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The McAuto Version of the MVMA 2-D Model  
and Associated Processors.

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16. Abstract  The report describes and illustrates the unique characteristics of the MVMA 2-D crash victim simulation computer code as it is implemented on the McAuto computer system. After an introduction a description is given of the software installed on McAuto and the available documentation. This is followed by a discussion of the Procedures needed to operate the code. An example run concludes the report.					
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## 1.0 INTRODUCTION

This report describes and illustrates the unique characteristics of the MVMA 2-D crash victim simulation computer code as it is implemented on the McAuto computer system. Reference is made to a variety of documents which are available and which describe the MVMA 2-D code and its use. The user of this software should have access to these various documents. The remainder of the report is in three parts. Section 2 describes the software installed on McAuto and the available documentation. Section 3 describes the Procedures necessary to operate the MVMA 2-D code as it is installed on McAuto. Section 4 contains the output from an example run produced on the McAuto system to illustrate the MVMA 2-D code and its associated processors in action. Examples of graphic displays (plots of output variables and ellipsoidal crash victim) are contained in the comparison reports to this document (See Reference 1 and 2).

## 2.0 SUMMARY OF AVAILABLE PROCESSORS

The current software available on McAuto consists of the following:

1. The MVMA Two-Dimensional Crash Victim Simulation, Version Three, which will henceforth be referred to by the abbreviation "MVMA";
2. The Validation Command Language which will be referred to by the abbreviation, "VCL";
3. The Ellipsoidal Man Plotting Package which will be referred to by the mnemonic, "PLOTCS"; and
4. The Validation Command Language Plotting Program which will be referred to by the abbreviation, "VCLPLOT".

The remainder of this section contains a short description of each of these programs followed by a discussion of the available documentation.

### 2.1 MVMA 2-D Model

The MVMA two-dimensional crash victim simulator is a mathematical model used for predicting occupant dynamics in a crash environment. The computer program is large and complex. Its many options and features provide the automotive safety engineer considerable flexibility in defining a crash event but at the same time impose considerable demands for specification of input data.

The MVMA contains an eight mass occupant linkage with a great many options for forcible interactions between the occupant and the vehicle. Occupant and/or vehicle components can be assigned tabular or polynomial material force deformation properties. The model employs internal structured data storage tables so that existing program storage can be used to maximize flexibility in problem description.

The MVMA expects the problem description in terms of formatted input cards.

The MVMA produces printed tabular output describing the problem as well as the dynamic solution to the problem. A great amount of flexibility is offered in what output will be produced. Users may specify their choices by means of somewhat free-format input cards.

The MVMA also optionally produces binary files to serve as input to the associated postprocessors.

The MVMA consists of three processors, known respectively as MVMAIN, MVMAGO, and MVMAUT. MVMAIN reads the problem description in the form of an input data deck (file) and produces binary tables of the form required for problem solution. MVMAGO then solves the problem based on these binary tables and puts kinematics and other quantities into the binary files. MVMAUT reads the output specification deck and the binary files in order to produce tabular printout and printer plots. MVMAUT can be run on the binary tables to produce different selections of printouts without repeating the other two processors. Also MVMAUT can be run directly after MVMAIN to produce a problem description in English together with a printer plot of the specified initial positions.

The principal report (Ref. 3) on the MVMA consists of three volumes. The first volume is devoted to a discussion of the underlying analysis while the second volume serves as a User's Guide complete with examples. The third volume is a Programmer's Guide which discusses internal organization of the three processors, the data structures employed in both internal and external tables, and the auxiliary printouts available to aid in tracking down problems.

Use of the model is facilitated by the use of a Tutorial System Self-Study Guide and Audio-Visual Program. The Tutorial System (References 4 and 5) consists of text, illustrations, and details of example problems. The Audio-Visual Program (Reference 6) includes the narration, text, and figures used in a slide/cassette tape program.

## 2.2 VCL Postprocessor

The VCL is designed to examine the output of one or more model runs together with user supplied data and produce comparisons, statistics, filtering, and plots of variables of interest. The VCL exists in two versions, one to operate on the binary tables produced by the MVMA and the other to operate on the tables produced by the HSRI Version of the 3-D CVS (Ref. 8).

The VCL provides a quasi-English command language in terms of which users specify their desires. The VCL produces printed output together with optional printer plots and/or CRT plots.

The principal report (Ref. 7) is essentially a user's guide with examples included. This is now supplemented by a report produced under the current project (Ref. 2) describing the changes to the VCL since the updated 1979 report including CRT plot presentation.

### 2.3 PLOTCS Postprocessor

The PLOTCS is designed to accept a special plot file produced by either the MVMA or the HSRI Version of the 3-D CVS (Ref. 8) together with interactive user instructions. It produces CRT displays of the ellipsoidal man in the vehicle for one or more time frames viewed from a point chosen by the user. This feature is especially useful when a hard copy device is available to the user.

The documentation for this program is a report (Ref. 1) produced as part of this project which is basically a user's guide with appendices devoted to analytical and programming considerations.

### 2.4 VCLPLOT Postprocessor

The VCLPLOT operates on a file written by either version of the VCL containing information on the plots requested during the VCL run. It was necessary to separate this function from the VCL due to the current structure of plotting services on MCAUTO and the size of the VCL. User information is contained in Reference 2.

### 3.0 SOFTWARE USE ON MCAUTO

The programs exist on McAuto in the form of absolute binary load modules which are accessed by means of a series of procedures described in subsequent sections. This discussion begins with an introduction to procedures on the McAuto system and the naming conventions which have been built into the procedure library developed as part of this project. There follows a detailed discussion of the pertinent procedures which are presented in the form of a table. Finally, a short discussion of how to use any of the procedures concludes this section of the report.

#### 3.1 PROCEDURES AND NAMING CONVENTIONS

A procedure could be described as a pseudo system command programmed from a series of regular system commands making use of string variables. When a procedure is used, it is expanded into the predefined series of system commands after the designated substitutions into the string variables have been made. What is accomplished by using a procedure is to substitute a single command for a sometimes complex series of system commands.

The procedure library often builds names from stems which the user supplies in order to cut down the number of pieces of information which must be specified in order to satisfy the procedure. A particular example is the procedure to submit an MVMA run. The MVMA run requires two data sets and five hold files. The data set first consists of input cards named 100 through 1000 which are read by "MVMAIN". The second consists of input cards named 1001 through 1600 which are read by "MVMAUT". The naming convention requires that the first data set be an unsequenced indirect access file with as name of the form DAXXXX. The second data set has similar requirements with a name of the form DAXXXXB. The XXXX is defined as the data set stem. Each such stem must be alphanumeric and at least one character but not more than four characters in length. The procedure uses the stem further as part of the banner title on the first page of printed output. The stem is also used to create the names of the five hold files used for communications between the three processors of the MVMA and also the postprocessors. Hold file names have "HO" prefixed to the stem and a single character (1,7,8,9, or A) suffixed for uniqueness.



### 3.2 PROCEDURES AVAILABLE FOR THE SIMULATION USER

Table 1 lists the governing procedures for runs of the various processors. These five procedures are the only ones which are necessary for ordinary operation of the software. The overall procedure library also includes additional procedures for compiling program source, obtaining dumps of binary files, etc. A complete list of procedures and calling conventions is recorded in the file named PROCS which also contains a brief description of each entry.

### 3.3 How to Use the Procedure Library

Using any of the procedures consists of issuing a single statement which can exist in either of two forms.

```
/BEGIN (procname, PROCLB, argument one ,..., argument n)
```

or

```
/BEGIN, procname, PROCLB, argument one ,..., argument n.
```

where the procname is as specified in the first column of Table 1 and the arguments are as specified in the second column. Arguments which are irrelevant to the desired run or for which the default is desired can be omitted in one of three ways:

1. By leaving the argument off the end of the list of arguments;
  2. By placing the closing comma next after the preceding comma;
- or
3. By explicitly calling out a later argument.

#### Example 1: Batch Run of MVMA 2-D Model for data sets DAT2D and DAT2DB.

The sequence of commands for this run is :

```
DROP
```

```
ATTACH PROCLB
```

```
/BEGIN, MVMA, PROCLB, T2D.
```

This is the example run contained in Section 4. The first of the commands releases all previously held files in order to remove any chance of interference. The second makes the procedure library available for use while the third uses the proc MVMA with the second

Table 1. Procedures Available

Procedure Name	Summary Argument Name	Discussion
1. MVMA		This procedure forms and submits a batch run on Complex 3 making use of and creating files on Complex 1 to run all three processors of the MVMA.
	QXZI	1 to 4 character stem of the two current data sets DAXXXX and DAXXXXB. Hold files are created or recreated as needed.
	QXMI	This defaults to MA, but could be used to access other versions of the MVMA when available. One or two characters with model processors named MVXXIN, MVXXGO, MVXXUT.
2. BAIL		This procedure runs just MVMAUT to obtain a partial or additional printout from a previous MVMA run. Used mainly when a system error has caused the run of MVMAUT to be skipped in MVMA.
		Same arguments as MVMA in question.
3. VCLB		Submits as a batch run of the VCL on Complex 1.
	HL8	Must be the full name of a hold file MAXXXX8 from a previous MVMA run.
	HL9	Must be the full name of the matching MAXXXX9 file from the same previous run.
	DAT	Name of data deck of VCL commands.
	HL3	Either an additional hold file or a user supplied test data file or omitted.
	HL4	Same as HL3.

Table 1. Procedures Available (continued)

Procedure Name	Summary Argument Name	Discussion
	HL10	Same as HL3.
	HL11	Same as HL3.
	PRT	File for special printout (normally print stream).
	PRU	File for tabular output (normally print stream).
4. VCLPLOT		Initiates interactive run of VCLPLOT post-processor. No arguments.
5. PLOTCS		Initiates interactive run of PLOTCS post-processor. No argument.

format for BEGIN statement (usually the more convenient). The first method of omitting arguments is also used to obtain default of the QXMI parameter to MA which is the only version of the MVMA 2-D Model currently available. The specified parameter "T2D" is the stem for the data set "DAT2D" as explained in Section 3.1. As a result of this batch run, and in addition to normal printout five hold files will be created and left on the number: MAT2D1 (binary plot file), MAT2D7 (binary acceleration tables), MAT2D8 (binary input and tabular output), MAT2D9 (binary tables of contact forces), MAT2DA (binary printer plot file). These files serve as input to the various postprocessors.

Example 2: Batch Run of VCL for MVMA Run in the first example.

The sequence of commands is:

```
DROP
```

```
ATTACH PROCLB
```

```
/BEGIN (VCLB, PROCLB, MAT2D8, MAT2D9, VCLDAT,,,PRA, PRB)
```

This illustrates the first form of the BEGIN statement and the second method of omitting arguments in order to leave out the unneeded arguments HL3, HL4, HL10, and HL11 (see Table 1). The third method could also have been used as follows:

```
/BEGIN (VCLB, PROCLB, MAT2D8, MAT2D9, VCLDAT, PRT=PRA, PRB)
```

In this case, the explicit use of the dummy argument name moves the argument pointer to the argument named.

The file VCLDAT contains VCL commands to read in body part accelerations and to produce both printer plots and PLOT10 plots of these results.

As a result of this run, two print files will be created with names PRA and PRB and a plot file HOVCLP. PRA will contain the printer plots and tabulated results. PRB will contain confirmations and error comments. HOVCLP will serve as input to VCLPLOT to obtain CRT plots.

Example 3: Interactive run to obtain CRT plots from VCL run of the second example.

The sequence of commands is:

DROP

ATTACH PROCLB

/BEGIN, VCLPLOT, PROCLB

This command sequence initiates an interactive run of the VCLPLOT postprocessor. It will ask the user to identify his type of machine and the name of the input file (which defaults to HOVCLP).

Example 4: Interactive run of Ellipsoid Man CRT Plots from the MVMA Run in the first example.

The sequence of commands is:

DROP

ATTACH PROCLB

/BEGIN, PLOTCS, PROCLB.

This command sequence initiates an interactive run of the PLOTCS postprocessor. It will ask many questions. The question about input file should be answered MAT2D1.

Example 5: Batch run to obtain printed tabular output using existing hold files such as those produced during the Example 1 MVMA 2-D run.

The sequence of commands is:

DROP

ATTACH PROCLB

/BEGIN, BAIL, PROCLB, T2D.

The main use of this procedure is to obtain a copy of partial results when an MVMA 2-D run aborts before regular printout. It can also be used with a changed DAT2DB file to obtain different printout from the original if that information was saved during the original run.

#### 4.0 EXAMPLE COMPUTER RUN

This section consists of the output from an example computer run of the MVMA 2-D crash victim simulation model on the McAuto system. The input data for this run are contained in the two files, DAT20 (cards up to 1000) and DAT2DB (output cards). These data describe a 30-mph frontal barrier crash with vehicle interior deformation and a dummy passenger restrained by a knee bolster and torso harness. This data set is described in detail in the MVMA-2D Self-Study Guide (Reference 4).

MONSIEUR LE DIRECTEUR GÉNÉRAL

AN	MOIS	RENTES	INTÉRÊTS	PROFITS	PERTE	NET
1	1	1000	1000	1000	1000	1000
2	2	1000	1000	1000	1000	1000
3	3	1000	1000	1000	1000	1000
4	4	1000	1000	1000	1000	1000
5	5	1000	1000	1000	1000	1000
6	6	1000	1000	1000	1000	1000
7	7	1000	1000	1000	1000	1000
8	8	1000	1000	1000	1000	1000
9	9	1000	1000	1000	1000	1000
10	10	1000	1000	1000	1000	1000
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98	2	1000	1000	1000	1000	1000
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100	4	1000	1000	1000	1000	1000









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ELL-LIMSHIEL	VS SEAT PATTOM
ELL-LIMSHIEL	VS TOEBOARD
ELL-LIMSHIP	VS BACK LINK
ELL-LIMSHIP	VS CUSHION LINK 1
ELL-LIMSHMO	VS KNEE/PAL LINK
ELL-LIMSHALE	VS KNEE/PAL LINK
ELL-LIMSHIGH	VS CUSHION LINK 1
ELL-LIMSHIGH	VS CUSHION LINK 2
ELL-LIMSHORAX	VS BACK LINK
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SYMBOL	TERMINATION	SYMBOL
1	HEAD C.G.	
2	UPPER BACK JOINT	
3	LOWER BACK JOINT	
4	UPPER THORAX C.G.	
5	UPPER SPINE JOINT	
6	LOWER SPINE JOINT	
7	HIP JOINT	
8	KNEE	
9	LOWER LEG C.G.	
10	SHOULDER AT TORSO	
11	SHOULDER AT ARM	
12	ELBOW	
13	LOWER ARM C.G.	
14	FOAM FILLER PTF	
15	ZERO COND-LINES	
16	HEAD	A
17	THORAX	B
18	HIP	C
19	THIGH	D
20	KNEE	E
21	SHANK	F
22	HEEL	G
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25	HAND	J
26	SEAT BACK	K
27	SEAT CUSHION	L
28	ELBOW	M
29	TOE PAD	N
30	KNEE PAD	O
31	HEEL	P
32	STANDARD BELT	Q

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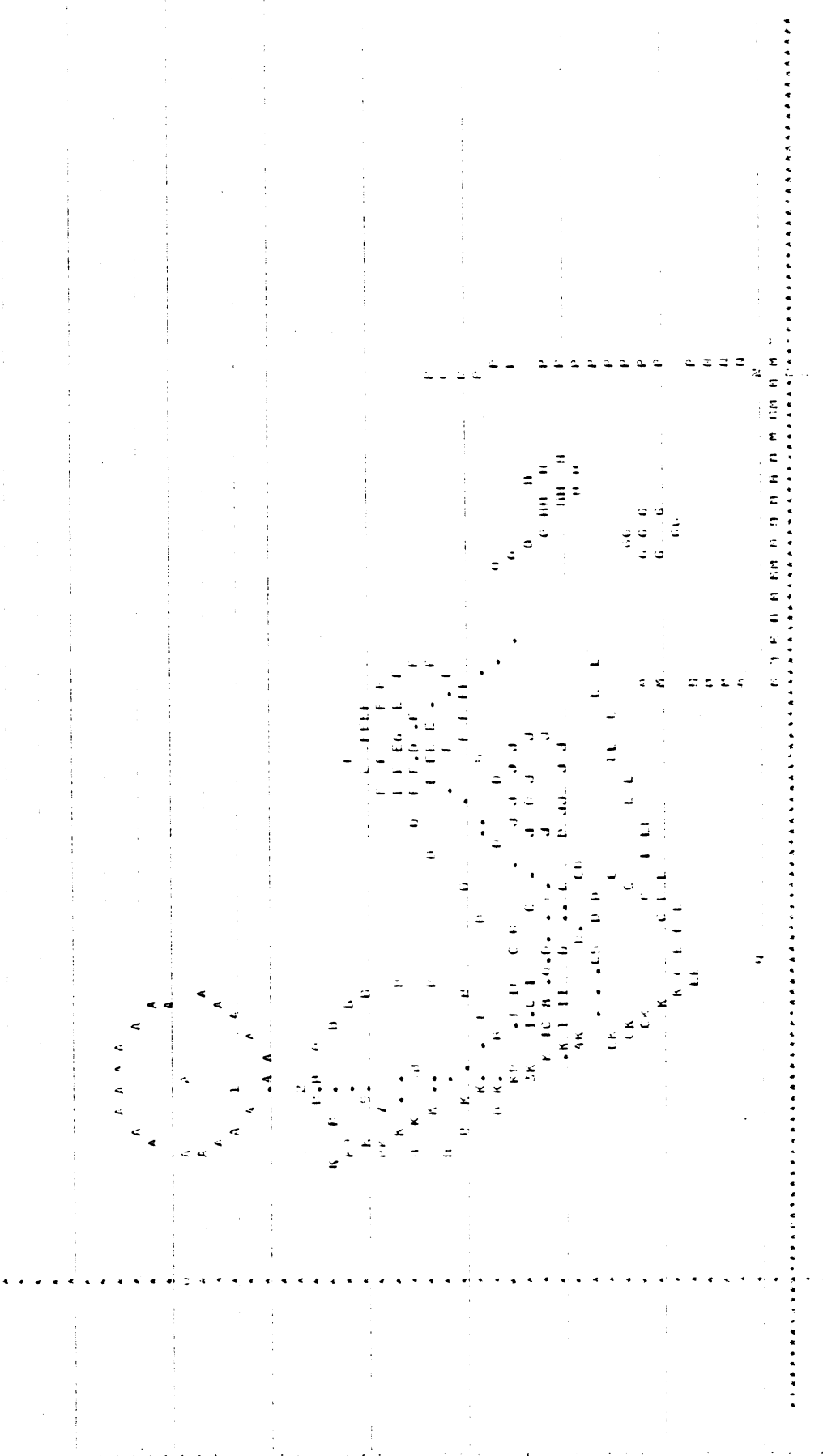
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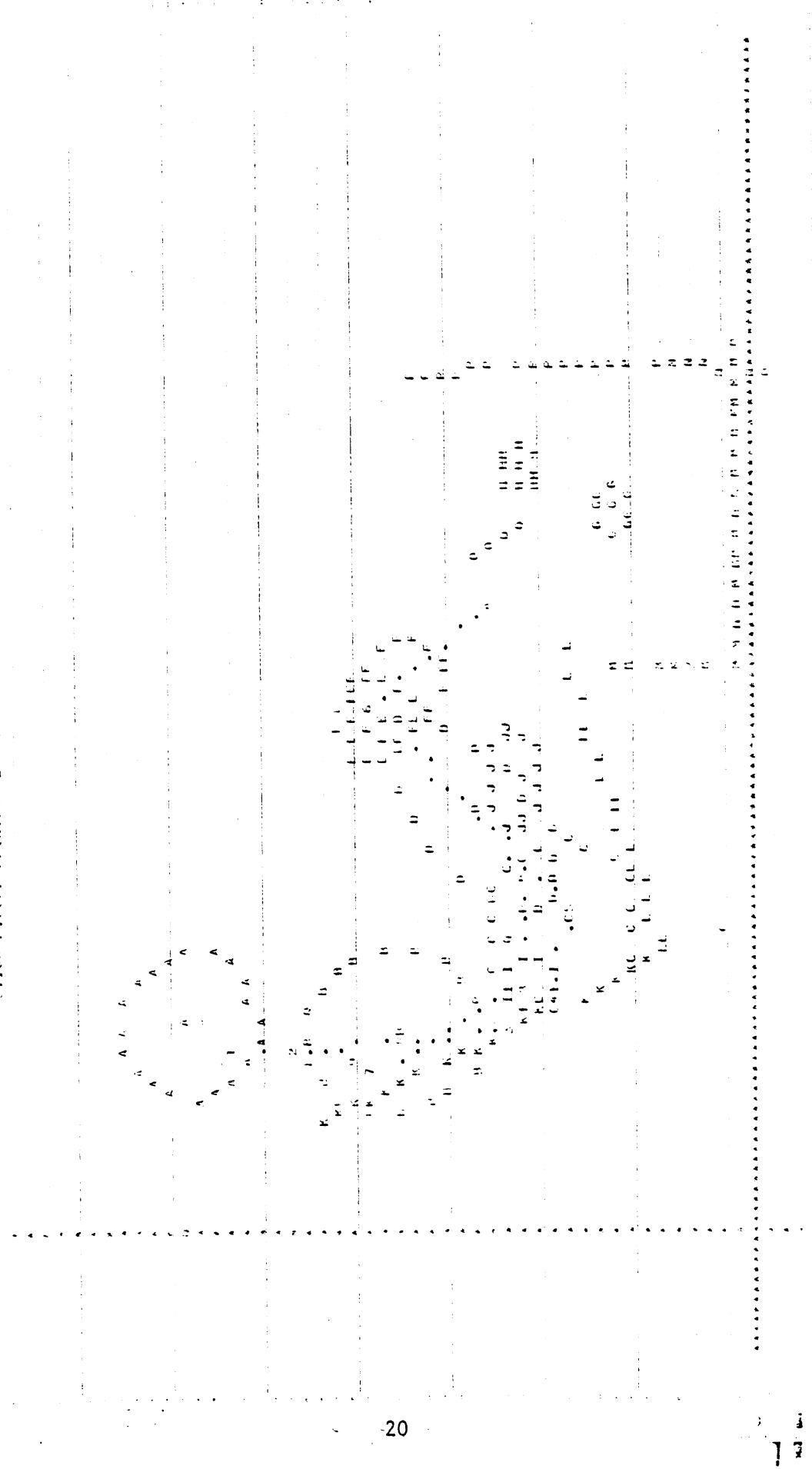
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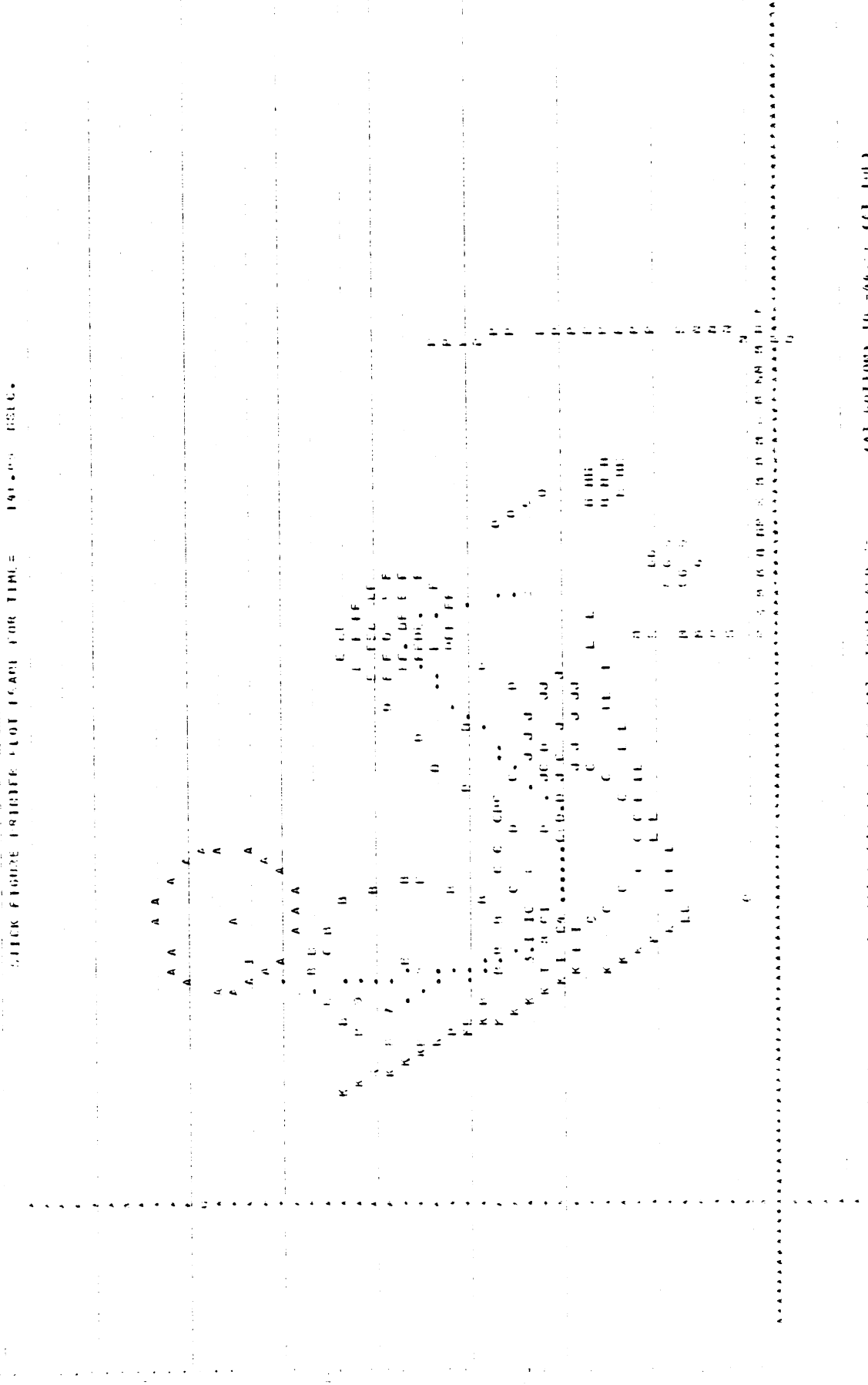
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CARD 111-40

AVFA 2-D TUGSKIAL KAMPUL #2  
 OCC. COM. DISPI. 3 MII FRONT BARKLE FOUCI-116. HAPNUS. NO LAY TULL

CARD 111-40



RECEIVED AT BUREAU OF AERONAUTICS

WASHINGTON, D.C.

FEBRUARY 21 1948

COMMUNICATIONS SECTION

FROM: SAC, WASHINGTON (100-44889)

TO: SAC, NEW YORK (100-2424)

RE: MURKIN (NY 100-17830)

NY 100-17830

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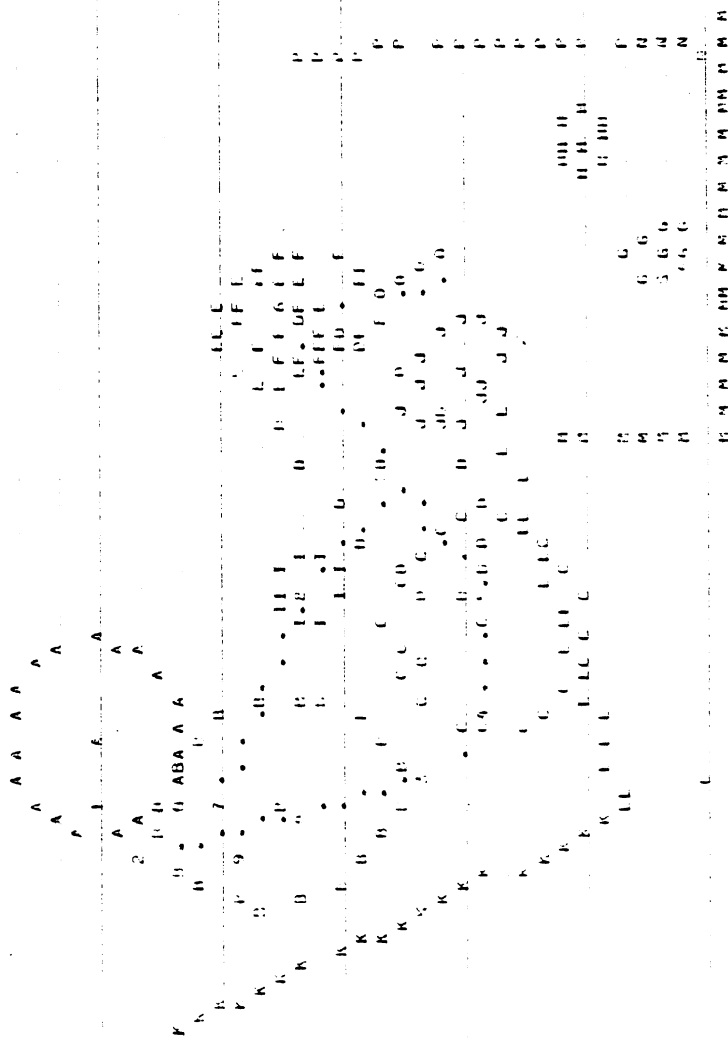
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05/07/11 21.30.59

CHARGE TO THE DUNDEE QUALIFICATION DATA

KBEI 1A1

FMEA 2-D TUTORIAL EXERCISE #2

PAGE 183-45

DO NOT PRINT

SLICK FIGURE PRINTING NOT PRINT FOR TIME 50.0 PAGE.

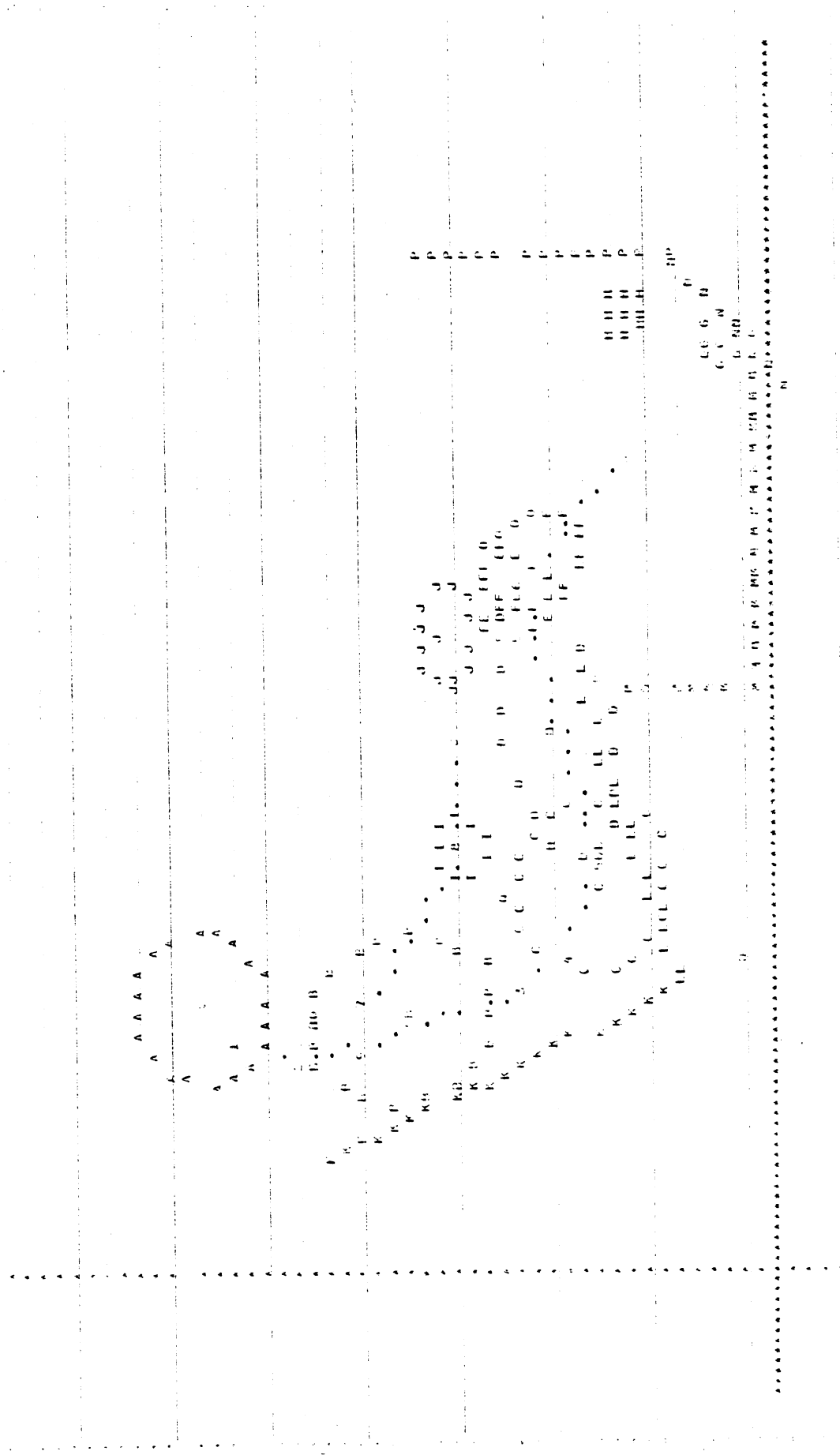


COPIES OF THE ORIGINAL DATA ARE AVAILABLE TO THE QUALIFICATION DATA QUALIFICATION GROUP AT BOTTOM TO 99.0 OF THE  
THE ORIGINAL DATA ARE AVAILABLE TO THE QUALIFICATION DATA QUALIFICATION GROUP AT BOTTOM TO 99.0 OF THE

2-E TUTORIAL EXERCISE 2-E

STICK FIGURE FRONT VIEW FROM LEFT

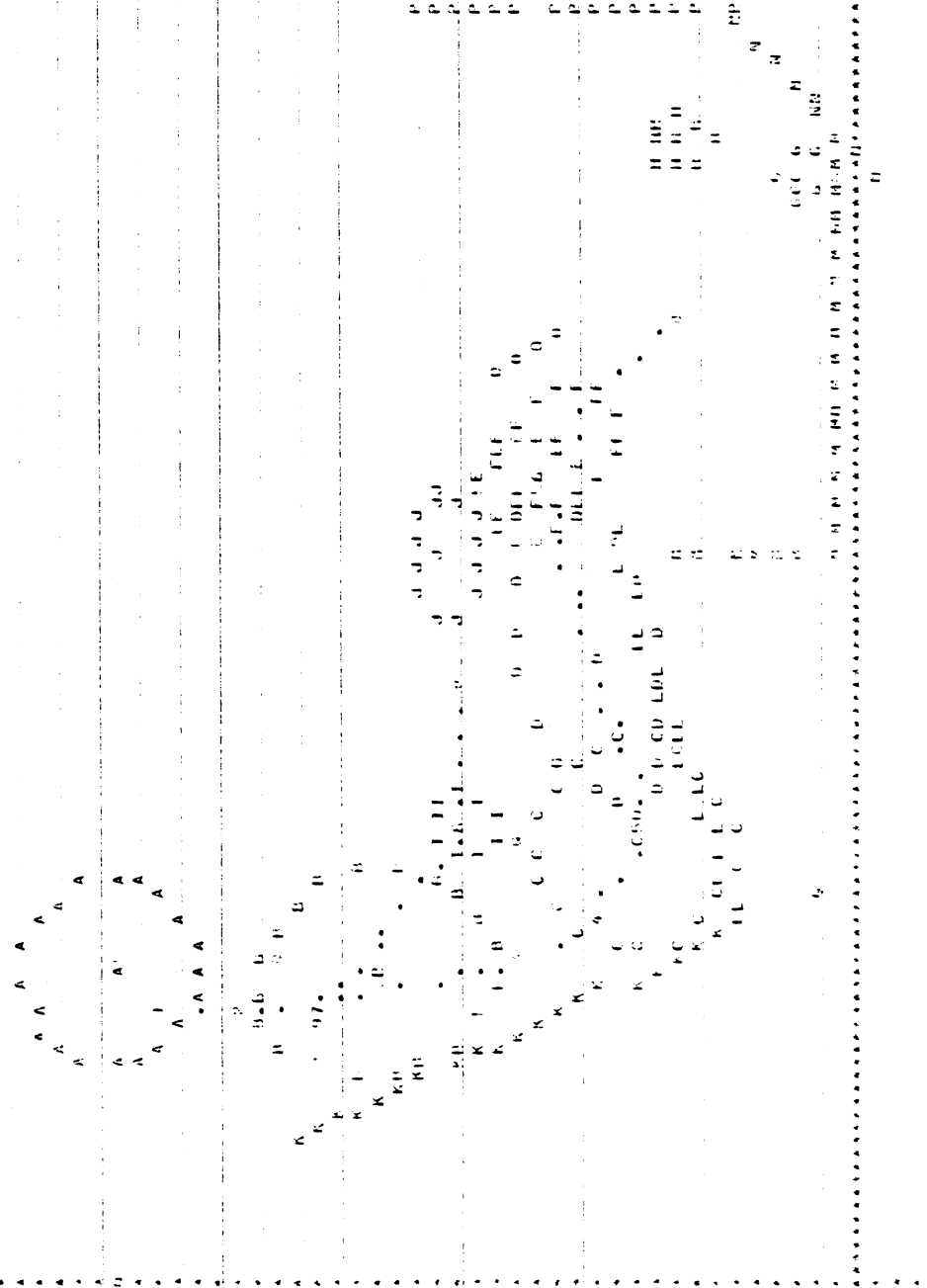
30.00 MIN



CONSTRUCTION OF THE STICK FIGURE FRONT VIEW FROM LEFT. THE FIGURE IS DRAWN TO SCALE. THE DIMENSIONS ARE: HEAD HEIGHT 10.00, HEAD WIDTH 10.00, NECK HEIGHT 5.00, NECK WIDTH 5.00, CHEST HEIGHT 15.00, CHEST WIDTH 20.00, WAIST HEIGHT 10.00, WAIST WIDTH 15.00, HIP HEIGHT 10.00, HIP WIDTH 20.00, LEG LENGTH 30.00, FOOT LENGTH 10.00, FOOT WIDTH 5.00. THE FIGURE IS DRAWN TO SCALE. THE DIMENSIONS ARE: HEAD HEIGHT 10.00, HEAD WIDTH 10.00, NECK HEIGHT 5.00, NECK WIDTH 5.00, CHEST HEIGHT 15.00, CHEST WIDTH 20.00, WAIST HEIGHT 10.00, WAIST WIDTH 15.00, HIP HEIGHT 10.00, HIP WIDTH 20.00, LEG LENGTH 30.00, FOOT LENGTH 10.00, FOOT WIDTH 5.00.



STICK FIGURE PRINTER PLOT FRAME FOR TIME 20.00 NSFC.



03/09/11 14:50:44  
 63 HYDRO II TURBY OSCILLATORY DATA      REF: BAR      NMEA 2-0 JOURNAL : XAVLI #2      PAGE 96-99  
 OCC. COM. DIST.      3 MPH FRONT BARRIER FORCI-LIN. HARDL:      NO LAF (LAT)

STICK FIGURE (PICTER PLOT FRAME FOR TIME 19.000000)

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A A
A A A
A A
A A
A
A A
A A A
A
L L L L L
O . O P B
K K b . . B
K H . . B
K K . . B
K K . . B
K K . . B
K B . . R I I I J J J J J
K F . . J . J . I . . J J J J
K L B . . I I . . J J J J
K K . . U . . B B B D I D F F F F O
K K . . C C C C . . L F D C L F O
K K . . C C . . L L L L L L
K C . . . C . . L L L L L L L L L L
K C . . . . . . C C . . L L L F F F
K . . . . . . L L L L L L L L
K . . . . . . L L L L L L L L
K L L L L L L L L L L L L L L L L
K C C C C C
L L L C

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5 G G  
 6 G G  
 6 G G

M  
 1  
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 3

H H H  
 H H H  
 H H H

H  
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 H

G G  
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 G G

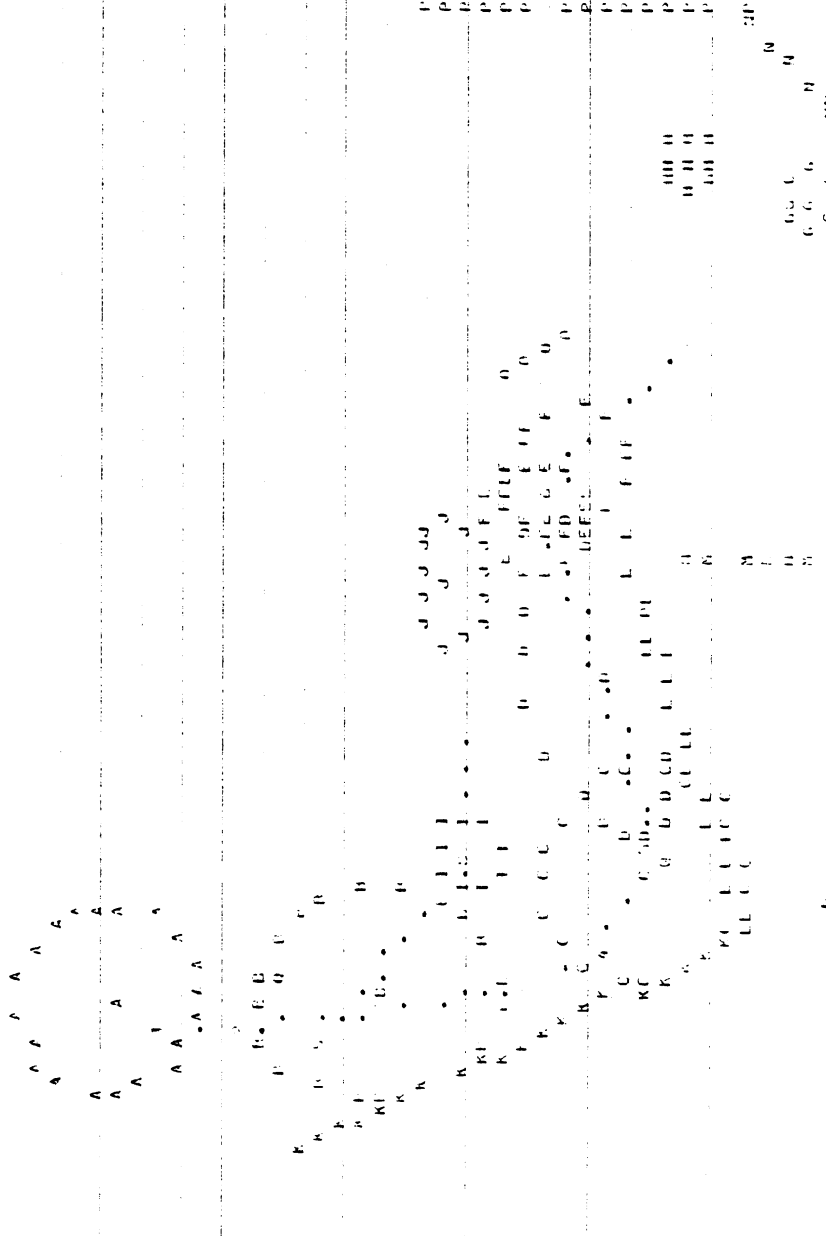
H H H  
 H H H

CONFIDENTIAL - SECURITY INFORMATION - NOT TO BE RELEASED OUTSIDE THE U.S. GOVERNMENT. (ALL INFORMATION IS UNCLASSIFIED UNLESS INDICATED OTHERWISE)





STICK PLOTTED FEEDER PLOT FRAME FOR TIME -J 00.00 ESIC.





TIME	HEAD		RESULTANT		6-F		S-E		RESULTANT		X		Y		RESULTS
	S-I	0-90	1-39	4-99	5-15	16-31	32-46	47-60	61-74	75-88	89-102	103-116	117-130	131-144	
1	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
2	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
3	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
4	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
5	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
6	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
7	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
8	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
9	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
10	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
11	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
12	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
13	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
14	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
15	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
16	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
17	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
18	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
19	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
20	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
21	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
22	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
23	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
24	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
25	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
26	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
27	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
28	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
29	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719
30	11.14	-1.19	2.421	15.338	2.675	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719	15.719

AREA 2-B INTERNAL EXAMPLE #2  
ACC. COMP. 91391. 3 MCH FRONT CAPTIVE FORCE-LIM. MEAS. (L) (R)  
116 PASS. FROM STROBE TO KRF 1.0013 1161A

AREA 2-B INTERNAL EXAMPLE #2  
ACC. COMP. 91391. 3 MCH FRONT CAPTIVE FORCE-LIM. MEAS. (L) (R)  
116 PASS. FROM STROBE TO KRF 1.0013 1161A

AREA 2-B INTERNAL EXAMPLE #2  
ACC. COMP. 91391. 3 MCH FRONT CAPTIVE FORCE-LIM. MEAS. (L) (R)  
116 PASS. FROM STROBE TO KRF 1.0013 1161A

AREA 2-B INTERNAL EXAMPLE #2  
ACC. COMP. 91391. 3 MCH FRONT CAPTIVE FORCE-LIM. MEAS. (L) (R)  
116 PASS. FROM STROBE TO KRF 1.0013 1161A

TIME	AXIAL FT	SHOUL KNEE	AXIAL FT	AXIAL KNEE	AXIAL FT	AXIAL FT
12.3	8.6	6.9	8.7	8.7	8.7	8.7
12.4	8.1	7.0	8.0	8.0	8.0	8.0
12.5	7.4	6.6	7.4	7.4	7.4	7.4
12.6	6.7	6.2	6.7	6.7	6.7	6.7
12.7	6.0	5.8	6.0	6.0	6.0	6.0
12.8	5.3	5.4	5.3	5.3	5.3	5.3
12.9	4.6	5.0	4.6	4.6	4.6	4.6
13.0	3.9	4.6	3.9	3.9	3.9	3.9
13.1	3.2	4.2	3.2	3.2	3.2	3.2
13.2	2.5	3.8	2.5	2.5	2.5	2.5
13.3	1.8	3.4	1.8	1.8	1.8	1.8
13.4	1.1	3.0	1.1	1.1	1.1	1.1
13.5	0.4	2.6	0.4	0.4	0.4	0.4
13.6	-0.3	2.2	-0.3	-0.3	-0.3	-0.3
13.7	-1.0	1.8	-1.0	-1.0	-1.0	-1.0
13.8	-1.7	1.4	-1.7	-1.7	-1.7	-1.7
13.9	-2.4	1.0	-2.4	-2.4	-2.4	-2.4
14.0	-3.1	0.6	-3.1	-3.1	-3.1	-3.1
14.1	-3.8	0.2	-3.8	-3.8	-3.8	-3.8
14.2	-4.5	-0.2	-4.5	-4.5	-4.5	-4.5
14.3	-5.2	-0.6	-5.2	-5.2	-5.2	-5.2
14.4	-5.9	-1.0	-5.9	-5.9	-5.9	-5.9
14.5	-6.6	-1.4	-6.6	-6.6	-6.6	-6.6
14.6	-7.3	-1.8	-7.3	-7.3	-7.3	-7.3
14.7	-8.0	-2.2	-8.0	-8.0	-8.0	-8.0
14.8	-8.7	-2.6	-8.7	-8.7	-8.7	-8.7
14.9	-9.4	-3.0	-9.4	-9.4	-9.4	-9.4
15.0	-10.1	-3.4	-10.1	-10.1	-10.1	-10.1
15.1	-10.8	-3.8	-10.8	-10.8	-10.8	-10.8
15.2	-11.5	-4.2	-11.5	-11.5	-11.5	-11.5
15.3	-12.2	-4.6	-12.2	-12.2	-12.2	-12.2
15.4	-12.9	-5.0	-12.9	-12.9	-12.9	-12.9
15.5	-13.6	-5.4	-13.6	-13.6	-13.6	-13.6
15.6	-14.3	-5.8	-14.3	-14.3	-14.3	-14.3
15.7	-15.0	-6.2	-15.0	-15.0	-15.0	-15.0
15.8	-15.7	-6.6	-15.7	-15.7	-15.7	-15.7
15.9	-16.4	-7.0	-16.4	-16.4	-16.4	-16.4
16.0	-17.1	-7.4	-17.1	-17.1	-17.1	-17.1
16.1	-17.8	-7.8	-17.8	-17.8	-17.8	-17.8
16.2	-18.5	-8.2	-18.5	-18.5	-18.5	-18.5
16.3	-19.2	-8.6	-19.2	-19.2	-19.2	-19.2
16.4	-19.9	-9.0	-19.9	-19.9	-19.9	-19.9
16.5	-20.6	-9.4	-20.6	-20.6	-20.6	-20.6
16.6	-21.3	-9.8	-21.3	-21.3	-21.3	-21.3
16.7	-22.0	-10.2	-22.0	-22.0	-22.0	-22.0
16.8	-22.7	-10.6	-22.7	-22.7	-22.7	-22.7
16.9	-23.4	-11.0	-23.4	-23.4	-23.4	-23.4
17.0	-24.1	-11.4	-24.1	-24.1	-24.1	-24.1
17.1	-24.8	-11.8	-24.8	-24.8	-24.8	-24.8
17.2	-25.5	-12.2	-25.5	-25.5	-25.5	-25.5
17.3	-26.2	-12.6	-26.2	-26.2	-26.2	-26.2
17.4	-26.9	-13.0	-26.9	-26.9	-26.9	-26.9
17.5	-27.6	-13.4	-27.6	-27.6	-27.6	-27.6
17.6	-28.3	-13.8	-28.3	-28.3	-28.3	-28.3
17.7	-29.0	-14.2	-29.0	-29.0	-29.0	-29.0
17.8	-29.7	-14.6	-29.7	-29.7	-29.7	-29.7
17.9	-30.4	-15.0	-30.4	-30.4	-30.4	-30.4
18.0	-31.1	-15.4	-31.1	-31.1	-31.1	-31.1
18.1	-31.8	-15.8	-31.8	-31.8	-31.8	-31.8
18.2	-32.5	-16.2	-32.5	-32.5	-32.5	-32.5
18.3	-33.2	-16.6	-33.2	-33.2	-33.2	-33.2
18.4	-33.9	-17.0	-33.9	-33.9	-33.9	-33.9
18.5	-34.6	-17.4	-34.6	-34.6	-34.6	-34.6
18.6	-35.3	-17.8	-35.3	-35.3	-35.3	-35.3
18.7	-36.0	-18.2	-36.0	-36.0	-36.0	-36.0
18.8	-36.7	-18.6	-36.7	-36.7	-36.7	-36.7
18.9	-37.4	-19.0	-37.4	-37.4	-37.4	-37.4
19.0	-38.1	-19.4	-38.1	-38.1	-38.1	-38.1
19.1	-38.8	-19.8	-38.8	-38.8	-38.8	-38.8
19.2	-39.5	-20.2	-39.5	-39.5	-39.5	-39.5
19.3	-40.2	-20.6	-40.2	-40.2	-40.2	-40.2
19.4	-40.9	-21.0	-40.9	-40.9	-40.9	-40.9
19.5	-41.6	-21.4	-41.6	-41.6	-41.6	-41.6
19.6	-42.3	-21.8	-42.3	-42.3	-42.3	-42.3
19.7	-43.0	-22.2	-43.0	-43.0	-43.0	-43.0
19.8	-43.7	-22.6	-43.7	-43.7	-43.7	-43.7
19.9	-44.4	-23.0	-44.4	-44.4	-44.4	-44.4
20.0	-45.1	-23.4	-45.1	-45.1	-45.1	-45.1

19

CENTER OF GRAVITY EXHAUST-FORCE RESULTANT COMPONENTS (LIB-LEB)											
TILE	ISAL	DI 10P30	DI 10P30	DI 10P30	DI 10S 0	OFF N LEB	TOBER LEB	OFFER AWP	LOSER ARM	APPLIED HEAD	
										FORCE COMPONENT	
1	1	1	1	1	1	1	1	1	1	1	
2	1	1	1	1	1	1	1	1	1	1	
3	1	1	1	1	1	1	1	1	1	1	
4	1	1	1	1	1	1	1	1	1	1	
5	1	1	1	1	1	1	1	1	1	1	
6	1	1	1	1	1	1	1	1	1	1	
7	1	1	1	1	1	1	1	1	1	1	
8	1	1	1	1	1	1	1	1	1	1	
9	1	1	1	1	1	1	1	1	1	1	
10	1	1	1	1	1	1	1	1	1	1	
11	1	1	1	1	1	1	1	1	1	1	
12	1	1	1	1	1	1	1	1	1	1	
13	1	1	1	1	1	1	1	1	1	1	
14	1	1	1	1	1	1	1	1	1	1	
15	1	1	1	1	1	1	1	1	1	1	
16	1	1	1	1	1	1	1	1	1	1	
17	1	1	1	1	1	1	1	1	1	1	
18	1	1	1	1	1	1	1	1	1	1	
19	1	1	1	1	1	1	1	1	1	1	
20	1	1	1	1	1	1	1	1	1	1	
21	1	1	1	1	1	1	1	1	1	1	
22	1	1	1	1	1	1	1	1	1	1	
23	1	1	1	1	1	1	1	1	1	1	
24	1	1	1	1	1	1	1	1	1	1	
25	1	1	1	1	1	1	1	1	1	1	
26	1	1	1	1	1	1	1	1	1	1	
27	1	1	1	1	1	1	1	1	1	1	
28	1	1	1	1	1	1	1	1	1	1	
29	1	1	1	1	1	1	1	1	1	1	
30	1	1	1	1	1	1	1	1	1	1	
31	1	1	1	1	1	1	1	1	1	1	
32	1	1	1	1	1	1	1	1	1	1	
33	1	1	1	1	1	1	1	1	1	1	
34	1	1	1	1	1	1	1	1	1	1	
35	1	1	1	1	1	1	1	1	1	1	
36	1	1	1	1	1	1	1	1	1	1	
37	1	1	1	1	1	1	1	1	1	1	
38	1	1	1	1	1	1	1	1	1	1	
39	1	1	1	1	1	1	1	1	1	1	
40	1	1	1	1	1	1	1	1	1	1	
41	1	1	1	1	1	1	1	1	1	1	
42	1	1	1	1	1	1	1	1	1	1	
43	1	1	1	1	1	1	1	1	1	1	
44	1	1	1	1	1	1	1	1	1	1	
45	1	1	1	1	1	1	1	1	1	1	
46	1	1	1	1	1	1	1	1	1	1	
47	1	1	1	1	1	1	1	1	1	1	
48	1	1	1	1	1	1	1	1	1	1	
49	1	1	1	1	1	1	1	1	1	1	
50	1	1	1	1	1	1	1	1	1	1	
51	1	1	1	1	1	1	1	1	1	1	
52	1	1	1	1	1	1	1	1	1	1	
53	1	1	1	1	1	1	1	1	1	1	
54	1	1	1	1	1	1	1	1	1	1	
55	1	1	1	1	1	1	1	1	1	1	
56	1	1	1	1	1	1	1	1	1	1	
57	1	1	1	1	1	1	1	1	1	1	
58	1	1	1	1	1	1	1	1	1	1	
59	1	1	1	1	1	1	1	1	1	1	
60	1	1	1	1	1	1	1	1	1	1	
61	1	1	1	1	1	1	1	1	1	1	
62	1	1	1	1	1	1	1	1	1	1	
63	1	1	1	1	1	1	1	1	1	1	
64	1	1	1	1	1	1	1	1	1	1	
65	1	1	1	1	1	1	1	1	1	1	
66	1	1	1	1	1	1	1	1	1	1	
67	1	1	1	1	1	1	1	1	1	1	
68	1	1	1	1	1	1	1	1	1	1	
69	1	1	1	1	1	1	1	1	1	1	
70	1	1	1	1	1	1	1	1	1	1	
71	1	1	1	1	1	1	1	1	1	1	
72	1	1	1	1	1	1	1	1	1	1	
73	1	1	1	1	1	1	1	1	1	1	
74	1	1	1	1	1	1	1	1	1	1	
75	1	1	1	1	1	1	1	1	1	1	
76	1	1	1	1	1	1	1	1	1	1	
77	1	1	1	1	1	1	1	1	1	1	
78	1	1	1	1	1	1	1	1	1	1	
79	1	1	1	1	1	1	1	1	1	1	
80	1	1	1	1	1	1	1	1	1	1	
81	1	1	1	1	1	1	1	1	1	1	
82	1	1	1	1	1	1	1	1	1	1	
83	1	1	1	1	1	1	1	1	1	1	
84	1	1	1	1	1	1	1	1	1	1	
85	1	1	1	1	1	1	1	1	1	1	
86	1	1	1	1	1	1	1	1	1	1	
87	1	1	1	1	1	1	1	1	1	1	
88	1	1	1	1	1	1	1	1	1	1	
89	1	1	1	1	1	1	1	1	1	1	
90	1	1	1	1	1	1	1	1	1	1	
91	1	1	1	1	1	1	1	1	1	1	
92	1	1	1	1	1	1	1	1	1	1	
93	1	1	1	1	1	1	1	1	1	1	
94	1	1	1	1	1	1	1	1	1	1	
95	1	1	1	1	1	1	1	1	1	1	
96	1	1	1	1	1	1	1	1	1	1	
97	1	1	1	1	1	1	1	1	1	1	
98	1	1	1	1	1	1	1	1	1	1	
99	1	1	1	1	1	1	1	1	1	1	
100	1	1	1	1	1	1	1	1	1	1	

352 6/11 21-22-61  
 6. HOPED 11 BERRY COTT. PRIMARY DATA FBEE MAP 3 MIL 2-0 TOTAL EXERCISE #2  
 DEC. COND. U.S.M.L. 5 MPH FRONT BARRIER FORCE-LIM. HANGES DO LAT BUT PAGE 50-51

COMPLETIONS - DAYS 2-COMPLETION OF ORIGINAL FORCE

TIME	LEAD	OF FORCE	TIME TOPSD	LOC TOPSD	OFFER LEG	LOWER LEG	UPPER ARM	LOWER ARM	RELATIVE TO INITIAL LEAD	APPLIC. HEAD FORCE COMPONENT
00	0.00	-0.354	0.000	-175.854	0.000	0.000	0.000	0.000	0.000	0.000
05	0.000	-55.266	0.000	-145.538	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	-11.876	0.000	-147.669	-33.175	0.000	0.000	0.000	0.000	0.000
15	0.000	11.559	0.000	-165.372	-32.779	-9.574	0.000	0.000	0.000	0.000
21	0.000	43.506	0.000	-159.879	-36.614	-16.531	0.000	0.000	0.000	0.000
25	0.000	506.814	0.000	-198.885	-51.957	-59.692	0.000	0.000	0.000	0.000
30	0.000	526.401	0.000	-217.611	-65.984	-71.735	0.000	0.000	0.000	0.000
35	0.000	401.433	0.000	-237.176	-105.461	-138.423	0.000	0.000	0.000	0.000
40	0.000	413.077	0.000	-256.277	-91.270	-91.126	0.000	0.000	0.000	0.000
45	0.000	558.135	0.000	-337.165	-117.549	-49.412	0.000	0.000	0.000	0.000
50	0.000	69.182	0.000	-471.306	5.272	63.393	0.000	0.000	0.000	0.000
55	0.000	-278.261	0.000	-592.396	155.822	-317.816	0.000	44.836	0.000	0.000
60	0.000	-69.184	0.000	-635.813	49.648	-662.478	0.000	150.848	0.000	0.000
65	0.000	-525.282	0.000	-612.885	-27.698	-463.451	0.000	350.775	0.000	0.000
70	0.000	-895.313	0.000	-592.432	-16.998	299.794	0.000	344.739	0.000	0.000
75	0.000	-68.826	0.000	-1524.601	5.272	44.924	0.000	4.930	0.000	0.000
80	0.000	-112.027	0.000	-367.962	0.000	0.000	0.000	0.000	0.000	0.000
85	0.000	581.110	0.000	-382.891	0.000	0.000	0.000	0.000	0.000	0.000
90	0.000	697.717	0.000	-722.110	0.000	0.000	0.000	0.000	0.000	0.000
95	0.000	773.374	0.000	-125.827	0.000	0.000	0.000	0.000	0.000	0.000
100	0.000	699.036	0.000	-95.329	0.000	0.000	0.000	0.000	-26.834	0.000
105	0.000	616.396	0.000	4.869	2.919	0.211	0.000	-52.334	0.000	0.000
110	0.000	476.091	0.000	0.000	0.000	0.000	0.000	-79.823	0.000	0.000
115	0.000	122.619	0.000	0.000	0.000	49.705	0.000	-75.992	0.000	0.000
120	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-50.961	0.000	0.000
125	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
185	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
190	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
195	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

6X HYDRO II BUDY COEFFICIENTARY DATA

ACC. COEF. DIRPL. 5 MPH TEST PASSEIR FORCE-LIM. HAPRES: CC-LAP-BELI

CENTER-OI-DAYS X-COMPONENT EXTERNAL FORCES (UP)

(RELATIVE TO INITIAL FRAME)

TIME HEAD OF TOP50 EID TORSE LOW TOP50 OFFER LEG LOVF LEG UPPER ARM LOWER ARM APPLIED HEAD FORCE COMPONENT

TIME	HEAD	OF TOP50	EID TORSE	LOW TOP50	OFFER LEG	LOVF LEG	UPPER ARM	LOWER ARM	APPLIED HEAD FORCE COMPONENT
5.0	0.000	3.40	0.000	-50.190	-12.291	0.000	0.000	0.990	0.990
5.2	0.000	-43.837	0.000	-119.453	-22.294	-7.175	0.000	-3.000	0.000
10.0	0.000	-493.395	0.000	-159.559	-26.356	-7.446	0.000	0.000	0.000
10.2	0.000	-641.940	0.000	-198.412	-31.159	-10.649	0.000	0.000	0.000
10.4	0.000	-901.632	0.000	-214.770	-32.981	-28.974	0.000	0.000	0.000
20.0	0.000	-1213.911	0.000	-253.646	-35.549	-31.514	0.000	0.000	0.000
20.2	0.000	-1376.053	0.000	-297.693	-39.967	-24.978	0.000	0.000	0.000
30.0	0.000	-1522.350	0.000	-353.640	-40.956	-19.472	0.000	0.000	0.000
30.2	0.000	-1556.954	0.000	-417.229	-47.790	-670.110	0.000	0.000	0.000
40.0	0.000	-1574.612	0.000	-421.977	-46.663	-366.360	0.000	0.000	0.000
50.0	0.000	-1545.977	0.000	-476.395	-47.348	-473.402	0.000	0.000	0.000
50.2	0.000	-1496.770	0.000	-527.739	-45.576	-274.174	0.000	-24.796	0.000
60.0	0.000	-1340.168	0.000	-359.160	-47.584	-3017.543	0.000	-277.521	0.000
60.2	0.000	-1378.894	0.000	-3917.113	-13.655	-232.675	0.000	-252.383	0.000
70.0	0.000	-1398.561	0.000	-5710.753	-3.317	-400.919	0.000	-733.432	0.000
70.2	0.000	-1402.259	0.000	-5712.656	0.000	-35.565	0.000	0.000	0.000
80.0	0.000	-1470.746	0.000	-739.150	0.000	0.000	0.000	0.000	0.000
80.2	0.000	-1441.115	0.000	-77.677	0.000	0.000	0.000	0.000	0.000
90.0	0.000	-1195.213	0.000	53.038	0.000	0.000	0.000	0.000	0.000
90.2	0.000	-915.623	0.000	-10.927	0.000	0.000	0.000	0.000	0.000
100.0	0.000	-583.463	0.000	-1.910	0.000	0.000	0.000	0.000	0.000
110.0	0.000	-297.732	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110.2	0.000	-17.757	0.000	0.000	0.000	0.000	0.000	0.000	0.000
115.0	0.000	-29.736	0.000	0.000	0.000	0.000	0.000	0.000	0.000
120.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
125.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
185.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
190.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
195.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
200.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000



NECK PIVOTION FORCES  
 IN HEAD, NECK, AND UPPER TORSO SYSTEMS

TIME CODE	NECK JOINT FORCES (N)				NECK JOINT FORCES (LBS)				NECK JOINT FORCES (KG)			
	DEAR ON NECK	COMB RESI ON NECK	DEAR ON HEAD	COMB RESI ON HEAD	DEAR ON NECK	COMB RESI ON NECK	DEAR ON HEAD	COMB RESI ON HEAD	DEAR ON NECK	COMB RESI ON NECK	DEAR ON HEAD	COMB RESI ON HEAD
0001	26.25	3.59	25.16	-1.29	5.89	16.37	10.33	-0.3	13.59	7.18	7.18	7.18
0002	6.15	-1.69	7.53	-14.96	7.53	6.58	77.94	17.38	17.38	17.38	17.38	17.38
0003	-2.78	-2.28	34.53	-22.72	12.54	-41.33	133.04	-18.24	-18.24	-18.24	-18.24	-18.24
0004	4.15	-91.61	71.15	-17.89	13.96	-115.93	164.37	-77.35	-77.35	-77.35	-77.35	-77.35
0005	113.97	-104.15	82.54	-164.53	161.43	-179.69	203.97	-124.64	-124.64	-124.64	-124.64	-124.64
0006	17.79	-17.79	112.58	-295.83	157.71	-214.67	263.71	-123.19	-123.19	-123.19	-123.19	-123.19
0007	192.82	-187.11	149.42	-223.27	243.12	-219.93	315.77	-85.25	-85.25	-85.25	-85.25	-85.25
0008	13.59	-13.59	140.59	-279.91	250.21	-215.92	317.08	-53.18	-53.18	-53.18	-53.18	-53.18
0009	122.72	-113.77	122.29	-146.82	192.66	-139.21	237.62	-1.68	-1.68	-1.68	-1.68	-1.68
0010	175.99	-8.77	125.96	-97.91	167.91	-16.24	136.98	97.97	97.97	97.97	97.97	97.97
0011	122.65	57.48	142.66	6.96	172.71	61.92	91.96	165.77	165.77	165.77	165.77	165.77
0012	144.81	76.56	163.48	19.94	223.33	88.18	171.11	215.17	215.17	215.17	215.17	215.17
0013	341.11	13.64	295.69	-85.44	354.89	-55.39	281.77	-295.62	-295.62	-295.62	-295.62	-295.62
0014	3.54	-7.39	263.39	-263.39	473.73	-56.53	3.15	267.95	267.95	267.95	267.95	267.95
0015	338.59	-11.87	213.4	-236.86	447.76	-116.61	338.58	-311.81	-311.81	-311.81	-311.81	-311.81
0016	317.33	-2.91	262.15	-17.29	364.37	-20.86	167.68	236.17	236.17	236.17	236.17	236.17
0017	333.37	13.42	244.14	-114.94	351.39	-11.75	13.49	211.53	211.53	211.53	211.53	211.53
0018	194.69	-9.13	176.17	-73.17	164.82	-14.46	93.14	136.21	136.21	136.21	136.21	136.21
0019	91.92	13.69	73.84	-25.14	91.19	-24.77	47.48	63.69	63.69	63.69	63.69	63.69
0020	7.64	-13.16	44.33	-11.13	71.13	-38.34	73.85	4.16	4.16	4.16	4.16	4.16
0021	79.17	-33.23	41.22	-77.27	63.92	-53.12	92.23	35.91	35.91	35.91	35.91	35.91
0022	39.85	-9.52	29.91	-23.13	34.82	-9.65	31.86	26.78	26.78	26.78	26.78	26.78
0023	41.17	-1.67	33.41	-97.49	40.13	-29.64	93.61	11.29	11.29	11.29	11.29	11.29
0024	73.85	-9.13	25.94	-97.64	65.72	-63.49	85.23	-4.9	-4.9	-4.9	-4.9	-4.9
0025	54.31	-13.53	17.98	-43.11	43.34	-73.21	74.66	-23.91	-23.91	-23.91	-23.91	-23.91
0026	9.76	-4.27	15.19	-71.47	24.74	-47.58	43.32	-23.28	-23.28	-23.28	-23.28	-23.28
0027	11.79	-23.74	17.48	-37.1	6.77	-19.17	15.81	-17.52	-17.52	-17.52	-17.52	-17.52
0028	11.97	-13.27	6.23	-16.74	-4.25	-8.75	-7.5	-4.73	-4.73	-4.73	-4.73	-4.73
0029	6.94	-17.95	-1.61	-17.32	-14.26	-17.89	-7.25	-13.24	-13.24	-13.24	-13.24	-13.24
0030	-5.44	-21.51	-11.53	-18.44	-25.93	-18.79	-17.13	-23.97	-23.97	-23.97	-23.97	-23.97
0031	6.97	-3.13	-3.11	-7.1	-7.1	-7.99	-7.99	-7.99	-7.99	-7.99	-7.99	-7.99
0032	-19.99	-24.59	-12.55	-18.52	-45.68	-24.52	-34.24	-34.24	-34.24	-34.24	-34.24	-34.24
0033	-11.91	-11.91	-13.97	-14.71	-61.81	-15.89	-35.76	-35.76	-35.76	-35.76	-35.76	-35.76
0034	-2.69	-2.69	-31.59	-2.9	-59.41	-24.41	-37.63	-15.41	-15.41	-15.41	-15.41	-15.41
0035	-2.84	11.53	-29.4	93.4	-76.33	21.53	-77.11	1.26	1.26	1.26	1.26	1.26
0036	-63.67	37.01	-16.4	93.49	-113.29	41.81	-117.19	31.73	31.73	31.73	31.73	31.73
0037	-11.65	64.27	-1.51	61.17	-173.7	67.17	-173.7	67.17	67.17	67.17	67.17	67.17
0038	-11.75	56.41	-1.94	54.91	-146.83	42.53	-146.83	42.53	42.53	42.53	42.53	42.53
0039	-66.13	6.97	-6.99	10.13	-117.13	13.74	-117.13	13.74	13.74	13.74	13.74	13.74









8571711. 21.00.29. PART 84-14  
 ON HYBRID IT CURVE (PRELIMINARY DATA) KNOE 648 EMPA 2-D TUTORIAL EXAMPLE #2  
600 COMP. DISPL. 3 MPH FRONT GAFFER FORCE-110. HAI OFF 5 NO LAP PUL  
CONTACT INTERACTION BETWEEN

ELLIPSE TOI ASSURED TO BE RIGID MADE OF DASHMATE  
 AND

LINE DASHLINE WHICH IS AN ELEMENT OF REGION DASH

INITIAL LINE LENGTH = 14.51(10) EDGE COEFFICIENT = 1.000

TIME (MSEC)	LINE (IN)	DEFLECTION (IN)	ELLIPSE (IN)	LINE (IN/SEC)	DEFL. RATE (IN/SEC)	ELLIPSE RATE (IN/SEC)	HORIZONTAL FORCE (LBS)	TANGENTIAL FORCE (LBS)	POSITION (NORTH-SOUTH) (IN)	VELOCITY (IN/SEC)	CONTACT LOCATION IN SPACE			CONTACT LOCATION ON BODY SEG.		
											X (IN)	Y (IN)	Z (IN)	X (IN)	Y (IN)	Z (IN)
5.000	2.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10.000	3.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15.000	4.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20.000	5.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25.000	6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30.000	7.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35.000	8.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40.000	9.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45.000	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50.000	11.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55.000	12.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60.000	13.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65.000	14.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70.000	15.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
75.000	16.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80.000	17.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
85.000	18.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
90.000	19.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
95.000	20.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.000	21.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105.000	22.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110.000	23.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
115.000	24.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
120.000	25.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
125.000	26.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130.000	27.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135.000	28.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140.000	29.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145.000	30.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150.000	31.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155.000	32.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160.000	33.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165.000	34.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170.000	35.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175.000	36.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180.000	37.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
185.000	38.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
190.000	39.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
195.000	40.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
200.000	41.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
205.000	42.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
210.000	43.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
215.000	44.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
220.000	45.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
225.000	46.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
230.000	47.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
235.000	48.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
240.000	49.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
245.000	50.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

ELLIPSE HAND ASSUMED TO BE RIGID  
 LINE KNEEBAR LINE WHICH IS AN ELEMENT OF REGION KNEE BAR MADE OF SHEET METAL

INITIAL LINE LENGTH = 5.53(IN) LOG CONSTANT = .500

TIME (MSEC)	DEFLECTION		DEFL. RATE LINE (IN/SEC)	ELLIPSE RATE (IN/SEC)	NORMAL (LB)	TANGENT (LB)	CONTACT LOCATION ON LINE		CONTACT LOCATION IN SPACE		CONTACT LOCATION ON BODY SEG.	
	LINE (IN)	ELLIPSE (IN)					POSITION (IN)	RATE (IN/SEC)	X (IN)	Z (IN)	X (IN)	Z (IN)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
35.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
45.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
55.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
60.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
65.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
105.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
110.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
115.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
120.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
125.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
130.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
135.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
140.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
145.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
150.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
155.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
160.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
165.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
170.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
175.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
180.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
185.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
190.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
195.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00

ELLIPSE KNEE ASSUMED TO BE RIGID

LINE KNEELAGE LINE WHICH IS AN ELEMENT OF REGION KNEE BAR MADE OF SHEET METAL

INITIAL LINE LENGTH = 4.533100 EDGE CONSTANT = 0.01

TIME (MSEC)	DEFLECTION		DEFL. RATE (IN/SEC)	ELLIPSE (IN)	ELLIPSE RATE (IN/SEC)	NORMAL (LBS)	TANGENT (LBS)	POSITION (HORIZIN.) (IN)	CONTACT LOCATION OR LINE		CONTACT LOCATION IN SPACE		CONTACT LOCATION ON BODY SURF.	
	(IN)	(IN)							(IN)	(IN)	(IN)	(IN)	(IN)	(IN)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
190.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



INITIAL LIFE LENGTH = 3.53E10 EDGE CONSTANT = .500

TIME (MSEC)	LINE (CID)	ELLIPSE (CID)	DEF. RATE (IN/SEC)	ELLIPSE RATE (IN/SEC)	NORMAL (CID)	TANGENT (CID)	POSITION (IN)	OB. LIFE (M)	CONTACT LOCATION (CID)	X IN SPACE (CID)	Z IN SPACE (CID)	CONTACT LOCATION (CID)	OR BODY SFG. (CID)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
190.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
195.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

CONTACT INTERACTION BETWEEN

ELLIPSE HOTEL ASSUMED TO BE RIGID

400

LEFT TOEBOARD WHICH IS AN ELLIPSE OF REGION YUJFAN RATE OF FEATH

INITIAL LEFT LENGTH = 6.98418 (USE CONSTANT) = 1.000

TIME (MSEC)	DEFLECTION		VEL. RATE		FORCE NORMAL (LBS)	TANGENL. FORCE (LBS)	POSITION (COORDIN.) (IN/SEC)	CONTACT LOCATION ON LINE		CONTACT LOCATION IN SPACE		CONTACT LOCATION ON BODY SURF.	
	(IN)	(IN)	(IN/SEC)	(IN/SEC)				X (IN)	Z (IN)	X (IN)	Z (IN)	X (IN)	Z (IN)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
35.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
45.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
55.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
60.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
65.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
105.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
110.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
115.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
120.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
125.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
130.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
135.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
140.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
145.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
150.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
155.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
160.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
165.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
170.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
175.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
180.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
185.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
190.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
195.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00

CONTACT THICKNESS ASSUMED TO BE RIGID

LINE CUSHION LINE WHICH IS AN ELEMENT OF RIGID SEAT CUSHION MADE OF SEAT MATERIAL

INITIAL LINE LENGTH = 9.5 (10) EDGE COORDINATE = 10.0

TIME (MS)	DEFLECTION (CIN)		VEL. RATE (CIN/SEC)		NORM (CIN)	TANGEN (CIN)	CONTACT LINE POSITION RATE (CIN/SEC)		CONTACT LOCATION IN SPACE (CIN)			CONTACT LOCATION ON BODY SURF. (CIN)	
	X	Y	X	Y			X	Y	Z	X	Y	Z	X
1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.2000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.6000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.8000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.2000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.6000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.8000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.2000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.6000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.8000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.2000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.4000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.6000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.8000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

AREA 2-C TUBIGRICAL EXAMPLE #2  
 MCC. COMP. DISPL. 3 MPH FIGHT HARRIER FORCE-LID. HARD TO

CONTACT INTERACTION BETWEEN

ELLIPSE WELL

ELLIPSE WELL

ELLIPSE WELL

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ELLIPSE WELL

ELLIPSE WELL

ELLIPSE WELL

CONTACT DEFLECTION BETWEEN

ELLIPSE THICK ASSUMED TO BE RIGID

ADD

LINE CUSHION LINE 1 WHICH IS AN ELLIPSE OF REGION SEAT CUSHION MADE OF SEAT MATERIAL

ELLIPSE LINE LENGTH = 13.5(CIN) (CUBI CONTACT = .169

TIME (SEC)	DEFLECTION (CIN)	ELLIPSE (CIN)	DEF. LAY (CIN)	ELLIPSE (CIN)	FORCE (CIN)	TANGENT (CIN)	POSITION (IN/SEC)	CONTACT LOCATION ON LINE	CONTACT LOCATION IN SEAT	CONTACT LOCATION ON BODY SEC.
								X (CIN)	Y (CIN)	Z (CIN)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45
1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55
1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65
1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80
1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00



252749411, CLASSIFIED, PAGE 2-4, JOURNAL REPORT #2, DATE 7-26-4

RESEARCH REPORT ON BATTERY DEVELOPMENT, CONFIDENTIAL, 3 FOOT FRONT ROCKER FOR C-119, PART NO. ED LAP 1001, CONTACT COLLECTION POINT N

CELLULAR UNIT ASSURANCE TO BE RIGID

LINE BACK LINE WHICH IS AN ELEMENT OF RECTOR SEAT BACK MADE OF SEAT MATERIAL

TIM	COLLECTION POINT (CIP)	DELL. RATE (DELL/S.C)	CONTACT LOCATION GR. LITH			FORCE (LBS)	POSITION (FROM BORN)	CONTACT LOCATION (CIP)	CONTACT LOCATION (14. SPACE)			CONTACT LOCATION (CIP)	OH BODY (LBS)
			DELL. RATE (DELL/S.C)	CONTACT LOCATION (CIP)	CONTACT LOCATION (CIP)				CONTACT LOCATION (CIP)	CONTACT LOCATION (CIP)	CONTACT LOCATION (CIP)		
100	100	100	100	100	100	100	100	100	100	100	100	100	100
101	101	101	101	101	101	101	101	101	101	101	101	101	101
102	102	102	102	102	102	102	102	102	102	102	102	102	102
103	103	103	103	103	103	103	103	103	103	103	103	103	103
104	104	104	104	104	104	104	104	104	104	104	104	104	104
105	105	105	105	105	105	105	105	105	105	105	105	105	105
106	106	106	106	106	106	106	106	106	106	106	106	106	106
107	107	107	107	107	107	107	107	107	107	107	107	107	107
108	108	108	108	108	108	108	108	108	108	108	108	108	108
109	109	109	109	109	109	109	109	109	109	109	109	109	109
110	110	110	110	110	110	110	110	110	110	110	110	110	110
111	111	111	111	111	111	111	111	111	111	111	111	111	111
112	112	112	112	112	112	112	112	112	112	112	112	112	112
113	113	113	113	113	113	113	113	113	113	113	113	113	113
114	114	114	114	114	114	114	114	114	114	114	114	114	114
115	115	115	115	115	115	115	115	115	115	115	115	115	115
116	116	116	116	116	116	116	116	116	116	116	116	116	116
117	117	117	117	117	117	117	117	117	117	117	117	117	117
118	118	118	118	118	118	118	118	118	118	118	118	118	118
119	119	119	119	119	119	119	119	119	119	119	119	119	119
120	120	120	120	120	120	120	120	120	120	120	120	120	120

DEFLECTED (CID)	LITL. RATE (CID/SEC)	AVE. DEF. RATE (CID/SEC)	DEF. RATE (CID/SEC)	DEF. RATE (CID/SEC)	DEF. RATE (CID/SEC)	DEF. RATE (CID/SEC)
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TIME (SEC)	LINE BACK LINE						CONTACT LOCATION						CONTACT LOCATION						CONTACT LOCATION								
	WHICH IS AN ELEMENT OF REGION SEAT BACK						TO SPACE						IN SPACE						ON BODY / C/B								
	DEFLECTED (CID)	LITL. RATE (CID/SEC)	AVE. DEF. RATE (CID/SEC)	DEF. RATE (CID/SEC)	DEF. RATE (CID/SEC)	DEF. RATE (CID/SEC)	DEFLECTED (CID)	LITL. RATE (CID/SEC)	AVE. DEF. RATE (CID/SEC)	DEF. RATE (CID/SEC)	DEF. RATE (CID/SEC)	DEF. RATE (CID/SEC)	DEFLECTED (CID)	LITL. RATE (CID/SEC)	AVE. DEF. RATE (CID/SEC)	DEF. RATE (CID/SEC)	DEF. RATE (CID/SEC)	DEF. RATE (CID/SEC)	DEFLECTED (CID)	LITL. RATE (CID/SEC)	AVE. DEF. RATE (CID/SEC)	DEF. RATE (CID/SEC)	DEF. RATE (CID/SEC)	DEFLECTED (CID)	LITL. RATE (CID/SEC)	AVE. DEF. RATE (CID/SEC)	DEF. RATE (CID/SEC)
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

CONTACT UNDETECTED PERIOD



60 INVERTER II ENERGY CONSUMPTION DATA KNEC CASE 2014/11. 21.22.10. 2014 TUTORIAL EXAMPLE #2  
 OCC. CORR. COEFF. 3 MPH FRONT WARRIUP CORC-LIM. HAPPHS 30 LAP UNIT  
 CONTACT ENERGY LOSS PER TORQUE UNIT FACTOR OF 5% WARRIUP #2 VS. UPPER TORQUE UNIT MAEL OF

ITEM	DIFFERENTIAL	DEFLECTION	DEFLECTION	DEFLECTION	DEFLECTION	UNADJUSTED	TORSION	RESISTANT	RESISTANT	RESISTANT	ADSORBED
(INCH)	(INCH)	(IN/100)	(IN/100)	(IN/100)	(IN/100)	(IN/100)	(IN/100)	(LBS)	(LBS)	(LBS)	(FT-LBS)
1	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
33	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
34	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
36	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
37	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
38	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
39	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
43	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
46	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
47	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
49	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
51	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
52	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
53	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
54	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
56	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
57	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
58	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
59	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TIME (SEC)	DEFLECTION (CM)	DEFLECTION RATE (CM/SEC)	RING FUNCTION (CM)	OMAGNETIC TENSION (CM)	TURSTON ADJUSTMENT (CM)	REGULANT FORCE (CM)	RESULANT HAIRING (CM)	ABSORBED ENERGY (CM-LBS)
1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.0	0.07	15.052	0.00	74.874	0.00	74.874	-26.450	0.00
11.0	0.96	50.516	0.00	525.743	0.00	525.743	-216.005	0.00
15.0	3.99	87.994	0.00	87.999	0.00	87.996	-29.791	0.00
21.0	12.828	12.828	0.00	906.452	0.00	958.435	-25.664	0.00
25.0	4.11	15.773	0.00	1156.456	0.00	1156.456	-25.813	0.00
31.0	0.68	9.563	0.00	1317.942	0.00	1317.942	-26.311	0.00
35.0	3.96	11.546	0.00	1474.275	0.00	1474.275	-27.686	0.00
41.0	2.97	6.432	0.00	1525.742	0.00	1500.722	-26.123	0.00
45.0	0.67	41.290	0.00	1596.71	0.00	1566.795	-29.278	0.00
51.0	2.97	85.792	0.00	1525.135	0.00	1525.138	-30.163	0.00
55.0	1.955	182.826	0.00	1596.702	0.00	1548.082	-30.763	0.00
61.0	2.832	124.946	0.00	1578.556	0.00	1578.556	-31.532	0.00
65.0	2.590	87.715	0.00	1667.897	0.00	1667.897	-31.901	0.00
71.0	2.854	37.877	0.00	1625.746	0.00	1625.746	-30.549	0.00
75.0	2.922	-6.169	0.00	1626.501	0.00	1624.591	-29.837	0.00
81.0	2.651	-22.890	0.00	1415.159	0.00	1415.169	-28.545	0.00
85.0	2.735	-24.936	0.00	1147.459	0.00	1147.459	-27.117	0.00
91.0	2.275	-26.891	0.00	832.437	0.00	832.437	-26.632	0.00
95.0	2.451	-29.988	0.00	619.215	0.00	619.215	-25.566	0.00
101.0	2.266	-36.730	0.00	351.125	0.00	351.125	-25.066	0.00
105.0	2.567	-39.733	0.00	75.268	0.00	73.268	-24.972	0.00
111.0	1.939	-29.538	0.00	14.813	0.00	6.000	0.000	0.00
115.0	1.749	-5.502	0.00	0.00	0.00	0.000	0.000	0.00
121.0	1.572	-30.241	0.00	0.00	0.00	0.000	0.000	0.00
125.0	1.232	-45.607	0.00	0.00	0.00	0.000	0.000	0.00
131.0	1.115	-51.354	0.00	0.00	0.00	0.000	0.000	0.00
135.0	0.941	-51.499	0.00	0.00	0.00	0.000	0.000	0.00
141.0	0.635	-55.220	0.00	0.00	0.00	0.000	0.000	0.00
145.0	0.562	-69.825	0.00	0.00	0.00	0.000	0.000	0.00
151.0	0.129	-40.118	0.00	0.00	0.00	0.000	0.000	0.00
155.0	0.159	-46.655	0.00	0.00	0.00	0.000	0.000	0.00
161.0	0.131	3.764	0.00	0.00	0.00	0.000	0.000	0.00
165.0	0.101	8.806	0.00	0.00	0.00	0.000	0.000	0.00
171.0	0.070	1.830	0.00	0.00	0.00	0.000	0.000	0.00
175.0	0.042	0.000	0.00	0.00	0.00	0.000	0.000	0.00
181.0	0.012	0.000	0.00	0.00	0.00	0.000	0.000	0.00
185.0	0.000	0.000	0.00	0.00	0.00	0.000	0.000	0.00
191.0	0.000	0.000	0.00	0.00	0.00	0.000	0.000	0.00
195.0	0.000	0.000	0.00	0.00	0.00	0.000	0.000	0.00

VELOCITY COMPONENTS OF JOINT TORQUES (IN-LBS)

TIME	UPPER BACK	LOWER BACK	UPPER SPINE	LOWER SPINE	HEI	KBEI	SHOULDER AT ANGLE	ELBOW
3.0	43.66	-55.59	81.54	-35.00	0.03	0.00	0.00	0.00
3.5	56.25	-19.25	14.54	-35.99	0.03	0.00	0.00	0.00
4.0	-16.02	-51.97	11.74	139.02	0.03	0.00	0.00	0.00
4.5	-55.21	-54.67	-115.33	176.92	0.06	0.06	0.00	0.00
5.0	-37.06	-57.74	-178.77	122.65	0.03	0.03	0.00	0.00
5.5	-76.25	-61.13	-142.24	111.51	0.03	0.03	0.00	0.00
6.0	-76.07	-56.93	-125.35	-9.80	0.03	0.00	0.00	0.00
6.5	-139.31	-515.33	-273.34	-166.62	0.03	0.00	0.00	0.00
7.0	-77.59	-57.76	-215.19	35.57	0.03	0.00	0.00	0.00
7.5	-291.96	-226.25	-127.66	-96.47	0.03	0.00	0.00	0.00
8.0	-255.59	-175.79	-55.69	-51.65	0.03	0.00	0.00	0.00
8.5	-231.83	-161.45	-17.53	-324.52	0.03	0.00	0.00	0.00
9.0	-174.62	-911.56	19.53	-511.16	0.03	0.00	0.00	0.00
9.5	-129.41	-535.78	5.28	-274.72	0.03	0.00	0.00	0.00
10.0	-22.55	-514.55	-54.55	-150.01	0.03	0.00	0.00	0.00
10.5	-359.49	-246.65	-110.55	-13.86	0.03	0.00	0.00	0.00
11.0	-93.27	-15.25	-312.78	59.79	0.03	0.00	0.00	0.00
11.5	-212.71	161.68	-611.25	66.41	0.03	0.00	0.00	0.00
12.0	-71.01	249.77	-845.53	15.35	0.03	0.00	0.00	0.00
12.5	135.57	213.01	-243.39	-24.51	0.03	0.00	0.00	0.00
13.0	165.19	355.25	-35.77	-208.51	0.03	0.00	0.00	0.00
13.5	115.39	509.09	-19.34	-189.12	0.03	0.00	0.00	0.00
14.0	189.33	351.25	35.24	-136.11	0.03	0.00	0.00	0.00
14.5	215.27	339.29	11.53	-73.27	0.03	0.00	0.00	0.00
15.0	254.55	242.52	169.49	-145.24	0.03	0.00	0.00	0.00
15.5	54.97	363.82	96.74	-24.55	0.03	0.00	0.00	0.00
16.0	210.24	389.45	168.01	-139.76	0.03	0.00	0.00	0.00
16.5	196.55	218.49	163.55	-139.79	0.03	0.00	0.00	0.00
17.0	115.97	512.15	196.11	-96.52	0.03	0.00	0.00	0.00
17.5	174.99	355.91	129.92	-63.49	0.03	0.00	0.00	0.00
18.0	176.11	372.01	118.15	-52.51	0.03	0.00	0.00	0.00
18.5	215.29	295.21	174.51	-132.53	0.03	0.00	0.00	0.00
19.0	16.21	337.97	113.19	-66.21	0.03	0.00	0.00	0.00
19.5	165.98	261.25	215.12	-163.87	0.03	0.00	0.00	0.00
20.0	174.19	219.94	166.53	-59.21	0.03	0.00	0.00	0.00
20.5	115.27	331.81	71.98	-9.29	0.03	0.00	0.00	0.00
21.0	165.69	393.76	214.85	-135.95	0.03	0.00	0.00	0.00
21.5	126.51	367.85	213.27	13.22	0.03	0.00	0.00	0.00
22.0	197.27	312.46	191.16	-21.27	0.03	0.00	0.00	0.00
22.5	130.29	299.59	169.51	-69.25	0.03	0.00	0.00	0.00

FRICTION COMPONENT OF JOINT 100.00% (CIR-LCS)

TIME	UPPER BECK	LOWER BECK	UPPER SPINE	LOWER SPINE	HIP	KNEE	SHOULDER AT ARM	ELBOW
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	17.49	17.49	1.00.00	-1.35.00	85.400	204.00	222.00	-64.00
10.00	17.49	17.49	1.00.00	-1.10.00	85.400	204.00	222.00	-64.00
15.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
20.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
25.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
30.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
35.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
40.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
45.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
50.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
55.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
60.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
65.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
70.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
75.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
80.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
85.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
90.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
95.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00
100.00	17.49	17.49	1.00.00	-1.00.00	85.400	204.00	222.00	-64.00



AVMA 2-L TUBULAR SAMPLE #2  
S.C. CAMP, DISPL. 3 ROD (KRF) UPPER FORCE-LIM. HARDEN. PO LAF 0111  
ELASTIC COMPONENT OF JOINT LOADS (EJ0-UB5)

2270011-21-52-25  
HYPERIC 11 0000V 0111111111111111

TIME	UPPER BECK	LOWER BECK	UPPER STRO	LOWER SPIFF	HP	KRF	SCHEUCR AT ABB	ELEOF
7.0	-1.27	0.24	-21.24	0.24	0.00	0.00	0.00	0.00
8.0	-1.27	0.29	-21.24	26.90	1.11	0.00	0.00	0.00
9.0	-4.94	-7.84	-3.53	11.32	1.22	5.52	0.00	0.00
10.0	1.54	-59.65	26.02	62.76	37.47	0.00	0.00	0.00
11.0	0.76	-0.36	12.11	146.66	62.92	0.00	0.00	0.00
12.0	0.76	-1.95	29.79	29.79	21.57	0.00	0.00	0.00
13.0	-1.54	-113.15	-91.86	214.53	429.86	0.00	0.00	0.00
14.0	-1.54	-90.57	-103.54	224.22	711.97	0.00	0.00	0.00
15.0	-1.54	-315.77	-205.11	256.69	101.29	0.00	0.00	0.00
16.0	-6.77	-374.32	-463.11	273.10	126.74	0.00	0.00	0.00
17.0	-7.51	-613.85	-906.97	515.89	1331.96	0.00	0.00	0.00
18.0	-1.96	-436.57	-673.15	87.22	1295.65	0.00	0.00	0.00
19.0	-13.52	-453.92	-479.80	-197.74	1161.78	0.00	0.00	0.00
20.0	-13.52	-492.34	-903.20	-97.74	991.09	0.00	0.00	0.00
21.0	-12.02	-353.85	-461.44	-113.24	740.12	0.00	0.00	0.00
22.0	-1.96	-634.14	-461.44	-99.57	676.92	0.00	0.00	0.00
23.0	-2.70	-664.47	-492.41	-95.46	598.16	0.00	0.00	0.00
24.0	-2.70	-655.52	-655.52	-65.67	565.40	0.00	0.00	0.00
25.0	-3.44	-674.44	-789.55	-511.62	665.18	0.00	0.00	0.00
26.0	-3.44	-569.35	-1134.57	-836.62	787.92	0.00	0.00	0.00
27.0	-3.44	-621.72	-1225.21	-132.42	944.68	0.00	0.00	0.00
28.0	-3.44	-596.86	-1315.67	-136.55	1193.83	0.00	0.00	0.00
29.0	-3.44	-559.55	-1332.48	-128.06	1376.92	0.00	0.00	0.00
30.0	-3.44	-477.17	-1315.32	-1415.32	1395.50	0.00	0.00	0.00
31.0	-4.18	-477.37	-1359.23	-1359.23	988.19	0.00	0.00	0.00
32.0	-4.18	-641.36	-1250.71	-1359.74	871.88	0.00	0.00	0.00
33.0	-2.70	-416.25	-1195.13	-1623.07	738.84	0.00	0.00	0.00
34.0	-2.70	-560.32	-1148.16	-1623.07	612.99	0.00	0.00	0.00
35.0	-1.96	-534.87	-1186.78	-1693.09	537.82	0.00	0.00	0.00
36.0	-1.96	-604.36	-1126.39	-1706.54	496.93	0.00	0.00	0.00
37.0	-1.96	-743.17	-1126.39	-1745.84	329.12	0.00	0.00	0.00
38.0	-1.96	-743.17	-986.10	-1745.84	260.56	0.00	0.00	0.00
39.0	-1.96	-743.17	-951.16	-1723.92	229.61	0.00	0.00	0.00
40.0	-1.96	-743.17	-875.63	-1837.22	193.95	0.00	0.00	0.00
41.0	-1.96	-743.17	-828.25	-1843.24	151.80	0.00	0.00	0.00
42.0	-1.96	-743.17	-782.61	-1894.76	81.46	0.00	0.00	0.00
43.0	-1.96	-743.17	-751.91	-1919.62	-13.54	0.00	0.00	0.00
44.0	-1.96	-743.17	-657.41	-1964.89	-137.71	0.00	0.00	0.00
45.0	-1.96	-743.17	-509.12	-1942.11	-204.61	0.00	0.00	0.00
46.0	-1.96	-563.92	-506.71	-1935.55	-93.62	0.00	0.00	0.00
47.0	-1.96	-467.32	-445.42	-1934.19	-559.25	0.00	0.00	0.00



FILE	UPPER BECK	LOWER BECK	UPPER SPIRE	LOWER SPIRE	HIP	KRFI	SHOULDER AT ARM	ELBOW
66.5	75.15	-15.26	125.24	-17.11	58.17	-15.92	26.44	-5.18
1.2.1	127.47	-57.12	212.24	-14.76	63.51	-31.87	-97.81	-8.85
15.3	75.99	-65.37	15.37	15.37	75.83	-57.95	121.64	4.25
23.23	-133.41	-64.5.69	-174.29	2.8.26	183.95	61.64	61.64	14.81
25.0	-117.16	-77.4.35	-278.71	105.31	563.24	-121.75	9.92	5.6.87
33.7	-67.37	-846.72	-215.51	1.22	593.16	-173.63	12.16	2.6.14
34.3	-65.78	-1.75.17	-109.73	-14.85	713.27	-249.95	27.76	5.1.78
45.8	-286.55	-951.22	-410.58	222.16	125.54	-197.83	-134.63	1.08.23
45.9	-440.31	-715.85	-376.5	13.99	41.27	69.18	-978.72	11.9.15
53.3	-476.77	-635.24	-193.12	-14.16	-132.96	1494.64	-5124.91	31.3.72
56.1	-63.71	-538.35	-46.56	-5.6.86	-176.62	1633.81	-1784.25	2713.77
65.79	-455.54	-518.52	-26.17	-583.63	-267.24	1781.47	116.57	433.29
65.8	-77.4.65	-791.84	29.64	-46.6.31	-51.2.94	1091.51	338.32	577.04
75.11	-224.26	-972.68	8.9	-411.72	-578.59	1516.65	-417.38	1683.34
75.11	-478.7	-969.85	-52.25	-242.42	-136.59	1155.92	1277.59	144.73
80.1	-759.79	-551.25	-152.95	-28.87	-187.82	959.91	92.89	-293.41
80.1	-61.73	-26.76	-473.91	9.5.59	66.13	221.49	132.59	-634.97
91.3	-61.86	211.92	-624.14	73.32	263.59	733.27	15.98	-438.33
95.9	-147.91	465.53	-674.71	-25.22	373.53	666.86	48.36	-7.9.27
103.1	284.73	635.82	-821.12	-58.54	312.13	6.1.29	3164.11	-610.54
105.3	314.65	637.55	-54.21	-276.59	174.51	551.97	218.64	-357.97
113.1	293.72	677.85	-27.59	-270.57	-45.03	672.47	342.47	-919.59
115.3	594.41	675.53	53.67	-296.1	-17.21	662.62	232.27	-113.9.9
123.1	591.83	675.36	17.47	-1.9.5	-195.74	-286.92	429.38	-1703.41
125.3	465.13	465.41	296.8	-217.07	-257.22	-776.15	1206.18	-2.61.55
127.3	445.21	542.34	146.43	-56.92	-515.12	-273.28	1229.54	-2715.29
135.3	412.7	575.87	256.65	-14.6.51	-26.03	-166.36	155.72	-2719.94
141.1	376.96	612.35	247.47	-16.2.25	-226.24	-796.66	1733.73	-2405.33
145.1	357.64	631.24	221.25	-137.15	-137.43	-836.97	1766.97	-2133.75
153.1	594.14	594.26	196.13	-120.43	-194.23	-917.21	1331.51	-1647.24
156.1	591.13	591.95	178.46	-139.86	-21.4.1	-226.59	164.13	-747.97
161.1	397.92	54.13	244.11	-224.64	-53.291	-328.15	-729.41	421.92
165.1	374.89	578.78	156.54	-171.53	-54.272	-917.13	-1279.39	1359.41
175.99	598.39	5.7	325.94	-248.25	-75.96	-681.42	-1242.24	1914.62
175.1	5.2.97	51.43	243.11	-142.71	-17.2.13	-166.98	-1277.11	191.5.1
185.3	253.47	676.35	198.51	-19.67	-269.36	99.17	-1116.27	1241.78
185.3	276.27	635.57	329.77	-176.37	166.76	166.76	-47.58	512.43
195.3	263.75	707.91	158.44	-23.15	-542.329	-211.43	-4.53.25	636.62
195.3	263.21	611.26	229.23	-110.64	-541.27	237.43	-338.13	334.10
20.3	304.34	453.04	249.95	-43.57	-278.22	259.24	-46.22	-1.53



LEAD	DEPT. BECK	LOPE L. NO. CR	DEPT. FIBER	LOWER FIBER	HIP	KNEE	SHOULDER AT AHD	ULFOV
33.3	-11.0	-8.3	-14.3	-54.16	-5.54	64.56	-41.58	-44.27
50.0	-11.2	-7.94	-16.0	-55.74	-9.59	64.97	-41.57	-43.97
133.3	-11.43	-8.61	-17.23	-57.98	-13.94	64.37	-41.44	-43.54
150.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
200.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
250.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
300.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
350.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
400.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
450.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
500.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
550.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
600.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
650.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
700.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
750.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
800.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
850.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
900.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
950.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76
1000.0	-11.53	-8.83	-17.65	-58.57	-15.59	65.16	-41.55	-43.76

TYPE	LEIFAR	NOELHEAR	MUSCLE	VISSCUS	MUSCLE	TOTAL	LEIFAR	NOELHEAR	VISSCUS	MUSCLE	TOTAL
15	4.13	0.0	0.0	5.53	0.0	7.65	-1.19	0.0	0.0	0.0	-1.19
15	0.75	0.0	0.0	-0.11	0.0	4.63	-1.61	0.0	0.0	0.0	-1.61
15	-1.09	0.0	0.0	-1.23	0.0	-25.74	-4.14	0.0	0.0	0.0	-4.14
15	-0.36	0.0	0.0	-5.91	0.0	-1.844	-9.0	0.0	0.0	0.0	-9.0
15	-1.2	-3.98	0.0	-9.89	0.0	-16.348	-17.25	0.0	0.0	0.0	-17.25
15	-1.04	-9.5	0.0	-1.97	0.0	-2.671	-27.08	0.0	0.0	0.0	-27.08
15	-1.01	-12.55	0.0	-3.65	0.0	-2.665	-29.91	0.0	0.0	0.0	-29.91
15	-1.01	-12.46	0.0	7.47	0.0	-19.25	-5.33	-13.914	0.0	0.0	-19.25
15	-1.05	-6.77	0.0	25.66	0.0	-12.756	-6.32	-461.32	0.0	0.0	-461.32
15	-1.09	-6.6	0.0	34.66	0.0	-1.775	-74.39	-60.11	0.0	0.0	-74.39
15	-1.05	0.2	0.0	29.76	0.0	6.269	-82.29	-112.53	0.0	0.0	-112.53
15	77.55	0.0	0.0	15.65	0.0	9.569	-82.56	-896.1	0.0	0.0	-896.1
15	61.97	0.0	0.0	-53.81	0.0	24.52	-75.38	-18.76	0.0	0.0	-75.38
15	-1.0	0.0	0.0	-6.96	0.0	-76.1	-75.21	-249.25	0.0	0.0	-249.25
15	-1.05	-1.01	0.0	-16.9	0.0	-119.18	-6.08	-705.93	0.0	0.0	-705.93
15	-1.05	-0.5	0.0	91.7	0.0	-29.66	-78.42	-571.92	0.0	0.0	-571.92
15	-1.05	0.0	0.0	17.26	0.0	5.33	-65.88	-166.93	0.0	0.0	-166.93
15	9.54	0.0	0.0	3.2	0.0	0.14	-4.74	-3.61	0.0	0.0	-4.74
15	2.1	0.0	0.0	-3.21	0.0	-7.11	-22.96	-4.92	0.0	0.0	-22.96
15	-11.33	0.0	0.0	-12.24	0.0	-23.59	-11.11	0.0	0.0	0.0	-11.11
15	-1.0	-1.1	0.0	-9.58	0.0	-46.68	-16.51	0.0	0.0	0.0	-16.51
15	-1.0	-1.1	0.0	13.6	0.0	-16.22	-30.98	0.0	0.0	0.0	-30.98
15	-1.0	-1.1	0.0	5.26	0.0	-5.56	-46.52	-35.26	0.0	0.0	-46.52
15	-1.0	-1.1	0.0	-1.54	0.0	-2.55	-50.11	-9.72	0.0	0.0	-50.11
15	-1.0	-1.1	0.0	-1.0	0.0	-6.31	-6.76	-166.28	0.0	0.0	-6.76
15	-1.0	-1.1	0.0	-5.16	0.0	-23.91	-53.74	-7.56	0.0	0.0	-53.74
15	-1.0	-1.1	0.0	6.88	0.0	-2.95	-91.42	-7.27	0.0	0.0	-91.42
15	-1.0	-1.1	0.0	13.74	0.0	-2.43	-31.49	0.0	0.0	0.0	-31.49
15	-1.0	-1.1	0.0	3.25	0.0	-1.7	-29.93	0.0	0.0	0.0	-29.93
15	-1.0	-1.1	0.0	-1.0	0.0	-13.21	-36.29	0.0	0.0	0.0	-36.29
15	-1.0	-1.1	0.0	-2.59	0.0	-2.02	-43.56	-16.24	0.0	0.0	-43.56
15	-1.0	-1.1	0.0	-1.24	0.0	-2.13	-43.74	-19.4	0.0	0.0	-43.74
15	-1.0	-1.1	0.0	0.0	0.0	-5.22	-37.98	0.0	0.0	0.0	-37.98
15	-1.0	-1.1	0.0	6.33	0.0	-15.66	-33.29	0.0	0.0	0.0	-33.29
15	-1.0	-1.1	0.0	0.76	0.0	-2.91	-31.72	0.0	0.0	0.0	-31.72
15	-1.0	-1.1	0.0	1.1	0.0	14.7	-3.16	0.0	0.0	0.0	-3.16
15	-1.0	-1.1	0.0	12.24	0.0	-29.96	-32.59	0.0	0.0	0.0	-32.59
15	-1.0	-1.1	0.0	5.71	0.0	31.66	-52.97	0.0	0.0	0.0	-52.97
15	-1.0	-1.1	0.0	-0.0	0.0	9.25	-31.37	0.0	0.0	0.0	-31.37
15	-1.0	-1.1	0.0	-13.53	0.0	15.16	-17.77	0.0	0.0	0.0	-17.77



TID (DEG)	WPPY DUCK (IN)			VELOCITY (IN/SEC)			DUCK JOINT COORDINATES (RELATIVE TO VEHICLE)			VELOCITY (IN/SEC)			DUCK LENGTH (IN)			P-11 (IN/SEC)		
	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
5.25	11.51	-31.69	1.14	19.86	0.00	0.00	11.24	-0.54	0.00	15.26	0.00	0.00	5.29	0.00	0.00	0.00	0.00	0.00
5.26	11.54	-31.66	1.04	19.86	-0.27	0.00	11.57	-0.87	0.00	15.26	-0.06	0.00	5.27	0.00	0.00	-1.76	0.00	0.00
10.0	11.57	-31.67	0.71	19.86	-0.71	0.00	11.55	-0.55	0.00	15.26	0.00	0.00	5.27	0.00	0.00	1.6	0.00	0.00
15.0	11.70	-31.65	0.51	19.86	-1.22	0.00	11.65	-0.55	0.00	15.26	0.00	0.00	5.24	0.00	0.00	16.75	0.00	0.00
20.0	11.75	-31.67	0.35	19.86	-1.85	0.00	11.64	-0.51	0.00	15.26	0.00	0.00	5.37	0.00	0.00	17.15	0.00	0.00
25.0	12.11	-21.65	2.24	19.86	-2.44	0.00	11.65	-0.52	0.00	15.26	0.00	0.00	5.45	0.00	0.00	14.85	0.00	0.00
30.0	12.25	-31.66	2.59	19.86	-3.97	0.00	11.67	-0.51	0.00	15.26	0.00	0.00	5.51	0.00	0.00	6.7	0.00	0.00
35.0	12.31	-31.16	2.25	19.86	-3.31	0.00	11.54	-0.74	0.00	15.26	0.00	0.00	5.51	0.00	0.00	1.54	0.00	0.00
40.0	12.53	-31.76	2.7	19.86	-4.27	0.00	11.58	-0.78	0.00	15.26	0.00	0.00	5.53	0.00	0.00	5.53	0.00	0.00
45.0	12.95	-31.26	3.92	19.86	-5.26	0.00	11.27	-0.57	0.00	15.26	0.00	0.00	5.49	0.00	0.00	-17.71	0.00	0.00
50.0	13.41	-29.08	4.76	19.86	-6.26	0.00	11.42	-0.54	0.00	15.26	0.00	0.00	5.57	0.00	0.00	-27.01	0.00	0.00
55.0	13.51	-29.12	4.67	19.86	-6.26	0.00	11.72	-0.51	0.00	15.26	0.00	0.00	5.57	0.00	0.00	-19.57	0.00	0.00
60.0	13.77	-26.66	3.92	19.86	-5.26	0.00	12.14	-0.57	0.00	15.26	0.00	0.00	5.18	0.00	0.00	-7.89	0.00	0.00
65.0	14.4	-25.57	3.52	19.86	-4.26	0.00	12.62	-0.54	0.00	15.26	0.00	0.00	5.26	0.00	0.00	17.19	0.00	0.00
70.0	14.56	-24.24	3.13	19.86	-3.57	0.00	12.96	-0.48	0.00	15.26	0.00	0.00	5.32	0.00	0.00	24.78	0.00	0.00
75.0	14.81	-23.57	2.66	19.86	-3.05	0.00	13.15	-0.55	0.00	15.26	0.00	0.00	5.41	0.00	0.00	34.4	0.00	0.00
80.0	15.05	-23.55	2.31	19.86	-2.61	0.00	13.29	-0.51	0.00	15.26	0.00	0.00	5.27	0.00	0.00	-21.6	0.00	0.00
85.0	15.14	-23.94	2.21	19.86	-2.45	0.00	13.41	-0.51	0.00	15.26	0.00	0.00	5.35	0.00	0.00	-8.78	0.00	0.00
90.0	15.45	-24.51	2.06	19.86	-2.18	0.00	13.47	-0.47	0.00	15.26	0.00	0.00	5.27	0.00	0.00	-1.67	0.00	0.00
95.0	15.47	-25.63	1.76	19.86	-1.76	0.00	13.47	-0.39	0.00	15.26	0.00	0.00	5.26	0.00	0.00	1.12	0.00	0.00
100.0	15.7	-27.39	1.57	19.86	-1.49	0.00	13.59	-0.35	0.00	15.26	0.00	0.00	5.50	0.00	0.00	6.18	0.00	0.00
105.0	15.84	-28.13	1.31	19.86	-1.26	0.00	13.24	-0.29	0.00	15.26	0.00	0.00	5.33	0.00	0.00	9.74	0.00	0.00
110.0	15.85	-28.29	1.07	19.86	-1.07	0.00	13.12	-0.25	0.00	15.26	0.00	0.00	5.32	0.00	0.00	-5.37	0.00	0.00
115.0	15.7	-28.44	0.82	19.86	-0.82	0.00	12.95	-0.22	0.00	15.26	0.00	0.00	5.29	0.00	0.00	-2.05	0.00	0.00
120.0	15.4	-28.66	0.57	19.86	-0.57	0.00	12.85	-0.19	0.00	15.26	0.00	0.00	5.57	0.00	0.00	4.16	0.00	0.00
125.0	14.9	-28.75	0.37	19.86	-0.37	0.00	12.61	-0.19	0.00	15.26	0.00	0.00	5.34	0.00	0.00	3.18	0.00	0.00
130.0	14.17	-28.89	0.27	19.86	-0.27	0.00	12.35	-0.21	0.00	15.26	0.00	0.00	5.37	0.00	0.00	2.07	0.00	0.00
135.0	13.71	-28.97	0.16	19.86	-0.16	0.00	12.08	-0.23	0.00	15.26	0.00	0.00	5.46	0.00	0.00	-4.79	0.00	0.00
140.0	13.27	-28.97	0.05	19.86	-0.05	0.00	11.81	-0.25	0.00	15.26	0.00	0.00	5.55	0.00	0.00	-6.56	0.00	0.00
145.0	12.46	-28.97	0.00	19.86	0.00	0.00	11.53	-0.28	0.00	15.26	0.00	0.00	5.54	0.00	0.00	-2.78	0.00	0.00
150.0	12.26	-28.85	0.00	19.86	0.00	0.00	11.26	-0.31	0.00	15.26	0.00	0.00	5.5	0.00	0.00	0.00	0.00	0.00
155.0	11.86	-28.74	0.00	19.86	0.00	0.00	10.99	-0.34	0.00	15.26	0.00	0.00	5.50	0.00	0.00	1.21	0.00	0.00
160.0	11.56	-28.58	0.00	19.86	0.00	0.00	10.74	-0.37	0.00	15.26	0.00	0.00	5.51	0.00	0.00	1.18	0.00	0.00
165.0	11.17	-28.45	0.00	19.86	0.00	0.00	10.51	-0.39	0.00	15.26	0.00	0.00	5.51	0.00	0.00	-0.13	0.00	0.00
170.0	10.75	-28.3	0.00	19.86	0.00	0.00	10.31	-0.41	0.00	15.26	0.00	0.00	5.51	0.00	0.00	-2.79	0.00	0.00
175.0	10.31	-28.09	0.00	19.86	0.00	0.00	10.14	-0.43	0.00	15.26	0.00	0.00	5.29	0.00	0.00	-5.93	0.00	0.00
180.0	10.04	-27.86	0.00	19.86	0.00	0.00	10.02	-0.44	0.00	15.26	0.00	0.00	5.27	0.00	0.00	-5.11	0.00	0.00
185.0	9.8	-27.6	0.00	19.86	0.00	0.00	9.99	-0.45	0.00	15.26	0.00	0.00	5.26	0.00	0.00	-6.08	0.00	0.00
190.0	9.63	-27.32	0.00	19.86	0.00	0.00	9.97	-0.46	0.00	15.26	0.00	0.00	5.22	0.00	0.00	-2.96	0.00	0.00
195.0	9.5	-27.0	0.00	19.86	0.00	0.00	9.96	-0.47	0.00	15.26	0.00	0.00	5.22	0.00	0.00	2.45	0.00	0.00
200.0	9.49	-26.6	0.00	19.86	0.00	0.00	9.96	-0.48	0.00	15.26	0.00	0.00	5.14	0.00	0.00	6.16	0.00	0.00

REP	BODY JOINT VELOCITIES			CINZACC			RELATIVE TG. VEHICLES			HIP			KNEE			ELBOW		
	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
1	21.15	11.92	-1.68	17.68	-3.64	19.4	19.4	2.63	2.63	49.45	49.45	2.7	2.7	2.7	2.7	2.7	2.7	2.7
2	61.59	-1.87	-0.87	65.7	-0.87	66.57	66.57	5.5	5.5	68.5	68.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
3	69.1	-3.87	-4.1	58.58	-4.98	-4.98	58.58	6.15	6.15	71.29	71.29	5.85	5.85	5.85	5.85	5.85	5.85	5.85
4	5.73	75.77	-4.75	78.68	-17.68	78.68	78.68	6.54	6.54	172.2	172.2	2.53	2.53	2.53	2.53	2.53	2.53	2.53
5	21.42	75.74	21.42	97.36	-15.17	98.86	98.86	7.21	7.21	126.01	126.01	1.64	1.64	1.64	1.64	1.64	1.64	1.64
6	56.11	15.52	15.52	97.27	-10.47	10.47	10.47	9.13	9.13	140.88	140.88	1.64	1.64	1.64	1.64	1.64	1.64	1.64
7	6.45	92.17	-33.44	112.94	-22.49	123.46	123.46	12.34	12.34	144.48	144.48	-2.2	-2.2	-2.2	-2.2	-2.2	-2.2	-2.2
8	59.01	97.47	21.59	116.91	-26.74	126.69	126.69	7.5	7.5	205.16	205.16	-7.47	-7.47	-7.47	-7.47	-7.47	-7.47	-7.47
9	45.12	51.48	51.48	116.48	-17.52	114.44	114.44	-15.29	-15.29	254.14	254.14	-50.18	-50.18	-50.18	-50.18	-50.18	-50.18	-50.18
10	1.56	68.75	68.75	137.53	4.8	71.29	71.29	-19.7	-19.7	251.48	251.48	-126.55	-126.55	-126.55	-126.55	-126.55	-126.55	-126.55
11	1.92	62.62	62.62	124.67	4.68	35.56	35.56	-2.174	-2.174	171.22	171.22	-147.59	-147.59	-147.59	-147.59	-147.59	-147.59	-147.59
12	96.53	96.25	96.25	194.11	15.16	15.16	15.16	-192.54	-192.54	67.47	67.47	-56.46	-56.46	-56.46	-56.46	-56.46	-56.46	-56.46
13	63.64	64.64	64.64	47.92	34.92	48.48	48.48	-19.44	-19.44	52.76	52.76	-89.44	-89.44	-89.44	-89.44	-89.44	-89.44	-89.44
14	1.94	9.26	9.26	11.16	-16.53	-36.78	-36.78	-196.54	-196.54	19.68	19.68	-15.27	-15.27	-15.27	-15.27	-15.27	-15.27	-15.27
15	-15.16	-18.55	-18.55	-17.82	-95.82	-69.45	-69.45	-12.255	-12.255	-56.77	-56.77	8.3	8.3	8.3	8.3	8.3	8.3	8.3
16	29.8	-87.81	-87.81	-79.59	-63.64	-83.29	-83.29	-1.503	-1.503	-161.34	-161.34	79.11	79.11	79.11	79.11	79.11	79.11	79.11
17	85.91	-79.82	-79.82	-41.11	-87.86	-92.86	-92.86	-87.47	-87.47	187.47	187.47	101.99	101.99	101.99	101.99	101.99	101.99	101.99
18	66.46	-59.7	-59.7	-53.51	-66.51	-83.51	-83.51	-83.51	-83.51	-157.16	-157.16	111.7	111.7	111.7	111.7	111.7	111.7	111.7
19	-79.72	-34.16	-34.16	-64.72	-49.33	-78.67	-78.67	-78.67	-78.67	-255.81	-255.81	-125.05	-125.05	-125.05	-125.05	-125.05	-125.05	-125.05
20	85.68	-87.78	-87.78	-69.76	-53.49	-62.74	-62.74	-64.24	-64.24	235.73	235.73	129.16	129.16	129.16	129.16	129.16	129.16	129.16
21	1.92	-65.92	-65.92	-73.74	-14.42	-48.42	-48.42	-81.24	-81.24	-214.25	-214.25	126.66	126.66	126.66	126.66	126.66	126.66	126.66
22	114.1	-62.35	-62.35	-68.15	-9.81	-69.71	-69.71	-18.18	-18.18	-211.39	-211.39	175.55	175.55	175.55	175.55	175.55	175.55	175.55
23	139.68	-63.76	-63.76	-74.82	1.61	-75.26	-75.26	-11.296	-11.296	-225.76	-225.76	144.24	144.24	144.24	144.24	144.24	144.24	144.24
24	61.15	-6.1	-6.1	-74.82	6.15	-75.64	-75.64	-11.296	-11.296	-225.76	-225.76	144.24	144.24	144.24	144.24	144.24	144.24	144.24
25	65.74	-23.43	-23.43	-73.62	5.27	-73.11	-73.11	17.37	17.37	-267.29	-267.29	141.72	141.72	141.72	141.72	141.72	141.72	141.72
26	135.7	-22.35	-22.35	-74.95	9.69	-74.64	-74.64	-12.13	-12.13	-226.49	-226.49	132.64	132.64	132.64	132.64	132.64	132.64	132.64
27	147.1	-22.16	-22.16	-76.78	11.27	-75.59	-75.59	21.67	21.67	-232.29	-232.29	99.78	99.78	99.78	99.78	99.78	99.78	99.78
28	145.1	-64.71	-64.71	-76.55	15.77	-75.19	-75.19	21.61	21.61	-196.15	-196.15	78.91	78.91	78.91	78.91	78.91	78.91	78.91
29	165.3	-65.75	-65.75	-76.55	14.67	-76.55	-76.55	14.12	14.12	-169.56	-169.56	59.91	59.91	59.91	59.91	59.91	59.91	59.91
30	167.5	-65.77	-65.77	-75.24	17.52	-76.29	-76.29	25.15	25.15	-95.64	-95.64	41.56	41.56	41.56	41.56	41.56	41.56	41.56
31	165.7	-63.71	-63.71	-78.49	2.79	-74.63	-74.63	27.34	27.34	25.79	25.79	-10.68	-10.68	-10.68	-10.68	-10.68	-10.68	-10.68
32	165.7	-66.49	-66.49	-76.11	15.46	-75.47	-75.47	5.26	5.26	95.54	95.54	-45.56	-45.56	-45.56	-45.56	-45.56	-45.56	-45.56
33	175.1	-48.33	-48.33	-66.58	23.47	-66.94	-66.94	35.69	35.69	-59.58	-59.58	56.94	56.94	56.94	56.94	56.94	56.94	56.94
34	175.1	-45.16	-45.16	-69.58	22.27	-63.27	-63.27	37.16	37.16	105.12	105.12	-65.94	-65.94	-65.94	-65.94	-65.94	-65.94	-65.94
35	166.1	-41.71	-41.71	-59.89	11.97	-59.44	-59.44	41.91	41.91	36.5	36.5	68.86	68.86	68.86	68.86	68.86	68.86	68.86
36	195.5	-24.5	-24.5	-44.57	15.26	-47.53	-47.53	37.15	37.15	96.12	96.12	-67.83	-67.83	-67.83	-67.83	-67.83	-67.83	-67.83
37	197.7	-19.7	-19.7	-33.69	9.47	-37.13	-37.13	34.33	34.33	76.49	76.49	-62.18	-62.18	-62.18	-62.18	-62.18	-62.18	-62.18
38	196.7	-3.14	-3.14	-33.69	4.52	-34.9	-34.9	39.77	39.77	57.19	57.19	-59.56	-59.56	-59.56	-59.56	-59.56	-59.56	-59.56
39	204.1	-7.53	-7.53	-15.51	-2.54	-15.51	-15.51	2.54	2.54	58.73	58.73	-46.24	-46.24	-46.24	-46.24	-46.24	-46.24	-46.24



LINE	BEAR	SECT	UPPER TORSO	BLD TO T-50	LOW TORSO	UPPER LEG	LOWER LEG	SHOULDER	UPPER ARM	LOWER ARM
52	-6,454	65,16	-23,81	73,11	82,61	-63,70	-9,36	---	---	---
53	-12,228	95,71	-31,403	1,35,23	-2,577	145,76	-175,11	---	679,58	-257,25
54	15,121	26,83	-31,769	94,5,25	-2,574	119,24	-159,84	---	32,84	-24,56
55	15,121	42,52	-54,19	1,95,95	97,63	-66,71	84	---	397,25	-52,71
56	24,21	35,45	-231,63	-97,56	173,85	-66,93	154,56	---	413,27	-92,65
57	23,57	19,10	-11,55	-7,55	167,75	-91,96	170,24	---	493,32	-70,79
58	-157,57	-14,04	-63,67	1,52,65	540,58	-66,45	133,59	---	696,17	-114,64
59	59,1	55,46	-519,83	461,27	-11,58	73,26	749,44	---	749,56	-161,66
60	166,21	-35,81	114,59	-64,43	1517,76	242,14	-598,91	---	145,68	-352,55
61	45,37	55,67	813,79	-35,93	1201,61	1076,40	-561,49	---	911,08	-14,261
62	58,39	25,25	-24,52	-24,93	94,93	14,129	-6856,76	---	197,51	-1294,83
63	85,39	-128,69	-95,23	-748,72	585,80	69,37	293,42	---	-611,51	495,06
64	69,1	-47,263	886,42	-54,53	134,26	913,65	1924,51	---	-5676,12	-212,39
65	-142,45	5,15	-192,43	1937,03	-11,66	11,13	747,27	---	2,95	-306,88
66	-2,414	5,94	-1382,75	2484,56	-746,55	129,27	636,15	---	-914,11	-523,21
67	-101,77	-2,19	5,497	-7,55	-261,95	-963,81	57,54	---	-7974,78	6487,84
68	54,52	1307,13	-629,27	1,56,22	-743,22	-911,76	8,17	---	179,97	2589,15
69	178,57	1367,7	-62,59	217,54	697,27	-214,56	15,21	---	151,77	498,67
70	225,16	51,49	521,16	-1191,46	974,78	-114,85	219,29	---	-147,64	566,64
71	3,584	-137,74	96,67	-4,21	1681,08	14,65	295,77	---	-13,14	365,29
72	996,99	-124,75	453,22	-1,74	-127,50	26,62	271,64	---	46,92	3,137
73	66,81	494,95	537,50	-1671,71	-177,99	565,92	291,83	---	293,69	320,36
74	25,93	-156,78	1356,22	-921,25	1,55,66	137,42	185,49	---	58,69	551,71
75	15,417	347,52	-175,51	1,95,11	-544,57	16,97	226,74	---	-775,80	716,52
76	13,27	1,497	-221,85	1,35,82	-773,76	29,25	544,63	---	-1039,99	474,54
77	-17,57	227,42	-117,40	4,23,31	-132,53	-61,18	-142,66	---	-1911,98	2,67
78	15,21	270,54	-137,34	6,4,16	-11,95	-61,46	-145,84	---	-1223,91	-235,92
79	-17,43	2,1,99	-121,10	4,6,79	-1,55,02	-66,66	-159,12	---	236,62	-540,28
80	-77,21	1859,17	-12,26	4,76,60	-4394,57	-50,64	-162,81	---	494,78	-537,38
81	-55,81	1,11,65	-1211,46	4,67,93	-1,510,67	-52,71	-163,96	---	727,27	-491,92
82	-297,95	1,88,21	-1245,28	4,75,25	-1280,38	-43,35	-163,64	---	251,11	-282,52
83	-52,15	2,13,81	-1247,41	4,73,53	-1292,31	-76,96	-162,49	---	5821,12	-744,44
84	-157,60	1,61,65	-1194,67	4,18,45	-1146,49	16,94	-215,54	---	5629,92	-872,81
85	-51,103	1,93,74	-1401,51	5,18,14	-1,334,62	143,12	-113,23	---	-92,63	-181,29
86	-53,27	2,07,29	-1759,23	4,65,16	-1,91,73	294,25	-191,25	---	-61,68	-133,91
87	44,71	-2,2,13	419,71	-339,42	916,82	-138,91	-251,82	---	-621,92	-19,18
88	-177,67	1,81,75	-122,67	4,1,6,0	-7,1,51	95,64	-269,73	---	-92,818	7,40
89	55,52	-132,25	7,3,51	-3424,84	-925,71	-167,61	-294,37	---	-291,43	136,85
90	-22,16	1,69,21	-11,6,67	4,8,27	-1,5,93	44,85	-77,63	---	-60,87	17,91
91	-797,2	1,63,67	-1,694,24	6,91,75	-1161,66	42,16	-747,13	---	-612,44	-16,63

TIME	U-ED	DIK	OFFER FORCE	RED FORC	LOS TORSE	UPPER LFG	LOWER LFG	SHOULDER	UPPER ARM	LOWER ARM	TOE	ARM
SEC	MM	SS	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM
VELOCITY OF BODY LINKS (CM/G) (RELATIVE TO VELOCITY)												
15.57	-0.50	-3.48	38.92	-92.88	52.20	3.81	3.81	---	0.52	0.52	---	---
15.58	-1.57	-2.63	126.19	-111.43	53.31	-16.00	-0.86	---	4.98	4.98	---	0.16
15.59	-0.65	-0.77	171.33	171.15	5.77	-37.20	-4.33	---	6.74	6.74	---	-0.87
15.60	-0.21	-0.50	214.57	219.05	111.01	173.62	6.57	---	14.82	14.82	---	1.50
15.61	-0.73	-1.11	212.00	485.91	297.73	-05.53	56.17	---	262.99	262.99	---	-2.02
15.62	-0.61	-0.16	272.71	448.25	408.15	-10.40	74.62	---	241.55	241.55	---	-5.59
15.63	-0.71	-0.11	373.23	502.57	577.01	-13.25	117.35	---	246.17	246.17	---	-15.61
15.64	-0.21	-0.24	549.69	646.55	594.75	-12.70	133.35	---	533.96	533.96	---	-07.24
15.65	-0.79	-0.97	319.90	639.31	615.11	211.89	-61.94	---	1540.67	1540.67	---	-210.46
15.66	-0.53	-0.53	219.66	447.78	593.94	776.93	-677.74	---	2379.97	2379.97	---	-746.15
15.67	-0.09	-0.16	191.90	105.49	645.35	421.97	-071.82	---	1976.23	1976.23	---	-639.49
15.68	-0.14	-0.24	245.75	-2.23	538.59	847.84	-93.53	---	-144.64	-144.64	---	-654.88
15.69	-1.00	-0.79	-68.59	-97.65	336.62	669.86	-121.93	---	-666.49	-666.49	---	-1124.76
15.70	-1.02	-1.11	-154.11	-162.12	244.63	623.24	-892.65	---	-371.48	-371.48	---	-2299.53
15.71	-1.16	-0.62	-178.97	-156.73	116.93	513.36	-633.66	---	-1973.57	-1973.57	---	-1619.40
15.72	-0.51	-0.71	-245.05	-95.02	-61.20	126.62	-833.28	---	-692.92	-692.92	---	-598.52
15.73	-1.19	-1.16	-319.20	165.71	79.12	15.99	-419.50	---	-436.59	-436.59	---	-1.62
15.74	-0.11	-0.10	-511.50	332.64	232.32	-31.26	-762.33	---	-322.97	-322.97	---	163.57
15.75	-0.73	-0.73	-314.77	395.93	336.71	-35.85	-712.60	---	-473.13	-473.13	---	316.14
15.76	0.36	0.36	221.88	243.29	327.62	12.44	-653.03	---	-816.62	-816.62	---	-324.52
15.77	0.36	0.36	-154.75	-13.35	275.97	111.66	-639.31	---	-373.35	-373.35	---	424.62
15.78	0.11	0.11	-172.11	-14.63	191.94	196.97	-495.27	---	-319.49	-319.49	---	615.13
15.79	0.09	0.09	-194.00	-134.00	111.32	217.32	-456.94	---	-513.65	-513.65	---	783.64
15.80	0.14	0.14	-163.53	-158.05	-60.55	145.19	432.89	---	-762.97	-762.97	---	970.64
15.81	0.13	0.13	-299.59	-299.59	-81.08	190.94	975.13	---	-1359.26	-1359.26	---	1233.13
15.82	0.17	0.17	-495.29	-191.72	-128.01	176.52	951.60	---	-1763.89	-1763.89	---	945.40
15.83	0.15	0.15	-274.56	-304.56	-117.75	142.39	926.65	---	-1863.74	-1863.74	---	686.57
15.84	0.09	0.09	-249.53	-249.53	-117.51	131.73	913.59	---	-1766.66	-1766.66	---	699.27
15.85	0.11	0.11	-232.27	-232.27	-117.35	111.28	873.37	---	-1639.29	-1639.29	---	592.01
15.86	0.15	0.15	-248.63	-248.63	-163.20	56.85	852.24	---	-1329.03	-1329.03	---	471.21
15.87	0.15	0.15	-333.60	-333.60	-97.64	71.70	813.15	---	-817.66	-817.66	---	329.51
15.88	0.14	0.14	-271.23	-271.23	-75.14	211.14	827.31	---	431.83	431.83	---	-49.90
15.89	0.13	0.13	-219.99	-219.99	-118.96	181.29	781.89	---	1269.56	1269.56	---	-603.15
15.90	0.17	0.17	-261.93	-261.93	-115.16	-57.21	694.22	---	1516.75	1516.75	---	-130.20
15.91	0.17	0.17	-261.43	-261.43	-169.21	53.53	192.52	---	1212.16	1212.16	---	-198.13
15.92	0.16	0.16	-112.22	-112.22	-237.18	31.23	-60.79	---	1392.87	1392.87	---	-218.91
15.93	0.16	0.16	-271.33	-271.33	-206.91	31.69	-131.17	---	751.54	751.54	---	-211.15
15.94	0.16	0.16	-291.18	-291.18	-317.51	22.27	-116.73	---	675.21	675.21	---	-188.75
15.95	0.16	0.16	-149.62	-149.62	-339.01	11.27	-274.17	---	108.59	108.59	---	-135.66
15.96	0.15	0.15	-134.65	-134.65	-297.12	-14.11	-273.35	---	-88.53	-88.53	---	-86.74





ONE MOTION

POSITIONS AND VELOCITIES RELATIVE TO VEHICLE FRAME  
 (ACCELERATION, RELATIVE TO INERTIAL FRAME)

TIME (MSEC)	X (CM)	X-VEL (CM/SEC)	X-ACCEL. (G'S)	Z (CM)	Z-VEL (CM/SEC)	Z-ACCEL. (G'S)
0.0	19.31	0.0	-3.19	-9.91	0.0	-1.625
5.0	16.66	17.06	4.591	-9.91	0.0	1.191
10.0	13.06	65.7	3.775	-9.91	-0.47	-2.44
15.0	19.57	59.35	-3.69	-9.96	-0.92	-3.539
20.0	19.71	78.68	-9.526	-9.51	-12.68	-1.640
25.0	9.15	38.56	-10.053	-9.51	-13.17	-1.664
30.0	29.59	62.27	-9.292	-9.67	-13.62	-1.735
35.0	31.09	112.96	-7.744	-9.77	-12.99	-2.270
40.0	21.66	115.41	-17.272	-9.83	-20.74	-2.43
45.0	27.29	171.17	-7.693	-17.1	-17.32	9.266
50.0	22.25	156.52	-23.632	-13.93	-9.8	3.522
55.0	33.69	179.67	-41.798	-16.15	6.68	6.656
60.0	24.19	134.31	-46.633	-9.97	13.12	9.433
65.0	24.63	67.9	-47.563	-9.9	8.99	-7.986
70.0	24.85	11.16	-47.566	-9.91	-10.35	-18.686
75.0	24.74	-17.62	-17.622	-10.19	-13.87	-17.599
80.0	24.67	28.55	-7.852	-12.04	-22.64	-5.996
85.0	24.51	33.47	-9.767	-13.06	-87.75	-0.79
90.0	24.27	52.36	-9.512	-11.56	-81.75	1.176
95.0	23.64	63.67	-9.756	-11.77	-70.67	6.443
100.0	23.29	69.76	-2.731	-12.17	-62.34	1.394
105.0	23.74	-7.74	-2.93	-12.53	-56.52	15.07
110.0	22.24	62.71	-2.629	-13.46	-12.18	3.372
115.0	22.64	37.54	1.33	-12.23	-9.39	3.231
120.0	22.25	75.7	-2.179	-12.59	9.24	7.468
125.0	21.83	15.64	3.517	-12.69	15.33	-7.9
130.0	21.51	-75.11	3.39	-12.41	17.37	-652
135.0	21.15	-76.09	3.571	-12.53	19.92	-226
140.0	21.77	-70.29	3.266	-12.22	21.63	-161
145.0	21.59	-71.16	6.174	-12.11	23.1	1.70
150.0	21.61	-71.55	9.473	-11.99	24.12	1.66
155.0	19.63	-76.59	4.929	-11.57	25.15	1.92
160.0	19.26	-76.65	5.9	-11.79	27.24	-0.34
165.0	18.9	-7.67	5.967	-11.56	3.36	-6.94
170.0	18.34	-56.39	7.294	-11.92	33.69	1.123
175.0	18.74	-41.51	7.67	-11.26	37.16	1.585
180.0	17.95	-59.99	-2.75	-11.7	39.20	-1.322
185.0	17.65	-67.55	9.255	-11.48	37.15	-7.75
190.0	17.67	-57.18	6.51	-11.47	35.02	-6.274
195.0	17.53	-71.77	9.965	-11.55	37.13	-3.261
200.0	17.21	-17.21	15.627	-11.66	33.34	-2.935



HEAD CENTER OF MASS MOTION

POSITIONS AND VELOCITIES RELATIVE TO VEHICLE FRAME  
(ACCELERATIONS RELATIVE TO INTERNAL FRAME)

TIME (003.0)	X (10)	X-VEL (1/27.0)	X-ACCEL. (6.0)	Z (CM)	Z-VEL (1/27.0)	Z-ACCEL. (6.0)	HEAD ANGLE (01.0)	ANG. VEL. (01/27.0)	ANG. ACC. (01/27.0)
9.57	15.296	0.532	-2.493	-50.1	1.56	1.718	70.54	0.00	0.00
9.58	15.291	19.76	-2.494	-50.4	1.2	0.19	70.69	-2.63	-6.5454
17.57	15.316	65.82	-6.915	-50.59	1.53	0.19	70.16	-1.7746	-12.2116
17.58	15.49	65.04	-9.941	-54.07	6.5	4.103	76.08	-4.4630	-6.9402
23.21	15.71	50.71	-9.226	-54.01	10.04	9.351	73.96	-6.2115	0.548
29.57	16.15	68.67	-13.073	-53.86	41.76	13.703	71.77	-6.2379	19.066
31.57	16.52	49.51	-18.019	-53.59	70.70	15.727	67.67	-6.6318	-15.757
35.07	16.97	46.76	-23.185	-53.16	99.95	14.577	64.15	-7.0022	-5.6090
40.00	14.71	28.14	-22.664	-52.59	125.84	12.161	60.15	-8.7124	160.51
40.01	14.9	77.17	-18.616	-51.91	194.59	6.118	55.09	-7.9197	50.567
51.22	15.13	64.66	-12.841	-51.13	147.44	-2.938	42.19	-6.5535	230.234
55.57	15.52	93.75	-13.879	-50.74	159.94	-0.214	40.51	-6.0277	-17.610
63.00	16.11	132.71	-16.223	-49.86	114.12	-11.907	45.54	-7.7420	-4.7465
65.00	16.94	159.95	-22.895	-49.53	96.7	-11.766	46.77	-11.9079	-14.2799
70.57	17.57	136.45	-31.925	-48.92	71.19	-9.292	54.37	-14.2012	-8.9414
75.17	18.16	95.76	-45.997	-48.63	5.01	-11.021	26.07	-19.7162	-11.177
80.57	18.53	48.71	-66.673	-48.43	31.16	-16.248	14.94	-10.3437	54.249
83.5	17.64	16.61	-15.431	-48.43	11.27	-11.039	11.99	-11.9769	1.0709
91.57	18.00	-2.2	-9.392	-48.57	-41.24	-11.761	7.58	-6.1193	22.5313
95.57	18.05	-12.79	-4.651	-48.03	-50.11	-8.947	5.09	2.16	21.546
100.17	18.57	-19.3	-5.730	-49.14	-66.22	-3.016	7.09	4.5671	9.9154
105.17	18.94	-33.4	-6.707	-49.60	-72.12	-1.703	9.76	6.1161	6.0081
110.33	16.23	-62.62	-3.786	-49.95	-74.11	-0.873	13.52	-7.9655	5.5943
115.1	18.50	-48.62	-3.57	-50.29	-76.91	-1.096	17.98	0.033	1.9667
121.57	17.73	-7.55	-4.016	-50.61	-73.2	0.365	22.7	9.0143	1.9367
125.57	17.94	-9.01	-9.479	-51.1	-75.93	1.762	24.57	9.1234	-17.667
131.57	17.5	-66.14	-0.111	-51.35	-69.65	3.667	51.18	9.226	15.2
135.57	16.50	-68.64	-6.897	-51.65	-61.31	3.386	33.97	9.552	-17.439
140.57	15.71	-11.571	-2.979	-51.99	-55.20	2.152	45.72	-1.9576	-20.641
145.57	17.53	-11.717	-1.019	-52.24	-47.91	1.755	45.41	9.9461	-5.7481
150.57	17.50	-11.70	-2.72	-52.30	-47.91	2.431	69.92	8.9187	-2.9025
155.00	16.90	-11.650	-1.176	-52.77	-41.55	3.197	54.35	8.7944	-2.7748
160.57	15.92	-11.927	-1.109	-52.92	-34.2	3.406	50.67	8.6052	-5.5115
165.57	15.45	-12.214	1.403	-53.17	-27.5	3.016	62.87	8.574	-1.7136
170.57	14.92	-9.722	2.697	-53.19	-21.31	2.359	44.92	8.1262	-5.103
175.57	14.48	-5.903	2.006	-53.16	-15.14	1.696	71.93	7.9741	-3.3117
180.57	13.77	-3.11	6.713	-53.55	-7.5	0.75	74.84	7.8653	4.671
185.57	11.65	-6.14	7.016	-53.42	-15.13	-2.169	78.91	8.049	-1.7667
190.57	11.57	-6.70	1.513	-53.51	-21.14	-3.786	65.82	7.9142	0.505
195.57	11.11	-5.709	0.707	-53.63	-26.96	-3.497	60.63	7.5947	-2.019
200.57	11.57	-6.21	0.025	-53.75	-33.7	-2.369	93.14	-6.3340	-7.9739

VEHICLE RESPONSE

TIME (SEC)	LOCAL			GLOBAL			ACCEL. (G)	VELOCITY (FT/SEC)	ACCEL. (G)	ACCEL. (G)	ACCEL. (G)	ACCEL. (G)	ACCEL. (G)
	VELOCITY (G)	ACCEL. (G)	ACCEL. (G)	VELOCITY (G)	ACCEL. (G)	ACCEL. (G)							
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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