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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 auxillary 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 colum 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 preceeding 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 us s 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).

| | | |

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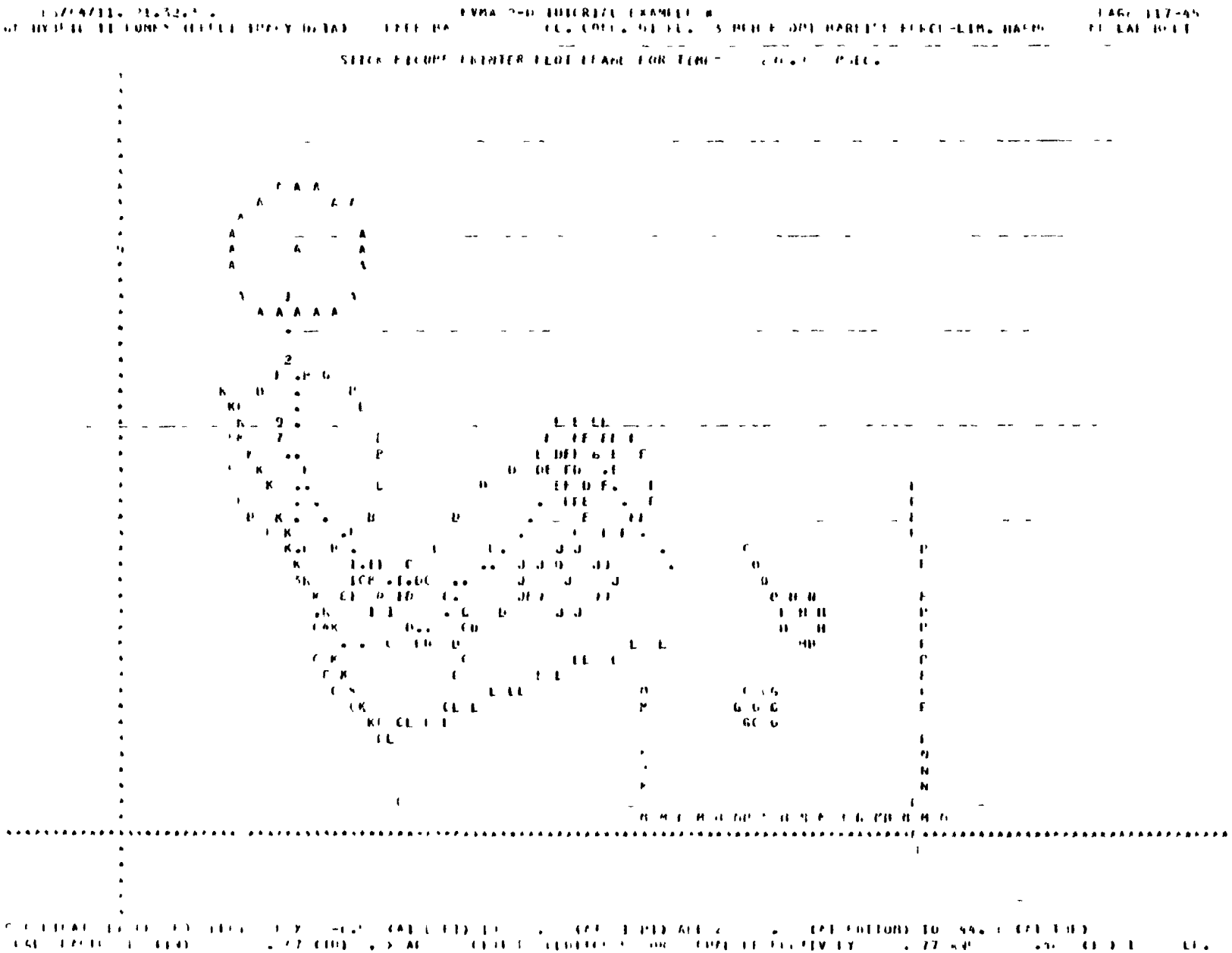
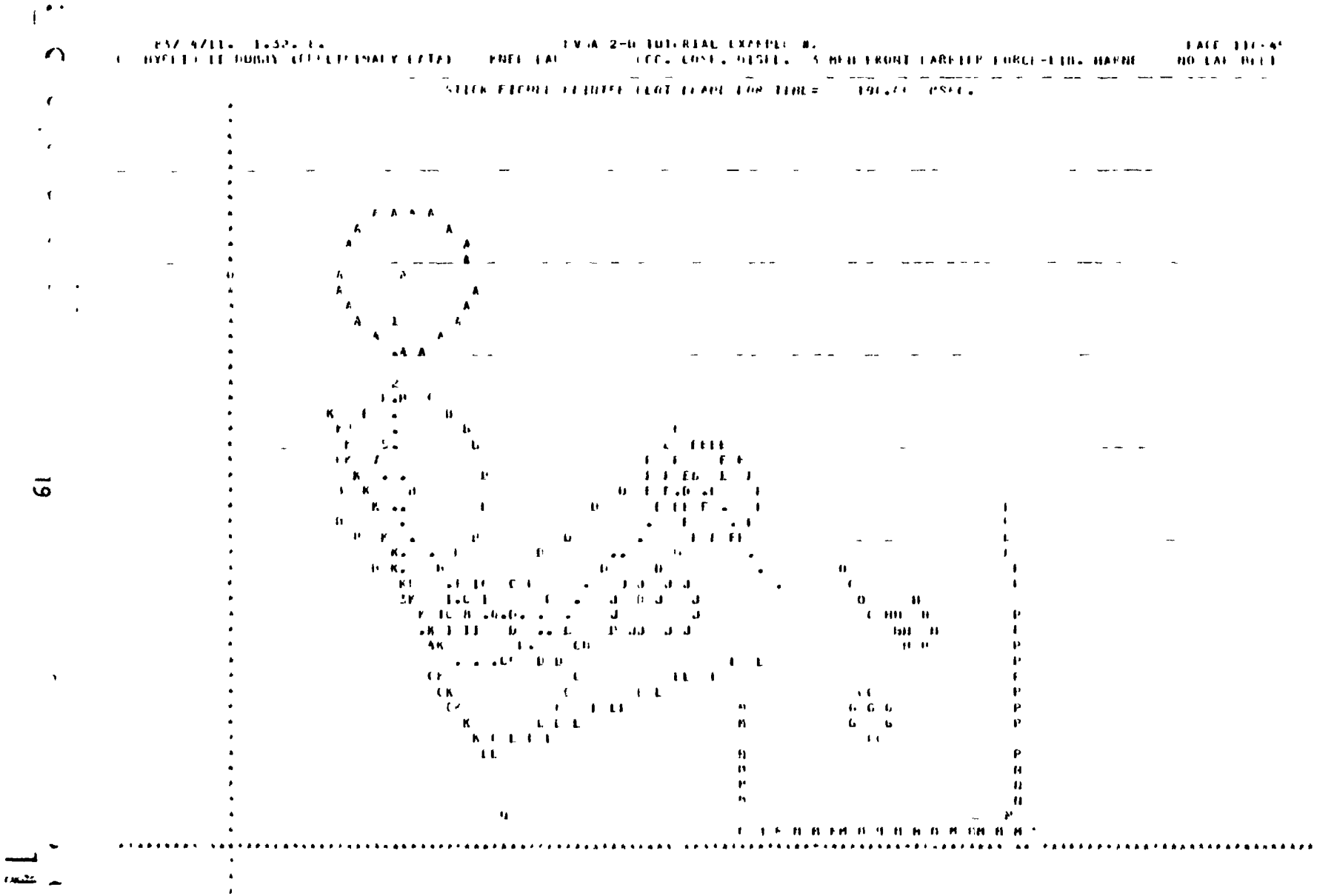
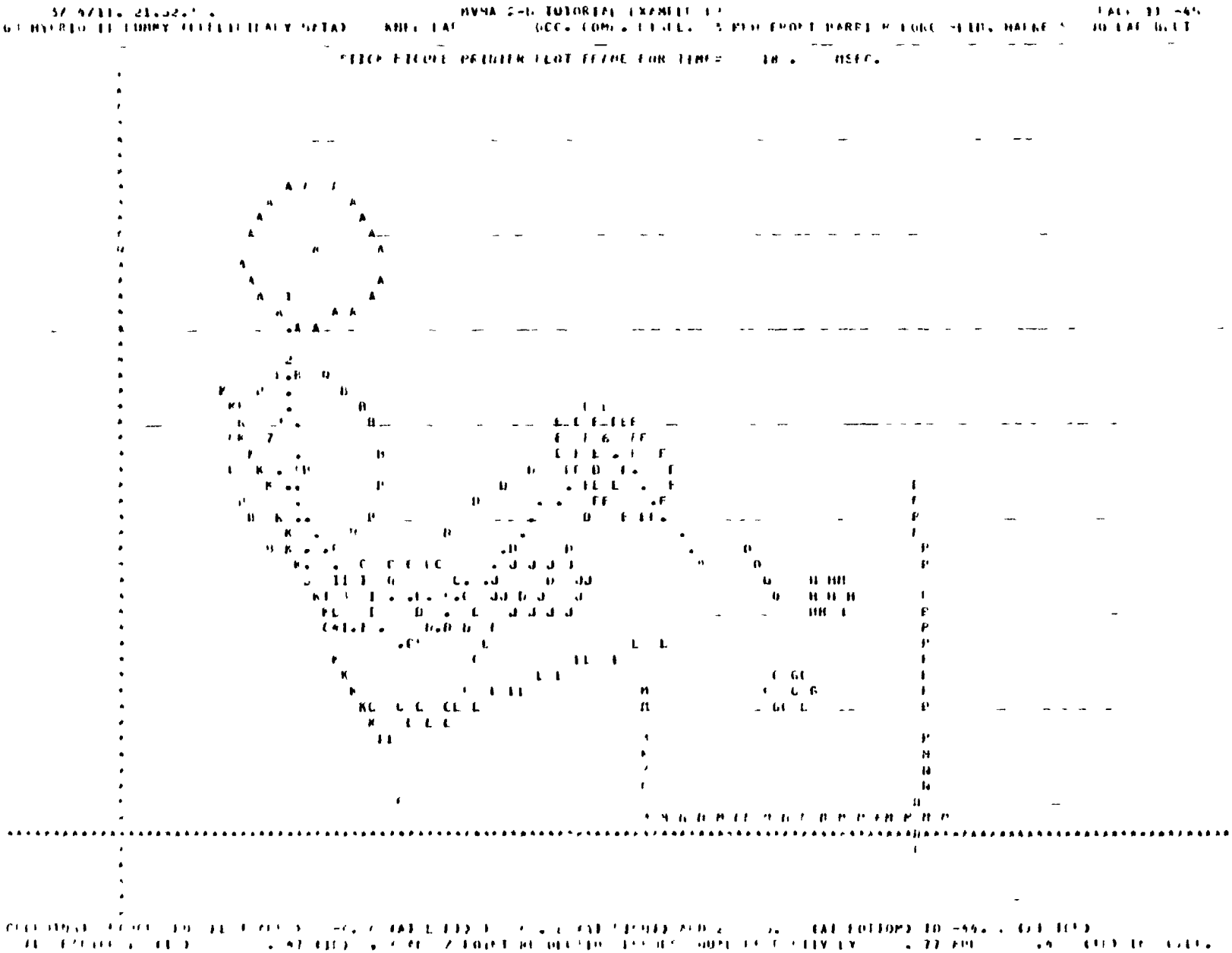
TEST FIGURE SYMBOLS USED

SYMBOL DESIGNATION	SYMBOL
HEAD C.G.	
UPPER NECK JOINT	1
LOWER NECK JOINT	2
UPPER TORSO C.G.	
UPPER SPINE JNT.	3
LOWER SPINE JNT.	4
HIP JOINT	5
KNEE	6
LOWER L.G. C.G.	
SHOULDER AT TORSO	9
SHOULDER AT ARM	7
ELBOW	8
LOWER A.M C.G.	-
BODY FILLER PTS	.
ZERO COORD.LINES	+
HEAD	A
THORAX	B
HIP	C
THIGH	D
KNEE	E
SHANK	F
HEEL	G
FOOT	H
ELBOW	I
HAND	J
SEAT BACK	K
SEAT CUSHION	L
FLOOR	M
TOEPAN	N
KNEE BAR	O
DASH	P
STANDARD TEST	Q



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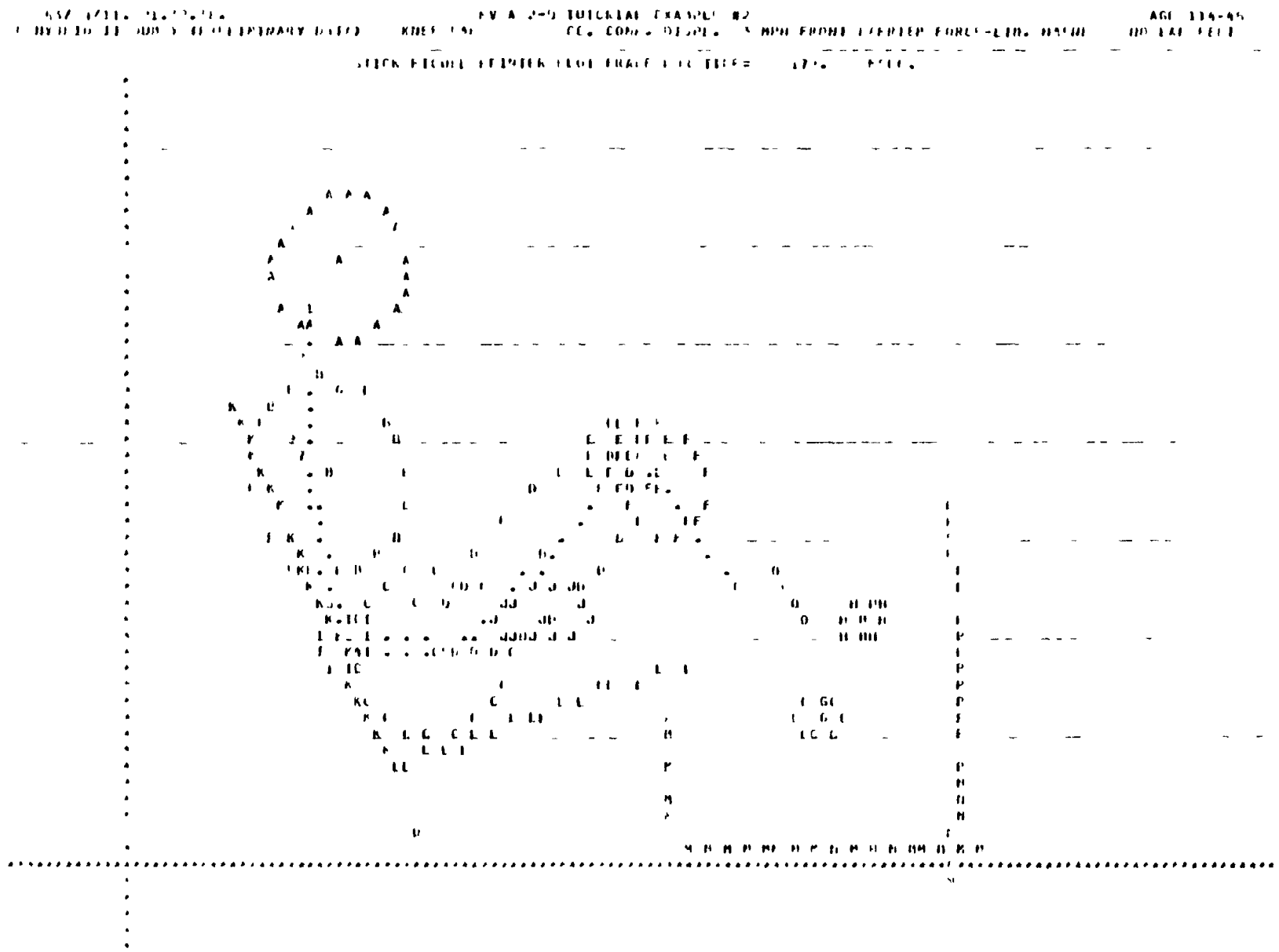

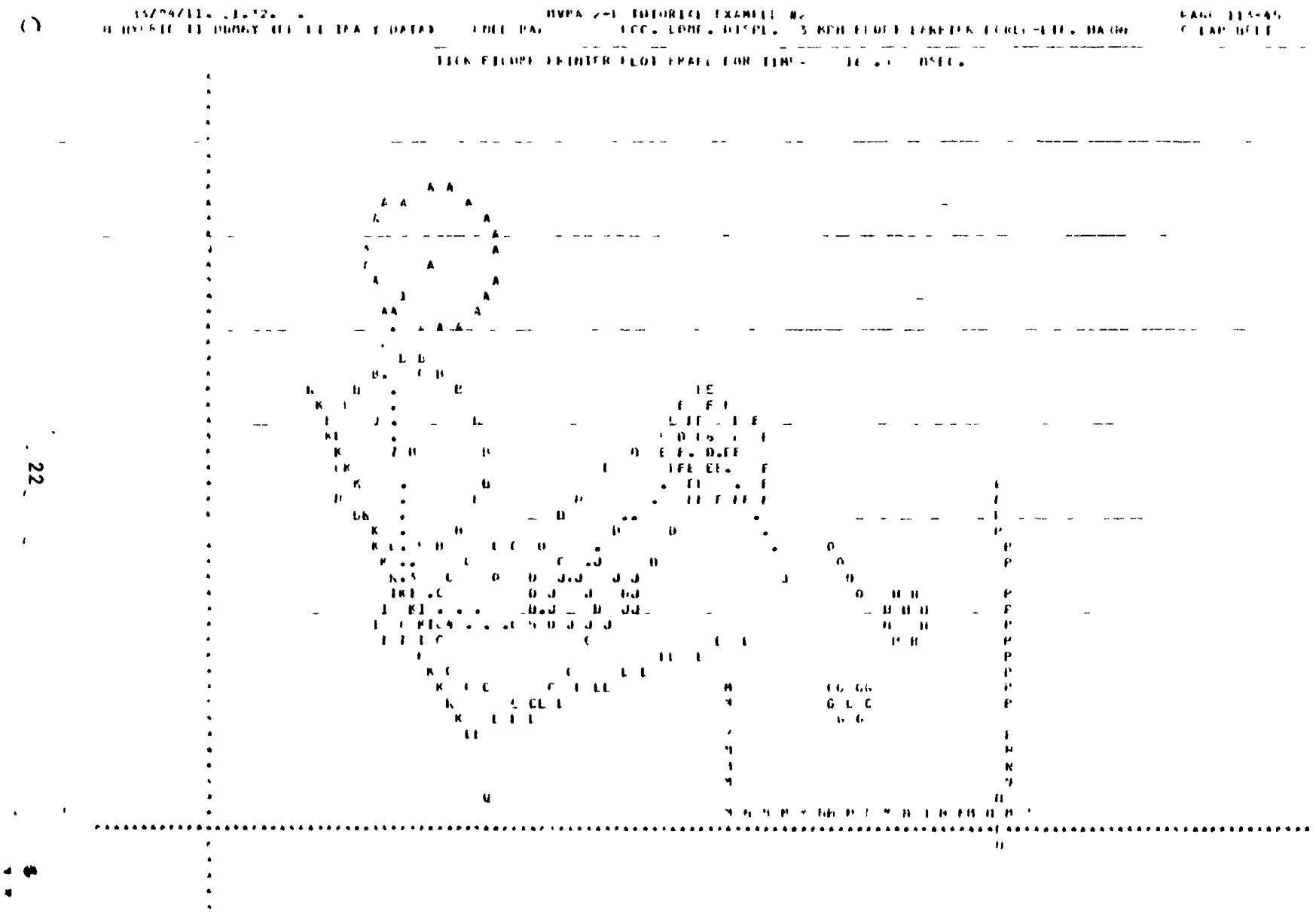

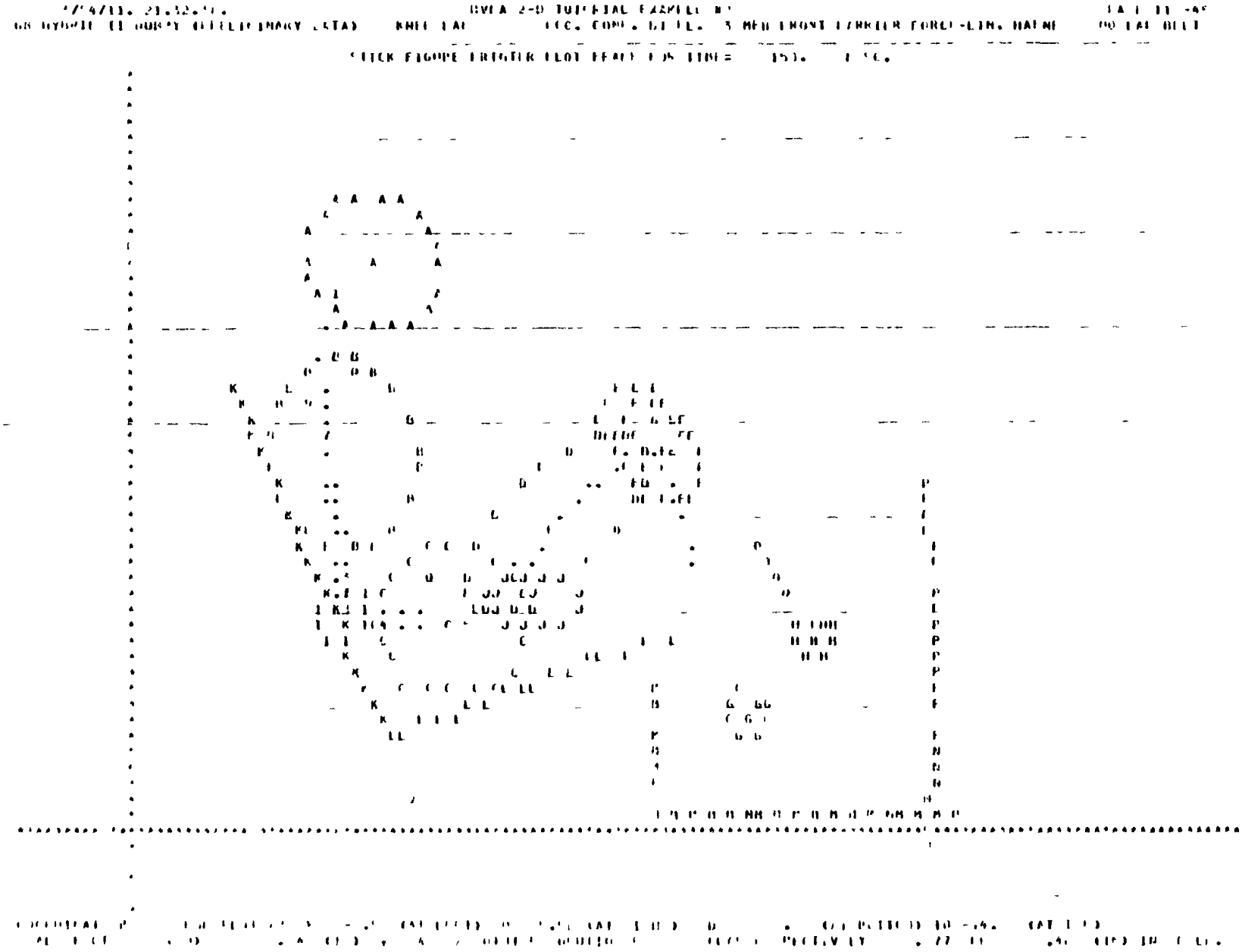

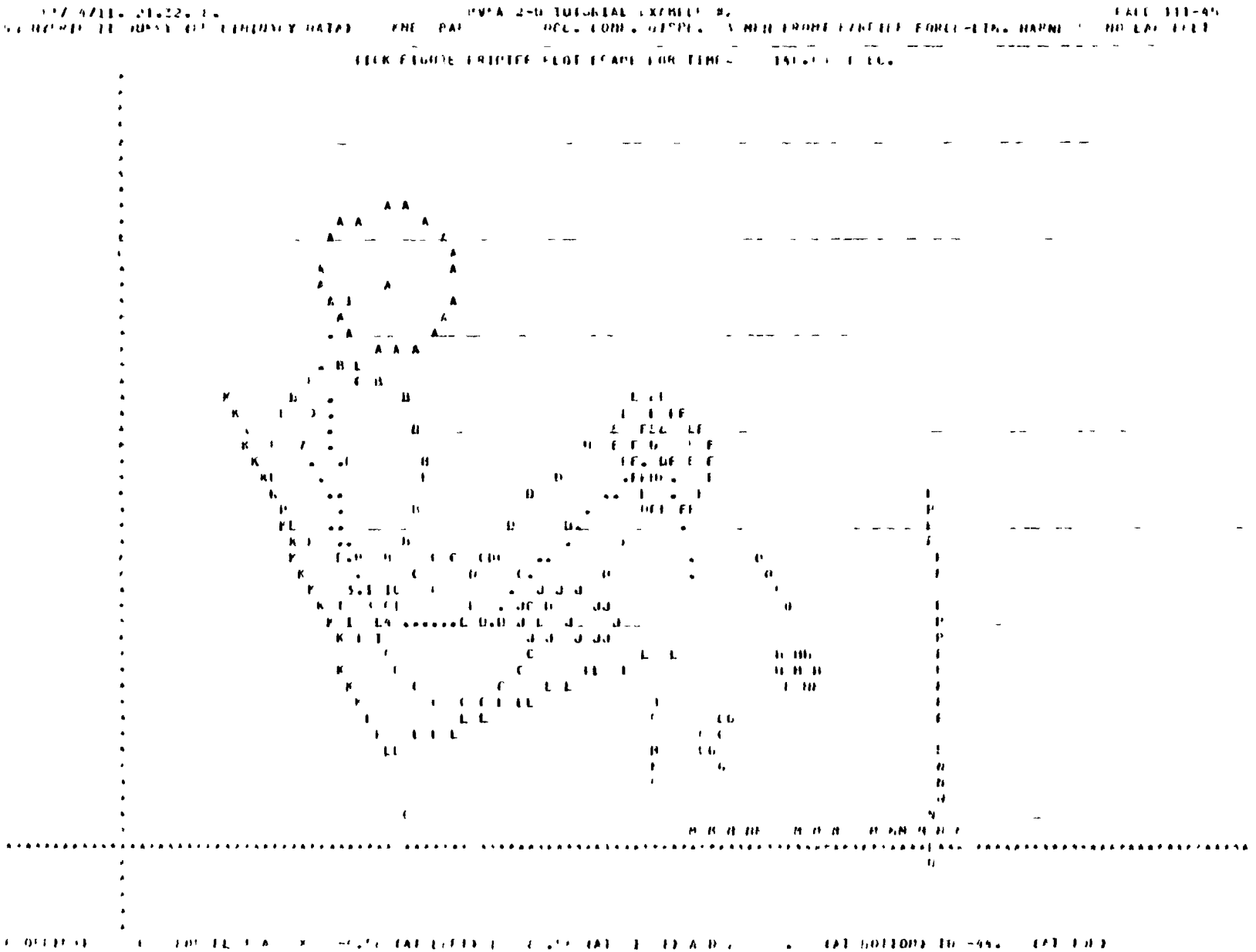

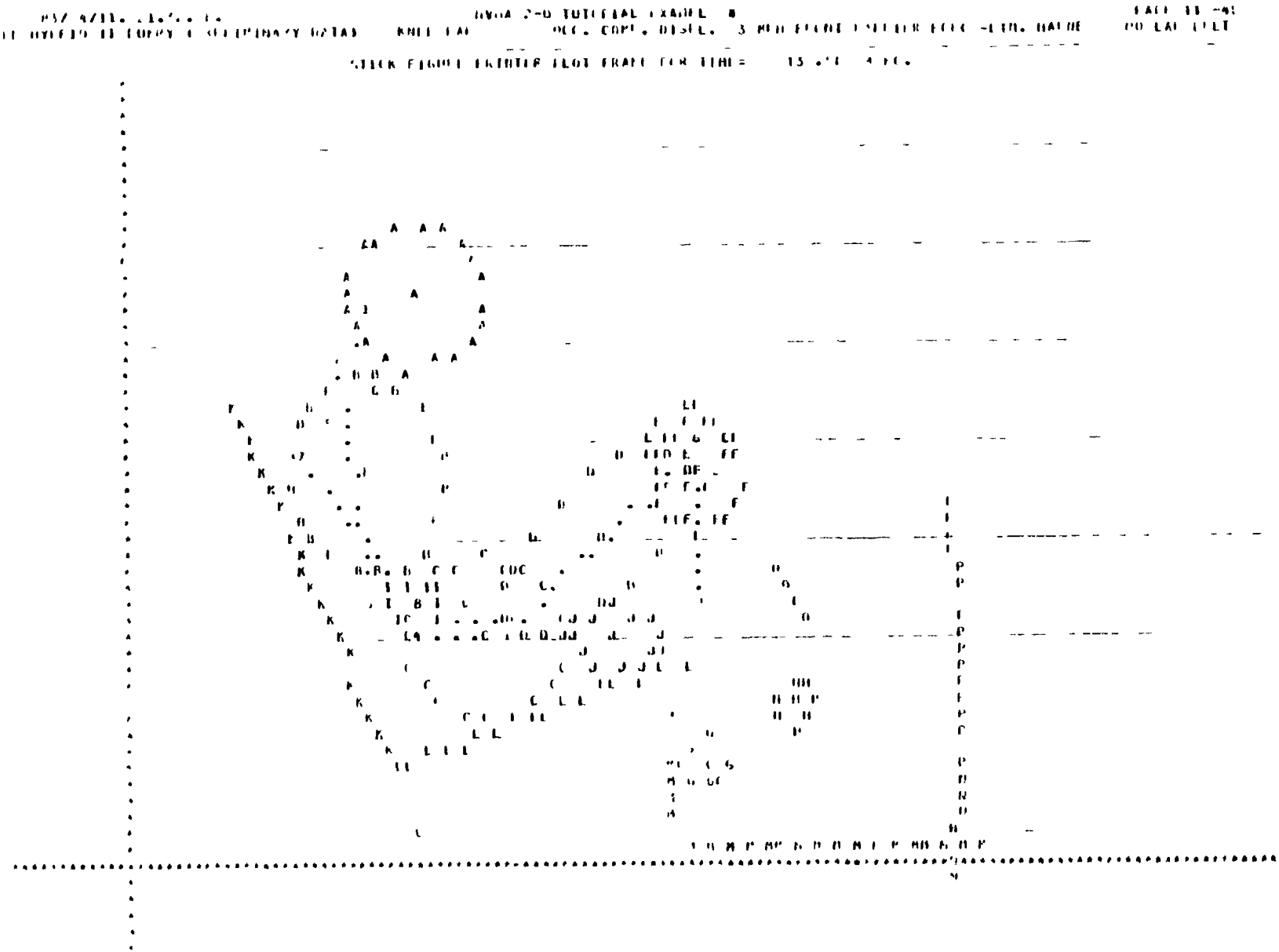

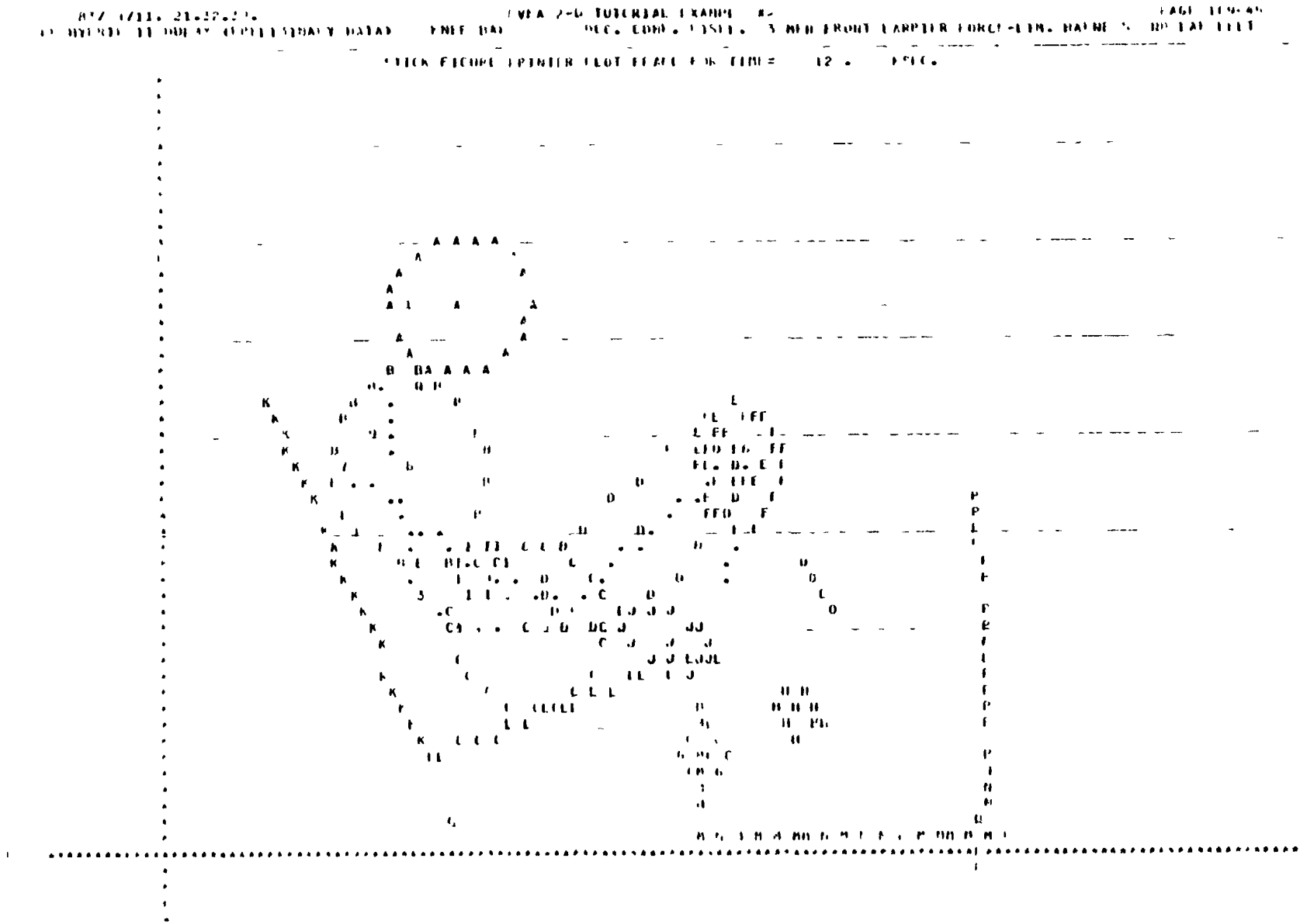

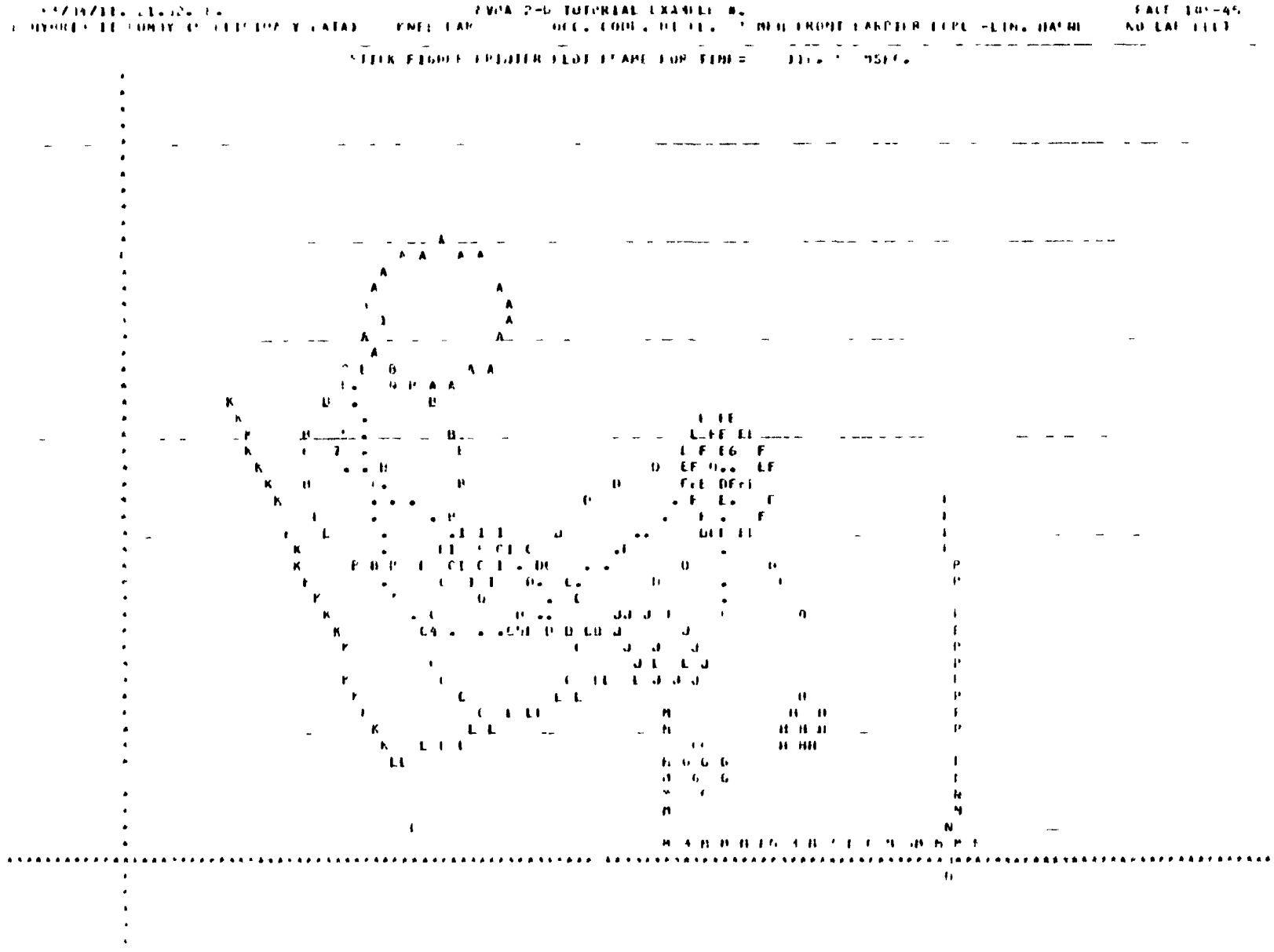

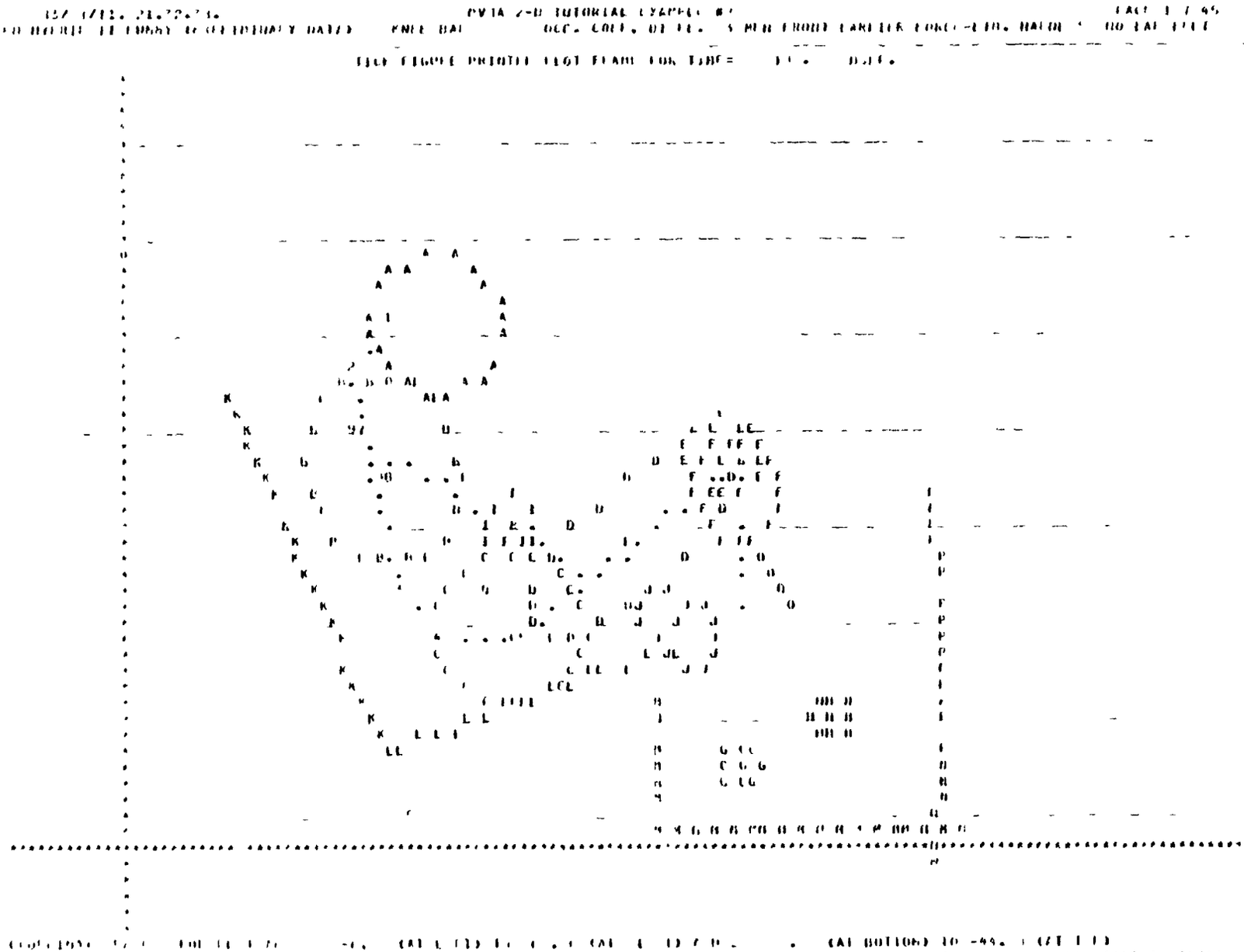

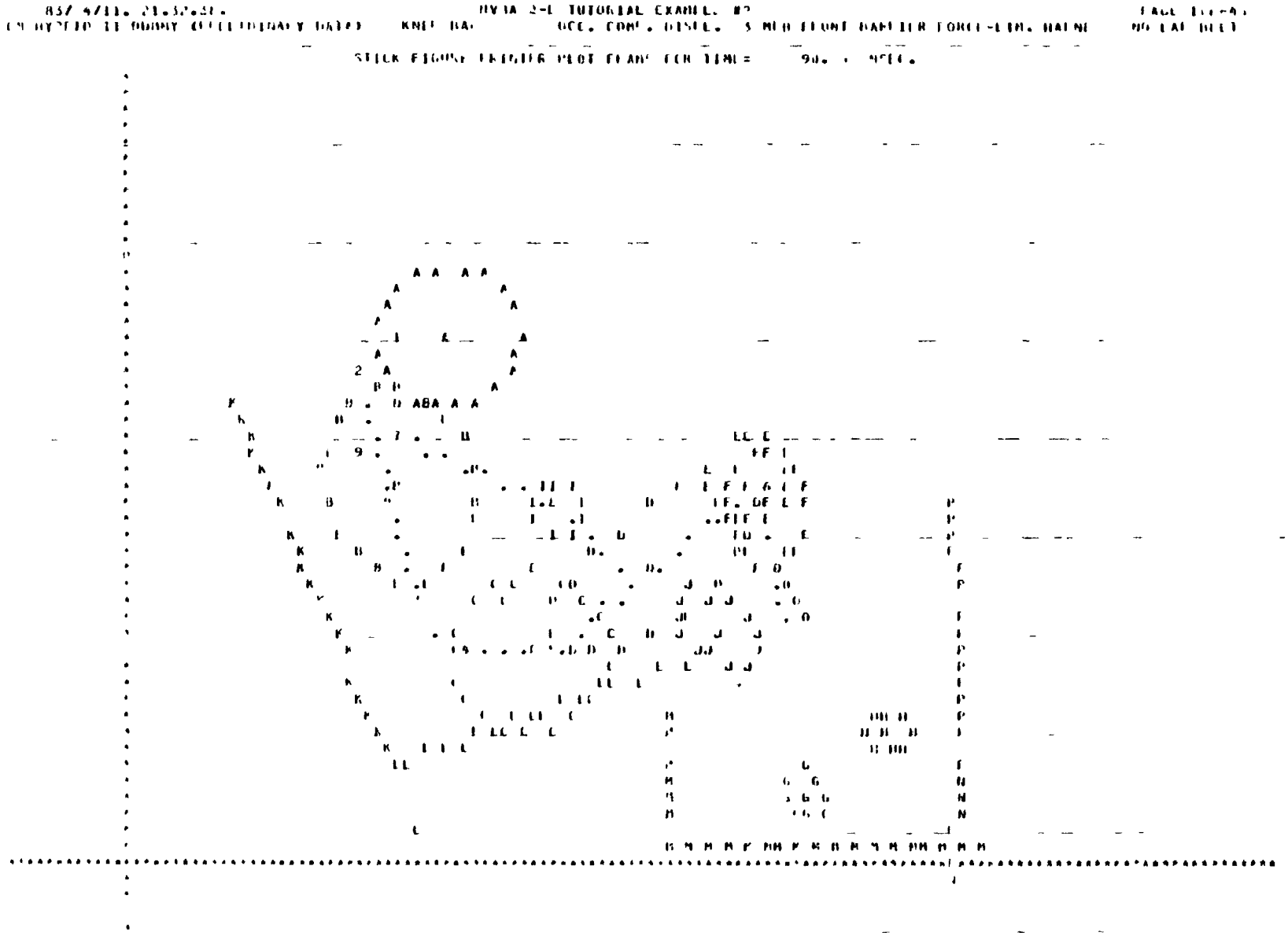
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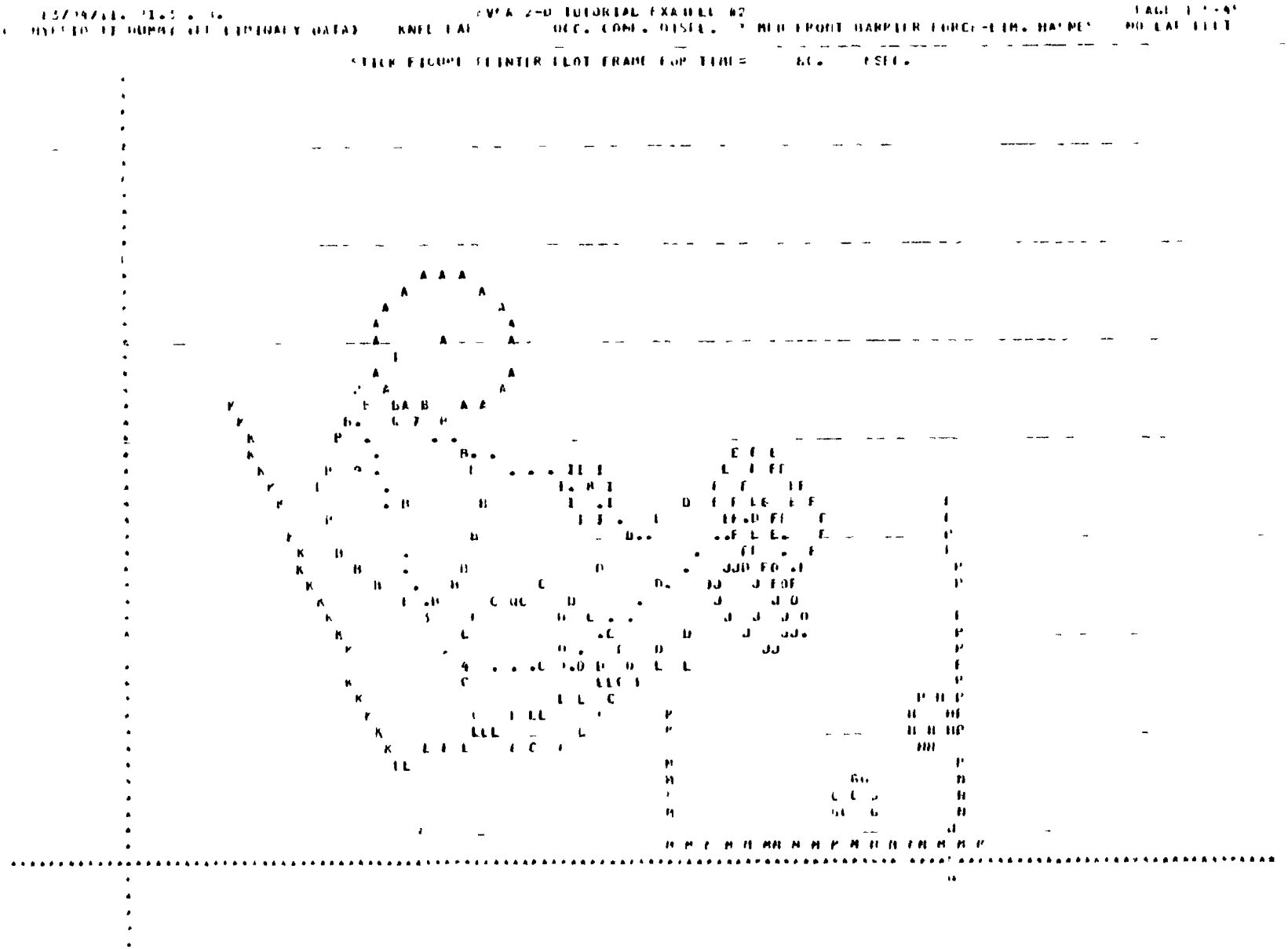

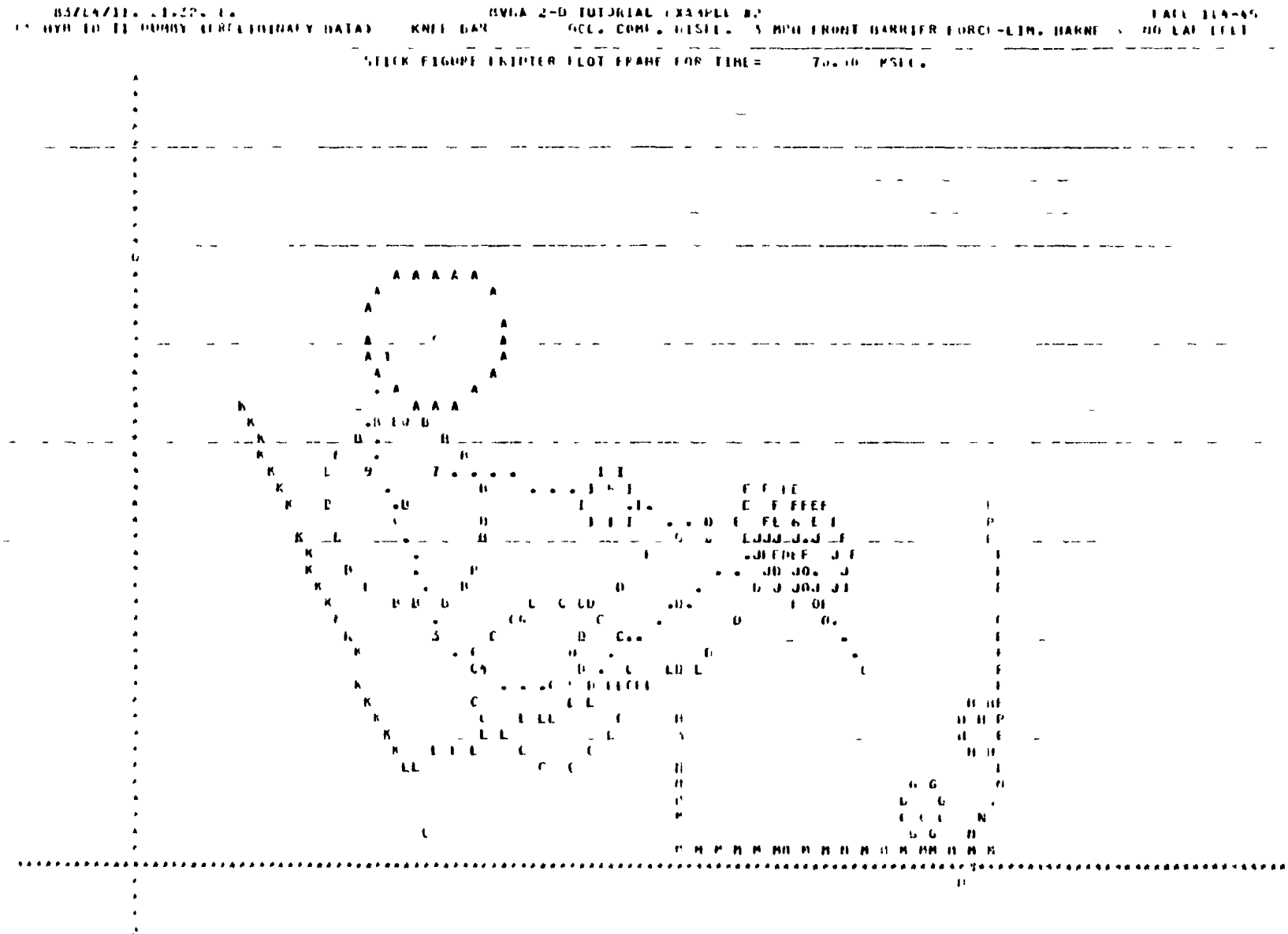
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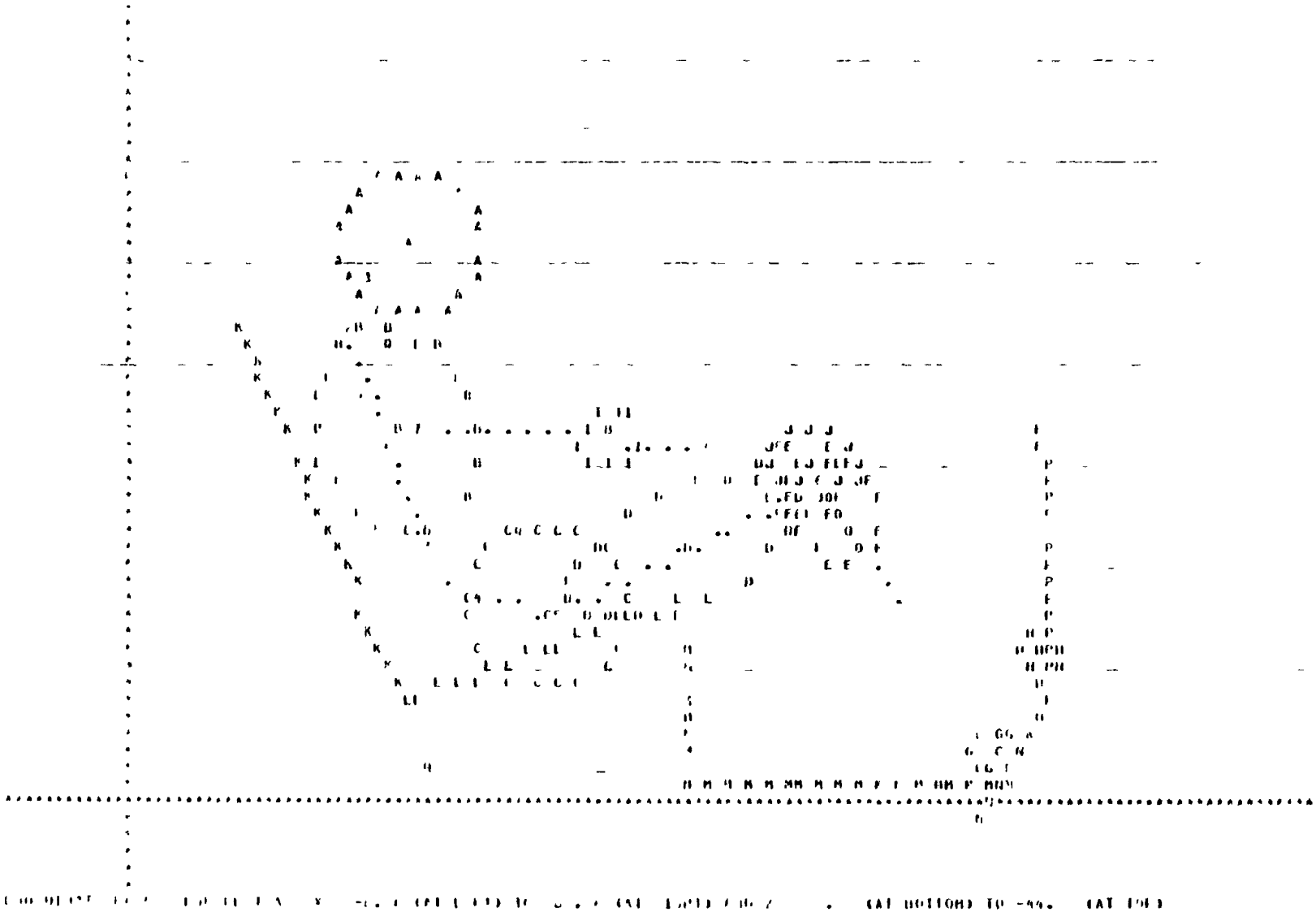

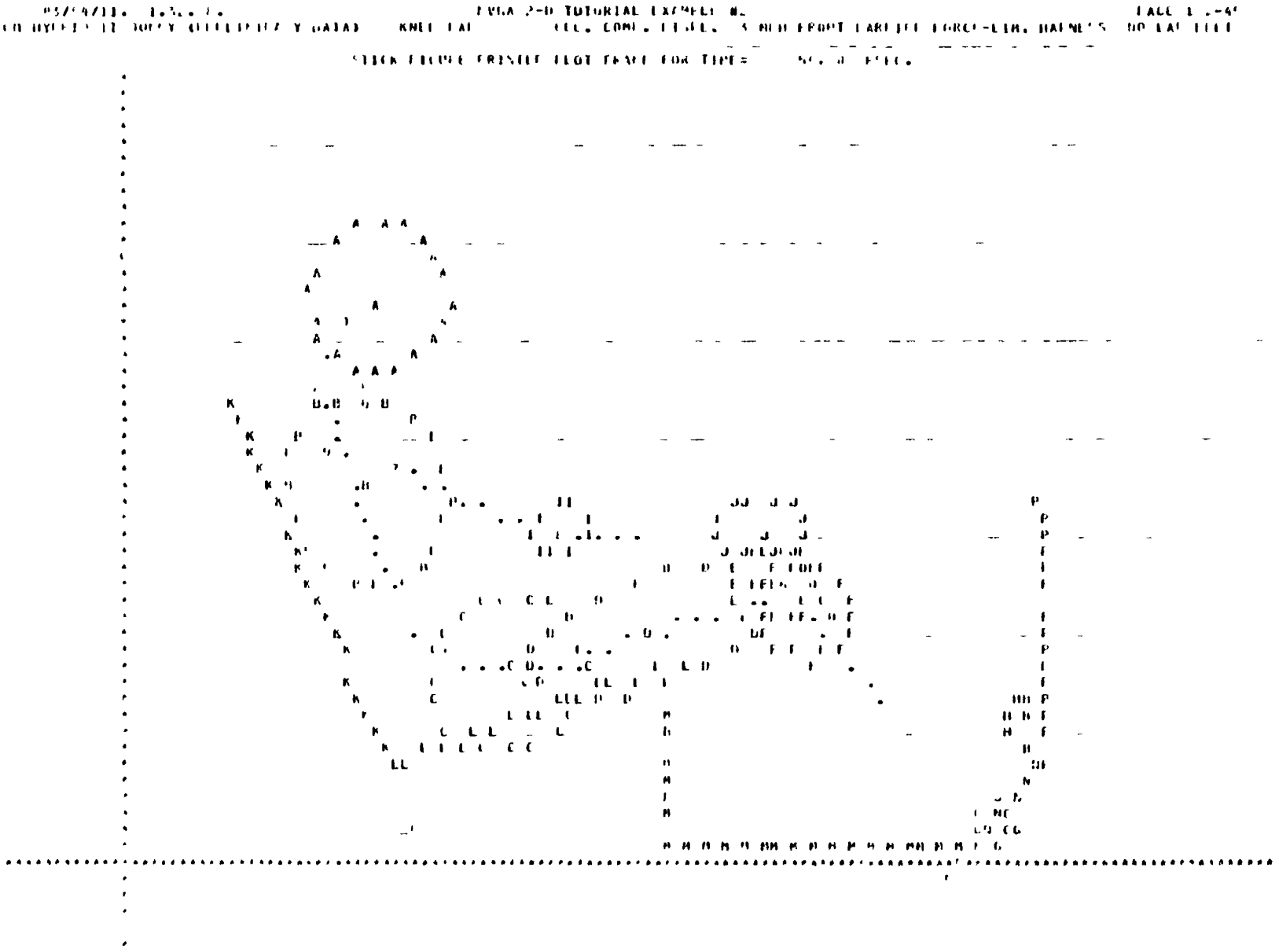

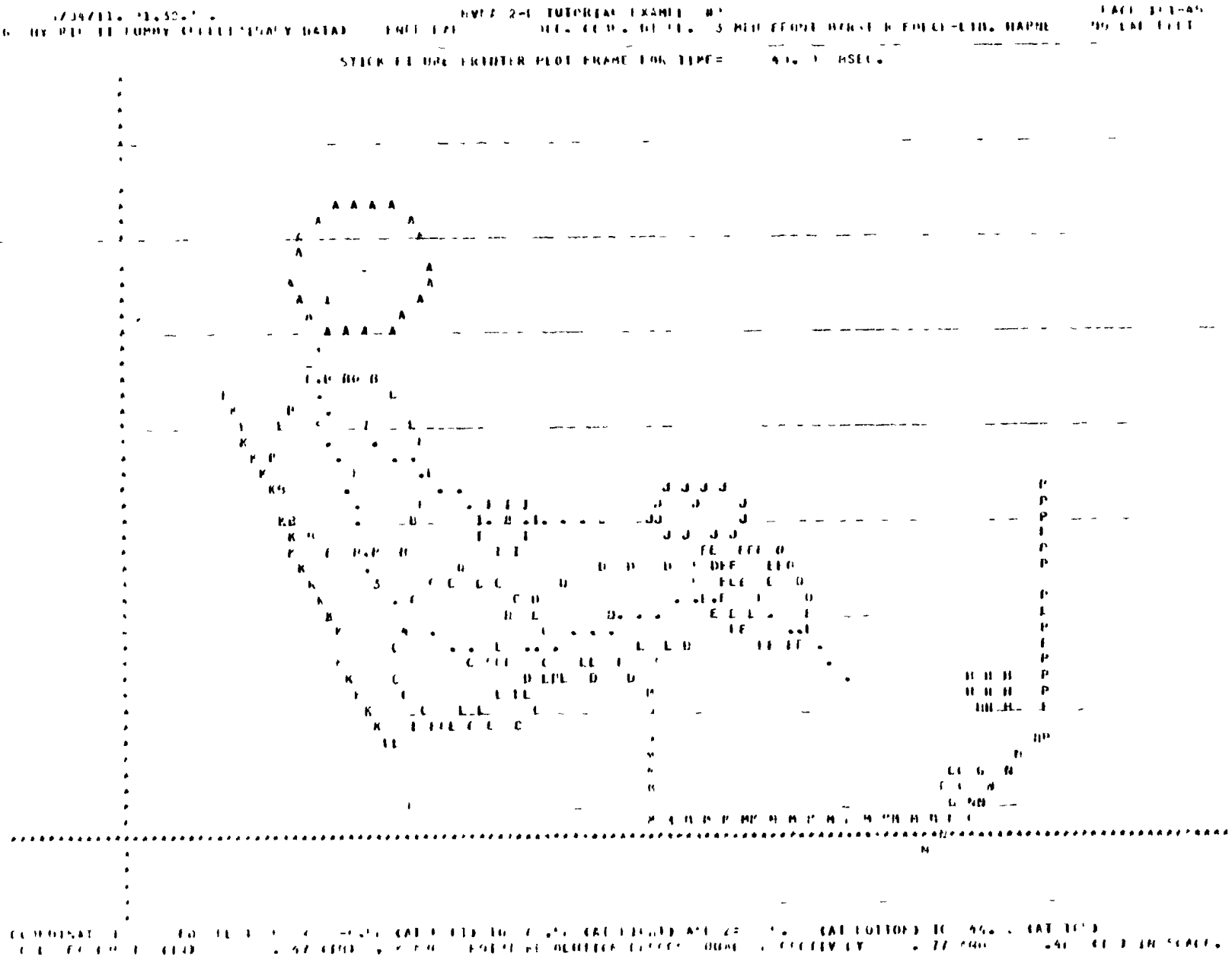
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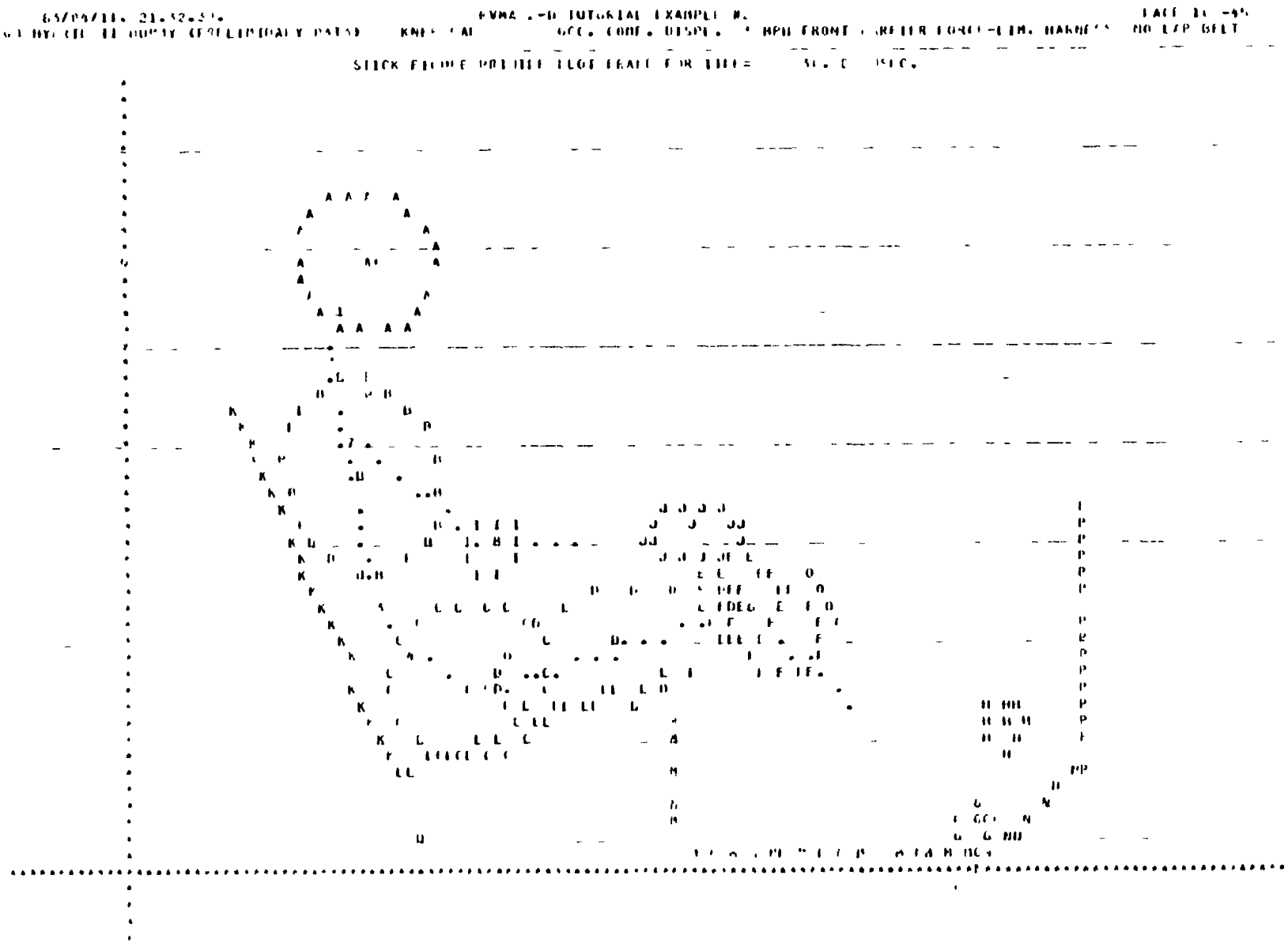

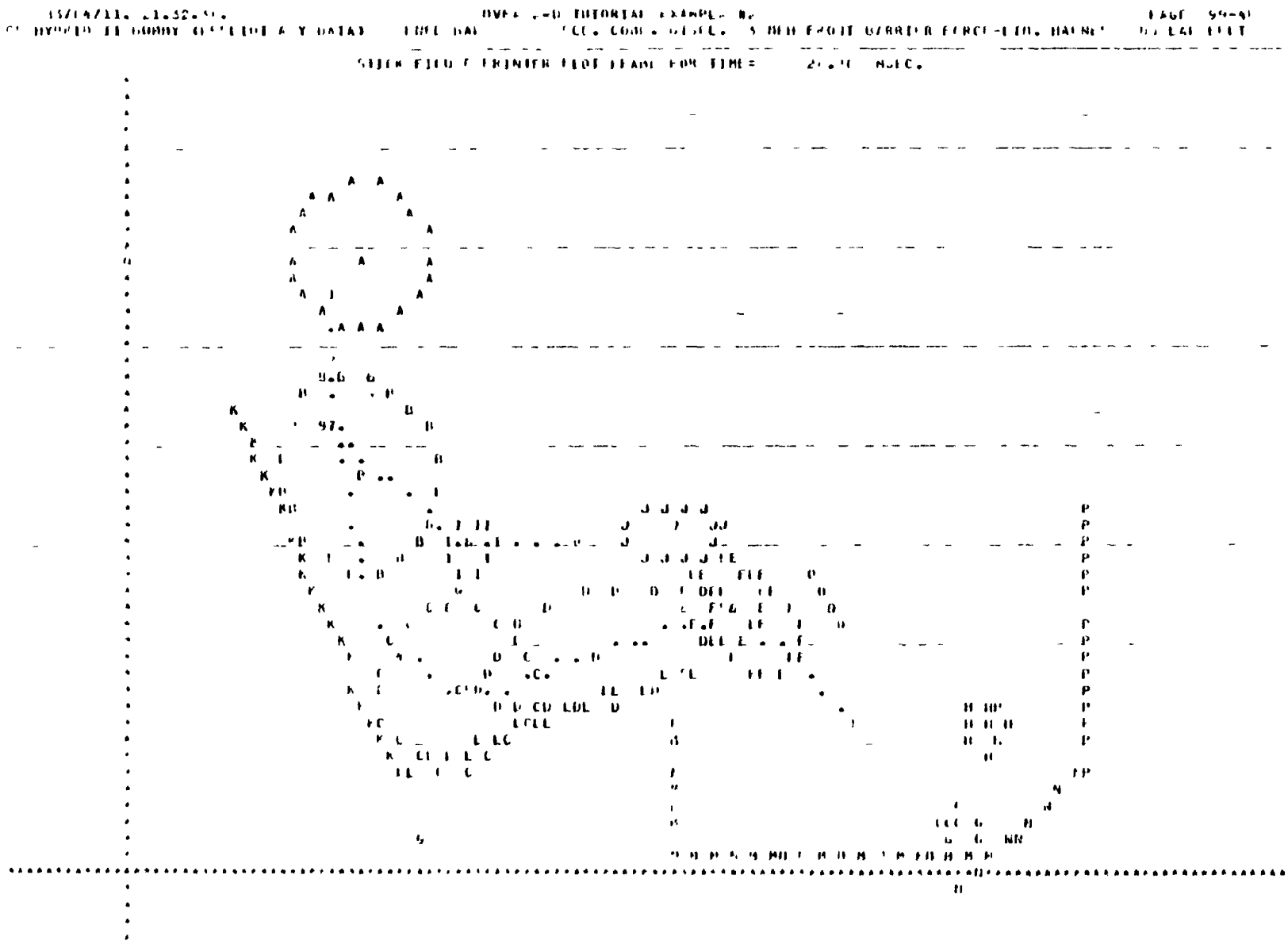
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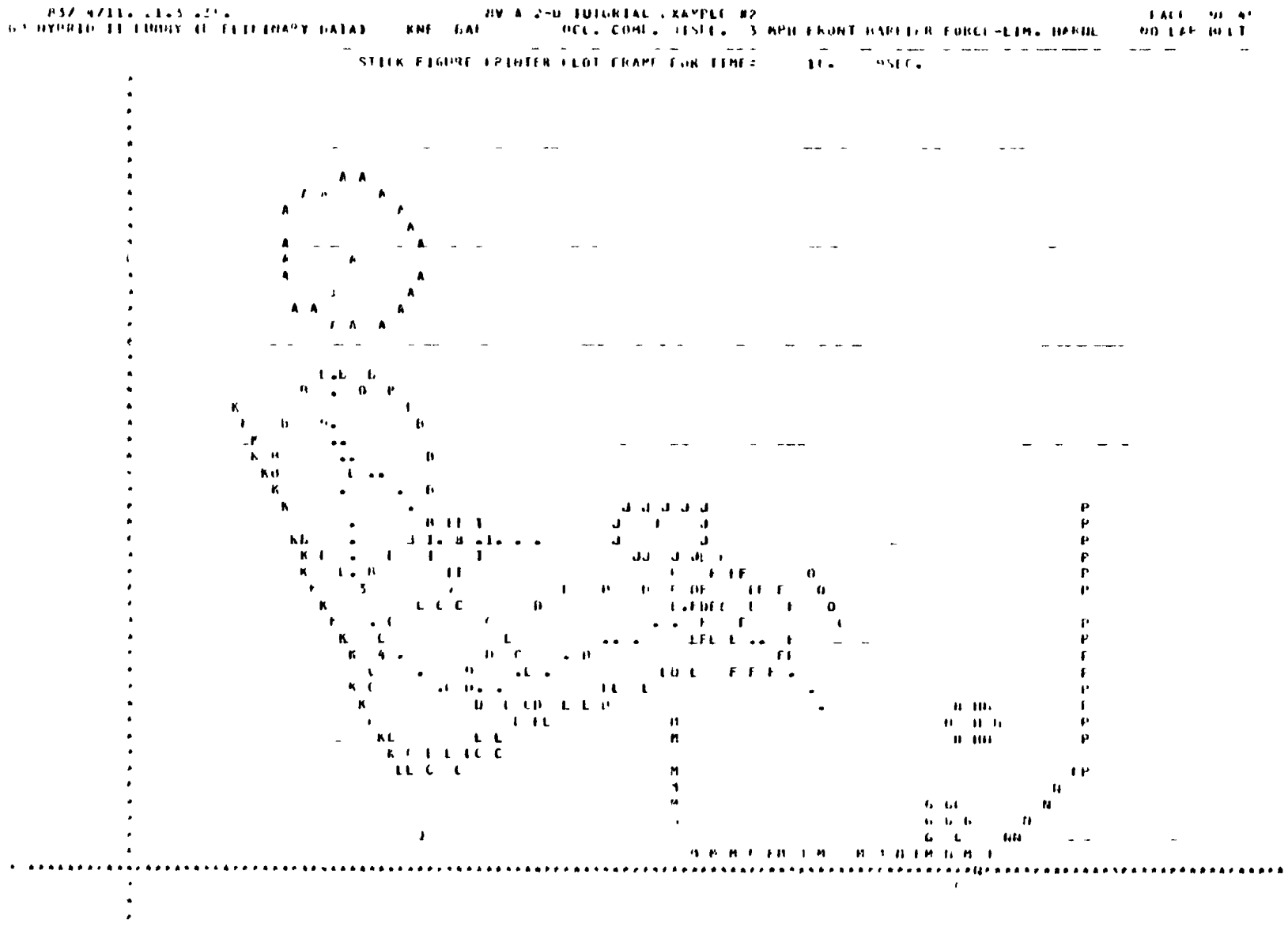
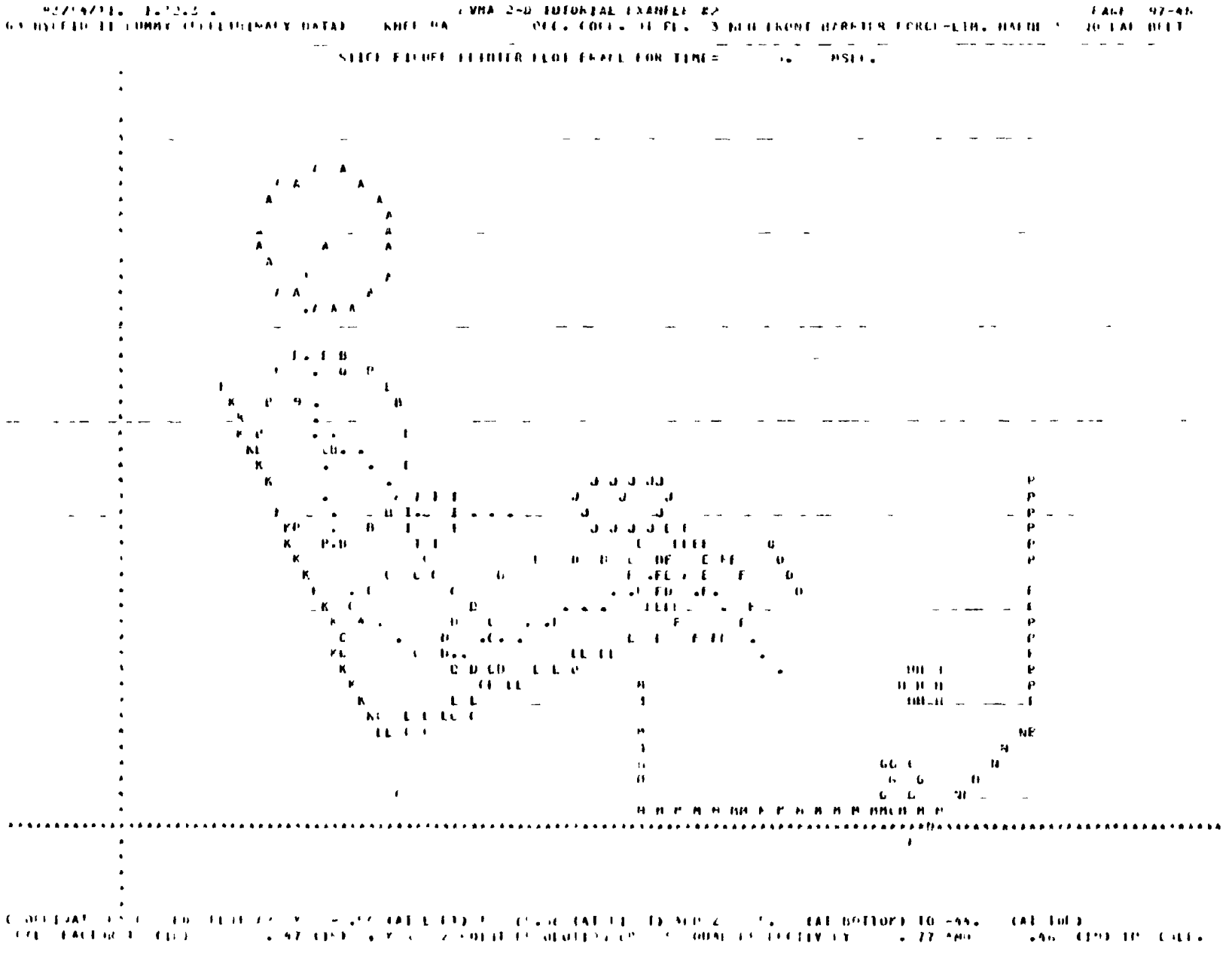
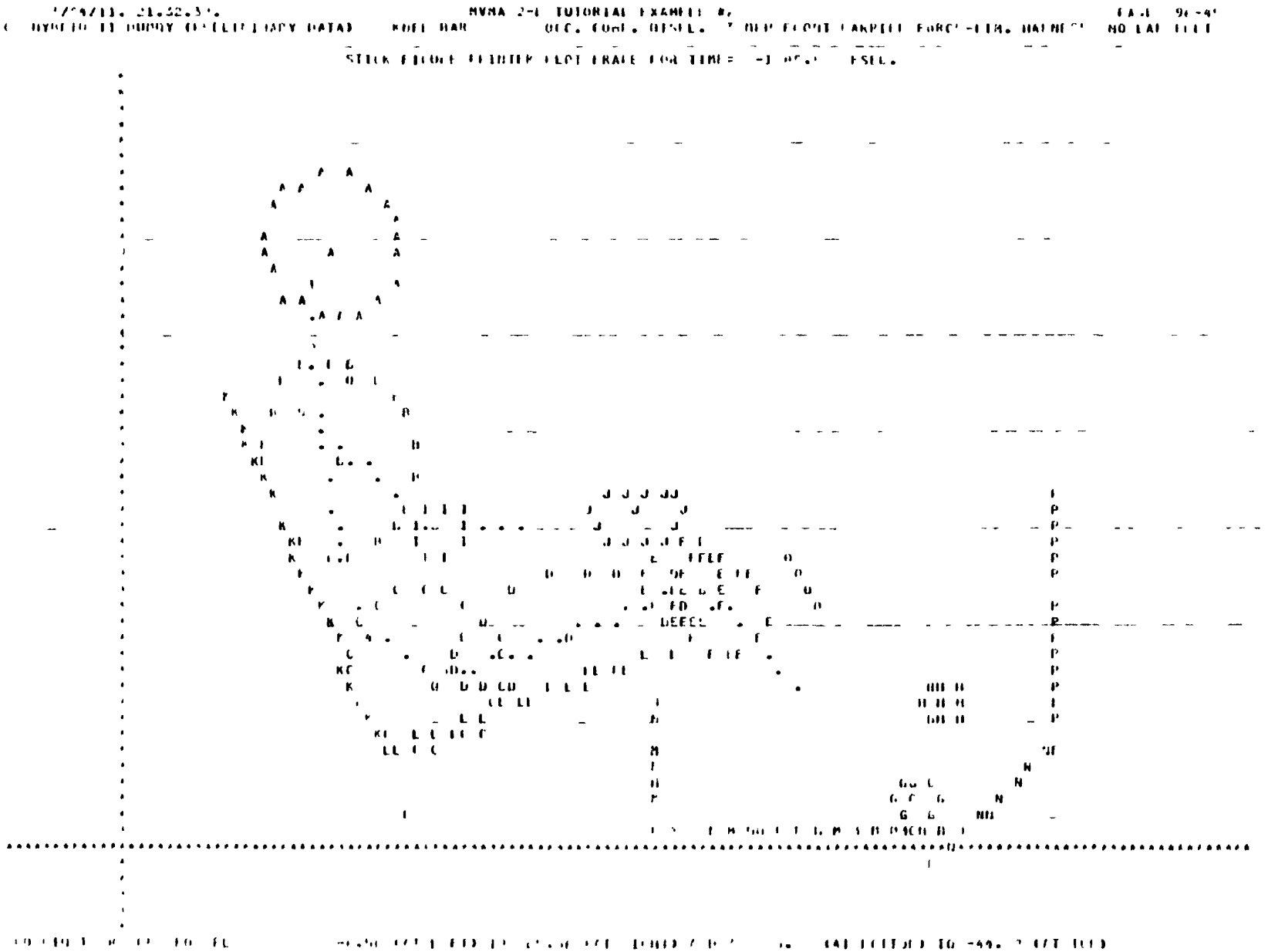

STICK FIGURE PRINTER PLOT FRAME FOR TIME=





KNEE LAT FEC. COMP. DIESEL. 5 MPH FRONT BARRIER FORCE -LEN. HAINE

SEVERITY INDICES FOR UNFILTERED ACCELERATIONS (AT ACCELEROMETERS)

HEAD

HIC= 275.49 AT TIME= 7.11 END TIME = 9.1
MAX AVG= 74.71 AT TIME= 7.11
A-P= 25.28 AT TIME= 7.14

	SEVERITY INDEX			CRK MODIFIED S.I.		
TIME	A-P	S-I	RESULTANT	A-P	S-I	RESULTANT
.0	.01	1.0	0.01	.0	.01	.01
.05	.02	.0	.02	.01	.01	.01
.10	.03	.01	.03	.01	.02	.01
1.04	1.53	.02	1.54	.01	.02	.01
.20	.53	.91	3.61	.02	.03	.01
.25	3.03	5.44	9.45	.02	.21	.03
.30	4.02	14.11	21.41	.03	.86	1.47
3.35	6.9	24.68	35.62	.08	1.79	3.46
.40	1.95	32.15	43.38	.10	2.88	6.19
4.31	10.54	45.61	67.34	.22	3.59	7.73
.50	15.49	48.51	72.83	.34	4.63	7.97
5.55	1.45	48.42	76.23	.36	5.64	8.[illegible]
.60	21.81	46.45	79.46	.38	5.64	8.[illegible]
.65	31.49	44.51	86.28	1.11	5.64	8.86
.70	44.74	41.74	1 8.17	2.40	5.79	12.13
7.75	58.88	64.22	119.69	4.53	5.29	21.23
.80	73.83	76.95	171.21	6.19	6.56	29.24
8.5	87.11	85.59	191.41	7.12	6.9	32.58
.90	87.84	88.[illegible]	212.54	7.17	7.04	33.54
9.5	89.27	[illegible]	217.69	7.18	7.07	33.68
1.00	89.51	91.72	218.58	7.18	7.07	33.69
1.05	89.66	93.18	211.34	7.18	7.18	33.71
11.10	89.67	93.92	211.11	7.18	7.18	33.71
11.15	89.69	94.1	211.52	7.19	7.19	33.71
1.20	89.7	94.1	211.57	7.19	7.19	33.71
1.25	89.72	94.97	212.30	7.21	7.19	33.71
13.30	89.74	96.21	213.17	7.21	7.1	33.72
13.35	82.74	97.11	214.47	7.22	7.11	33.7
14.40	89.74	7.[illegible]	214.71	7.23	7.1	33.7
145.45	89.74	97.38	214.7	7.24	7.11	33.72
1.50	89.75	97.35	214.77	7.24	7.11	33.7
155.55	89.78	97.4	214.91	7.24	7.11	33.72
16.60	89.84	97.45	214.34	7.25	7.12	33.74
165.65	89.81	97.48	215.13	7.25	7.12	33.74
17.70	[illegible]	7.1	215.15	7.25	7.12	3.74
17.75	9.15	97.51	215.[illegible]	7.25	7.13	33.74
18.80	9.41	97.51	215.61	7.26	7.14	33.74
185.85	91.17	97.57	216.45	7.26	7.14	33.7
19.90	4.[illegible]	97.63	218.12	7.27	7.15	33.77
19.95	99.[illegible]	97.16	[illegible].49	7.[illegible]	7.15	33.81
20.00	9.[illegible]	.[illegible]	222.23	7.[illegible]	7.15	3.81

CHEST

5 MSEC AVGE= 47.835 AT TIME= 67.[illegible]
A-AB= -47.966 AT TIME= 6[illegible]

	SEVERITY INDEX			CRK MODIFIED S.I.		
TIME	A-P	S-I	RESULTANT	A-P	S-I	RESULTANT
.0	[illegible]	.9	[illegible]	0.03	[illegible]	[illegible]
.05	3.30	.14	3.49	.1	.0	.11
.10	12.[illegible]	.16	12.47	.95	.11	.96
1.15	28.5	.17	28.66	3.39	.1	3.43
.20	31.7	.17	31.76	3.51	.[illegible]	3.[illegible]
.25	32.5[illegible]	.31	33.9	3.51	.2	3.57
.30	35.[illegible]	.4[illegible]	36.7	3.61	.12	3.61
3.35	49.67	.49	8.93	5.66	.12	1.76
.40	58.98	.5	67.[illegible]	6.73	.13	6.87
4.31	59.31	.6[illegible]	69.62	6.73	.14	6.87
.50	61.5[illegible]	.59	72.[illegible]	6.81	.14	1.96
5.55	67.79	1.87	71.5[illegible]	7.12	.16	7.64
.60	73.67	9.35	17.51	7.38	.77	18.21
.65	102.21	3.50	146.65	15.49	5.12	39.66
.70	141.[illegible]	57.[illegible]	2.4[illegible]	27.61	11.[illegible]	62.65
7.75	156.1	89.3	27[illegible]	28.79	19.53	98.25
.80	1[illegible]0.35	134.11	285.61	28.81	2[illegible]	1[illegible].61
8.5	157.15	164.33	292.9[illegible]	29.37	22.24	101.23
.90	159.42	174.92	296.25	29.39	22.24	101.30
9.5	159.98	185.46	297.51	29.40	22.[illegible]	101.31
1.00	161.25	1[illegible].14	299.77	29.41	22.[illegible]	1[illegible].35
1.05	161.18	166.20	299.86	29.41	22.25	101.35
11.10	161.58	106.23	300.34	29.41	2.25	101.36
11.15	161.77	106.63	3[illegible]	29.42	22.25	1[illegible].36
1.20	162.[illegible]7	136.5[illegible]	3[illegible]	29.42	22.27	101.36
1.25	163.17	187.15	3[illegible]	29.42	22.26	1[illegible].38
13.30	164.39	197.71	305.17	29.43	2.26	101.41
13.35	165.76	166.25	3[illegible]	29.43	22.26	101.42
14.40	166.[illegible]	168.77	3[illegible]	29.44	22.26	101.44
145.45	167.87	169.31	311.7	29.45	22.26	1[illegible].47
1.50	169.1	169.85	313.33	29.45	22.27	1[illegible].49
155.55	169.96	11[illegible].36	314.9[illegible]	29.45	22.27	101.51
16.60	170.58	11[illegible].87	316.5	29.46	2[illegible].7	101.[illegible]
165.65	17[illegible]	111.42	317.28	29.46	22.27	1[illegible].51
17.70	171.[illegible]	111.88	316.3	29.46	22.27	101.52
17.75	171.74	11[illegible].1	318.78	29.46	22.7	101.52
18.80	171.1	11[illegible].33	319.1	29.47	2.27	101.53
185.85	172.24	11[illegible].39	3[illegible]	29.49	2.21	101.55
19.90	173.58	11[illegible].46	3[illegible]	29.52	22.28	101.59
19.95	173.99	11[illegible].53	3[illegible]	29.53	22.23	101.61
20.00	174.4	11[illegible].56	[illegible]	29.53	2.29	1[illegible].61

UNFILTERED ACCELERATIONS AT ACCELEROMETERS (G'S)

TIME	HEAD X-I	HEAD Y-I	HEAD RESULTANT	CHEST X-I	CHEST Y-I	CHEST RESULTANT	HIP X	HIP Y	HIP RESULTANT
[illegible]	-.139	.98	[illegible]	[illegible]	-.425	.816	-.618	[illegible]	1.7[illegible]
[illegible]	[illegible]	-.7[illegible]	2.421	15.[illegible]	[illegible]	15.751	4.521	1.151	4.673
1[illegible]	-6.531	-1[illegible].05	6.[illegible]	24.136	[illegible]	-24.445	-1.279	[illegible].44	[illegible].787
1[illegible]	8.5	5.724	[illegible].87	1[illegible].7 1	2.[illegible]42	1[illegible]	-3.819	[illegible]	5.1 6
2[illegible]	6.432	11.914	13.[illegible]2	[illegible] 96	[illegible]6	6.591	-9.626	-1. 48	9.[illegible]
2[illegible]	7.615	17.992	19.444	1[illegible] 5	4.166	10.[illegible]38	-11.853	-1.164	10.[illegible]
3[illegible]	1[illegible].492	21. 21	23.497	13.[illegible]4	3.5[illegible]	19.[illegible]87	-9.692	-1.733	9.[illegible]6
3[illegible]	14. 8	[illegible]1.42	5.18	[illegible]6.[illegible]21	1.71	[illegible]6.[illegible]76	-7.744	-2.[illegible]78	8. [illegible]
4[illegible]	12.[illegible]	22.331	25.[illegible]1	[illegible]3.146	[illegible]	7.688	-17.[illegible]70	[illegible]	17. 71
4[illegible]	11.4[illegible]	17. 92	[illegible]	1.[illegible]91	-1.467	2.473	-24.[illegible]93	9. [illegible]6	5.[illegible]13
5[illegible]	11.573	6.[illegible]26	13.131	15.[illegible]23	-3.[illegible]17	15.957	-23.652	3.5 2	23.91[illegible]
5[illegible]	13. [illegible]4	-.[illegible]39	13.[illegible]	17.947	-12.[illegible]8	21.[illegible]78	-41.[illegible]7 8	[illegible].656	41.[illegible]98
6[illegible]	15.121	-2.[illegible]36	15.34[illegible]	17.747	-25.[illegible]66	30.959	-46.[illegible]3	9.4 3	47.[illegible]42
6[illegible]	2[illegible].764	5.547	23.45	36.[illegible]95	-29.74[illegible]	47.588	-47.385	-7.980	48. [illegible]1
7[illegible]	23.735	18.543	3[illegible].12	33.363	-32.132	46.31[illegible]	-47.[illegible]46	-14.[illegible]86	1.1 4
7[illegible]	24. 91	25.[illegible]	35.[illegible]	1.92	-32.589	32.646	-17.[illegible]29	-17.799	4.712
8[illegible]	23.218	18.967	[illegible].9[illegible]	12. 75	-7.242	14. 80	-7.052	-5.936	9.93
8[illegible]	18.192	1[illegible].742	24.72[illegible]	1[illegible].[illegible]7	5.[illegible]7[illegible]	13.798	-9.761	-.879	9.8[illegible]
9[illegible]	13.5[illegible]1	15.831	18.643	9.591	7.357	12.[illegible]88	-9.512	2.178	5.759
9[illegible]	[illegible].43	9.711	11.616	1.449	4.6[illegible]	4.842	-9.736	6.443	11.875
1[illegible]	3.337	6.187	8.881	3.562	3.689	5.128	-2.888	1[illegible].994	11.346
1[illegible]	3.773	9.[illegible]57	1[illegible].[illegible]5[illegible]	-3.[illegible]61	1.632	4.[illegible]32	-.913	13. 37	13.111
11[illegible]	1.169	5. 26	5.155	-6.7.5	-3.[illegible]9	7.729	-2.629	5. 72	9.446
11[illegible]	1. [illegible]	3.775	3.137	4.[illegible]7	3. 93	5.6[illegible]3	1.631	3.381	[illegible]
12[illegible]	.71	4.156	4.[illegible]	7.153	2.405	7.478	-3.139	7.468	1. 89
12[illegible]	1. [illegible]	8.7[illegible]	[illegible].922	9.174	7.819	12.562	3.537	.7[illegible]9	[illegible]
13[illegible]	.175	8.253	8.954	8.126	6.[illegible]04	10.[illegible]24	3.648	.652	3.1 9
13[illegible]	-. 95	[illegible]. 64	[illegible]	8.533	[illegible].289	10.44	3.571	.[illegible]6	3.[illegible]
14[illegible]	-.47	. 84	2.927	9.[illegible]	6.478	11. 76	7.946	.161	3.9[illegible]
14[illegible]	-.[illegible]1	1.430	1.[illegible]4	9.[illegible]5	6.612	11.[illegible]15	4.193	. 71	4.1 3
15[illegible]	-1.495	1.169	2.[illegible]37	9.4 1	6.375	1[illegible].551	4.473	. [illegible]	4.473
15[illegible]	-2.446	[illegible] 18	3.171	7. 47	6.531	9.758	4.3 9	.19	4.9 2
16[illegible]	-1.49	[illegible] 2	2.431	6.5 7	6.187	9.475	5.9[illegible]	.454	5.91[illegible]
16[illegible]	-3.[illegible]1	2. 94	4.252	4. 21	5.947	7.643	[illegible].968	.[illegible]4	6.[illegible]
17[illegible]	-[illegible]12	.935	2.681	4.[illegible]18	7.[illegible]09	8.535	7.[illegible]94	1.155	7.184
17[illegible]	-4. 37	-. [illegible]6	4.[illegible]	3.497	4.138	5.169	7.471	1.595	7.[illegible]
18[illegible]	-6.7	-1. 57	6.819	-13.147	-4. 41	14. 33	-.875	-1.8 [illegible]	2.[illegible].2
1[illegible]	-7.811	-4. 73	9.4[illegible]	-.439	1.[illegible]4	1.615	9. 59	-.775	9.[illegible]
19[illegible]	-1[illegible]	-4.[illegible]53	11.929	-14.[illegible]	-5.293	15.268	.6[illegible]1	-4.274	4.3[illegible]3
19[illegible]	-11. 7	-4.[illegible]7	11.957	.[illegible]7[illegible]	.4[illegible]	.[illegible]18	9.9[illegible]6	-2.811	1[illegible].5[illegible]9
[illegible]	-9. 35	-1. 99	9.[illegible]	6.6[illegible]	.861	7.41	11.663	-2.[illegible]5	11.065

[illegible] PV & 2- [illegible] EXAMPLE #2 [illegible]

[illegible] DUMMY [illegible] EQUALLY [illegible] FOOT [illegible] DEG. COMP. [illegible] FT. 3 MEN FRONT [illegible] FORCE-LIM. [illegible] NO [illegible]

FLOOR AND TIBIA LOADS (LB)

STEP COUNT	SEQ OF LOCATION	ANGLE FROM HIP		LEG FA FROM SENSOR TO KNEE		TIBIA	
			ERROR				
	AXIAL F KIPS	AXIAL AT KIPS	AXIAL AT KNEE	SHEAR AT KNEE	AXIAL AT KNEE	AXIAL AT FOOT
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TIME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TIME	HEAD	HE FORCE	CHEST	LEG FORCE	OUTER LEG	LOWER LEG	OUTER ARM	LOWER ARM	ANKLE HEAD FORCE COMPONENT
	CENTER-OF-MASS ACCELERATION (RELATIVE TO INERTIAL FRAME)								
0.	0.	-.334	0.	-17.851	-31.13	0.	0.	0.	0.
5.	[illegible]	-35.266	[illegible]	-145.538	-[illegible]	-.239	0.	.468	0.
10.	.	-1[illegible].76	0.	-147.49	-[illegible]	-9.58	0.	0.	0.
15.	0.	1[illegible].559	0.	-165.72	-36.414	-23.511	0.	0.	0.
20.	.	413.354	0.	-[illegible]	-36.14	-25.33	0.	0.	0.
25.	.	61.14	0.	-198.185	-31.97	-9.492	0.	0.	0.
30.	0.	526.461	0.	-217.611	-45.414	-71.735	0.	.361	0.
35.	0.	4[illegible].623	[illegible]	-237.176	-35.461	-16[illegible].3	[illegible]	[illegible]	0.
40.	.	413.877	0.	-[illegible]	-41.79	-81.126	0.	9.010	0.
45.	0.	358.135	0.	-377.375	-117.549	49.412	0.	0.	0.
50.	0.	79.1[illegible]	0.	-471.286	5.272	633.93	0.	0.	0.
55.	0.	-278.61	0.	-592.356	135.422	317.416	0.	44.436	.
60.	0.	-69.134	0.	-625.813	49.648	-662.478	0.	139.188	0.
65.	0.	-1.5.283	0.	-612.285	-27.698	-443.131	0.	-268.775	0.
70.	0.	-8[illegible].71	0.	-592.432	-14.998	229.794	0.	144.734	0.
75.	0.	-8[illegible]6	0.	-1628.661	0.	44.924	0.	0.	0.
80.	0.	-112.627	0.	-267.913	.	0.	0.	0.	0.
85.	0.	551.112	0.	-362.891	0.	0.	0.	0.	0.
90.	0.	637.737	0.	-272.138	0.	0.	0.	0.	.
95.	0.	773.578	0.	-123.87	0.	0.	0.	0.	0.
100.	0.	194.	0.	-45.39	0.	0.	0.	-21.859	0.
105.	0.	616.596	0.	0.	0.	0.	0.	-52.334	0.
110.	.	4[illegible]	0.	0.	0.	0.	0.	-79.823	.
115.	0.	172.619	0.	0.	0.	49.785	0.	-79.192	0.
120.	0.	0.	0.	0.	0.	851.833	0.	-48.461	.
125.	.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	-2.340	0.	0.
150.	.	-[illegible]	0.	0.	0.	.	16.674	0.	0.
155.	0.	-8[illegible].51	0.	0.	0.	0.	-2.9.351	0.	0.
160.	.	[illegible]	0.	0.	0.	0.	-527.972	0.	0.
165.	0.	11.961	0.	0.	0.	32.263	-2.271	.	0.
170.	0.	0.312	0.	0.	.	.356	7.872	0.	0.
175.	0.	-88.35	0.	-2.562	0.	418.86	-2.534	0.	0.
180.	0.	-[illegible]	0.	-72.171	.	74.446	0.	0.	0.
185.	0.	-2[illegible]	0.	-121.799	0.	2.132	0.	0.	0.
190.	.	-562.87[illegible]	0.	-[illegible]	.	0.	0.	0.	.
195.	.	-2[illegible]	0.	-2[illegible]796	0.	.	0.	0.	0.
[illegible]	.	-147.8[illegible]	0.	-[illegible]	.	.	0.	0.	.

CENTER-OF-MASS X-COMPONENT OF EXTERNAL FORCES (LB) (RELATIVE TO INITIAL FRAME)

TIME	HEAD	PE TORSO	FID TORSO	LOW TORSO	UPPER LEG	LOWER LEG	UPPER ARM	LOWER ARM	APPLIED HEAD FORCE COMPONENT
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10.	[illegible]	-485.5[illegible]	[illegible]	[illegible]	[illegible]	-7.446	[illegible]	[illegible]	[illegible]
15.	[illegible]	-691.948	[illegible]	-128.[illegible]	-51.1[illegible]	-18.649	[illegible]	[illegible]	[illegible]
20.	[illegible]	-981.6[illegible]	[illegible]	-214.770	[illegible]	- 8.424	[illegible]	[illegible]	[illegible]
25.	[illegible]	-121.516	[illegible]	[illegible]	[illegible]	-31.514	[illegible]	[illegible]	[illegible]
30.	[illegible]	-1376.853	[illegible]	[illegible]	-39.967	-74.388	[illegible]	[illegible]	[illegible]
35.	[illegible]	-1522.3[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
40.	[illegible]	-1560.9[illegible]	[illegible]	-417.[illegible]	-67.798	-678.018	[illegible]	[illegible]	[illegible]
45.	[illegible]	-1574.612	[illegible]	[illegible]	-66.663	-3663.561	[illegible]	[illegible]	[illegible]
5[illegible].	[illegible]	-1545.927	[illegible]	-1[illegible]3.935	-143.535	-4[illegible]3.482	[illegible]	[illegible]	[illegible]
55.	[illegible]	-1496. 74	[illegible]	-1727.729	-153.767	-27[illegible]4.174	[illegible]	-34.796	[illegible]
6[illegible].	[illegible]	-1398.168	[illegible]	-2[illegible]59.[illegible]	-97.374	-3117.543	[illegible]	-77.521	[illegible]
65.	[illegible]	-1378.894	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7[illegible].	[illegible]	-1398.561	[illegible]	-5718.753	.317	-4[illegible]0.919	[illegible]	-7[illegible].432	[illegible]
75.	[illegible]	-14.9239	[illegible]	-1112.[illegible]	[illegible]	-35.[illegible]5	[illegible]	[illegible]	[illegible]
8[illegible].	[illegible]	-1478.246	[illegible]	-239.1[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
85.	[illegible]	-1441.115	[illegible]	47.647	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9[illegible].	[illegible]	-1195.13	[illegible]	53.[illegible]8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
95.	[illegible]	-915.623	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
100.	[illegible]	-582.482	[illegible]	-1.418	[illegible]	[illegible]	[illegible]	4.491	[illegible]
105.	[illegible]	-252.32	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	11.496	[illegible]
110.	[illegible]	-1[illegible]7.57	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	17.023	[illegible]
115.	[illegible]	-29.736	[illegible]	[illegible]	[illegible]	62.231	[illegible]	17.331	[illegible]
120.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2[illegible]2.347	[illegible]	[illegible]	[illegible]
125.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
130.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
140.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
145.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	13.3[illegible]2	[illegible]	[illegible]
150.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]9.872	[illegible]	[illegible]
155.	[illegible]	181.[illegible]2	[illegible]	[illegible]	[illegible]	[illegible]	526.889	[illegible]	[illegible]
1[illegible].	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	768.746	[illegible]	[illegible]
165.	[illegible]	232.495	[illegible]	[illegible]	[illegible]	- [illegible].161	144.867	[illegible]	[illegible]
17[illegible].	[illegible]	5[illegible].478	[illegible]	[illegible]	[illegible]	-47[illegible]	95.[illegible]6	[illegible]	[illegible]
175.	[illegible]	411.[illegible]9	[illegible]	5[illegible]	[illegible]	-891.217	75.8[illegible]6	[illegible]	[illegible]
18[illegible].	[illegible]	566.7.8	[illegible]	78.7 9	[illegible]	-116.151	[illegible]	[illegible]	[illegible]
185.	[illegible]	71[illegible].[illegible]3	[illegible]	119.4.6	[illegible]	-45.349	[illegible]	[illegible]	[illegible]
190.	[illegible]	7[illegible].96[illegible]	[illegible]	1[illegible].[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
195.	[illegible]	6[illegible]	[illegible]	2[illegible]1.7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible].	[illegible]	475.[illegible]	[illegible]	44.841	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

NECK RETENTION FORCE
IN HEAD, NECK, AND UPPER TORSO SYSTEMS

TIME (SECS)	UPPER NECK JOINT FORCES (LB)				LOWER NECK JOINT FORCE (LB)				MOMENTS (IN-LB)	
	SHEAR ON NECK	COMPRESSIVE ON NECK	SHEAR ON HEAD	COMPRESSIVE ON HEAD	SHEAR ON NECK	COMPRESSIVE ON NECK	SHEAR ON TORSO	COMPRESSIVE ON TORSO	UPPER NECK	LOWER NECK
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.27	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	67.81	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.58	77.44	[illegible]	72.72	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	71.[illegible]	[illegible]	135.86	-115.93	104.37	-77.35	-94.45	[illegible]
[illegible]	113.97	[illegible]	82.64	[illegible]	161.43	-179.69	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	112.56	[illegible]	197.71	-214.07	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	149.42	[illegible]	[illegible]	-219.93	315.72	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-215.92	317.06	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	19[illegible].66	-139.21	237.62	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	122.65	[illegible]	142.[illegible]	[illegible]	178.71	61.92	[illegible]	165.77	[illegible]	[illegible]
[illegible]	144.81	[illegible]	103.44	19.99	[illegible]	88.18	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	245.65	[illegible]	354.9[illegible]	35.39	[illegible]	281.62	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	273.4	[illegible]	447.76	[illegible]	338.38	311.81	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	164.5[illegible]	[illegible]	93.14	136.21	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	73.84	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CONTACT INTERACTION BETWEEN

ELLIPSE TOP ASSUMED TO BE RIGID

AND

LINE KEEL BAR TIPS WHICH IS AN ELEMENT OF REGION KEEL BAR HALF OF SHEET METAL

ENTIRE LINE LENGTH = .55(FT) EDGE CO TANT = .50

TI (DESC)	DEFLECTION LI (IN)	DEFLECTION ELLIPSE (IN)	DEFL. RATE LINE (IN/SEC)	DEFL. RATE ELLIPSE (IN/SEC)	FORCE NORMAL (LB)	FORCE TANGENTIAL (LB)	CONTACT LOCATION ON LINE POSITION (NORMALIZED)	CONTACT LOCATION ON LINE RATE (IN/SEC)	CONTACT LOCATION IN SPACE X (IN)	CONTACT LOCATION IN SPACE Z (IN)	CONTACT LOCATION ON BODY DEG. X (IN)	CONTACT LOCATION ON BODY DEG. Z (IN)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5.75	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
35.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
40.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
45.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
50.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
55.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
60.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
65.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
70.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
75.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
80.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
85.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
90.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
95.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
100.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
105.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
110.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
115.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
120.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
125.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
130.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
140.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
145.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
150.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
155.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
160.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16.	5.47	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.481	[illegible]	61.86	-13.5	[illegible]	-6.55
17.	4.41	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-13.[illegible]	[illegible]	[illegible]
17.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-14.2	[illegible]	[illegible]
18.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-14.[illegible]	[illegible]	[illegible]
185.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-13.[illegible]	[illegible]	[illegible]
19.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-13.[illegible]	[illegible]	[illegible]
19.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-13.[illegible]	[illegible]	[illegible]
19.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CONTACT INTERACTION [illegible]

ELLIPSE LEVEL AS USED TO FIT FIGID

ANG [illegible]

LIFT BACK LINE WHICH IS AN ELEMENT OF REGION SEAT BACK MADE OF SEAT MATERIAL

INITIAL LIFT LENGTH = [illegible] FORCE CONSTANT = [illegible]

TIME (MSEC)	REFLECTION LINE (IN)	REFLECTION ELLIPSE (IN)	REFL. RATE LINE (IN/SEC)	REFL. RATE ELLIPSE (IN/SEC)	FORCE NORMAL (LB)	FORCE TANGENT. (LB)	CONTACT LOCATION ON LIF POSITION (INCHES)	CONTACT LOCATION ON LIF RATE (IN/SEC)	CONTACT LOCATION IN SCALE Y (IN)	CONTACT LOCATION IN SCALE Z (IN)	CONTACT LOCATION ON BODY SEG. X (IN)	CONTACT LOCATION ON BODY SEG. Z (IN)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CONTACT INTERACTION BETWEEN

[illegible] MODEL ASSUMED TO BE RIGID

AND

LINE SEAT BOTTOM WHICH IS AN ELEMENT OF REAR FLOOR MADE OF [illegible]

INITIAL LINE LENGTH = [illegible] (FREE CONTACT - [illegible])

TIME (MSEC)	DEFLECTION LINE (IN)	DEFLECTION ELLIPSE (IN)	DEFL. RATE LINE (IN/SEC)	DEFL. RATE ELLIPSE (IN/SEC)	FORCE NORMAL (LB)	FORCE TANGENTIAL (LB)	CONTACT LOCATION ON LINE POSITION (NONDIM.)	CONTACT LOCATION ON LINE RATE (IN/SEC)	CONTACT LOCATION IN SPACE X (IN)	CONTACT LOCATION IN SPACE Z (IN)	CONTACT LOCATION ON BODY SEG. Y (IN)	CONTACT LOCATION ON BODY SEG. Z (IN)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CONTACT INTERACTION BETWEEN

ELLIPSE BAND ASSUMED TO BE RIGID

AND

LINE CUSHION LINE , WHICH IS AN ELEMENT OF REGION SEAT CUSHION MADE OF SEAT MATERIAL

INITIAL LINE LENGTH = 4.59(IN) FORCE CONSTANT .0

TIME (MSEC)	DEFLECTION LINE (IN)	DEFLECTION ELLIPSE (IN)	DEFL. RATE LINE (IN/SEC)	DEFL. RATE ELLIPSE (IN/SEC)	FORCE NORMAL (LB)	FORCE TANGENTIAL (LB)	CONTACT LOCATION ON LINE POSITION (NONDIM.)	CONTACT LOCATION ON LINE RATE (IN/SEC)	CONTACT LOCATION IN SPACE X (IN)	CONTACT LOCATION IN SPACE Z (IN)	CONTACT LOCATION ON BODY SEG. X (IN)	CONTACT LOCATION ON BODY SEG. Z (IN)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
35.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
40.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
45.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
50.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
55.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
60.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
65.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
70.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
75.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
85.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
90.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
95.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
100.	.7	[illegible]	27.	[illegible]	19.8	7.1	1.50	-168.	54.77	-1[illegible].2	7.96	[illegible]
105.	[illegible]	[illegible]	9.	[illegible]	57.7	27.3	1.163	-157.	53.76	-9.97	7.51	.4
110.	.78	[illegible]	-19.	[illegible]	75.1	[illegible]	.985	-144.	51.77	-9.86	7.[illegible]	.45
115.	.6	[illegible]	-15.	[illegible]	75.3	[illegible]	.826	-132.	51.82	-9.53	7.76	.3
120.	[illegible]	[illegible]	-17.	[illegible]	51.7	14.5	.674	-124.	50.86	-10.17	7.71	[illegible]
125.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
130.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
140.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
145.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
150.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
155.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
160.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
165.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
170.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
175.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
180.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
185.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
190.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
195.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
200.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CONTACT INTERACTION BETWEEN

ELLIPSE TOP ASSUMED TO BE RIGID

AND

LINE DASHLINE WHICH IS AN ELEMENT OF REGION DASH MADE OF DASHMATL

INITIAL LINE LENGTH = 14.51(IN) EDGE CONSTANT = [illegible]

TIME (MSEC)	DEFLECTION LINE (IN)	DEFLECTION ELLIPSE (IN)	DEFL. RATE LINE (IN/SEC)	DEFL. RATE ELLIPSE (IN/SEC)	FORCE NORMAL (LB)	FORCE TANGENTIAL (LB)	CONTACT LOCATION ON LINE POSITION (NONDIM.)	CONTACT LOCATION ON LINE RATE (IN/SEC)	CONTACT LOCATION IN SPACE X (IN)	CONTACT LOCATION IN SPACE Z (IN)	CONTACT LOCATION ON BODY SEG. X (IN)	CONTACT LOCATION ON BODY SEG. Z (IN)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ON HYBRID II DUMMY (PRELIMINARY DATA) KNEE BAR OCC. COMP. DISPL. 5 MPH FRONT BARRIER FORCE -LIM. HARNESS NO LAP BELT

CONTACT INTERACTION BETWEEN

ELLIPSE HAND ASSUMED TO BE RIGID

AND

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

INITIAL LINE LENGTH = [illegible](IN) EDGE CONSTANT = [illegible]

TIME (MSEC)	DEFLECTION LINE (IN)	DEFLECTION ELLIPSE (IN)	DEFL. RATE LINE (IN/SEC)	DEFL. RATE ELLIPSE (IN/SEC)	FORCE NORMAL (LB)	FORCE TANGENTIAL (LB)	CONTACT LOCATION ON LINE POSITION (NONDIM.)	CONTACT LOCATION ON LINE RATE (IN/SEC)	CONTACT LOCATION IN SPACE X (IN)	CONTACT LOCATION IN SPACE Z (IN)	CONTACT LOCATION ON BODY SEG. X (IN)	CONTACT LOCATION ON BODY SEG. Z (IN)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible] DYNAMIC TEST DUMMY (PRELIMINARY DATA) KNEE BAR DEC. COMP. DISPL. 5 MPH FRONT BARRIER FORCE-LIM. HARNESS NO LAP BELT

CONTACT INTERACTION BETWEEN

ELLIPSE KNEE ASSUMED TO BE RIGID

AND

LINE KNEEBAR LINE WHICH IS AN ELEMENT OF PLGION KNEE BAR MADE OF SHEET METAL

INITIAL ELLIPSE LENGTH = [illegible] FRICTION COEFFICIENT = [illegible]

TIME (MSEC)	DEFLECTION LINE (IN)	DEFLECTION ELLIPSE (IN)	DEFL. RATE LINE (IN/SEC)	DEFL. RATE ELLIPSE (IN/SEC)	FORCE NORMAL (LB)	FORCE TANGENTIAL (LB)	CONTACT LOCATION ON LINE POSITION (NONDIM.)	CONTACT LOCATION ON LINE RATE (IN/SEC)	CONTACT LOCATION IN SPACE X (IN)	CONTACT LOCATION IN SPACE Z (IN)	CONTACT LOCATION ON BODY SEG. X (IN)	CONTACT LOCATION ON BODY SEG. Z (IN)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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15.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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25.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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45.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	.27	[illegible]	139.	[illegible]	115.[illegible]	17.5	.944	134.	58.97	-16.14	9.24	[illegible]
55.00	.91	[illegible]	112.	[illegible]	226.6	113.3	1.169	159.	66.13	-17.33	[illegible]	[illegible]
[illegible]	1.37	.61	73.	[illegible]	116.8	53.4	1.796	167.	69.85	-18.25	9.25	[illegible]
65.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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CONTACT INTERACTION BETWEEN

ELLIPSE SHAPE ASSUMED TO BE RIGID

AND

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

INITIAL ELEMENTS = 5.5(SEC) TIME CONSTANT .5(SEC)

TIME (MSEC)	DEFLECTION LINE (IN)	DEFLECTION ELLIPSE (IN)	DEFL. RATE LINE (IN/SEC)	DEFL. RATE ELLIPSE (IN/SEC)	FORCE NORMAL (LB)	FORCE TANGENTIAL (LB)	CONTACT LOCATION ON LINE POSITION (NONDIM.)	CONTACT LOCATION ON LINE RATE (IN/SEC)	CONTACT LOCATION IN SPACE X (IN)	CONTACT LOCATION IN SPACE Z (IN)	CONTACT LOCATION ON BODY SEG. X (IN)	CONTACT LOCATION ON BODY SEG. Z (IN)
0.	.0	.19	0.	0.	0.	0.	0.00	0.	0.00	0.0	0.	0.
5.00	0.00	0.03	0.	0.	0.0	0.0	0.00	0.0	0.40	0.0	0.0	0.0
10.0	0.	0.00	0.	0.	0.	0.0	0.000	0.	0.00	0.00	0.0	0.0
15.0	0.0	0.00	0.	0.	0.0	0.0	0.00	0.	0.00	0.00	0.0	0.
20.0	0.00	.01	0.	0.	0.	0.0	0.00	0.	0.00	0.00	0.00	0.00
25.0	0.00	.00	0.	0.	0.0	0.0	0.000	0.	0.00	0.00	0.0	0.0
30.0	.0	.00	0.	0.	0.	0.0	0.000	0.	0.00	0.00	.00	.0
35.0	.00	.00	0.	0.	0.0	0.0	-0.000	0.	0.00	0.00	0.0	0.00
40.0	.71	.00	119.	0.	186.9	93.4	.154	-61.	57.59	-13.85	-6.73	-2.16
45.0	.91	.00	117.	0.	430.	219.0	.113	25.	59.64	-13.97	-6.93	-2.18
50.0	1.35	.01	320.	0.	854.0	427.0	.233	154.	61.19	-14.64	-6.47	-2.04
55.0	2.08	.01	87.	0.	1473.1	736.5	.482	189.	62.21	-15.62	-6.71	-2.71
60.	2.42	.00	47.	0.	1137.7	568.8	.742	204.	62.78	-16.01	-6.99	-2.76
65.0	2.87	.00	65.	0.	758.0	379.0	.995	245.	62.79	-17.65	-7.35	-2.59
70.0	3.0	.0	27.	0.	363.8	181.9	1.257	181.	62.36	-18.53	-7.62	-2.41
75.00	3.20	.01	33.	0.	51.2	25.6	1.466	141.	61.77	-19.20	-7.19	-2.36
80.0	0.	.00	0.	0.	0.	0.0	0.00	0.	0.00	0.00	0.00	0.0
85.0	.0	.0	0.	0.	0.	0.0	0.000	0.	0.00	0.00	0.0	0.0
90.0	.0	.00	0.	0.	0.0	0.0	0.00	0.	0.00	0.0	0.0	0.0
95.	0.	.00	0.	0.	0.0	0.0	0.00	0.	0.00	0.00	0.0	0.0
100.	0.00	.00	0.	0.	0.0	0.	0.00	0.	0.00	0.0	0.0	0.0
105.	0.	.0	0.	0.	0.	0.	0.00	0.	0.00	0.00	0.00	0.00
110.	0.	.0	0.	0.	0.	0.	0.00	0.	0.00	0.0	0.0	0.0
115.0	.0	.00	0.	0.	0.	.00	0.000	0.	0.00	0.00	0.0	0.0
120.0	0.	.0	0.	0.	0.	0.	0.00	0.	0.00	0.0	0.0	0.0
125.0	0.	.00	0.	0.	0.	0.0	0.000	0.	0.00	0.0	0.00	0.0
130.0	.00	0.	0.	0.	0.	0.	0.000	0.	0.00	0.0	.00	0.0
135.0	0.	.00	0.	0.	0.	0.0	0.00	0.	0.00	0.00	0.00	0.0
140.	0.0	.0	0.	0.	0.0	0.0	0.00	0.	0.00	0.0	.00	0.0
145.	.0	.00	0.	0.	0.0	0.	0.00	0.	0.00	0.0	.00	0.00
150.0	0.	.00	0.	0.	0.0	0.	0.0	0.	0.00	0.00	0.0	0.0
155.	0.0	0.	0.	0.	0.	0.	0.00	0.	0.00	0.00	0.0	0.0
160.0	0.	0.	0.	0.	0.	0.	0.00	0.	0.00	0.00	0.0	0.0
165.	0.	.00	0.	0.	0.	0.0	0.	0.	.00	0.00	0.0	0.0
170.	0.	.0	0.	0.	0.	0.	0.	0.	.00	0.	.00	0.0
175.	0.	0.	0.	0.	0.	0.	0.	0.	0.00	0.00	0.	0.0
180.	0.	0.	0.	0.	0.	0.	0.	0.	.00	0.0	.0	0.0
185.	0.	0.	0.	0.	0.	0.	0.	0.	.00	0.	.00	0.00
190.	0.	0.	0.	0.	0.	0.	0.	0.	.0	0.	.0	0.
195.	.0	0.	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 INTERACTION BETWEEN

FLEXIBLE BEAM ASSUMED TO BE RIGID

AND

LINE TIEDOWN WHICH IS AN ELEMENT OF REGION TOPPAN MATE OF PLATE

INITIAL LINE LENGTH = [illegible] (IN) TIDE CONSTANT = [illegible]

TIME (MSEC)	DEFLECTION LINE (IN)	DEFLECTION FLEXIBLE (IN)	DEFL. RATE LINE (IN/SEC)	DEFL. RATE FLEXIBLE (IN/SEC)	FORCE NORMAL (LB)	FORCE TANGENTIAL (LB)	CONTACT LOCATION ON LINE POSITION (NONDIM.)	CONTACT LOCATION ON LINE RATE (IN/SEC)	CONTACT LOCATION IN SPACE X (IN)	CONTACT LOCATION IN SPACE Z (IN)	CONTACT LOCATION ON BODY SEG. X (IN)	CONTACT LOCATION ON BODY SEG. Z (IN)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
35.00	[illegible]	[illegible]	93.	[illegible]	9.7	7.7	[illegible]	-320.	65.21	-1.13	9.77	[illegible]
40.00	.40	[illegible]	58.	[illegible]	571.1	296.9	.455	111.	67.62	-1.19	9.77	[illegible]
45.00	1.07	[illegible]	56.	[illegible]	2636.2	2169.3	.444	20.	69.52	-1.12	9.77	[illegible]
50.00	1.19	[illegible]	-67.	[illegible]	3[illegible]	[illegible]	.455	13.	70.54	-1.18	9.74	-.16
55.00	.79	[illegible]	-121.	[illegible]	579.2	463.4	.453	-45.	70.80	-1.47	9.72	-.73
[illegible]	[illegible]	[illegible]	-167.	[illegible]	[illegible]	[illegible]	.433	[illegible]	70.46	-1.75	9.65	-.12
65.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
70.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
75.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
80.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
85.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
90.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
95.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
100.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
105.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
110.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
115.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
120.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
125.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
130.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
140.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
145.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
150.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
155.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
160.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
165.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
170.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
175.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
180.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
185.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
190.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CONTACT INTERFACE BETWEEN

ELLIPSE THICK ASSUMED TO BE RIGID

AGO

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

INITIAL LINE LENGTH - 4.5 (IN) EDGE CONTACT - .5

TIME (MSEC)	DEFLECTION LINE (IN)	DEFLECTION ELLIPSE (IN)	VELO. RATE LINE (IN/SEC)	VELO. RATE ELLIPSE (IN/SEC)	FORCE NORMAL (LB)	FORCE TANGENTIAL (LB)	CONTACT LOCATION ON LINE POSITION (NONDIM.)	CONTACT LOCATION ON LINE RATE (IN/SEC)	CONTACT LOCATION IN SPACE X (IN)	CONTACT LOCATION IN SPACE Z (IN)	CONTACT LOCATION ON BODY SEG. X (IN)	CONTACT LOCATION ON BODY SEG. Z (IN)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
50.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
100.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
150.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
200.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
250.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
300.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
350.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
400.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
450.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
500.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
550.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
600.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
650.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
700.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
750.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
800.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
850.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
900.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
950.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1000.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1050.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1100.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1150.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1200.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1250.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1300.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1350.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1400.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1450.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1500.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1550.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1600.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1650.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1700.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1750.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1800.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1850.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1900.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CONTACT INTERACTION BETWEEN

[illegible] WELL ASSUMED TO BE FIXED

AND

[illegible] FLOOR/GRND WHICH IS AT CLOSEST OF REGION FLOOR BASE OF [illegible]

INITIAL LIP LENGTH = 17.8(IN) LOGI CONTAPT - [illegible]

TIME (MSEC)	DEFLECTION LIP (IN)	DEFLECTION FLOOR (IN)	DEFL. RATE LIP (IN/SEC)	DEFL. RATE FLOOR (IN/SEC)	FORCE NORMAL (LB)	FORCE TANGENTIAL (LB)	CONTACT LOCATION ON LIP POSITION (NONDIM.)	CONTACT LOCATION ON LIP RATE (IN/SEC)	CONTACT LOCATION IN SPACE X (IN)	CONTACT LOCATION IN SPACE Z (IN)	CONTACT LOCATION ON BODY SEG. X (IN)	CONTACT LOCATION ON BODY SEG. Z (IN)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.052	49.	48.98	-.84	9.42	.85
10.00	[illegible]	[illegible]	6.	[illegible]	9.3	7.4	.065	65.	51.61	-.82	9.42	.85
15.00	.16	.0.	7.	[illegible]	23.3	18.6	.083	64.	54.23	-.78	9.42	[illegible]
20.00	[illegible]	[illegible]	[illegible]	[illegible]	35.5	38.4	.104	87.	56.83	-.75	9.42	.85
25.00	.10	[illegible]	-1.	[illegible]	39.4	51.5	.131	104.	59.39	-.74	9.42	.85
30.00	[illegible]	[illegible]	-7.	[illegible]	[illegible]	74.6	.162	118.	61.92	-.76	9.41	[illegible]
35.00	[illegible]	[illegible]	-14.	[illegible]	8.5	6.8	.199	149.	64.43	-.82	9.41	.86
40.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	0.00	0.00	[illegible]	0.
45.00	0.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	0.00	0.00	[illegible]	0.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	.00	[illegible]	[illegible]	[illegible]
55.00	[illegible]	[illegible]	3.	[illegible]	[illegible]	[illegible]	[illegible]	0.	0.00	0.00	[illegible]	[illegible]
60.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	0.00	0.00	[illegible]	[illegible]
65.00	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]	0.	0.00	0.00	[illegible]	[illegible]
70.00	[illegible]	[illegible]	0.	[illegible]	0.	0.	[illegible]	0.	0.00	0.00	[illegible]	[illegible]
75.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]
80.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]
85.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]
90.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]
95.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	0.	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]
105.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]
110.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]
115.00	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]
120.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]
125.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]
135.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]
140.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]
145.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]
150.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]
155.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
160.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	0.	[illegible]	0.00
165.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	.00	0.	[illegible]	0.
170.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
175.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
180.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
185.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
190.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
195.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
200.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

CONTACT INTERSECTION BETWEEN

[illegible] THIGH ASSUMED TO BE RIGID

AND

LINE CONDITION LINE 1 WHICH IS AN ELEMENT OF REGION SEAT CUSHION MADE OF SEAT MATERIAL

INITIAL LINE LENGTH - [illegible] EDGE CONSTANT - .164

TIME (SEC)	DEFLECTION LINE (IN)	DEFLECTION ELLIPSE (IN)	DEFL. RATE LINE (IN/SEC)	DEFL. RATE ELLIPSE (IN/SEC)	FORCE NORMAL (LBS)	FORCE TANGENTIAL (LBS)	CONTACT LOCATION ON LINE POSITION (NONDIM.)	CONTACT LOCATION ON LINE RATE (IN/SEC)	CONTACT LOCATION IN SPACE X (IN)	CONTACT LOCATION IN SPACE Z (IN)	CONTACT LOCATION ON BODY SEG. X (IN)	CONTACT LOCATION ON BODY SEG. Z (IN)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.559	[illegible]	27.58	-9.45	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	34.3	[illegible]	.561	-18.	30.23	-9.46	.19	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12.7	.579	61.	32.89	-9.46	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	22.	[illegible]	45.3	15.6	1.05	10.	35.56	-9.48	.15	[illegible]
[illegible]	[illegible]	[illegible]	28.	[illegible]	45.6	17.1	1.35	88.	38.21	-9.52	.29	[illegible]
[illegible]	.77	[illegible]	31.	[illegible]	43.1	16.8	1.73	90.	40.82	-9.57	.41	[illegible]
[illegible]	[illegible]	[illegible]	32.	[illegible]	27.1	13.8	1.113	95.	43.36	-9.12	.53	[illegible]
[illegible]	1.11	[illegible]	-41.	[illegible]	[illegible]	[illegible]	1.161	116.	45.85	-9.69	.69	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CONTACT INTERSECTION BETWEEN

ELEMENT NO. ASSUMED TO BE RIGID

AND

LINE CUSHION LINE 1 WHICH IS AN ELEMENT OF BUCKET SEAT CUSHION MADE OF SEAT MATERIAL

INITIAL LINE LENGTH = 15.5 (IN) FORCE CONSTANT = .169

TIME (MSEC)	DEFLECTION LINE (IN)	DEFLECTION ELLIPSE (IN)	DEFL. RATE LINE (IN/SEC)	DEFL. RATE ELLIPSE (IN/SEC)	FORCE NORMAL (LB)	FORCE TANGENT. (LB)	CONTACT LOCATION ON LINE POSITION (NONDIM.)	CONTACT LOCATION ON LINE RATE (IN/SEC)	CONTACT LOCATION IN SPACE Y (IN)	CONTACT LOCATION IN SPACE Z (IN)	CONTACT LOCATION ON BODY SEG. X (IN)	CONTACT LOCATION ON BODY SEG. Z (IN)
[illegible]	.09	[illegible]	[illegible]	[illegible]	173.6	[illegible]	.511	0.	19.67	-5.69	3.43	2.77
5.[illegible]	.88	[illegible]	5.[illegible]	[illegible]	175.2	[illegible]	.513	17.	22.31	-5.7[illegible]	3.43	2.77
1[illegible]	.9[illegible]	[illegible]	19.	[illegible]	19[illegible]	94.1	.529	69.	24.94	-5.71	3.43	2.77
1[illegible]	1.03	[illegible]	14.	[illegible]	222.8	114.2	.551	58.	27.54	-5.74	3.43	2.77
2[illegible]	1.11	[illegible]	18.	[illegible]	246.4	173.[illegible]	.576	76.	30.10	-5.79	3.41	2.79
2[illegible]	1.21	[illegible]	21.	[illegible]	277.9	162.3	.605	84.	32.60	-5.85	3.36	[illegible]
3[illegible]	1.3	[illegible]	22.	[illegible]	311.7	196.9	.637	87.	35.01	-5.91	3.25	2.[illegible]
35.1	1.44	[illegible]	27.	[illegible]	355.5	241.8	.673	117.	37.32	-5.96	3.11	3.13
4[illegible]	1.57	[illegible]	35.	[illegible]	399.4	[illegible]	.713	112.	39.53	-6.04	[illegible].95	[illegible]
45.[illegible]	1.72	[illegible]	4[illegible]	[illegible]	54[illegible].6	454.4	.756	122.	41.61	-6.11	.76	3.46
[illegible]	1.98	[illegible]	58.	[illegible]	829.2	816.5	.812	121.	43.46	-6.11	2.[illegible]	3.[illegible]
55.[illegible]	2.21	[illegible]	61.	[illegible]	1176.3	1395.9	.844	108.	45.03	-6.14	[illegible].37	3.73
6[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1[illegible]2[illegible]	2149.4	.880	87.	46.23	-5.93	[illegible].16	[illegible]
65.	2.65	[illegible]	28.	[illegible]	1624.6	2953.3	.717	57.	47.13	-5.8[illegible]	[illegible].70	3.57
7[illegible]	2.93	[illegible]	-8.	[illegible]	1[illegible]16.9	3241.[illegible]	.721	15.	47.37	-5.81	1.91	4.12
75.[illegible]	[illegible]	[illegible]	-17.	[illegible]	1361.7	6[illegible]8.5	.723	3.	47.31	-5.97	1.85	4.[illegible]
8[illegible]	2.4[illegible]	[illegible]	-14.	[illegible]	337.1	1[illegible]4.1	.724	3.	47.[illegible]9	-6.3	1.8[illegible]	4.[illegible]
85.[illegible]	1.99	[illegible]	-95.	[illegible]	264.2	155.6	.723	-6.	46.77	-6.74	1.63	4.6
9[illegible]	1.47	[illegible]	-97.	[illegible]	187.1	1[illegible]	.719	-18.	46.35	-7.17	1.77	4.8
95.[illegible]	[illegible]	[illegible]	-92.	[illegible]	111.3	[illegible]	.709	-33.	45.85	-7.56	1.66	4.13
1[illegible]	[illegible]	[illegible]	-78.	[illegible]	42.7	15.3	.695	-44.	45.30	-7.89	1.53	4.13
1[illegible]	[illegible]	[illegible]	-18.	[illegible]	0.	0.	.677	0.	44.72	-8.11	1.4[illegible]	4.[illegible]
11[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11[illegible]	[illegible]	[illegible]	0.	[illegible]	0.	0.	[illegible]	[illegible]	1.00	0.[illegible]	.11	[illegible]
1[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.01	0.[illegible]	[illegible]	[illegible]
14[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
145.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.00	0.0	[illegible]	[illegible]
15[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
165.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.15	[illegible]	[illegible]	[illegible]
17[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
175.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.00	[illegible]	[illegible]	[illegible]
185.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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CONTACT INDEX CHECK POINT N

ELEMENT NO ASSUMED TO BE RIGID

AND

LINE BACK LINE WHICH IS AN ELEMENT OF REGION SEAT BACK NAME OF SEAT MATERIAL

ELEMENT ELEVATION = 22.8 (IN) ELEV COMPARE = [illegible]

TIME (MSEC)	DEFLECTION LIMB (IN)	DEFLECTION RELEASE (IN)	DEFL. RATE LIMB (IN/SEC)	DEFL. RATE RELEASE (IN/SEC)	FORCE NORMAL (LB)	FORCE TANGENTIAL (LB)	CONTACT LOCATION ON LINE POSITION (NONDIM.)	CONTACT LOCATION ON LINE RATE (IN/SEC)	CONTACT LOCATION IN SPACE X (IN)	CONTACT LOCATION IN SPACE Z (IN)	CONTACT LOCATION ON BODY SEG. X (IN)	CONTACT LOCATION ON BODY SEG. Z (IN)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CONTACT INTERFACE NO. [illegible]

SEATBELT THORAX ASSUMED TO BE RIGID

AND

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

INITIAL LINE LENGTH = [illegible] (IN) FRIC COEFFICIENT .0

TIME (DEC SEC)	DEFLECTION LINE (IN)	DEFLECTION ELEMENT (IN)	VEL. RATE LINE (IN/SEC)	VEL. RATE ELEMENT (IN/SEC)	FORCE INITIAL (LB)	FORCE FINAL (LB)	CONTACT LOCATION ON LINE POSITION (NONDIM.)	CONTACT LOCATION ON LINE RAT (IN/SEC)	CONTACT LOCATION IN SPACE X (IN)	CONTACT LOCATION IN SPACE Z (IN)	CONTACT LOCATION ON BODY REF. X (IN)	CONTACT LOCATION ON BODY REF. Z (IN)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CONTACT FORCES FOR LOWER TORSO (LEFT EAR OF 50 %ILE) #2 VS. UPPER TORSO LINK MASS OF

TIME (SEC)	DEFLECTION (IN)	DEFLECTION RAT (IN/SEC)	SING FORCE TENSION (LB)	UNADJUSTED TENSION (LB)	TENSION ADJUSTMENT (LB)	RESULTANT FORCE (LB)	RESULTANT HEADING (DEGREES)	ALLOWED ENERGY (FT-LBS)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CONTACT FORCES FOR LOWER TORSO LEFT HALF OF [illegible] VERSUS 61 VS. UPPER TORSO LINK MADE OF

TIME (SEC)	DEFLECTION (IN)	DEFLECTION RATE (IN/SEC)	RING FORCE TENSION (LB)	UNADJUSTED TENSION (LB)	TENSION ADJUSTMENT (LB)	RESULTANT FORCE (LB)	RESULTANT HEADING (DEGREES)	ABSORBED ENERGY (FT-LBS)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-26.486	[illegible]
[illegible]	[illegible]	13.432	[illegible]	74.874	[illegible]	74.874	-26.430	[illegible]
[illegible]	.1[illegible]6	3[illegible].316	[illegible]	5[illegible]3.743	[illegible]	523.748	-26.885	[illegible]
[illegible]	[illegible]	[illegible].94	[illegible]	[illegible]	[illegible]	87[illegible].96	-25.74[illegible]	[illegible]
[illegible]	.341	[illegible]	[illegible]	9[illegible]8.43[illegible]	[illegible]	968.436	-25.668	[illegible]
[illegible]	.411	15.773	[illegible]	11[illegible]6.436	[illegible]	1156.436	-25.617	[illegible]
[illegible]	.468	[illegible]	[illegible]	1317.942	[illegible]	[illegible]	-26.31[illegible]	[illegible]
[illegible]	[illegible]	11.546	[illegible]	1474.273	[illegible]	1474.273	-27.64[illegible]	[illegible]
[illegible]	.547	6.43[illegible]	[illegible]	15[illegible].72[illegible]	[illegible]	15[illegible].722	-28.1[illegible]	[illegible]
[illegible]	[illegible]	41.293	[illegible]	15[illegible]	[illegible]	1[illegible]6.95	-29.278	[illegible]
[illegible]	[illegible]	83.792	[illegible]	1523.131	[illegible]	1523.138	-31.163	[illegible]
[illegible]	1.455	102.826	[illegible]	1541.[illegible]82	[illegible]	1548.182	-30.763	[illegible]
[illegible]	2.102	126.446	[illegible]	1571.356	[illegible]	1571.356	-31.[illegible]	[illegible]
[illegible]	[illegible]	87.715	[illegible]	1[illegible].997	[illegible]	1[illegible]6.997	-3[illegible].991	[illegible]
[illegible]	2.854	37.877	[illegible]	1623.746	[illegible]	1623.746	-36.549	[illegible]
[illegible]	[illegible]	-8.169	[illegible]	1624.591	[illegible]	1624.591	-29.837	[illegible]
[illegible]	2.631	-22.890	[illegible]	1415.1[illegible]	[illegible]	1415.169	-28.545	[illegible]
[illegible]	2.715	-24.936	[illegible]	114[illegible].454	[illegible]	1147.454	-27.117	[illegible]
[illegible]	2.[illegible]5	-26.896	[illegible]	8[illegible].432	[illegible]	382.432	-26.632	[illegible]
[illegible]	2.931	-29.988	[illegible]	61[illegible]	[illegible]	619.209	-25.366	[illegible]
[illegible]	[illegible].266	-[illegible]	[illegible]	351.125	[illegible]	351.125	-25.866	[illegible]
[illegible]	2.[illegible]7	-39.[illegible]	[illegible]	7[illegible].268	[illegible]	73.268	-24.972	[illegible]
[illegible]	1.9[illegible]9	-29.538	[illegible]	[illegible]	[illegible]	6.806	[illegible]	[illegible]
[illegible]	1.749	-3[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1.372	-38.281	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	-4[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1.1	-51.3[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	-51.439	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	-5[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	-49.825	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	-48.118	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	-47.653	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] ACC. CORR. [illegible] FL. [illegible] MPH FLOT BEARING FORCE-LBS. HARDL [illegible] DEG [illegible]

VELOCITY COMPONENT OF JOINT TORQUES (IN-LBS)

TIME	UPPER NECK	LOWER NECK	UPPER SPINE	LOWER SPINE	HIP	KNEE	SHOULDER AT ACR	ELBOW
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15.	-14.[illegible]	-514.74	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	-534.67	-115.[illegible]	176.9[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-178.[illegible]	122.6[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-142.24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-125.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	-13[illegible]	-515.33	-273.98	146.63	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-215.19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	-246.38	[illegible]	-127.46	-96.47	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	-175.79	-39.69	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-17.[illegible]	-384.52	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	-411.34	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	-1[illegible].11	[illegible]	[illegible]	-271.23	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	-514.32	-34.35	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	-359.[illegible]	-287.65	-103.9[illegible]	-19.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	-13.9[illegible]	-312.78	59.79	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	-31[illegible].71	161.68	-411.35	46.41	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-445.3[illegible]	15.23	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	213.01	-343.39	-28.5[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-35.77	-248.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	341.84	-18.[illegible]	-199.15	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	194.3	351.2[illegible]	35.[illegible]	-194.1[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	339.29	11.[illegible]3	-72.27	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	254.3	242.2	169.49	-145.24	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	282.1[illegible]	96.[illegible]4	-34.53	[illegible]	[illegible]	[illegible]	[illegible]
135.	214.24	[illegible]	169.41	-1[illegible]9.76	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	163.35	-1[illegible]5.79	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	146.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	177.99	[illegible]	129.42	-83.44	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	118.12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	174.31	-149.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	163.19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	215.[illegible]	-163.87	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	160.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	71.98	9.69	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	214.[illegible]	-115.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	91.27	13.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	147.[illegible]	[illegible]	151.1[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	149.7[illegible]	[illegible]	169.51	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

FRICTION COMPONENT OF JOINT TORQUE (IN-LB.)

TIME	UPPER NECK	LOWER NECK	UPPER SPINE	LOWER SPINE	HIP	KNEE	SHOULDER AT ARM	ELBOW
0. 0	. .	.	0. 0	0.00	.00	0.00	. 0	0. 0
5. 0	17.40	.	1 00.	-1 0.0	85 .00	-204.0	22.00	-64.0
10. 0	.	-17.4	-100.0	-100.00	85.00	-204.00	222.00	-64.00
15. 0	.00	-17.4	1 00.	1 0.00	85 .00	-204.00	222.00	64.00
20.0	0. 0	-17.40	-1 00.	1 0.00	85 .00	-204.00	222.00	64.00
25.00	-17.4	-17.4	-1 00. 0	1 0. 0	85 .00	-204.00	222.00	64.00
30.	-17.4	-17.4	-100.	-1.17	85 .00	-204.00	222.00	64.00
35.	-17.40	-17.4	-1 00. 0	-1 0. 0	85.00	-204.00	222. 0	64. 0
40. 0	-17.4	-17.4	-100.00	100.00	85.00	-204.00	-222.00	64. 0
45. 0	-17.4	-17.40	-100.00	100.0	85.00	204.00	-222. 0	64.00
50.00	-17.40	-17.4	-100.00	-100.0	-85.00	204.00	-222.00	64.00
55.	-17.4	-17.40	-1 00.00	-1 0. 0	-85 .00	204.00	-222.00	64.00
60. 0	-17.4	-17.4	-100.00	-1 0.00	-85.00	204.20	222.00	64.00
65. 0	-17.4	-17.4	1 00.0	-100.0	-85 .00	204.00	222.00	64.00
70.00	-17.40	-17.4	100.00	-100.00	-85.00	204.00	222.00	64.00
75. 0	-17.4	-17.4	-1 00.	-1 0.00	-85 .00	204.00	222. 0	64. 0
80.	-17.4	-17.4	-1 00.0	-100.00	-85 .00	204.00	222.00	-64.00
85. 0	-17.4	-17.40	-1 00.00	1 0.0	85 .00	204.00	222. 0	-64.00
90. 0	-17.4	17.40	-100.0	1 0.0	85.00	204.00	222.	-64.00
95. 0	-17.4	17.40	-100.0	100.0	85 .00	204.00	22.00	-64.00
100. 0	17.4	17.40	-1 00.0	-100.00	-85.00	204.00	-222.00	-64.00
105. 0	17.4	17.40	-100.00	-100.0	85 .00	204.00	222.00	-64.00
110.00	17.40	17.40	-1 00. 0	-1000.0	-85.00	204.00	222.00	-64.00
115. 0	17.4	17.4	1 00. 0	-100.0	-85 .00	204.00	222.00	-64.00
120.0	17.4	17.40	100.00	-100.00	-85 .00	-204.00	222.00	-64.00
125.00	17.4	17.4	100.	-1 0.00	-85 .00	-204.00	222.00	-64.00
130. 0	17.4	17.4	100.0	-1 0.0	-85.00	-204.00	222.00	-64.00
135.	17.4	17.40	1 00.	-1 0.	-85.00	-204.00	222.00	-64.0
140. 0	17.4	17.40	1 00. 0	-100.00	-85.00	-204.00	222.00	-64.00
145.00	17.4	17.40	1 00. 0	-1 0.00	-85 .00	-204.00	22.00	-64. 0
150. 0	17.4	17.4	1 00.	-1 0.00	-85 .00	-204.00	222.00	-64.00
155.	17.4	17.40	1 00.	-100.0	-85 .00	-204.00	222.00	-64.00
160. 0	17.4	17.41	100.00	-100.00	-85.00	-204.00	-222.00	64.00
165. 0	17.4	17.40	100.0	-1 0.00	-85 .	-204.00	-222.00	64.00
170. 0	17.40	17.40	100.	-1 0.00	-85 .00	-204.00	-222.00	64.00
175. 0	17.4	17.40	100.0	-100.0	-85 .00	-204.00	222.00	64.00
180. 0	17.4	17.40	100.	1 0.00	-85 .00	204.00	-222. 0	64. 0
185.00	.	.0	1 00. 0	-1 0.00	-85.00	204.00	-222. 0	64.00
190. 0	.	.00	1 00.	100.00	-85 .00	204.00	-222. 0	64. 0
195. 0	. 0	0. 0	1 0 .	-1 0.	-85 .00	204.00	-222.00	64. 0
00.00	.0	0.0	1 0 . 0	-1 .	-85 .00	204.00	-222. 0	-64. 0

[illegible] KNEE [illegible] DEG. FOR. DEFL. 3 MPH FRONT BARRIER FORE -130. HALND [illegible]

JOINT- TOP CONTOUR OF JOINT TORQUES (LB-FT)

TIME	HEAD DECEL	UPPER NECK	UPPER SPINE	LOWER SPINE	HIP	KNEE	SHOULDER AT ATT	ELBOW
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ELASTIC COMPONENT OF JOINT FORCES (KN-LB)

TIME	UPPER DECK	LOWER DECK	UPPER TEMP	LOWER SPIRE	HIP	KNEE	SHOULDER AT ARM	ELBOW
.	-..	. .	-.	0. .	.00	-..	. 0	0.00
. .	-..	..	-21. 4	.0.91	1.11	.0	.	. .
1.. .	1.44	-7.84	-3.53	11.32	1..27	1.94	1..6	1.1
15. 0	1..1	-3. .	2. .	4. .4	37.47	.0	.	.
2..	.70	-6.6	12.11	146.6	9.4.	.	.	0.
25. .	- .17	-1 .74	-2. .9	4.77	21. .37	1.	. .	.
3 . .	-. .5	-11.15	-91.8	214.32	4.9.8	1.1	. .	1.0
35.	-13.65	- . .	-183.74	. 34.2	7 1.47	0.0	. .	0.91
4.	- ..16	-315.77	-265. 1	256.64	103..28	1. .	1. .	0.01
4 .	-44.77	-374.	-5 3. 1	213.11	12 .54	.15	0.10	0.1
5 . .	-7.51	-41 .	-446.97	.56.89	1331.46	.0	. .	0.5
5 . .	-1 4.54	-45 .57	-473. 5	87..	1245.65	.10	. .	0. .
6 .	-13.13	-4 .42	-479.8	-197.74	11 1.78	1.18	.10	.0
65. .	-153.5	-492.34	-4 1.28	-492.74	9 1.09	.0	0.1	0.1
7 . .	-17 .42	-551.85	-946.3	-715.87	768.12	1.0	0..0	0.00
75. .	-1 .34	-614.14	-461.4	-887.75	676.92	1.0	1.09	1.0
8. .	-2 .3	-6 4.47	-492.81	-954.66	598.16	.61	.1	1.0
85. .	-28 .5	-695.5	-5 4. 7	-951.63	5 9.48	1.0	1.0	.0
9 .	-32 .39	-674.49	-789.55	-911.62	645.18	1.0	0.10	0..
95.	-554.4	-649.35	-1 14.57	-916.62	787.9	1.0	1.0	0. 0
1 .	-34 .12	-621.	-1229.51	-932.62	944.66	. .	. .	. .
105.	-3 7.8	-7 6.86	-1313.6	-1 64.33	1 5.63	.0	.	. .
11 . .	-3 7.58	-7 9.55	-1332.38	-1228.96	1376.92	.0	.	. .
11 . .	-2 .49	- 17.17	-1314. 7	-1413.53	1 5 .59	1.9	. 0	1.0
12. .	-261.11	-977.37	-1274.5	-15 9.28	988.15	0.0	. .	. .
1 .	-2 .58	-941.	-1239.71	-15 4.74	871.08	1.	. .	.01
13 .	-2 .82	-4.6. .3	-1195. .3	-1623.07	738.14	. .	0.10	. .
13 . .	-173.3	-568.37	-1148.16	-16 3.5	61 .49	.10	. 0	0. .
14 . .	-1 7. .	-32 .67	-1 84.78	-1693.8	5 . .2	. .	.1	0.01
145. .	-15 .	-2 4.36	-1 2 . 9	-1724.34	4 .43	.1	.1	.
15 . .	-11 .	-243.17	-986.19	-1745. 4	328.12	.00	0.1	.1
15 . .	-9 .4	-2 7.2	-951.16	-1766.96	.69.5	.1	1.1	0. 0
1 . .	-7 .54	-311.33	-922. 8	-1 3.32	22 .61	0.0	0.0	0.0
16 . .	- . .	-3 3.76	-875.63	-1 37. 2	19 .9	.1	. .	0.10
17 .	-7 . 2	-3 4.75	-828.23	-1573.2	1 1.8	0.1	1.0	0.19
175.	- 3. 4	-4 .3	-782.61	-1894. 6	87.4	.4	1. 0	0.1
18 . .	- .54	-4.32	-731.4	-1919.6	-1 .54	1.0	0.0	. .
1 . .	.1	114.31	-657. 1	-1 44.8	-1 7.1	. .	. 0	. .
19 . .	74.2	24 . 1	-589.2	-1 62.11	-2 5.61	. .	. .	. 0
19 .	1 .1	363.	-5 6.71	-1 13.5	-4 .6	0.1	. 0	.1
. .	1 .87	4 7.5	-4 4.	-1 39.1	-5 0.25	.0	.10	0.1

JOINT TORQUES (IN-LBS)

TIME	HIP-HIPK	LOWER HIPK	HIPK SPING	LOWER SPINE	ANK	KNEE	SHOULDER AT TORSO	SHOULDER AT ARM	ELBOW
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

JOINT RELATIVE ANGLE VELOCITIES (DEG/SEC)

TIME	UPPER NECK	LOWER NECK	UPPER SPINE	LOWER SPINE	HIP	KNEE	SHOULDER AT ARM	ELBOW
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5.	7[illegible].15	-1[illegible].4	123.24	-177.11	[illegible].17	-1[illegible].42	2[illegible].44	-5.18
10.	127.47	-372.12	216.4	-144.76	[illegible].61	-31.87	97.11	-9.85
15.	-[illegible].49	-[illegible]	15. [illegible]	1[illegible].39	[illegible]	-5.9[illegible]	171.74	14.[illegible]
20.	-1[illegible].1	-643.6[illegible]	-174.[illegible]	[illegible]	16[illegible].43	-8.19	11.64	14[illegible].81
25.	-1[illegible]	-7[illegible].5	-270.71	1[illegible].81	5[illegible].24	-121.7	9.9[illegible]	[illegible].87
30.	-47.17	-840.72	-215.51	[illegible]	593.18	-173.64	12.16	-46.14
35.	-4[illegible].2[illegible]	1[illegible].17	-189.73	-14.85	71.27	-249.95	27.6	3[illegible].74
40.	-266.55	-951.[illegible]	-410.58	-22.16	7[illegible].53	-197.83	-1[illegible].63	5[illegible].2
45.	-499.[illegible]	-715.85	-326.5	1[illegible].8[illegible]	4[illegible].27	[illegible]96.18	-979.72	1[illegible]
50.	-474.77	-435.24	-193.12	-146.1[illegible]	-132.96	1494.64	-1[illegible]4.91	31[illegible].72
55.	-4[illegible].71	-538.[illegible]	-46.[illegible]	-456.86	-176.62	1693.8	-1784.[illegible]5	2[illegible]5.7[illegible]
60.	-415.54	-510.32	-26.[illegible]	-5[illegible].6[illegible]	-267.24	1781.47	116.[illegible]7	651.24
65.	-[illegible].6	-791.4	29.6[illegible]	-456.31	-51.[illegible]4	1891.51	1[illegible]58.32	77.84
70.	-2[illegible].36	-972.66	8.[illegible]	-411.7[illegible]	-578.59	1516.6[illegible]	417.38	1665.4
75.	-4[illegible].7	-969.85	-52.5	-[illegible]42.42	-138.94	1135.5[illegible]	1[illegible]97.39	144.3
80.	-759.79	-551.25	-152.95	-[illegible]8.87	-187.84	959.91	45.[illegible]89	-[illegible]5.41
85.	-8[illegible]6.75	-[illegible]8.76	-373.91	9.[illegible]9	[illegible].13	82.49	1[illegible].79	-9[illegible]4.97
90.	-[illegible] 1.3[illegible]	31[illegible].92	-624.14	7[illegible].3[illegible]	26.[illegible]39	733.27	1[illegible].98	-438.[illegible]5
95.	-147.94	46.[illegible]3	-674.7[illegible]	23.2[illegible]	37.53	666.86	88.36	-7[illegible].37
100.	284.75	473.86	-521.1[illegible]	-158.34	-312.19	601.29	-164.11	-810.34
105.	31[illegible].[illegible]2	4[illegible].55	-54.[illegible]	-276.57	174.71	551.97	218.6[illegible]	-5[illegible]7.97
110.	2[illegible].72	67[illegible].83	-27.59	-286.57	-45.63	672.47	142.47	-319.59
115.	5[illegible].41	675.3[illegible]	53.[illegible]	-294.1	-1[illegible]7.21	66[illegible].62	232.37	-11[illegible]. 9
120.	531.42	65[illegible].56	17.47	-1[illegible]9.5	-193.74	-28[illegible].92	629.58	-174[illegible].1
125.	4[illegible].[illegible]	46[illegible].41	256.9	-217.[illegible]	-2[illegible].82	-776.15	1[illegible]86.18	-2[illegible].35
130.	443.21	54[illegible].34	146.93	-5[illegible].9	-315.12	-775.28	1724.64	-2755.29
135.	41[illegible]	575.87	256.6[illegible]	-1[illegible].31	-[illegible]6.83	-766.34	1[illegible].72	-2779.44
140.	376.96	61[illegible].35	247.47	-16[illegible].2[illegible]	-2[illegible].24	-796.66	1753.73	-2415.33
145.	357.64	6[illegible].24	221.23	-137.15	-1[illegible].3	-8[illegible].78	1[illegible]66.97	-21[illegible]. 5
150.	34[illegible].14	584.26	196.1	-1[illegible].43	-144.23	-817.21	1181.[illegible]1	-1647. 4
155.	34[illegible].3	5[illegible].4[illegible]	178.[illegible]	-139.86	-[illegible].41	2[illegible].53	564.13	-742.97
160.	347.9	5[illegible].1[illegible]	264.1	-226.64	-[illegible]3.91	-428.15	-729.41	6[illegible].9[illegible]
165.	3[illegible]7.8[illegible]	37[illegible].75	156.[illegible]	-1[illegible].33	-64.72	-816.13	-1[illegible].39	13[illegible]9.41
170.	348.4	5[illegible].9	325.94	-248.2[illegible]	-7[illegible].96	-681.43	-1[illegible]4.4	14[illegible]7.62
175.	3[illegible].9	5[illegible].43	43.[illegible]1	-142.7[illegible]	-17.23	-186.48	-1[illegible]77.11	141[illegible].31
180.	2[illegible]5.47	676.55	1[illegible]8.[illegible]1	14.67	-26[illegible].36	99.17	-1116.27	12[illegible].78
185.	374.2	6[illegible].57	324.7	-174.3	-277.[illegible]	161.[illegible]	-[illegible]47.78	[illegible].49
190.	2[illegible].7[illegible]	7[illegible]7.41	138.44	-[illegible].12	-343.58	211.[illegible]	-13[illegible].5	6[illegible]
195.	2[illegible].21	[illegible]	229.[illegible]	-[illegible]8.[illegible]4	-3[illegible].7	137.43	-158.15	[illegible]4.18
200.	3[illegible].39	4[illegible].14	[illegible].41.[illegible]	-[illegible]1.37	-27[illegible]	25[illegible].4	-46.42	-1.56

[illegible]

JOINT RELATIVE ANGLES (DEG)

TIME	UPPER NECK	LOWER NECK	UPPER SPINE	LOWER SPINE	HIP	KNEE	SHOULDER ABDUCTION	ELBOW
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

NECK AND SHOULDER FORCES (LB)

TIME	LINEAR	WORKLINEAR	NECK VISCOUS	TORSEL	TOTAL	LINEAR	WORKLINEAR	SHOULDER VISCOUS	NO CL.	TOTAL
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5.	[illegible]	[illegible]	3.6[illegible]	[illegible]	7.65	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1.61	[illegible]	[illegible]	[illegible]	[illegible]
15.	-14.4[illegible]	[illegible]	[illegible]	[illegible]	-35.74	-4.14	[illegible]	[illegible]	[illegible]	-4.14
[illegible]	[illegible]	[illegible]	-15.91	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	-1[illegible]	-3.98	[illegible]	[illegible]	-163.68	-17.45	[illegible]	[illegible]	[illegible]	-17.2[illegible]
[illegible]	-174.54	-9.5	-15.97	[illegible]	[illegible]	-27.18	[illegible]	[illegible]	[illegible]	-27.18
[illegible]	-191.9[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-37.91	[illegible]	[illegible]	[illegible]	-39.91
[illegible]	-191.18	[illegible]	7.41	[illegible]	-194.25	-9[illegible].33	-13[illegible].14	[illegible]	[illegible]	-19[illegible].47
95.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-68.32	-461.[illegible]	[illegible]	[illegible]	-[illegible]29.3[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-74.39	[illegible]	[illegible]	[illegible]	-754.51
5[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-82.29	-1128.53	[illegible]	[illegible]	-1[illegible]
6[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-82.56	-896.[illegible]	[illegible]	[illegible]	-9[illegible].[illegible]6
65.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-2[illegible].66
7[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-75.21	-249.25	[illegible]	[illegible]	-3[illegible]4.4[illegible]
75.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-785.93	[illegible]	[illegible]	-86[illegible].73
[illegible]	[illegible]	[illegible]	41.7	[illegible]	[illegible]	-78.42	-557.92	[illegible]	[illegible]	-6[illegible].35
85.	[illegible]	[illegible]	17.3[illegible]	[illegible]	5[illegible]	-65.88	-166.93	[illegible]	[illegible]	-16[illegible].78
[illegible]	4.94	[illegible]	3.2	[illegible]	8.14	-4[illegible].74	-3.81	[illegible]	[illegible]	-44.56
95.	3.[illegible]	[illegible]	-3.21	[illegible]	[illegible]	-2[illegible].96	[illegible]	[illegible]	[illegible]	-2[illegible].96
1[illegible]	-11.	[illegible]	-12.24	[illegible]	[illegible]	-11.11	[illegible]	[illegible]	[illegible]	-11.11
1[illegible]	[illegible]	[illegible]	-9.38	[illegible]	[illegible]	-16.51	[illegible]	[illegible]	[illegible]	-1[illegible].51
11[illegible]	[illegible]	[illegible]	13.[illegible]	[illegible]	-16.2[illegible]	-3[illegible].98	[illegible]	[illegible]	[illegible]	-3[illegible].9[illegible]
115.	[illegible]	[illegible]	5.26	[illegible]	-5.36	-46.5[illegible]	-33.26	[illegible]	[illegible]	-79.75
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-58.11	[illegible]	[illegible]	[illegible]	-1[illegible].[illegible]3
125.	[illegible]	[illegible]	-18[illegible]	[illegible]	-64.[illegible]	-6[illegible].76	+166.28	[illegible]	[illegible]	-16[illegible].[illegible]4
13[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-73.9[illegible]	-53.74	-7[illegible].36	[illegible]	[illegible]	-1[illegible].1
1[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-[illegible]2.95	-41.42	-7[illegible].7	[illegible]	[illegible]	-46.[illegible]
14[illegible]	[illegible]	[illegible]	13.7[illegible]	[illegible]	-[illegible]2.43	-31.49	[illegible]	[illegible]	[illegible]	-31.49
145.	[illegible]	[illegible]	5.5	[illegible]	-16.7	-29.9[illegible]	[illegible]	[illegible]	[illegible]	-29.9[illegible]
[illegible]	[illegible]	[illegible]	-1.8	[illegible]	-15.21	-3[illegible].29	[illegible]	[illegible]	[illegible]	-3[illegible].2
15[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-2[illegible].82	-43.56	-1[illegible].24	[illegible]	[illegible]	-61.8[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-25.13	-43.79	-19.4	[illegible]	[illegible]	-63.19
16[illegible]	[illegible]	[illegible]	.46	[illegible]	[illegible]	-37.98	[illegible]	[illegible]	[illegible]	-37.98
17[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-15.6[illegible]	-33.29	[illegible]	[illegible]	[illegible]	-33.29
175.	[illegible]	[illegible]	[illegible]	[illegible]	-3.91	-31.72	[illegible]	[illegible]	[illegible]	-31.72
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	14.	-[illegible].16	[illegible]	[illegible]	[illegible]	-[illegible].16
185.	[illegible]	[illegible]	12.24	[illegible]	[illegible]	-3[illegible].59	[illegible]	[illegible]	[illegible]	-32.59
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-3[illegible].97	[illegible]	[illegible]	[illegible]	-3[illegible].97
1[illegible]	[illegible]	[illegible]	-9.8	[illegible]	[illegible]	-31.37	[illegible]	[illegible]	[illegible]	-31.37
[illegible]	[illegible]	[illegible]	-13.[illegible]	[illegible]	[illegible]	-[illegible]7.77	[illegible]	[illegible]	[illegible]	-[illegible]7.77

SHOULDER JOINT COORDINATE (RELATIVE TO VEHICLE)

TIME (MSEC)	SHOULDER AT TORSO (IN) X	SHOULDER AT TORSO (IN) Z	VELOCITY (IN/SEC) X	VELOCITY (IN/SEC) Z	SHOULDER AT ARM (IN) X	SHOULDER AT ARM (IN) Z	VELOCITY (IN/SEC) X	VELOCITY (IN/SEC) Z	SHOULDER LENGTH (IN)	R TE (IN/SEC)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

NECK JOINT COORDINATES (RELATIVE TO VEHICLE)

TIME (MSEC)	NECK DISP (IN) X	NECK DISP (IN) Z	VELOCITY (IN/SEC) X	VELOCITY (IN/SEC) Z	LOWER NECK (IN) X	LOWER NECK (IN) Z	VELOCITY (IN/SEC) X	VELOCITY (IN/SEC) Z	NECK LENGTH (IN)	NECK LENGTH (IN/SEC)
[illegible]	11.51	-33.67	[illegible]	[illegible]	11.29	-8.34	[illegible]	[illegible]	[illegible]	[illegible]
5.[illegible]	11.34	-31.6[illegible]	19.84	.94	11.3	-8.34	15.[illegible]4	-.6[illegible]	3.27	-1.70
10.[illegible]	11.[illegible]	-31.6[illegible]	37.89	-7.21	11.[illegible]	-8.3[illegible]	47.73	-1.4	3.[illegible]7	1.[illegible]
15.[illegible]	11.78	-31.6[illegible]	51.97	-7.22	11.63	-8.35	6.42	2.5[illegible]	3.31	14.73
20.[illegible]	11.[illegible]	-31.67	73.34	-.85	11.64	-10.31	1.15	13.04	3.37	17.13
25.[illegible]	12.11	-33.63	34.27	2.[illegible]	11.65	-8.8[illegible]	-3.55	3.[illegible]	3.46	14.[illegible]
30.[illegible]	12.[illegible]	-31.96	74.97	41.51	11.62	-8.[illegible]	-14.51	47.97	3.51	1.[illegible]7
35.[illegible]	12.56	-31.16	2[illegible].31	71.[illegible]	11.54	-17.73	-24.74	62.3[illegible]	3.13	1.54
40.[illegible]	1[illegible].43	-3[illegible].76	.27	9[illegible].43	11.38	-17.58	-33.6	76.19	3.03	-7.74
45.[illegible]	12.45	-3[illegible].21	14.75	111.23	11.27	-6.97	.35	86.43	3.49	-17.71
50.[illegible]	12.[illegible]	-29.68	47.26	137.86	11.40	-[illegible].54	47.21	68.78	3.[illegible]7	-[illegible].[illegible]
55.[illegible]	1[illegible].51	-28.12	76.67	163.42	11.72	-26.11	73.66	41.11	3.2[illegible]	-19.[illegible]7
60.[illegible]	13.39	-26.60	110.7[illegible]	77.43	12.14	-5.74	102.57	62.76	3.18	-7.89
65.[illegible]	14.[illegible]4	-23.37	133.95	36.36	12.62	-3.5[illegible]	83.43	36.46	3.21	17.[illegible]9
70.[illegible]	14.68	-21.29	12[illegible].37	-1.86	12.96	-5.46	51.53	-14.74	3.32	24.78
75.[illegible]	15.21	-28.37	16.66	-3[illegible].58	13.15	-5.65	24.44	-64.[illegible]7	3.41	-9.[illegible]4
80.[illegible]	15.55	-21.[illegible]	5[illegible].71	-58.[illegible]3	13.28	-6.1	3[illegible].21	-1[illegible]4.3[illegible]	3.37	-21.[illegible]6
3[illegible]	15.74	-28.94	22.21	-74.51	13.41	-26.65	19.95	-94.18	3.3[illegible]	-6.78
7[illegible]	15.9[illegible]	-29.31	5.68	-71.88	13.47	-7.[illegible]	6.4[illegible]	-73.44	3.27	-1.[illegible]
1[illegible]	15.1	-29.63	-12.76	-58.37	13.47	-7.34	-7.87	-51.69	3.26	1.[illegible]
1[illegible]	15.7	-27.59	-24.73	-44.49	13.39	-7.55	-23.85	-35.95	3.21	6.18
1[illegible]	15.54	-3[illegible].1[illegible]	-39.64	-41.1[illegible]	13.24	-7.69	-3[illegible].38	-25.72	3.23	4.74
11[illegible]	15.32	-3[illegible].79	-48.7	-37.18	13.12	-7.8[illegible]	-2[illegible].53	-19.12	3.32	-6.07
12[illegible]	15.[illegible]7	-3[illegible].44	-52.51	-3[illegible].36	12.99	-7.88	-26.45	-13.25	3.[illegible]9	-2.06
1[illegible]	14.9	-3[illegible].6	-47.11	-31.42	1[illegible].83	-7.95	-35.97	-11.52	3.3	4.11
1[illegible]	14.49	-3[illegible].73	-36.65	-24.83	12.61	-7.99	-51.33	-7.44	3.34	3.10
15.[illegible]	14.12	-3[illegible].89	-21.2[illegible]	-21.[illegible]	12.35	-8.11	-54.73	-3.[illegible]	3.37	2.[illegible]
15.[illegible]	13.71	-3[illegible].97	-16.56	-13.66	12.[illegible]8	-8.[illegible]	-55.99	-2.4[illegible]	3.26	-4.[illegible]9
14.[illegible]	13.[illegible]7	-31.[illegible]	-18.97	-6.1[illegible]	11.81	-8.[illegible]	-[illegible].64	-.[illegible]7	3.[illegible]	-[illegible].[illegible]
14.[illegible]	12.87	-31.7	-18.[illegible]	-8.[illegible]2	11.53	-8.[illegible]	-56.66	2.18	3.34	-2.78
13.[illegible]	12.[illegible]	-31.11	-1[illegible].65	-6.74	11.26	-8.31	-5[illegible].66	4.1[illegible]	3.3	.[illegible]
13.[illegible]	11.[illegible]4	-31.13	-1[illegible].18	-3.26	1[illegible].99	-7.9[illegible]	-5[illegible].96	7.14	3.31	1.31
10[illegible].[illegible]	11.56	-31.14	-77.3	1.31	1[illegible].74	-7.9[illegible]	-5[illegible].44	9.[illegible]4	3.31	1.1[illegible]
165.[illegible]	11.1[illegible]	-31.13	-74.17	4.65	1[illegible].61	-7.[illegible]	-44.[illegible]	1[illegible].67	3.31	-.[illegible]3
17[illegible]	10.[illegible]7	-31.[illegible]9	-67.45	9.13	1[illegible].71	-7.1[illegible]	-4[illegible].54	1[illegible].[illegible]4	3.31	-2.[illegible]9
175.[illegible]	11.11	-31.09	-51.8[illegible]	11.93	1[illegible].14	-7.77	-3[illegible].18	11.1[illegible]	3.29	-3.43
1[illegible]	11.[illegible]4	-3[illegible].91	-17.6	11.[illegible]	1[illegible].[illegible]7	-7.7	-15.18	9.[illegible]	3.[illegible]7	-5.31
185.[illegible]	1[illegible].4	-31.94	-31.47	7.41	9.93	-7.6[illegible]	-1.51	1.19	3.24	-6.[illegible]8
1[illegible]	9.[illegible]7	-3[illegible].92	-11.91	-1[illegible].[illegible]	11.[illegible]7	-7.7	18.81	3.11	3.[illegible]2	-2.[illegible]
1[illegible]	9.[illegible]	-3[illegible].[illegible]5	6.4[illegible]	-1[illegible].[illegible]	15.16	-7.74	31.[illegible]6	-11.[illegible]	3.[illegible]2	2.4[illegible]
2[illegible]	9.[illegible]	-31.19	.8	-2.98	11.74	-7.81	3[illegible].67	-1[illegible].51	[illegible].4	[illegible].[illegible]

BODY JOINT VELOCITIES (IN/SEC) (RELATIVE TO VEHICLE)

TIME	UPPER TORSO		LOWER TORSO		HIP		KNEE		ELBOW	
	Y	X	X	Z	X	Z	X	Z	X	Z
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] HYBRID II DUMMY [illegible] DATA) FORE AND [illegible] DISEL. [illegible] MPH FRONT [illegible] FORE [illegible] DAMPS [illegible] AND [illegible]

BODY JOINT COORDINATES (IN) (RELATIVE TO VEHICLE)

TIME	UPPER NECK X	UPPER NECK Z	LOWER NECK X	LOWER NECK Z	HIP X	HIP Z	KNEE X	KNEE Z	FEET X	FEET Z
[illegible]	13.[illegible]	-15.[illegible]	14.[illegible]	-11.9	11.91	[illegible].41	33.71	-14.[illegible]	18.[illegible]	-17.75
[illegible]	13.6	-15.2	14.53	-11.95	11.84	-9.41	33.74	-14.[illegible]	18.71	-17.75
[illegible]	13.7	-15.3	14.75	-11.90	11.[illegible]	[illegible]	33.96	-14.[illegible]	19.[illegible]	-17.73
[illegible]	13.7	-15.5	15.16	-1[illegible]	11.37	-9.46	34.36	-14.[illegible]	19.[illegible]	-17.71
[illegible]	13.[illegible]	-1[illegible]	1[illegible].39	-1[illegible]	11.71	-9.51	34.57	-14.[illegible]	19.71	-17.71
[illegible]	14.11	-14.[illegible]	15.76	-1[illegible].81	[illegible].13	-3.58	35.1[illegible]	-14.56	20.29	-17.[illegible]9
[illegible]	14.77	-14.15	16.1[illegible]	-11.94	[illegible].58	-9.67	35.61	-14.5[illegible]	20.97	-17.[illegible]8
[illegible]	14.[illegible]4	-14.[illegible]	16.54	-11.[illegible]	21.[illegible]	-9.77	36.18	-14.42	21.94	-17.[illegible]7
[illegible]	14.[illegible]	14.[illegible]	17.01	-11.7[illegible]	21.66	-9.89	36.8[illegible]	-14.41	[illegible].77	-17.[illegible]
[illegible]	15.[illegible]	-14.[illegible]	17.53	-11.57	[illegible].9	-1[illegible].01	37.42	-14.54	23.87	-17.[illegible]
[illegible]	15.8	-13.84	18.13	-11.3[illegible]	[illegible].96	-1[illegible].8[illegible]	37.84	-15.[illegible]	25.[illegible]	-18.[illegible]
[illegible]	1[illegible].53	-13.49	11.73	-11.9[illegible]	25.62	-1[illegible].03	38.14	-16.[illegible]	26.[illegible]9	-18.96
[illegible]	16.84	-13.15	19.25	-1[illegible].75	24.1[illegible]	-[illegible].97	38.[illegible]	-17.[illegible]	26.73	-19.[illegible]9
65.	17.7	-12.[illegible]9	19.66	-10.47	24.63	-[illegible]	38.[illegible]7	-18.2	27.6	-2[illegible].1
70.	17.43	-1[illegible].31	19.85	-1[illegible].35	24.83	-9.91	37.69	-19.1	27.5	-[illegible].1
75.	17.43	-12.53	19.81	-1[illegible].45	24.79	-1[illegible].49	37.28	-19.78	27.19	-2[illegible]
8[illegible]	17.29	-13.5	19.69	-1[illegible].79	24.[illegible]7	-1[illegible].44	36.98	-[illegible]	26.62	-2[illegible]
85.	17.21	-13.71	19.52	-11.22	24.5	-1[illegible].26	36.76	-[illegible].89	25.72	-2[illegible].7
[illegible]	16.[illegible]7	-14.4	19.28	-11.58	24.27	-11.58	36.53	-[illegible]	24.7[illegible]	-19.[illegible]4
[illegible]	15.[illegible]6	-14.[illegible]6	18.98	-11.8[illegible]	23.98	-11.7[illegible]	36.27	-21.[illegible]	23.75	-18.[illegible]
[illegible]	1[illegible].[illegible]6	-14.[illegible]9	18.[illegible]4	-1[illegible].[illegible]7	23.[illegible]4	-1[illegible].7	35.95	-21.98	22.73	-18.[illegible]
[illegible]	15.7[illegible]	-14.[illegible]	18.29	-12.1[illegible]	23.29	-12.32	35.55	-2[illegible].9	21.70	-17.[illegible]7
[illegible]	15.47	-14.[illegible]7	17.94	-1[illegible].24	22.94	-1[illegible].46	35.[illegible]7	-22.[illegible]	20.[illegible]9	-17.[illegible]4
[illegible]	15.1[illegible]	-14.72	17.61	-12.24	[illegible].6[illegible]	-1[illegible].55	34.5[illegible]	-22.86	19.69	-1[illegible].41
[illegible]	14.88	-14.[illegible]6	17.[illegible]6	-1[illegible].24	[illegible].5	-1[illegible].54	34.[illegible]3	-[illegible].[illegible]6	18.68	-15.76
[illegible]	14.55	-14.[illegible]9	16.87	-12.22	[illegible].88	-1[illegible].49	33.43	-[illegible].21	17.67	-15.[illegible]5
[illegible]	14.[illegible]2	-14.71	16.5[illegible]	-12.2[illegible]	21.51	-1[illegible].41	33.[illegible]4	-[illegible].[illegible]	16.[illegible]5	-14.[illegible]
[illegible]	13.89	-14.71	16.1[illegible]	-1[illegible].17	21.1	-1[illegible].32	3[illegible].4[illegible]	-[illegible].[illegible]	15.[illegible]1	-13.[illegible]7
[illegible]	13.[illegible]	-14.71	15.77	-1[illegible].1[illegible]	[illegible].77	-1[illegible].22	31.9[illegible]	-[illegible].41	14.[illegible]8	-13.11
[illegible]	13.[illegible]	-14.7	15.39	-1[illegible].[illegible]	[illegible].39	-1[illegible].16	31.46	-[illegible].35	13.9	-12.7
[illegible]	12.[illegible]	-14.7	1[illegible].1	-1[illegible].1	[illegible].11	-11.99	31.[illegible]	-[illegible].3	1[illegible].11	-1[illegible]
[illegible]	12.55	-14.3	14.63	-11.98	1[illegible].63	-11.87	3[illegible].6[illegible]	-[illegible].1	11.98	-12.[illegible]
[illegible]	12.[illegible]1	-14.[illegible]7	14.26	-11.86	1[illegible].[illegible]	-11.74	3[illegible].[illegible]	-[illegible].7	11.79	-11.[illegible]7
[illegible]	11.[illegible]	-14.51	13.[illegible]	-11.77	1[illegible].9	-11.5[illegible]	29.43	-[illegible].[illegible]1	1[illegible].13	-12.13
[illegible]	11.61	-14.45	13.56	-11.67	1[illegible].[illegible]6	-11.4[illegible]	[illegible].6	-[illegible].71	12.[illegible]3	-12.[illegible]
[illegible]	11.[illegible]	-14.[illegible]8	13.25	-11.5[illegible]	1[illegible].4	-11.[illegible]6	27.3	-[illegible]	13.16	-12.[illegible]9
[illegible]	11.12	-14.52	12.97	-11.4[illegible]	17.9	-11.[illegible]7	29.[illegible]	-[illegible]	15.[illegible]7	-1[illegible].[illegible]
[illegible]	1[illegible].[illegible]8	-14.[illegible]	12.72	-11.3[illegible]	17.69	-1[illegible].8[illegible]	28.7[illegible]	-[illegible]	14.12	-13.[illegible]
[illegible]	1[illegible].74	-14.[illegible]	1[illegible].[illegible]	-11.[illegible]	17.41	-1[illegible].7	2[illegible].41	-[illegible].[illegible]	14.[illegible]3	-13.77
[illegible]	1[illegible].[illegible]	-14.5[illegible]	1[illegible].50	-11.31	17.[illegible]	-1[illegible].5[illegible]	28.3	-1[illegible].1	14.[illegible]9	-1[illegible].[illegible]
[illegible]	1[illegible].[illegible]	-14.[illegible]	12.[illegible]	-11.[illegible]	17.[illegible]	-1[illegible].43	28.1[illegible]	-1[illegible].79	15.[illegible]	-14.[illegible]

ACCELERATION OF BODY LEFT ANGLE, (RAD/SEC**2) (RELATIVE TO INITIAL FRAME)

TIME	HEAD	NECK	UPPER TORSO	MID TORSO	LOW TORSO	UPPER LEG	LOWER LEG	SHOULDER	UPPER ARM	LOWER ARM
.	.	45.16	-[illegible]	73.11	[illegible]	-63.78	-9.31	---	-.[illegible]	-.[illegible]
[illegible]	-[illegible]	[illegible]	-2145.[illegible]	[illegible]	-1377.49	142.76	-17[illegible]	---	677.58	-[illegible]
10.	-12[illegible]	[illegible]	-1769.35	9343.25	-2624.99	-119.23	-159.87	---	-32[illegible].84	-21.[illegible]
15.	-984.9[illegible]	423.[illegible]	-44.19	1193.46	37.62	-66.71	.84	---	547.25	-[illegible]
[illegible]	85.45	-231.[illegible]	1729.89	-4776.9[illegible]	1733.85	-66.93	165.31	---	433.27	-[illegible]
[illegible]	13[illegible]	-1[illegible]5.9	981.57	-2[illegible]	1074.79	-91.96	178.24	---	483.32	-78.79
30.	-157.37	-168.84	63.67	173.66	248.38	-66.45	131.59	---	698.17	-114.[illegible]
35.	-151.56	65.46	-519.88	461.27	-1[illegible]56.75	-71.26	75.44	---	743.56	-161.16
40.	166.[illegible]	-135.81	1163.89	-4641.[illegible]	1517.74	-249.14	-596.91	---	13[illegible].96	-352.66
45.	55.67	-[illegible]	813.79	-5591.61	1281.61	187[illegible].48	-5619.49	---	4111.[illegible]	-14[illegible].61
50.	235.25	13.73	-243.57	-3[illegible].42	94.93	141.29	-6886.76	---	197.51	-1284.83
55.	-121.49	-931.42	-95.23	-[illegible]	383.51	69.37	293.42	---	-[illegible]611.37	4.[illegible]
60.	-472.63	-3214.31	886.42	-5453.67	134.26	913.65	1328.31	---	-5[illegible]76.12	-212.39
65.	-1421.45	-[illegible]	-712.43	1937.[illegible]	-1141.47	11.13	747.27	---	2[illegible].57	-3[illegible].88
70.	-8[illegible]4.14	-1594.83	-1382.73	-2768.36	-746.55	-1329.57	-616.16	---	-974.11	-[illegible]
75.	-181.77	-[illegible]5.19	5[illegible]4.97	-[illegible]1.42	-251.95	-863.81	47.14	---	-[illegible]474.78	6437.84
.	543.82	1287.[illegible]	-629.[illegible]7	[illegible]56.[illegible]	-742.23	-411.76	8.17	---	.779.97	2589.1[illegible]
85.	1785.[illegible]	1367.7	-62.39	217.54	647.27	-214.36	150.21	---	1[illegible]37.77	499.17
9[illegible].	1235.18	517.4	327.16	-1197.6[illegible]	974.78	-114.85	269.59	---	-187.44	566.64
95.	[illegible].46	-6[illegible]7.74	909.67	-4[illegible]27.91	1441.18	14.65	293.77	---	-13[illegible].15	565.21
1[illegible].	37[illegible].99	-1[illegible]5.75	8[illegible]5.2[illegible]	-1[illegible]74.13	-1[illegible]7.58	26[illegible].82	271.64	---	46.9[illegible]	3[illegible].37
1[illegible].	[illegible].81	444.95	437.50	-1671.71	-177.99	563.92	291.83	---	2[illegible].69	328.[illegible]
11.	53[illegible].85	-1[illegible]67.78	1336.22	-4921.[illegible]	1135.46	137.46	185.49	---	58.19	551.71
11[illegible].	15.47	182.59	-175.5[illegible]	1[illegible]55.11	-544.57	16.[illegible]	225.74	---	-775.80	716.58
1[illegible].	15[illegible].7	1[illegible]4.47	-2[illegible]1.85	1[illegible]	-773.76	29.25	5448.63	---	-1838.99	474.54
1[illegible]5.	-176.57	2[illegible]7.4[illegible]	-11[illegible]6.48	9623.85	-1375.31	-61.68	-142.60	---	-1911.98	[illegible].67
1[illegible].	15.21	2749.34	-1[illegible]17.34	4[illegible]9[illegible].14	-1135.92	-66.46	-145.44	---	-1[illegible]33.91	-3[illegible]
1[illegible].	-124.[illegible]	2[illegible]1.44	-121[illegible].[illegible]	4653.79	-1753.02	-66.66	-159.12	---	225.62	-54[illegible]
14[illegible].	-[illegible]1.1	1[illegible]54.17	-1[illegible].26	4776.66	-1344.57	-58.64	-1[illegible]2.9	---	494.78	-557.39
14[illegible].	-5[illegible].81	1[illegible]11.25	-1211.46	4147.9[illegible]	-1318.67	-52.71	-1[illegible]3.9[illegible]	---	727.27	-431.92
15.	-[illegible]9.95	188.[illegible]	-1245.[illegible]8	4793.25	-1288.38	-43.35	-163.64	---	2651.11	-282.5[illegible]
15[illegible].	[illegible].41	1954.11	-1[illegible]33.94	4773.6[illegible]	-12[illegible].78	-[illegible].84	-172.49	---	3821.12	-744.44
16[illegible].	-55[illegible].1[illegible]	[illegible].81	-1247.41	4916.57	-1292.3[illegible]	2.75	-167[illegible]8	---	3625.93	-872.81
165.	-157.[illegible]	1[illegible]1.[illegible]	-11[illegible]4.17	4[illegible]18.43	-1146.4[illegible]	11.54	-215.54	---	53[illegible].45	-254.68
17[illegible].	-1[illegible].83	.8[illegible].74	-1491.5[illegible]	[illegible].68.64	1334.6[illegible]	145.1[illegible]	-115.33	---	-93.63	-181.9
175.	-55[illegible].7	[illegible]	-1[illegible].23	3[illegible].64	-1591.1[illegible]	234.35	-19[illegible]	---	-561.68	-133.41
1[illegible].	44.71	-6[illegible]	619.71	-139.8	916.8	-1[illegible].9[illegible]	-251.85	---	-8[illegible].9[illegible]	-19.18
18[illegible].	-177.67	1519.7[illegible]	-1[illegible].67	41[illegible]	[illegible]	[illegible].64	-269.73	---	-9[illegible].19	7.4[illegible]
19[illegible].	59.35	-13.1[illegible]	7[illegible]3.51	-3431.84	-925.71	-167.61	-94.57	---	-991.83	136.85
1[illegible].	-[illegible].19	[illegible]	-11[illegible]	4[illegible].2[illegible]	-1[illegible]	44.89	-[illegible].63	---	-9[illegible].87	17.81
2[illegible].	-797.9	1[illegible]	-1344.34	1441.7[illegible]	-1161.66	4[illegible]	-[illegible].13	---	-61[illegible].44	-18.65

VELOCITY OF BODY LINK ANGLES (DEG/SEC) (RELATIVE TO VEHICLE)

TIME	HEAD	NECK	NECK TORSO	MID TORSO	LOW TORSO	UPPER LEG	LOWER LEG	SHOULDER	UPPER ARM	LOWER ARM
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	-97.8	59.28	-16.88	-.86	---	-5.12	.16
[illegible]	-137.38	[illegible]	[illegible]	-111.4[illegible]	33.31	-36.20	-4.33	---	4.98	-.87
[illegible]	[illegible]	[illegible]	117.3[illegible]	17.1[illegible]	5.77	-57.79	-4.81	---	[illegible] .74	[illegible]
[illegible]	[illegible]	-438.3	[illegible]	279.86	111.81	-75.62	8.57	---	14[illegible].95	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	297.7[illegible]	-85.53	36.17	---	[illegible]	[illegible]
[illegible]	-661.18	-614.[illegible]	272.71	481.2[illegible]	488.15	-114.98	74.62	---	26[illegible].56	[illegible]
[illegible]	[illegible]	-711.34	173.23	[illegible]	577.81	-132.45	117.[illegible]	---	546.17	-15.61
4[illegible]	-671.[illegible]	-544.69	[illegible]	916.91	594.75	-127.78	[illegible]	---	53[illegible].96	[illegible]
45.0[illegible]	-73[illegible].97	[illegible]	[illegible]	[illegible]	61[illegible].11	211.84	-414.54	---	1348.67	-31[illegible].46
[illegible]	[illegible]	-18[illegible]	254.66	447.78	593.94	726.98	-677.74	---	2379.57	-746.16
[illegible]	[illegible]	[illegible]	141.99	18[illegible].49	645.35	871.97	-871.82	---	1926.35	-519.43
9[illegible]	-774.29	-331.75	-28.37	-2.3[illegible]	58[illegible].3[illegible]	847.54	-9[illegible].93	---	-144.64	-654.66
[illegible]	-1[illegible].79	-853.14	[illegible]	-97.65	358.6[illegible]	869.56	-1[illegible].95	---	-6[illegible].4[illegible]	-1114.26
7[illegible]	-1421.12	-1131.76	-159.11	-167.1[illegible]	244.6[illegible]	623.24	-893.45	---	-576.48	-[illegible].269.53
75.0	-1[illegible].62	-1147.92	-178.87	-1[illegible].[illegible]	116.4[illegible]	5[illegible].36	-833.66	---	-147[illegible].37	-1619.41
[illegible]	-1534.[illegible]7	-794.28	-243.83	-9[illegible].68	-61.28	126.62	-833.28	---	-693.92	-398.[illegible]
[illegible]	-1197.49	-33[illegible].97	-[illegible]	169.71	77.1[illegible]	1[illegible].99	-8[illegible].51	---	-47[illegible].59	-1.62
[illegible]	-611.94	-1 1.57	-1 1.5[illegible]	[illegible] 2.64	23[illegible].32	-36.96	-763.35	---	-33[illegible].47	[illegible]
95.[illegible]	[illegible].46	15 .75	-[illegible].77	[illegible].93	33[illegible].71	-9[illegible].83	-7 2.68	---	-4[illegible].15	[illegible]
1[illegible]	436.71	151.96	-[illegible].90	269.29	3[illegible].63	-13.44	-634.85	---	-416.62	3[illegible].32
1[illegible]	611.[illegible]	297.7[illegible]	-1[illegible].75	-1 .5[illegible]	27[illegible].97	1[illegible].66	-5[illegible].31	---	-375.35	4[illegible].62
11[illegible]	79[illegible].55	4[illegible].84	-172.[illegible]1	-144.63	141.94	186.97	-485.[illegible]	---	-314.49	6 5.1[illegible]
115.	98[illegible].74	53[illegible].91	-14[illegible].48	-1[illegible].[illegible]	1[illegible] .7[illegible]	2[illegible].22	-456.4[illegible]	---	-575.45	78[illegible].14
1 .	9 1.4[illegible]	3.97	-143.57	-15[illegible].[illegible]	-41.55	145.19	432.[illegible]9	---	-769.97	97[illegible].64
1 .	91.[illegible]4	4[illegible].31	-42.1[illegible]	-298.9	-81.88	198.94	97[illegible].1[illegible]	---	-13[illegible].26	1[illegible].15
1[illegible]	94 .26	4[illegible].[illegible]5	-45.29	-191.7[illegible]	-138.81	17[illegible].32	951.68	---	-1763.85	945.48
1[illegible]	[illegible]	[illegible]	- 7.76	-284. 4	-117.73	14[illegible].29	9[illegible].63	---	-1883.[illegible]	8[illegible].37
14 .	9[illegible]	[illegible]	-42.33	-279.8	-113.51	1[illegible].73	9 3.39	---	-1766.66	699.27
145.	5 4.1[illegible]	5[illegible].97	-[illegible].27	-[illegible]	-117.35	71.28	878.17	---	-16[illegible].24	55[illegible].81
1[illegible]	891.87	54[illegible].73	-38.53	-134.63	-1[illegible].2[illegible]	36.05	85[illegible].24	---	-122[illegible].03	42[illegible] 1
15[illegible]	871.44	5[illegible].4[illegible]	-53.53	-[illegible]	-[illegible] .64	2.7[illegible]	8[illegible].1[illegible]	---	-417.66	3[illegible].[illegible]1
1[illegible]	866.5[illegible]	368.51	-37.53	-3 1.66	-35.[illegible]4	-21.14	8[illegible].31	---	691.83	69.96
165.	[illegible] 4.74	51[illegible].[illegible]	-42.94	-21[illegible].[illegible]	-11[illegible].96	-34.24	781.89	---	1[illegible].[illegible]6	-98.[illegible]
17 .	81.[illegible]	464.58	-35.51	-361.4[illegible]	-113.16	-37.21	644.2[illegible]	---	1316.73	-138.[illegible]
175.	7[illegible].31	4[illegible].5	-[illegible]	-[illegible].44	-1[illegible].2[illegible]	[illegible]	192.52	---	1217.18	-19[illegible]
1[illegible]	78[illegible].53	5[illegible]	-113.[illegible]	-[illegible] .41	-237.18	3 .28	-[illegible].79	---	1332.87	-218.[illegible]
1[illegible]	8[illegible].74	[illegible]	-[illegible]	-4 .7[illegible]	- 46.41	3 .89	-13[illegible].17	---	751.34	-211.1[illegible]
1[illegible]	79 .4[illegible]	1[illegible].67	-1[illegible].74	-297.18	-317.31	[illegible]	-184.73	---	475.21	-18[illegible].75
1 .	73.4	4[illegible].1	-149.6[illegible]	-[illegible] .6[illegible]	-3[illegible].01	11.[illegible]	-2[illegible].17	---	198.52	-135.[illegible]
[illegible]	[illegible]	[illegible]	-134.[illegible]	-3[illegible].5	- 9.[illegible]	-14.11	- 73.35	---	-88.35	-86.74

5/04/11. 21.3 .'. . NVHA 2-D TUTORIAL EXAMPLE #2 FAC 57-1

HYBRID III DUMMY (PRELIMINARY DATA) FREE HAR DEC. COMP. DEFLE. 5 MPH FRONT BARRIER FORCE-LEN. HA MES TO EAR PIT

BODY LINK ANGLES (DEGREES) (RELATIVE TO VEHICLE)

TIM	HEAD	NECK	UPPER TORSO	MID TORSO	LOW TORSO	UPPER LEG	LOWER LEG	SHOULDER	UPPER ARM	LOWER ARM
[illegible]	73.[illegible]	37.5	37.5[illegible]	115.5	149.5[illegible]	19.50	-4[illegible].36	---	-41.[illegible]	5.10
[illegible]	7[illegible].43	[illegible]	57.44	11[illegible].74	149.47	19.46	-45.1	---	-41.98	2.49
10.[illegible]	76.16	86.93	67.66	11[illegible].6[illegible]	149.56	19.33	-45.3	---	-4[illegible].96	2.98
15.[illegible]	7[illegible].[illegible]	87.27	[illegible].35	11[illegible].9[illegible]	149.35	19.16	-45.6	---	-4[illegible].78	2.98
[illegible]	73.9[illegible]	84.94	99.4	117.[illegible]	149.8[illegible]	18.77	-45.06	---	-4[illegible].27	2.98
5.[illegible]	7[illegible].17	8[illegible].4	1[illegible].54	11[illegible].8[illegible]	151.94	18.37	-44.34	---	-3[illegible].35	2.55
[illegible]	67.67	79.[illegible]	1[illegible].84	121.[illegible]	152.99	17.98	-44.66	---	-38.16	2.52
3[illegible]	64.1[illegible]	7[illegible].21	1[illegible].36	123.91	155.62	17.51	-44.19	---	-36.7[illegible]	2.18
41.[illegible]	6[illegible].63	7[illegible].76	165.43	127.11	158.68	16.62	-43.62	---	-34.61	[illegible].78
4[illegible]	5[illegible].[illegible]	7[illegible].3	17.52	1[illegible].5[illegible]	161.81	16.73	-44.73	---	-3[illegible].26	1.95
[illegible]	5[illegible].19	63.1[illegible]	19.11	133.32	164.79	19.32	-47.83	---	-2[illegible].68	-.71
5.[illegible]	4[illegible].91	6[illegible].7	110.18	134.75	167.9	23.15	-51.90	---	-8.99	-4.94
[illegible]	45.34	6[illegible].8	110.46	135.12	171.65	27.29	-56.35	---	-4.53	-8.79
75.[illegible]	4[illegible].77	63.77	110.23	13[illegible].62	173.43	31.69	-61.23	---	-7.[illegible]2	-13.14
7[illegible]	3[illegible].57	56.68	1[illegible].72	133.92	174.49	35.56	-6[illegible].67	---	-9.84	-21.69
7[illegible]	2[illegible].8[illegible]	5[illegible].87	1[illegible].81	133.22	17[illegible].84	37.82	-70.30	---	-14.63	-32.93
8[illegible]	1[illegible].[illegible]	47.85	1[illegible].77	132.61	175.92	38.84	-74.47	---	-[illegible].81	-37.37
8[illegible]	11.94	4[illegible]	1[illegible].42	132.81	175.9	35.16	-78.61	---	-23.75	-3[illegible]
[illegible]	7.58	44.1[illegible]	1[illegible].81	133.84	176.74	39.10	-82.53	---	-2[illegible].47	-37.64
95.[illegible]	.89	44.58	1[illegible].31	135.41	178.24	38.91	-86.20	---	-27.53	-3[illegible].43
1.[illegible]	7.[illegible]2	45.37	1[illegible].69	136.91	178.91	36.82	-89.54	---	-29.43	-34.68
105.[illegible]	[illegible].76	46.31	1[illegible].14	137.1[illegible]	181.57	39.1[illegible]	-92.49	---	-31.40	-32.49
11[illegible]	13.33	48.38	1[illegible].1[illegible]	135.6[illegible]	182.53	39.83	-95.36	---	-33.[illegible]9	-29.79
115.[illegible]	17.[illegible]8	[illegible].9[illegible]	99.37	135.48	183.27	4[illegible].63	-97.42	---	-34.72	-2[illegible].[illegible]
12[illegible]	2[illegible].46	[illegible]5.46	29.76	134.46	183.47	41.77	-98.3[illegible]	---	-37.45	-[illegible].91
1[illegible]	[illegible].57	55.87	98.28	133.49	18[illegible].[illegible]5	4[illegible].73	-94.[illegible]4	---	-4[illegible].68	-1[illegible].87
13[illegible]	31.18	5[illegible].6	97.98	13[illegible].58	18[illegible].42	43.67	-89.[illegible]3	---	-5[illegible].53	-11.81
1[illegible]	35.9[illegible]	6[illegible].9[illegible]	97.76	1[illegible].5[illegible]	181.72	44.47	-84.53	---	-5[illegible].82	-7.11
14[illegible]	4[illegible].72	6[illegible].[illegible]	97.51	13[illegible].5	181.[illegible]4	45.[illegible]9	-79.96	---	-6[illegible].96	-3.29
145.[illegible]	4[illegible].41	67.[illegible]	97.[illegible]	12[illegible].5[illegible]	181.3[illegible]	45.54	-75.51	---	-77.4	-.17
15[illegible]	4[illegible].42	5[illegible].98	96.98	1[illegible]8.67	179.7[illegible]	45.81	-71.19	---	-14.6[illegible]	[illegible].26
155.[illegible]	5[illegible].52	7[illegible].85	9[illegible].65	127.8[illegible]	179.1[illegible]	45.31	-67.99	---	-8[illegible].8[illegible]	4.21
16[illegible]	[illegible].67	7[illegible].6[illegible]	56.26	127.[illegible]7	178.57	45.86	-6[illegible].91	---	-86.14	5.[illegible]
165.[illegible]	[illegible].87	73.[illegible]	95.93	126.[illegible]5	178.[illegible]	45.73	-58.94	---	-8[illegible].76	5.[illegible]
17[illegible]	6[illegible].93	8[illegible].9[illegible]	95.5[illegible]	125.8[illegible]	177.34	45.54	-55.[illegible]7	---	-7[illegible].29	4.46
175.[illegible]	7[illegible].93	4[illegible].61	[illegible].14	124.[illegible]1	176.45	45.45	-53.08	---	-69.93	[illegible].58
18[illegible]	74.[illegible]	4[illegible].35	[illegible].66	12[illegible].6	175.45	45.58	-52.80	---	-69.37	2.52
185.[illegible]	78.[illegible]1	89.1[illegible]	94.12	121.[illegible]	174.[illegible]4	45.74	-[illegible].52	---	-[illegible].97	1.44
19[illegible].[illegible]	8[illegible].82	91.87	53.45	119.63	172.77	45.89	-54.33	---	-16.89	.45
195.[illegible]	8[illegible].6[illegible]	9[illegible].[illegible]	52.72	117.7[illegible]	171.2	45.58	-5[illegible].3[illegible]	---	-5[illegible].23	-.35
2[illegible].	9[illegible].94	9[illegible].[illegible]	91.9[illegible]	11[illegible].1	169.[illegible]	45.98	-5[illegible].6[illegible]	---	-5[illegible].[illegible]8	-.91

HIC MOTION

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

TIME (MSEC)	X (IN)	X VEL. (IN/SEC)	X-ACCEL. (G'S)	Z (IN)	Z-VEL. (IN/SEC)	Z-ACCEL. (G'S)
[illegible]	[illegible]	[illegible]	[illegible]	-9.41	[illegible]	-1.625
[illegible]	[illegible]	[illegible]	[illegible]	-9.41	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	-9.43	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	-9.46	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	-9.58	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	-9.67	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	-9.77	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CHEST CENTER OF MASS MOTION

(POSITION AND VELOCITIES RELATIVE TO VEHICLE FRAME)
(ACCELERATIONS RELATIVE TO INERTIAL FRAME)

TI (MSEC)	X (IN)	X-VEL. (IN/SEC)	X-ACCEL. (G'S)	Z (IN)	Z-VEL. (IN/SEC)	Z-ACCEL. (G'S)
[illegible]	[illegible]	[illegible]	[illegible]	-21.4[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-15.[illegible]	[illegible]	-1.[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-24.[illegible]	[illegible]	-3.14	3.[illegible]
[illegible]	[illegible]	[illegible]	-16.[illegible]	-21.[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-5.[illegible]	-21.[illegible]	[illegible]	3.468
[illegible]	[illegible]	[illegible]	-9.[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-18.[illegible]	-21.[illegible]	[illegible]	7.389
[illegible]	[illegible]	[illegible]	-25.[illegible]	[illegible]	[illegible]	7.815
[illegible]	[illegible]	[illegible]	-7.585	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-2.[illegible]	[illegible]	[illegible]	-.799
[illegible]	[illegible]	[illegible]	-15.[illegible]	-13.92	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-21.[illegible]	-19.[illegible]	[illegible]	-5.717
[illegible]	[illegible]	[illegible]	-25.495	-19.[illegible]	63.98	-17.564
[illegible]	[illegible]	[illegible]	-44.[illegible]	-18.93	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-42.[illegible]	-18.87	-8.18	-18.992
[illegible]	[illegible]	[illegible]	-12.[illegible]	[illegible]	[illegible]	-30.231
[illegible]	[illegible]	[illegible]	-13.[illegible]	-19.83	-95.92	[illegible]
[illegible]	[illegible]	-15.7	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	-31.54	-7.381	-2[illegible]	-63.35	9.573
[illegible]	[illegible]	-45.[illegible]	[illegible]	-26.[illegible]	[illegible]	4.830
[illegible]	14.83	-52.37	-2.726	-26.71	-27.61	4.344
[illegible]	14.57	-48.[illegible]	3.[illegible]	-2[illegible]	-22.13	1.182
[illegible]	14.24	-43.22	5.953	-2[illegible].91	-15.44	-4.939
[illegible]	14.13	-43.3	-4.[illegible]	[illegible]	-1.46	3.812
[illegible]	[illegible]	-5[illegible].99	[illegible]	-21.[illegible]	-7.97	3.530
[illegible]	[illegible]	-[illegible]6.47	[illegible]	-21.[illegible]	-6.7[illegible]	9.117
[illegible]	[illegible]	-61.[illegible]	-7.[illegible]	-21.16	-5.13	7.273
[illegible]	[illegible]	-5[illegible].31	-7.4[illegible]	-1.[illegible]	-1.[illegible]	7.756
[illegible]	[illegible]	-59.[illegible]	-8.[illegible]	-21.19	[illegible]	7.6[illegible]
[illegible]	[illegible]	-[illegible]	-4.6[illegible]	[illegible]	[illegible]	7.764
[illegible]	[illegible]	-61.33	-7.[illegible]	[illegible]	5.45	7.349
[illegible]	11.9	-5[illegible]	-6.44	[illegible]	7.[illegible]	7.527
[illegible]	11.51	-[illegible]	-5.[illegible]	[illegible]	9.[illegible]	7.555
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	11.[illegible]	6.[illegible]
[illegible]	[illegible]	-49.65	-3.8[illegible]	[illegible]	11.11	7.413
[illegible]	[illegible]	[illegible]	-3.[illegible]	[illegible]	11.[illegible]	6.132
[illegible]	[illegible]	[illegible]	13.[illegible]	[illegible]	9.[illegible]	-5.137
[illegible]	[illegible]	-13.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	13.[illegible]	-2[illegible].71	-5.4	-6.242
[illegible]	[illegible]	13.[illegible]	[illegible]	[illegible]	-1.[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-6.[illegible]	[illegible]	-13.[illegible]	3.[illegible]88

HEAD CENTER OF MASS MOTION

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

TIME (MSEC)	X (IN)	X-VEL. (IN/SEC)	X-ACCEL. (G'S)	Z (IN)	Z-VEL. (IN/SEC)	Z-ACCEL. (G'S)	HEAD ANGLE (DEG)	ANG. VEL. (DEG/SEC)	ANG. ACC. (RAD/SEC**2)
9.[illegible]	1.[illegible]74	0.	.	-34.1[illegible]	[illegible]	1.[illegible]	78.[illegible]	[illegible]	[illegible]
5.[illegible]	1.[illegible]97	1[illegible].46	-2.49	-34.[illegible]	1.2	.619	78.49	-.68	-634.54
1[illegible]	13.1[illegible]	63.8[illegible]	-6.915	-34.39	1.73	1.78	78.16	-137.86	-122.[illegible]
1[illegible]	13.4[illegible]	43.[illegible]4	-9.441	-34.37	6.5	4.183	76.[illegible]8	-446.58	-6[illegible]4.9[illegible]
2[illegible].0	13.75	56.7[illegible]	-9.7[illegible]6	-34.61	18.84	9.351	73.96	-623.13	8.45
2[illegible]	14.[illegible]	[illegible]	-13.[illegible]3	-35.8[illegible]	41.[illegible]6	15.763	71.17	-623.71	1[illegible]
3[illegible]	14.3[illegible]	49.[illegible]	-18.219	-33.59	70.70	15.727	67.67	-671.18	-1[illegible]7.37
3[illegible]	14.57	41.76	-23.183	-33.16	99.95	14.577	64.15	-758.22	-[illegible]
4[illegible]	14.75	26.14	-22.666	-32.59	125.84	12.161	60.73	-871.24	1[illegible]
45.[illegible]	14.9	7.3[illegible]	-18.616	-31.91	144.9	6.1[illegible]	55.89	-79[illegible].97	5[illegible]
5[illegible]	15.1[illegible]	64.4[illegible]	-12.842	-31.18	147.8	-2.938	52.19	-656.35	236.25
55.	15.55	93.75	-13.3[illegible]9	-[illegible].47	154.84	-8.914	48.51	-6[illegible].77	-1[illegible]
6[illegible]	16.11	132.71	-16.223	-29.84	114.12	-11.907	45.34	-774.29	-47[illegible]
65.[illegible]	16.84	153.45	-2.8[illegible]	-9.33	9[illegible].7	-11.766	40.77	-1[illegible]4.79	-14[illegible]
7[illegible]	17.[illegible]7	136.43	-31.535	-26.93	71.19	-9.292	34.37	-1428.12	-814.[illegible]
75.[illegible]	18.16	35.7[illegible]	-15.[illegible]57	-18.63	5[illegible].1	-11.821	26.[illegible]	-157[illegible].62	-1[illegible]1.77
8[illegible].5	1[illegible]	46.75	-4.[illegible]73	-8.45	21.18	-17.248	18.94	-1434.67	64[illegible].82
85.[illegible]	17.[illegible]	1[illegible]	-15.431	-28.4[illegible]	-13.[illegible]	-1[illegible]	11.94	-1197.69	178[illegible].9
9[illegible]	16.[illegible]	-2.[illegible]	-9.[illegible]	-28.57	-41.4	-11.761	7.8	-611.93	225[illegible]
95.	18.[illegible]	-12.73	-4.[illegible]	-8.8	-58.[illegible]	-5.947	[illegible].89	2.[illegible]	[illegible].46
1[illegible]	18.57	-13.	-5.738	-29.14	-66.22	-2.816	7.[illegible]9	43[illegible].71	99[illegible].94
1[illegible]	11.44	-33.4	-8.[illegible]7	-9.48	-72.[illegible]	-1.703	9.76	611.61	6[illegible]
11[illegible]	1[illegible]	-42.62	-3.706	-29.25	-74.[illegible]	-.873	13.73	796.55	53[illegible].83
115.	14.	-48.[illegible]	-3.[illegible]	-[illegible]	-76.41	-1.196	17.[illegible]8	88[illegible].53	19[illegible].67
1[illegible]	17.7[illegible]	-7.3	-4.[illegible]	-3[illegible].1	-72.2	.565	22.[illegible]	931.45	13[illegible].67
125.	17.44	-7[illegible]	-9.4[illegible]	-31.[illegible]	-75.[illegible]3	1.742	26.[illegible]7	91[illegible].34	-17[illegible]
13[illegible]	17.[illegible]	-16.34	-8.131	-[illegible]1.3	-69.45	3.[illegible]7	31.18	94.26	1[illegible]
13[illegible]	16.58	-18.[illegible]	-[illegible].8[illegible]7	-31.[illegible]	-61.1	[illegible].346	35.[illegible]	96.52	-1[illegible]
14[illegible].1	16.7	-1[illegible].1	-2.[illegible]73	-31.99	-55.26	2.138	40.72	957.6[illegible]	-2[illegible]
14[illegible]	1[illegible].53	-1 7.17	-1.[illegible]19	-3[illegible]	-51.1[illegible]	1.755	45.41	9[illegible].61	-3[illegible]
15[illegible]	17.[illegible]	-1 7.[illegible]	-.7 2	-3.[illegible]	-47.41	.438	49.52	891.87	-[illegible]
15[illegible]	17.41	-1 6.52	-.1 8	-[illegible].7[illegible]	-41.[illegible]	3.197	54.[illegible]	87[illegible].44	-[illegible]
1[illegible]	13.[illegible]	-1[illegible].77	-1.149	-2.9[illegible]	-34.[illegible]	3.486	58.67	86[illegible].52	-5[illegible]
16[illegible]	1[illegible].4	-1 3.14	1.415	-33.7	-27.[illegible]	[illegible].8[illegible]	72.87	8[illegible].74	-1[illegible]
17.[illegible]	1[illegible].9[illegible]	-9[illegible]	.47	-33.1[illegible]	-2[illegible].1	.759	66.93	81[illegible].62	-61.[illegible]
17[illegible]	1.4[illegible]	-1[illegible].9	[illegible].998	-3[illegible].8	-1[illegible].4	1.998	7[illegible].15	797.41	-37[illegible]
18.[illegible]	1.[illegible]	-[illegible].1[illegible]	1.[illegible]13	-3[illegible].3[illegible]	-13.14	.73	74.86	786.53	44.71
185.1	11.6	-6.1[illegible]	7.1[illegible]	-3.4	-15.13	-2.169	78.91	8[illegible].84	-177.[illegible]
1[illegible]	11.7	-47.8	1.[illegible]1	-37.[illegible]1	-21.[illegible]4	-3.785	12.12	79[illegible].42	[illegible]
19[illegible]	11.1[illegible]	-7.91	7[illegible].7[illegible]	-3.63	-2[illegible].46	-5.4[illegible]7	86.[illegible]	734.4[illegible]	-2[illegible]
2[illegible]	11.	7.1	8.5	-3.7[illegible]	-33.7	-.149	9.34	633.48	-797.9

[illegible] EXAMPLE [illegible] FAC [illegible]

[illegible] BODY [illegible] A Y [illegible] TAB FREE [illegible] CC. [illegible] DISEL. [illegible] FOR REPORT [illegible] R FORE [illegible] HAUNCH [illegible]

VEHICLE RESPONSE

TIME (SECS)	DISPL. (INCHES)	HORIZONTAL VELOCITY (MPH)	ANGLE. (DEG)	DISPL. (INCHES)	VERTICAL VELOCITY (FT/SEC)	ANGLE. (DEG)	ANGLE (DEGREES)	PITCH VELOCITY (DEG/SEC)	ANGLE (RAD/SEC)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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