

#410

VIKING LANDER 2

SEISMIC EDR-2

75-083C-08A

75-083C-08B



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1. INTRODUCTION:

The documentation for this data set was originally on paper, kept in NSSDC's Data Set Catalogs (DSCs). The paper documentation in the Data Set Catalogs have been made into digital images, and then collected into a single PDF file for each Data Set Catalog. The inventory information in these DSCs is current as of July 1, 2004. This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system. The information existing in the DSCs is now not needed for locating the data files, but we did not remove that inventory information.

The offline tape datasets have now been migrated from the original magnetic tape to Archival Information Packages (AIP's).

A prior restoration may have been done on data sets, if a requestor of this data set has questions; they should send an inquiry to the request office to see if additional information exists.

2. ERRATA/CHANGE LOG:

NOTE: Changes are made in a text box, and will show up that way when displayed on screen with a PDF reader.

When printing, special settings may be required to make the text box appear on the printed output.

Version	Date	Person	Page	Description of Change
01				
02				

3 LINKS TO RELEVANT INFORMATION IN THE ONLINE NSSDC
INFORMATION SYSTEM:

<http://nssdc.gsfc.nasa.gov/nmc/>

[NOTE: This link will take you to the main page of the NSSDC Master Catalog. There you will be able to perform searches to find additional information]

4. CATALOG MATERIALS:

- a. Associated Documents To find associated documents you will need to know the document ID number and then click here.
<http://nssdcftp.gsfc.nasa.gov/miscellaneous/documents/>

- b. Core Catalog Materials

VIKING 2 LANDER

SEISMIC DATA PROGRAM TAPE

75-083C-08A PSPG-00472

This data set have been restored. Originally there was one 7-track, 800 BPI tape. There is one restored tape. The original tape was created on a 1108 computer, and the restored tape was created on an IBM 9021 computer. The DR tape is 3480 cartridge and the DS tape is 9-track, 6250 BPI, written in ASCII. The DR and DS number along with their corresponding D number is as follows:

DR#	DS#	DD#	FILES
-----	-----	-----	-----
DR-005229	DS-005229	DD-029660	1

VIKING 2 LANDER

SEISMIC EDR-2 TAPES

75-083C-08B PSPG-00070

This data set has been retored. There were originally 113 7-track, 800 BPI tapes written in BCD. There are 10 restored tapes written in ASCII. The DR tapes are 3480 cartriges and the DS tapes are 9-track, 6250 BPI. The original tapes were created on a 1108 computer. The DR and DS numbers along with the corresponding D numbers are as follows:

DR#	DS#	D#	FILES	TIME SPAN
DR004167	DS004167	30690		
		D019660	1 - 3	09/03/76 - 09/09/76
		D029661	4 - 6	09/04/76 - 09/06/76
		D030689	7 - 9	09/10/76 - 09/12/76
		D030691	10 - 12	09/13/76 - 09/15/76
		D030692	13 - 15	09/16/76 - 09/18/76
		D030694	16 - 18	09/19/76 - 09/21/76 (a)
		D030696	19 - 21	09/21/76 - 09/24/76 (b)
		D030697	22 - 24	09/25/76 - 09/27/76
		D030698	25 - 27	09/27/76 - 09/30/76
		D030693	28 - 30	10/01/76 - 10/02/76
DR004168	DS004168	D030700	1 - 3	10/05/76 - 10/07/76
		D030701	4 - 6	10/09/76 - 10/10/76
		D030702	7 - 9	10/11/76 - 10/14/76
		D030703	10 - 12	10/14/76 - 10/17/76
		D030705	13 - 15	10/21/76 - 10/23/76
		D030706	16 - 18	10/23/76 - 10/26/76
DR004169	DS004169	D030707	1 - 3	10/27/76 - 10/29/76
		D030708	4 - 6	10/30/76 - 11/01/76
		D030709	7 - 9	11/02/76 - 11/04/76
		D030688	10 - 12	12/02/76 - 12/27/76
		D030953	13 - 15	12/29/76 - 01/01/77
		D030954	16 - 18	01/03/77 - 01/09/77 (c)
		D030955	19 - 21	01/11/77 - 01/15/77
		D031188	22 - 24	01/16/77 - 01/19/77
		D031189	25 - 27	01/21/77 - 01/30/77
		D031190	28 - 30	01/30/77 - 02/01/77

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DR#	DS#	D#	FILES	TIME SPAN
DR004170	DS004170	D031191	1 - 3	02/03/77 - 02/06/77 (d)
		D031210	4 - 6	02/11/77 - 02/12/77
		D031209	7 - 9	02/13/77 - 02/14/77
		D031211	10 - 12	02/15/77 - 02/16/77
		D031207	13 - 15	02/18/77 - 02/22/77 (e)
		D031208	16 - 18	02/24/77 - 02/26/77
		D031275	19 - 21	02/27/77 - 02/28/77
		D031276	22 - 24	02/28/77 - 03/01/77
		D031265	25 - 27	03/03/77 - 03/04/77 (f)
		D031266	28 - 30	03/06/77 - 03/09/77
		D031267	31 - 33	03/11/77 - 03/13/77
DR004171	DS004171	D031268	1 - 3	03/13/77 - 03/14/77 (g)
		D031269	4 - 6	03/15/77 - 03/16/77
		D031270	7 - 9	03/17/77 - 03/17/77
		D031271	10 - 12	03/18/77 - 03/22/77
		D031272	13 - 15	03/23/77 - 03/25/77
		D031800	16 - 18	03/26/77 - 03/27/77 (h)
		D031801	19 - 21	03/28/77 - 03/29/77
		D031802	22 - 24	03/30/77 - 04/02/77
		D031791	25 - 27	04/03/77 - 04/05/77 (i)
		D031792	28 - 30	04/05/77 - 04/07/77 (j)
		D031793	31 - 33	04/07/77 - 04/09/77
		D031794	34 - 36	04/09/77 - 04/10/77 (k)
		D031803	37 - 39	04/11/77 - 04/12/77
		D031796	40 - 42	04/15/77 - 04/16/77 (l)
DR004172	DS004172	D031795	1 - 3	04/17/77 - 04/20/77
		D031797	4 - 6	04/23/77 - 04/28/77 (m)
		D031798	7 - 9	05/01/77 - 05/02/77 (n)
		D031799	10 - 12	05/04/77 - 05/06/77 (o)
		D031948	13 - 15	05/06/77 - 05/08/77
		D031949	16 - 18	05/09/77 - 05/10/77 (p)
		D031950	19 - 21	05/11/77 - 05/12/77 (q)
		D031951	22 - 24	05/19/77 - 05/24/77 (r)
		D031952	25 - 27	06/03/77 - 06/09/77
		D031953	28 - 30	06/09/77 - 06/17/77
		D031954	31 - 33	06/18/77 - 06/19/77 (s)
		D032023	34 - 36	06/23/77 - 06/29/77

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DR#	DS#	D#	FILES	TIME SPAN
DR004173	DS004173	D032024	1 - 3	07/01/77 - 07/07/77
		D032025	4 - 6	07/15/77 - 07/24/77 (t)
		D032026	7 - 9	07/24/77 - 07/27/77
		D032027	10 - 12	07/30/77 - 08/08/77
		D032028	13 - 15	08/16/77 - 08/20/77
		D032029	16 - 18	08/21/77 - 08/27/77
		D032030	19 - 21	08/20/77 - 09/02/77
		D032031	22 - 24	09/05/77 - 09/11/77
		D032032	25 - 27	09/11/77 - 09/17/77 (u)
		D032033	28 - 30	09/17/77 - 09/26/77
		D032034	31 - 33	09/26/77 - 09/28/77
		D032035	34 - 36	09/28/77 - 10/01/77 (v)
DR004174	DS004174	D032036	1 - 3	10/01/77 - 10/06/77
		D032037	4 - 6	10/06/77 - 10/11/77 (w)
		D032346	7 - 9	10/12/77 - 10/16/77
		D032347	10 - 12	10/17/77 - 10/21/77
		D032348	13 - 15	10/24/77 - 10/27/77
		D032349	16 - 18	10/27/77 - 10/29/77
		D032350	19 - 21	10/31/77 - 11/02/77
		D032351	22 - 24	11/03/77 - 11/05/77 (x)
		D032352	25 - 27	11/06/77 - 11/14/77
		D032353	28 - 30	11/15/77 - 11/17/77
		D032354	31 - 33	11/19/77 - 11/22/77 (y)
		D032355	34 - 36	11/27/77 - 11/30/77 (z)
		D032356	37 - 39	12/01/77 - 12/03/77
		D032357	40 - 42	12/04/77 - 12/07/77 (aa)
DR004175	DS004175	D032668	1 - 3	12/08/77 - 12/09/77
		D032669	4 - 6	12/10/77 - 12/12/77
		D032670	7 - 9	12/13/77 - 12/17/77 (bb)
		D032671	10 - 12	12/20/77 - 12/26/77
		D032672	13 - 15	12/26/77 - 01/01/78
		D032673	16 - 18	01/01/78 - 01/05/78
		D032691	19 - 21	01/05/78 - 01/09/78
		D032689	22 - 24	01/09/78 - 01/12/78
		D032674	25 - 27	01/12/78 - 01/15/78
		D032675	28 - 30	01/15/78 - 01/17/78 (cc)
		D032676	31 - 33	01/19/78 - 01/30/78 (dd)
		D032677	34 - 36	01/30/78 - 02/02/78 (ee)
		D032678	37 - 39	02/06/78 - 02/13/78

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DR#	DS#	D#	FILES	TIME SPAN
DR004176	DS004176	D032679	1 - 3	02/13/78 - 02/17/78
		D032680	4 - 6	02/13/78 - 02/18/78
		D032681	7 - 9	02/19/78 - 02/22/78 (ff)
		D032682	10 - 12	02/22/78 - 02/24/78
		D032683	13 - 15	02/25/78 - 03/09/78 (gg)
		D032684	16 - 18	03/09/78 - 03/12/78
		D032685	19 - 21	03/12/78 - 03/15/78
		D032690	22 - 24	03/12/78 - 03/15/78
		D032686	25 - 27	03/18/78 - 03/29/78
		D032687	28 - 30	03/29/78 - 03/29/78
		D032688	31	03/31/78 - 04/01/78 (hh)

- (a) D030694 : Read errors occurred in records 2351, 2352, 2361, 2370, & 2399 of File 3.
- (b) D030696 : Read error occurred in record 2329 of File 3.
- (c) D030954 : Read errors occurred in records 92, 93, & 94 of File 1.
- (d) D031191 : Read errors occurred in records 235, 236, & 237 of File 1.
- (e) D031207 : Read errors occurred in records 729, 763, 775, 821, 832 of File 1 and records 521, 543, 554, 565, 835 of File 2.
- (f) D031265 : Read errors occurred in records 657, 658, 659, 660, & 661 of File 1.
- (g) D031268 : Read errors occurred in records 226, & 227 of File 1.
- (h) D031800 : Read error occurred in record 111 of File 3.
- (i) D031791 : Read errors occurred in records 332, 333, 344, & 650 of File 1.
- (j) D031792 : Read errors occurred in records 10, 12, 20, 137, 141, 172, & 211 of File 1.
- (k) D031794 : Read error occurred in record 258 of File 1.
- (l) D031796 : Read errors occurred in records 231, 232, & 233 of File 1.
- (m) D031797 : Read errors occurred in records 151, 245, 246, 247, 248, & 249 of File 2.
- (n) D031798 : Read error occurred in record 256 of File 3.
- (o) D031799 : Read error occurred in record 129 of File 1.
- (p) D031949 : Read errors occurred in records 13 & 25 of File 2.
- (q) D031950 : Read errors occurred in records 601, 605, 616, 617, 624, 636, 647, 658, 704 of File 3.
- (r) D031951 : Read errors occurred in records 153, 189, 206, 213, 218, 655, 667 & 679 of File 1.
- (s) D031954 : Read error occurred in record 58 of File 1.
- (t) D032025 : Read error occurred in record 673 of File 1.
- (u) D032032 : Read error occurred in record 6 of File 1.

- (v) D032035 : Read error occurred in record 6 of File 1.
- (w) D032037 : Read error occurred in record 213 of File 1.
- (x) D032351 : Read errors occurred in records 11, 149, 371, 421, 738, 757, 759 of File 1 and record 145 of File 2.
- (y) D032354 : Read error occurred in record 16 of File 3.
- (z) D032355 : Read error occurred in record 19 of File 1.
- (aa) D032357 : Read error occurred in record 5 in File 1 and record 84 of File 2.
- (bb) D032670 : Read errors occurred in records 23 & 29 of File 1.
- (cc) D032675 : Read error occurred in record 1 of File 1.
- (dd) D032676 : Read errors occurred in records 258, 363, 386, 635, 863 of File 2 and records 149 & 220 of File 3.
- (ee) D032677 : Read errors occurred in records 21, 37, 41, 42, 48, 49, 90, & 126 of File 1.
- (ff) D032681 : Read errors occurred in records 520, 794, 795, 796 of File 1 and record 450 of File 3.
- (gg) D032683 : Read errors occurred in records 89, 174, 217, 263, 738, 756 of File 1 and record 573 of File 2, and record 732 of File 3.
- (hh) D032688 : Read error occurred in records 1, 567, 581 of File 1.

REQ. AGENT

DBN

CMP

RAND #

RC7885 RD0050

RC8604 RD0467

RC9053 RD1112

ACQ. AGENT

RWV

VIKING LANDER 2

SEISMIC EDR-2

75-083C-08A

75-083C-08B

This data set consists of one program tape and 106 data tapes. Both tapes are 800 BPI, Even Parity, 7 track, 08A contains 1 file and 08B contains 3 files. The tapes were created on a UNIVAC 1108 computer.

D#C#TIME SPAN08A

D-29660

C-19261

Program Tape

08B

D-29661

C-19262

09/04/76 - 09/06/76

D-30688

C-19658

12/06/76 - 12/27/76

D-30689

C-19659

09/10/76 - 09/12/76

D-30690

C-19660

09/03/76 - 09/09/76

D-30691

C-19661

09/13/76 - 09/15/76

D-30692

C-19662

09/16/76 - 09/18/76

D-30693

C-19663

10/01/76 - 10/02/76

D-30694

C-19684

09/19/76 - 09/21/76

D-30696

C-19685

09/21/76 - 09/24/76

D-30697

C-19664

09/25/76 - 09/27/76

D-30698

C-19686

09/27/76 - 09/30/76

D-30700

C-19687

10/05/76 - 10/07/76

D-30701

C-19688

10/09/76 - 10/10/76

D-30702

C-19689

10/11/76 - 10/14/76

<u>D#</u>	<u>C#</u>	<u>TIME SPAN</u>
D-30703	C-19690	10/14/76 - 10/17/76
D-30705	C-19665	10/21/76 - 10/23/76
D-30706	C-19691	10/23/76 - 10/26/76
D-30707	C-19666	10/27/76 - 10/29/76
D-30708	C-19667	10/30/76 - 11/01/76
D-30709	C-19692	11/02/76 - 11/04/76
D-30953	C-19810	12/29/76 - 1/01/77
D-30954	C-19811	01/03/77 - 01/09/77
D-30955	C-19812	01/11/77 - 01/15/77
D-31188	C-19845	01/16/77 - 01/19/77
D-31189	C-19846	01/21/77 - 01/30/77
D-31190	C-19847	01/30/77 - 02/01/77
D-31191	C-19848	02/03/77 - 02/06/77
D-31207	C-19863	02/18/77 - 02/22/77
D-31208	C-19864	02/24/77 - 02/26/77
D-31209	C-19865	02/11/77 - 02/12/77
D-31210	C-19866	02/15/77 - 02/16/77
D-31211	C-19867	02/15/77 - 02/16/77
D-31265	C-19898	03/03/77 - 03/04/77
D-31266	C-19899	03/06/77 - 03/09/77
D-31267	C-19900	03/11/77 - 03/13/77
D-31268	C-19901	03/13/77 - 03/14/77
D-31269	C-19902	03/15/77 - 03/16/77
D-31270	C-19903	03/17/77 - 03/17/77
D-31271	C-19904	03/18/77 - 03/22/77
D-31272	C-19905	03/23/77 - 03/25/77
D-31275	C-19907	02/27/77 - 02/28/77
D-31276	C-19908	02/28/77 - 03/01/77

<u>D#</u>	<u>C#</u>	<u>TIME SPAN</u>
D-31791	C-19927	04/03/77 - 04/05/77
D-31792	C-19928	04/05/77 - 04/07/77
D-31793	C-19929	04/07/77 - 04/09/77
D-31794	C-19930	04/09/77 - 04/10/77
D-31795	C-19931	04/17/77 - 04/20/77
D-31796	C-19932	04/15/77 - 04/16/77
D-31797	C-19933	04/23/77 - 04/28/77
D-31798	C-19934	05/01/77 - 05/02/77
D-31799	C-19935	05/04/77 - 05/06/77
D-31800	C-19936	03/26/77 - 03/27/77
D-31801	C-19937	03/28/77 - 03/29/77
D-31802	C-19938	03/30/77 - 04/02/77
D-31803	C-19939	04/11/77 - 04/14/77
D-31948	C-20015	05/06/77 - 05/08/77
D-31949	C-20016	05/09/77 - 05/10/77
D-31950	C-20017	05/11/77 - 05/12/77
D-31951	C-20018	05/19/77 - 05/24/77
D-31952	C-20019	06/03/77 - 06/09/77
D-31953	C-20020	06/09/77 - 06/17/77
D-31954	C-20021	06/18/77 - 06/19/77
D-32023	C-20097	06/23/77 - 06/29/77
D-32024	C-20098	07/01/77 - 07/06/77
D-32025	C-20099	07/15/77 - 07/24/77
D-32026	C-20100	07/24/77 - 07/27/77
D-32027	C-20101	07/30/77 - 08/08/77
D-32028	C-20102	08/16/77 - 08/20/77

<u>D#</u>	<u>C#</u>	<u>TIME SPAN</u>
D-32029	C-20103	08/21/77 - 08/27/77
D-32030	C-20104	08/30/77 - 09/02/77
D-32031	C-20105	09/05/77 - 09/11/77
D-32032	C-20106	09/11/77 - 09/17/77
D-32033	C-20107	09/17/77 - 09/26/77
D-32034	C-20108	09/26/77 - 09/28/77
D-32035	C-20109	09/28/77 - 10/01/77
D-32036	C-20110	10/01/77 - 10/06/77
D-32037	C-20111	10/06/77 - 10/11/77
D-32346	C-20186	10/12/77 - 10/16/77
D-32347	C-20187	10/17/77 - 10/21/77
D-32348	C-20188	10/24/77 - 10/27/77
D-32349	C-20189	10/27/77 - 10/29/77
D-32350	C-20190	10/31/77 - 11/02/77
D-32351	C-20191	11/03/77 - 11/05/77
D-32352	C-20192	11/06/77 - 11/14/77
D-32353	C-20193	11/15/77 - 11/17/77
D-32354	C-20194	11/19/77 - 11/22/77
D-32355	C-20195	11/27/77 - 11/30/77
D-32356	C-20196	12/01/77 - 12/03/77
D-32357	C-20197	12/04/77 - 12/07/77
D-32668	C-20272	12/08/77 - 12/09/77
D-32669	C-20297	12/10/77 - 12/12/77
D-32670	C-20273	12/13/77 - 12/17/77
D-32671	C-20274	12/20/77 - 12/26/77
D-32672	C-20275	12/26/77 - 01/01/78
D-32673	C-20276	01/01/78 - 01/05/78
D-32674	C-20277	01/12/78 - 01/15/78
* D-32675		
D-32676	C-20278	01/19/78 - 01/30/78

<u>D#</u>	<u>C#</u>	<u>TIME SPAN</u>
D-32677	C-20279	01/30/78 - 02/02/78
D-32678	C-20280	02/06/78 - 02/13/78
* D-32679		
* D-32680	C-20281	02/19/78 - 02/22/78
D-32681		
D-32682	C-20282	02/22/78 - 02/24/78
D-32683	C-20283	02/25/78 - 03/09/78
D-32684	C-20284	03/09/78 - 03/12/78
* D-32685		
D-32686	C-20285	03/18/78 - 03/29/78
* D-32687		
* D-32688	C-20286	01/09/78 - 01/12/78
D-32689		
* D-32690	C-20287	01/05/78 - 01/09/78
D-32691		

* THESE TAPES HAD VARIOUS REASONS WHY THEY WERE NOT ACCEPTABLE

D-32675 DLT799 First part of record 1 of file 1 is missing, this includes the time span

D-32679 DLT804 Roughly the same time span as D-32680 2/13/78-2/18/78 but the data is different

D-32680 DLT805 Time span is 2/13/78-2/19/78

D-32685 DLT810 Same time span as D-32690 3/12/78-3/15/78 data seems identical

D-32690 DLT802 Time span 3/12/78-3/15/78 same as above

D-32687 DLT812 Time Span goes from a later date to an earlier date

D-32688 DLT813 There is only one file of data when there should be three

DUMPS OF THE ABOVE TAPES ARE AT THE BACK OF THE CATALOG

VIKING TAPES - FORMAT

Anton M. Dainty

M.I.T.

May 2, 1977

The Viking EDR-2 tapes are unlabelled, ⁹ track, ⁶²⁵⁰ 800 bpi, ~~even~~ ^{odd} parity tapes. They are written in ^{Asc II} BCD by a FORTRAN Program on a UNIVAC 1108 at the Jet Propulsion Laboratory, Pasadena. When data is written by a FORTRAN program on this machine, only one record format is permissible. Records are written in a ¹ blocked format, and are of variable length. A control word is placed at the beginning of each record; this control word is thirty-six bits long, and is written in binary, not BCD. This complicates the task of reading the tapes - a program, EDRFMT, written in PL/I to remove the control words and write the output as card images, one record to an image, is described below. The blocksize is 1344 BCD characters. There are two additional control words at the beginning of the first block, which we have not used. Otherwise, there are no control words at the beginning of the block - if a record starts at the end of one block, it is carried over to the next block. The information in the control words used by EDRFMT is in bits 0-5, the record type; in bits 6-11, the number of BCD characters in the following record; in bits 12-17, the number of BCD characters in the previous record. Figure 1 illustrates these relations. The number of characters in any record is always an exact multiple of 6. See EDRFMT write-up.

Note: the number of characters discussed above is expressed as the number of 6 characters words.

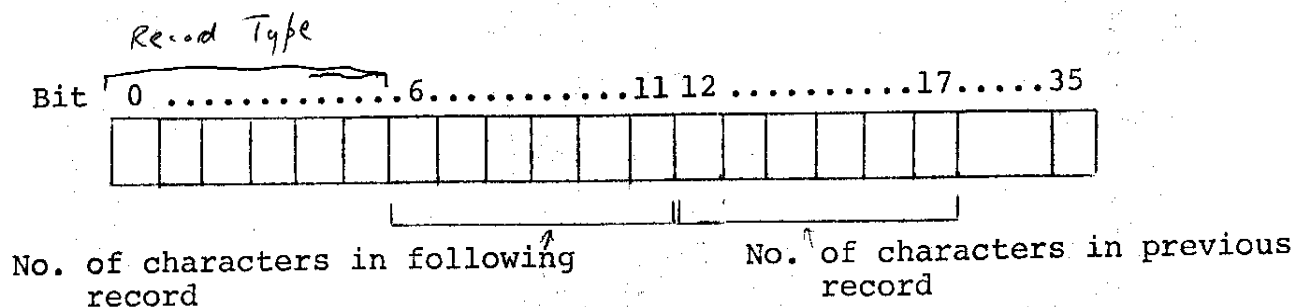


Figure 1.

The records themselves are organized into buffers, which are the basic unit of seismometer data. Each buffer contains two header records, containing information such as timing, the number of data samples in the buffer, and the operating status of the instrument. Following the header records are the data samples. Each data sample consists of one sample from each of three components. If a sample is not available from a component, zeros are written. At least one data sample is written, if the number of data samples in the header is given as '0', zeros are written. The format of the header records and the data samples is described below.

The header records are written by the FORTRAN commands
 WRITE(N,1) LNDR, ISAS, ISDR, IDEC, IDAY, ITIME, IRUN,
 NDATA, IMODE, MODE, VATTEN, HATTEN, TLEVEL, FILT, FMODE,
 XTRIG, YTRIG, ZTRIG, CAL, IYEAR, IGCSC, SEC.

```
1 FORMAT(1X, I1, I7, 2I5, I3, I10, I3, I2, I1, 5A6/1X, 5A6,
        I5, I10, E16.8)
```

'N' is a seven track tape drive. The slash in the format statement indicates an end of record. A detailed description of the meaning of each variable is given below, together with information concerning allowed values or ranges. Hollerith

constants are enclosed in a single quote; the single quotes are not, of course, on the tape.

LNDR(integer) Lander. Allowed values, 1=VL1, 2=VL2.

ISAS(integer) Buffer number assigned by program SASEIS. Should start at 1000 and increment by 10.

ISDR(integer) No meaning. Apparently usually 0.

IDEC(integer) Program DECSET sequence number. Little meaning.

IDAY(integer) GMT day of first data sample, x-component.

ITIME(integer) GMT time in milliseconds (apparently after the nearest hour) of earth receipt of first bit of the buffer.

IRUN(integer) Run number. Little meaning.

NDATA(integer) Number of data samples in buffer. For normal mode, range 0-83; for event mode, 0-53; for high data rate, 0-83.

IMODE(integer) Integer code denoting mode of operation of seismometer. 1 = normal mode, 2 = event mode, 3 = high data mode.

MODE(hollerith) Mode of operation of seismometer, allowed values, 'NORMAL', 'EVENT', 'HIGH'.

VATTEN (") Vertical (x-component) attenuation. Allowed values '0DB', '6DB', '12DB', '18DB', '24BD', '30DB', '36DB'.

HATTEN (") Horizontal (y- and z-component) attenuation. Allowed values as for VATTEN.

TLEVEL(") Trigger level (see report on operation of the instrument). Signal must rise above background by this factor to trigger into EVENT mode. Has

no meaning if trigger is not set. Allowed values 'X4', 'X8', 'X12', 'X16', 'X20'.

FILT (")

Rollover point for the hi-pass filter. Has no meaning for EVENT mode (filter cannot be used in this mode). Allowed values '.5HZ', '1.HZ', '2.HZ', '4.HZ', ' '.

FMODE (")

Indicates status of filter range. Allowed values 'FIX', 'STEP', 'FIX' indicates IFILT value holds for entire buffer. 'STEP' (only allowable in NORMAL mode) indicates that first 8 data samples are at IFILT setting; filter then cycles through all possible values in the sense .5HZ → 1.HZ → 2.HZ → 4.HZ → .5HZ, etc. at 8 data sample intervals. Has no meaning in EVENT mode.

XTRIG (")

Trigger status of x-component (any or all of the triggers may be enabled at any time). Allowed values 'XON', 'XOFF'.

YTRIG (")

Trigger status of y-component. Allowed values 'YON', 'YOFF'.

ZTRIG (")

Trigger status of z-component. Allowed values 'ZON', 'ZOFF'.

CAL (")

Calibration status. Only has meaning in high data rate. Allowed values 'CALON' (indicating calibration sequence), 'CALOFF'.

IYEAR(integer) Year.

IGCSC(integer) Integer count kept by the GCSC (Guidance command and sequencing computer) for timing. One bit in this count represents 160 milliseconds (nominal).

Note that because of limitations on the number of bits available, this number cycles through 0 approximately every 31 days. This number is the original source for IDAY and SEC.

SEC(real) Seconds into GMT day of first sample, x-component.

Data samples are written in two formats, depending on whether the period is the first after the header records or not.

The FORTRAN write is:

```
WRITE(N,2) (IXA(I) (IXA(I),IXZ(I),IYA(I),IYZ(I),IZA(I),IZZ(I),
              I=1,NDATA.
```

If the record is the first record after the header record, the FORMAT is 2 FORMAT(4X,12(I4,12)). Otherwise the FORMAT is 2 FORMAT(12(I4,I2)). The symbols are as follows:

IXA(integer) Normal mode - average rectified amplitude of x-component in a 14.85 sec interval. Allowed range 0→127.

Event mode - average rectified amplitude in a 0.9901 sec interval. Allowed range 0→127.

High data rate - sampled value of output of seismometer. Samples every 0.0495 sec. Allowed range -127→+127.

IXZ(integer) Normal mode - no meaning. Zero written.

Event mode - number of negative to positive zero crossings of seismometer output for x-component in 0.9901 sec interval. Amplitude of zero crossing must be at least 3 bits (-1 to +2) to be counted.

High data rate - no meaning. Zero written.

IYA(integer) Y-component, as for IXA.

IYZ(integer) Y-component, as for IXZ.
 IZA(integer) Z-component, as for IXA.
 IZZ(integer) Z-component, as for IXZ.
 NDATA(integer) Number of data samples (from ¹header. Allowed
 range - normal mode, 0→83; event mode, 0→53; high
 data rate, 0→83.

Program EDRFMT

This PL/I program reads in data from a VIKING EDR-2 tape and removes the binary control records, placing each on a card-image and outputting it in a suitable format. The program uses the PL/I Optimizing compiler under IBM OS/370.

Input:

The only input is the seven-track VIKING tape. The file name is EDRIN and the Data Definition (DD) card is:

```
//G.EDRIN DD UNIT=TAPE7,VOL=SER=xxxxxx,DISP=OLD,
//          LABEL=(y,NL),DCB=(RECFM=U,BLKSIZE=1344,DEN=2,TRTCH=ET)
```

Note xxxxxx is the tape number. y is the appropriate file - VIKING EDR-2 tapes are multi-file tapes with standard file marks. G. indicates GO step of the PL/I Optimizing compile, link edit and execute.

Outputs:

On file SYSPRINT, a printer output of the card images.

On file EDROUT, the card images. Currently we are using the following DD card - any other appropriate card could be used.

With this DD card, the output is EBCDIC.

```
//G.EDROUT DD UNIT=TAPE9,VOL=SER=xxxxxx,DISP=(NEW,KEEP),
//          LABEL=(1,NL),DCB=(RECFM=FB,BLKSIZE=3120,LRECL=80,DEN=2)
```

Error messages:

Appear on file SYSPRINT.

'EDRFMT: TRANSMIT CONDITION RAISED'

Followed by a dump of the input block.

Indicates a permanent I/O error while reading file EDRIN.

'STRANGE BLOCK LENGTH xxxx AT BLOCK yyyy'

A block of length xxxx $\neq$ 1344 was detected, at the yyyy block (in order). Will always be printed at the EOF mark.

'BREAK: BUG - INVALID HEADER FORMAT AT xxxx'

Self explanatory. xxxx is the character from the start of the block.

'BREAK: BUG - INVALID LOGICAL RECORD TYPE = x = YYYYYYYY
AT zzzz'

The record type (bits 0-5 of the control word) does not correspond to tape label, Data, or End of File. x is the EBCDIC character representation (see program notes), YYYYYYYY is the (binary) internal code of the character, zzz is the character number in the block.

'LNGTH: BUG - STRANGE CHARACTER CODE = x = YYYYYYYY at
zzzz'

The record length is not one of the expected length (bits 6-11 of the control word, see program notes), x, YYYYYYYY, zzzz same meaning as above.

Program notes:

The Data Control Block (DCB) parameters used for file EDRIN cause the BCD→EBCDIC translator to be invoked, causing an 8 bit code to be substituted for every 6 bit code on the original tape. With respect to the control words, this causes bits 0-5 (record tape) to be converted as well as bits 6-11 (length of following recording) and bits 12-17 (length of previous record). As a result of the conversion the valid record types are:

EBCDIC character '*' - tape label;

EBCDIC character "'" - data[^];

Binary string 11100000 - EOF.

The record length encountered together with their equivalent EBCDIC representation are given in Table I below.

TABLE I.

<u>Record length, characters, decimal</u>	<u>EBCDIC Equivalent</u>
18	↖ ↗
24	
36	A
42	B
54	D
60	E
66	F
72	G
78	H

9J08 8:10:03

SNOP ***** DUMP OF X-45n *****

SASS IN MS2

SEXEC DPHEX RS

INPUT TAPE ON MS2

DATA INPUT 1 3 3

FILE	1	RECORD	1	LENGTH	2000 BYTES	REF0	RMAT	SAS	EIS	EDR	TAP/E
(0)	40615C40	40404040	40404040	40404040	40406040	09E3C6D9	09D4C1E3	40E2C9E2	C5C9E24N	C5C4D940	E3C1D7C5
(40)	40604040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F0F1F0
(80)	F7F560F4	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(120)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F0F2F0
(160)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(200)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F0F3F0
(240)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(280)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F0F4F0
(320)	40404040	40404040	40404040	40404040	4040C5C4	D9C6D4E3	40D9C5C1	C4E240C1	40E2C1E2	C5C9E240	C5C4D940
(360)	E3C1D7C5	40E6D9C9	E3E3C5D5	40D6D540	C140E4D5	C9E5C1C3	40F1F1F0	F8404040	F0F0F0F0	F0F0F5F0	F0F0F5F0
(400)	40404040	40404040	40C1D5C4	40C3D6D5	E5C5D9E3	E240E3C8	C540C4C1	E3C140E3	D640C140	C9C2D440	C9C2D440
(440)	F3F7F040	C4C1E3C1	E2C5E340	40C6C9E7	C5C440C2	D3D6C3D2	6B40D040	40404040	F0F0F0F0	F0F0F6F0	F0F0F6F0
(480)	40404040	40404040	40D3D6C7	C9C3C1D3	40D9C5C3	D6D9C440	D3C5D5C7	E3C8407E	40F8F05D	4B404040	4B404040
(520)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F0F7F0	F0F0F7F0
(560)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(600)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F0F8F0	F0F0F8F0
(640)	40404040	40404040	40E3C8C5	40E4D5C9	ESC1C340	F1F1F0F8	40E3C1D7	C540C9E2	40C6C9E7	C5C440C2	C5C440C2
(680)	D3D6C3D2	40E6C9E3	C840C2D3	D2E2C9E9	C57EF1F3	F4F46840	40404040	40404040	F0F0F0F0	F0F0F9F0	F0F0F9F0
(720)	40404040	40404040	40E3D9E3	C3C8407E	40C5E34B	4040C5C1	C3C840D3	D6C7C9C3	C1D340D9	C5C3D6D9	C5C3D6D9
(760)	C440C9E2	40D6C640	E5C1D9C9	C1C2D3C5	40D3C5D5	C7E3C840	C1D5C440	40404040	F0F0F0F0	F0F1F0F0	F0F1F0F0
(800)	40404040	40404040	40C9E240	D7D9C5C3	C5C5C4C5	C440C2E8	40C140F6	40C2E8E3	C540E6D6	D9C440E3	D9C440E3
(840)	C8C1E340	C3D6D5F3	C1C9D5E2	40E3C8C5	40D3C5D5	C7E3C840	D6C640E3	C8C54040	F0F0F0F0	F0F1F1F0	F0F1F1F0
(880)	40404040	40404040	40D3D6C7	C9C3C1D3	40D9C5C3	D6D9C440	C1D5C440	C7C9E5C5	E240C9E3	E240E3E8	E240E3E8
(920)	D7C54040	E2C5C540	C6E4D5C3	E3C9D6D5	40D3C5C7	E3C85D4B	40404040	40404040	F0F0F0F0	F0F1F2F0	F0F1F2F0
(960)	40404040	40404040	40E3D640	D9C5C1C4	40E3C8C9	E240C4C1	E3C140C5	C1E2C9D3	E840D6D5	40C1D540	40C1D540
(1000)	C9C2D440	F3F7F040	E2E3E2E3	C5D440E3	C8C540C4	C1E3C140	40404040	40404040	F0F0F0F0	F0F1F3F0	F0F1F3F0
(1040)	40404040	40404040	40D4E4E2	E340C2C5	40D9C5C6	D6D9D4C1	E3C5C440	E2C9D5C3	C540C9C2	D440C5E7	D440C5E7
(1080)	D7C5C3E3	E240C140	F440C2E8	E3C540E6	D6D9C440	C7C9E5C9	D5C740E3	C8C54040	F0F0F0F0	F0F1F4F0	F0F1F4F0
(1120)	40404040	40404040	40D3D6C7	C9C3C1D3	40D9C5C3	D6D9C440	D3C5D5C7	E3C84B40	40404040	40404040	40404040
(1160)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F1F5F0	F0F1F5F0
(1200)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(1240)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F1F6F0	F0F1F6F0
(1280)	40404040	40404040	40404040	4040C4C4	4040C3D9	C440C6D6	D940C5C4	D9C9D540	C9E27A40	40404040	40404040
(1320)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F1F7F0	F0F1F7F0
(1360)	40404040	40404040	40404040	6161C74B	C5C4D9C9	D54040C4	C44040E4	D5C9E37E	E3C1D7C5	F76BE5D6	F76BE5D6
(1400)	D37EE2C5	D97EF0F0	F0F6F7F8	6B04C9E2	D77ED6D3	C4684040	40404040	40404040	F0F0F0F0	F0F1F8F0	F0F1F8F0
(1440)	40404040	40404040	40404040	40404040	D3C1C2C5	D37E4DF1	6B05D35D	6B04C3C2	7E4DD9C5	C3C6D47E	C3C6D47E
(1480)	E466C2D3	D2E2C9E9	C57EF1F3	F4F468C4	C5D57EF2	6BE3D9E3	C3C87EC5	E35D4040	F0F0F0F0	F0F1F9F0	F0F1F9F0
(1520)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(1560)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F2F0F0	F0F2F0F0
(1600)	40404040	40404040	40C1E4E3	C8D6D97A	40D2C5D5	40C1D5C4	C5D9E2D6	D56B40D4	4B40C94B	4B40C94B	4B40C94B
(1640)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F2F1F0	F0F2F1F0
(1680)	405C6140	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(1720)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F2F2F0	F0F2F2F0
(1760)	40C5C4D9	C6D4E37A	4040D7D9	D6C34D06	D7E3C9D6	D5E2404D	D4C1C9D5	D5E40404	40404040	40404040	40404040
(1800)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F2F3F0	F0F2F3F0
(1840)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(1880)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F2F4F0	F0F2F4F0
(1920)	40404040	40404040	40C4C3D3	40C2D3D6	C3D240C3	C8C1D94D	F1F3F4F4	D540E5C1	D95E4040	40404040	40404040
(1960)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F2F5F0	F0F2F5F0
FILE	1	RECORD	2	LENGTH	2000 BYTES						
(0)	40404040	40404040	40C4C3D3	40C2D3D6	C3D26DD5	E4D440C6	C9E7C5C4	40C2C9D5	40C9D5C9	E34DFO5D	E34DFO5D
(40)	5E404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F2F6F0	F0F2F6F0
(80)	40404040	40404040	40C4C3D3	40C6C9D3	C56DD6D7	C5D540C2	C9E34DF1	D540C9D5	C9E34D7D	F17DC25D	F17DC25D
(120)	5E404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F2F7F0	F0F2F7F0
(160)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(200)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F0F2F8F0	F0F2F8F0

(0)	40615C40	F7F560F4	60F84040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(40)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F2F0F1F0
(80)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(120)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F2F0F2F0
(160)	40404040	40404040	40404040	40404040	40404040	C7E3C840	D9C5E3F4	D9D5E240	E3C8C540	D3C5D5C7	E3C84040
(200)	C9D340C2	E8E3C5E2	SD40D6C6	40E3C8C5	40C4C1E3	C140D9C5	C3D6D9C4	40404040	F0F0F0F0	F2F0F3F0	
(240)	40404040	40404040	40E6C9E3	C840D3D9	C5C3D347	C1E240C9	E3E240D9	C5C3D6D9	C440D3C5	D5C7E3C8	
(280)	40C3C8C1	D9C1C3E3	C5D94B47	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F2F0F4F0	
(320)	405C6140	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	
(360)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F2F0F5F0	
(400)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	
(440)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F2F0F6F0	
(480)	40404040	40404040	40C4C3D3	40D3D9C5	C3D340C3	C8C1D940	F15D5E40	40404040	40404040	40404040	
(520)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F2F0F7F0	
(560)	40404040	40404040	40C4C3D3	40C3D6C4	C54DF95D	40C9D5C9	E34D7DC7	7D6B7DC6	7D6B7DC6	7D6B7DC6	
(600)	7D6B7DC1	7D6B7D4F	7D6B7DC5	7D6B7DC2	7D6B7D5F	7D5D4DC3	C8C1D940	F15D5E40	F0F0F0F0	F2F0F8F0	
(640)	40404040	40404040	40C4C3D3	40E5C1D3	E4C54DF9	5D4DC9D5	C9E34DF7	F26BF6F6	6BF7F86B	F5F46BF3	
(680)	F66BF1F8	6BF6F06B	F4F26BF2	F45D4DC6	C9E7C5C4	40C2C9D5	5E404040	40404040	F0F0F0F0	F2F0F9F0	
(720)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	
(760)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F2F1F0F0	
(800)	40404040	40404040	40C4D640	C94D7E40	F14DE3D6	40F95E40	40404040	40404040	40404040	40404040	
(840)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F2F1F1F0	
(880)	40404040	40404040	40404040	4040C9C6	40D3D9C5	C3D3407E	40C3D6C4	C54DC95D	40E3C8C5	D54DD9C5	
(920)	E3E4D9D5	404DE5C1	D3E4C54D	C95D5D5E	40404040	40404040	40404040	40404040	F0F0F0F0	F2F1F2F0	
(960)	40404040	40404040	40C5D5C4	5E404040	40404040	40404040	40404040	40404040	40404040	40404040	
(1000)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F2F1F3F0	
(1040)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	
(1080)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F2F1F4F0	
(1120)	40404040	40404040	40D7E4E3	40E2D2C9	D74DF25D	40C6C9D3	C54DE2E8	E2D7D9C9	D5E35D40	C5C4C9E3	
(1160)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F2F1F5F0	
(1200)	40404040	40404040	40404040	407DD3D5	C7E3C87A	4040C2E4	C7406040	E2E3D9C1	D5C7C540	C3C8C1D9	
(1240)	C1C3E3C5	D94DC3D6	C4C54D7E	407D6B40	40404040	40404040	40404040	40404040	F0F0F0F0	F2F1F6F0	
(1280)	40404040	40404040	404040D3	D9C5C3D3	6B7D407E	407D6B40	D5E2D7C5	C34DD3D9	C5C3D35D	6B7D40C1	
(1320)	E34D7D6B	D7E3D95D	404DC16B	C14DF15D	6B8C16B2	40F85D6B	C16BC64D	F55D5D5E	F0F0F0F0	F2F1F7F0	
(1360)	40404040	40404040	40E2C9C7	D5C1D340	C3D6D5C4	C9E3C9D6	D54D4DC7	D9D6D5D2	5D5E4040	40404040	
(1400)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F2F1F8F0	
(1440)	40C5D5C4	40D3D5C7	E3C85E40	40404040	40404040	40404040	40404040	40404040	40404040	40404040	
(1480)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F2F1F9F0	
(1520)	40C5D5C4	40C2D9C5	C1D25E40	40404040	40404040	40404040	40404040	40404040	40404040	40404040	
(1560)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F2F2F0F0	
(1600)	40C5D5C4	40C5C4D9	C6D4E35E	40404040	40404040	40404040	40404040	40404040	40404040	40404040	
(1640)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	F0F0F0F0	F2F2F1F0	

FILE	1	# OF DATA RECORDS	9	# SUCCESSFUL READS	12	# PERMANENT READ ERRORS	0	# ZERO BYTE ERRORS	0	# SHORT RECORDS	0	# UNDEFINED ERRORS	0
		# OF RECORDS RETRIED	0	TOTAL # OF RETRIES	0								

"Table label"

Example of input to FDR FMT
and translation

```

BLOCK 1 1344
1** (P*****F(C** 2 1000 0*
33* 4316284 81120757 0512EVENT 0*
65*DB ODB X20 .5HZ"FFC"( FIX *
97* XOFF YOFF ZOFF CALOFF 1976 *
129* 2797502 .46967221604 "HFC*
161*" 5 0 4 0 4 0 3 4 *
193* 2 1 3 4 3 1 3 3 2 5 5*
225* 2 2 3 3 3 1 "GHC" 2 2 1*
257* 2 3 5 3 3 2 1 3 4 2 2*
289* 1 3 4 3 5 2 4 2 5 2"G*
321*GC") 6 3 3 3 2 4 3 3 3*
353* 4 5 7 5 7 3 7 6 6 4 5*
385* 3 6 6 5"GGC" 4 1 2 5 *
417* 4 5 4 7 5 7 9 7 7 7 5*
449* 7 8 6 6 4 3 3 4 6"GGC" *
481* 4 7 4 7 7 7 7 6 5 7 *
513* 9 7 5 7 3 6 5 7 5 7 5*
545* 7 8 8"GGC" 5 7 4 7 7 6*
577* 6 7 5 5 7 7 5 7 5 7 *
609* 8 7 7 4 5 4 8 4"GGC"A 6*
641* 5 4 7 7 7 9 7 7 4 12 5*
673* 6 3 3 5 4 5 6 1 4 4 *
705* 7 4"GGC"B 9 4 4 6 6 6 7*
737* 7 5 6 9 7 5 6 4 6 5 7*
769* 4 7 4 6 8 6"GGC"C 6 7 *
801* 6 7 11 7 8 6 5 4 9 5 6*
833* 4 5 3 7 4 7 2 5 4 7 3*
865*"GGC"D 5 2 6 2 8 4 8 3 *
897* 5 4 8 5 9 4 6 2 8 5 4*
929* 5 6 4 8 7"GGC"E 7 5 7 5*
961* 11 6 10 5 7 5 12 7 7 7 *
993* 6 4 9 7 7 7 7 6 15 6"GGC*
1025*"F 12 6 10 7 15 6 9 4 6 3*
1057* 11 3 8 4 7 2 10 3 7 2 *
1089* 5 2 5 2"DGC"G 4 2 3 2 5*
1121* 4 8 4 8 5 13 6 10 7 6 6*
1153* 12 7"FFDC"" 2 1010 0 43172*
1185*84 81121285 0492EVENT ODB 0*
1217*DB X20 .5HZ"FFC"( FIX XOFF *
1249* YOFF ZOFF CALOFF 1976 27978*
1281*26 .47485616804 "HFC"" *
1313* 1014 815 1515 10 7 7 4 *
2 1000 0 4316284 81120757 0512EVENT ODB ODB X20 .5HZ
FIX XOFF YOFF ZOFF CALOFF 1976 2797502 .46967221+04
5 0 4 0 4 0 3 4 2 1 3 4 3 1 3 3 2 5 5 2 2 3 3 3
2 2 1 2 3 5 3 3 2 1 3 4 2 2 1 3 4 3 5 2 4 2 5 2
6 3 3 3 2 4 3 3 3 4 5 7 5 7 3 7 6 6 4 5 3 6 6 5
4 1 2 5 4 5 4 7 5 7 9 7 7 7 5 7 8 6 6 4 3 3 4 6
4 7 4 7 7 7 7 6 5 7 9 7 5 7 3 6 5 7 5 7 5 7 8 8
5 7 4 7 7 6 6 7 5 5 7 7 5 7 5 7 8 7 7 4 5 4 8 4
6 5 4 7 7 7 9 7 7 4 12 5 6 3 3 5 4 5 6 1 4 4 7 4
9 4 4 6 6 6 7 7 5 6 9 7 5 6 4 6 5 7 4 7 4 6 8 6
6 7 6 7 11 7 8 6 5 4 9 5 6 4 5 3 7 4 7 2 5 4 7 3
5 2 6 2 8 4 8 3 5 4 8 5 9 4 6 2 8 5 4 5 6 4 8 7
7 5 7 5 11 6 10 5 7 5 12 7 7 7 6 4 9 7 7 7 7 6 15 6
12 6 10 7 15 6 9 4 6 3 11 3 8 4 7 2 10 3 7 2 5 2 5 2
4 2 3 2 5 4 8 4 8 5 13 6 10 7 6 6 12 7
2 1010 0 4317284 81121285 0492EVENT ODB ODB X20 .5HZ
FIX XOFF YOFF ZOFF CALOFF 1976 2797826 .47485616+04

```

→ Control Word.

→ Input Block. (written by Procedure DUMP, FDRFMT).

Header Records

→ Output from above block,
Card images

→ Data.

```

BLOCK      2  LENGTH 1344
1*11 6      7 5      5 6      8 7      5 2      3*
33* 3      6 5      "GHC"(      5 5      6 7      7*
65* 7      5 5      4 5      8 6      6 6      5 4*
97*      9 6      6 5      9 3      11 2"GGC") *
129* 8 2      7 2      8 5      7 5      4 6      11*
161* 7      10 4      8 4      13 4      10 2      7 3*
193* 12 5"GGC"1      10 6      10 7      12 5      *
225* 8 4      5 3      11 3      10 2      8 2      9*
257* 3      11 2      7 3      8 4"GGC"-      5 5*
289*      4 4      8 4      5 3      4 5      5 7      *
321* 4 7      4 4      10 6      7 5      5 2      9*
353* 4"GGC"      7 2      7 4      8 5      8 4*
385*      5 4      8 6      5 7      6 7      11 6      *
417* 7 5      5 3      9 6"GGC"A      6 5      6*
449*      4      9 4      6 3      6 5      7 4      5 4*
481*      3 4      5 5      5 5      5 3      8 5"G*
513*GC"B      610      010      017 25526      0*
545* 0      10 8      031      0 0      0 0      0 0*
577*      0 0      0 0"GGC"C      0 0      0 0      *
609* 0 0      0 0      0 0      0 0      0 0      0*
641* 0      0 9      1025      616      11 3"GGC"D*
673*      8 2      6 2      6 5      6 3      4 5      *
705* 9 7      1 2      0 9      0 8      0 0      0*
737* 0      0 0"GGC"E      0 0      0 0      0 0*
769*      0 0      0 0      0 0      0 0      0 0      *
801* 0 0      0 0      0 0      0 0      0 0"GGC"F      0*
833* 0      0 0      0 0      0 0      0 0      0 0*
865*      0 0      0 0      0 0      0 0      0 0      *
897* 0 0"IGC"G      0 0      0 0      0 0"PIC*
929*" 2      1020      0 4429284      811767*
961*86      0512EVENT      ODB      ODB      X20      *
993*.5HZ"FFC"( FIX      XOFF      YOFF      ZOFF*
1025*F      CALOFF 1976      2812840      .715*
1057*07800804      "HFC"      2 8      2*
1089*18      3 1      4 1      3 1      3 3      6 1*
1121*      3 2      3 4      3 3      1 3      3 6      *
1153*"GHC"(      3 4      3 1      5 3      5 1      *
1185* 3 3      5 6      5 7      4 6      7 5      5*
1217* 4      3 6      5 7"GGC")      4 5      4 4*
1249*      7 6      5 5      4 5      6 6      5 7      *
1281* 3 6      6 7      4 6      3 6      5 7"GGC*
1313*"1      4 7      3 6      5 7      3 7      3 6*
1014      815      1515      10 7      7 4      11 6      7 5      5 6      8 7      5 2      3 3      6 5
5 5      6 7      7 7      5 5      4 5      8 6      6 6      5 4      9 6      6 5      9 3      11 2
8 2      7 2      8 5      7 5      4 6      11 7      10 4      8 4      13 4      10 2      7 3      12 5
10 6      10 7      12 5      8 4      5 3      11 3      10 2      8 2      9 3      11 2      7 3      8 4
5 5      4 4      8 4      5 3      4 5      5 7      4 7      4 4      10 6      7 5      5 2      9 4
7 2      7 4      8 5      8 4      5 4      8 6      5 7      6 7      11 6      7 5      5 3      9 6
6 5      6 4      9 4      6 3      6 5      7 4      5 4      3 4      5 5      5 5      5 3      8 5
610      010      017 25526      0 0      10 8      031      0 0      0 0      0 0      0 0      0 0
0 0      0 0      0 0      0 0      0 0      0 0      0 0      0 0      0 9      1025      616      11 3
8 2      6 2      6 5      6 3      4 5      9 7      1 2      0 9      0 8      0 0      0 0      0 0
0 0      0 0      0 0      0 0      0 0      0 0      0 0      0 0      0 0      0 0      0 0      0 0
0 0      0 0      0 0      0 0      0 0      0 0      0 0      0 0      0 0      0 0      0 0      0 0
0 0      0 0      0 0
2      1020      0 4429284      81176786      0512EVENT      ODB      ODB      X20      .5HZ
FIX      XOFF      YOFF      ZOFF      CALOFF 1976      2812840      .71507800+04
2 8      218      3 1      4 1      3 1      3 3      6 1      3 2      3 4      3 3      1 3      3 6
3 4      3 1      5 3      5 1      3 3      5 6      5 7      4 6      7 5      5 4      3 6      5 7

```

\$JOB 17:00:05
\$ASS IN MS6
\$NOP; ***** LIST OF *****
\$EXEC LIST BS

INPUT PARAMETERS ARE: BC FL=2=2 1

1/5/78-1/9/78

TAPE NO. 1 FILE NO. 1
RECORD 1 LENGTH 1344
*["F"*****"FFC" 2 1000 2690 5 68445003 0512EVENT ODB ODB X20 .5HZ"FFC" E FIX XO
FF YOFF ZOFF CALOFF 1978 12366660 .63389370+05 "HFC" 1 0 1 0 2 0 0 0 1 0 1 0 2 0 0 0 1 0 1 1 0 0
2 0 4 0 2 0 0 0 0 0 1 0 1 0 "GHC" 2 0 1 0 1 0 2 0 0 0 1 0 1 0 1 1 0 0
2 1 1 0 1 0 2 0 "GGC" 2 0 1 0 1 0 2 0 2 0 2 0 1 0 1 0 2 0 0 0 1 0
"GGC"! 1 0 1 0 1 0 1 0 1 0 0 1 2 0 1 0 2 0 0 0 0 0 "GGC" 1 0 1 0
2 0 1 0 0 0 1 0 3 0 1 0 1 0 0 0 1 0 1 0 "GGC" 3 0 1 0 1 0 1 0 0 0 1 0
1 1 1 0 1 0 1 1 1 1 1 1 "GGC" A 4 1 2 1 2 1 3 1 2 0 1 0 1 0 1 0 1 0
2 0 0 0 1 0 "GGC" B 1 0 1 0 1 0 1 0 1 0 1 0 2 0 0 0 1 0 1 0 "GGC" C
1 1 0 0 1 0 2 0 1 0 1 0 1 0 1 0 2 0 1 0 "GGC" D 2 0 0 0 0 0
1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 "GGC" E 2 0 1 0 1 0 1 0 0 0 1 0 2 0
1 0 1 0 1 1 0 0 2 0 "GGC" F 3 0 1 0 1 0 0 0 1 0 2 0 0 0 1 0 1 0
1 0 1 0 "DGC" G 1 0 0 0 1 0 3 0 0 0 1 0 1 1 1 0 "FDC" 2 1010 0 2691 5
68445267 0512EVENT ODB ODB X20 .5HZ"FFC" E FIX XOFF YOFF ZOFF CALOFF 1978 12366984
63441209+05 "HFC" 2 1 0 1 2 1 1 1 2 0

TAPE NO. 1 FILE NO. 1
RECORD 2 LENGTH 1344
2 1 4 0 1 0 2 0 1 0 0 0 1 0 "GHC" 1 1 1 0 1 0 2 0 0 1 1 2 3 0 2 1
2 0 3 1 2 0 1 0 "GGC" 2 0 1 0 1 0 2 0 0 0 1 0 1 0 1 0 1 1 0 0 1 0
"GGC"! 2 0 0 0 1 0 1 0 1 0 2 0 1 0 1 0 1 0 0 0 1 0 "GGC" 1 0 0 0
1 0 1 0 1 0 2 0 1 0 0 0 0 0 2 0 0 0 1 0 "GGC" 1 1 1 0 1 0 2 0 1 0 1 0
2 0 0 0 1 1 1 0 1 0 1 0 "GGC" A 1 1 1 0 1 0 2 0 1 0 1 0 3 0 1 0 0 0
1 0 0 0 1 0 "GGC" B 1 0 1 0 1 0 1 1 1 0 1 0 2 0 1 0 1 1 0 1 1 "GGC" C
2 0 1 0 2 1 4 1 2 0 2 0 3 0 1 0 1 0 1 0 "GGC" D 1 0 1 0 1 0
2 0 0 0 1 1 1 1 0 1 0 2 1 2 0 1 0 "GGC" E 4 0 2 0 1 0 2 0 1 0 2 0
1 0 1 0 2 0 1 0 1 0 "GGC" F 0 1 0 0 1 0 2 0 1 0 1 0 2 1 2 0
1 0 1 0 "DGC" G 2 0 0 0 1 0 1 0 1 0 0 0 1 1 1 0 1 0 "FDC" 2 1020 0 2692 5
68445531 0512EVENT ODB ODB X20 .5HZ"FFC" E FIX XOFF YOFF ZOFF CALOFF 1978 12367308
63493049+05 "HFC" 1 0 0 1 2 1 2 1 2 0 2 0 4 0 2 0 1 1 1 1 2 0
"GHC" 2 0 1 0 2 0 2 0 1 0 2 1 1 0 1 0 1 0 1 0 "GGC" 2 0 1 0
1 0 1 0 0 0 1 0 2 0 0 0 0 0 1 0 1 0 1 0

TAPE NO. 1 FILE NO. 1
RECORD 816 LENGTH 1344
0 0 1 0 "GGC" F 2 0 1 0 2 0 2 0 1 0 1 0 2 0 1 0 2 0 1 0 1 0 "GGC" G
2 0 1 0 1 0 2 0 0 0 1 0 1 0 2 0 2 0 0 0 1 0 "GGC" H 2 0 1 0 1 0 2 0
1 0 1 0 2 0 1 0 2 0 1 0 1 0 2 0 "GGC" I 1 0 1 0 1 0 1 0 2 0 1 0
1 0 1 0 2 0 0 0 1 0 "GGC" J 2 0 1 0 1 0 2 0 1 0 2 0 2 0 1 0 2 0 1 0 1 0
1 0 "GGC" K 2 0 1 0 1 0 2 0 1 0 1 0 1 0 1 0 1 0 2 0 1 0 "GGC" L 1 0
1 0 1 0 2 0 1 0 1 0 2 0 1 0 2 0 2 0 1 0 1 0 "GGC" M 2 0 1 0 2 0 2 0 1 0
1 0 2 0 1 0 1 0 2 0 1 0 "GGC" N 2 0 1 0 2 0 2 0 1 0 1 0 2 0 0 0
0 6446 7 69570324 0831NORMAL ODB ODB X20 4.HZ"FFC" E FIX XOFF YOFF ZOFF CALOFF 1978 1
3370262 .51163490+05 "HFC" 255 0 1 0 1 0 2 0 1 0 1 0 2 0 1 0 2 0 2 0
1 0 2 0 "GHC" 2 0 1 0 1 0 2 0 1 0 2 0 2 0 1 0 1 0 1 0 2 0 "GGC" J
1 0 1 0 1 0 2 0 1 0 1 0 2 0 1 0 1 0 2 0 1 0 "GGC"! 2 0 1 0 2 0 2 0
1 0 1 0 2 0 1 0 1 0 2 0 1 0 2 0 "GGC" 2 0 1 0 2 0 1 0 2 0
1 0 2 0 1 0 1 0 1 0 "GGC" 1 0 1 0 2 0 2 0

TAPE NO. 1 FILE NO. 1
RECORD 817 LENGTH 1344
1 0 1 0 2 0 1 0 1 0 2 0 1 0 1 0 "GGC" A 2 0 1 0 1 0 2 0 1 0 2 0
1 0 1 0 1 0 2 0 "GGC" B 1 0 1 0 1 0 1 0 2 0 1 0 2 0 1 0 2 0 0 0
1 0 "GGC" C 2 0 1 0 1 0 2 0 0 0 1 0 2 0 1 0 1 0 2 0 0 0 2 0 "GGC" D 2 0
1 0 1 0 2 0 1 0 1 0 2 0 1 0 1 0 1 0 "GGC" E 1 0 1 0 1 0 1 0 0 0

1 0 1 0 1 0 "GGC"E 2 0 1 0 1 0 2 0 1 1

TAPE NO. 1

FILE NO. 1

RECORD 784

LENGTH 1344

1 1 1 1 1 1 2 1 4 1 2 0 1 "GGC"F 3 0 1 0 2 0 1 1 1 0 1 0 2 0 1 0
1 0 2 0 1 0 1 0 "DGC"G 1 0 0 0 2 0 1 0 1 0 1 0 1 0 1 0 1 0 "FDC"" 2 10210
0 8356 9 70685600 0512EVENT 0DB 0DB X20 .5HZ"FFC"C FIX XOFF YOFF ZOFF CALOFF 1978 1
4458246 .52438545+05 "HFC"" 1 0 0 1 2 0 3 1 2 1 2 0 3 0 2 0 1 0 2 0
0 0 2 0 "GHC"C 1 0 1 0 1 1 2 1 1 0 1 0 3 1 2 1 1 0 3 0 2 0 1 0 "GGC"J
0 0 1 0 2 0 2 0 1 0 1 0 3 0 1 0 1 0 2 0 1 0 1 0 "GGC"! 1 0 1 0 1 1 1 0
1 0 2 0 2 1 1 0 1 0 2 0 0 0 1 0 "GGC"" 2 0 1 0 1 0 1 0 1 0 1 0 2 0
1 0 1 0 1 0 1 0 1 0 "GGC" 2 0 1 1 1 0 1 1 2 0 2 0 3 0 2 0 1 0 2 0 1 0
1 0 "GGC"A 2 0 1 0 1 1 1 0 1 0 2 0 1 0 0 0 1 0 2 0 1 0 2 0 "GGC"B 2 0
1 0 1 0 3 0 1 0 1 0 1 1 1 0 1 1 2 0 1 0 1 0 "GGC"C 1 0 1 0 1 0 3 0 1 0
1 0 1 0 1 0 1 0 1 0 1 0 0 0 1 1 "GGC"D 2 0 1 1 2 0 3 1 3 0 2 0 2 0 1 0
1 0 1 0 1 0 1 0 "GGC"E 2 0 1 0 1 0 1 0 1 0 1 0 2 0 0 0 1 0 2 0 0 0 1 0
"GGC"F 0 1 1 0 1 0 2 0 1 0 1 0 2 0 1 0 1 0 2 0 1 0 2 0 "DGC"G 1 0 1 0
1 0 2 0 1 0 1 0 2 0 1 0 1 0 "DS""")["")*****

***** JOB DONE.

\$WE0 LPS