -,23452E-02 -,107045E-02 -,23205E-02 -,22561E-02 -,26675E-02 -,20405E-03 -,9053E-03 -,9053E-03 -,9057E-02 -,20410E-01 -,26475E-02 -,20410E-01 -,26475E-02 -,20410E-01 -,12754E-01 -,12256E-01 -,26492E-01 -,16464E-01 -,12754E-01 -,2256E-01 -,26492E-01 -,16464E-01 -	NASTRAN	-,56915£-02	≈ ₀62346E=02	∞.65385E-02	⊷ ₀62755E⊶02	⇔.12093E=01	13721E-01	15428£-01	17709E-01	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ROTATIONS AT	25	26	27	28					
NASTRAN24368E-0122903E-0123958E-0123253E-01 LOAD AT POINT 26 000000000000000000000000000000000000	KU	10418E-01	10418E-01	10418E-01	10418E-01					
LOAD AT POINT 26 000000000000000000000000000000000000	NASTRAN	24368E-01	22903E-01	~.23056E-01	23253E-01					
NOTATIONS AT 1 2 3 4 5 6 7 8 NOTATIONS AT 15661E-04 15661E-04 16277E-03 26827E-04 .22264E-03 90532E-03 90532E-03 90532E-03 90672E-03 NASTRAN 16950E-04 15277E-03 26827E-04 .22264E-03 55320E-03 90532E-03 91667E-03 NASTRAN 10406E-02 14354E-02 14354E-02 18354E-02 23842E-02 30945E-02 42561E-02 NASTRAN 48940E-03 .36786E-03 24955E-02 2212E-02 30945E-02 42561E-02 NASTRAN 46508E-02 61054E-02 15030E-02 32482E-02 30945E-01 42561E-02 NASTRAN 650360E-02 61054E-02 73503E-02 90067E-02 161506E-01 17539E-01 20410E-01 NASTRAN 650360E-01 65095E-01 66012E-02 .16215E-01 164646E-01 114973E-01 122564E-01 NASTRAN 830387E-02 22900E-01 66612E-02 .16215E-01 66612E-02 .16215E-01 164646E-01 <				1.04	10 AT DOTNE 26					
HOTATIONS AT 1 1 2 3 4 5 6 7 8 KU15661E-0415661E-0415671E-0419172E-0357947E-0339172E-033932E-0337840E-03 NASINAN16950E-0479074E-0415277E-0326827E-04 .22264E-03555320E-0390532E-039167E-03 NASINAN16950E-0417356E-0218356E-0228482E-0230945E-0242561E-0242561E-02 NASINAN48940E-03 .38786E-032495EE-0228482FE-0230945E-0232005E-0304757E-02 ROTATIONS AT 1 1 1 12 13 14 15 16 19 20284857E-0230945E-0232005E-03045757E-02 ROTATIONS AT 1 1 1 12 12 13 14 15 16 19 20284857E-0230945E-0242561E-0242561E-0242561E-0242561E-0242561E-0242561E-0242561E-0242561E-0232005E-0304757E-02 ROTATIONS AT 1 1 1 12 12 13 14 15 16 19 20284857E-0217084E-0232005E-0304757E-02228 RU550360F-0261054E-0273503E-0290067E-0213173E-0115160E-0117539E-0120410E-01 NASTRAN65585E-0260192E-0246611E-0224566E-0216939E-0116446E-0117539E-0112256E-01 RU23900E-0145099E-0145099E-0145099E-01 NASTRAN65776E-0415704E-0474656E-0419340E-0358775E-0319340E-0338794E-0357994E-03 ROTATIONS AT 1 2 3 4 5 0 ROTATIONS AT				000	000000000000000000000000000000000000000					
KU 15661E-04 15661E-04 169172E-03 319172E-03 31329F-03 31329F-03 31329F-03 31329F-03 91667E-03 NASIHAN 16950E-04 79074E-04 15277E-03 26827E-04 .22264E-03 55320E-03 90532E-03 90532E-03 90532E-03 90532E-03 90532E-03 90532E-03 90532E-03 90532E-03 90532E-02 42561F-02 42561F-02 KU 26950E-02 18354E-02 13176E-02 23042E-02 30945E-02 42561F-02 42561F-02 ROTATIONS AT 17 18 19 20 21 22 23 24 ROTATIONS AT 17 18 19 20 13173E-01 15160E-01 12256E-01 NASTRAN 65585E-02 660192E-02 46811E-02 24566E-02 16939E-01 16446E-01 14973E-01 12256E-01 NASTRAN 25300E-01 45099E-01 45099E-01 45099E-01 16215E-01 16446E-01 14973E-03 12256E-03 12256E-03 12256E-03 125704E-04 76656E-04 77936E-	ROTATIONS AT	1	2	3	4	5	6,	7	4	
NASTRAN16950E-047907AE-0415277E-0326027E-04 .22264E-0359320E-0390532E-0391667E-03 HOTATIONS AT 9 10 11 12 13 14 15 16 KU12040E-0214354E-0213841E-0718354E-0223842E-0230945E-0242561E-0242561E-02 HASTRAN60940E-03 .38786E-0326958E-0227102E-0227102E-0224857E-0237084E-0242561E-0264757E-02 ROTATIONS AT 17 18 19 20 21 22 23 .24 KU50360E-0261054E-0273503E-0290067E-0231373E-0115160E-0117539E-0120410E-01 NASTRAN65585E-0260192E-0246811E-0224566E-0216939E-0115160E-0117539E-0120410E-01 NASTRAN65585E-0260192E-0246811E-0224566E-0216939E-0116446E-0114973E-0112256E-01 KU29900E-0145099E-0145099E-0145099E-01 NASTRAN63387E-0226292E-0166612E-02 .16215E-01 NASTRAN63387E-0226292E-0166612E-02 .16215E-01 NASTRAN63387E-0226292E-0166612E-02 .16215E-01 KU1250E-0415704E-0415809E-0339363E-04 .22018E-0358775E-03919340E-0392794E-03975994E-03 ROTATIONS AT 9 10 1 1 2 13 14 15 10 KU12250E-0218708E-0415809E-0228244E-0224336E-0231635E-02907243E-03 ROTATIONS AT 9 10 1 1 2 13 14 15 10 KU12250E-0218708E-0218708E-02282436E-0224336E-0231635E-02907243E-03 ROTATIONS AT 9 10 1 2 13 14 15 10 KU12250E-0218708E-0218708E-02282436E-0224336E-0231635E-02907243E-03 NASTRAN57730E-03 .30897E-0325274E-0228244E-02264336E-0259036E-039006E-03907243E-03 NASTRAN57730E-03 .30897E-0325274E-0228244E-02264336E-0259036E-02907243E-03 NASTRAN51666E-0262790E-0218708E-02318708E-0259036E-0259036E-03907243E-03 NASTRAN57730E-03 .30897E-0325274E-0228244E-02264336E-0259036E-0359036E-0290346E-0359036E-02907436E-02 NASTRAN51666E-0262790E-0218708E-0233718E-0118436E-0121546E-01 NASTRAN51666E-0262790E-0257076E-0293319E-0213718E-0118934E-0121546E-01 NASTRAN70456E-02705476E-03	KU	≈.15661£ ∞04	15661E-04	74237E-04	+.19172E-03	∞ 。 57947E-03	-019172E-03	38329E-03	74840£-03	
H01ATIONS AT 9 10 11 12 13 14 15 16 KU -,12446E-02 -,1835KE-02 -,1835KE-02 -,2342E+02 -,2345E+02 -,42551E-02 -,20410E-01 -,17359E-01 -,20410E-01 -,20410E-01 -,20410E-01 -,17359E-01 -,20410E-01 -,12256E-01 -,20410E-01 -,12256E-01 -,20410E-01	NASTRAN	16950E-04	79074E-04	15277E-03	-,26827E-04	.22264E-03	∞ ₀55320E ≂03	90532E-03	91667E-03	
KU -,12040E-02 -,14354E-02 -,13454E-02 -,23042E-02 -,30945E-02 -,42561E-02 -,42561E-02 <td< td=""><td>ROTATIONS AT</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td></td></td<>	ROTATIONS AT	9	10	11	12	13	14	15	16	
NASTRAN	KU	15040E-05	18354E-02	∝.13841E ⊷0?	18354E-02	23842E-02	30945E-02	42561E-02	42561F-02	
ROTATIONS AT 17 18 19 20 21 22 23 24 KU\$0360E-02\$60192E-02\$60192E-02\$90067E-02\$13173E-01\$15160E-01\$17539E-01\$20410E-01 ROTATIONS AT 25 26 27 28 KU\$23900E-01\$45099E-01\$45099E-01\$45099E-01 NASTRAN\$63387E-02\$26292E-01\$66612E-02 -\$16215E-01 ROTATIONS AT\$63387E-02\$26292E-01\$66612E-02 -\$16215E-01 ROTATIONS AT 1 2 3 4 5 6 7 8 KU\$15704E-04 -\$15704E-04\$74656E-04 -\$19340E-03 -\$58775E-03 -\$19340E-03 -\$38794E-03 -\$75994E-03 ROTATIONS AT\$12250E-04 -\$74656E-04 -\$19340E-03 -\$3975E-03 -\$19340E-03 -\$38794E-03 -\$75994E-03 ROTATIONS AT\$12250E-04 -\$177936E-04 -\$16092E-04 -\$111 12 13 14 15 16 KU\$12250E-02 -\$18704E-04 -\$111 12 13 14 15 16 KU\$12250E-02 -\$18704E-02 -\$14090E-02 -\$18704E-02 -\$24336E-02 -\$163163EE-02 -\$16366EE-02 -\$163163EE-02 -\$163163EE-02 -\$163163EE-02 -\$16366EE-02 -\$16366EE-02 -\$16366EE-02 -\$163163EE-02 -\$16366EE-02 -\$16366EE-01 -\$16366EE-01 -\$16366EE-01 -\$16366EE-01 -\$16366EE-01 -\$16366EE-01 -\$16366EE-01 -\$16366EE-01 -\$16366EE-01 -\$16	NASTRAN	48940E-03	.38786E-03	24955E-02	27102E-02	-24857E-02	17084E-02	+.32005E-03	047578-02	
KU 50360E-02 61054E-02 73503E-02 90067E-02 13173E-01 015160E-01 17539E-01 20410E-01 NASTRAN 65585E-02 60192E-02 646811E-02 24566E-02 116939E-01 14973E-01 12256E-01 ROTATIONS AT 25 26 27 28 KU 23900E-01 45099E-01 45099E-01 45099E-01 45099E-01 NASTRAN 83387E-02 26292E-01 66612E-02 .16215E-01 12256E-01 NASTRAN 83387E-02 26292E-01 66612E-02 .16215E-01 12256E-03 19340E=03 38794E=03 375994E-03 36794E=03 367942E=03	ROTATIONS AT	17	18	19	20	21	22	23	24	
NASTRAN = ${}_{0}65585E-02$ = ${}_{0}60192E-02$ = ${}_{0}46811E-02$ = ${}_{0}24566E-02$ = ${}_{0}16939E-01$ = ${}_{0}16446E-01$ = ${}_{0}14973E-01$ = ${}_{0}12256E-01$ ROTATIONS AT 25 26 26 27 28 NASTRAN = ${}_{0}23900E-01$ = ${}_{0}45099E-01$ = ${}_{0}45099E-01$ = ${}_{0}45099E-01$ NASTRAN = ${}_{0}83387E-02$ = ${}_{0}26292E-01$ = ${}_{0}66612E-02$ = ${}_{1}6215E-01$ ROTATIONS AT 1 2 3 4 5 5 6 7 8 RU = ${}_{0}15704E-04$ = ${}_{0}15704E-04$ = ${}_{0}7656E-04$ = ${}_{0}19340E-03$ = ${}_{0}19340E-03$ = ${}_{0}38794E-03$ = ${}_{0}75994E-03$ NASTRAN = ${}_{0}15267E-04$ = ${}_{0}77936E-04$ = ${}_{0}7656E-04$ = ${}_{0}19340E-03$ = ${}_{0}58775E-03$ = ${}_{0}19340E-03$ = ${}_{0}202E-03$ = ${}_{0}72934E-03$ ROTATIONS AT 9 10 11 12 13 14 15 16 RU = ${}_{1}1250E-02$ = ${}_{0}10708E-02$ = ${}_{0}1490E-02$ = ${}_{0}18708E-02$ = ${}_{0}28244E-02$ = ${}_{0}26376E-02$ = ${}_{0}31635E+02$ = ${}_{0}43615E-02$ ROTATIONS AT 1 1 1 12 13 14 15 16 RU = ${}_{0}1250E-02$ = ${}_{0}10708E-02$ = ${}_{0}14900E-02$ = ${}_{0}18708E-02$ = ${}_{0}28244E-02$ = ${}_{0}26376E-02$ = ${}_{0}31635E+02$ = ${}_{0}43615E-02$ ROTATIONS AT 1 1 1 12 12 13 14 15 16 RU = ${}_{0}57730E-03$ = ${}_{0}25274E-02$ = ${}_{0}28244E-02$ = ${}_{0}26979E-02$ = ${}_{0}1934E-03$ = ${}_{0}59006E-03$ = ${}_{0}67436E-02$ ROTATIONS AT 1 17 18 19 20 21 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	KU	50360E-02	61054E-02	-,73503E-02	90067E-02	-,13173E-01	~ ₀15160E~01	17539E-01	20410E-01	
ROTATIONS AT 25 26 27 28 KU -,23900E-01 +.45099E-0145099E-01 +.45099E-01 NASTRAN63387E-0226292E-0166612E-02 .16215E-01 ROTATIONS AT 1 2 3 6 5 6 7 8 KU15704E-0415704E-0474656E-0419340E-03 +.58775E-0319340E+0338794E+0375994E+03 NASTRAN15267E-0477936E-0415809E-03 +.39363E-04 .22018E=0354282E=0392002E=0397243E+03 NASTRAN12250E+0218708E+0218708E+0224336E+0231635E+0243615E+0243615E+02 NASTRAN12250E+0218708E+0218708E+0228244E+0228236E+0219346E+0359006E+0367436E=02 NASTRAN57730E+03 .30897E+0325274E+0228244E+02262979E+0219934E+0259006E+0367436E=02 NASTRAN51666E+0262790E+0275767E+0293119E+0213718E+0115847E+0118444E+0121544E+01 NASTRAN51666E+0262790E+0275767E+02335194E+0213718E+0115847E+0118444E+0121544E+01 NASTRAN12625E+0262790E+0275767E+0293119E+0213718E+0115847E+0118444E+0121544E+01 NASTRAN51666E+0262790E+0255430E+02335915E+02013718E+0115847E+0115847E+0121544E+01 NASTRAN51656E+0262790E+0255430E+02335915E+02013718E+0115847E+0118444E+0121544E+01 NASTRAN51656E+0262790E+0275767E+0293119E+02013718E+0115847E+0118444E+0121544E+01 NASTRAN51656E+0262790E+0235515E+02013718E+0115847E+0118444E+0121544E+01 NASTRAN51656E+0262790E+02355915E+02013718E+0115847E+0118444E+0121544E+01 NASTRAN51656E+0262790E+02355915E+02335915E+0218768E+0118768E+011844E+0121544E+01 NASTRAN51656E+0262790E+02355915E+02355915E+0218768E+0118768E+011844E+0121544E+01 NASTRAN51656E+0262790E+02355915E+02355915E+0218768E+0118768E+011847E+0118647E+0118647E+0118647E+0118647E+0118647E+0118647E+0118647E+0118647E+0118647E+0118647E+0118647E+0118647E+0118647E+0118647E+0118647E+0118647E+0118647E+0118647E+0118647E+0118647E+01 -	NASTRAN	65585E-02	-°60185E-05	46811E-02	24566E-02	-,16939E-01	16446E-01	14973E-01	12256E-01	
KU 23900E-01 45099E-01 45099E-01 45099E-01 NASTRAN 83387E-02 26292E-01 66612E-02 .16215E-01 LOAD AT POINT 27	ROTATIONS AT	25	26	27	28					
NASTRAN 63387E-02 26292E-01 66612E-02 .16215E-01 LOAD AT POINT 27 666612E-02 .16215E-01 ROTATIONS AT 1 2 3 4 5 6 7 8 ROTATIONS AT 1 2 3 4 5 6 7 8 ROTATIONS AT 1 2 3 4 5 6 7 8 ROTATIONS AT 1 2 3 4 5 6 7 8 ROTATIONS AT 15704E=04 15704E=04 74656E=04 19340E=03 58775E=03 93840E=03 9202E=03 75994E=03 ROTATIONS AT 9 10 11 12 13 14 15 16 KU 12250E=02 18708E=02 18708E=02 28274E=02 282844E=02 26979E=02 19934E=02 59006E=03 67436E=02 NASTRAN 51666E=02 62790E=02 75767E=02 282844E=02 26979E=02 19934E=02 59006E=03 67436E=02 NASTRAN 51666E=02<	ĸu	-,23900E-01	45099E-01	45099E-01	~~45099E⊷01					
LOAD AT POINT 27 #8##8################################	NASTRAN	83387E-02	26292E-01	66612E-02	•16215Ê∞01					
ROTATIONS AT 1 2 3 4 5 6 7 8 KU =.15704E=04 =.15704E=04 =.015704E=04 =.015704E=04 =.074656E=04 019340E=03 =.058775E=03 =.019340E±03 =.038794E=03 =.038794E=03 =.038794E=03 =.075994E=03 NASTRAN =.015267E=04 =.077936E=04 =.015809E=03 =.039363E=04 .22018E=03 =.054282E=03 =.092002E=03 =.075994E=03 =.07243E=03 ROTATIONS AT 9 10 11 12 13 14 15 16 KU =.012250E=02 =.018708E=02 =.018708E=02 =.018708E=02 =.026979E=02 =.031635E=02 =.043615E=02 =.019934E=02 =.059006E=03 =.067436E=01 Z NASTRAN =.057730E=03 .030897E=03 =.025274E=02 =.028244E=02 =.026979E=02 =.19934E=02 =.059006E=03 =.067436E=02 Z										
ROTATIONS AT 1 2 3 4 5 6 7 8 KU 15704E=04 15704E=04 74656E=04 19340E=03 19340E=03 38794E=03 38794E=03 75994E=03 NASTRAN 15267E=04 77936E=04 15809E=03 39363E=04 .22018E=03 92002E=03 97243E=03 ROTATIONS AT 9 10 11 12 13 14 15 16 KU 12250E=02 18708E=02 18708E=02 18708E=02 24336E=02 31635E=02 43615E=02 226979E=02 19934E=02 59006E=03 67436E=02 67436E=02 26979E=02 19934E=02 59006E=03 67436E=02 24336E=02 19934E=02 59006E=03 67436E=02 26979E=02 19934E=02 59006E=03 67436E=02 24354E=01 19934E=02 59006E=03 67436E=02 24354E=02 19934E=02 59006E=03 67436E=02 2164				0 0 0 0 0 0	0 AT PUINT 27					
RU $= 0.15704E=04$ $= 0.15704E=04$ $= 0.7504E=04$ $= 0.74656E=04$ $= 0.19340E=03$ $= 0.19340E=03$ $= 0.38794E=03$ $= 0.75994E=03$ NASTRAN $= 0.15267E=04$ $= 0.77936E=04$ $= 0.15809E=03$ $= 0.39363E=04$ $= 0.22018E=03$ $= 0.54282E=03$ $= 0.92002E=03$ $= 0.97243E=03$ ROTATIONS AT 9 10 11 12 13 14 15 16 RU $= 0.12250E=02$ $= 0.18708E=02$ $= 0.18708E=02$ $= 0.24336E=02$ $= 0.31635E=02$ $= 0.43615E=02$ $= 0.43615E=02$ $= 0.43615E=02$ $= 0.28244E=02$ $= 0.26979E=02$ $= 0.19934E=02$ $= 0.43615E=02$ $= 0.43615E=02$ $= 0.43615E=02$ $= 0.28244E=02$ $= 0.26979E=02$ $= 0.19934E=02$ $= 0.43615E=02$ $= 0.28244E=02$ $= 0.26979E=02$ $= 0.19934E=02$ $= 0.59006E=03$ $= 0.67436E=01$ NASTRAN $= 0.57730E=02$ $= 0.275767E=02$ $= 0.23764E=02$ $= 0.13718E=01$ $= 0.18414E=01$ $= 0.21544E=01$ $= 0.1644E=$	ROTATIONS AT	1	2	· 3	4	5	6	7	8	
NASTRAN $-0.15267E-0.4$ $0.77936E-0.4$ $0.15809E-0.3$ $0.39363E-0.4$ $0.22018E=0.3$ $0.54282E=0.3$ $0.92002E=0.3$ $0.97243E=0.3$ ROTATIONS AT 9 10 11 12 13 14 15 16 RU $-0.12250E+0.2$ $-0.18708E=0.2$ $-0.18708E+0.2$ $-0.28244E+0.2$ $-0.24336E=0.2$ $-0.31635E+0.2$ $-0.43615E-0.2$ $-0.43615E-0.2$ $-0.43615E-0.2$ $-0.43615E-0.2$ $-0.67436E=0.2$ $-0.43615E-0.2$ $-0.67436E=0.2$ $-0.67446E=0.1$ $-0.1644E=0.1$ </td <td>RU</td> <td>15704E-04</td> <td>~.15704E-04</td> <td>74656E-04</td> <td>~.19340E~03</td> <td>58775E-03</td> <td>19340E-03</td> <td>38794E-03</td> <td>⇒°22286€03</td> <td></td>	RU	15704E-04	~.15704E-04	74656E-04	~.19340E~03	58775E-03	19340E-03	38794E-03	⇒°22286€03	
ROTATIONS AT 9 10 11 12 13 14 15 16 RU -,12250E-02 -,18708E-02 -,18708E-02 -,24336E-02 -,31635E+02 -,43615E-02 -,43615E-02 NASTRAN -,57730E-03 ,30897E-03 -,25274E-02 -,28244E+02 -,26979E=02 -,19934E=02 -,59006E=03 -,67436E=02 RUTATIONS AT 17 18 19 20 21 22 23 24 KU -,51666E-02 -,62790E=02 -,93119E=02 -,13718E=01 -,15847E=01 -,18414E=01 -,21544E=01 NASTRAN -,51666E-02 -,62790E=02 -,35843E=02 -,13718E=01 -,18414E=01 -,21544E=01	NASTRAN	- 15267E-04	-,77936E-04	-15809E-03	+.39363E=04	22018E-03	54282E-03	-,92002E-03	97243E-03	
KU 12250E-02 18708E-02 18708E-02 24336E-02 31635E+02 43615E-02 43615E-02 NASTRAN 57730E-03 .30897E-03 25274E-02 28244E-02 26979E=02 19934E=02 59006E=03 67436E=02 NOTATIONS AT 17 18 19 20 21 22 23 24 KU 51666E=02 62790E=02 93119E=02 13718E=01 18414E=01 21544E=01 NASTRAN 51666E=02 62790E=02 75767E=02 93119E=02 13718E=01 18414E=01 21544E=01	ROTATIONS AT	9	10	11	12	13	14	15	16	
NASTPAN -,57730E-03 .30897E-03 -,25274E-02 -,28244E+02 -,26979E=02 -,19934E=02 -,59006E=03 -,67436E=02 R0TATIONS AT 17 18 19 20 21 22 23 24 KU -,51666E=02 -,62790E=02 -,93119E=02 -,13718E=01 -,18414E=01 -,21544E=01 NASTRAN -,70535E=02 -,62790E=02 -,75767E=02 -,33593E=02 -,13718E=01 -,18414E=01 -,21544E=01	RU	12250E-02	-19708E-02	14090E-02	18708E-02	24336E-02	31635E+02	⇔.43615E-02	- .43615E-0 2	
RUTATIONS AT 17 18 19 20 21 22 23 24 KU •.51666E-02 •.62790E-02 •.75767E-02 •.93119E-02 •.13718E-01 •.15847E-01 •.18414E-01 •.21544E-01 MASTRAN - 70535E-02 - 47757E-02 - 56300E-02 - 33593E-02 - 18657E-01 - 19236E-01 - 19035E-01 - 17544E-01	NASTRAN	- 57730E-03	30897E-03	25274E-02	28244E-02	26979E-02	-,19934E-02	59006E-03	67436E-12	
$K_{U} = -51666E - 02 = -62790E - 02 = -75767E - 02 = -93119E - 02 = -13718E - 01 = -18847E - 01 = -18414E - 01 = -21544E - 01 = -2154E - 01 = -2154E - 01 = -2154E - 01 = -2154E - 01 = $	ROTATIONS AT	17	18	19	20	21	22	23	24	
	KII		62790E-02	75767E-02	93119E-02	-,13718E-01	-15847E-01	-18414E-01	21544E-01	
いんろくちんい ティンリンコンビーマル ディンリンノレーマル ディンリンプンビデング ディンリンプレーマル ディングンコンビービル ディングロンバービル ディアンプラビデビアレイ	NASTRAN	- 70535E-02	67757E-02	56300E-02	335938-02	- 18657E-01	-19236E-01	19035E-01	17544E-01	
	RUTATIONS AT	25	26	27	28		***************************************			
π_1 = 25402F=01 = 51488F=01 = 55169E=01 = 55169E=01	KU .	254028-01	-51488E-01	55169E-01	~.55169E-01					
mastran = 14260E=01 = 159769E=01 = 168449E=01 = 13733E=01	NASTRAN	-14260E-01	-,59769E+01	48449E-01	30335E-01					

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1. State 1

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KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR SOLID WING 3 (ALL ROTATIONS ARE BASED ON & 1LB. LOAD)

LOAD AT POINT 28

ROTATIONS AT	1	2	3	4	5	6	7	8 —
KU	- 。157 46E-04	15746E-04	⇔₀75076E-04	19508E-03	59602E-03	19508E-03	39259E-03	77147t-03
NASTRAN	-a13584E-04	÷₀76799E≏04	16341E-03	51901E-04	21771E-03	53243E-03	-,93473E-03	102526-02
ROTATIONS AT	9	10	11	12	13	14	15	16
KU	∞.12459E+02	19062E+02	14339E-02	19062E-02	-,24829E-02	32326E-02	44668E-02	44668E-02
NASTRAN	66524E-03	°556-03	25594E-02	29385E-02	29101E-02	22786E-02	86063E-03	70140E-02
HOTATIONS AT	17	18	19	20	21	22	23	24
KU	- . 53013E-02	64526E-02	78031E-02	96171E-02	-,14264E-01	~.16533E-01	-,1928SE-01	22679E-01
NASTRAN	75475F-02	-,75296E-02	65770E-02	42551E-02	- 20326E-01	21929E-01	23046E-01	229406-01
ROTATIONS AT	25	26	27	28				
ĸū	26903E-01	57876E-01	70919E-01	76787E-01			-	
NASTRAN	20437E-01	93190E-01	10142E+00	10638E+00			•	

Arches

R.M.S. OF DIFFERENCES # .14014E-03

MAXIMUM ERROR = .13888E-03

ende wetene st	MARGER WITH THE RESERVED	ana		a state and a state of the second	nis in the strate	an a	n i den ser	<u>ۇدەن ئەركەنگەن ئۇرى</u>	eren san Saat	ALC: NO.			n seat (Marachi		OF THE PARTY OF				1
[]	C	and the second s	€ 2000-100-100-100 1000-100-100-10	Parisitisi Taning P	g Specific († Barretsen (†	Litting Control	● ar-6530r) ● ar-56911	Backs to Transit	Handsteiner 7			Contraction of the second s				ine Siderate Set Set Set Set Set Set Set Set Set Set		A STATES	
	-								Table	18								-	
		E	XPERIN	AENTAL	- AND	NASTR (ALL	AN- D DEFLE	EFLECT CTIONS	FION I S ARE	NFLUE	NCE CO	DEFFIC 100LB	IENTS	FOR 1	SUILT-	UP WING	1		
								L	0AD AT 1	90 INT 940000	1								
	ULFL, AT EXP. NASTRAN	1 01746 01841	2 1621 1698	3 •1510 •1577	4 •1415 •1463	5 1296 1353	6 ∘0987 ∘0951	7 0902 0888	8 •0327 •0819	9 •0750 •0745	10 .0610 .0663	11 •0312 •0274	12 2650° 0260°	13 0252 0236	14 0216 0206	15 •0175 •0164			
								1			•								
1	DEFL. AT	1	2		,	ŕ	,	ب م	04040444	0141 0141	5 13								
	EXP. NASTRAN	•1621 •1693	.1631 .1676	•1554 •1596	•1494 •1530	-1428 -1463	6 •0914 •0876	7 .0880 .0855	8 •0846 •0823	9 0502 0782	10 •0747 •0733	11 •0280 •0246	12 0279 0247	13 0257 0237	14 •0238 •0220	15 •0213 •0191			
								L o	OAD AT P	OINT :	3								
1	DEFL. AT EKP. NASTRAN	1 •1510 •1577	2 •1554 •1596	3 -1572 -1618	4 •1566 •1596	5 。1546 。1577	6 •0832 •0504	7 .0836 .0819	8 •0854 •0826	9 •0844 •0819	10 •0823 •0804	11 0244 0218	12 0257 0233	13 •0254 •0237	14 •0255 •0233	15 2450. 8150.			
	N							L	0AD AT P 04004000	01NT 4	•								
L L L	IKP. NASTRAN	1415 •1453	2 .1494 .1530	3 •1566 •1596	4 =1645 =1676	5 。1664 。1698	6 0772 0733	7 •0804 •0782	8 •0854 •0823	9 0855 0855	10 .0914 .0876	11 0216 0191	12 8420° 0220°	13 0264 0237	14 •0276 •0247	15 •0284 •0246			
								L	DAD AT P	UINT 5	ì								
2	EFL. AT	1	2	з	4	5	6	7	8494949 8	04444 Q	10	11	12	13	14	16			
Ē	ASTRAN	•1296 •1353	.1428 .1463	.1546 .1577	₀1664 ₀1698	.1804 .1841	•0706 •0663	.0766 .0745	•0847 •0819	.0930 .0888	.1014 .0951	•0184 •0164	•0234 •0206	•0262 •0236	•0292 •0260	•0318 •0274			
								LC	DAD AT P	OINT 6									
Q	EFL. AT	1	2	3	4	5	6	7	666666666 8	9 0 0 0 0 0 0 0 9	10	11	12	13	14	15			
E N	ам» 145 , 244	.0987 .0951	.0914 .0876	•0832 •0804	₀0772 ₀0733	°0706 °0663	•0687 •0606	.0591 .0518	•0502 •0453	•0444 •0393	•0373 •0333	•0250 •0194	•0216 •0170	•0173 •0142	•0136 •0115	•0106 •0083			

EXPERIMENTAL- AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR BUILT-UP WING 1 (ALL DEFLECTIONS ARE BASED ON A 100LB, LOAD)

							L ð	0AU AT	PUINT addaaaa	7 •					
DEFL. AT Exp. NASTRAN	1 0902 8880.	2 .0880 .0855	3 • 0836 • 0819	4 •0804 •0782	5 .0766 .0745	6 •0591 •0518	7 •0573 •0515	8 •0512 •0463	9 •0468 •0428	10 •0426 •0393	11 •0208 •0164	12 .0178 .0158	13 •0173 •0145	14 0151 0129	15 •0130 •0108
							L	OAD AT	POINT	6					
DEFL. AT Exp. NASTRAN	1 •0827 •180•	2 0846 0823	3 •0854 •0826	4 •0854 •0823	5 .0847 .0819	6 •0502 •0453	7 •0512 •0463	8 • 0540 • 0480	9 .0515 .0463	10 .0492 .0453	11 •0118 •0135	12 .0174 .0144	13 •0180 •0147	14 •0172 •0144	15 0165 0135
							L	0AD AT	PUINT	9					
ƏLFL. AT Exp. NASTRAN	1 •0750 •0745	2 0802 0782	3 •0844 •0819	4 •0895 •0855	5 .0930 .0888	6 •0444 •0393	7 •0468 •0428	8 •0515 •0463	9 0580 0515	10 .0583 .0518	11 •0130 •0108	12 0158 0129	13 •0178 •0145	14 .0196 .0158	15 •0809 •0164
							L	DAD AT	POINT 1	0					
DEFL: AT ExP: NASTRAN	1 •0660 •0663	2 .0747 .0733	3 •0823 •0804	4 •0914 •0875	5 •1014 •0951	6 •0379 •0333	7 .0426 .0393	8 •0492 •0453	9 •0583 •0518	10 •0714 •0606	11 •0105 •0083	12 •0142 •0115	13 0170 0142	14 •0205 •0170	15 20250 0194
							L	OAD AT		1					
DEFL. AT Exp. NASTRAN	1 •0312 •0274	2 .0280 .0246	3 •0244 •0218	4 •0216 •0191	5 .0184 .0164	6 •0250 •0194	7 .0208 .0164	8 •0168 •0135	9 •0139 •0105	10 .0105 .0083	11 •0174 •0115	12 .0124 .0070	13 •0071 •1049	14 •0048 •0033	15 0028 0018
		•					Ĺ	OAD AT	POINT 1	2					
DEFLI AT EXPI NASTRAN	۱ 0302ء 1020ء	2 .0286 .0247	3 •0266 •0233	4 •0251 •0220	5 0234 0206	6 •0226 •0170	7 。0160 。0158	8 •0175 •0144	•0160 •0154	10 0139 0115	11 0127 0070	12 0137 0086	13 0080 0055	14 •0061 •0044	15 •0050 •0033



EXPERIMENTAL- AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR BUILT-UP WING I (ALL DEFLECTIONS ARE BASED ON A 100LB. LOAD)

· • '

LOAD AT POINT 13

14 15 11 12 13 9 10 8 7 5 6 2 3 4 DEFL. AT .0252 .0257 .0254 .0264 .0262 .0173 .0173 .0180 .0170 .0170 .0071 .0082 .0105 .0081 .0073 .0236 .0237 .0237 .0237 .0236 .0142 .0145 .0147 .0145 .0142 .0049 .0055 .0069 .0055 .0049 1 εχρ. NASTRAN

LOAD AT PUINT 14

15 12 13 14 9 10 11 5 7 8 · 6 ·0216 ·0238 ·0255 ·0276 ·0292 ·0136 ·0151 ·0172 ·0196 ·0205 ·0048 ·0064 ·0081 ·0125 ·0119 з 4 DEFL. AT •0205 •0220 •0233 «0247 •0260 •0115 •0129 •0144 •015H •0170 •0033 •0044 •0055 •0086 •0070 EXP. NASTRAN

LOAD AT POINT 15

							-								
			-		E	6	· 7	, j	a	10	. 11	12	13	14	15
DEFL, AT	1	2	3	4				0145	0.200	0.250	- 0028	- 0052	-0073	.0119	.0169
£X2.	.0175	.0215	•0242	0284	0318	0100	°0130	0105	0207	00230	00020	00032	00000	0070	.0115
MASTRAN	.0164	-0191	.0218	.0246	,0274	°0083	°0108	.0135	0164	°0120	°0010	00033	00049	00010	OULL.

R.H.S. OF DIFFERENCES = 3.79374E-04

MARIMUM ERROR = 9.48000E-03

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Tai	ble	19
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KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR BUILT-UP WING 1 (ALL ROTATIONS ARE BASED ON A 1LB. LOAD)

			LO ou	AD AT POINT 1		·		
ROTATIONS AT <u NASTRAN ROTATIONS AT <u NASTRAN</u </u 	1 3.48491E-05 3.72819E-05 9 2.32328E-05 2.07417E-05	2 3.48491E-05 3.51742E-05 10 2.32328E-05 2.31138E-05	3 3.48491E-05 3.11774E-05 11 1.16164E-05 9.21831E-07	4 3.48491E-05 2.97003E-05 12 1.16164E-05 4.68882E-06	5 3.48491E-05 3.00359E-05 13 1.16164E-05 6.93465E-06	6 2.32328E-05 1.53465E-05 14 1.16164E-05 9:64162E-06	7 2.32328E-05 1.75438E-05 1.16164E-05 1.25986E-05	8 2.32328E-05 1.88995E-05
			LO	AD AT POINT 2				
ROTATIONS AT RU NASTRAN ROTATIONS AT RU NASTRAN	1 1.74246E-05 4.19507E-06 9 1.16164E=05 1.16871E-05	2 1.74246E-05 1.40774E-05 10 1.16164E-05 1.45329E-05	3 1.74246E-05 1.99484E+05 11 5.80819E+06 -2.44087E-06	4 1.74246E-05 1.77129E-05 12 5.80819E-06 9.73136E+07	5 1.74246E-05 1.87403E+05 13 5.80819E+06 3.48859E-06	6 1.16164E+05 3.61912E-06 14 5.80819E-06 6.14863E+06	7 1.161644E-05 7.44688E-06 15 5.80819E-06 9.34100E-06	8 1.16164E-05 1.01064E-05
			LO	AD AT POINT 3				
RUTATIONS AT KU VASTRAN ROTATIONS AT KU VASTRAN	1 0. -6.07577E-06 9 0. 3.19043E+06	2 0. -5.62194E=06 10 0. 5.18037E-06	0° -1°18395E-19 11 0° -2°82000E-00	U. 5.62194E~06 12 0. ~2.70163E-06	5 6.07577E-06 13 0. -2.00469E+17	0. -5.19037E-06 14 0. 2.70163E-06	7 •3.19043E-08 15 0. 5.85000E-06	8 0; -5:83906E-17 -
			LO/	AD AT POINT 4				
ROTATIONS AT «U NASTRAN Rotations at «U NASTRAN	1 -1.74246E-05 -1.87403E-05 -1.16164E-05 -7.44688E-06	2 ~1.74246E-05 -1.77129E-05 10 -1.16164E-05 -3.61912E-06	-1.74246E-05 -1.999484E-05 11 -5.80819E-06 -9.34100E-06	-1.74246E-05 -1.40774E-05 12 -5.80814E-06 -6.14863E-06	5 -1.74246E-05 -4.19507E-06 13 -5.80819E-06 -3.48859E-00	6 -1:16164E=05 -1::329E=05 14 -5:00819E=06 -9:7313:E=07	7 -1.16164E-05 -1.16871E-05 15 *5.80819E-06 2.44087E-06	ë -1.10164E-05 -1.01064E-05 :

KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR BUILT-UP WING } (ALL ROTATIONS ARE BASED ON A 1LB. LOAD)

		_	۲0 ۴۴	AD AT POINT 5				
ROTATIONS AT	1	2	3	4	5	6	7	st.
∢U	-3.48491E-05	-3.48491E-05	-3,484916-05	-3,48491F-05	-3-484415-05	-2-32328F-05	-2.123285-05	
NASTRAN	-3.00359E-05	-2.97003E+05	-3.11/74E-05	-3,51742E-05	-3.72818E-05	-2.311385-05	-2.07417E-05	-1.88995E-05
ROJATIONS AT	ý.	10	11	12	13	14	15	10007736-03
KU	-2.32328E-05	-2.32328E-05	-1.16164E-05	-1.16164E-05	-1.16164E-05	-1.16164F-05	-).16164F=05	
NASTRAN	-1.754382-05	-1.53465E-05	-1,25986(-05	-9,64162E-06	-6,93465E-06	-4.68882E-06	-9-21831E-07	
			L0 00	AD AT POINT 6				
ROTATIONS AT	1	2	3	4	5	6	7	я
<u< td=""><td>2.32328E-05</td><td>2.32328E-05</td><td>2.32328E-05</td><td>2.32328E-05</td><td>2.32328E-05</td><td>2.32328F-05</td><td>2.32328F+05</td><td>2. 123285+05</td></u<>	2.32328E-05	2.32328E-05	2.32328E-05	2.32328E-05	2.32328E-05	2.32328F-05	2.32328F+05	2. 123285+05
NASTRAN	2.22198E-05	2.00960E-05	1.88633E-05	1.88162E-05	1.90033E-05	2.51610F-05	2.152256-05	1.679658-05
ROTATIONS AT	9	10	11	12	13	14	15	
<u< td=""><td>2,32328E-05</td><td>2.32328E-05</td><td>1.16164E-05</td><td>1.16164E-05</td><td>1.16164E-05</td><td>1.16164E-05</td><td>1.161648-05</td><td></td></u<>	2,32328E-05	2.32328E-05	1.16164E-05	1.16164E-05	1.16164E-05	1.16164E-05	1.161648-05	
VASTRAN	1.61665E-05	1.64232E-05	5.52071E-06	6.38812E-06	6.86754E-06	7.92142E-06	9.14721E-06	
			LO: • •	AD AT POINT 7				
ROTATIONS AT	1	5	3	40	5	6	7	8
≺U	1.16164E-05	1.16164E-05	1.16164E-05	1.16164E-05	1.16164E-05	1º16164E+05	1.16164E+05	1.16164E-05
NASTRAN	6.09989E-06	9.68691E-06	1.081972-05	9.04384E-06	1.03807E-05	-2°28118E-00	8.297286-06	1.31612E-05
ROTATIONS AT	9	10	11	15	13	14	15	
<u </u 	1.16164E-05	1.16164E-05	5.80819E-06	5.80819E-06	5.80819E-06	5.80819E-06	5-80819E-06	
VASINAN	9.01065E-06	1-01/505-02	-2.4/8482-0/	2,191212-06	4.030042-05	4°48820E~09	6.38705E-06	
			L0) 8 64	AD AT POINT 8				
ROTATIONS AT	1	. 2.	3	4	5	6	7	8
<บ	0.	0.	0.	0.	0.	0.	0.	0.
NASTRAN	-2.70386E-07	-1.76720E-06	-6.18472E-17	1,76720E-06	2.70386E+07	-2.67500E-06	¢4°23233€≈00	-2.79377E-17
ROTATIONS AT	9	10	31	12	13	14	15	
∢U	0.	0.	0.	0.	0.	0	0.	
VASTRAN	4,535338-06	2.67500E-06	~2°89805E-09	~1,95001E - 06	-1.04821E-17	1°82001E-09	2:86802E-06	

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KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR BUILT-UP WING 1 (ALL ROTATIONS ARE BASED ON A 1LB. LOAD)

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		8	10	AD AT POINT 9				
RUTATIONS AT	1	2	3	4	5	6	7	8
<u .<="" th=""><th>-1.16164E-05</th><th>-1,16164E-05</th><th>-1.16164E-05</th><th>-1,16164E-05</th><th>-1.16164E-05</th><th>-1.16164E-05</th><th>-1.16164E-05</th><th>-1.16164E-05</th></u>	-1.16164E-05	-1,16164E-05	-1.16164E-05	-1,16164E-05	-1.16164E-05	-1.16164E-05	-1.16164E-05	-1.16164E-05
NASTRAN	-1.03807E-05	-9.04384E-06	-1.08197E-05	-9.68691E-06	-6.09989E-06	-1.01720E-05	-9.01065E-06	-1.31612E-05
POTATIONS AT	-1 161645-05	-1 161665-05	-5 909195-06	-6 808195-06	LL -5 809105-06	-5.000105-04	-5 008195-06	
NASTRAN	-8,29728E+06	2,59119E-06	-6.38705E+06	-4.48890E-05	-4.03004E-06	-2.79727E-06	2.47848E-07	
			L04	AD AT POINT 10				
ROTATIONS AT	1	. 2	3	4	5	6	7	8
∢U	-2.323286-05	-2.32328E-05	-2.3?328E-05	-2,32328E-05	-2.32328E-05	~2.323282-05	-2.32328E-05	-2.32328E-05
NASIRAN POTATIONS AT	-1.90033E-05	10881025-02	-1.8863JE-05	-2,00960E-05	-2.221982-05	-1064232E-05	+1.61065E-05	-1.6/9651-05
KU	-2.32328E-05	-2.32328E-05	-1.161648-05	-1,16164E-05	-1.16164E-05	-1.16164E+05	-1.16164E-05	
VASTRAN	-2.15225E-05	-2.51610E-05	-9,14721E-06	-7,92142E-06	-6.86754E-06	-6.38812E-06	-5-52071E-06	
			L.0/ # 0 4	AD AT POINT 11				
ROTATIONS AT	i	2	3	4	5	6	7	8
<u .<="" td=""><td>1.16164E-05</td><td>1.16164E-05</td><td>1.16164E-05</td><td>1.16164E-05</td><td>1.16164E-05</td><td>1.16164E-05</td><td>1.161648-05</td><td>1.101648-05</td></u>	1.16164E-05	1.16164E-05	1.16164E-05	1.16164E-05	1.16164E-05	1.16164E-05	1.161648-05	1.101648-05
NASTRAN POTATIONS AT	6.70281E-06	1°53121F-00	11 7°77RARE~00	1,24450E-05	1°30A18F-00	8°18081E-00 17	7.84300E-VO 15	1°51A30F+00
XU XU	1.161646-05	1.16164E-05	1.16164E-05	1,16164E-05	1.16164E+05	1.141648-05	1.101648-05	
MASTRAN	7,05253E-06	7.04324E-06	1.23486E-05	9.79412E-06	4.78986E-06	4.19730E-06	4.068948-06	-
			L04 891	AD AT PUINT 12				-
ROTATIONS AT	1	2	3	4	5	. 6	7	8 :
<u 1457044</u 	5,808198-06	5°80818€⇔09	2 20014E-06	3,80817E-06	3.830175-06 3.830175-04	3080819E-06 2.50110E-04	3 01076E-00	50808191-00 S
NADIRAN Rotations at	3°4996-25+00 Ø	3°0402150A0 19	30200216200	12	13	60308875900 14	35930102300	4011070E-00
KU	5,80819E-06	5.808192-06	5.80819E-06	5.80814E-06	5080819E-06	5-80819E-06	5.80819E-006	:
NASTRAN	3.49286E-06	4.02581E-06	-7.47480E-06	2.58796E-06	6°ðð333E⇔00	2°95188E⇔09	3.07832E-06	

					· · · · ·		
	i	LO	AD AT POINT 13				
		8 Ø 9					
1	2	3	4	5	6	7	8
0.	0.	0.	0.	0.	0.	0	0.
3.63133E-08	-1.69869E-07	~1,79349E~17	1.69869E-07	-3-63133E=08	-2-62261F=07	-8,50349F-07	-7-88649Fala
9	10	11	12	13	14	15	-19900476-10
0.	0.	9.	0.	0.	0.	0.	
8.50349E-07	2.62261E-07	-1-62485F+06	-3.57159F-06	=2.83465F=18	3.571595-06	1.624855-06	
		10001005 00		590040JE-10	20211235-00	10054005000	
		L0/	AD AT POINT 14				
1	2	3	4	5	6	7	а
-5.80819E-06	-5-80819E-06	-5-808198-06	~5.80819E-06	~5-80919E-06	~5.80819F+06	-5-80819F-06	-5-80819F=06
-3.83017E-06	-3.55646E-06	~3.58097E-06	-3,64691E-06	-3.88865E-06	=4.02581F=06	-3.49286F-04	-4.17806FanA
9	10	13	12	13	14	15	-48210902-00
-5.80819E-06	-5-80819F-06	+5.80819F+06	-5.808195-06	#5-80819F=06	-5-808195-06	-6.000196-06	
-3,93076F-96	-2-58119E+06	-1.07832F-06	+2.62144F-06	-6.993336-06	-2-507965-06	7 474905-06	
20.000 a				-00//3336-00	-6031305-00	10414002-00	
		L0/ 49/	AU AT POINT 15				
1	2	3	4	5	6	7	8
-1.16164E-05	-l.16164E-05	-1.16164E-05	-1.16164E-05	-1.16164E-05	-1.16164E-05	~1.16164E-05	-1.16164E-05
-7.36918E-06	-7.24456E-06	-7.31808E-06	-7,23151E-06	-6.70281E-06	-7-04324E-06	-7.05253E-06	-7-2193606
9	10	11	12	13	14	15	
-1.16164E-05	-1.16164E-05	-1.16164E-05	-1.16164E-05	-1.16164E-05	-1.16164F-05	-1.161647-05	
-7.84368E-06	-8-79097E-06	-4-06894E-06	-4-19730F-06	-4-78986E-06	-9.799125-06	e1.23486E+05	
	1 0. 3.63133E-08 9 0. 8.50349E-07 1 -5.80619E-06 -3.83017E-06 -3.83017E-06 -3.93076E-06 -3.93076E-06 -3.93076E-06 -1.16164E-05 -7.36918E-06 9 -1.16164E-05 -7.84368E-06	; 0. 3.63133E-08 9 0. 8.50349E-07 2.62261E-07 10 0. 8.50349E-07 2.62261E-07 2.62261E-07 10 0. 2.62261E-07 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 2.62261E-07 10 10 2.62261E-06 -3.55646E-06 -3.55646E-06 -2.58119E-06 -7.24456E-06 10 -1.16164E-05 -7.24456E-06 10 -1.16164E-05 -7.24456E-06 10 -1.16164E-05 -7.24456E-06 10 -1.16164E-05 -7.24456E-06 10 -1.16164E-05 -7.24456E-06 -2.58119E-06 -2.58119E-06 -2.58119E-06 -2.58119E-06 -7.24456E-06 -1.16164E-05 -7.24456E-06 -1.16164E-05 -7.24456E-06 -1.16164E-05 -7.24456E-06 -1.16164E-05 -7.24456E-06 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1.16164E-05 -1	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

KU- AND NASTRAN- ROTATIONAL INFLUENCE COFFFICIENTS FOR BUILT-UP WING 1 (ALL ROTATIONS ARE BASED ON A ILB. LOAD)

R.N.S. OF DIFFEHENCES = 2.95788E-07

MAXIMUM ERROR = 1.06946E-05

NASTRAN

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(1997-1997) (1997-1997) (1997-1997) (1997-1997) Permeter (1997-1997) (1997-1997) (1997-1997) (1997-1997) Permeter (1997-1997)

Table 20

1. 1. **1**. 1

EXPERIMENTAL - AND NASTRAN- DEFLECTION INFLUENCE. COEFFICIENTS FOR BUILT-UP WING 2 (ALL DEFLECTIONS ARE BASED ON A 100LB, LOAD)

LOAD AT POINT 1 00000000000000000000 14 15 9 10 15 13 DEFL. AT 5 6 78 11 .1 2 3 4 0854 .7863 .0987 .0917 .0968 .0423 .0475 .0502 .0532 .0575 .0128 .0156 .0172 .0190 .0215 **ΕXP**。 ·0636 ·0636 ·0651 ·0666 ·0678 ·0276 ·0319 ·0346 ·0367 ·0384 ·0058 ·0083 ·0102 ·0116 ·0127 NASTRAN

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LOAD AT POINT 2

LOAD AT POINT 3

DEFL. AT 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 EXP. .0897 .1117 .1360 .1541 .1715 .0353 .0527 .0574 .0835 .0997 .0066 .0135 .0209 .0272 .0377 VASIRAN .0651 .0838 .1047 .1217 .1393 .0237 .0352 .0482 .0623 .0778 .0035 .0072 .0119 .0178 .0260

LOAD AT PUINT 4

DEFL. AT							÷								
	1	2	3	4	5	6	7	8	4	10	11	12	13	14	15
EXP.	.0917	.1207	•154Î	·1923	°5122°	°0335	۰0548	.0760	.0994	.1254	s0044	.0130	•0230	+0319	+0479
NASTRAN	A0666	.0920	.1217	.1568	.1875	•0220	0364ء	٥٥540	.0759	.1017	•0024	.0057	.0126	°0508	°0335

LOAD AT POINT S

555 A.C.	1	2	з	4	5	6	7	8	У	10	11	12	13	14	15
FXP.	<u>0968</u>	.1319	.1715	·2215	°542°	°035 <u>3</u>	.0582	.0839	.1139	.1514	·0055	.0123	0235ء	۰0355	.0565
MASTHAN	.0678	.0999	1393	.1875	.2450	.0201	0376	·0598	.0890	*1591	·0014	°00 0 1	.0133	°0534	₀ 040 分

LOAD AT POINT 6

	,	2	2	6	5	6	7	8	9	10	11	12	13	14	15
DELES AL	44.33	0274	. 0757	. 0132	-0323	<u></u>	.0288	°0535	°0512	e020°	.0147	.0129	°0108	°00-23	•0085
NASTRAN	0923	.0255	.0237	.0220	.0201	0204	.0166	0147	·0132	.0116	·0056	.0060	₀00 5 5	·0048	•0039

						Table	e 20 (C	ontinue	ed)						
E.	XPERIM	MENTAL	- AND	NASTI (ALL	RAN- D DEFLE	EFLEC	TION S ARE	INFLUE BASED	NCE CON A	OEFFIC 100LE	IENTS 3. LOA	FOR (D)	BUILT	∙U⊬ WI	ΝG
						L C	DAD AT I		7		•				
1 .0475 .0319	2 。19505 。19339	3 • 0527 • 0352	4 •0549 •0364	5 .0582 .0376	6 0288 0166	7 .0354 .0215	8 0328 0204	9 .0337 .0213	10 0359 0224	11 •0100 •0040	12 0126 0057	13 .0135 .0067	14 .0139 .0073	15 0153 0081	
						L	TA DAO	POINT	8						
	_	-	6	5	6	· • 7	4440404 8	0404048 9	ь 10	11	12	13	14	15	·
1 0502 0346	。0582 。0416	د 0674،0674،0	.0760 .0540	.0839 .0598	.0232 .0147	.0328 .020%	.0422 .0274	•0462 •0310	.0519 .0362	•0055 •0028	.0096 .0050	0151 0076	。0175 。0101	°0222 °0135	
			,	1	I	L	OAD AT	POINT	9 ·						
1 0532 0367	2 .0676 .0490	3 0835 0623	4 .0994 .0759	5 .1:39 .0890	6 .0215 .0132	7 .0337 .0213	8 •0462 •0310	9 0627 0447	10 .0744 .0546	11 •0039 •0017	12 8800. 6400.	13 •0154 •0080	14 .0218 .0131	15 80318 80500	
						L	OAD AT	POINT 1	0						
	-	-	4	5	6	a 7	,	, a a a a a a a a a a a a a a a a a a a	10	11	12	13	14	15	
.0575 .1384	.0781 .0566	.0997 .0778	.1254 .1017	.1514 .1261	.0209 .0116	.0359 .0224	.0519 .0362	.0744 .0546	.1007 .0792	•0018 •0007	.0083 .0038	.0180	·0248	.0278	
						. L	OAD AT	PUINT 1	1						
8<00°	2 .0090 .0046	3 •0056 •0035	4 •0044 •0024	5 0022 0014	6 0147 0056	7 .0100 .0040	8 •0055 •0028	9 .0039 .0017	10 .0018 .0007	11 •0177 •0061	12 0096 0027	13 •0046 •0015	14 0025 0008	15 •0008 •0001	
						i	LOAD AT	POINT	15						
1 •0156 •0083	2 0135 0078	3 0135 0072	4 .9130 .0067	5 0123 1800,	6 0129 0060	7 .0126 .0057	00000000 8 0096 0050	••••••• • •0088 •0043	0083 0038 0038	11 0096 0027	12 0117 0054	13 0071 0025	14 0049 0019	15 0040 0014	
	E .0475 .0319 .0502 .0346 .0532 .0367 .0367 .0575 .0367 .0575 .0367 .0575 .0367 .0128 .0078 .0078 .0078 .0078	EXPERI 	EXPERIMENTAL 	EXPERIMENTAL = AND $\begin{array}{c} 1 & 2 & 3 & 4 \\ .0475 & .0505 & .0527 & .0549 \\ .0319 & .0339 & .0352 & .0364 \\ \end{array}$ $\begin{array}{c} 0502 & .0582 & .0674 & .0760 \\ .0346 & .0416 & .0482 & .0540 \\ \end{array}$ $\begin{array}{c} 1 & 2 & 3 & 4 \\ .0532 & .0676 & .0835 & .0996 \\ .0367 & .0490 & .0623 & .0759 \\ \end{array}$ $\begin{array}{c} 1 & 2 & 3 & 4 \\ .0575 & .0781 & .0997 & .1254 \\ .0384 & .0566 & .0778 & .1017 \\ \end{array}$ $\begin{array}{c} 1 & 2 & 3 & 4 \\ .0575 & .0781 & .0997 & .1254 \\ .0384 & .0566 & .0778 & .1017 \\ \end{array}$	EXPERIMENTAL = AND NAST (ALL .0475 .0505 .0527 .0549 .0582 .0319 .0339 .0352 .0364 .0376 .0502 .0582 .0674 .0760 .0839 .0346 .0416 .0482 .0540 .0598 .0346 .0416 .0482 .0540 .0598 .0346 .0416 .0482 .0540 .0598 .0347 .0490 .0623 .0759 .0890 .0367 .0490 .0623 .0759 .0890 .0367 .0490 .0623 .0759 .0890 .0128 .0566 .0778 .1254 .1514 .0384 .0566 .0778 .1017 .1261 .0058 .0046 .0056 .0044 .0022 .0058 .0046 .0056 .0024 .0014 .0156 .0135 .0135 .0130 .0123 .0043 .0078 .0072 .0067 .0061	EXPERIMENTAL = AND NASTRAN= D (ALL DEFLE .0475 .0505 .0527 .0549 .0582 .0288 .0319 .0339 .0352 .0364 .0376 .0166 .0502 .0582 .0674 .0760 .0839 .0232 .0346 .0416 .0482 .0540 .0598 .0147 .0532 .0676 .0835 .0996 .1139 .0232 .0367 .0490 .0623 .0759 .0890 .0132 .0367 .0490 .0056 .0044 .0022 .0147 .0058 .0078 .0056 .0024 .0014 .0056 .0128 .0090 .0056 .0024 .0014 .0056 .0156 .0135 .0135 .0130 .0123 .0129 .0043 .0078 .0072 .0067 .0061 .0068	EXPERIMENTAL = AND NASTRAN= DEFLEC (ALL DEFLECTION (ALL DEFLECTION (AL	EXPERIMENTAL = AND NASTRAN = DEFLECTION (ALL DEFLECTIONS ARE LOAD AT (ALL DEFLECTIONS ARE (ALL DEFLECTIONS ARE (ALCAL DEFLECTIONS ARE (ALL	EXPERIMENTAL = AND NASTRAN= DEFLECTION INFLUE (ALL DEFLECTIONS ARE BASED LOAD AT POINT betweeneeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeee	EXPERIMENTAL = AND NASTRAN= DEFLECTION INFLUENCE C (ALL DEFLECTIONS ARE BASED ON A LOAD AT POINT 7 beseeveese beseeveese beseeveese contraction of the second secon	EXPERIMENTAL - AND NASTRAN- DEFLECTION INFLUENCE COEFFIC (ALL DEFLECTIONS ARE BASED ON A 100LE LOAD AT POINT 7 000000000000000000000000000000000000	EXPERIMENTAL = AND NASTRAN DEFLECTION INFLUENCE COEFFICIENTS (ALL DEFLECTIONS ARE BASED ON A 100LB. LOA LOAD AT POINT 7 00075 .0505 .0577 .0549 .0582 .0288 .0376 .036 .037 .0359 .0101 .0126 .0319 .0339 .0352 .0364 .0376 .0166 .0215 .0204 .0213 .0224 .0040 .0057 .0319 .0339 .0352 .0364 .0376 .0166 .0215 .0204 .0213 .0224 .0040 .0057 .0502 .0582 .0674 .0760 .0839 .0222 .0328 .0422 .0462 .0519 .0055 .0096 .0316 .0416 .0482 .0540 .0598 .0147 .0204 .0274 .0310 .0362 .0028 .0028 .0512 .0676 .0035 .0954 .1139 .0215 .0337 .0462 .0627 .0744 .0039 .0068 .0316 .0490 .0623 .0759 .0890 .0132 .0213 .0310 .0447 .0546 .0017 .0043 .0575 .0781 .0997 .1254 .1514 .0209 .0359 .0519 .0744 .0039 .0078 .0366 .0078 .0107 .1261 .0116 .0224 .0362 .0546 .0792 .0007 .0038 .0324 .0056 .0024 .0014 .0016 .0224 .0362 .0017 .0008 .0083 .0366 .0046 .0035 .0024 .0117 .1261 .0116 .0224 .0362 .0072 .0007 .0038 .0088 .0046 .0035 .0024 .0014 .0056 .0007 .0008 .0077 .0006 .0088 .0046 .0035 .0024 .0014 .0056 .0077 .0007 .0061 .0027 .008 .0046 .0035 .0024 .0014 .0056 .0024 .0017 .0007 .0061 .0027 .0080 .0046 .0035 .0024 .0014 .0056 .0024 .0017 .0028 .0017 .0007 .0061 .0027 .0080 .0046 .0035 .0024 .0014 .0056 .0026 .0078 .0017 .0043 .0083 .0077 .0096 .0078 .0078 .0072 .0067 .0061 .0029 .0057 .0050 .0089 .0033 .0096 .0111 12 .0093 .0078 .0072 .0067 .0061 .0069 .0057 .0050 .0089 .0033 .0096 .0117 .0043 .0027 .0056 .0017 .0043 .0027 .0056 .0024 .0014 .0056 .0024 .0014 .0056 .0024 .0014 .0056 .0077 .0007 .0061 .0027 .0056 .0024 .0014 .0056 .0078 .0077 .0007 .0061 .0027 .0056 .0024 .0014 .0056 .0027 .0058 .0017 .0007 .0061 .0027 .0056 .0049 .0058 .0017 .0007 .0061 .0027 .0056 .0024 .0014 .0056 .0056 .0057 .0050 .0089 .0013 .0038 .0077 .0056 .0078 .0072 .0061 .0027 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050 .0050	EXPERIMENTAL = AND NASTRAN= DEFLECTION INFLUENCE COEFFICIENTS FOR I (ALL DEFLECTIONS ARE BASED ON A 100LB. L0AD) LOAD AT POINT 7 0000000000000000000000 1 2 3 4 5 0086 0376 0328 0327 0359 0100 0126 0135 0319 0339 0352 0364 0376 0166 0215 0204 0213 0224 0040 0057 00057 LOAD AT POINT 8 00502 0582 0674 0760 0839 0222 0328 0422 0462 0519 0055 0056 0076 LOAD AT POINT 8 00502 0582 0674 0760 0839 0122 0328 0422 0462 0519 0055 0006 0151 0346 0416 0482 0540 0598 0147 0208 0274 0310 0362 0028 0055 0076 LOAD AT POINT 9 00502 0676 0053 00759 0090 0132 0213 00310 0447 0546 0017 0043 0080 LOAD AT POINT 10 005000000000000000 LOAD AT POINT 9 00500 0075 0090 0132 0213 00310 0447 0546 0017 0043 0080 LOAD AT POINT 10 0000000000000000 LOAD AT POINT 10 000000000000000000000000 LOAD AT POINT 10 00000000000000000000000000000000000	EXPERIMENTAL- AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR BUILT- (ALL DFFLECTIONS ARE BASED ON A 100LB. LOAD) LOAD AT POINT 7 000000000000000000000000000000000000	EXPERIMENTAL - AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR BUILT-UP WI (ALL DEFLECTIONS ARE BASED ON A 100LB. LOAD) LOAD AT POINT 7 000000000000000000 0019 .0339 .0352 .0354 .0522 .0268 .0354 .0328 .0337 .0359 .0100 .0126 .0135 .0139 .0153 .0319 .0339 .0352 .0364 .0376 .0166 .00215 .0204 .0213 .0224 .0040 .0057 .0067 .0073 .0081 LOAD AT POINT 8 00502 .0558 .00574 .0764 .0059 .0222 .0268 .0224 .0421 .0355 .0096 .0151 .0177 .0222 .0346 .0416 .0482 .0549 .0599 .0126 .0237 .0462 .0519 .0055 .0096 .0151 .0175 .0222 .0346 .0416 .0482 .0549 .0599 .0127 .0204 .0213 .0224 .0462 .0519 .0055 .0096 .0151 .0175 .0222 .0346 .0416 .0482 .0549 .0599 .0128 .0204 .0274 .0310 .0362 .0028 .0050 .0076 .0101 .0135 LOAD AT POINT 9 .0532 .0676 .0835 .0994 .1139 .0215 .0213 .0310 .0447 .0546 .0017 .0043 .0080 .0131 .02202 LOAD AT POINT 9 .0575 .0781 .0997 .1254 .556 7 .8 9 10 11 12 13 14 15 .0575 .0781 .0097 .1254 .556 7 .0359 .0359 .0168 .0017 .0043 .0080 .0131 .02202 LOAD AT POINT 10 .0575 .0781 .0997 .1254 .556 7 .8 9 10 11 12 13 14 15 .016 .0224 .0359 .0359 .0359 .0359 .0359 .0018 .0017 .0043 .0080 .0131 .02202 LOAD AT POINT 10 .0000 .0076 .0014 .0022 .0167 .0362 .0556 .0079 .0007 .0038 .0086 .0158 .0027 .0036 .0056 .0078 .1017 .1261 .0116 .0224 .0362 .0556 .0792 .0007 .0038 .0086 .0158 .0278 .0028 .0046 .0035 .0024 .0014 .0025 .0056 .0017 .0006 .0025 .0008 .0015 .0008 .0008 .0015 .0008 .0008 .0015 .0008 .0008 .0001 .0027 .0015 .0008 .0008 .0005 .0008 .0001 .0027 .0005 .0008 .0008 .0015 .0008 .0008 .0015 .0008 .0008 .0001 .00046 .0055 .0008 .0015 .0008 .0008 .0015 .0008 .0005 .0008 .0005 .0008 .0005 .0008 .0005 .0008 .0005 .0008 .0005 .0008 .0005 .0008 .0005 .0008 .0005 .0008 .0005 .0008 .0005 .0008 .0005 .0008 .0005 .0008 .0005 .0008 .0005 .0008 .0017 .0006 .0005 .0008 .0008 .0005 .0008 .0005 .0008 .0005 .0008 .0005 .0008 .0005 .0008 .0017 .0005 .0008 .0005 .0008 .0005 .0008 .0005 .0005 .0005 .0008 .0005 .0008 .0005 .0005 .0008 .0005 .0005 .0008 .0005 .0005 .0005 .0005 .0005 .0005 .0005 .0005 .0005 .000

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Table 20 (Continued)

EXPERIMENTAL- AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR BUILT-UP WING 2 (ALL DEFLECTIONS ARE BASED ON A 100LB. LOAD)

LOAD AT POINT 13

DEFL. AT	ì	2	3	4	5	6	7	6	9	10	11	12	13	14	15
ĒX ^D .	.0172	.0189	0209	٥٤30	.0235	0108	.0135	.0151	.0154	.0160	-0046	.0071	0108	.0085	.6081
NASTRAN	°0105	.0111	0119	°0159	°0133	o0055	.0067	₀0076	.0080	.0086	0015	.0025	.0046	.0035	0037

LOAD AT PUINT 14

										-					
JÉFLo AT	1	2	3	4	5	6	7	8	ÿ	10	11	12	13	14	15
Exp.	•0190	•0531	•0272	•0319	۰0355	•0093	.0139	·0175	.0218	.0248	•0025	.0049	.0085	.0137	.0143
NASTRAN	-0116	.0147	•0178	.0208	•0237	o0048	.0073	•0101	0131	٥ <u>01</u> 58	+0008	.0019	.0035	.0077	.0074

LOAD AT PUINT 15

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GEFL. AT	1	2	З	4	5	6	7	8	9	10	11	12	13	14	15
c A P .	•0512	.0294	•0377	.0479	۰0565	•0082	0153ء	°0555	.0318	.0409	•000 8	.0040	.0081	.0143	•0257
NASTRAN	•0152	.0190	•0560	°0335	a0404	•0039	-0081	0135	·0505	•0278	•0001	.0014	.0037	.0074	+0155

R.M.S. OF DIFFERENCES = 1.01217E-03

MAXIMUM ERROR = 3.36469E-02
				Table 01		_		
			<i></i>			•		:
	KU- AND	NASTRAN- R((All)TATIONAL IN . Rotations	FLUENCE COEF	FICIENTS FO A 1LB. LOA	R BUILT-UP I D)	WING 2	
			LO e o	AD AT POINT 1		•	· .	·
ROTATIONS AT KU NASTRAN ROTATIONS AT	1 -4。47816E=06 -4。36780E=06 9	2 -4.47816E-06 1.74350E-06 10	3 ≈4°442819E≈09 ≈5°842112E=09 11	4 -4,47816E-06 -2,79705E-06 12	5 -4.47816E-06 -1.29764E-06 13	6 -7.48382E-06 -9.86688E-06 14	7 -7.22260E-06 -6.67318E-06 15	в -6.18802E-06 -4.2199JE-06
KU NASTRAN	-4.47815E-06 -3.48463E-06	-4.47816E-06 -2.55542E-06	-3.27010E-06 -4.96116E-06	-4,57068E-06 -4,35271E-06	-6.25292E-06 -3.01349E-06	+7.25500E-06 -2.37424E-06	-7.50007E-06 -7.36408E-07	
			LO BO	AD AT POINT 2				
ROTATIONS AT. KU NASTRAN ROTATIONS AT	1 -1.94068E-05 -2.58666E-05 -2	2 -1.81126E-05 -2.13302E-05 10	3 -1.81126E-05 -1.03989E-05 11	-1,81126E-05 -1,56740E-05 12	5 ~1.81126E-05 ~1.40696E-05 13	6 -1.73097E-05 -1.55973E-05 14	7 -1.80656E-05 -1.51659E+05 15	-1.90767E-05 -1.40558E-05
KU NASTRAN	-1.92839E-05 -1.43319E-05	-1.8]126E-05 -1.42818E-05	-4.75999E-06 -5.11846E-06	-7,24229E-06 -6,55367E-06	-1.09703E-05 -6.25487E-06	-1°40181E-05 -7°35829E-06	-1.52802E-05 -8.29654E-06	
			L0 **	AD AT POINT 3 Gougeogouposo				
ROTATIONS AT SU WASTRAN ROTATIONS AT	1 +3,43354E-05 -3,37273E+05	2 -3.69684E-05 -3.71355F-05	3 -3,72205E-05 -3,82017E-05	4 -3.72205E-05 -3.07953E-05	5 -3.72205E=05 -3.28031E-05	6 -2°71356E-05 -1°94959E-05	7 -2.89086E-05 -2.33503E-05	8 -3.19655E-05 -2.54999E-05
KU NASTRAN	-3.54152E-05 -2.81327E-05	-3.69684E-05 -3.08487E-05	-6.24989E-06 -5.02527E-06	-9.91390E-06 -8.03977E-06	-1.56876E-05 -9.72260E-06	-2.07812E-05 -1.29613E-05	-2.30604E-05 -1.77245E-05	
	•		LO 40	AD AT POINT 4				
ROTATIONS AT <u NASTRAN ROTATIONS AT</u 	1 -4.92641E∞05 -4.45095E-05 9	2 -5.58242E-05 -5.11039E-05 10	3 -5.75661E-05 -6.10616E-05 11	4 -5,75661E-05 -6,67856E-05 12	5 -5.75661E-05 -5.40349E-05 13	6 ∞3∘69615E∞05 ∞2∘43430E-05 14	7 •3•97516E-05 -2•98543E-05 15	-4.48542E-05 -3.65986E-05
KU NASTRAN	-5.15464E-05 -4.49666E-05	-5.58242E-05 -5.24228E-05	-7.73978E-06 -5.48273E-06	-1,25855E-05 -9,33659E-06	-2.04049E-05 -1.25380E-05	-2.75442E-05 -1.92583E-05	-3.08406E-05 -2.80424E-05	

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			Table	21 (Continued	i)			
	KU- AND	NASTRAN- RO	TATIONAL IN	FLUENCE COEL	FFICIENTS FO	R BUILT-UP	WITNG 2	
	. . .	(ALL	. ROTATIONS	ARE SASED OF	A ILB. LOA	D)		• _
			LO	AD AT POINT 5	• • • •		·	
ROTATIONS AT	1	2	3	4	5	6	7	8 :
KU NASTRAN DOLATIONE AT	-6.41927E-05 -5.52395E-05	-7.46801E-05 -6.62788E-05	-7.79118E-05 -8.19844E-05	-7.79118E-05 -9.94549E-05 12	-7.79118E-05 -1.17224E-04 13	-4.678/4E-05 -2.84430E-05	~5~05945E-05 -3~71381E-05 15	-5.77429E-05 -4.76766E-05
KU NASTRAN	-6.76776E-05 -6.22898E-05	-7.46801E-05 -7.82436E-05	-9.22968E-06 -5.82513E-06	-1,52571E-05 -1,10290E-05	-2.51223E-05 -1.56697E-05	-3.43073E+05 -2.48058E-05	-3.86207E-05 -3.89529E-05	
			LO	AD AT POINT 6				
POTATIONS AT	1	5	3	4	5	6	7	8
KU Nastran	6.09053E-06 7.54032E-06	6.09053E-06 1.10836F-06	6.09053E-06 3.07722E-06	6.09053E-06 3.54322E-06	6.09053E-06 3.61655E-06	6°03022-09 9°90235-09	6.0903JE-06 6.82645E+06	5.09053E-06
ROTATIONS AT	9	10	11	12	13	14	15	
KU NASTRAN	6.09053E-06 2.89605E-06	6.09053E-06 3.115922-06	-2.06016E-06	-1,63198E+07	1.17294E-06	2.25180E-08 1.53012E-06	3.27353E-06	•
			L0 00	AD AT PUINT 7				
ROTATIONS AT	1	2	3	4	5	6	7	8 7 140515 74
4U NA510AN	-3.14051E-06 +6.55338E-06	-3.14051E-06 -4.38194E-07	-3,14051E-06 -3,93402E-06	-3,14051E+06 -3,0901JE+06	-3,14051E-06 -1,07302E-06	-1.30403E-05	-3.04124E-06	-3.140512+00 2.59510E-06
ROTATIONS AT	3	10	11	12	13	64	15	
KU NASTRAN	→3.14051E-06 -2.47636E-06	-3.14051E-06 -2.10175E-06	-1.88382E-06	-2,93687E-06	-1.16350E-06	-1°0211505-00	-5.693166-07	·
			LG	AD AT POINT 8				
ROTATIONS AT	1	2	3	4	5	6	7	k i non i r
KU NASTOAN	-1,43236E-05	-1.43236E+05	-1,43236E-05	-1.43236E+05 +1.16304E+05	-1.4J236E-05 -1.15812E-05	-1.3561JE-05 -9.09101E-06	-1.39835E-05 -1.32712E-05	-1.43230E-0:
ROTATIONS AT	-1-20:3145-02	10	11	12	13	14	15	
KU Nastran	-1.43236E-05 -6.76358E-06	-1.43236E-05 -1.13206E-05	-3,75816E-06 -3,05527E-06	-5,84073E-06 -4,54160E-06	-8.89763L-06 -5.05201E-06	-1º12744E-05 -5º24158E-06	-1.22029E-05 -7.00057E-06	÷
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		κu	- ANU	NASIR	ANS R	L ROTATI	AL IN Ions	ARE BAS	SED 0	N A 1LE	NTS FO 3. LO	7D) DK ROT		WING	2		
				-			LOA	40 41 POI	NT 9 ######	•	-						
ATIONS /	41	-2,8913	1 1E-05	-2.9596	2	-2.95967	3 F-05	-2 4506	4 75-05	-2.9504	5	-2-33	6 9725-05	-3 49	7		1775 0
TRAN ATTONE	А Т	-2.2577	4E-05	-2.3RU0	6E-05	-2,65735	E-05	-2,3189	4E-05	-2,6191	36-05	-1.37	003E-05	-1.59	324E-05	-2.3	568E-0
	A 1	-2.9596	7E-05	-2.9596	57E-05	-5,24806	E-06	-8,5123	1⊄ 4E÷06	-1.3619	13 50E-05	-1.80	14 374E-05	-1.99	15 830E-05		
TRAN		-2.4700	5E-05	-1.5273	1E-05	-3,54489	E-06	-5,7917	5E-06	-7.2335	i9E-06	-1.16	474E-05	* 1.54	902E-05		-
							LOA	D AT POI	NT 10								
ATIONS A	4 T		1		5		3		4		5		6		7		a
TRAN		-4.3841 -3.1978	72-05 BE-05	-4.9077 -3.6919	1E-05	-4,90771	E+05 E-05	-4,9077	1E-05 3E-05	-4.9077	12-05 72-05	-3.32	131E-05 408E-05	-3.56	695E-05	-4.01	010E-09 287E-05
ATTONS /	AT	-4:5728(9 0F-05	-4.9077	10 15-05	-6 71795	11 E-06	ุ่∎1 1183	12		13	-2.40	14	- 7 77	15		
TRAN		-4.0503	BE-05	-5,2396	58-05	-3,49421	E-05	-7,2053	1E-06	-1.0647	3E-05	-1.69	226E-02	-2.86	916E-05		
							LOA	AD AT POI	NT 11								
ATTONS A	AT		1		2		3		4		5		6		7		ł
IRAN		1.7133	SE-06 1E-07	1.7133	35E+06 24E-06	1.71335	E≁06 E-06	2,0023	58-06 9F-06	1.7133	35E-06	1.71	335E-06	1.71	335E-06	1.71	335E-00
ATIONS A	AT		9		10		11		12		13		14	1.000	15	1070	· · I · C - O(
TRAN		1.9660	7E-06	2.0742	25+06	1./1335 6.05044	E-06 E-06	e°0505 1°1133	9E-06 9E-06	1.7133	ISE-06 ISE-06	1.71	335E-06 170E-06	1.71 1.84	335E-06 020E-06		
							ĻOA	AD AT POI	SI TN								
4T10' - I	д Т		ı		2		000 3	000000000	00000 4		5		6		7		,
TUAN		9.04040	5E, 7E-07	9.0404	6E-07	9.04046	E-07 E-06	9,04040 5 77040	6E-07	9.0404	6E-07	9.04	046E=07	9.04	0468-07	9.04	046E-0
ATIONS A	AT	-1-40101	9	106704	10	6449696	11	5.1107	15	106100	13	-40J().	}*55≂n/ }4	C • U 8	370E+V0 85	1000	c412-01
		9.04045	6E-07	9.0404	6E-07	2,23454	E-07	9.0404	6E-07	9.0404	6E-07	9.04)46E-07	9.04	046E-07		
	ORI ORI OF CF CF CF CF CF CF CF CF CF CF CF CF CF	ORIGINAL OF POOR OF POOR ATIONS AT RAN ATIONS AT RAN ATIONS AT RAN ATIONS AT RAN ATIONS AT RAN ATIONS AT RAN ATIONS AT RAN ATIONS AT RAN ATIONS AT	ORIGINAL PAGE OF POOR QUALU KU KU	ORIGINAL PACE S OF POOR QUALITY KU- AND KIDNS AT KIDN AND KIDN AND KIDN AND KIDN AND KIDN	ORIGINAL PAGE S OF POOR QUALITY KU AND NASTR KU AND NASTR KU AND NASTR RAN -2.89131E-05 -2.95967E-05 -3.6919 -10708 AT -4.57280E-05 -4.05038E-05 -5.2396 -10005 AT -1.71335E-06 1.71335E-06 1.71335E-06 1.71335E-06 1.71335E-06 1.9004046E 9.04046E	Image: Non-State of the state of the st	Image: Second	Image: Normal formed	ORIGINAL PAGE 15 OF POOR QUALITY: Table 21 (Con KU- AND NASTRAN- ROTATIONAL INFLUENCI (ALL ROTATIONS ARE BAX (ALL ROTATIONS ARE BAX LOAD 4T POI ************************************	Image: Second	ORIGINAL PAGE 15 OF POOR QUALITY Table 21 (Continued) KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIEN (ALL ROTATIONS ARE BASED ON A LL (ALL ROTATIONS AT -2.89067E-05 -2.38006E-05 -2.95967E-05 -2.95967E-05 -2.95967E-05 -3.54489E-06 -5.7917E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -4.90771E-05 -	Consisting Constrained Constrained <thconstrained< th=""> <thconstrained< th=""></thconstrained<></thconstrained<>	Image Image <th< td=""><td>Image Image <th< td=""><td>Image: Second Second</td><td>Image Image <th< td=""><td>Image Image <th< td=""></th<></td></th<></td></th<></td></th<>	Image Image <th< td=""><td>Image: Second Second</td><td>Image Image <th< td=""><td>Image Image <th< td=""></th<></td></th<></td></th<>	Image: Second	Image Image <th< td=""><td>Image Image <th< td=""></th<></td></th<>	Image Image <th< td=""></th<>

	· .		Table 21	(Continued)				
	KU- AND	NASTRAN- ROT (ALL	ROTATIONAL INF	LUENCE COEFF Re based on	ICIENTS FOR A 1LB. LOAD	BUILT-VP W)))	[NG 2	-
			LO	AD AT POINT 13				
ROTATIONS AT KU NASTRAN ROTATIONS AT	1 -2.10764E-06 -1.91382E-06	2 -2.10764E-06 -1.80027E-06	3 -2.10764E-06 -1.36246E-06	4 -2.10764E-06 -6.39902E-07 12	5 -2.10764E-06 -1.56545E-06 13	6 -2.10764E+06 -2.49322E+06 14	7 -2.10764E-06 -2.20339E-06 15	8 -2.10764E-06 -6.82339E-07 _
KU NASTRAN	-2.10764E-06 -1.45254E-06	~2.10764E~06 -1.51737E-06	-1.26644E-06 -9.54309E-07	-1,76756E-06 -4,06517E-06	-2.10764E-06 -1.30001E-06	-2.10764E-06 2.26023E-06	-2.10764E-06 -3.10880E-07	
				AD AT POINT 14				
ROTATIONS AT KU NASTWAN ROTATIONS AT KU NASTRAN	1 -8.53064E-06 -5.81645E-06 9 -8.53064E-06 -4.17262E-06	2 -8.53064E+06 -5.65005E=06 10 -8.53064E-06 -8.17244E+06	3 -8.53064E-06 -6.08718E-06 11 -2.75634E-06 -1.26566E-06	4 -8.53064E-06 -6.14393E-06 12 -4.43917E+06 -1.96906E-06	5 -8.53064E-06 -3.52653E-06 13 -6.82498E-06 -6.96069E-06	6 -8.53064E-06 -4.85864E-06 14 -8.53064E-06 -5.27994E-06	7 -8.53064E-06 -4.85044E-06 15 -8.53064E-06 4.17600E-06	8 -8.53064E+06 -5.49052E-06
			L 0- • •	AD AT POINT 15 00000000000000000				
ROTATIONS AT KU NASTRAN ROTATIONS AT KU	1 -1.69057E-05 -1.12148E-05 9 -1.69057E-05	2 -1.64057E-05 -1.23957E-05 10 -1.69057E-05	3 1.69057E-05 1.34304E-05 11 -4.24623E-06	4 -1.69057E-05 -1.38335E-05 12 -7.11077E-06	5 -1.69057E-05 -1.27175E-05 13 -1.15423E-05	6 -1.69057E-05 -7.16116E-06 14 -1.52937E-05	7 -1.69057E-05 -9.14182E-06 15 +1.69057E-05	8 -1.64057E-05 -1.15494E-05 -
NASTRAN	-1.39397E-05	+1.37448E+05	-1.25197E-06	+3,13084E-06	-4.134712-06	-1º18A12E+02	-1°303535-02	

R.4.5. OF DIFFERENCES = 3.89450E-07

MAXIMUM ERROR = 6.76366E-06

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Table 22

EXPERIMENTAL= AND NASTRAN= DEFLECTION INFLUENCE COEFFICIENTS FOR BUILT-UP WING 3 (All Deflections are based on a loolb. Load)

LOAD AT POINT 1

	1	2	3	6	5	6	7	8	9	10	11	12	13	14	15
FXP.	.046Î	.0463	.0472	.0489	.0527	.0231	.0251	.0272	.0295	.0317	o0078	.0095	.0104	.0109	•0124
NASTRAN	0375	.0362	.0366	.0376	.0384	.0163	0186	.0199	.0211	. 0222	°0036	.005 0	°00e1	,0069	•0078

LOAD AT PUINT 2

							น								
OFFL. AT	1	2	з	4	S	6	7	8	Ŷ	10	11	12	13	14	15
EXP.	.0463	٥ 5 43	.0588	.0640	.0712	0208	.0272	•0326	.0363	0424	•0065	.0093	.0115	0132	•0165
VASTRAN	.0362	.0447	.0474	° 0250	。0567	0148	.0198	•0241	•0587	°0358	•0051	a UU41	• [] () () f	₀ ₩000	08113

LOAD AT POINT 3

DEEL AT	,	2	٦	4	5	6	7	8	9	10	11	12	13	14	15
ERPO	.0472	.0588	•0726	.0812	.0900	•020Z	·0285	.0376	.0458	.0544	•0052	0090	°0158	.0166	•0216
NASTRAN	.0366	.0474	.0600	.0691	.0791	•0136	.0204	°0581	.0362	.0451	°0018	.0043	°0015	•0108	•015 <i>1</i>

LOAD AT POINT 4

								-							
34 F 1 6 T	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
011160 111		•							04.33	0203	0013	0000	0178	. 0102	. 147
FX2.	-0684	.0640	.0812	.0988	.1150	•0197	°0709	oU4∠1	*0231	*0001	の近しのつ	00007	01120	001 2	00401
L (1)						AL OF	0.21.2	0.215	0442	0588	. 0012	.0040	-0077	.0127	-0201
NASTRAN	.0376	.0520	.0691	*0A01	.1000	*0155	00616	00712	0.0442	0000	00014	900.40	00011		

LOAD AT PUINT 5

JEFL AT	1	2	Э	4	5	6	7	8	4	10	11	12	13]4	15
EXP.	.0527	.0712	•0900	-1150	.1475	0191	٥350 ه	•0448	.0601	o0844	•0031	.00A0	.0147	•0218	•0296
UACTOAN	-0784	0567	-0791	.1065	.1400	0114	*0559	٥٥٦٥٥	•0518	.0730	•0004	0036	0095	0143	00244

LOAD AT POINT 6

		~	-		5	6	7	8	9	10	11	12	13	14	15
DEFLS AT	1	4208	- 0202	.0197	. กาจโ	.0187	.0156	•013š	.0126	.0120	•0084	•0076	.0067	۰0057	•0053
LAPO	00231	00200	00202	00177 A)75	0116	.0127	-0104	-0088	-0078	.0068	.0039	.0039	a0035	.0030	°0052
VASTRAN	.0103	oU148	01130	**152	00114	001734	00204	00000		000-4					

Table 22 (Continued)

EXPERIMENTAL- AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR BUILT-UP WING 3 (ALL DEFLECTIONS ARE BASED ON A 100LB. LOAD)

LOAD AT POINT 7

DEFL. AT	1	2	3	9 G	5	6	7	8	9	10	11	12	13	14	15
£λΡ.	<u>0251</u>	°0525°	285ه	.0308	o350°	0156ء	.0189	•0.90	.0191	.0206	0058	.0072	.00B1	.0080	.0085
NASTRAN	-0186	.0198	•0204	°0515	°0550°	·0104	0138	.0125	.0127	.0135	•0026	.0038	.0043	.0047	0052

LOAD AT PUINT 8

DEFL. AT 5 5 8 9 1 3 4 6 7 10 11 12 13 14 15 .0272 .0326 .0376 .0421 .0448 .0135 .0190 .0235 .0259 .0288 .0040 .0065 .0090 .0108 .0129 .0199 .0241 .0281 .0315 .0350 .0088 .0125 .0170 .0188 .0218 .0017 .0031 .0049 .0065 .0085 EXP. NASTRAN

LOAD AT POINT 9

							-	-		-					
DEFL. AT	1	5	3	4	5	6	7	8	Ŷ	10	11	12	13	14	15
EXP.	•0242	.0363	•045B	•0531	.0601	-0126	.0191	•0259	•0340	.0405	•0032	.0060	.0094	•0131	+0183
VASTRAN	•0211	.0283	•0362	.0442	.0518	.0078	. 0127	•0188	o276	.0327	•0009	°0052	0051	.0084	•0127

LOAD AT PUINT 10

DIFL, AT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
EXP.	.0317	.0424	•0544	°0681	•0844	•0120	.0206	·0288	.0405	.0571	0025	٥056	.0101	.0150	.0240
NASTRAN	•0222	.0328	•0451	•0588	.0730	•0068	.0 35	∘0216	•0327	.0479	S0000	•0053	on055	.0100	.0172

LGND AT POINT 11

GEFL. AT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
EXP.	₀ 0078	.0065	•0052	.0043	.0031	•0084	.0058	•0040	•0032	.0025	·0089	°0023	°0030	°0018	•0011
NASTRAN	.0036	.0027	.0019	°0015	.0004	•0039	°0059	.0017	.0009	S000.	•0052	.0022	.0010	.0005	•0000

LOAD AT POINT 12

DEFL, AT	1	5	3	4	5	6	7	8	9	10	11	12	13	14	15	
EAP.	۰00 95	.0093	.0090	.0089	.0080	.0076	°0025	•0065	.0060	.0056	•0053	.0069	0045	°0035	°0058	۴
NASTRAN	.0050	.0047	.0043	.0040	.0036	.0039	.0038	.0031	.0027	°0053	-005S	°0045	.0019	.0013	•0010	

		Commences &	Contraction (å i tajvast (∳	ەمەمبىقى يە ل ە	<u></u> €177421 ×	r Design	 All setting to the 	÷∳ ∰t≥≕∧⊮÷		u≖i‡ n∰2152	* 1 ***	1997 -1 1977-1	+4,°20 Β(3)	6-403 8-403 8-403 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-703 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-603 8-700 8-700 8-700	* •
ORIC OF]	INAL P POOR Q	AGE IS UALITY	5				Tabl	e 22 (0	Continu	ed)						
	1	ЕХРЕРІ	MENTA	L- AND	NAST (ALL	RAN- DEFL	DEFLEC	CTION NS ARE	INFLU BASE	ENCE D ON	COEFFI A 100L	CIENTS B. LO	5 FOR AD)	BUILT	-UP WIN	G 3
	• •						L.	OAD AT	POINT 1	3						
DEFL. AT EXP. NASTRAN	1 •0104 •0061	2 .0115 .0067	3 0128 0072	4 0138 0077	5 .0147 .0082	6 •0067 •0035	7 •0081 •0043	8 •0090 •0049	9 .0094 .0051	10 。0101 。0055	' ₹1 ∘0030 ∘0010	12 0045 0019	13 0064 0035	14 0053 0026	15 0050 0025	
							L	0AD AT	POINT 1	4			•			
DHFL. AT Exp. NAGTRAN	1 0104 0064	2 .0132 .0088	3 •0166 •0108	4 0192 0127	5 .0218 .0145	6 .0057 .0030	7 。0080 。0047	8 •0108 •0065	9 0131 0084	10 0150 0100	11 •0018 •0005	12 0032 0013	13 0053 0026	. 14 。0088 。0058	15 •0092 •0052	
							L	.0AD AT	PÚINT 1	5						
DEFL. AT ERP. NASTRAN	1 0124 0078	2 0165 0115	3 0216 0157	4 .0267 .0201	5 .0296 .0244	6 0053 0025	7 0085 0052	8 0129 0085	9 0183 0127	10 .0240 .0172	11 •0011 •0000	12 0028ء۔ 0010ء	13 0050 0025	14 0092 0052	15 •0154 •0110	

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R.M.S. OF DIFFERENCES = 4.50924E-04

HAXIMUM ERROR = 1.42625E-02

Table 23

KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR BUILT-UP WING 3 (ALL ROTATIONS ARE BASED ON A 1LB. LOAD)

WELCHARD T

						,		
			LO-	AD AT POINT 1				
TA ZUGITATIONS AT	1	2	3	4	5	6	7	A.
KU	-1.31896E-06	-1.31896E-06	-1.31896E-06	-1,31896E-06	-1.31896E-06	-3.08756£-06	-2-84830E-06	-2.27153E-06 -
NASTRAN	-5.88390E-07	3.37729E-06	-1.47872E+06	-1,96391E-06	-1.09807E-06	-5.42448E+06	+3.42184E+06	~2.20064E~06
ROTATIONS AT	9		11	12	2 800025 04	14	15	
NASTRAN	-2.14736F-06	-1.31090E-00 -1.91981E-06	+1,550/02-00	-2,47786F-06	-1.69478F-06	-1.54687F-06	-3.222122-00	
			Deverter De		10004102 00	110-20012 00	00302002-01	-
			LO	AD AT POINT 2				
COTATIONS AT)	2		00000000000000000000000000000000000000	5	6	. 7	a l
KU	-9.027876-06	-8.28327E-06	-8.283275-06	-8,28327E-06	-8,28327E-06	-8.17240E-06	-8.50625E-06	-8-93164E-06
VASTRAN	-1.61884E-05	-1.283102-05	-3.67792E-06	-9,25360E-06	-8.52245E=06	-9.38455E-06	-8.68902E-06	-7.88868E-06
HOTATIONS AT	9'	10	11	12	13	14	15	1
50 NASTUAN	-8-34722F-06	-8.283272-06	-2,350152-08	-3,52/88 <u>5</u> -06	-3.673305-06	-0.070248-00	-7.25481E-V6	
1031000	-00341526-00	-00130416-00	-3*599445-49		-3:013376-00	4403130cf.400	-20510005-00	-
			LO	E TRIOG TA GA				
			00	0000000000000000				
ROTATIONS AT	1 (7)696 46	2	1 912945 05	4 	5	6 1 305735.05	-1 (11620.05	1 CE0176 05
NASTRAN	-1.93756F-05	-2.18310F-05	-2.246458-05	-1.62950F-05	-1.87943E-05	-l.17627F-05	-1.38488F-05	-1.53917E-05
ROTATIONS AT	9	10	11	15	13	14	15	
₹U	-1.72583E-05	-1.80084E-05	-3.14152E-06	-4.93314E-06	-7.72386E+06	-1-01858E+05	-1.12875E-05	
VASTRAN	-1.60424E-05	-1.77894E-05	∞3,15762E-06	-5.22150E-06	-6.02389E-06	-7.78938E-06	+1.05656E-05	
			LO	AD AT POINT 4				
POTATIONS AT	1	2	3	4	5	6	7	8
∢ U +	-2,44457E-05	-2.77336£+05	~2,86015E-05	+2.86015E+05	-2,86015E-05	-1.83421E-05	-1.972228-05	~2.22519E-05
NASTRAN	-2.54409E+05	-2,91068E-05	-3,56376E-05	-3,94017E-05	-2.70431E-05	-1.50188E-05	-1.76285E-05	-2.12645E-05
POTATIONS AT				26 338405-06	-1.010125-05	14 1-349545-05	15 al.632025-05	
NASTRAN	-2.56413E+05	-2,983948-05	-3,60100E-06	-0,06784E-06	~7.93205E-06	-1.17585E-05	~1.62985E-05	
ALC: 0 1 10 111								

Table 23	(Continued)
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KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR BUILT-UP WING 3 (ALL ROTATIONS ARE BASED ON A 1LB. LOAD)

			L0/	AD AT POINT 5				
SOLATIONS AT	,	י כ	3	4	5	6	7	8
KU KETONO KE	-3.21546F-05	-3.745375-05	-1-907485-05	-3.90748F-05	+3,90748E+05	-2.34269F-05	-2-533018-05	-2-89120E-05
NASTOAN	-3,17239F+05	-3.769145-05	-4.53980E+05	-5.70422E-05	-6,90056E-05	-1.76612E-05	-2.20993E-05	-2.767228-05
ROTATIONS AT	9	10	11	12	13	14	15	
40	-3-39123E-05	-3.74587E-05	-4.72426E-06	-7.74365E-06	-1.26387E-05	-1.720502-05	-1.93529E+05	
NASTRAN	-3.55763E-05	-4.46584E-05	-3,98141E-06	-1,33751E-06	-9.81070E-06	-1.500282-05	+2.28185E-05	
			L04	AD AT POINT 6				
TA RELIAN	1	2	3	4	5	. 6	7	н
	3-53342E-06	3-533428-06	3.533428-06	3.53342E-06	3.53342E-06	3.533428-06	3.53342E-06	3.53342E-06
NASTRAN	6.27258E-06	2.98698E-07	1.78291E-06	2,21745E-06	2.23038E-06	6.13207E-06	5.90620E-06	2.17607E-06
ROTATIONS AT	9	10	11	12	13	14	15	
<u.< td=""><td>3.53342E+06</td><td>3.533428-06</td><td>-3,03757E-07</td><td>-9.40324E-08</td><td>5,32738E-07</td><td>1.48827E-06</td><td>2.08269E-06</td><td></td></u.<>	3.53342E+06	3.533428-06	-3,03757E-07	-9.40324E-08	5,32738E-07	1.48827E-06	2.08269E-06	
NASTRAN	1.72788E-06	1.80191E-06	-1.07528E-06	1.82669E-07	9.17406E-07	9.37185E-07	1.88724E-06	
			LO	AD AT POINT 7				-
57. TATIONE 37	•	• • •	, ou	00000000000000000000000000000000000000	c	6	7	я
AUTATIONS AT	1 222605 04	5 		-) 232605-06	-1.232606-06	-1.55)625-06		-1.23260E-06
NO NAS 7 0 / 11	-1 307705-06	2 668616-07	-2 617695-06	-10CJ24VE-00	-5.48689F-07	-9.61245FeD6	-1.545278-06	3-046755-06
NADISING DUISINGS AT	-4,20/102-08	20400415-01	-2,037070-00	12	13	14	15	
	-1 232405-06	-1.23260F-06	-1.095138-06	-1.49929E-06	-1.92468E-06	-2.02131F-06	-1.94700E-06	
VASTRAN	-1.37533E-06	-1.76060E-06	-1.19018E-06	-1.97374E-06	-5.11650E-07	-1.12793E-06	-5.55563E-07	
			LO: 04:	AD AT POINT 8 				•
POTATIONS AT	1	2	3	4	5	6	7	8
(U	-7.00472E-06	-7.00472E-06	-7.00472E-06	-7,00472E-06	-7.00472E-06	-6.63626E-06	-6.84035E-06	-7.00472E-06
NASTHAN	-8,00204E-06	-8.02181E-06	-5,97129E-06	-7,09140E-06	-7.295302-06	~5.79826E~06	-8-87319E-06	-6.17858E-06 -
ROTATIONS AT	. 9	10	17	12	13	14	15	
KÚ –	+7.00472E-06	-7.00472E-06	-1,886502-06	-2,90455E-06	-4.38209E-06	-5.53089E-06	~5.97968E-06	
NASTRAN	-3.17503E-06	-6.67531E-06	-1.88232E+06	-3,00420E-06	-3,34406E-06	-3.24931E-06	-4,306028-06	

Table 23 (Continued)

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KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR BUILT-UP WING 3 (ALL ROTATIONS ARE BASED ON A 1LB. LOAD)

	,	\$	L0	AD AT POINT 9		· · · ·	•	
ROTATIONS AT KU NASTRAN ROTATIONS AT KU NASTRAN	1 -1.45497E-05 -1.32551E-05 9 -1.49171E-05 -1.50581E-05	2 -1.49171E-05 -1.39985E-05 10 -1.49171E-05 -6.48548E-06	60 3 -1,49171E-05 -1,58097E-05 11 -2,67786E-06 -2,58275E-06	4 -1.49171E-05 -1.30257E+05 12 -4.30580E-06 -3.86553E-06	5 -1.49171E-05 -1.59584E-05 13 -6.83951E-06 -4.58934E-06	6 -1.17211E=05 -8.39618E=06 14 -9.04046E=06 -7.37266E=06	7 -1.24483E-05 -9.67144E-06 15 -1.00124E-05 -9.06092E+06	8 ∝1.366%8E~05 ∻1.55854E-05
•			10	AD AT POINT 10				
RUTATIONS AT NU NASTHAM RUTATIONS AT NU NASTRAN	1 -2。22586E-05 -1。87069E-05 9 -2。32441E-05 -2,45888E-05	2 -2.50270E-05 -2.13202E-05 10 -2.50270E-05 -3.29315E-05	3 -2,50270E-05 -2,48968E-05 11 -3,46923E-06 +2,50158E-06	4 ~2.50270E-05 ~2.76352E-05 12 ~5.71506E-06 -4.98467E-06	5 -2,50270E-05 -2,54402E-05 13 -9,29693E-06 -6,82638E-06	6 -1.68059E-05 -1.11141E-05 14 -1.25500E-05 -1.02615E-05	7 -1.80562E-05 -1.38432E-05 15 -1.40450E-05 +1.75072E-05	8 -2.03244E-05 -1.71952E+05
			£0-	AD AT POINT 11				
ROFATIONS AT KU NASTRAN ROTATIONS AT KU NASTRAN	1 9.51269E-07 4.10027E-07 9.51269E-07 1.42995E-06	2 9.51269E-07 2.64720E-06 10 9.51269E-07 1.47503E-06	64 3 9.51269E-07 1.53872E-06 11 9.51269E-07 5.24051E+06	4 9.51269E-07 1.38471E-06 12 9.51269E-07 5.40376E-06	5 9.51269E=07 1.60645E=06 13 9.51269E=07 1.69465E=06	6 9。51269E-07 4。35697E-06 14 9。51269E-07 9。95544E-07	7 9。51269E-07 6。02658E-07 15 9。51269E+07 1。25123E-06	8 9.51264E-07 1.27414E-06
			LO	SI THING TA CA				
ROTATIONS A' NU NASTRAN ROTATIONS AT KU NASTRAN	1 5,29306E=07 ≈4,53560E=07 9 5,29306E=07 4,14054E=07	2 5.29106E=07 9.49678E=07 10 5.29306E=07 1.02080E=06	3 5.29306E=07 1.52093E=06 11 1.59900E=07 =6.35892E=06	4 5.29300E+07 3.72360E+07 12 5.29306E+07 1.46785E-07	5.29306E=07 7.80418E=07 13 5.29306E=07 4.62492E=06	6 5.29306E-07 -3.73262E-07 14 5.29306E-07 7.74781E-07	7 5。29306E=07 1。61656E=06 15 5。29306E=07 7。25921E=07	8 5029306E-07 3059740E-08

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Table 23 (Continued)

KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR BUILT-UP WING 3 (ALL ROTATIONS ARE BASED ON A 1LP. LOAD) and the second second

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			LO- oo-	AD AT POINT 13				
ROTATIONS AT	1	2	3	- 4	· 5	6	7	8
<u .<="" td=""><td>-1.04033E-06</td><td>-1.04033E→06</td><td>-1.04033E-06</td><td>-1.04033E-06</td><td>-1.04033E-06</td><td>-1.040335-06</td><td>-1.04033F-06</td><td>=1.04033E=06</td></u>	-1.04033E-06	-1.04033E→06	-1.04033E-06	-1.04033E-06	-1.04033E-06	-1.040335-06	-1.04033F-06	=1.04033E=06
VESTRAN	-1.22764E-06	-1.23721E-06	-9.18767E-07	-3.04712E-07	-9.99444E-07	-1.733915-06	-1.43773E-06	-2.922502-07
ROTATIONS AT	9	10	11	12	13	14	15	
<u.< td=""><td>-1.04033E-06</td><td>-1,04033E-06</td><td>-6.31469E-07</td><td>-8,75951E-07</td><td>-1.04033E-06</td><td>-1.04033E-06</td><td>~1.04033E-06</td><td></td></u.<>	-1.04033E-06	-1,04033E-06	-6.31469E-07	-8,75951E-07	-1.04033E-06	-1.04033E-06	~1.04033E-06	
VASTRAN	-9,76760E-07	-1.26741F-06	-9,31781E-07	-3,30700E+06	-9.32723E-07	2.07006E-06	2.05897E-07	
			I D.					
			00	0000000000000000				
ROTATIONS AT	1	2	3	4	. 5	· 6	7	2
∢U	-4.38553E-06	-4.38553E-06	-4,38553E-06	-4.38553E-06	-4.38553E-06	~4.38553F-06	-4. 18553F-06	-4.38553F-06
NASTRAN	-3.53920E-06	-3.48503E-06	-3.94170E-06	-3,93253E-06	-1.71349E-06	-3.26728F-06	-3-134428-06	-3.52787E-06
ROTATIONS AT	9	10	11	12	13	14	15	
KU	-4.38553E-06	-4.38553E-06	-1.42284E-06	-2.281216-06	-3.49775E-06	-4.38553E-06	-4.38553E-06	
HASTRAN	-2.3270 3 E-06	-5.45563E-06	-7.03867E-07	-1,525638-06	-5.61139E-06	-3.78171E-06	4.30104E-06	
			L04	AD AT PUINT 15				
			0.04	0000000000000000				
ROTATIONS AT	1	5	. 3	4	5	б	7	8
۲U	-8.73724E-06	-8.73724E-06	-8.73724E-06	-8.73724E-06	-8.73724E-06	-8°13154E-00	-8.73724E-06	-8.73724E-06
NASTHAN	-6.75665E-06	-7.37815E-06	-7.972246-06	-8,38985E-06	-7.44691E-06	-4.81546E-06	-5.75600E+06	-7.11835E-06
ROTATIONS AT		10	11	12	13	14 .	15	
RU .	-8.73724E-06	-8.73724E-06	-2.21421E-06	-3.68047E-06	-5.95516E-06	-7.89510E-06	-8,73724£+06	
NASTHAN	-8.47132E-06	-8.11935E-06	-9.76227E-07	-2,2019JE-06	-3.31133E-06	-8°13860E-06	−1.34731£-05	

R.M.S. OF DIFFERENCES = 2.26268E-07

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MARIMUM ERROR = 4.69625E-06

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Table 24

							•	42.4 -	-						
	ЕX	PERIM	ENTAL-	AND	NASTRA (ALL U	N- DE DEFLEC	FLECT	ION IN ARE E	IFLUEN SASED	CE COI ON A	EFFIC: 100LB	ENTS	FOR BL)	JILT-U	P WING
סו רנו א ז	1	2		4	5	6	L(a+ 7	AD AT I Adagesso 8	POINT 00000000 9	1 10	11	12	13	14	15
EAP. NASTRAN	.0407 .0340	•0327 •0256	0246 0198	₀0170 ₀0150	.0116 .0109	0256 0173	.0191 .0140	•0144 •0107	.0093 .0078	。0061 。0048	。0110 。0054	.0086 .0045	•0033	°0035	-000B
							L	0AD AT	POINT	2					
DEFL, AT Exp. NASTRAN	1 7580. 8650.	2 0309 0263	3 0270 0213	4. •0208 •0180	5 .0168 .0150	6 •0188 •0136	7 .0194 .0128	8 •0157 •0113	•0116 •0094	10 0092 0073	11 •0080 •0041	12 • • 0074 • • 0040	13 0052 0035	14 。0043 。0028	15 0028 0017
							L	OAD AT	P01NT	3					
DEFL. AT Exp. NASTRAN	1 ₀0246 ₀0198	2 0770. 0213	3 •0274 •0234	4 0252 0213	5 0229 0198	6 0141 0102	7 0150 0112	8 •0162 •0117	9 .0139 .0112	01 8510. 2010.	11 0049 0028	12 0054 0034	13 .0056 .n036	14 0052 0034	15 0045 85000
							L	7A (140)	PUINT	4					
DEFL. AT EXP. NASTRAN	1 •0170 •0150	2 8030. 0810.	3 0252 0213	4 .0294 .0263	5 0308 0256	6 0097 0073	7 .0119 .0094	8 •0146 •0113	9 0176 0128	10 .0190 .0136	11 00028 0017	12 0040 0028	13 •0050 •0035	14 0066 0040	15 .0070 .0041
							Ĺ	0AD AT	P01NT	5					
DEFL. AT Exp. NASTHAN	1 0116 0109	2 .0168 .0150	3 0209 0198	4 0308 0256	5 .0387 .0340	6 0065 0048	7 .0092 .0078	8 .0132 .0107	9 •0180 •0140	10 .0240 .0i73	11 •0014 •0008	12 0200。 2200。	13 0046 0033	14 。0075 。0045	15 0100 0054
								LOAD AT	P01NT	6 ¤⊅					
DEFL. AT EAP.	1 •0256	2 0188 0136	3 •0141 •0102	4 ,0097 .0073	5 。0065 。0048	6 2020。 90139	7 0152。 0086。	8 0087 0059	9 0054 0039	01 0030 0200	11 0104 00045	12 8000. 2000.	0030°° 13°°0°°	14 0020. 0011	۲۵ 0004 2000ء

Table 24 (Continued)

EXPERIMENTAL- AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR BUILT-UP WING 4 (ALL DEFLECTIONS ARE BASED ON A 100LB. LOAD)

LOAD AT POINT 7

DETLA AT	۱	2	3	4	· 5	6	7	. 8	9	10	' 11	12	13	14	15
EXP	•0191	.0194	•0150	.0119	.0092	•0152	°0155	•0098 •0066	.0068 .0052	.0054 .0039	•0064 •0030	。0066 。0029	°0033	°0058 °0017	00014 00009

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LOAD AT POINT 8

OFFL. AT	1	2	า	4	5	6	7	8	9	10	11	12	13	14	15
EXP.	.0144	.0157	o162	.0146	.0132	.0087	.0098	•0122	.0095	.0085	o0034	°0046	o0046	0041	·0034
VASTUAN	.0107	.0113	-0117	-0113	.0107	.0059	.0066	.0082	.0066	,0059	°0018	°0053	2200ء	°0053	°0018

LOAD AT POINT 9

							_								
D Ft. AT	1	2	3	4	5	6	7	8	9	10	11	15	13	14	19
Ex⊃,	.0093	.0116	.0139	.0176	.0180	•0054	.0068	.0095	.0133	.0133	0016	.0026	.0035	.0059	.0060
NASTRAN	.0078	.0094	•011S	0158	.0140	•0039	°0025	.0066	.0100	.0086	*0008	.0017	.0023	·0029	°0030

LOAD AT POINT 10

DEEL, AT	ı	2	3	4	5	6	7	8	9	10	11	15	13	14	15
EXP.	.0061	°00 <i>6</i> 5	°0158	-0180	°0540	°0030	.0054	.0085	.0133	•0182	60000	.0019	•0032	.0063	•0092
VASTHAN	.0048	.0073	S010*	-0136	₀0173	°0050	•0039	۰0059	.0085	°013A	∘000∠	°0011	°00∠0	2000	00047

LOAD AT POINT 11

			_		-		-9	0	u	10	11	12	13	14	15
DEFL, AT	1	2	3	4	5	5				10	14	16		0006	
EXP.	+0110	.0080	•0049	*0058	o0014	0104	0064	°0034	°0019	°0008	0095	00048	•0010	00000	500002
NANTRAN	.0054	.0041	.002B	+0017	.0008	•0045	.0030	°0018	*0003	-0002	•0048	.0016	• 0 0 0 <i>1</i>	•0003	~ ∘0001

LOAD AT PUINT 12

							_	-								
3551 AT	1	2	3	4	5	6	7	8	9	10	11	15	13	14	15	ø
JELE MI	+	۲.	2	. 7				6.6.4.0	0000	0010	001 B	. 8848	. 6623	- 0017	~0006	¥
= • D	. 0086	- 0074	.0054	.0040	.0030	0065ء	0066ء	00040	°0050	*100*	00 040	****	00063	0001-1	00000	
CAFe	00000	6VUIT	00000				0.000	0020	0017	0013	. 0016	-0026	. 6011	.0006	.0003	
VASTRAN	.0045	。0040	o0034	°0059	°0055	∘0032	*0058	00CJ	*00ľi	*****	•001v	00030	0 U V A A			

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Table 24 (Continued)

EXPERIMENTAL- AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR BUILT-UP WING 4 (ALL DEFLECTIONS ARE BASED ON A 100LB, LOAD)

LOAD AT POINT 13

A 1 A 1															
JEFL, AT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Exo.	•0650	.0052	.0056	.0050	.0046	•0033	·0039	.0046	.0035	.0032	0016	•0023	.0036	•0022	.0014
NASTRAN	.0033	.0035	•0036	.0035	.0033	•0020	0023	•0025	.0023	.0020	.0007	.0011	.0023	.0011	.0007

LCAD AT POINT 14

JËFL. AT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ËXP.	•0032	.0043	•0052	.0066	.1075	•0020	-Ju28	.0041	.0059	.0063	•0006	.0013	.0022	·0056	.0046
NASTRAN	°0055	.0028	·0034	.0040	.0045	•0011	.0017	•0053	•0029	.0032	.0003	.0006	.0011	.0036	.0016

LOAD AT POINT 15

							12		000000000	· 12					
DEFL. AT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
EXP.	-0010	°005 8	•0045	.0070	.0100	•0004	.0014	o0034	.0060	.0092	·0002	.0006	.0014	0046	•0081
NASTRAN	•0008	.0017	•0058	.0041	.0054	•0002	•0009	•0018	.0030	.0045	~∘ 0001	•0003	.0007	o0016	0048

R.M.S. OF DIFFERENCES = 2.13327E-04

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MAXIMUM ERROR = 6.30690E-03

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				Table 25			• • •	
	KU- AND	NASTRAN- RO (ALL	ROTATIONAL IN	FLUENCE COEF ARE BASED ON	FICIENTS FO A 118. Loa	R BUILT-UP V D)	ING 4	
			10/	AD AT POINT 1				
ROTATIONS AT KU NASTRAN ROTATIONS AT	1 1.74246E-05 2.31340E-05 9	2 1.74246E-05 1.95267E-05 10	3 1.74246E-05 1.35458E-05 11	4 1.74246E-05 1.15392E-05 12	5 1.74246E-05 1.08567E-05 13	6 1.16164E-05 8.82154E-06 14	7 1。16164E~05 9。05185E-06 15	8 1。16164E-05 8。05109E≈06
KU NASTRAN	1.16164E-05 7.61782E-06	i.16164E-05 8.09413E-06	5.80819E-06 1.13004E-06	5,80819E-06 3,38759E-06	5.80819E-06 3.14142E-06	5.80819E-06 3.47203E-06	5.80819E-06 4.33200E-06	
			L0/	AD AT POINT 2	·			
ROTATIONS AT KU VÁSTRAN ROTATIONS AT KU VASTRAN	1 8.71229E-06 -6.09825E-06 9 5.80819E-06 4.77755E+06	2 8.71229E-06 6.93675E-06 10 5.80819E-06 6.31073E-06	3 8.71229E-06 1.28559E-05 11 2.90410E-06 -1.24392E-06	4 8.71229E-06 7.59958E+06 12 2.90410E+06 9.44371E-07	5 8.71229E-06 8.32238E-06 13 2.90410E-06 1.79871E-06	6 5.80819E-06 2.72388E-07 14 2.90410E-06 2.29323E-06	7 5.80819E-06 3.45832E+06 15 2.90410E-06 3.72299E-06	8 5.80819E-06 4.99617E-06
			L04 994	40 AT POINT 3				
ROTATIONS AT KU NASTRAN ROTATIONS AT KU NASTRAN	1 -3,73900E+06 9 0, 2,40276E-06	2 0. -6.24910E-06 10 0. 2.80619E+35	3 0. 3.46945E-18 11 0. -2.53068E-06	4 0. 6.24910E-06 12 0. -1.06461E-06	5 0. 3.73900E-06 13 0. 4.93041E-19	6 0. -2.80619E-06 14 0. 1.06461E-06	7 0. -2.40276E-06 15 0. 2.53068E+06	8 4,12431E-18
			L04 001	AD AT PUINT 4				
RQTATIONS AT KU NASTRAN ROTATIONS AT KU NASTRAN	1 -8.71229E-06 -8.32238E-06 9 ~5.60819E-06 ~3.45832E-06	2 -8.71229E-06 -7.59958E-06 10 -5.80819E-06 -2.72388E-07	3 -8.71229E-06 -1.28559E-05 11 -2.90410E-06 -3.72299E-06	4 -8.71224E-06 -6.93675E-06 12 -2.90410E-06 -2.29323E-06	5 -8.71229E+06 6.09825E=06 13 -2.90410E-06 -1.79871E=08	6 -5.80819E-06 -6.31073E-06 14 -2.90410E-06 -9.44371E-07	7 -5.80819E-06 -4.77755E-06 15 -2.90410E-06 1.24392E-06	8 -5.808192-06 -4.996172-06

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Table 25 (Continued)

KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR BUILT-UP WING 4 (ALL ROTATIONS ARE BASED ON A ILB. LOAD)

			L0.	AD AT POINT 5				
ROTATIONS AT KU NASTRAN ROTATIONS AT	1 -1.74246E-05 -1.08567E-05 9	2 -1.74246E+05 -1.15392E-05 10	3 -1,74246E-05 -1,35458E-05	4 -1.74206E-05 -1.95267E-05	5 -1.74246E-05 -2.31840E-05 13	6 -1.16164E-05 -8.09413E-06	7 -1.16164E=05 -7.61782E-06	8 -1.16164E-05 -8.05109E-06
KU NASTRAN	-1.16164E-05 -9.05185E-06	-1.16164E-05 -8.82154E-06	-5.80819E-06 -4.33290E-06	-5,80819E-06 -3,47203E-06	-5.80819E-06 -3.14142E-06	-5.80819E-06 -3.38759E-06	-5.80819E-06 -1.13004E-06	
			L0/	AD AT POINT 6				
ROTATIONS AT	1	2	3	4	5	6	7	8
KU NASTRIN	1.16164E-05 1.13252E-05	1.13164E+05 8.31725E-06	1.16164E-05 8.07256E-06	1.16164E-05 7.13158E-06	1.16164E-05 6.58887E-06	1.16164E-05 1.55226E-05	1.16164E-05 1.08542E-05	1.16164E-05 5.68445E-05
NASTRAN	9 1.16164E-05 5.03051E-06	10 1.15164E-05 5.13 ⁻ 10E-06	11 5,80819E-06 3,37545E-06	5.80314E-06 3.16613E-06	13 5.80819E-06 2.72240E-06	14 5.80819E-06 2.47521E-06	15 5+80819E+06 2+72593E+06	
			L.0/	AD AT POINT 7				
ROTATIONS AT	1	2	3	4	5	6	7	8
K U	5.80819E-06	5.808198-06	5.80819E-06	5,80819E-06	5.80819E-06	5.80819E-06	5.80819E-05	5.80819E-06
NASTRAN	1.89961E-06	4.04355E-06	4.77813E-06	3.928882-06	5.08049E-06	-7.41026E-06	3.85407E-06	8.01956E-06
KU K	5.80819E-06	5-80819E-06	2.90410E-06	2.40410F-06	2.90410E=06	2.90410F-06	2.90410F+06	
NASTRAN	2,79137E+06	3.91969E-06	-4.94134E-07	1,36394E-06	1.65458E-06	1.52438E-06	2.51383E-06	
			L0/	AD AT POINT B				
POTATIONS AT	1	2	3	4	5	6	7	з
NJ	0.	0 .	0.	Ο.	0.	0.	0.	0,
VASTRAN	-9.91624E-07	-1.80251E-06	1.25767E-18	1.80251E-06	9.91624E-07	-1.22595E-06	-4.232802-06	2.18358E-18
RUIATIONS AF	ر ۹	0. IU	13	μ. μ.	1.3	14 Da	12	
NASTRAN	4.23280E-06	1.22595E-06	-1.40494E-06	~1,03355E≁06	5.250258-19	1.03355E-06	1.404948-06	

			Tab1	e 25 (Continue	d)			
	KU- AND	NASTRAN- RC (All	TATIONAL IN ROTATIONS	FLUENCE COEF ARE BASED ON	FICIENTS FO	R BUILT-UP V D)	ING 4	
			LO	AD AT PUINT 9				
ROTATIONS AT KU NASTRAN 2014 LOUS AT	1 -5.80819E-06 -5.08049E-06	2 -5.80819E-06 -3.92888E-06	3 -5.80819E-06 -4.77813E-06	4 -5.80819E-06 -4.04365E-06	5-5-80819E-06 -1-89961E-06	6 ~5.80819E-06 -3.91969E-06	7 •5•80819E-06 -2•79137E-06	8 -5,80819E-06 -8,01956E-06
KU NASTRAN	-5.80819E-06 -3.85407E-06	-5.80819E+06 7.41026E-06	-2,90410E-06 -2,51383E-06	12 -2,90410E-06 -1,52438E-06	13 -2.90410E-06 -1.65458£-06	14 -2.90410E-06 -1.36394E-06	15 -2.90410E-06 4.94134E-07	
			L0 84	AD AT POINT 10				
ROTATIONS AT RU NASTRAN ROTATIONS AT RU NASTRAN	1 -1.16164E-05 -6.58887E-06 9 -1.16164E-05 -1.08542E+05	2 -1.16164E-05 -7.13158E-06 10 -1.16164E-05 -1.55226E-05	3 -1.16164E-05 -8.07256E-06 11 -5.80819E-06 -2.72593E-06	4 -1,10164E-05 -8,81725E-06 12 -5,80819E-06 -2,47521E+06	5 -1.16164E-05 -1.13252E-05 13 -5.80819E-06 -2.72240E-06	6 -1.16164E-05 -5.13710E-06 14 -5.80819E-06 -3.16613E-06	7 ~1.16164E-05 ~5.03051E-06 15 ~5.80819E-06 -3.37545E-06	8 -1.16164E-05 -5.68445E-06
			LO	AD AT POINT 11				
RUTATIONS AT KU NASTRAN ROTATIONS AT KU NASTRAN	1 5.80819E-06 3.30558E-06 9 5.80819E-06 2.16148E-06	2 5.80819E-06 4.063B1E-06 10 5.80814E+06 2.00918E-06	3 5.80819E-06 3.10436E-06 11 5.80819E-06 9.29408E-06	4 5.80%]9E-06 2.69557E-06 12 5.80%]9E-06 6.59184E+06	5.80819E-06 2.48525E-06 13 5.80819E-06 1.13720E-06	5°80819E-06 4°66037E-06 14 5°80819E-06 1°17567E-06	7 5∘80819E→06 2∘99322E-06 15 5∘80819E-06 1∘01870E-06	8 5,80814E-06 2,48469E-06
			LO	AD AT PUINT 12				
ROTATIONS AT RU NASTRAN ROTATIONS AT RU	1 2.90410E-06 3.91706E-07 9 2.90410E-06	2.90410E-06 1.35106E-06 10 2.90410E-06	3 2.90410E+06 2.05874E-06 11 2.90410E-06	4 2.90410E-06 1.54386E-06 12 2.90410E-06	5 2.90410E=06 1.81406E=06 13 2.90410E=06	6 2.90410E=06 7.89533E=07 14 2.90410E=06	7 2°90410E-06 1°49611E-06 15 2°90410E-06	8 2。90410E+06 1。53482E-06
NASTRAN	OF POOR QUALL	1.74538E-06	-9,98553E≠06	ݰ∂323∂E-06	6 .02736E ~06	1.95753E-07	1-2796BE-06	

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			Tab	le 25 (Continu	ed)			
	KU- ANI) NASTRAN- R	OTATIONAL II	NFLUENCE COE	FFICIENTS F	OR-BUILT-UP	WING 4	
		(AL	L ROTATIONS	ARE BASED O	N A 1LB. LO	AD)		
		Ŗ	L0 00	AD AT POINT 13				
ROTATIONS AT	1	5	3	4	5	6	. 7	8
KU NASTRAN RUTATIONS KI	0。 -3,89271E-07 9	0. -6.65798E-07 10	0. 4.35849E-19 11	0. 6.65798E-07 12	0。 3。89271E-07 13	0. -3.48091E-07 14	0. -7.72411E-07 15	0. 5.65954E-19
KI) NASTRAN	0. 7.72411E-07	0. 3.48091E-07	0. -2.35768E-07	0. -3,54293E-06	0. 2,95445E-19	0. 3.54293E-06	0. 2.35768E-07	
			LO	AD AT POINT 14				
ROTATIONS AT	1	· 2	3	4	5	6	7	8
<ψ	-2.90410E-06	-2.90410E-06	-2,90410E-06	-2,90410E-06	-2.90410E-06	-2.90410E-06	-2.90410E-06	-2.90410E-06
NASTRAN	-1.81406E-06	-1.54386E-06	-2.05874E-06	-1.35106E-06	-3,91706E-07	-1.74538E-06	-1.14072E-06	-l.51482E-06
ROTATIONS AT	-2 006105.06	10	-2 086105 06	2 006100.06	13	14	15	
NASTRAN	-1.496112-06	-7.895336-07	-1,27968E-06	-1.95753£-07	-6.02736E-06	-2.90410E-06 -1.93539E-06	9.98553E-06	
			LO	AD AT POINT 15				
		-	00	00045469946699	-		_	
RUTALIUNS AU	-E 40410E 04	-5 404105-04	J	4 	5 -5 404105/04	-E. 000105-04	-5 00030F 04	5 000105-01
NASTOAN	-2.485255-06	-3.8049192-00		-J_000176-00 #4.06381F-04	-3.302282~04	-2*000135+00 -2*000135+00	-3.16148F-06	-3.800176-00
ROTATIONS AT	r 04092.00-00 Q	10	1)	12	-30349306-40	-50003105-00 17	15	-20403076-00
<u< td=""><td>-5.808195-06</td><td>-5.808192-06</td><td>-5.80819E-06</td><td>~5.80819E~06</td><td>-5.80819E-06</td><td>-5.80819E-06</td><td>-5.80819E-06</td><td></td></u<>	-5.808195-06	-5.808192-06	-5.80819E-06	~5.80819E~06	-5.80819E-06	-5.80819E-06	-5.80819E-06	
NASTRAN	-2.99J22E-06	-4.66037E-06	-1.01870E-06	-1.17567E-06	-1.13720E-06	-6.59184E-06	-9.29808E-06	

R.M.S. OF DIFFERENCES = 2.43809E-07

MAXIMUM ERROR = 6.56790E-06

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Table 26

EXPERIMENTAL AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR BUILT-UP WING 5 (ALL DEFLECTIONS ARE BASED ON A 100LB, LOAD)

DEFL. AT	1	2	-		_		L	.0AD AT	P01NT	1	•				
EXP. NASTRAN	•1499 •1099	.1555 .1079	•1586 •1072	•1533 •1066	5 •1554 •1058	6 •0891 •0517	7 0927。 0550	8 •0884 •0567	9 0914 0575	10 .0914 .0575	11 •0284 •0125	12 •0368 •0150	13 •0349 •0165	14 •0342 •0174	15 •0389

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LOAD AT POINT 2

	· · ·	2	÷				-								
EXP. VASTRAN	•1555 •1079	•1742 •118]	•1852 •1858	•1884 •1266	5 •1976 •1311	6 •0881 •0490	7 .1009 .0562	8 •1033 •9621	9 •1130 •0672	10 •1184 •0718	11 •0262 •0110	12 •0416 •0145	13 •0416 •0174	14 00442 00200	15 •0507 •0223

LOAD AT POINT 3

LAP. VASTHAN	•1586 •1072	.1852 .1218	•2071 •1371	4 •2184 •1479	5 •2290 •1592	6 •0839 •0464	7 •1046 •0569	8 •1118 •0672	9 •1270 •0771	10 .1345 .0871	11 0240 0096	12 •0414 •0139	13 •0446 •0182	14 •0486 •0226	15 • 0568 • 0274
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LOAD AT PUINT 4

VELLO AL	1	2	3				-			9 G					
EXP. NASTRAN	+1533 +1006	•1884 •1265	•2184 •1479	•2511 •1721	9 •2802 •1909	6 •0804 •0439	7 。1062 。0574	8 •1170 •0715	9 •1445 •0869	10 1620 1031	11 0209 0081	12 •0414 •0134	13 0488 0184	14 •0569 •0251	15 •0718 •0325

LOAD AT POINT 5

EAP. NASTRAN	•1554 •1058	•1976 •1311	•2290 •1592	4 •2802 •1909	5 •3330 •2273	6 0810 0414	7 01106 0579	8 •1226 •0759	9 •1584 •0962	10 01880 01193	11 •0198 •0067	12 0424 0128	13 •0517 •0195	14 0622 0275	15 •0840 •0376
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LOAD AT POINT 6

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ULL AT	1	2	•		-		v		000000000	¢.					
EAP. VASTRAN	•0891 •0517	.0881 .0490	0839 0464	4 •0804 •0439	5 0810 0414	6 •0680 •0339	7 0642 0297	8 •0545 •0273	9 •0518 •0252	10 .0494 .0230	11 •0279 •0097	12 0304 0099	13 0248 0092	14 •0218 •0084	15 02220 0700

THE PROPERTY SECTION OF LEVELS

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Table 26 (Continued)

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EXPERIMENTAL- AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR BUILT-UP WING 5 (ALL DEFLECTIONS ARE BASED ON A 100LB. LOAD)

. LOAD AT POINT 7

	1	2	2	6	5	6	7	8	9	10	11	15	13	14	12
UCLE AL	+	ç					A 71 7	1673	0680	0496	- 0219	-0336	.0310	a0288	°0358
EXP.	<u>₀0927</u>	.1009	₀]046	°1095	.1100	₀064⊄	0V/12	00012		00000	0000	0000	0107	0100	0110
VACTUAL	-0550	.0562	.0569	.0574	.0579	·0297	°033ð	.0325	°0758	.033J	008U	**0.40	°0103	0 U I V O	00110

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LOAD AT POINT 8 AA68A66666686666

										-					
	1	2	3		5	6	7	8	9	10	11	15	13	14	15
EXP.	.0884	.1033	•1118	e1170	.1226	•0545	.0672	.0729	.0744	.0748 .0448	•0159 •0064	°0283	•0335 •0113	.0314 .0133	•0364 •0155
VASTRAN	.0567	°0921	°0615	.0/15	*0/24	0∠/J	0VJCJ	00304	10411	00440					

LOAD AT POINT 9

								p = = = = = = =							
		2	-		G	6	7	я	9	10	11	12	13	14	15
JEFL. AT	1	ے ا	3	4	-				1005	0.007	A1 74	0201	0 2 5 4	. 0797	- 0496
	0014	1130	-1270	.1445	.1584	₀0518	。0680	oU/44	°1002	°0325	01170	****	0UJJ4	00.071	00-00
147.	90414	+1100	01210				0.2.20	0611	0520	0584	-0050	~00A2	.0117	a0159	°020°
いんく すみるね	.05/5	.0672	.0771	.0869	"0.APS	0626	00360	00411	00320	80 JUV	00000	000.00			

LOAD AT PUINT 10 00000000000000000000

		_	_			4	7	D	. 0	10	11	12	13	14	15
DEFL. AT	1	2	3	4	2002	0.04	0404	0749	. 1992	1267	.0118	.0288	.0364	.0427	.0604
LXP.	.0914	.1184	.1345	.1020	.1802	.0499	0070 0222	00140	0596	0759	-0036	-0076	.0123	.0182	°0501
VACTOAN	- 0575	.0718	.0871	.1031	°11A3	°0570°	00333	0V440	• V - D - T	00137	00030				

LOAD AT PUINT 11

	-	-	-		E	6	7	. 8	9	10	11	12	13	14	15
DEFL, AT	1	2	3	4		A 3 7 U	0210	.0150	.0136	.0118	0226	.0171	.0094	0066	.0054
έχ ο .	.0284	°0505°	°0540	*0504	01100	*15Uo	0V63V	1400	0050	0036	.0076	.0041	1500	.0019	00009
SACTOAN	40125	.0110	.0096	0081	a0067	°00Al	00000	0000	00030	00000		00044			

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LOAD AT POINT 12

							-								
			-		-	۲	7	R	Q	10	11	12	13	14	15
DEFL. AT	1	2	3	4			0776	4292	0201	0.084	-0171	.0269	-0190	.0148	0151
EXP.	.0368	.0416	.0614	.0414	0424	o0304	0330	°V273	00671	00200	00010	0045	0038	-0031	.0026
VACTOAN	-0150	.0145	°0138	.0134	°0)58	°0028	.0096	~0089	-0082	.0010	00048	00000	00000	00001	

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							Table	26 (C	ontinue	d)			•			
		Εχ ρ εκ!	IMENTA	L- AN	D NAS'	TRAN- DEFL	DEFLE	CTION NS ARE	INFLU BASE	ENCE D ON	COEFFI A 100L	CIENŤ .Ŗ. LO	S FOR Ad)	BUILT	'-UP WI	۹G 5
					a		L	OAD AT	POINT 1	3 ¢	-	••		<u> </u>		
DEFL. AT Ex ⁴ . Nastran	1 •0349 •0165	2 .0415 .0174	3 •0446 •0182	4 0488 0189	5 .0517 .0195	6 •0248 •0092	7 .0310 .0103	8 0335 0113	9 0354 0117	10 .0364 .0123	11 0094 0027	12 0190 0038	13 0253 0057	14 0200 0047	15 0206 0048	
							L	0AD AT	PUINT]	4 0						
DEFL. AT EXP. NASTRAN	1 0342 0174	2 。0442 。0200	3 •0486 •0226	4 0569 0251	5 0622 0275	6 •0218 •0084	7 0288 0108	8 •0314 •0133	9 0397 0159	10 0427 0182	11 0066 0019	12 0148 0031	13 0200 0047	14 •0253 •0087	15 0282 0081	
							L	OAD AT	POINT 1	5						
DEFL. AT Exp. Nastran	1 .0389 .0173	2 0507。 0223	3 •0568 •0274	4 .0718 .0325	5 。0840 。0376	6 5220 - 0700 -	7 0328 0110	8 •0364 •0155	9 •0496 •0207	10 0604 0261	11 •0054 •0009	12 0151 0026	13 0206 0048	14 0282. 0081	15 •0407 •0147	

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R.M.S. OF DIFFERENCES = 2.46414E-03

MAXIMUM ERROR = 5-13620E-02

Table 27

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KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR BUILT-UP WING 5 (ALL ROTATIONS ARE BASED ON A 1LB. LOAD)

			LOA	D AT POINT 1				
ROTATIONS AT KU NASTRAN ROTATIONS AT KU NASTRAN	1 14545E-05 37013E-06 9 15985E-05 10326E-05	2 。14545E=05 。50428E=05 10 。17105E=06 。10257E=95	3 。14545E-09 。17616E-05 11 =。33140E-05 =。70230E-05	4 •14545E-05 •16249E-05 12 ••42800E-05 ••49336E-05	5 。14545E=05 。27431E=05 13 =。48840E=05 =。26020E*05	6 47675E-05 97316E-05 14 51310E-05 72278E-06	7 40693E-05 58186E-05 15 50190E-05 .23102E-05	8 ∽₀30158€∝05 ∽₀287485+05
			LOA	D AT POINT 2				
HOTATIONS AT KU Nastran Rotations at KU Nastran	1 14841E-04 25034E-04 9 15550E-04 11586E-04	2 13472E-04 17644E-04 10 15225E-04 10080E-04	3 -013472E-04 -072589E-05 11 -062267E-05 -081027E-05	4 13472E-04 10658E-04 12 66436E-05 77516E-05	5 ~.13472E~04 ~.95879E~05 13 ~.10693E~04 ~.61662E~05	6 14372E-04 17742E-04 14 12391E-04 54515E-05	7 15125E-04 14985E-04 15 13724E-04 37452E-05	8 15516E-04 12457E-04
				D AT POINT 3				
ROTATIONS AT Ku Nastran Rotations at Ku Nastran	1 31137E-04 34006E-04 9 29501E-04 23037E-04	2 31784E=04 33965E=04 10 30621E=04 23605E=04	3 31838E-04 31787E-04 11 91395E-05 91851E-05	4 3183kE-04 24295E-04 12 13007E-04 10208E-04	5 31838E-04 25154E-04 13 16501E-04 +.98149E=05	6 23976E-04 23586E-04 14 19650E-04 10343E-04	7 26180E-04 24239E-04 15 22428E-04 10506E-04	8 26016E+04 23334E+04
			LOA	DAT POINT 4				
ROTATIONS AT Ku Nastran Rotations at Ku Nastran	} ~.47433E~04 ~.45741E~04 9 ~.43452E-04 ~.36712E-04	2 50099E-04 470G9E-04 10 46018E-04 38761E-04	3 508812=04 519672=04 120522=04 120522=04	4 50881E-04 52731E-04 12 17371E-04 12467E+04	5 ~,50881£=04 ~,40538E=04 13 ~,22310E=04 ~,13194E=04	6 33581E-04 30319E-04 14 26910E-04 15554E-04	7 37235E∞04 31519E∸04 15 31133E-04 17430E-04	8 ∽₀40517E~04 ∽₀33913E+04

<u>Ballina</u> 1950 - Sala	Control of	S ame		• • • • • • • • • • • • • • • • • • •	() <u> </u>	Bernerit Berliter	Second Second	(Carlos)			an a
					Tabl	le 27 (Continu	ed)				
						STUENCE COF	FEICIENTS	OR BUILT-UP	WING 5		
			KU⇒ AN	ID NASTRAN- A (AL	L ROTATIONAL I	ARE BASED O	NA 1LB. LO	AD)			
			· ·		LO	AD AT POINT 5					
RO	TATIONS	8 1	. \$7729F-04	2 AA-2¢1404 -	- 609325-04	. 4	5	6	7	8	···
ALA	STRAN		57161E-04	60805E+04	68367E-04	77868E-04	09923E-04.	∞°43185F∞04 ∞°36409E∞04		∞₀53017E∞04	•
RO	TATIONS	AT	574035 04	10	11	12	13	14	15	-0430110-04	
NA	STRAN		∞.50229E-04 ∞.50229E-04	56908 <u>E</u> -04	11803E-04 11803E-04	21734E-04 14942E-04	∞.28119£-04 ∞.16571£-04	34169E-04 20476E-04	39837E-04 24689E-04		4
					LO	AD AT POINT 6					
RŬ	TATIONS	AT	1	. 5	9 G C 3	00000000000000000000000000000000000000	F	د	-		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
KU			.63776E-05	₀63776E∞05	.63776E-05	.63776E-05	₀63776E~05	°03110E~02	.63776E-05	₀63776E∽0%	₹
NA	STRAN	۸.4	•94055E-05	.47271E-05	.51969E-05	°283E∞02	.59879E-05	.96914E-05	.87648E-05	.51245E-05	<u> </u>
- KU	TATIONS	H (~63776E-05	10 .63776F=05	11 15553Felk	12 H5379F-06	190736-06	14	15		
NA	STRAN		.50284E-05	•54178E-05	-,18428E-05	•23534E-06	.17107E-05	.26987E-05	.4840UE-05		<u> </u>
					L04 440	D AT POINT 7					
RO	TATIONS	AT .	1	2	3	4	5	6	. 7	8	
NA	STRAN		~,231312005 ~,58468Ee05	₽°5782126602 8°228202802	-₀23151€⇔05 -,16852€=05	23151E+05	23151E-05	⇔₀32268E≈05	23151E-05	23151E-05	
RU	TATIONS	AŸ	9	-0340002-01	11	12	13	0013375C004 14	9°523/0/5003 12	₀3054/E=05	·
KU			23151E-05	23151E+05	~.27572E-05	35098E-05		39350E-05	36105E-05		
NΑ	STRAN		13862E-05	∞°10150E=00	36627E-05	~ ,27751E+05	-,93219E ∽06	97172E-06	₀72489E-0 6		
				•		D AT POINT 8					
80	TATIONS	AT	1	2	3	4	5	6	7	÷ 8	
KU			135492-04	13549E-04	-0°3549E-04	13549E-04	13549E-04	12831E-04	13370E-04	13549E-04	
· NA	STRAN	44	12874E-04	12703E-04	, 98568E-05	-,98166E-05	11123E-04	-,11298E-04	13978E-04	10052E-04	
KŲ ICH	PALIONS	P (9 8.13549F=04	10 • 135405-04	11 8.567106-05	12	13 - 071005-05	- 111055-01	- 122155 0		
NA	STRAN		62333E-05		49373E-05	57931E=05	-,51550E-05	44717E-05	-,48572E-05		
			*-					v - • • • • • • • • • •			
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Table 27 (Continued)

1.

KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR BUILT-UP WING 5 (ALL ROTATIONS ARE BASED ON A 1LB, LOAD)

ROTATIONS AT 1 2 3 4 5 6 7 KU =.27321E=04 =.21020E=04 =.21020E=04	
NASTRAN 23065E-04 21321E-04 23698E-04 20739E-04 2108E-04 22435E-04 24428E-04 26 NASTRAN 23065E-04 22143E-04 23698E-04 20739E-04 21008E-04 17243E-04 17836E-04 23 NOTATIONS AT 9 10 11 12 13 14 15 NASTRAN 27321E-04 27321E-04 85827E-05 12237E-04 18454E-04 21020E+04 NASTRAN 21711E-04 11852E-04 65538E-05 75251E-05 82791E+05 10508E-04 10814E+04 NASTRAN 21711E-04 11852E-04 65538E-05 75251E+05 82791E+05 10508E-04 10814E+04 NASTRAN 21711E-04 11852E-04 65538E-05 75251E+05 82791E+05 10614E+04 NASTRAN 10812E-04 10812E-04 10814E+04 10814E+04 10814E+04 ROTATIONS AT 1 2 3 4 5 6 7 KU 43625E-04 43625E-04 43625E-04 43625E-04 3	8 -
ROTATIONS AT 9 10 11 12 13 14 15 KU =.27321E=04 =.27321E=04 =.85827E=05 =.12237E=04 =.15519E=04 =.18454E=04 =.21020E=04 NASTRAN =.21711E=04 =.11852E=04 =.65538E=05 =.75251E=05 =.82791E=05 =.10508E=04 =.10814E=04 NASTRAN =.21711E=04 =.11852E=04 =.65538E=05 =.75251E=05 =.82791E=05 =.10508E=04 =.10814E=04 NASTRAN =.21711E=04 =.11852E=04 =.65538E=05 =.75251E=05 =.82791E=05 =.10508E=04 =.10814E=04 NASTRAN =.21711E=04 =.01852E=04 =.65538E=05 =.75251E=05 =.82791E=05 =.10508E=04 =.10814E=04 ROTATIONS AT 1 2 3 4 5 6 7 KU =.43625E=04 =.43625E=04 =.43625E=04 =.43625E=04 =.32040E=04 =.35481E=04 =.388	050E-04
KU =.27321E=04 =.27321E=04 =.85827E=05 =.12237E=04 =.15519E=04 =.18454E=04 =.21020E=04 NASTRAN =.21711E=04 =.11852E=04 =.65538E=05 =.75251E=05 =.82791E=05 =.10508E=04 =.10814E=04 LOAD AT POINT 10	(42E=V+
NASTRAN 21711E-04 11852E-04 65538E-05 75251E-05 82791E-05 10508E-04 10814E-04 LOAD AT POINT 10	i
LOAD AT POINT 10 epoposososos ROTATIONS AT 1 2 3 4 5 6 7 KU ===\$3625E=04 ==\$3625E=04 ==\$3625E=04 ==\$43625E=04 ==\$43625E=04 ==\$32040E=04 ==\$35481E=04 ==\$38	
ROTATIONS AT 1 2 3 4 5 6 7 KU ===43625E=04 ===43625E=04 ===43625E=04 ===43625E=04 ===43625E=04 ===32040E=04 ===35481E=04 ===38	
KU ===43625E=04 ===43625E=04 ===43625E=04 ===43625E=04 ===43625E=04 ===32040E=04 ===35481E=04 ===38	6
	55At-04
NASYRAN =32959E=04 =33923E=04 =36304E=04 =38514E=04 =37174E=04 =22495E=04 =25098E=04 =28	447E-04
ROTATIONS AT 9 10 11 12 13 14 15	
RU ===41272E=04 ===43625E=04 ===11496E=04 ===16601E=04 ===21327E=04 ===25714E=04 ===29724E=04	
NASTRAN	-
LOAD AT POINT 11 800000000000000000	
ROTATIONS AT · 1 2 3 4 5 6 7	8
KU36250E=0536250E=0536250E=0536250E=0536250E=0536250E=0536250E=0536	2506-05
NASTRAN 624763E+05 638970E+05 63557E+05 633137E+05 633401E+05 654196E+05 629552E+05 631	048E-05 _
ROYAYIONS AT 9 10 11 12 13 14 15	
KU 38250E=05 36250E=05 36250E=05 36250E=05 36250E=05 36250E=05 36250E=05	
NASTRAN 032014E=05 033300E=05 078986E=05 069116E=05 026692E=05 022522E=05 027230E=05	
LOAD AT POINT 12	
	-
	0 - 20
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	(372903 (116.0C
	0116003
10/0/2/2000 01 2 10 10 10 10 10 10 10 10 10 10 10 10 10	
NASTRAN ALO434E=05 AL6486E=05 BIRESE=05 A60984E=06 BIG257E=05 AL0257E=05 AL0257E=05 AL0257E=05 AL0257E=05	••

		1	ini ng			Esco - Sta V	G ankard	an a	B essier i	J ange of	an a	•		() ()		(inns) (inn		<u> </u>
	OF POOR						Tabl	e 27 ((Continue	ed)							CAL INTERVIEW	
	QUAL	KU= /	AND	NASTR	AN- RO (All	TATIO	NAL IN Tions	FLUEN	CE COEN	FFICIE N A 1L	NTS F(B. LO/	DR BUI Ad)	LT≂UP	WING	5	<i>.</i> .		
							LO	AD AT P	0INT 13			•						and the second
ROTATIONS KU NASTRAN ROTATIONS KU	АТ АТ	29187E- 20565E- 29187E-	1 05 05 9	291(194(291(2 87E-05 52E-05 10 97E-05	-,291 -,17(-,22(3 187E-05 13E-05 11 105E-05		4 187E=05 803E-05 12 397E-05	-, 29 -, 16 -, 29	5 187E-05 584E-05 13 187E-05	29 24	6 2197E-05 863E-05 14 2187E-05	~∘2 ~∘2 ~∘2	7 9187E-05 5706E-03 1f 9187E-05	2918) 1338(8 7E-05 DE-05	
NASTRAN		12908E-	05	1939	542-05	-,186	1892-05	±.44	820E=05	⇔,12)	264E-05	.21	918E-05	• 1	0110E-07	1		
							00	4094000 4094000	0101 14								1	
ROTATIONS KU NASTRAN ROTATIONS KU NASTHAN	а т Ат		1 05 05 9	-,9998 -,5784 -,9998	2 95£=05 42E=05 10 95E=05 72E=05	=,999 =,603 =,511	3 85E⇔05 149E-05 11 133E-05 3225+05	∞。999 ≈。61 ∞.71	4 985E=05 439£=05 12 033E=05 441F=05	,999 ,509 ,871	5 985E=05 516E=05 13 274E=05 327E=05	∞。99 ≂,57 ~,99	6 9985E=05 407E=05 14 9985E=05 454E=05	~,9 ~,5 ~,9	7 9985E-05 4305E-05 15 9985E-05 586E-05		8 5€≈05 5€≈05	
un pitana			0.5		120-02	-9544	222 03	-000	4410-00	-,.0.	55.5		0945-09		02005-02	, ,		-
							L0 00	AD AT P	0INT 15									
ROTATIONS KU NASTRAN	AT ·	19611E- 11351E-	1 04 04	196) 1137	2 11E-04 72E-04	196 116] }E⇔04]E=04	19 11	4 611E-04 673E-04	199 109	5 511E-04 984E-04	-,19 -,9(6 611E-04 599E-05	1 -,9	7 9611E-04 9229E-05	1961) 1112;	8 1E-04 3E-04	
ROTATIONS Ku Nastran	АŸ	∽₀19611E- ≈₀12538E-	9 04 04	1961 1269	10 11E⇔04 53E=04	- • 802 - • 286	11 60E-05 73E-05	-011 -044	12 467€∞04 518E∞05	. ≂al49 ≂s589	13 536E-04 589E-05	-011 -012	14 258E=04 268E=04	∞°1 ∝°1	15 9611E-04 7184E-04			

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R.M.S. OF DIFFERENCES = .37037E+06

MAXIMUM ERROR = .73292E-05

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								Table	28									
	E	XPERI	MENTAL	_= AND	NASTI (ALL	RAI1- C DEFLE	DEFLEC	TION S ARE	INFLUE BASE	ENCE C	OEFFIC	CIENTS B, Loa	FOR D)	BVILT-	∘UP WI	NG 6		
				. •	- ·-		Ļ	OAD AT	POINT	1					-			
DEFL. AT EAP. NASTRAN	1 •0604 •0375	2250° 0355°	3 .0480 .0281	4 0410ء 0243ء	5 0328 0205	6 0342 0170	7 .0351 .0179	8 .0336 .0170	9 .0288 .0153	10 .0246 .0131	11 -0183 -0098	12 0112. 0038.	13 .0144 .0050	14 .0148 .0055	15 0144 0054	16 0113 0049	17 .0076 .0038	19 0000. 2000.
							Ĺ	OAD AT	POINT	2								
DEFL. AT EXP. NASTRAN	1 0552 0322	2 0610。 0366。	3 0580. 0332.	4. 0512 0304	5 。0430 。0274	6 0286 0138	7 .0344 .0167	8 .0367 .0150	,0332 ,0177	10 .0284 .0103	11 .0240 .0136	12 0089 0028	13 0126 0041	14 0152 0052	15 0154 0057	16 0130 0057	17 .0096 .0049	13 •0084 •0036
							L	OAD AT	POINT	3						•		
DEFL. AT Exp. Nastran	1 • 0480 • 0281	2 .0580 .0332	3 。0644 。0382	4 ₀0620 ₀0371	5 .0543 .0356	6 0228. 0111.	7 .0275 .0140	8 .0364 .0177	9 .0360 .0194	10 .0324 .0195	11 0299 0183	12 0061 0020	13 2010。 2000,	14 .0138 .0046	15 •0154 •0056	16 0136 2000.	17 。0114 。0060	14 •0104 •2005
							L	OAD AT	POINT	4								
DEFL. AT Exp. NASTRAN	1 .0410 .0243	2 .0512 .0304	3 0620。 1760。	4 .0713 .0450	5 .0688 .0456	6 .0176 .0088	7 。0252 。0124	8 0330 0161	9 .0382 .0198	10 0371. 02220	11 0379 0240	.0038 .0014	13 0077 0025	14 00115 0038	15 0141 0051	16 0143 5000,	17 .0138 .0071	14 0142 0072
							L	OAD AT	POINT	5								
DEFL. AT Exp. NASTRAN	1 8320. 8020.	2 。0430 。0274	3 0543 0356	4 。0688 。0456	5 .0811 .0586	6 00137 0068	7 。0207, 。0104	8 0272 0144	9 .0342 .0189	10 0398 0219	11 00478 00305	12 0025 0009	13 .0060 .0019	14 0088 0031	15 0113 0045	16 .0134 .0059	17 .0152 .0080	18 0190° 90085
•	ŕ						1	LOAD AT	PUINT	6 0 0								
DEFL. AT Eap. Nastran	1 0342 0170	2 。0286 。0138	3 0228. 0111.	4 .0176 .0040	5 .0137 .0068	6 0349 0150	7 0276 0110	8 .0194 .0085	9 0152 0066	10 .0108 .0050	11 0074 0031	12 0148 0045	13 0144 0045	14 。0107 。0037	15 0096 0029	16 1700. 2200.	17 .0038 .0014	64 5200° 6000°

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REELEVAL	(Ň	·				Tat	ole 28	(Contin	nued)								
	E)	(PER1M		- AND	NASTR (ALL	AN- D DEFLE	EFLECT	TION I 5 ARE	NFLUE	NCE CO ON A	EFFIC 100LB	IENTS , LOAC	FOR B	UILT-I	UP WIN	IG 6		•
				•			t a	0AD AT	PUINT	7								
DEFL. AT Eap. Nastran	1 0351 0179	2 0344 0167	3 0298 0146	4 0252 0124	5 。0204 。0104	6 0276 0110	7 0328 0138	0105°°	9 0204 0087	10 .0158 .0071	11 .0118 .0051	12 0106 0030	13 .0148 .0040	14 。0140 。0040	15 0120 0037	16 .0085 .0030	17 0056 0022	18 .0040 .0012
							L	OAD AT	POINT	8								
DEFL。AT Exp。 NASTRAN	1 0336 0170	2 - 7367 - 0180	3 .0364 .0177	4 .0330 .0161	5 0272 0144	6 •0194 •0085	7 .0266 .0105	80000000 800000 0129	0265 0110	10 02020, 0095,	11 00164 00076	12 0070. 0019	13 .0114 .0030	14 •0154 •0040	15 •0144 •0042	16 .0109 .0039	17 .0074 .0031	18 20062 1500
•	-						L	OAD AT	POINT	9						-		
DEFL. AT Exp. Nastran	0288°° 10°20°	2 0332 0177	3 •0360 •0194	4 .0382 .0198	5 0342 0189	6 0152 0066	7 ,0204 ,0087	0265 0110	,0148	10 6750. 5510.	11 0216 0107	12 0043. 0013	13 0850. 5200.	14 0120 0032	15 0158 0043	16 .0144 .0045	17 .0098 .0041	18 •0083 •0033
							L	OAD AT	POINT	10								
DEFL. AT Eap. Nastran	1 .0246 .0131	2 .0284 .0163	3 0324 0195	4 .0371 .0222	5 0398 0239	6 0108 0050	7 。0158 。0071	8 0202 0095	9 9 0276 0122	10 0341 0165	11 。0284 。0146	.0078 .0008	13 .0055 .0016	14 0028 0025	15 0120. 0035	16 。0146 。0047	17 0122 0050	18 0122 0050
							เ	OAD AT	POINT	11								
DEFL。 AT EAP。 Nastran	1 .0183 .0098	2 .0240 .0136	50299 10299 10290	,0379 0240	5 .0478 .0305	6 00074 0031	7 。0118 。0051	0164 0076	0216 0107	0284 0146	11 •0387 •0228	12 0010 0003	13 1003 0009	14 .0051 .0016	15 0076 0026	16 .0100 .0038	17 0128 0058	18 •0164 •0078
. •							t	.OAD AT	POINT	12								
DEFL. AT Eap. Nastran	0112 0038	S 9800. 8500.	3 1600。 0200。	4 0038 0014	5 0025 0009	6 0148 0045	7 。0106 。0030	00000000 8 0070 0019	.0043 .0013	01 85 00 , 8000, 8000,	11 .0010 .0003	12 0161. 0058.	13 .0108 .0024	14 0053 0012	15. •0040 •0007	16 .0023 .0004	17 0010 0002	13 0004 0000
												•						

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							Tab	le 28 (Contin	ued)								
	E	XPERI	MENTAL	L= AND	NASTI (ALL	RAN- C Defl	DEFLEC	TION S ARE	BASE	ENCE C D on A	0EFF1(100L	CIENTS 8. LOA	5 FOR VD)	BUILT	-UP WI	NG 6		
							Ļ	OAD AT	- POINT 1	3								
DEFL. AT Exp. Nastran	1 •0144 •Q050	2 0126 0041	3 0102 0033	4 20077 20025	5 .0060 .0019	6 0144 0045	7 。0148 。0040	8 .0114 .0030	9 0080 0022	10 。0055 。0016	11 •0031 •0009	12 0108 0024	13 。0140 。0049	14 .0091 .0019	15 0065 0012	16 2400. 8000.	17 0021 0005	81 5100° 5000°
							L	OAD AT	POINT 1	4								
DEFL. AT Elp. Nastran	1 。0148 。0055	2 0152. 0052	3 0138 0046	4 。0115 。0038	5 .0088 .0031	6 .0107 .0037	7 .0140 .0040	8 0154 0040	9 0120 0032	10 0078 0025	11 •0051 •0016	12 0053 0012	13 .0091 .0019	14 .0133 .0036	15 0097 0020	16 0052 0014	17 92000 80000	13 0020 0004
							Ļ	OAD AT	POINT	5								
DEFL AT EAP . NASTRAN	1 。0144 。0054	2 .0154 .0057	3 .0154 .0056	4 .0141 .0051	5 .0118 .0045	∂ 6000∘ 9000₀	7 0120 0037	8 .0144 .0042	9 0158 0043	0120 0035	11 0076 0026	12 .0040 .0007	13 0065 0012.	14 .0097 .0020	15 •0188 •0049	16 0124. 0024	17 .0054 .0014	18 •0034 •000러
							L	OAD AT	POINT 1	6	:							
DEFL. AT EXP. NASTRAN	1 .0113 .0049	2 .0130 .0057	3 。0136 。0062	4 .0143 .0062	5 。0134 。0059	6 1700. 2200.	7 .0088 .0030	.00000000 8 .0109 .0039	0144 0144 0045	10 .0146 .0047	11 •0100 •0038	12 0023 0004	13 0042 8000.	14 .0052 .0014	15 •0124 •0024	16 183. 2000,	17 0082 0023	19 .0051 .0014
				-		·	L	OAD AT	POINT	17						۰.		
DEFL. AT Eap. Nastran	1 。0076 。0038	2 。0096 。0049	3 .0114 .0060	.0138 .0071	5 .0152 .0080	6 .0038 .0014	7 0056 0022	8 .0074 .0031	.0098 .0098 .0041	10 0122 0050	11 0128 0058	12 0100.0 2000.	13 1500 2000	14 .0029 .0008	15 •0054 •0014	16 20002 0023	17 .0133 .0055	13 0084 0027,
							Ļ	OAD AT	POINT 1	18								
DEFL. AT Eip. Vastran	1 0060 0023	2 。0084 。0036	3 •0109 •0052	6 0142 0072	5 .0180 .0095	6 2200. 0000,	7 0040 0012	8 2000 1500	9 0083 0033	10 0122.00 0050	11 •0164 •0078	2{ \$0000 -,0000	13 0012 0002	14 0020, 0004	15 0034 0008	16 .0051 .0014	17 0084. 0027.	81 8510° 8900°

MARIMUM ERROR = 2.29859E-02

R.M.S. OF DIFFERENCES = 6.13165E-04

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Table 29

VALUE A

KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR BUILT-UP WING 6 (All rotations are based on a 1LB. Load)

	•		LO	AD AT POINT 1				
ROTATIONS AT . Ku Nastran	1 7.17000E-06 5.47109E-06	2 7.17000E-06 1.17969E-05	3 7.17000E-06 7.56486E-06	4 7.17000E-06 7.20416E-06	5 7.17000E-06 7.30061E-06	6 7.52046E-07 -3.69215E-06	7 1.76743E-06 -8:17913E-08	8 3.14996E-06 2.65880E+06
KU NASTRAN Rotations at	4.50190E-06 3.98847E-06 17	10 6.15723E-06 4.58475E-06 18	11 7.17000E-06 5.27416E-06	12 -3.47402E-07 -2.91878E-06	13 -4.15829E-07 -1.77022E-06	14 -4.57226E-07 -4.28698E-07	15 -3.22103E=07 6.43143E=07	16 2.92299E-07 1.60517E-06
KU NASTRAN	1.76743E+06 2.21428E+06	3.14996E~06 3.39134E-06						
			LO Be	AD AT POINT 2			•	
ROTATIONS AT	1	2	3	4	5	6	7	8
AU NASTOAN	1.48681E-06	3.82881E~06	3.82881E-06	3.82881E-06	3.82681E-06	-8-354712-07	-6.35091E-07	-2.21087E-07
RUIATIONS AT		-3°40220Fero ' 10	A°221045-00	· 3,48.14E-06	0°541/25-00	-0°11820€-09	-3-99326E-06	-9.93277E-07
∢ U	2.908275-07	1.00868E-06	1.486812-06	-4,53891E-07	-5.94456E-07	=7,44461F=07	-8.71604F-07	+8-94316F-07
NASTRAN	1.69604E-06	3.44610E-06	4.527036-06	+2,56153E-06	-2.66756E-06	-1.57816E-06	-5+41112E-07	8.2944JE-07
ROTATIONS AT	17	18						
ξ υλςτωλώ	+6.35091t-07	-2.21087E-07				-		
UND FRANC	19931415-00	20222345-00				•••		
		•	LO	AD AT POINT 3	· .	· ·		
ROTATIONS AT	<u>י</u> ז	2	2 3	4	. 5	. 6	7	8
≪U	-4.19639E-06	~4.25445E-06	-4.25445E-06	-4.25445E-06	-4.25445E-06	-2-42299E-05	~3.03761E-06	-3.592132-06
VASTRAN	~9.60289E-06	-9.59190E-06	-6,02483E-06	4,99394E-06	3.56736E-06	-6.136682-06	-6.66989E-06	-4-852398-06
RUTATIONS AT	9	- 10	11	12	13	14	15	16
4U 9457049	-3,92025E-06	-4,13988E=06 7 334515-07	~40376376-06	-3.50380E-07 -1 909725-04	-1075084E-07 -2 643516-04	-1.03170E-06	≈1.42110E=06	-2.08093E-06
PADIMAN PATATIONS AT	~10JUI4E~VO. 17	10~31co36°1	20021105000	~*************************************	~**045316~00	~~°000005~00	-1°011175-10	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
KU	-3.03761E-06	-3.59213E=06						
VASTRAN	9.786532-07	2.80371E-06						

		and formers to	nimenta Considérat Situati Internet Constants Économica Internet	ena (Energia) (Eadela 2013 (Energia) (Energia) 2013 (Energia) (Energia)	al Australia Filipati 19 December - Constant				
•	OF POOR QUALITY	KU- AN	D NASTRAN- R((AL)	Tabl OTATIONAL IN L ROTATIONS	e 29 (Continue IFLUENCE COE ARE BASED O	d) Fficients F(N A 1LB. LOA)R BUILT∞UP \D)	WING 6	
	- 1 00			LO	AD AT POINT 4				
ROTATIONS KU NASTRAN ROTATIONS KU NASTRAN NASTRAN	at At	1 -9.87959E=06 -1.11752E=05 9 -A.13132E=06 -5.52702E=06 17 -5.44013E=06 =6.14315E=07	2 -1.23377E-05 -1.18544E-05 10 -9.28843E-06 -3.80958E-06 18 -6.96318E-06 1.54516E-06	3 -1.23377E-05 ~1.36719E-05 11 -9.87959E-06 ~1.80399E-06	4 -1.23377E-05 -1.17822E-05 12 -6.66869E-07 -1.79362E-06	5 -1.23377E-05 4.12527E-06 13 -9.51712E-07 -2.26014E-06	6 4.01050E-06 6.60661E-06 14 -1.31893E-06 -2.54532E-06	7 -5.44013E-06 ~6.77735E-06 15 -1.97061E-06 -2.65623E+06	8 -6.96318E-06 -7.10919E-06 16 -3.26754E-06 -1.55501E-06
			-	LO	AD AT POINT 5				
			•	6 .		_		_	
ROTATIONS RU NASTRAN RUTATIONS RU NASTRAN ROTATIONS RU NASTRAN	AT At Aĩ	1 -1.55628E-05 -1.18703E-05 -1.23424E-05 -9.39933E-06 17 -7.84265E-06 -2.65622E-06	2 -2.04210E-05 -1.39114E-05 10 -1.44370E-05 -9.11472E-06 18 +1.03342E-05 -8.44580E-07	3 -2,04210E-05 -1,67703E+05 11 -1,55628E=05 -8,17889E-06	4 -2.04210E-(5 -2.08533E-05 12 -7.73358E-07 -1.55149E-06	5 -2.04210E-05 -2.68964E-05 13 -1.13034E-06 -2.22872E-06	6 ~5.59802E-06 -6.10821E-06 14 ~1.60617E-06 ~2.41795E-06	7 -7.84265E-06 -7.22876E-06 15 -2.52011E-06 -2.55415E-06	8 ~1.03342E-05 -8.08103E-06 16 ~4.45416E-06 -3.04959E+06
				LO	AD AT POINT 6	•			
QOTATIONS CU NASTRAN ROTATIONS CU NASTRAN ROTATIONS CU NASTRAN	AT AT	1 3.29994E⇒06 9.78436E≈06 3.29994E=06 3.27177E≈06 1.29994E=06 1.35033E=06	2 3.29994E-06 2.94848E-06 10 3.29994E-06 2.76388E-06 18 3.29994E-06 1.65365E-06	3 3.29994E+06 4.46382E+06 11 3.29994E+06 2.77138E+06	4 3,29994E-06 4,24450E-06 12 -3,95713E-08 -1,26193E-06	5 3.29994E-06 3.65383E-06 13 4.47824E-08 5.92124E-07	6 3.29994E-06 8.3}537E-06 14 2.12109E-07 1.63580E-06	7 3.29994E-06 8.24740E-06 15 7.60421E-07 1.57423E-06	8 3.29944E-06 3.89505E-06 16 2.28326E-06 1.56019E-06
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	and the second s	ger (15553) Gernegens	Antonia Antonia Antonia Antonia Antonia	and the second sec					() () () () () () () () () () () () () (
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					labl	e 29 (Continue	ed)			
			KU- AND	NASTRAN- RO (All	TATIONAL INF Rotations A	LUENCE COEF Re based on	FICIENTS FOR A 1LB, LOAD	X BUILT-UP W))	ING 6	
•			•		LO	AD AT POINT 7			- ,	
9 4 N R	OFATIONS U JASTRAN DTATIONS	AT AT	1 3.05363E~06 -6.66246E-07 9	2 3.05363E⇔06 5.69108E⇔06 10	3.05363E-06 2.54173E-06	4 3.05363E-06 3.31051E-06	5 3°02363E∽06 4°28608E∽06	6 1071242E-06 -9037751E-06	7 3005363E-06 1003760E-06	8 3°02303E-00 7°08281E-00
۲ ک ج	U IASTRAN IUTATIONS	A۴	3°02393E-09 5°9363E-09 5°02363E-09 5°0222	3.05363E-06 3.12159E-06 18	3.053638-06 2.842278-06	-1.46060E-07 -7.56750E-07	-1.33845E-07 -1.38624E-06	-7.51270E-08 5.43282E-07	15 2010919E-07 7064431E-07	18 1.09664E-06 1.58444E-06
4 V	U IASTRAN		3.05363E-06 1.53132E-06	3.05363E-06 2.01579E-06						
		_			LO	AD AT POINT 8				
र ह र र र	UTATIONS U ASTRAN UTATIONS	ат ат	1 1.45352E-06 -2.55603E-06	2 1.45352E=06 =1.29236E=06 10	3 1.45352E-06 3.21852E-06 11	4 1.45352E-06 2.84526E-06	5 1.45352E-06 2.72583E-06	6 1.24908E=07 =2.88523E=06 14	7 6051112E-07 -5065449E-06	8 1.45352E-05 -8.79196E-07
ง 1 สิ ช	U ASTRAN UTATIONS	AT	1.45352E-06 4.77766E-06 17 4.51112E-07	1.45352E-06 2.57443E-06 18	1.45352E-06 3.15817E-06	-2,52550E-07 -1,55330E-06	-3.12473E-07 -1.97813E-06	-3.62363E-07 -1.63243E-06	-3.34582E-07 3.86690E-07	-8.99709E-08 9.98417E-07
V	ASTRAN		1.62635E-06	2.08709E-06			-7 ***. 2	2		
,			••		L0/	AD AT POINT 9				
R & V	U ASTRAN	AY	1 -1.91503E-06 -5.22956E-06	2 -1.91503E-06 -3.71659E-06	3 -1,91503E-06. -3,11004E-06	4 -1,91503E-06 2,99678E-06	5 -1.91503E-06 -5.54922E-07	6 ~] ~4626}E-06 -4~14982E-06	-7 -1.75141E-06 -3.37921E-06	8 -1.91753E-05 -7.64738E-06
re rt N	U ASTRAN	μ' ΔŤ	-1.91503E-06 -2.22414E-06	-1.91503E-06 6.99997E-06	-1.91503E-06 -4.83237E-07	-3,5903¥E-07 -1,62185E+06	13 -4.91101E-07 -1.84947E-06	14 -6.49598E-07 -1.63345E-06	15 ∞8∘88083E∞07 ∞1∘82658E=06	16 -1.27659E-06 3.48201E-07
4	U		-1.75141E-06 1.05727E-06	-1.91753E-06 2.36676E-06						

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	n navne fastas		a katara Taranga	REPORT							NUMBER OF	History History						
	ORIGINA OF POOR	•				•	Tal	51e 29 (Cc	ontinu	ued)								
:	L PAGE QUALL	KU	- AND	NASTRA	N- RO (All	TATION ROTAT	AL IN Ions	FLUENCE ARE BASE	COEF ED ON	FICIENT A 110.	S FO	R BUIL D)	.T=UP	WING 6) ·			
						•	LOA	D AT POINT	10									
	ROTATIONS AT CU NASTRAN ROTATIONS AT CU NASTRAN ROTATIONS AT CU NASTRAN	-6.91453 -6.01507 -6.12610 -7.92334 -4.15393 -3.24664	1 2-06 2-06 9 2-06 9 2-06 17 12-05 5-08	-6.91453 -6.11666 -6.91453 -5.49955 -5.28857 3.21426	2 E=06 10 E=06 E=06 18 E=06 E=06 E=07	-6,91453 -5,71362 -6,91453 8,63450	3 12-06 12-06 11 12-06 12-06	-6,91453E -5,15479E -4,65528E -1,07057E	4 -06 -05 -05 -07 -06	-6.91453 2.16254 -6.69729 -1.71325	5 E-06 E-07 13 E-07 E-06	-3,050 -3,680 -9,368 -1,835	6 12E-06 60E-06 14 34E-07 04E-06	-4°15; -4°35(-1°43; -1°26(7 393E-06 520E-06 15 758E-06 863E-06	∽5°28 ~4°09 ~2°46 -1°51	8 857E+06 332E-06 16 320E+06 ∀31E+06	
								-	(11					•				
	DATATIONS AT		,		2		900 900	000000000000000000000000000000000000000	444 444 444		E		¢		7		а	
	U VASTRAN	-1.488/95 -6.64141	iE-05	-1.48845 -7.90978	E=05 E=06	~1°48948 ~ð°83654	5E-05 ε-06	~1.48845E ~1.16910E	-05	-1,48845i -1,34265i	5-05 E-05 E-05	-5.167 -3.329	81E-06 86E-06	-7.350 -4.13	880E-06	-9.78 -5.07	542E-06 960E-06	
i i i	KU NASTRAN Rotations at KU NASTRAN	-1.17435 -6.04648 -7.35880 -2.72843	5E-05 5E-06 17 1E-06 1E-06	-1.37825 -9.32330 -9.78542 -1.36124	E=05 E=06 18 E=06 E=06	-1,49845 -1,49136	jE∞05]E≈05	-6,07580E -7,87755E	-07 -07	-9.080120 -1.233230	E⇔07 E+06	-1.319 -1.610	99E-06 34E-06	-2.17(-2.04)	060E-06 902E-06	-4.04 -2.50	610E-06 437E-05	
							108	D AT POINT	12							•		
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r N E	VUTATIONS AT NASTRAN ROTATIONS AT	2.68259 7.26160	E-07 E-07 9	2.68259 2.91226	E=07. E=08 10	2.68259].25544)E-07 · E-06 11	2,68259E 9,58047E	-07 -07 12	2。68259 9。94799	E=07 E=07 13	20682 40948	59E-07 38E-06 14	2°682 8°478	259E-07 339E-07 15	2.68 1.45	259E-07 709E-06 16	
	U NASTRAN NOTATIONS AT	2.68259 1.07454	E-07 E-06 17	2.682591 7.454101	E=07 E=07 18	2,6H254 6,0949))E≈07 7E≈07	2.68259E 6.18574E	-07	2.68259 6.03944	E=07 E=06	2°682 1°704	59E-07 12E-06	2.682 8.28	259E=07 347E=07	2.68 4.87	259E-07 674E-07	
4	(U Vastran	2.68259 3.14475	12-07 iE-07	2°042221 3°448551	E⇔07 E⇔07									•				

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Table 29 (Continued)

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報告

的问题

KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR BUILT-UP WING 6 (ALL ROTATIONS ARE BASED ON A 1LB, LOAD)

LOAD AT POINT 13

			94					
ADTATIONS AT	3	2	3		5	6	7	8
KU	3º564665-04	. 3°56468€≈04	3.26766E-07	3.26766E-07	3.26766E-07	3.26766E-07	3º56269E-02	3-26766E-07
NASTRAN	5.709332-07	1.84873E-06	2,49066E-06	8.04212E-07	1.231116-06	1.273725-07	2.57193E-06	4.80246E-07
ROTATIONS AT	ę	10	11	12	13	14	15	16
<u< td=""><td>3.26766E-07</td><td>3.26766E-07</td><td>3.26766E-07</td><td>1.61770E-07</td><td>3.267662-07</td><td>3.26766E-07</td><td>3.26766E-07</td><td>3.26760E-07</td></u<>	3.26766E-07	3.26766E-07	3.26766E-07	1.61770E-07	3.267662-07	3.26766E-07	3.26766E-07	3.26760E-07
NASTRAN	1.20001E-06	1.15009E-06	8.29474E+07	-7,91934E-06	3.26377E-07	5.60474E-06	8.43985E-07	8.87246E-07
ROTATIONS AT	17	18						
κU	3.26765E-07	3,26766E+07						ť
VASTRAN	5.401956-07	6.075282-07						

LOAD AT POINT 14

RUTATIONS AT	1	2	3	. 4	5	6	7	8							
ĸU	3.06972E-07	3.06972E-07	3.06972E-07	3,06972E-07	3.06972E-07	3°06915E-01	3-069728-07	3.06972E-07							
VASTHAN	4.34317E-07	7.01764E-07 .	1.32973E-06	2.0478/E-06	9.23527E-07	-1.03804E-06.	-4.93514E-07	1.34954E-06							
ROTATIONS AT	9	10	11	12	13	14	15	16							
<u .<="" td=""><td>3.069725-07</td><td>3.06972E-07</td><td>3.06972E-07</td><td>5,52806E-08</td><td>1.48138E-07</td><td>3.06972E-07</td><td>3.06972E-07</td><td>3.06972E-07</td></u>	3.069725-07	3.06972E-07	3.06972E-07	5,52806E-08	1.48138E-07	3.06972E-07	3.06972E-07	3.06972E-07							
NASTRAN	9.66117E-07	1.06459E-06	1.20350E+06	-5,6338JE-07	-3.44719E-06	- 5∘33042E-07	3.477998-06	1.112048-05							
ROTATIONS AT	17	18													
«U	3.06972E-07	3.06972E-07	•												
MASTAAN	0.18763F=07	8.238675-07													

LOAD AT POINT 15 Geergeooggooggoogg

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ROTATIONS AT	. 1	. 2	3 .	- 4	. 5	6	7	8
4 Ψ.	1.94440E-07	1.94440E=07	1.94440E-07`	1,94440E-07	1.94440E-07	1.94440E-07	1.94440E-07	1.54440E-07
NASTRAN	-8-45517E-07	-1-52477E-08	3.72225E-07	8.784542-07	3.18645E-06	-2.01033E-06	-1.15027E-06	-8,14306E-07
ROTATIONS AT	9	10	11	12	13	14	15	16
∢u	1.944408-07	1.94440E=07	1.94440E-07	-5,12086E-08	-3.04901E-08	1.97362E-08	1°94440E-01	1.94440E-07
VASTRAN	1.66259E-06	1,521558-09	2.08641E-05	-6.88931E-07	∞7.46428E-07	-5.14114E-06	-1.15829E-06	6.04177E-06
ROTATIONS AT	17	18						
< U	1.94440E-07	1.94440E-07	•					
WASTRAN	7.157386-07	1.704398-06						

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	β N			•	Table	e 29 (Conti	nued)							1
	R A													:
	PAG	KU- AN	D NASTRAN- F	ROTATION	NL IN Cons	FLUENCE C ARE BASED	OEFFIC	IENTS F Ilb. Lo	OR BUILT- AD)	-UP WIN	G 6			
	E													
20		_			EOAL 868	D AT POINT 1 8099000000000	6 8							
	TRAN	-4.72241E-07 -1.57089E-06	2 -4.72241E-07 -1.20816E-06	-4.722411 -3.791771	3 -07 -07	-4.72241E-0 8.57349E-0	4 7 -4.7 8 1.0	5 2241E-07 032E-06	4072241E -1072397E	6 -07 -4, -06 -1,	7 72241E-07 77489E-06	-4.72 -1.45	8 241É-07 909E-06	
KU VAS	TRAN	-4.72241E-07 -1.04356E-06	0 4.72241E-07 1.78920E-06	-4.722411 -2.830331	11 E-07 E-06	1 -1.\$7698E-0 -4.12891E-0	2 7 -2.0' 7 -9.0.	13 119E-07 1490E-07	-2.67499E -9.60323E	14 -07 -3. -07 -5.	15 55061E=07 09648E+06	-4.72 -2.50	16 241E-07 725E-06	ļ
701 4U NAS	ATIONS AT	17 -4.72241E-07 6.45089E-06	18 -4.72241E-07 -5.43373E-08											
					LOAI	D AT PUINT L	7							
ROT	ATIONS AT		2	· · · ·	3	7 / 70.77- 4	4	5		6	7		. 8	
NA5	TRAN	=2.96068E+06	-2.10290E-06	-3.67007	-06 -06	-3.67007E-0 -1.69062E+0	6 -3.6 6 -1.4	007E-06	-2.61992E -1.40786E	-06 -3. -06 -1.	67007E-06	-3.67 -1.93	007E-06 983E-05	-
VAS	TRAN	-3.67007E-06 -1.88839E-06	-3.67007E-06 -2.06148E-06	-3,67007(2,19987(11 -06 -06	1 -2.99750E-0 -3.24231E-0	2 7 -4,4; 7 -5,74	13 7401E-07 8411E-07	-6.50661f -8.37300E	14 -07 -1. -07 -1.	15 08807E-06 03051E-06	-2.05 -3.84	16 514E-05 407E-06	:
401 40 845	ATIONS AT	-3.67007E-06 -3.16249E-06	18 -3。67007E-06 9。66009E-06											
				· ·										
					LOAL Bess) AT POINT 1 10000000000	8		."					
- 201 ∉⊔	ATIONS AT	1. 	2 	-0 234420	ل ۵۵۰	-0 234475-0	4	5		6	7		8	
NAS	THAN	-2.19556£-06	-2.717598-06	-3.41709	-00 . -06	-4.17201E=0	D =≫₀≤. 6 ⇒4₀4: ⊃	1544E-06	-1.05055E	-06 -1.	44629E-06	-1.89	662E-06 691E-06	
٩U ١٨٣		-9.23662E-06	-9.23662E-06	-9.236626	-06	-4.41803E-0	7 -6.85	684E-07	-1.03382E	-06 -1.	82109E-06	-3.63	16 804E-06	-
ROI	ATIONS AT	-2.803352-06	-1°52/15-00 18	-4°20A046	.⇔()D	*1°84532E~0	1 -3,85	>793E∞07	-5.13285E	•07 - 8.	22492E-07	-7.24	294E-07	
4u Vas	TRAN	~6.87495E-06 ~3.82613E-06	-9.23662E-06 -9.13196E-06		!									
				•										

R.M.S. OF DIFFERENCES = 1.93366E-07

MAAIMUM ERPOR = 4.62691E-06

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STATISTICS AND STOLEN TO THE PARTY

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	RIGIN						•		٩					-	-				
r C	AL PA								Tabl	e 30									
	AGE IS		EXPER	IMENTA	L- AN	D NAST (ALI	RAN- DEFL	DEFLE Ectio	CTION NS ARI	INFLU E BASI	JENCE Ed on	COEFFI A 100	ICIEN LB. L	TS FOF DAD)	≀ BUIL	T−UP W	ING 7		
LOAD AT POINT 1 Betterest																			
DEFL. A' Erp. Nastran	ĩ	1 0422 0356	२ ०३५२ ७९९०,	.0292 .0292 .0249	4 .0238 .0206	5 .0196 .0167	6 .0214 .0153	7 0223 0167	8 0195 0154	9 .0160 .0132	10 0132 0106	11 •0103 •0079	12 0050 0028	13 0066 0045	14 .0080 .0050	15 00072 00047	16 0060 0039	17 .0098 .0031	18 20032 2000
								٤	OAD AT	POINT	2								
DEFL. A Eap. Nastran	۲ i	1 •0353 •0298	2 .0419 .0340	3 0372 0301	4 0324 0269	5 0290. 0238.	6 0146 0117	7 .0192 .0151	8 8 0218 0163	0206 0157	10 0179 0141	11 0162 0110,	12 0032 0018	13 。0050 。0034	14 。0073 。0045	15 0081 0049	15 .0077 .0047	17 .0068 .0042	18 •0056 •0030
								L	OAD AT	POINT	3								
DEFL. A Eap. Nastran	T t	1 0292 0249	2 0372。 0301。	3 0442 0352	4 .0440 .0341	5 0428 0328,	6 •0104 •0087	7 .0156 .0128	8 0203 0156	9 0247 0175	10 .0243 .0178	11 .0244 .0169	12 0200. 1100.	13 0036 0025	14 0060 0038	15 .0076 .0047	16 0088 0052	17 .0096 .0054	18 0086 0047
			. •					L	OAD AT	POINT	4								
DEFL. A Elp. Nastran	4 T 1	1 0238 0206	2 0324 0269	3 。0440 。0341	4 ,0560 ,0428	5 .0606 .044]	6 .0078 .0063	7 0132 0106	8 .0186 .0142	9 0260 0179	10 0318 0212	11 0344 023200	12 0008 0005	13 •0026 •0017	14 0051 0031	15 .0070 .0043	15 0094 0054	17 0127 0065	18 0125 0068
		•						l	OAD AT		5								
DEFL。 A EAP。 Nastran	4 T	1 •0196 •0167	0520° 0520°	3 0428 0328	4 。0606 。044]	5 ,0742 ,0587	6 0056 0042	7 0108 0085	8 0172 0126	9 0258 0177	10 .0380 .0238	11 0448 0302	12 0001- 0001-	0010 0010 0010	3 14 0042 0023	15 0065 00037	16 。0098 。0054	17 0142 0075	18 0167 0992
								Į	OAD AT	POINT	6								•
DEFLO A Erpo Nastran	AT V	} .0214 .0153	2 .0146 .0117	3 0104 0087	4 0078 0063	5 .0056 .0042	6 .0207 .0144	7 。@140 。0094	€0098 €0092 €0068	م 0062ء 0062ء 004ع	10 0046 0032	11 0025 0017	12 0080 0037	2 13 0 0074 0 0044) 14 .0054 .0033	15 0042 0023	16 0026 0015	17 .0014 .0009	61 5000. 5000.

Table 30 (Continued)

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EXPERIMENTAL- AND NASTRAN- DEFLECTION INFLUENCE COEFFICIENTS FOR BUILT-UP WING 7 (All Deflections are based on a loolb, Load)

							Ļ	0AD AT	POINT 00000000	7 +								
DEFL. AT Exp. Nastran	1 0223 0167	2 0192 0151	3 0156 0128	4 0132 0106	5 .0108 .0085	6 0146 0094	7 .0187 .0126	8 0138 0092	9 .0098 .0073	10 0079 0057	11 0062 0041	12 0038 0019	13 0054 0032	14 0072 0037	15 0060 0032	16 .0042 .0024	17 .0030 .0017	ы 8100. 9000.
							L.	0AD AT	POINT	8								
DEFL. AT Exp. Nastran	1 .0195 .0154	2 .0248 .0163	3 2020ء 6110ء	4 0186 0142	5 .0172 .0126	6 50000 80000	7 0138 0092	8 0183 0123	9 .0134 .0093	10 .0112 .0079	11 •0103 •0065	12 0022 0011	13 0037 0022	14 .0060 .0032	15 0072. 0036	16 .0058 .0031	17 .0049 .0026	18 0039 0018
							L	OAD AT	POINT	9								
DEFL. AT EAP. Nastran	1 0160 0132	2 .0206 .0157	3 .0247 .0175	4 0260 0174	5 .0258 .0177	6 0062 0048	7 .0098 .0073	80000000 0134 0093	0119 0119	10 .0173 .0106	11 .0165 .0099	12 0010. 006-0	13 00024 00014	14 0043 0024	15 20062 2000 •	16 .0074 .0037	17 .0076 .0036	18 0067 0031
							L	OAD AT	POINT 1	0								
DEFL.AT Exp. Vastran	1 0132 0106	2 .0179 .0141	3 .0243 .0178	4 .0318 .0212	5 .0380 .0238	6 0046 0032	.0079 .0057	8 0112 0079	9 .0173 .0106	10 .0265 .0154	11 .0269 .0147	21 8000. 2000.	13 .0017 .0009	14 .0031 .0017	15 0049 05000	16 20072. 20006	17 .0114 .0047	18 0110 0051
							L	OAD AT	POINT 1	1								
DEFLO AT. Eipo Vastran	1 .0103 .0079	2 0162 0119	3 0246 0169	4 .0344 .0232	5 ,0448 ,0302	6 0025 0017	7 。0062 。0041	0103 00065	00000000 00000 00000 00090	10 .0264 .0147	11 9850° 9250°	12 2000 1000	13 。0006 。0003	14 0024 0011	15 0040 0020	16 .0074 .0033	17 0123 0053	18 0162 0077
							· L	DAD AT	POINT	2								
OEFL. AT EXP. Vastran	1 0050ء 0028ء	2 0032 0018	3 2000ء 2001ء	4 .0008 .0005	5 0001 .0001	6 •0080 •0037	7 0028 0019	°001) 8 8 9400000 8	°0010 8 0010 0010	01 0100 2000	11 0002 0001	12 0113 0151	13 •0040 •1019	14 0020 0000	. 15 。0011 。0004	61 6000. 5000.	17 0002. 0000	18 0003 0001
	abh Bardhin 1998 Bardenau	аза (салаа) 194 — Саласта 194	ana Anito Anit (anna	senta pren Land b aran	17366) (143 6479) (147	tabhadh Bah Issann9 Ban	164223 B	999A (<u>6039684</u> - 1969		C. S. S.			Contraction of the second s			
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							Tab	le 30	(Contir	ued)	·							
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	EX	PERIM	ENTAL	⇒ AND	NASTR (ALL	AN- DO Defle(EFLECT Ctions	ION I G ARE	BASED	ON A	100LB	. LOAL))	0861-1	UF 11819	0.		
					- · -	• • • • • • •		OAD AT	POINT 1	3								
EFL, AT RP, Astran	1 • 0066 • 0045	2 0050 0034	3 •0036 •0025	4 •0026 •0017	5 .0016 .0010	6 .0074 .0044	7 。0054 。0032	8 0037 0022	0014	10 .0017 .0009	11 •0006 •0003	12 0040 0019	13 0082 0048	14 0037 0017	15 0020 0009	16 .0012 .0005	17 0007. 0002.	18 •0001 ••0000
							Ł	OAD AT	POINT 1	4								
EFL。 AT AP。 Astran	1 0080 0000	2 0073 0045	3 .0060 .0038	4 .0051 .0031	5 0042 0023	6 0059 0033	7 0072,0037	8 0000 0050 0032	0024	00 0031 0017	11 0024 0011	12 0020 8000	13 。0037 。0017	14 .0074 .0045	15 •0042 •0017	16 0021 €000€	17 .0014 .0005	16 00010 00002
							L	OAD AT	POINT 1	15						÷		
EFL. AT 19. Astran	1 •0072 •0047	2 •0081 •0049	3 。0076 。0047	4 .0070 .0043	5 。0065 。0037	6 0042 0023	7 .0060 .0032	8 0072. 0036.	9 29000 26000	10 0049 0026	11 0040 0020	12 .0011 .0004	13 0020 0000	14 0042 0017	15 .0073 .0042	16 .0035 .0015	17 .0026 .0009	16 0018 0005
							L	OAD AT	POINT	16								
EFLO AT RPO Astran	1 .0060 .0039	2 。0077 。0047	3 0088 0052	4 。0094 。0054	5 。0098 。0054	6 0026 0015	7 。0042 。0024	8 0058 0031	0074 0037	10 0072,0036	11 。0074 。0033	12 ، 2000 ، 2000 •	13 0012 0005	14 .0021 .0009	15 .0035 .0015	16 .0064 .0031	17 .0048 .0017	12 0040 0012
	•							LOAD AT	POINT	17								
EFL. AT 19. Astran	1 。0048 。0031	2 0068 0042	3 .0096 .0054	4 .0127 .0065	5 0142 0075	6 ₀0014 ₀0009	7 。0030 。0017	0049 0026	0076 0036	10 。0114 。0047	11 0123 0053	12 0002 0000-	13 .0007 .0002	14 。0014 。0005	15 0026 0009	16 .0048 .0017	17 .0108 .0047	1 009 002 002
•							1	LOAD AT	POINT	18 -				,				
)EFL. AT IXP. Hastran	1 20032 81000	2 0056 0030	3 •0080 •0047	4 ,0125 "0068	5 0167 0092	8 2000. 2000.	7 。0018 。0009	8 0039 0018	.0067 .0031	10 0110 0051	11 0162 0077	12 2000 1000	13 0001- 0000-	0010。 0000。 0002	15 0018 0005	16 0040 0012	17 0096 0026	006) 0060 0061

NAXINUM ERROR = 6.72929E-03

R.M.S. OF DIFFERENCES = 2.71512E-04

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•	AG				~~~		ទងចើ	1 UENCE	COFF	FICIFNT	S FA	2 81111	T-UP W	ING 7				
		KU-	AND P	NASIKAN≃		BOTATIO	- 1910/ Jaig (RE BAS	ED ON	A ILB.	LOA	D)						
	K 6										· · · · · ·	· · · · · · · · · · · · · · · · · · ·				·	-	
							10A	D AT POIN	1 1									
ROTATIONS	A'T		1		ີ້ເ		3		4		5		6		7		8	
NASTRAN		7.14854E=	-06	1.11700E-	05 05	7.491456 8.526196	-06 -06	7,4914:	>E=06 L€=06	7°4A142 2°44809	E=06 E=06	9.6752 -5.5397	25E-07 19E-06	2°340; 1°52;	55E-06 73E-06	3.607 3.845	63E-06	
ROTATIONS	AT	5.08756F-	9 .06	7.49145F=	10 06	7 601655	11	m] 668)	12	-7 34051	13	-3 5000	14	5 4 2 6	15	0 475	16	
NASTRAN		4.47375E-	•06	4.89421E-	06	5,473938	-06	-3,5211	5E-06	-1.85722	E-06	1.6043	112-07	1.256	91E-06	1.554	758-06	
RUTATIONS	AT	2.34055E-	17	3.60763E-	18 06										•			
VASTRAN		2.11519E-	06	3.03535E-	06													
							LOA	D AT POIN 880000000	5 TV						•			
ROTATIONS	AY		1		2		£		4.		5		6		7		8	
NASTRAN		1.63619E- -1.13750E-	-05 -05	3.90482E- 1.44621E-	U8 07	3.904826	~05 -06	5,53308	4E-06 3E-06	3,90482	E⇔06 E≈06	-7.6761	4E-07	-4.368 -3.977	18E-07 43E-06	-1.668	28E-08	
ROTATIONS	AT	e (633)e	9	1 (64) (6	10		11	2 1010	12		13		14		15		10	
NASTHAN		-311899°5	.07	3.23319£-	06 06	3,90482E 4,83660E	-06	-2.61757	42-07 12-06	-4./5015	E=07 E=06	-1.3998	3E-07	-8.672	18E-07 50F-08	-7.676	14E-07	
QUIATIONS	44	-4 364185	17	1 440705	18			• -										
VASTHAN		1.49630E-	-06 -	3.03008E-	06 06							•						
												•			•			
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ROTATIONS	AT		1		2		3		4		5		6		7		8	
NASTRAN		~~.17918E-	·06 =	-4.22304E-	06 4 05 4	-4.22304E -3.77937E	-06 -06	-4,22304 3,76434	•E=00 •E=06	2.59086	E-V6 E-06	-2.5027	5E≈06 8E≈06	-3.214) -5.4449	19E-06 91E-06	~3.641 ~5.018	00E=06 30E=06	
ROTATIONS	AT		9	+	10		Ì Ì	3 6 3 3 6 7	12	< 10.000	13	1 0000	14		15		16	
NASTRAN		~3.95612E- ~2.05856E-	-06 =	-1°01863E− 1°01863E	ue 4 06	-%°5530%E 1°86230%E	-06 -06	-2,57394 -1,87995	E-06	-2.21269	2-07 E-06	-1.2064	8E≈08 0E≈08	∽1₀8113 ∽]₀4340	32E-06)0E-06	-2.502	756-06 748-07	
ROTATIONS	AT		17		18		-										_ •	
NASTRAN		-3.21419E- 4.62573E-	07	2.19082E-	06 06			-	-									
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												•						
								. Tal	ble 31 ((Conti	nued)							
		•				• .			· · · · · · · · · · · · · · · · · · ·	-		-						
			KU-	AND I	NASTRAN	I- RO (ALL	TATIONA ROTATI	L INF Ons A	LUENCE	E COE SED O	FFICIENT N A 1LB,	IS FO	DR BUIL Ad)	T-UP	WING 7			
				-				LOAD	AT POIN	т. Т. 4		·		•··· ••·	• • • • • • • • • • • • • • • • • • •			
20181	IONS AT			1		2		0000 3	000000000	0000 4		5		6		7		8
AU NASTR ROTAT	AN LONS AT	0 -1 -1	。00145E- 。14854E-	05 - 05 -	1.23509E 1.23854E	-05 -05	-1.23509E -1.67505E	=05 =05 11	-1,23507 -1,03573	E+05 E+05	-1.235090 1.675610	E⇔05 E⇔06 13	-4.2378 -5.4956	9E-06 5E-06	-5.9919 ≈6.6786	65-96 65-96	∞7°265; -6°156	31E-06 74E-06
40.		-8	.47796E-	06 -	1.00145E	-05	-1.23509E	-05 ·	-3.02683	E-07	-7.551436	E-07	-1.6307	2E-06	-2.7554	+2E=06	-4.237	34E-06
RATOR	IONS AT	- /	.1//J2E-	17	2.342046	18	≏1°30411C.	-00	-103043	2-00	-10320311	00	-2030020	55-00	°2°2042	15400	-5.0300	00-00
KU NASTRI	AN	-5 ~1	,99156E- .60081E-	06 - 06 -	7.26531E 8.25332E	-06 -07												
								LOAD	AT POIN	T 5								
TATOF	IONS AT			1		2		3		4 -		5	5 0-00	6		7		8
- KU - NASTRI	AN	-1	-58498E- -20973E-	05 - 05 -	2.04787E 1.50415£	-05 -05	-2.04787E	-05 -05	-2,04/8/ -2,50546	E-05 E-05	-2.047879	E-05	-5.9730	1E-06	-6.9955	32-06 92-06	-1.0685	16E-05
TATOF	10NS AT		200000	9) E0400E	10		11		12	-4 052070	13	-2.0549	14		15	-5 0731	16 135-05
NASTR	AN	-1	.05274E-	05 -	1.21921E	-05	-1.18045E	-05	-8.37507	E-07	-1.74920	E=06	-2.436.	72-06	-5.9011	85-06	-3.758	+0E-00
ADTAT 4U	IONS AT	+A		17	1.088965	18 -05												
NASTR	AN	-4	.27504E-	06 -	1.74973E	-06												
	,						÷	LÇAD	AT POIN	T 6	•							
90747	TONS AT			1		2		1.999 1	80090000 1	4		5		6		7		8
KU		3	.72869E-	06	3.72869E	-06	3.72869E	-06	3,72869	E-06	3.72869	E-06	3.7286	9E-06	3.7286	59E-06	3.728	59E-06
NASTR Rotat	AN IONS AT	8	.30337E-	9	2°81A35E	-06 10	5.17306E	-05 11	4,104/0	12	2942184	13	0.0499	0E+06 14	0.4076	15	30334	16
40	4.1	3	.72869E-	06	3.72869E	-06	3,72869E	-06	-3,20663	E-08	2.85461	E-08 E-04	5.2057	5E-07	1.7233	31E-06	3,728	98-06
RICAN	AN IONS AT	3	1.39645E-	17	6019414E	-vo 18	207380/E	-00	-5°03230	r-10	80002341	L-40	8021001		Tetone		10100	
٩U		3	.72869E-	06	3.72869E	-06												
NASTR	AN	1	.23648E-	06	1.46108E	- V 0												

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5		Tab	le 31 (Continu	ad)			
>			re or tooneine	<u><u> </u></u>			
± Ku⊷ AND	NASTRAN⇒ RO	DTATIONAL IN	FLUENCE COEF	FFICIENTS FO	R BUILT-UP	WING 7	
d d	(ALI	. ROTATIONS	ARE BASED OF	N'A 1LB, LOA	D)		
		LO	AD AT POINT 7				
1	2	3	4	5	6	7	
2.86005E=06	2-86005E-06	2.86005E-06	2.86005E+06	2.86005E-06	1.41408E+06	2-86005E-06	2.86005E-0
6°335396090 8	······································	7°004106∞18	**E*EDOF*AP	J,7J884E9V6]]	. =70ULCUYE=U6 14	12 1°428416-09	6°434615-0 1
2.86005E-06	2.86005E-06	2.86005E-06	=9,24824E-08	-1.58294E-07	-4.53452E-08	4.63915E-07	1.41408E-0
200000000000000000000000000000000000000	2,703436#00 1B	")* AAAD3F -00	~1°041076=00	-1°31041€∞AD	J.198445-01	1+358105-08	1.2/605E-0
2.86005E-06	2.86005E-06						
[045607E-06	1.77290E-00						
		LO	AD AT POINT 8				
1	2	. 89 	4000000000000 400000000000000000000000	5	6	7	
5.58745E-07	5.587452-07	5.587452-07	5,58745E-07	5.587456-07	-3.21056E-07	8-26792E-08	5.58745E-0
∽3,186/6E+06 y	-1.23377E-07	2.46176E-06	2,33086E-06	3.59575E-06	-2.01797E-06	-6.71431E-06	1.8533/E-0
5.587458-07	5.58745E-07	5.58745E-07	-1.37773E-07	-2.9835BE-07	-4.695868-07	-4.80184E-07	-3-51020E-0
5.726862-06	1.89364E-06	5,90980E-06	-1,88521E+06	-1.46314E-06	-1.264062-06	1.55917E-07	1.069578-0
8.26792E-08	5.58745E-07						
1.04998E-06	2.05496E-06			•			
		. LO 88	AD AT POINT 9 Beecececector	• .			
l	2	3	4	5	6	7	
+3.32245E-06	-3.32245E-06 -4.426875-86	-3,32245E-06	3,32245E-06. 3,68078F-07	-3,32245E-06 1,035466-08	-2.05619E-06 -3.462955-04	~2°69469E~06 ~1°565462	~3.06557E-0
90~12036~00	10	-2000000-200	12	13		-30239292900	-200000516-0
-3.32245E-06	-3.32245E-06	-3.32245E+06	-1.83064E-07	-4.38422E-07	-8.93827E-07	-1.42428E-06	-2.05619E-0
~1°58310F+08 17	18	8.173736-01	∝1°0\A¢0F∞0Ω	∞1°4?]QAF∞00	■1°3101AE=00	-10405045-00	-4.84091E+0
-2.59469E-06	-3,06557E-06						
7.469/6E-07	1.29234E-06		`				
			•				
	KU=- AND 2.86005E=06 2.55253E=06 2.85693E=06 2.85693E=06 1.45607E=06 1.45607E=06 1.45607E=06 1.04998E=06 1.04998E=06 1.04998E=06 1.28370E=06 -3.32245E=06 -1.28370E=06 1.28370E=06 7.46976E=07	KU= AND NASTRAN= R(2.86005E=06 2.86005E=06 (ALL) 2.86005E=06 2.86005E=06 2.86005E=06 2.85253E=06 4.17626E=06 2.86005E=06 2.86005E=06 2.86005E=06 2.86005E=06 2.86005E=06 2.86005E=06 2.86005E=06 2.86005E=06 2.86005E=06 2.86005E=06 1 1 2.86005E=06 2.86005E=06 1.45607E=06 1.77290E=06 3.18676E=06 -1.23377E=07 9 10 5.58745E=07 5.58745E=07 5.58745E=07 5.58745E=07 5.58745E=07 5.58745E=07 9 10 7.2646E=06 1.89364E=06 1.04998E=06 2.05496E=06 -3.32245E=06 -3.32245E=06 -3.32245E=06 -3.32245E=06 -1.28370E=06 3.03363E=06 17 18 -2.69469E=06 -3.06557E=06 7.46976E=07 1.29234E=06	Tab $KU=AND NASTRAN= ROTATIONAL IN (ALL ROTATIONS I = 2 2.86005E=06 2.86005E=06 2.86005E=06 2.86005E=06 2.86005E=06 2.86005E=06 2.86005E=06 2.86005E=06 2.85693E=06 2.86005E=06 3.09985E=06 1.285693E=06 2.86005E=06 1.23377E=07 2.46176E=06 1.277290E=06 1.45607E=06 1.23377E=07 2.46176E=06 1.23377E=07 2.46176E=06 1.89364E=06 2.90980E=06 1.205496E=06 2.90980E=06 1.205496E=06 2.90980E=06 1.205496E=06 2.05496E=06 1.205496E=06 1.205496E=06 1.205496E=06 2.05496E=06 1.20370E=06 3.03363E=06 8.19595E=07 1.20370E=06 3.03363E=06 8.19595E=07 1.20370E=06 3.06557E=06 7.46976E=07 1.29234E=06 1.20370E=06 1.20370E=06 1.20370E=06 1.20370E=06 3.03363E=06 1.20370E=06 3.03557E=06 3.032245E=06 3.02245E=06 3.02245E=06 3.02245E=06 3.02245E=06 3.02245E=06 3.032245E=06 3.02245E=06 3.032245E=06 3.04657E=06 3$	Table 31 (Continu Ku- AND NASTRAN- ROTATIONAL INFLUENCE COEF (ALL ROTATIONS ARE BASED OF (ALL ROTATIONS ARE BASED O	Table 31 (Continued) Ku- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FO (ALL ROTATIONS ARE BASED ON A 1LB, LOA LOAD AT POINT 7 000000000000000000000000000000000000	Table 31 (Continued) KU AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR BUILT-UP (ALL ROTATIONS ARE BASED ON'A 1LB, LOAD) LOAD AT POINT 7 1 2 2.86005E-06 2.86005E-06 3.80995E-06 -1.564181E-06 1.4160E-06 2.15624E-07 3.8095E-06 1.58745E-07 5.58745E-07 5.58745E-07 5.58745E-07 5.58745E-07	Table 31 (Continued)

Carnorada		ternenen ternene	nal provide providence		ն գերազինումունը գրեղությունը 1 9 մերություն հետությունը	ولېرسېدادې، و مېدو مېدادو و امېر مېسېرو و د روم ور و و	general and Bridgers	Barristen Barristen	ğamış (İlaş
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	AG			Table	≥ 31 (Continue	d) '			
	26	KU- AND	NASTRAN- RO	TATIONAL INF	LUENCE COEFF	FICIENTS FOR	BUILT-UP WI	[NG 7	
			(ALL	ROTATIONS A	RE BASED ON	A 1LB, LOAD	3		
				10			· · · · ·		
				00	8808666666666666 20 11 10 10 10 10 10				
ROT	TIONS AT	1	2	3	4	5	6	7	8
NASI	RAN A	~9.30100E+00 +6.46358Fe06	-9.30160E-06 -6.30179E-06	-9.3016VE+05 -7.01552F=06	-9.JU150E-06 -5.93288E-06	-9°9030300F=00	-3.791332-06	-5.47206E-06	+0.68989E+06 +4.07131E+06
NOTA	TIONS AT	9	10	11	12	13	14	15	16
۲U		-7.84429E-06	-9.30160E-06	-9,30160E-06	-2.28355E-07	-5.78486E+07	-1-31807E-06	-2.36838E-06	-3.7913JE+06
NAST	RAN .	-8.57922E-06	-4.89876E-06	4,59842E-06	-7,04448E-07	~1.11545E-06	-1.60763E-06	-1.57932E-06	-2.14275E+00
 ∢U	ATTOM2 HI	-5.47206E-06	-6.68989E-06						
NAST	IRAN	-1.78472E-06	1.88530E-07						
				LO	AD AT POINT 11				
-	X 9 0010 0 T			. 00	00000000000000000000000000000000000000	c	,	7	ņ
	TIONS AT	-1.51369E-05	-1.97493E-05	-1.97493E~05	~1,97493E-05	-1.97493E-05	-5.52647F-06	-8.24943E-06	-1.03142E-05
NAST	RAN	-6,65778E-06	-8.52760E-06	-1.0S208E-05	-1,19671E-05	-1.45564E-05	-2.70256E-06	-4.01447E-06	-5.361068-06
ROTA	TIONS AT	9	10	1034035.45	12	-7 195665 AT	16	15	16
40 . NAST	PAN	-l.236012-09 -7.25118F-06	-1,252298-05	-1-87695F-05	=2,73040E=07 =3.19071E=07	-7.10550E-07 -9.28942E-07	-l.45594F+06	-3+31240E-VO -2+03832E-06	-3-520476-00 -3-18695E-06
AUTA	TIONS AT	17	18	-19010175-02		- > 20 > 42 - 01		240000000	-31100302-00
۲U	•	-8.24943E-06	-1.03142E-05						
NASI	RAN	-4.13252E-06	-4.15140E-00				•		
							• -		
				LO Be	21 TVIO9 TA DA				
801ª	TIONS AT	1	2	3		5	6	7	8
٩U		1.02678E-07	1.02678E-07	1.02678E-07	· 1.02678E=07	1.02678E-07	1.02678E-07	1.02678E-07	1.02678E-07
VAST	RAN ATIONS AT	1-831272-06	, 1°74004E-00	1,151586+08	.9,30135E-07	8°721816-01 11	%°02210E⊳00 14	1°485277Fead 12	1.310596+06
4014 40	ALTOWS AT	1.02673E-07	1.02678E-07	1.02678E-07	1.02678E-07	1.02678E-07	1.02678E-07	1.02678E-07	1.02678E-07
NAST	RAN	7.79896E-07	6.35167E-07	6.08959E-07	4,31854E-06	3.72538E-06	6.59099E-07	6.76800E-07	2.96662E-07
A108	TIONS AT	17	18						
KU VACV	DAN	1.020/82-0/ 2.72631F=07	1.020/8240/						
¥~21		F310000F-01	appyante Vi						
				• .			0		

Table 31 (Continued)

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KU- AND NASTRAN- ROTATIONAL INFLUENCE COEFFICIENTS FOR BUILT-UP WING 7 (ALL ROTATIONS ARE BASED ON A 1LB, LOAD)

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			10 86	AD AT POINT 13				
ROTATIONS AT	1	2	3	. 4	5	6	7	8
∢U	2.05203E-07	2.05203E-07	2.05203E-07	2,05203E-07	2.05203E-07	2.052038-07	2.052032-07	2.052038-07
NASTRAN 0	1.107422-06	2.13750E-06	1.65924E-06	1.35128E-06	1.30295E-06	1.20425E+06	1.72448E-06	1.57651E-06
KUTATIONS AT	9 2 052035-07	2 052025-07	0 050035.03	12	13	14	15	16
NASTRAN	1,244465-06	4.72609F=07	2,03203E+07	4022021E-08 08 03560E-06	2.002032007	2+05203E-07	2.052038-07	2.05203E-07
ROTATIONS AT	17	18	30 31 I JOC-01	-0,03300 <u>C</u> -00	20102245-01	49993115-00	0,900000-01	0,500010-01
KU	2.052035-07	2-052035-07						
NASTRAN	4.38117E-07	4.77463F-07						
			L0:	AD AT POINT 14 Boodgooggooggo				
ROTATIONS AT	1	2	3	- 4	5	6	7	8
∢ U	2.67311E-07	2.67311E-07	2°64311E-01	2.67311E~07	2.67311E-07	2.67311E-07	2.67311E-07	2.67311E-07
VASTRAN	5.491972-07	1.55884E-06	1.35789E-06	1.45178E-06	1.33352E-06	-8.925782-07	8.45625E-07	1.18324E-06
ROTALIONS AT	9	10	11	12	13	14	15	16
NU NACTOAN	2.6/3112-0/	2.673112+07	2.6/311E-0/	-1.81541E+08	1.8J627E=08	2.673116-07	2.67311E-07	2.67311E-07
NADINAN Dotations at	10159195-00	1.248058+00	1°13082E-09	2.6038/E-0/	-5.10077E-06	1.17958E-06	5.11898E-06	5-26676E-07
KU KU KU KU	- 2 6731)F-07	2 673115-07						
NASTRAN	7.218075+07	6.392015+07	•					
			1.0	AD AT BOINT 15				
	•			000000000000000000000000000000000000000	•			
ROTATIONS AT	1	2	3	4	5	6	7	8
<u c<="" td=""><td>~9.31499E-08</td><td>-9,31499E-08</td><td>-9,31499E-08</td><td>-9.31499E-08</td><td>-9.314992-08</td><td>-9.31499E-08</td><td>-9.31499E-08</td><td>~9.31494E~08</td></u>	~9 .31499E -08	-9,31499E-08	-9,31499E-08	-9.31499E-08	-9.314992-08	-9.31499E-08	-9.31499E-08	~9 .31494E ~08
VASTRAN	-1.455292-06	8.25332E-08	1,04026E-06	8.56659E-07	1.21467E-06	-1.10277E-06	-1.06731E-06	8.01045E-08
ROTATIONS AT	9	10	- 11	, 15	13	14	15	16
KU	-9.31499E-08	-9.31499E-08	-9.31499E-08	-6,34449E-08	-1.21701E-07	-1.56930E-07	-9.31499E-08	-9.31499E-08
VASTRAN	9.91858E-07	7.80410E-07	1.32117E-06	-1.00777E-06	1.85778E-07	-5°41900E-06	4.13892E-07	4.9875YE-06
ROTATIONS AT	17	18						
4U 4668000	-9.31499E-08							
	5"852136-01	1000005-00		•				

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	AL PAGE R QUALL	KU- ANT	NASTRAN= RO	Tab TATIONAL INF	le 31 (Continu LUENCE COEFI RF BASED ON	ed) Ficients For A 110. Load	801LT-UP W	ING 7	
				LO	AD AT POINT 16				. .
ROTATIONS KU NASTRAN ROTATIONS KU NASTRAN ROTATIONS KU	at At At	1. -1.60964E-06 -1.39115E-06 -1.60964E-06 -4.26106E-07 17 -1.60964E-06	2 -1.60964E-06 -1.50521E-06 10 -1.60964E-06 5.57225E-07 18 -1.60964E-06	444 3 -1.60964E-07 -6.64293E-07 11 -1.60964E-06 2.38515E-07	4 -1.60964E-06 1.59938E-07 12 -1.08736E-07 -2.96380E-07	5 -1.60964E-06 4.55980E-09 . 13 -2.61765E-07 -6.20272E-07	6 -1.60964E-06 -1.29057E-06 14 -5.81170E-07 -5.49184E-07	7 -1.60964E-06 -1.12736E-06 15 -1.03725E-06 -3.18827E+06	8 -1.60964E-06 -1.41187E-06 16 -1.60964E-06 -1.91994E-07
ROTATIONS	AT	1. ∞4。95256E-06	-4,95256E-06	L0/ ∞00 3 ∞4°952229€~00	ND AT POINT 17 000000000000000 4 04,952565-06	-4₀95256E≈06	-J.36478F-06	7 ≈4→95256F≠06	≈4,95256F≠05
NASTHAN ROTATIONS KU NASTHAN ROTATIONS KU	AT AT	-2,07978E-06 9 -4,95256E-06 -1,95753E-06 17 74,95256E-06	-2.10873E-06 10 -4.95256E-06 -1.83892E-06 18 18 -4.95256E-06	-2.57297E-06 11 -4.95256E-06 -1.18774E-06	-1.90685E-06 12 -1.54026E-07 -2.00538E-07	-1.12407E-06 13 -4.01829E-07 -3.36956E-07	-9.37590E-07 14 -1.00541E-06 -7.44173E-07	-1.51917E-06 15 -1.98135E-06 -3.85135E-07	-1.53108E-06 16 -3.34478E-06 -5.33955E-06
VASTHAN		-1.88789E-06	8.081295-06	10/	ND AT POINT 18	، ۲ جر م ۱۰	· · ·		
ROTATIONS QU NASTRAN ROTATIONS QU NASTRAN ROTATIONS QU NASTRAN	AT AT AT	1 -9.73878E-36 -2.09071E-06 9 -9.73878E-06 -2.90824E-06 17 -7.72993E-06 -6.33795E-06	2 -9.738782-06 -2.798762-06 -10 -9.738782-06 -3.851322-06 18 -9.738782-06 -8.541992-06	3 -9.73878E-06 -3.6078JE-06 11 -9.73878E-06 -5.56283E-06	-9,73878E-D6 -4,71597E-06 12 -1,99317E-07 -1,00517E-08	5 -9.73878E=06 -4.27891E=06 13 -5.41893E=07 -2.41449E=07	6 -5:07991E=06 -7:64581E=07 14 -1:42965E=06 -4:55589E=07	7 ~7.72993E+06 ~1.31435E-06 15 ~2.92545E-06 ~8.84053E-07	8 -9.73878E-06 -2.03287E-06 16 -5.07991E-06 -1.41693E-06

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Figure 2 Solid Wing 2 - Geometry and Details



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Figure 3 Solid Wing 3 - Geometry and Details



Figure 4 Built-up Wing 1 - Geometry and Details



Figure 5 Built-up Wings 2 and 3 - Geometry and Details





NOTES: Model material - 6051-76 Aluminum All internal members formed of 0.040" sheet.

Figure 6 Built-up Wing 4 - Geometry and Details

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Figure 7 Built-up Wing 5 - Geometry and Details

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0.040" sheet.



Figure 8 Built-up Wing 6 - Geometry and Details





Figure 10 Built-up Wing 8 - Geometry and Details





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