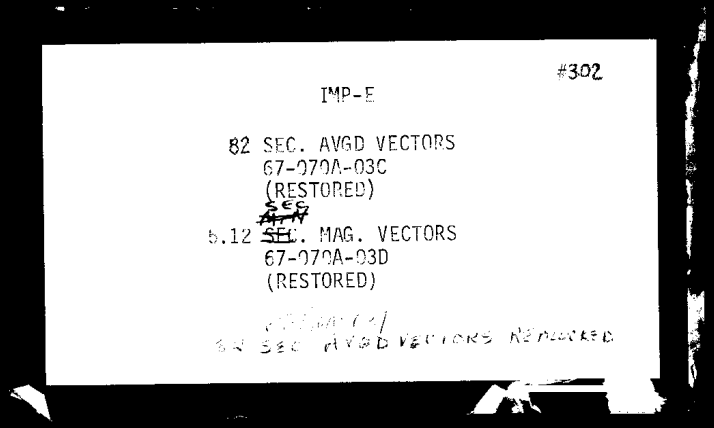

#302

IMP-E

82 SEC. AVGD VECTORS
67-070A-03C
(RESTORED)

5.12 ~~SEC~~ SEC. MAG. VECTORS
67-070A-03D
(RESTORED)

82 SEC AVGD VECTORS REPLACED

Imp E

82 Second Averaged Vectors

67-070A-03C

This data set has been restored. There were originally 20 7-track, 556 BPI tapes written in binary on an IMB 7094 computer. There are now 5 restored tapes maintaining the binary format, packing 6-bit bytes into 8-bit bytes. The DR and DS tapes are 9-track, 6250 BPI tapes. When determining start and stop times, consider January 1 to be day zero. The DR and DS numbers along with the corresponding D numbers and time spans follow.

DR	DS	D	Files	Time Span
DR000850	DS000850		41	07/19/67 - 04/25/68
		D-017537	1-10	07/19/67 - 09/27/67
		D-017540	11-20	09/28/67 - 12/07/67
		D-017532	21-30	12/06/67 - 02/14/68
		D-017533	31-41	02/14/68 - 04/25/68
DR000851	DS000851		44	04/25/68 - 01/30/69
		D-017525	1-11	04/25/68 - 07/04/68
		D-017534	12-21	07/04/68 - 09/12/68
		D-017535	22-33	09/12/68 - 11/21/68
		D-017538	34-44	11/21/68 - 01/30/69
DR000852	DS000852		44	01/30/69 - 11/05/69
		D-017536	1-11	01/30/69 - 04/09/69
		D-017539	12-22	04/10/69 - 06/19/69
		D-017531	23-33	06/19/69 - 08/28/69
		D-017541	34-44	08/28/69 - 11/05/69
DR000853	DS000853		44	11/06/69 - 08/13/70
		D-017530	1-12	11/06/69 - 01/15/70
		D-017529	13-24	01/15/70 - 03/26/70
		D-017528	25-34	03/26/70 - 06/04/70
		D-017542	35-44	06/04/70 - 08/13/70
DR000854	DS000854		42	08/13/70 - 12/30/71
		D-017527	1-10	08/13/70 - 10/22/70
		D-017526	11-19	10/22/70 - 12/24/70
		D-017543	20-33	07/29/71 - 10/28/71
		D-018983	34-42	10/28/71 - 12/30/71

REQ. AGENT	RAND NO.	ACQ. AGENT
CMT	RC2827	JHK
VJP	RC3358	

IMP-E

82 SEC. AVGD VECTORS

5.12 SEC. MAG. VECTORS

67-070A-03C

67-070A-03D

This data set catalog contains 20 82 Second Averaged Vectors and 210 5.12 Second Magnetic Field Vectors data tapes. The tapes are 556 BPI, Binary, 7 track. The 82 Sec. data are multifiled and the 5.12 Sec. data are 1 file each. These tapes were written on an IBM 7094 computer. In determining the start and stop times consider Jan. 1, = day 0.

Time spans are as follows:

82 Second Averaged Vectors

D#	C#	FILES	TIME SPAN
D-17537	C-14120	10	7/19/67 - 9/27/67
D-17540	C-14121	10	9/28/67 - 12/07/67
D-17532	C-14115	10	12/06/67 - 2/14/68
D-17533	C-14116	11	2/14/68 - 4/25/68
D-17525	C-14108	11	4/25/68 - 7/04/68
D-17534	C-14117	10	7/04/68 - 9/12/68
D-17535	C-14118	12	9/12/68 - 11/21/68
D-17538	C-15123	11	11/21/68 - 1/30/69
D-17536	C-14119	11	1/30/69 - 4/09/69
D-17539	C-15124	11	4/10/69 - 6/19/69
D-17531	C-14114	11	6/19/69 - 8/28/69
D-17541	C-14122	11	8/28/69 - 11/05/69
D-17530	C-14113	12	11/06/69 - 1/15/70
D-17529	C-14112	12	1/15/70 - 3/26/70

D#	C#	FILES	TIME SPAN
D-17528	C-14111	10	3/26/70 - 6/04/70
D-17542	C-14123	10	6/04/70 - 8/13/70
D-17527	C-14110	10	8/13/70 - 10/22/70
D-17526	C-14109	9	10/22/70 - 12/24/70
D-17543	C-14124	14	7/29/71 - 10/28/71
D-18983	C-15134	9	10/28/71 - 12/30/71

5.12 Second Magnetic Field Vectors

D#	C#	WEEK	TIME SPAN
D-17774	C-14825	01	7/19/67 - 7/27/67
D-17782	C-14833	02	7/27/67 - 8/03/67
D-17783	C-14834	03	8/03/67 - 8/10/67
D-17772	C-14823	04	8/10/67 - 8/17/67
D-17784	C-14835	05	8/17/67 - 8/24/67
D-17785	C-14836	06	8/24/67 - 8/30/67
D-17786	C-14837	07	8/31/67 - 9/07/67
D-17787	C-14838	08	9/07/67 - 9/14/67
D-17819	C-14870	09	9/14/67 - 9/21/67
D-17788	C-14839	10	9/21/67 - 9/27/67
D-17773	C-14824	11	9/28/67 - 10/04/67
D-17789	C-14840	12	10/05/67 - 10/12/67
D-17777	C-14828	13	10/12/67 - 10/19/67
D-17776	C-14827	14	10/19/67 - 19/25/67
D-17815	C-14866	15	10/26/67 - 11/02/67
D-17775	C-14826	16	11/02/67 - 11/09/67
D-17778	C-14829	17	11/09/67 - 11/15/67
D-17779	C-14830	18	11/16/67 - 11/23/67
D-17780	C-14831	19	11/23/67 - 11/29/67

D#	C#	WEEK	TIME SPAN
D-17781	C-14832	20	11/30/67 - 12/07/67
D-17818	C-14869	21	12/07/67 - 12/14/67
D-17817	C-14868	22	12/14/67 - 12/20/67
D-17816	C-14867	23	12/21/67 - 12/28/67
D-17795	C-14846	25	1/04/68 - 1/11/68
D-17794	C-14845	26	1/11/68 - 1/17/68
D-17792	C-14843	27	1/18/68 - 1/25/68
D-17793	C-14844	28	1/25/68 - 1/31/68
D-17823	C-14874	29	2/01/68 - 2/08/68
D-17822	C-14873	30	2/08/68 - 2/15/68
D-17821	C-14872	31	2/15/68 - 2/22/68
D-17801	C-14852	33	2/29/68 - 3/07/68
D-17812	C-14863	34	3/07/68 - 3/13/68
D-17808	C-14859	35	3/14/68 3/21/68
D-17800	C-14851	36	3/21/68 - 3/28/68
D-17799	C-14850	37	3/28/68 - 4/04/68
D-17807	C-14858	38	4/04/68 - 4/11/68
D-17798	C-14849	39A	4/11/68 - 4/13/68
D-17797	C-14848	39B	4/13/68 - 4/18/68
D-17820	C-14871	40	4/18/68 - 4/25/68
D-19218	C-15619	41	4/25/68 - 5/02/68
D-19219	C-15620	42	5/02/68 - 5/09/68
D-19220	C-15621	43	5/09/68 - 5/16/68
D-19221	C-15622	44	5/16/68 - 5/23/68
D-19222	C-15623	45	5/23/68 - 5/30/68
D-19223	C-15624	46	5/30/68 - 6/06/68
D-19224	C 15625	47	6/06/68 - 6/13/68
D-19225	C-15626	48	6/13/68 - 6/20/68
D-19226	C-15627	49	6/20/68 - 6/27/68

D#	C#	WEEK	TIME SPAN
D-19227	C-15628	50	6/27/68 - 7/04/68
D-19228	C-15629	51	7/04/68 - 7/11/68
D-19229	C-15630	52	7/11/68 - 7/17/68
D-19230	C-15631	53	7/18/68 - 7/25/68
D-19231	C-15632	54	7/25/68 - 8/01/68
D-19232	C-15633	55	8/01/68 - 8/08/68
D-19233	C-15634	56	8/08/68 - 8/15/68
D-19234	C-15635	57	8/15/68 - 8/22/68
D-19235	C-15636	58	8/22/68 - 8/29/68
D-19236	C-15637	59	8/29/68 - 9/05/68
D-19237	C-15638	60	9/05/68 - 9/12/68
D-18589	C-14950	61	9/12/68 - 9/19/68
D-18590	C-14951	62	9/19/68 - 9/26/68
D-18591	C-14952	63	9/26/68 - 10/03/68
D-18592	C-14953	64A	10/03/68 - 10/06/68
D-18593	C-14954	64B	10/06/68 - 10/07/68
D-18594	C-14955	64C	10/07/68 - 10/10/68
D-18595	C-14956	65	10/10/68 - 10/17/68
D-18596	C-14957	66	10/17/68 - 10/24/68
D-18597	C-14958	67	10/24/68 - 10/31/68
D-18598	C-14959	68	10/31/68 - 11/07/68
D-18599	C-14960	69	11/07/68 - 11/14/68
D-18570	C-14931	70	11/14/68 - 11/21/68
D-18019	C-15321	71	11/21/68 - 11/28/68
D-18571	C-14932	72	11/28/68 - 12/05/68
D-18572	C-14933	73	12/05/68 - 12/12/68
D-18573	C-14934	74	12/12/68 - 12/19/68
D-18574	C-14935	76	12/26/68 - 12/31/68

D#	C#	WEEK	TIME SPAN
D-18575	C-14936	76	1/01/69 - 1/01/69
D-18569	C-14930	77	1/02/69 - 1/09/69
D-19238	C-~~19239~~ 15639	78	1/09/69 - 1/16/69
D-19011	C-15322	79	1/16/69 - 1/23/69
D-18576	C-14937	80	1/23/69 - 1/30/69
D-18577	C-14938	81	1/30/69 - 2/06/69
D-19541	C-15813	82	2/06/69 - 2/13/69
D-19012	C-15323	83	2/13/69 - 2/20/69
D-18578	C-14939	84	2/20/69 - 2/27/69
D-18600	C-14961	85	2/27/69 - 3/03/69
D-18601	C-14962	85	3/03/69 - 3/06/69
D-18602	C-14963	86	3/06/69 - 3/13/69
D-18603	C-14964	87	3/13/69 - 3/20/69
D-18604	C-14965	88	3/20/69 - 3/27/69
D-18605	C-14966	89	3/27/69 - 4/03/69
D-18606	C-14967	90	4/03/69 - 4/09/69
D-18607	C-14968	91	4/10/69 - 4/17/69
D-18608	C-14969	92	4/17/69 - 4/24/69
D-19239	C-~~19240~~ 15640	93	4/24/69 - 5/01/69
D-18609	C-14970	94	5/01/69 - 5/08/69
D-18619	C-14980	95	5/08/69 - 5/15/69
D-18618	C-14979	96	5/15/69 - 5/22/69
D-18617	C-14978	97	5/22/69 - 5/29/69
D-18616	C-14977	98	5/29/69 - 6/05/69
D-19013	C-15324	99	6/05/69 - 6/11/69
D-18615	C-14976	100	6/12/69 - 6/15/69
D-18614	C-14975	100	6/15/69 - 6/19/69
D-19014	C-15325	101	6/19/69 - 6/26/69

D#	C#	WEEK	TIME SPAN
D-18613	C-14974	102	6/26/69 - 7/03/69
D-18612	C-14973	103	7/03/69 - 7/10/69
D-19542	C-15814	105	7/17/69 - 7/24/69
D-18611	C-14972	106	7/24/69 - 7/31/69
D-18610	C-14971	107	7/31/69 - 8/07/69
D-18588	C-14949	108	8/10/69 - 8/10/69
D-18587	C-14948	108	8/10/69 - 8/14/69
D-18586	C-14947	109	8/14/69 - 8/21/69
D-18585	C-14946	110	8/21/69 - 8/28/69
D-18584	C-14945	111	8/28/69 - 9/04/69
D-18583	C-14944	112	9/04/69 - 9/11/69
D-18582	C-14943	113	9/11/69 - 9/17/69
D-18581	C-14942	114	9/18/69 - 9/25/59
D-18580	C-14941	115	9/25/69 - 10/01/69
D-18579	C-14940	116	10/01/69 - 10/08/69
D-18984	C-15136	116	10/08/69 - 10/09/69
D-18985	C-15137	117	10/09/69 - 10/16/69
D-18986	C-15138	118	10/16/69 - 10/23/69
D-18987	C-15139	119	10/23/69 - 10/30/69
D-18988	C-15140	120	10/30/69 - 11/05/69
D-18989	C-15141	121	11/06/69 - 11/13/69
D-18990	C-15142	121	11/13/69 - 11/20/69
D-18991	C-15143	123	11/20/69 - 11/26/69
D-18992	C-15144	124	11/27/69 - 12/01/69
D-18993	C-15145	124	11/30/69 - 12/01/69
D-18994	C-15305	124	12/01/69 - 12/04/69
D-19240	C-15641	125	12/04/69 - 12/11/69
D-19543	C-15815	126	12/11/69 - 12/18/69

D#	C#	WEEK	TIME SPAN
D-19025	C-15409	127	12/18/69 - 12/25/69
D-19026	C-15410	128	12/25/69 - 1/01/70
D-19027	C-15411	129	1/01/70 - 1/08/70
D-19028	C-15412	130	1/08/70 - 1/15/70
D-19029	C-15413	131	1/15/70 - 1/22/70
D-19030	C-15414	132A	1/22/70 - 1/29/70
D-19031	C_15415	132B	1/28/70 - 1/29/70
D-19032	C-15416	133	1/29/70 - 2/05/70
D-19034	C-15418	134B	2/05/70 - 2/06/70
D-19033	C-15417	134E	2/06/70 - 2/11/70
D-19024	C-15408	135	2/11/70 - 2/19/70
D-19023	C-15334	136	2/19/70 - 2/25/70
D-19022	C-15333	137	2/26/70 - 3/05/70
D-19021	C-15332	138	3/05/70 - 3/11/70
D-19020	C-15331	139	3/12/70 - 3/19/70
D-19019	C-15330	140	3/19/70 - 3/26/70
D-19018	C-15329	141	3/26/70 - 4/02/70
D-19017	C-15328	142	4/02/70 - 4/09/70
D-19035	C-15419	143	4/09/70 - 4/16/70
D-19036	C-15420	144	4/16/70 - 4/23/70
D-19015	C-15326	145	4/23/70 - 4/30/70
D-19016	C-15327	146	4/30/70 - 5/07/70
D-19037	C-15421	147	5/07/70 - 5/14/70
D-19038	C-15422	148	5/14/70 - 5/21/70
D-19039	C-15423	149	5/21/70 - 5/28/70
D-19040	C-15424	150	5/28/70 - 6/04/70
D-19041	C-15425	151	6/04/70 - 6/11/70
D-19042	C-15426	152	6/11/70 - 6/18/70
D-19043	C-15427	153	6/18/70 - 6/25/70

D#	C#	WEEK	TIME SPAN
D-19044	C-15428	154	6/25/70 - 7/01/70
D-19045	C-15429	155	7/01/70 - 7/09/70
D-19046	C-15430	156	7/09/70 - 7/15/70
D-19047	C-15431	157	7/16/70 - 7/23/70
D-19048	C-15432	158	7/23/70 - 7/29/70
D-19049	C-15433	159	7/29/70 - 8/06/70
D-19050	C-15434	160	8/06/70 - 8/13/70
D-19051	C-15435	161	8/13/70 - 8/20/70
D-19052	C-15436	162	8/20/70 - 8/27/70
D-19053	C-15437	163	8/27/70 - 9/03/70
D-19054	C-15438	164	9/03/70 - 9/10/70
D-18995	C-15306	165	9/10/70 - 9/17/70
D-18996	C-15307	166	9/17/70 - 9/24/70
D-18997	C-15308	167	9/24/70 - 10/01/70
D-18998	C-15309	168	10/01/70 - 10/08/70
D-18999	C-15310	169	10/08/70 - 10/15/70
D-19000	C-15311	170	10/15/70 - 10/22/70
D-19001	C-15312	171	10/22/70 - 10/29/70
D-19002	C-15313	172	10/29/70 - 11/05/70
D-19003	C-15314	173	11/05/70 - 11/12/70
D-19004	C-15315	174	11/12/70 - 11/19/70
D-19005	C-15316	175	11/19/70 - 11/26/70
D-19006	C-15317	176	11/26/70 - 12/03/70
D-19007	C-15318	177	12/03/70 - 12/10/70
D-19008	C-15319	178	12/10/70 - 12/17/70
D-19009	C-15320	179	12/17/70 - 12/24/70
D-17796	C-14847	211	7/29/71 - 8/05/71
D-17806	C-14857	212	8/05/71 - 8/11/71

D#	C#	WEEK	TIME SPAN
D-17810	C-14861	213	8/12/71 - 8/19/71
D-17809	C-14860	214	8/19/71 - 8/25/71
D-17805	C-14856	215	8/26/71 - 8/28/71
D-17790	C-14841	215	8/29/71 - 9/02/71
D-17804	C-14855	216	9/02/71 - 9/08/71
D-19241	C-15642	217	9/09/71 - 9/15/71
D-17791	C-14842	218	9/16/71 - 9/23/71
D-17803	C-14854	219	9/23/71 - 9/29/71
D-17802	C-14853	220	9/30/71 - 10/07/71
D-17811	C-14862	221	10/07/71 - 10/14/71
D-17813	C-14864	222	10/14/71 - 10/21/71
D-17814	C-14865	223	10/21/71 - 10/28/71
D-19242	C-15643	224	10/28/71 - 10/04/71
D-19243	C-15644	225	11/04/71 - 11/11/71
D-19244	C-15645	226	11/11/71 - 11/17/71
D-19245	C-15646	227	11/18/71 - 11/26/71
D-19246	C-15647	228	11/25/71 - 12/01/71
D-19247	C-15648	229	12/02/71 - 12/09/71
D-19248	C-15649	230	12/09/71 - 12/16/71
D-19249	C-15650	231	12/16/71 - 12/23/71
D-19250	C-15651	232	12/23/71 - 12/30/71

Project 1064-3 - Technical Note 122

Originator: Sharone Lathrop Date: March 8, 1972

Subject: Documentation of a FORTRAN Package to Read DCS Blocked Explorer Individual Vector Tapes

CITED

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Section 1

PROGRAM DESCRIPTION

1.1 PURPOSE

This set of three FORTRAN subprograms is used to read the Explorer 33 and Explorer 35 Magnetometer Individual Vector tapes on the IBM/360. The tapes are blocked for the IBM 7040/7094 DCS which makes them directly unreadable by other systems.

1.2 INPUT/OUTPUT

Input is an Explorer Magnetometer Individual Vector tape. A complete tape description is included as Appendix A. Output is one logical record, that is one individual vector for each call to the subroutine IVREAD. The exact amount of data returned depends on whether the vector is the first in a sequence as described under method.

1.3 METHOD

The program is written in FORTRAN IV for use on the IBM 360/67. The program makes use of a re-read capability which may not be available on other machines. The Ames write-up for this feature is included as Appendix B. Essentially, an array is defined to be also a buffer area. Each time a physical record is read it is placed in this array, starting at any desired place in the array. The array is then treated as an external device which may be read many times. The procedure is to read one physical record into the array in A format, then locate and read successive logical records in the appropriate integer and floating point formats.

The re-read approach is used because there are two vector formats. The first vector of each sequence contains time information, data and a count of the number of vectors in the sequence. The rest of the vectors in a sequence have blanks instead of time information and are six characters shorter because they do not have the vector count. The number of vectors in a sequence ranges from eight to fourteen. Each physical record contains a fixed number of characters, 2760, including control words. There are about twenty-one vectors then in a physical record.

Section 2

SUBROUTINE DESCRIPTION

2.1 SUBROUTINE IVREAD

2.1.1 Purpose

This subroutine reads standard Explorer Individual Vector tapes and returns one vector for each subroutine call.

2.1.2 Calling Sequence

CALL IVREAD (ITIME, L, VECTOR, NVEC)

All four quantities are output; NVEC is also input and should not be changed by the calling program.

ITIME is an integer array of dimension five containing sequence number, day, hour, minute, second.

L is vector position.

VECTOR is a real array containing the magnitude, angles and vector components in three coordinate systems. The dimension is sixteen.

The dimension is sixteen.

NVEC is the number of vectors in the sequence.

L and VECTOR are set on every call, but ITIME and NVEC are changed only when the first vector of a sequence is read.

2.1.3 Key Variables

Variable	Description
A	The array into which the data is read, and which serves as a buffer to be re-read, 721 words
BLANK	An integer containing four blank characters for resetting formats.
FIRST	A logical flag set to true before the first entry to IVREAD and false after
FMT	The format for reading all vectors except the first in a sequence (integer).
FMT1	The format for reading the first vector in a sequence (integer)
FMT3, FMT4	The integer words for initializing the third and fourth words of FMT and FMT1.
INDEX	The character position inside the word array A where the previous vector ended. The position of the last character of the six character control word
IREAD	A logical word set to true if a physical record will be read on the next subroutine call, i.e. if there is less than a complete vector left in the buffer
IVEC	A counter of the number of vectors read in this sequence
J	A counter of the number of words moved from the end to the start of the buffer
N1	The number of multiples of 255 characters to be skipped with format FMT or FMT1
N2	The number of remaining characters to skip, $0 < N2 \leq 255$.

2.1.4 Method

We start by declaring that A is a buffer area of 2884 characters. This size is one physical record, 2748 characters, (the twelve character control word is skipped) plus the longest vector, 132 characters, plus four characters.

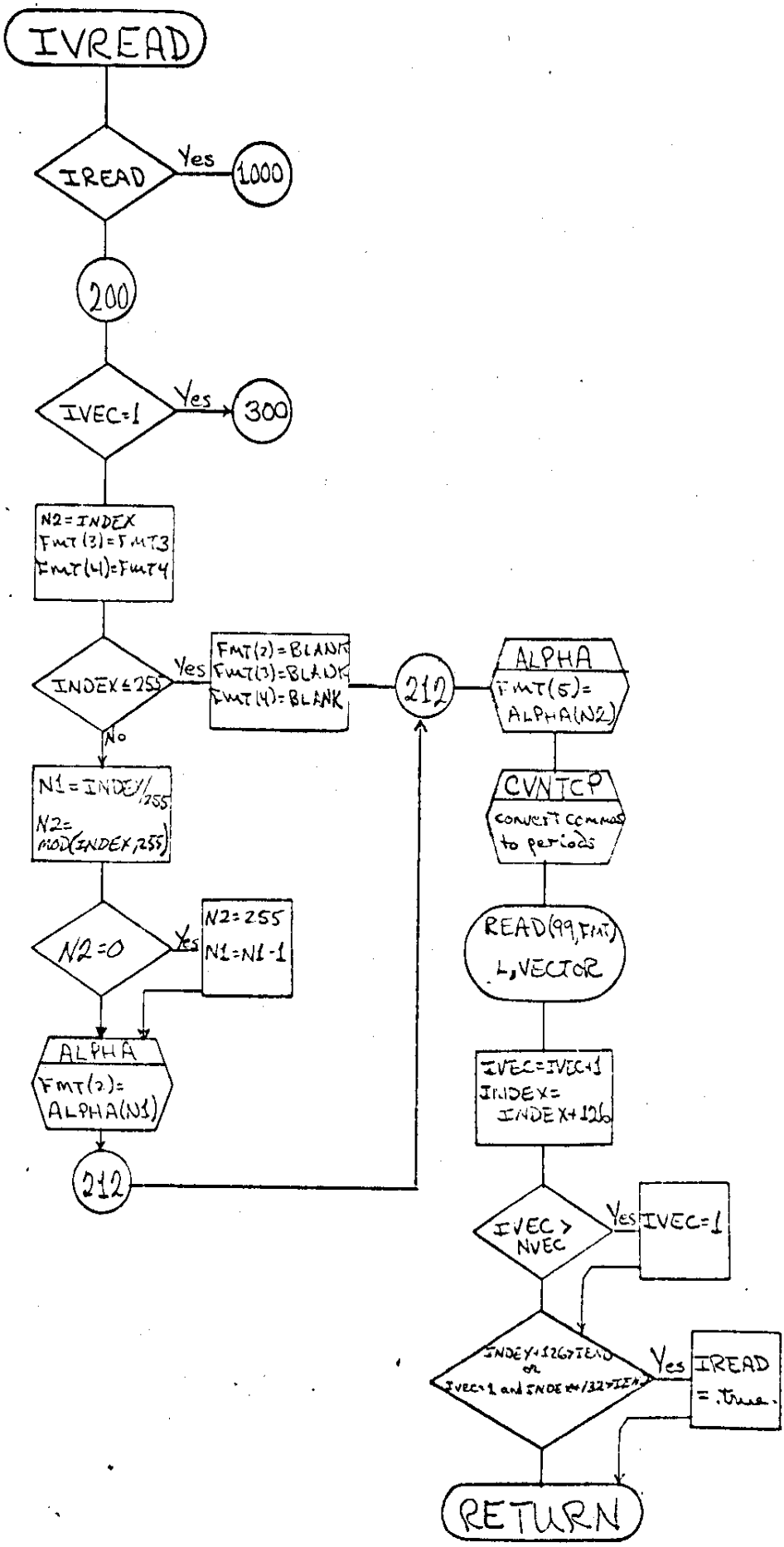
Next, one physical record is read in A format skipping the twelve character control word. On the first read the data is placed at the beginning of the buffer. Before subsequent reads any partial vector at the end of the buffer is moved to the beginning of the buffer. This transfer is on a word basis. To avoid trying to move zero words an extra four characters (one word) are moved.

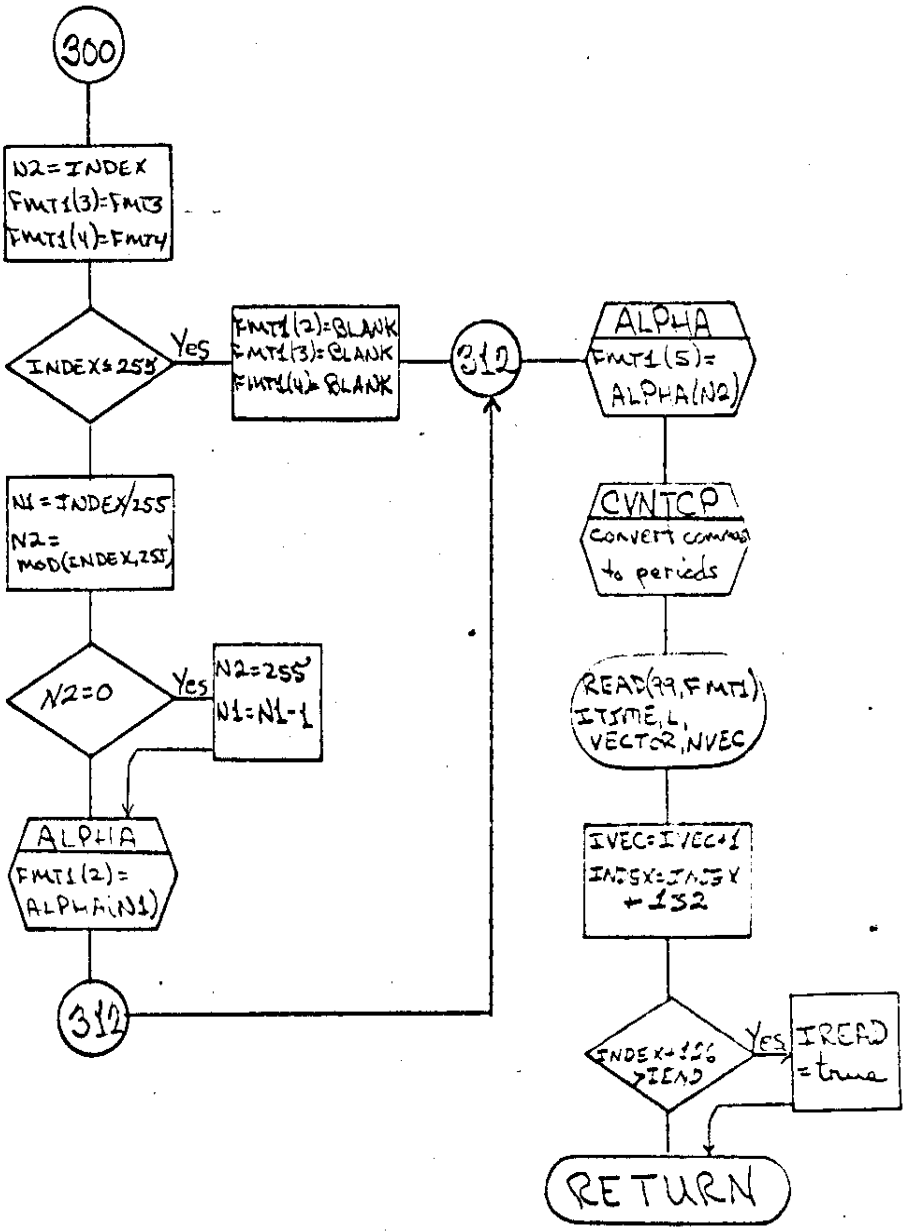
A vector is re-read from the buffer area using an execution time format. The format is referenced to the beginning of the buffer area, so a variable number of characters must be skipped. On the very first read the control word of six characters must be skipped. The second read skips 138 characters, the first vector and another control word. Soon more than 255 characters must be skipped. However Fortran limits you to 255X. Thus we code 2558x as 10(255X), 8X. The ten and eight are N1 and N2 listed under Key Variables. Likewise, 2550x would be coded 9(255x), 255x to avoid the error of reading 0x. The execution time formats are setup by determining N1 and N2 then using function ALPHA to obtain their character representation in the appropriate place in the format.

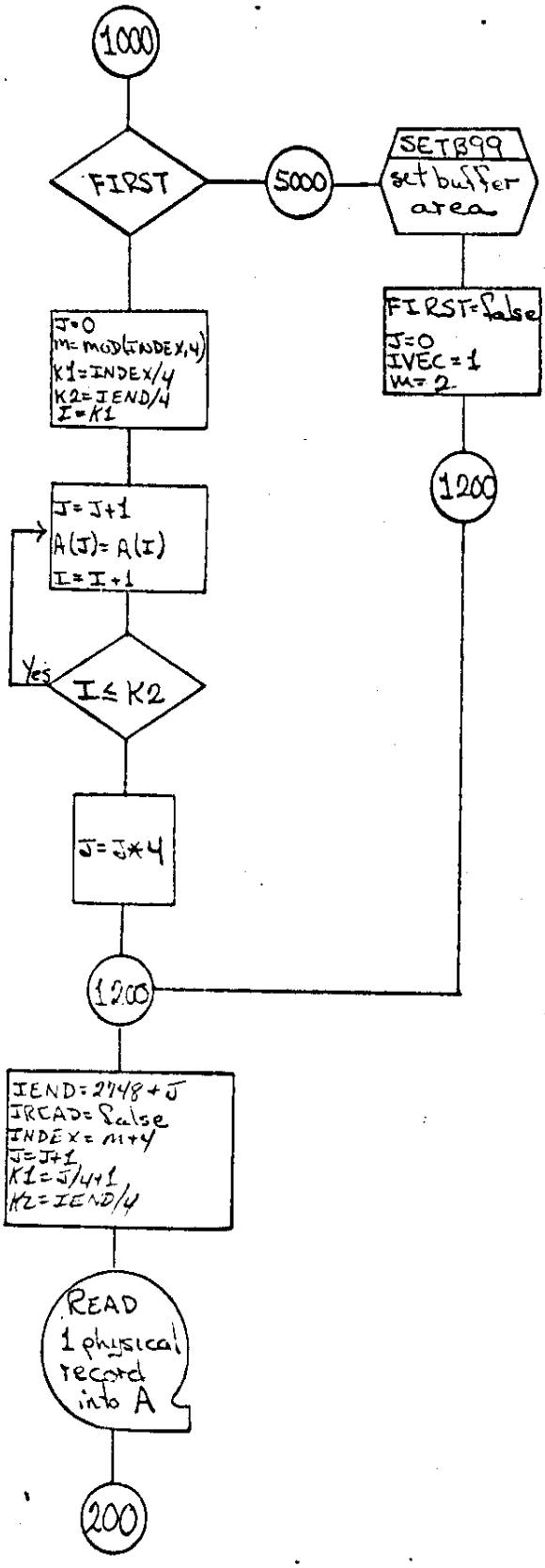
2.1.5 Comments

There is extensive use of the number four in this routine. There are four characters per word on the IBM/360. A machine such as a CDC 6600 which has ten characters per word would need to change these

fours to tens. Also, a CDC 6600 would probably not have the Read (99) feature, but the CDC DECODE routine is similar.


IVREAD
IREAD
Yes
1000
200
IVEC=1
Yes
300
N2=INDEX
FMT(3)=FMT3
FMT(4)=FMT4
INDEX≤255
Yes
FMT(2)=BLANK
FMT(3)=BLANK
FMT(4)=BLANK
212
ALPHA
FMT(5)=
ALPHA(N2)
No
N1=INDEX/255
N2=
MOD(INDEX,255)
CVNTCP
convert commas
to periods
N2=0
Yes
N2=255
N1=N1-1
READ(99,FMT)
L,VECTOR
ALPHA
FMT(2)=
ALPHA(N1)
IVEC=IVEC+1
INDEX=
INDEX+126
212
IVEC>
NVEC
Yes
IVEC=1
INDEX+126>IEND
or
IVEC=1 and INDEX+132>IEND
Yes
IREAD
=.true.
RETURN


300
N2=INDEX
FMT1(3)=FMT3
FMT1(4)=FMT4
INDEX≤255
Yes
FMT1(2)=BLANK
FMT1(3)=BLANK
FMT1(4)=BLANK
312
ALPHA
FMT1(5)=
ALPHA(N2)
N1=INDEX/255
N2=
MOD(INDEX,255)
CVNTCP
convert commas
to periods
N2=0
Yes
N2=255
N1=N1-1
READ(99,FMT1)
ITIME,L,
VECTOR,NVEC
ALPHA
FMT1(2)=
ALPHA(N1)
IVEC=IVEC+1
INDEX=INDEX
+132
312
INDEX+132
>IEND
Yes
IREAD
=true
RETURN


1000
FIRST
5000
SETB99
set buffer area
FIRST=false
J=0
IVEC=1
M=2
1200
J=0
M=mod(INDEX,4)
K1=INDEX/4
K2=IEND/4
I=K1
J=J+1
A(J)=A(I)
I=I+1
Yes
I≤K2
J=J*4
1200
IEND=2048+J
IREAD=false
INDEX=M+4
J=J+1
K1=J/4+1
K2=IEND/4
READ 1 physical record into A
200

2.2 SUBROUTINE CNVTCP

2.2.1 Purpose

When the IBM 7040/7094 DCS writes a blocked tape it does not translate characters from internal Storage format to tape format (Table 2-1). Numbers have the same code, except for zero which seems to read satisfactorily. Blanks show up as ampersands, which read correctly, but periods show up as commas. This subroutine converts the commas to periods.

2.2.2 Calling Sequence

CALL CNVTCP (A, INDEX)

where A is the array containing the data, INDEX is the byte of A where the last vector ended.

2.2.3 Key Variables

CHAR	Array of masks to select one character from a word
COMMA	Array of masks to check for comma in any of the four character positions
I	Index of word in A being checked or changed
J	Position of character in word of A being checked or changed
K1	Index of first word of A to be checked
PERIOD	Array of masks to change comma to period in any of four character positions

APPENDIX B — TABLE OF SOURCE PROGRAM CHARACTERS

CHARACTER	CARD	BCD TAPE	STORAGE	CHARACTER	CARD	BCD TAPE	STORAGE	CHARACTER	CARD	BCD TAPE	STORAGE	CHARACTER	CARD	BCD TAPE	STORAGE
1	1	01	01	A	12 1	61	21	J	11 1	41	41	/	0 1	21	61
2	2	02	02	B	12 2	62	22	K	11 2	42	42	S	0 2	22	62
3	3	03	03	C	12 3	63	23	L	11 3	43	43	T	0 3	23	63
4	4	04	04	D	12 4	64	24	M	11 4	44	44	U	0 4	24	64
5	5	05	05	E	12 5	65	25	N	11 5	45	45	V	0 5	25	65
6	6	06	06	F	12 6	66	26	O	11 6	46	46	W	0 6	26	66
7	7	07	07	G	12 7	67	27	P	11 7	47	47	X	0 7	27	67
8	8	10	10	H	12 8	70	30	Q	11 8	50	50	Y	0 8	30	70
9	9	11	11	I	12 9	71	31	R	11 9	51	51	Z	0 9	31	71
blank	blank	20	60	+	12	60	20	-	11	40	40	0	0	12	00
=	8-3	13	13	.	12 8-3	73	33	$	11 8-3	53	53	,	0 8-3	33	73
-	8-4	14	14	)	12 8-4	74	34	*	11 8-4	54	54	(	0 8-4	34	74

NOTE: There are two - signs. Only the 11-punch minus sign can be used in FORTRAN source program cards. Either minus sign may be used in input data to the object program; object program output uses the 11-punch minus sign.

The character $ can be used in FORTRAN only as hollerith text in a FORMAT statement.

Table 2-1

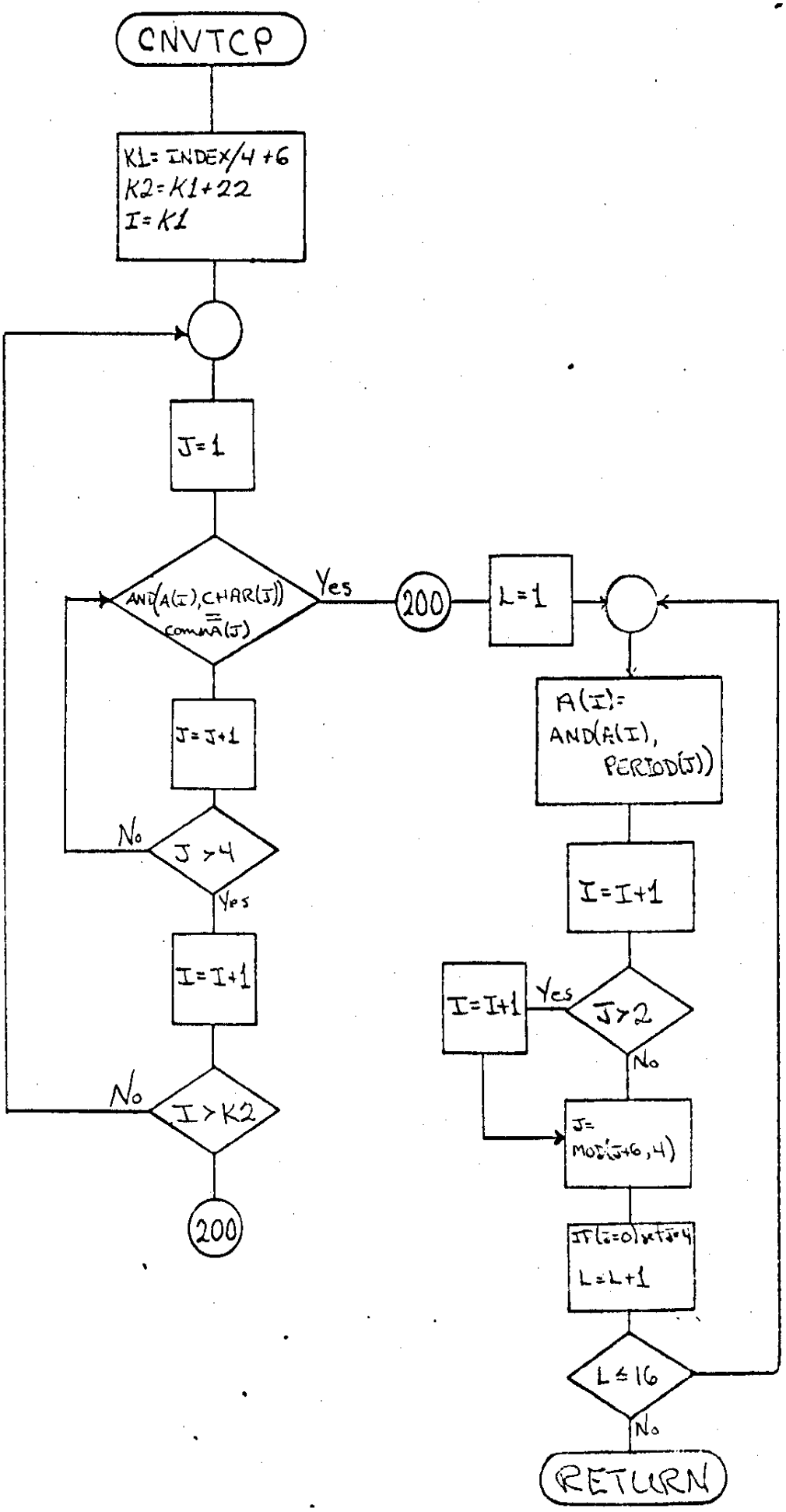
2.2.4 Method

The first word to be checked is the word containing the vector position (time words or blanks are skipped). The four characters in each word are checked until a comma is found. That character is changed to a period and every sixth character for fifteen more times is changed to a period.

The tests are performed on integers because the numbers are not really floating point and test as zero despite their bit configuration when floating point tests are used.

2.2.5 Comments

This method of course pre-supposes that the data is in core in EBCDIC. If the in core format is different, the masks at least must be different.


CNVTCP
K1= INDEX/4 +6
K2=K1+22
I=K1
J=1
AND(A(I),CHAR(J)) = COMMA(J)
Yes
200
L=1
J=J+1
No
J >4
Yes
I=I+1
No
I>K2
200
A(I)= AND(A(I), PERIOD(J))
I=I+1
I=I+1
Yes
J>2
No
J= MOD(J+6,4)
IF(J=0) set J=4
L=L+1
L≤16
No
RETURN

2.3 FUNCTION ALPHA

2.3.1 Purpose

This function generates the EBCDIC representation of an integer with four or fewer decimal digits.

2.3.2 Calling Sequence

KI = ALPHA(I)

where I is the integer to be converted and KI is the resulting characters right adjusted in the word.

2.3.3 Key Variables

J1	The left most digit
J2	The next digit
J3	The third digit from the left
ZONES	A mask to set the zone bits

2.3.4 Method

The digits are isolated by integer division. Then the characters are constructed by moving the digits to the appropriate positions (by multiplying by powers of two) and inserting the zone bits.

2.3.5 Comments

There is a faster way to accomplish the purpose of ALPHA. This alternate method is to make ALPHA an array of dimension 255 which is initialized with the character representations of the indices.

For example, ALPHA(10) would contain ' 10'.

Both methods are of course machine dependent.

Section 3

USAGE INSTRUCTIONS

3.1 DESCRIPTION

This set of three subprograms can be used to read logical records from a standard Explorer 33 or Explorer 35 Individual Vector tape.

3.2 SYSTEM AND EQUIPMENT

The program is written in FORTRAN IV for use on the IBM/360. The cards are punched in EBCDIC. As discussed elsewhere in this document, this program may not be usable on other machines. One seven-track tape drive is required.

3.3 CONTROL CARDS

The program expects the input tape to be mounted on FORTRAN logical unit 7. Thus for the IBM/360, data definition cards should have the form:

```
Col 1            Col 16                                                    Col 72
//GO.FT07F001    DD UNIT=TAPE,DISP=(OLD,KEEP),LABEL=(1,BLP),                X
//               DCB=(TRTCH=T,RECFM=F,DEN=1,LRECL=2760,BLKSIZE
                 =2760),                                                    X
//               VOLUME=SER=EXPIV
```

3.4 CALLING THE ROUTINE

The calling sequence is:

CALL IVREAD (ITIME, L, VECTOR, NVEC)

all of these variables are output from IVREAD.

ITIME is an integer array of size five which will contain the sequence number and time when return is made to the calling program after reading the first vector of a sequence. Reading other vectors does not reset ITIME.

L is the position of the vector in the original sequence (1-14). The first vector is not necessarily position 1, but positions are in ascending order.

VECTOR is a real array of size sixteen containing the data.

NVEC is the number of vectors in the sequence and is returned only by the first vector of a sequence. However it must have the correct value on subsequent calls since it is used internally by IVREAD. Figure 3-1 is the listing of a sample program which reads and prints thirty sequences.

```
FORTRAN IV G LEVEL  20                MAIN                DATE = 72063          13/43/12                PAGE 00

0001                DIMENSION ITIME(5),VECTOR(16)
0002                DO 100 I=1,30
0003                CALL IVREAD(ITIME,L,VECTOR,NVEC)
0004                WRITE(6,10) ITIME,L,VECTOR,NVEC
0005          10    FORMAT(1X,I6,I4,3I3,I3,16F6.1,I6)
0006                N = NVEC
0007                DO 50 J=2,N
0008                CALL IVREAD(ITIME,L,VECTOR,NVEC)
0009                WRITE(6,11) L,VECTOR
0010          11    FORMAT(20X,I3,16F6.1)
0011          50    CONTINUE
0012          100   CONTINUE
0013                STOP
0014                END
```

Figure 3-1

Sample Program to Read and Print 30 Sequences

3.5 RESTRICTIONS

A complete tape descriptions is given in Appendix A. If the tape should develop a bad record (parity error, redundant record, etc.) the program will not detect it or compensate for it in any way. The exact treatment will depend on the computer operating system.

No test for end of data (end of file) is made in the reading routine.

Appendix A

DESCRIPTION OF THE EXPLORER INDIVIDUAL VECTOR TAPE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AMES RESEARCH CENTER
MOFFETT FIELD, CALIFORNIA 94035

REPLY TO ATTN OF: SST:245-3

January 8, 1975

Dr. Joseph H. King
Code 601.1
National Space Science Data Center
Goddard Space Flight Center
Greenbelt, Maryland 20771

Dear Dr. King:

Continuing our transmission of Explorer 35 Ames magnetometer data, we enclose 52 reels of magnetic tape comprising 52 weeks of individual vectors at the 6 second sampling rate. We plan to send such tapes for all weeks covered by the plots which you now have. In November we sent you tapes for 82 second averages of these data.

Details of the time period covered are contained in the enclosed packing list. We also enclose the format and documentation for a program to read the tapes on an IBM machine.

For data after week 211 there is a source of noise and possible uncertainty in the direction of the spin plane component. This shows up as noise above frequencies of 0.01 Hz, so that rapid resolution data for these weeks has principal value in identification of transients rather than Fourier transform at high frequencies.

Yours Sincerely,

David S. Colburn
Research Scientist
Space Science Division

Deck for Technical Note 122

is included in Box 6

Appendix B

AMES, IBM/360 RE-READ CAPABILITY

360/50 FORMAT CONVERSION AND RE-READ CAPABILITY

TAPE 99 FORMAT CONVERSION

Format conversion without actual input or output is now available for FORTRAN programs under the regular operating system on the 360/50.

A formatted write statement referring to unit 99 will place the generated string of output characters in a special buffer instead of transmitting it to an output device. The contents of this buffer may then be read (usually under a different format) by a formatted read statement referring to unit 99. For example, the program statements

```
      I = 641
      WRITE(99,100) I,I
      READ(99,101) A,B
100   FORMAT(2I4)
101   FORMAT(A4,F4.2)
```

will place a blank followed by the three characters 641 in A , and the floating-point number 6.41 in B . READ(K,) or WRITE(K,) , where K has the value 99 , is also permitted.

A WRITE(99,) statement fills the entire buffer with blanks before placing the generated output in it. READ(99,) statements do not alter the contents of the buffer, and it may be re-read as often as is wanted. The buffer is 133 characters long, and an attempt to write or read a single record longer than 133 characters will terminate the job with an error message. A READ(99,) statement that calls for more than one record simply re-reads the buffer for each record. If the read statement in the sample above were

```
READ(99,101) A,B,C,D
```

then C would receive the same contents as A , and D would receive the same contents as B . If a WRITE(99,) statement produces more than one record, later records simply overlay earlier ones. The buffer is not blanked out between records.

Re-Read Capability

Executing the statement

```
CALL SETB99(A,NCHAR)
```

causes the first NCHAR characters of the array A to be used instead of the standard buffer. (Note that NCHAR is the number of characters (bytes) in A , not the number of words.) For example, if input card images are to be scanned several times with different formats, one may write

```
      DIMENSION A(20)
      CALL SETB99(A,80)
      READ(5,103) A
103   FORMAT(20A4)
```

The contents of the input card may then be scanned immediately by READ(99,) statements; no WRITE(99,) statement is necessary. The array and buffer length specified in a call of SETB99 will continue in use until another call of SETB99 or the statement

```
CALL RESB99
```

is executed. The latter ("reset buffer 99") reinstates the standard 133-character buffer.

The buffer length NCHAR in a call of SETB99 must be at least 2 . It may be as large as is wanted, provided the array used for the buffer is sufficiently large. If NCHAR is greater than 257 , however, a WRITE(99,) statement will not blank out the buffer properly before writing, and the user must make his write statement insert trailing blanks if they are necessary for correct operation of his program.

Note:

The Ames library subroutine AL CVRT uses the READ(99,), WRITE(99) feature. This subroutine is recommended for use, when a program does not have large amounts of format conversion.

Appendix C

PROGRAM LISTING

```
0001            SUBROUTINE IVREAD(ITIME,L,VECTOR,NVEC)                                  IVRD  01
                C  SUBROUTINE TO READ EXPLORER 33 AND 35 MAGNETOMETER INDIVIDUAL VECTOR IVRD  02
                C   TAPES GENERATED ON THE IBM 7040/7094 DCS                            IVRD  03
                C  THE TAPES ARE BLOCKED IN A MANNER WHICH MAKES THEM UNREADABLE        IVRD  04
                C  DIRECTLY ON ANY OTHER COMPUTER                                       IVRD  05
                C  THIS ROUTINE MAKES USE OF THE RE-READ CAPABILITY OF UNIT 99,         IVRD  06
                C  THIS FEATURE MAY NOT BE AVAILABLE ON MACHINES OTHER THAN THE IBM/360 IVRD  07
                C  CALLING SEQUENCE...                                                  IVRD  08
                C  ITIME AN INTEGER ARRAY OF SIZE 5 CONTAINING THE INFORMATION          IVRD  09
                C  FROM THE FIRST 5 WORDS OF THE FIRST VECTOR OF THE SEQUENCE,          IVRD  10
                C  NOT CHANGED WHEN OTHER VECTORS ARE READ                              IVRD  11
                C  L        VECTOR NUMBER, A NUMBER FROM 1 TO 14                        IVRD  12
                C  VECTOR   A REAL ARRAY OF SIZE 16 CONTAINING THE DATA                 IVRD  13
                C  NVEC     THE NUMBER OF VECTORS IN THE SEQUENCE                       IVRD  14
                C                                                                       IVRD  15
0002                LOGICAL FIRST,IREAD                                                 IVRD  16
0003                DATA FIRST,IREAD/.TRUE.,.TRUE./                                     IVRD  17
0004                DIMENSION VECTOR(16),ITIME(5),A(721)                                IVRD  18
0005                INTEGER FMT(9),FMT1(11),BLANK,FMT3,FMT4                             IVRD  19
0006                DATA FMT/'   (',' ','(255','X), ',' ','X,19','X,I3',',16F',        IVRD  20
                   * '6.1)'/                                                            IVRD  21
0007                DATA FMT1/'   (',' ','(255','X), ',' ','X,I6',',I4,',',4I3,',',IVRD  22
                   * '16F6','.1,I','6)  '/                                              IVRD  23
0008                DATA FMT3/'(255'/,FMT4/'X), '/                                      IVRD  24
0009                DATA BLANK /'    '/                                                 IVRD  25
0010                INTEGER ALPHA                                                       IVRD  26
0011                DATA M/2/                                                           IVRD  27
                C                                                                       IVRD  28
0012            100 CONTINUE                                                            IVRD  29
                C  DO WE NEED TO READ A NEW RECORD                                      IVRD  30
0013                IF(IREAD) GO TO 1000                                                IVRD  31
                C  IS NEXT VECTOR THE FIRST OF A SEQUENCE                               IVRD  32
0014            200 IF(IVEC.EQ.1) GO TO 300                                             IVRD  33
                C  READ A NON-FIRST VECTOR                                              IVRD  34
0015                N2 = INDEX                                                          IVRD  35
0016                FMT(3) = FMT3                                                       IVRD  36
0017                FMT(4) = FMT4                                                       IVRD  37
0018                IF(INDEX.LE.255) GO TO 210                                          IVRD  38
0019                N1 = INDEX/255                                                      IVRD  39
0020                N2 = MOD(INDEX,255)                                                 IVRD  40
0021                IF(N2.EQ.0) N1 = N1-1                                               IVRD  41
0022                IF(N2.EQ.0) N2 = 255                                                IVRD  42
0023                FMT (2) = ALPHA(N1)                                                 IVRD  43
```

C-2

```
0024          GO TO 212
0025    210   FMT (2) = BLANK
0026          FMT (3) = BLANK
0027          FMT (4) = BLANK
0028    212   FMT (5) = ALPHA(N2)
        C  CONVERT COMMAS TO PERIODS
0029          CALL CNVTCP(A,INDEX)
0030          READ(99,FMT) L,VECTOR
0031          IVEC = IVEC + 1
0032          INDEX =INDEX + 126
0033          IF(IVEC.GT.NVEC) IVEC = 1
0034          IF(INDEX+126.GT.IEND) IREAD=.TRUE.
0035          IF(IVEC.EQ.1 .AND. INDEX+132.GT.IEND) IREAD=.TRUE.
0036          RETURN
        C  READ THE FIRST VECTOR OF A SEQUENCE
0037    300   CONTINUE
0038          N2 = INDEX
0039          FMT1(3) = FMT3
0040          FMT1(4) = FMT4
0041          IF(INDEX.LE.255) GO TO 310
0042          N1 = INDEX/255
0043          N2 = MOD(INDEX,255)
0044          IF(N2.EQ.0) N1 = N1-1
0045          IF(N2.EQ.0) N2 = 255
0046          FMT1(2) = ALPHA(N1)
0047          GO TO 312
0048    310   FMT1(2) = BLANK
0049          FMT1(3) = BLANK
0050          FMT1(4) = BLANK
0051    312   FMT1(5) = ALPHA(N2)
0052          CALL CNVTCP(A,INDEX)
        C  CONVERT COMMAS TO PERIODS
0053          READ(99,FMT1) ITIME,L,VECTOR,NVEC
0054          IVEC = IVEC +1
0055          INDEX = INDEX + 132
0056          IF(INDEX+126.GT.IEND) IREAD =.TRUE.
0057          RETURN
        C  TIME TO READ A NEW RECORD
0058    1000  CONTINUE
        C  FIRST ENTRY REQUIRES INITIALIZATION
0059          IF(FIRST) GO TO 5000
        C  FIRST MOVE PARTIAL RECORD AT END TO START OF BUFFER
0060          J = 0
```

C-3

```
0061            M = MOD(INDEX,4)                                                IVRD  87
                C  MOVE FOUR EXTRA CHARACTERS (1 WORD) TO PREVENT OX IN FORMAT   IVRD  88
0062            K1 = INDEX/4                                                    IVRD  89
0063            K2 = IEND/4                                                     IVRD  90
0064            DO 1100 I=K1,K2                                                 IVRD  91
0065            J = J+1                                                         IVRD  92
0066        1100  A(J) = A(I)                                                   IVRD  93
0067            J = J*4                                                         IVRD  94
0068        1200  IEND = 2748 + J                                              IVRD  95
0069            IREAD = .FALSE.                                                 IVRD  96
0070            INDEX = M + 4                                                   IVRD  97
0071            J =J+1                                                          IVRD  98
0072            K1 = J/4+1                                                      IVRD  99
0073            K2 = IEND/4                                                     IVRD 100
                C  READ THE DATA                                                IVRD 101
0074            READ(7,1500) (A(I),I=K1,K2)                                     IVRD 102
0075        1500  FORMAT(12X,100A4,100A4,100A4,100A4,100A4,100A4,87A4)         IVRD 103
0076            GO TO 200                                                       IVRD 104
                C  ENTER HERE ONLY TO INITIALIZE THE BUFFER AREA, ARRAY A WITH 2884 CHARIVRD 105
0077        5000  CALL SETB99(A,2884)                                           IVRD 106
0078            FIRST = .FALSE.                                                 IVRD 107
0079            J=0                                                             IVRD 108
0080            IVEC = 1                                                        IVRD 109
0081            GO TO 1200                                                      IVRD 110
0082            END                                                             IVRD 111
```

```
0001            SUBROUTINE CNVTCP(A,INDEX)                                      CNVTCP01
                C  SUBROUTINE TO CONVERT THE INTERNAL FORMULA PERIOD            CNVTCP02
                C  (WHICH PRINTS AS A COMMA) TO THE EXTERNAL FORMULA PERIOD.    CNVTCP03
                C  THE FACT THAT THIS IS AN 16F6.1 FORMAT IS USED.              CNVTCP04
                C  SEARCHING STARTS WITH THE VECTOR POSITION.                   CNVTCP05
0002            INTEGER AND                                                     CNVTCP06
0003             INTEGER  COMMA(4),PERIOD(4),CHAR(4)                            CNVTCP07
0004            DATA COMMA/Z6B000000 ,Z006B0000 ,Z00006800 ,Z0000006B /         CNVTCP08
0005            DATA PERIOD/Z4BFFFFFF ,ZFF4BFFFF ,ZFFFF4BFF ,ZFFFFFF4B /        CNVTCP09
0006            DATA CHAR/ZFF000000,Z00FF0000,Z0000FF00,Z000000FF/              CNVTCP10
0007            INTEGER   A(721)                                                CNVTCP11
0008            K1 = INDEX/4 + 6                                                CNVTCP12
0009            K2 = K1 + 22                                                    CNVTCP13
                C                                                               CNVTCP14
0010            DO  100 I=K1,K2                                                 CNVTCP15
0011            DO   90 J=1,4                                                   CNVTCP16
0012            IF(AND(A(I), CHAR(J)).EQ.COMMA(J)) GO TO 200                    CNVTCP17
0013        90  CONTINUE                                                        CNVTCP18
0014       100  CONTINUE                                                        CNVTCP19
0015       200  CONTINUE                                                        CNVTCP20
0016            DO 300 L=1,16                                                   CNVTCP21
0017            A(I) = AND(PERIOD(J),A(I))                                      CNVTCP22
0018            I = I+1                                                         CNVTCP23
0019            IF(J.GT.2) I = I+1                                              CNVTCP24
0020            J = MOD(J+6,4)                                                  CNVTCP25
0021       300  IF(J.EQ.0) J = 4                                               CNVTCP26
0022            RETURN                                                          CNVTCP27
0023            END                                                             CNVTCP28
```

5-2

```
0001          INTEGER FUNCTION ALPHA(I)                                          ALPHA001
0002          INTEGER OR,ZONES                                                   ALPHA002
        C   THIS FUNCTION CHANGES AN INTERNAL INTEGER OF 4 OR LESS DECIMAL DIGITSALPHA003
        C    TO EBCDIC (CHARACTER) REPRESENTATION                                ALPHA004
        C   IF SPACE IS NO PROBLEM, A FASTER METHOD WOULD BE TO DECLARE ALPHA AN ALPHA005
        C    ARRAY AND USE A DATA STATEMENT TO PUT THE EBCDIC CHARACTERS IN THE  ALPHA006
        C    ARRAY, ONLY NUMBERS 1 THROUGH 255  ARE NEEDED                       ALPHA007
0003          DATA ZONES/ZF0F0F0F0/                                              ALPHA008
0004          K = I                                                              ALPHA009
0005          J1 = K/1000                                                        ALPHA010
0006          K = K-J1*1000                                                      ALPHA011
0007          J2 = K/100                                                         ALPHA012
0008          K = K-J2*100                                                       ALPHA013
0009          J3 = K/10                                                          ALPHA014
0010          K = K-J3*10                                                        ALPHA015
0011          K = J1*(2**24) + J2*(2**16) + J3*(2**8) + K                         ALPHA016
0012          ALPHA = OR(ZONES,K)                                                ALPHA017
0013          RETURN                                                             ALPHA018
0014          END                                                                ALPHA019
```

C-6

67-070A-03C

The Explorer 33 and Explorer 35 sequence summary tapes have the following physical characteristics:

one file
density: 556 bpi
7-track
parity: odd
physical record length: 2760 characters (nominal)
BCD characters

The first twelve characters of each physical record contain the physical record count and tape number of the original tape. These twelve characters are skipped by the SAREAD routine. The first six characters are binary, the second six are BCD.

Each logical record is a sequence summary. The format of a sequence summary is shown in Figure A-1. Preceding every logical record is a six character word which contains binary information describing the preceding logical record (if any) and the following logical record.

We could view the final tape format as having been created in the following manner. All logical records are stored in order each preceded by its six character control word. Then a group of 2748 characters is picked off, prefixed by a twelve character physical record control word and placed on tape followed by an inter-record gap. The second physical record would contain the second 2748 characters prefixed by twelve control characters and followed by an inter-record gap. At the end of the data, the last physical record will contain however many characters remain less than or equal to 2742, suffixed by a six character logical record control

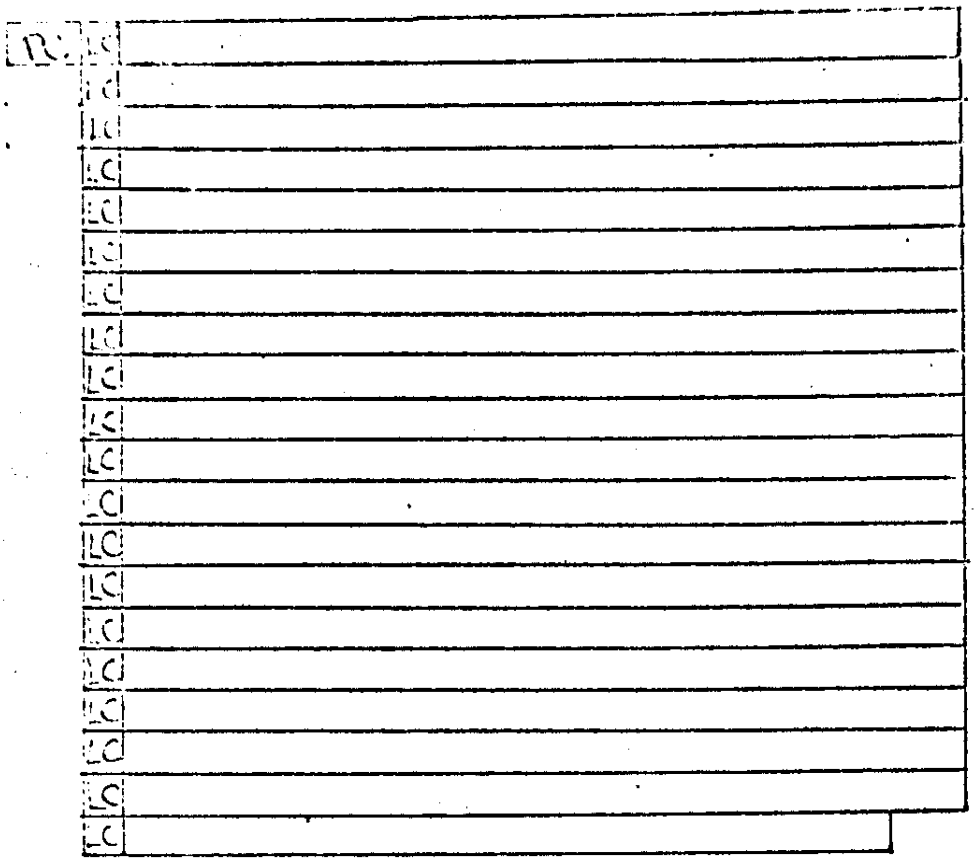
	Sequence Number	Day	Hour	Min	Sec	Magnitude	Solar Equatorial Theta	Phi	Y	Z	Dev. Y	Dev. Z	Solar Theta	Phi	X	Y	Z
length	7	4	3	3	3	5	6	6	5	5	5	5	6	6	5	5	5
representation	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
element	7	11	14	17	20	25	31	37	42	47	52	57	63	69	74	79	84

	Magnetospheric Dev. X	Dev. Y	Dev. Z	Solar Ecliptic Theta	Phi	Y	Z	Dev. Y	Dev. Z	
length	5	5	5	6	6	5	5	5	5	1
representation	I	I	I	I	I	I	I	I	I	X
element	81	86	91	97	103	108	113	118	123	124

FIGURE A-1
SEQUENCE SUMMARY FORMAT

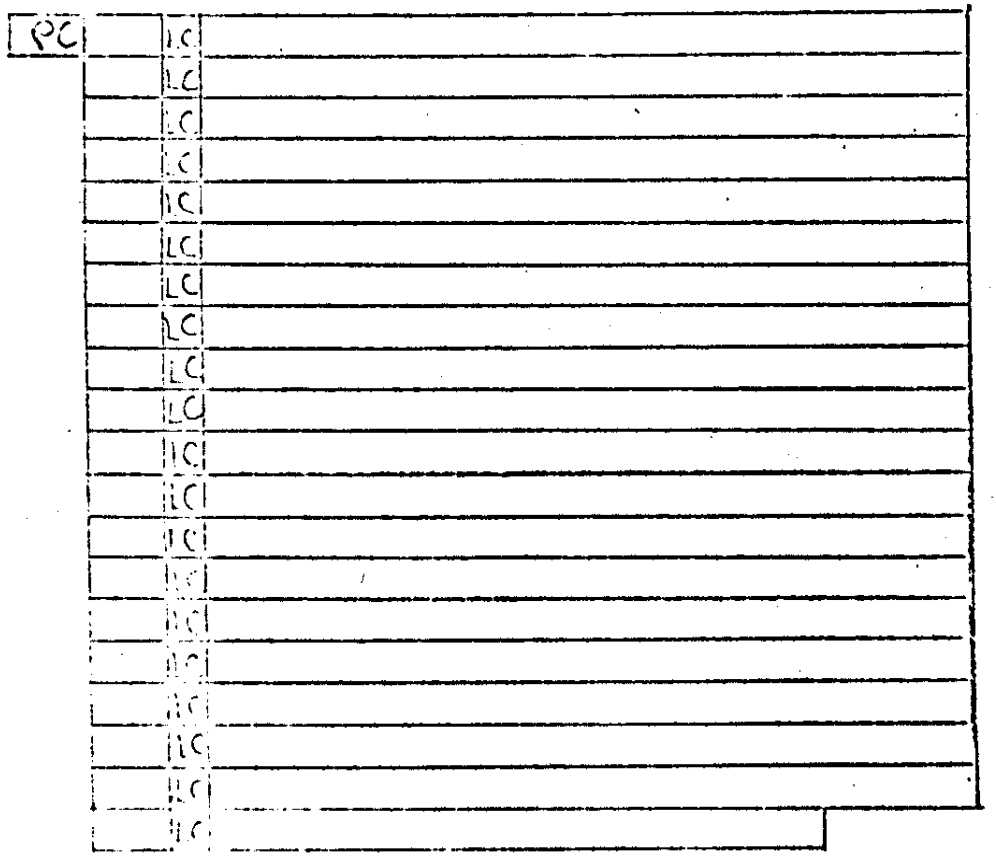
word and preceded by a twelve character control word then followed by a single end of file. A schematic representation of this concept is shown in Figure A-2.

Figure A-3 shows the twenty three formats which a physical record may have. These twenty three formats are also shown in the listing of the block data subprogram, but that form is hard to read.



Record 1

LC = Logical Control Word
PC = Physical Control Word



Record 2

FIGURE A-2
SCHEMATIC REPRESENTATION OF LOGICAL RECORDS WITHIN PHYSICAL RECORDS

```
1  (12X,[illegible],I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,I5,A4)
2  (12X,I[illegible],I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I[illegible],I3 )
3  (12X,I3,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,2I6,4I5,2I6,5I5,I2 )
4  (12X,I3,2I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,2I6,4I5,2I6,3I5 )
5  (12X,3I5,2I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,2I6,4I5,2I6,A3 )
6  (12X,I2,5I5,2I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,2I6,4I5,A3 )
7  (12X,I3,I6,6I5,2I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,2I6,2I5,I1 )
8  (12X,I4,I5,2I6,6I5,2I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,I6,I5 )
9  (12X,I1,4I5,2I6,6I5,2I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I4 )
10 (12X,I1,2I6,4I5,2I6,6I5,2I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,I1 )
11 (12X,I2,2I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X )
12 (6X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,3I5 )
13 (12X,I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,A3 )
14 (12X,I2,3I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,A3 )
15 (12X,I3,I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,2I6,4I5,2I6,4I5,I1 )
```

FIGURE A-3

THE PHYSICAL RECORD FORMATS

```
16      (12X,I4,I5,2I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,2I6,4I5,2I6,I5,A4)
17      (12X,I1,4I5,2I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,2I6,4I5,I6,A3    )
18      (12X,I3,6I5,2I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,2I6,3I5,I2       )
19      (12X,I3,2I6,6I5,2I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,2I6,I5       )
20      (12X,3I5,2I6,6I5,2I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,3I3,I5,A4,A1       )
21      (12X,I1,I6,4I5,2I6,6I5,2I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I7,I4,2I3,I1       )
22      (12X,I2,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X),6X,I6              )
23      (12X,I1,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X,19(6X,I7,I4,3I3,I5,2I6,4I5,2I6,6I5,2I6,4I5,1X)             )
```

REGULAR OCTAL DUMP OF DS000850

67-070A-03C
DS000850

FILE 1 RECORD 1 2760 BYTES

(0)	002600000001	600106001101	000000000026	606001040301	016001111160	010560041060	010360030403	016060600501
(48)	016060010407	046001000600	600204040560	010104106060	011110606060	040601606001	031106400106	051160010401
(96)	006002020602	606007041160	010100066060	030605606060	050310606001	050306606010	020260020503	056001010602
(144)	606060101060	000026000026	606001040301	106001111160	010560050760	040560030202	116060600310	006060010407
(192)	106001030410	600111071160	600101116060	021103606060	030305606001	040301400201	040360010600	106001070705
(240)	606001001060	600105116060	020704606060	040007606001	050107600101	050360020011	116060601101	606003000360
(288)	000026000026	606001040303	016001111160	010660010560	021160020511	066060600304	106060010411	076060101010
(336)	600102021160	010101076060	040704606060	030103606001	040600400105	020460010002	066001010107	606010050260
(384)	010006106060	050706606060	030705606001	050303606007	060660010300	106001010407	606003110660	000026000026
(432)	606001040303	036001111160	010660011060	010260020306	066060600310	066060020001	116040040501	606011060260
(480)	010401026060	110406606060	040010606001	110607400101	011060400303	056001000010	606006070360	010403076060
(528)	110010606060	030603606002	000510604005	040160601101	046001031003	606011100760	000026000026	606001040304
(576)	016001111160	010660021160	600760020405	116060600200	006060010502	046060111101	606007071160	600606006060
(624)	050105606060	010701606001	050006400110	111060010006	106060060700	606004071060	600605076060	050111606060
(672)	020205606001	050403606011	010260601007	016060060600	606005010660	000026000026	606001040304	066001111160
(720)	010660030560	050660601006	006060600410	006060010104	106060030703	606004050660	600210106060	011103606060
(768)	040211606001	010205604001	070360600401	056060040110	606005001060	600210016060	020004606060	050210606001
(816)	010707606003	021060600410	116060021104	606001100360	000026000026	606001040304	076001111160	010660030760
(864)	011060020207	076060600110	046060010407	116001010405	606007010760	606004056060	010100606060	010504606001
(912)	040605400110	021060010200	116060060004	606060040160	606005056060	010006606060	020102606001	041106600100
(960)	070260601002	036060600305	606001010460	000026000026	606001040304	106001111160	010660031060	031160020105
(1008)	056060600204	026060010501	066060071105	606007050060	601102046060	020707606060	020104606001	041105400104
(1056)	070060601006	036060060700	606006060560	601100016060	030407606060	020607606001	050311606007	020060601002
(1104)	036060110400	606002011160	000026000026	606001040304	116001111160	010660040060	600160601104	016060600306
(1152)	046060010401	106060040403	606005021060	600103026060	010311606060	030300606001	031100604005	060460600410
(1200)	116060041006	606002031060	600101116060	010500606060	031106606001	040502606003	110160600506	106060010405
(1248)	606001020660	000026000026	606001040305	006001111160	010660040160	020360020201	016060606005	076060010505
(1296)	116060100401	606002001060	600207106060	060707606060	600306606001	050505400110	100660601005	076060010300
(1344)	606002050260	600303106060	060411606060	600711606001	050605606010	010760600210	076060020102	606007000060
(1392)	000026000026	606001040305	016001111160	010660040260	040560601006	056060600306	046060010201	116060040602
(1440)	606004000260	600203046060	020404606060	030111606001	020001604002	101060600411	076060030510	606004031160
(1488)	600201056060	020601606060	040100606001	020403606004	020260600404	046060020501	606002020660	000026000026
(1536)	606001040305	046001111160	010660040660	050060011005	026060600111	066060010407	046060100600	606005061160
(1584)	600410046060	030107606060	010611606001	040600400103	040760601100	066060041104	606005030160	600406016060
(1632)	030501606060	020205606001	041102606010	000260600604	116060050007	606002071160	000026000026	606001040305
(1680)	056001111160	010660041060	010260600711	036060600507	076060010605	056060600607	606004020760	600407006060
(1728)	011002606060	050602606001	051003604002	060160600100	036060040200	606003061160	600406006060	020007606060
(1776)	051007606001	070403606060	020660600403	026060040710	606001060160	000026000026	606001040305	066001111160
(1824)	010660041160	030460601003	046060600501	036060010702	076060600402	606004020260	600407046060	020506606060
(1872)	050004606001	060610604003	030660606007	106060040107	606003040560	600405046060	021010606060	050106606001
(1920)	071106606060	600260600402	046060041101	606002020060	000026000026	606001040305	076001111160	010660050060
(1968)	050660011003	006060600111	006060010500	116060100402	606005110660	606001116060	606011606060	010607606001
(2016)	041106400105	010260601010	076060050206	606060010560	606001116060	600100606060	020106606001	050207606007
(2064)	100160600607	036060600200	606060601060	000026000026	606001040305	106001111160	010660050260	011060601100
(2112)	066060600301	036060010502	076060030504	606004070160	606060026060	606005606060	021101606001	050003604006
(2160)	101060600311	016060040401	606060600260	606060026060	606004606060	030307606001	050510606003	001060600500
(2208)	036060606001	606060600560	000026000026	606001040305	116001111160	010660050360	031160601100	046060600301
(2256)	016060010502	116060030503	606004060760	606060026060	606005606060	021011606001	050005604006	101160600310
(2304)	116060040307	606060600260	606060036060	606005606060	030305606001	050600606003	000660600411	116060606002
(2352)	606060600560	000026000026	606001040306	006001111160	010660050560	600160601100	016060600300	066060010503
(2400)	016060030500	606004051160	606060026060	606005606060	021005606001	050100604006	110360600310	046060040301
(2448)	606060600260	606060026060	606005606060	030211606001	050602606003	000560600411	006060606001	606060600560
(2496)	000026000026	606001040306	016001111160	010660050660	020360601011	106060600300	006060010503	056060030407
(2544)	606004041160	606060016060	606004606060	021000606001	050104604006	110660600307	116060040202	606060600160
(2592)	606060026060	606005606060	030203606001	050605606003	000260600410	006060606001	606060600560	000026400026

(1824)	600360600460	030460606003	056060400307	006060010201	066060600202	606040020060	606060066060	606011606040
(1872)	010001606001	010501606040	010460606002	116060604005	606060600560	606060016060	600101606040	030210606001
(1920)	011110606060	020460604001	106060606005	606060601160	000026000026	600300030103	056001001060	600360600560
(1968)	050660606003	116060400411	026060010110	016060600202	606040021160	606060036060	606004606040	020105606001
(2016)	001103606040	010260606003	046060400104	606060600360	606060026060	606004606040	040410606001	010507606060
(2064)	020560604002	076060606003	606060600460	000026000026	600300030103	066001001060	600360600760	011060606003
(2112)	066060400205	116060010211	036060600204	606040010560	606060036060	606007606060	400106606001	020407606040
(2160)	020060606002	106060604001	606060600460	606060056060	606005606040	020200606001	020711606060	020560604001
(2208)	036060606003	606060600660	000026000026	600300030103	076001001060	600360601060	040060606003	076060400302
(2256)	046060010207	076060600204	606040011160	606060016060	606002606060	400704606001	020104606040	011160606003
(2304)	016060604004	606060600260	606060016060	606003606040	021005606001	020600606060	020660604001	076060606001
(2352)	606060600260	000026000026	600300030103	106001001060	600360010060	600260606003	076060400303	106060010404
(2400)	016060600107	606040011160	606060106060	606005606040	010311606001	030311606040	020460606002	046060604010
(2448)	606060600260	606060056060	606011606040	030010606001	040106606060	011160604001	106060606010	606060600660
(2496)	000026000026	600300030103	116001001060	600360010160	020360606004	006060400410	006060011001	046060604000
(2544)	606040030060	606060026060	606000606040	040007606001	050111606040	020760606001	046060400206	606060600260
(2592)	606060026060	606001606040	040711606001	070511606060	600160604003	006060606002	606060600060	000026000026
(2640)	600300030104	006001001060	600360010260	040560606003	116060400400	116060011104	116060604007	606040020560
(2688)	606060056060	606002606040	040106606001	060710606040	021060606060	066060400205	606060600360	606060046060
(2736)	606003606040	040200606001	110007606060	400560604002				

REGULAR OCTAL DUMP OF DS000850

FILE 41 RECORD 314 2048 BYTES

(0)	005340000472	216262312745	600405606003	020105606040	020760606060	036060606002	606060600160	400026000026
(48)	600301000403	026001010560	600060050560	600060606004	036060606010	046060030203	106060400205	606060600660
(96)	606060016060	606001606040	010200606003	020407606060	030460604002	046060604011	606060600160	606060016060
(144)	606001606060	600501606003	020303606040	020560606060	036060606001	606060600160	000026000026	600301000403
(192)	036001010560	600060050660	020260606004	036060606006	076060030204	066060400204	606060600560	606060016060
(240)	606004606040	010302606003	020603606060	030460604002	036060604011	606060600160	606060026060	606003606060
(288)	600304606003	020402606040	020560606060	026060606001	606060600460	000026000026	600301000403	046001010560
(336)	600060050760	040460606004	026060604003	056060030202	076060400205	606060400260	606060016060	606002606040
(384)	020302606003	021110606060	030360604001	116060400106	606060600260	606060016060	606002606060	400611606003
(432)	020301606040	020560606040	056060606001	606060600260	000026000026	600301000403	056001010560	600060051160
(480)	600660606004	036060606002	036060030203	036060400205	606060600160	606060016060	606001606040	010707606003
(528)	020703606060	030460604002	026060400103	606060600160	606060016060	606001606060	400100606003	020303606040
(576)	020560606040	006060606001	606060600160	000026000026	600301000403	066001010560	600160600060	021060606004
(624)	046060606005	026060030203	006060400206	606060600460	606060016060	606001606040	010501606003	020505606060
(672)	030560604002	046060400101	606060600160	606060016060	606002606060	600111606003	020207606040	020660606060
(720)	016060606001	606060600160	000026000026	600301000403	076001010560	600160600160	041160606004	036060606001
(768)	116060030203	016060400206	606060600160	606060016060	606000606040	011000606003	020702606060	030560604002
(816)	026060400103	606060600160	606060016060	606000606060	400103606003	020301606040	020660606040	016060606001
(864)	606060600060	000026000026	600301000403	106001010560	600160600360	010160606004	026060606002	076060030203
(912)	016060400205	606060600260	606060016060	606001606040	010703606003	020610606060	030360604002	016060400102
(960)	606060600260	606060016060	606001606060	604005606003	020300606040	020560606040	006060606001	606060600160
(1008)	000026000026	600301000403	116001010560	600160600460	030360606004	026060606004	036060030204	006060400204
(1056)	606060600360	606060016060	606001606040	010505606003	020611606060	030460604002	026060400101	606060600260
(1104)	606060016060	606001606060	600100606003	020310606040	020560606060	006060606001	606060600160	000026000026

Refer to 67-070A-03D

REQ. AGENT	RAND NO.	ACQ. AGENT
CMT	RC2827	JHK
VJP	RC3358	

IMP-E

5.12 SEC. MAG. VECTORS

67-070A-03D
(RESTORED)

This data set catalogue contains 22 data tapes of 5.12 second magnetic vectors. The tapes represent a restoration of 210 original tapes which were written on an IBM 7094 DCS. The original tapes were 556 BPI, binary and written on 7 tracks. The restored tapes are 6250 BPI and 9 track. In restoring the tapes, the 6-bit bytes of the original tapes were expanded to 8-bit bytes. Also the DCS format of the original tapes was converted to ASCII during the restoration. Each file on the restored tapes is a restoration of one of the original tapes. In determining the start and stop times consider January 1 to be day zero.

The contents of the restored tapes are as follows:

DR#	DS#	FILE	RESTORATION OF	TIME SPAN
DR01016	DS01016	1	D-17774	07/19/67 - 07/27/67
		2	D-17782	07/27/67 - 08/03/67
		3	D-17783	08/03/67 - 08/10/67
		4	D-17772	08/10/67 - 08/17/67
		5	D-17784	08/17/67 - 08/24/67
		6	D-17785	08/24/67 - 08/30/67
		7	D-17786	08/31/67 - 09/07/67
		8	D-17787	09/07/67 - 09/14/67
		9	D-17819	09/14/67 - 09/21/67
DR01017	DS01017	1	D-17788	09/21/67 - 09/27/67
		2	D-17773	09/28/67 - 10/04/67
		3	D-17789	10/05/67 - 10/12/67
		4	D-17777	10/12/67 - 10/19/67
		5	D-17776	10/19/67 - 10/25/67
		6	D-17815	10/26/67 - 11/02/67
		7	D-17775	11/02/67 - 11/09/67
		8	D-17778	11/09/67 - 11/15/67
		9	D-17779	11/16/67 - 11/23/67
DR01018	DS01018	1	D-17780	11/23/67 - 11/29/67
		2	D-17781	11/30/67 - 12/07/67
		3	D-17818	12/07/67 - 12/14/67
		4	D-17817	12/14/67 - 12/20/67
		5	D-17816	12/21/67 - 12/28/67
		6	D-17795	01/04/68 - 01/11/68
		7	D-17794	01/11/68 - 01/17/68
		8	D-17792	01/18/68 - 01/25/68
		9	D-17793	01/25/68 - 01/31/68

DR#	DS#	FILE	RESTORATION OF	TIME SPAN
DR01019	DS01019	1	D-17823	02/01/68 - 02/08/68
		2	D-17822	02/08/68 - 02/15/68
		3	D-17821	02/15/68 - 02/22/68
		4	D-17801	02/29/68 - 03/07/68
		5	D-17812	03/07/68 - 03/13/68
		6	D-17808	03/14/68 - 03/21/68
		7	D-17800	03/21/68 - 03/28/68
		8	D-17799	03/28/68 - 04/04/68
		9	D-17807	04/04/68 - 04/11/68
DR01020	DS01020	1	D-17798	04/11/68 - 04/13/68
		2	D-17797	04/13/68 - 04/18/68
		3	D-17820	04/18/68 - 04/25/68
		4	D-19218	04/25/68 - 05/02/68
		5	D-19219	05/02/68 - 05/09/68
		6	D-19220	05/09/68 - 05/16/68
		7	D-19221	05/16/68 - 05/23/68
		8	D-19222	05/23/68 - 05/30/68
		9	D-19223	05/30/68 - 06/06/68
		10	D-19224	06/06/68 - 06/13/68
DR01021	DS01021	1	D-19225	06/13/68 - 06/20/68
		2	D-19226	06/20/68 - 06/27/68
		3	D-19227	06/27/68 - 07/04/68
		4	D-19228	07/04/68 - 07/11/68
		5	D-19229	07/11/68 - 07/17/68
		6	D-19230	07/18/68 - 07/25/68
		7	D-19231	07/25/68 - 08/01/68
		8	D-19232	08/01/68 - 08/08/68
		9	D-19233	08/08/68 - 08/15/68
DR01022	DS01022	1	D-19234	08/15/68 - 08/22/68
		2	D-19235	08/22/68 - 08/26/68
		3	D-19236	08/29/68 - 09/05/68
		4	D-19237	09/05/68 - 09/12/68
		5	D-18589	09/12/68 - 09/19/68
		6	D-18590	09/19/68 - 09/26/68
		7	D-18591	09/26/68 - 10/03/68
		8	D-18592	10/03/68 - 10/06/68
		9	D-18593	10/06/68 - 10/07/68
DR01023	DS01023	1	D-18594	10/07/68 - 10/10/68
		2	D-18595	10/10/68 - 10/17/68
		3	D-18596	10/17/68 - 10/24/68
		4	D-18597	10/24/68 - 10/31/68
		5	D-18598	10/31/68 - 11/07/68
		6	D-18599	11/07/68 - 11/14/68
		7	D-18570	11/14/68 - 11/21/68
		8	D-19010	11/21/68 - 11/28/68
		9	D-18571	11/28/68 - 12/05/68

DR#	DS#	FILE	RESTORATION OF	TIME SPAN
DR01024	DS01024	1	D-18572	12/05/68 - 12/12/68
		2	D-18573	12/12/68 - 12/19/68
		3	D-18574	12/26/68 - 12/31/68
		4	D-18575	01/01/69 - 01/01/69
		5	D-18569	01/02/69 - 01/09/69
		6	D-19238	01/09/69 - 01/16/69
		7	D-19011	01/16/69 - 01/23/69
		8	D-18576	01/23/69 - 01/30/69
		9	D-18577	01/30/69 - 02/06/69
		10	D-19541	02/06/69 - 02/13/69
DR01025	DS01025	1	D-19012	02/13/69 - 02/20/69
		2	D-18578	02/20/69 - 02/27/69
		3	D-18600	02/27/69 - 03/03/69
		4	D-18601	03/03/69 - 03/06/69
		5	D-18602	03/06/69 - 03/13/69
		6	D-18603	03/13/69 - 03/20/69
		7	D-18604	03/20/69 - 03/27/69
		8	D-18605	03/27/69 - 04/03/69
		9	D-18606	04/03/69 - 04/09/69
		10	D-18607	04/10/69 - 04/17/69
DR01026	DS01026	1	D-18608	04/17/69 - 04/24/69
		2	D-19239	04/24/69 - 05/01/69
		3	D-18609	05/01/69 - 05/08/69
		4	D-18619	05/08/69 - 05/15/69
		5	D-18618	05/15/69 - 05/22/69
		6	D-18617	05/22/69 - 05/29/69
		7	D-18616	05/29/69 - 06/05/69
		8	D-19013	06/05/69 - 06/11/69
		9	D-18615	06/12/69 - 06/15/69
		10	D-18614	06/15/69 - 06/19/69
DR01027	DS01027	1	D-19014	06/19/69 - 06/26/69
		2	D-18613	06/26/69 - 07/03/69
		3	D-18612	07/03/69 - 07/10/69
		4	D-19542	07/17/69 - 07/24/69
		5	D-18611	07/24/69 - 07/31/69
		6	D-18610	07/31/69 - 08/07/69
		7	D-18588	08/07/69 - 08/10/69
		8	D-18587	08/10/69 - 08/14/69
		9	D-18586	08/14/69 - 08/21/69
		10	D-18585	08/21/69 - 08/28/69
DR01028	DS01028	1	D-18584	08/28/69 - 09/04/69
		2	D-18583	09/04/69 - 09/11/69
		3	D-18582	09/11/69 - 09/17/69
		4	D-18581	09/18/69 - 09/25/69
		5	D-18580	09/25/69 - 10/01/69
		6	D-18579	10/01/69 - 10/08/69
		7	D-18984	10/08/69 - 10/09/69
		8	D-18985	10/09/69 - 10/16/69
		9	D-18986	10/16/69 - 10/23/69
		10	D-18987	10/23/69 - 10/30/69

DR#	DS#	FILE	RESTORATION OF	TIME SPAN
DR01029	DS01029	1	D-18988	10/30/69 - 11/05/69
		2	D-18989	11/06/69 - 11/13/69
		3	D-18990	11/13/69 - 11/20/69
		4	D-18991	11/20/69 - 11/26/69
		5	D-18992	11/27/69 - 12/01/69
		6	D-18993	11/30/69 - 12/01/69
		7	D-18994	12/01/69 - 12/04/69
		8	D-19240	12/04/69 - 12/11/69
		9	D-19543	12/11/69 - 12/18/69
		10	D-19025	12/18/69 - 12/25/69
DR01030	DS01030	1	D-19026	12/25/69 - 01/01/70
		2	D-19027	01/01/70 - 01/08/70
		3	D-19028	01/08/70 - 01/15/70
		4	D-19029	01/15/70 - 01/22/70
		5	D-19030	01/22/70 - 01/29/70
		6	D-19031	01/28/70 - 01/29/70
		7	D-19032	01/29/70 - 02/05/70
		8	D-19034	02/05/70 - 02/06/70
		9	D-19033	02/06/70 - 02/11/70
		10	D-19024	02/11/70 - 02/19/70
DR01031	DS01031	1	D-19023	02/19/70 - 02/25/70
		2	D-19022	02/26/70 - 03/05/70
		3	D-19021	03/05/70 - 03/11/70
		4	D-19020	03/12/70 - 03/19/70
		5	D-19019	03/19/70 - 03/26/70
		6	D-19018	03/26/70 - 04/02/70
		7	D-19017	04/02/70 - 04/09/70
		8	D-19035	04/09/70 - 04/16/70
		9	D-19036	04/16/70 - 04/23/70
		10	D-19015	04/23/70 - 04/23/70
DR01032	DS01032	1	D-19016	04/30/70 - 05/07/70
		2	D-19037	05/07/70 - 05/14/70
		3	D-19038	05/14/70 - 05/21/70
		4	D-19039	05/21/70 - 05/28/70
		5	D-19040	05/28/70 - 06/04/70
		6	D-19041	06/04/70 - 06/11/70
		7	D-19042	06/11/70 - 06/18/70
		8	D-19043	06/18/70 - 06/25/70
		9	D-19044	06/25/70 - 07/01/70
		10	D-19045	07/02/70 - 07/09/70
DR01033	DS01033	1	D-19046	07/09/70 - 07/15/70
		2	D-19047	07/16/70 - 07/23/70
		3	D-19048	07/23/70 - 07/29/70
		4	D-19049	07/29/70 - 08/06/70
		5	D-19050	08/06/70 - 08/13/70
		6	D-19051	08/13/70 - 08/20/70
		7	D-19052	08/20/70 - 08/27/70
		8	D-19053	08/27/70 - 09/03/70
		9	D-19054	09/03/70 - 09/10/70
		10	D-18995	09/10/70 - 09/17/70

DR#	DS#	FILE	RESTORATION OF	TIME SPAN
DR01034	DS01034	1	D-18996	09/17/70 - 09/24/70
		2	D-18997	09/24/70 - 10/01/70
		3	D-18998	10/01/70 - 10/08/70
		4	D-18999	10/08/70 - 10/15/70
		5	D-19000	10/15/70 - 10/22/70
		6	D-19001	10/22/70 - 10/26/70
		7	D-19002	10/29/70 - 11/05/70
		8	D-19003	11/05/70 - 11/12/70
		9	D-19004	11/12/70 - 11/19/70
		10	D-19005	11/19/70 - 11/26/70
DR01035	DS01035	1	D-19006	11/26/70 - 12/03/70
		2	D-19007	12/03/70 - 12/10/70
		3	D-19008	12/10/70 - 12/17/70
		4	D-19009	12/17/70 - 12/24/70
		5	D-17796	07/29/71 - 08/05/71
		6	D-17806	08/05/71 - 08/11/71
		7	D-17810	08/12/71 - 08/19/71
		8	D-17809	08/19/71 - 08/25/71
		9	D-17805	08/26/71 - 08/28/71
		10	D-17790	08/29/71 - 09/02/71
DR01036	DS01036	1	D-17804	09/02/71 - 09/08/71
		2	D-19241	09/09/71 - 09/15/71
		3	D-17791	09/16/71 - 09/23/71
		4	D-17803	09/23/71 - 09/29/71
		5	D-17802	09/30/71 - 10/07/71
		6	D-17811	10/07/71 - 10/14/71
		7	D-17813	10/14/71 - 10/21/71
		8	D-17814	10/21/71 - 10/28/71
		9	D-19242	10/28/71 - 11/04/71
		10	D-19243	11/04/71 - 11/11/71
DR01037	DS01037	1	D-19244	11/11/71 - 11/17/71
		2	D-19245	11/18/71 - 11/26/71
		3	D-19246	11/25/71 - 12/01/71
		4	D-19247	12/02/71 - 12/09/71
		5	D-19248	12/09/71 - 12/16/71
		6	D-19249	12/16/71 - 12/23/71
		7	D-19250	12/23/71 - 12/30/71

67-0701 030

The Explorer 33 and Explorer 35 individual vector tapes have the following physical characteristics

density: 556 bpi

7-track

parity: odd

physical record length: 2760 characters

BCD characters (essentially)

The first twelve characters of each physical record contain the physical record count and tape number of the original tape. These twelve characters are skipped by the IVREAD routine.

Each logical record is an individual vector. The formats of the two kinds of individual vectors are shown in Figure A-1 and A-2. The first format is associated with the first vector in each sequence. All of the other vectors have the second format. Preceding every logical record is a six character word which contains binary information describing the preceding logical record (if any) and the following logical record. Note that on the DCS control words always start on the whole word boundary and a DCS word has six characters. Thus both vector formats have two blank characters between the end of the vector and the following control word.

We could view the final tape format as having been created in the following manner. All logical records are stored in order, each preceded by its six character control word. Then a group of 2748 characters is picked off, prefixed by a twelve character physical record control word and placed on tape followed by an inter-record gap. The second physcial record would contain the second 2748 characters prefixed by twelve control characters and followed by an inter-record gap. The

At the end of the data, the last physical record will contain however many characters remain less than or equal to 2742, suffixed by a six character logical record control word and preceded by a twelve character control word then followed by a single end of file.

67-07A-03A

	Sequence Number	Day of Year Jan 1 = 0	Hour of Day	Minutes	Seconds	Vector Position *	|B| magnitude of vector
char. length	6	4	3	3	3	3	6
representation	I6	I4	I3	I3	I3	I3	F6.1
char. count	6	10	13	16	19	22	28

	SOLAR EQUATORIAL				
	θ Elevation angle latitude	ϕ Deviation angle longitude	X-Component of vector	Y-Component of vector	Z-Component of vector
char. length	6	6	6	6	6
representation	F6.1	F6.1	F6.1	F6.1	F6.1
char. count	34	40	46	52	58

	SOLAR MAGNETOSPHERIC				
	θ Elevation angle latitude	ϕ Deviation angle longitude	X-component of vector	Y-Component of vector	Z-Component of vector
char. length	6	6	6	6	6
representation	F6.1	F6.1	F6.1	F6.1	F6.1
char. count	64	70	76	82	88

	SOLAR ECLIPTIC					
	θ Elevation angle latitude	ϕ Deviation angle longitude	X-component of vector	Y-component of vector	Z-Component of vector	Total number of vectors this sequence
char. length	6	6	6	6	6	6
representation	F6.1	F6.1	F6.1	F6.1	F6.1	I6
char. count	94	100	106	112	118	124

θ & ϕ are field vector latitude and longitude, obtained from B_x, B_y, B_z

* indicates 1st, or 2nd, or 3rd etc vector of sequence

Figure A-1

First Vector of a Sequence

	Blank	Vector Position	|V| magnitude of vector
char. length	19	3	G
representation	19X	I3	FG.1
char. count	19	22	22

	SOLAR EQUATORIAL				
	θ Elevation angle latitude	φ Deviation angle longitude	X-Component of vector	Y-Component of vector	Z-Component of vector
char. length	G	G	G	G	G
representation	FG.1	FG.1	FG.1	FG.1	FG.1
char. count	54	60	66	72	78

	SOLAR MAGNETOSPHERIC				
	θ Elevation angle latitude	φ Deviation angle longitude	X-component of vector	Y-Component of vector	Z-Component of vector
char. length	G	G	G	G	G
representation	FG.1	FG.1	FG.1	FG.1	FG.1
char. count	64	70	76	82	88

	SOLAR ECLIPTIC				
	θ Elevation angle latitude	φ Deviation angle longitude	X-component of vector	Y-Component of vector	Z-Component of vector
char. length	G	G	G	G	G
representation	FG.1	FG.1	FG.1	FG.1	FG.1
char. count	94	100	106	112	118

Figure A-2
Other Vector of a Sequence

67-070A-03D
DR01016

```
$NOP
$NOF
$NOP
$NOP  ********** C1 **********
$EXE TPLIST BS

INPUT PARAMETERS ARE:  AS FL=1=1 5 1 1                    7/19/07

 TAPE NO.   1              FILE NO.   1
 RECORD   1                LENGTH   2760
0E-001  225500000E 14311 199 15 48 13  3 344.2  43.7 142.0-196.1 153.4 237.6  38.1 136.4-196.1 186.
8 212.4  46.9 146.4-196.1 130.0 251.2     7  00E00D                                5 344.2  43.7 142.0-196.1 1
53.4 237.6  38.1 136.4-196.1 186.8 212.4  46.9 146.4-196.1 130.0 251.2  00D00D
6 344.2  43.7 142.0-196.1 153.4 237.6  38.1 136.4-196.1 186.8 212.4  46.9 146.4-196.1 130.0 251.2
00D00D                    8 341.8  59.0 275.8  17.8-175.2 293.0  67.4 277.8  17.7-130.1 315.6  53.
5 275.0  17.8-202.4 274.9  00D00D                          9 344.2  43.7 142.0-196.1 153.4 237.6  38.1 1
36.4-196.1 186.8 212.4  46.9 146.4-196.1 130.0 251.2  00D00D                          11 341.8  43.2 142.
4-197.4 152.0 234.1  37.7 136.9-197.4 184.9 209.1  46.4 146.8-197.4 128.9 247.5  00D00D
        12 341.8  43.2 142.4-197.4 152.0 234.1  37.7 136.9-197.4 184.9 209.1  46.4 146.8-197.4 128.
9 247.5  00D00E 14318 199 15 57 45  1 328.8  39.9 146.2-209.5 140.2 211.1  35.3 141.3-209.5 167.9 1
89.8  42.8 150.3-209.5 119.4 223.5     7  00E00D                                3 328.8  39.9 146.2-209.5 140.
2 211.1  35.3 141.3-209.5 167.9 189.8  42.8 150.3-209.5 119.4 223.5  00D00D                          5 2
91.5  25.6 156.3-240.8 105.6 126.1  22.2 153.1-240.7 121.9 110.4  27.7 158.9-240.8  93.0 135.6  00D
00D                       7 328.8  39.9 146.2-209.5 140.2 211.1  35.3 141.3-209.5 167.9 189.8  42.8 1
50.3-209.5 119.4 223.5  00D00D                          8 328.8  39.9 146.2-209.5 140.2 211.1  35.3 141.
3-209.5 167.9 189.8  42.8 150.3-209.5 119.4 223.5  00D00D                          10 326.8  39.4 146.6-2
10.8 138.8 207.5  34.8 141.8-210.8 166.0 186.5  42.3 150.7-210.8 118.3 219.8  00D00D
        12 326.8  39.4 146.6-210.8 138.8 207.5  34.8 141.8-210.8 166.0 186.5  42.3 150.7-210.8 118.3 2
19.8  00D00E 14331 199 16 15 29  1 277.7  28.2 148.8-209.3 126.9 131.3  24.6 145.9-209.3 141.4 115.
6  30.9 151.5-209.3 113.8 142.8     9  00E00D                                6 277.7  28.2 148.8-209.3 126.9 1
31.3  24.6 145.9-209.3 141.4 115.6  30.9 151.5-209.3 113.8 142.8  00D00D                          7 277.
7  28.2 148.8-209.3 126.9 131.3  24.6 145.9-209.3 141.4 115.6  30.9 151.5-209.3 113.8 142.8  00D00D
                          8 276.4  27.5 149.2-210.5 125.5 127.8  24.0 146.4-210.5 139.6 112.3  30.2 151.
8-210.5 112.7 139.2  00D00D                          9 234.7  48.2 259.4 -28.7-153.9 174.9  54.8 257.7 -
28.8-132.4 191.7  42.8 260.4 -28.7-169.9 159.4  00D00D                          10 276.4  27.5 149.2-210.
5 125.5 127.8  24.0 146.4-210.5 139.6 112.3  30.2 151.8-210.5 112.7 139.2  00D00D
  11 248.2  -0.8  87.3  11.5 247.9  -3.6  -7.5  87.3  11.6 245.8 -32.6   4.6  87.3  11.5 247.1  20.
1  00D-0D                          13 276.4  27.5 149.2-210.5 125.5 127.8  24.0 146.4-210.5 1

 TAPE NO.   1              FILE NO.   1
 RECORD   4047             LENGTH   1841
0E-0    225548.1   5.0  -1.0  -0.8  -0D00D                          13   5.1  -8.3 347.4   5.0  -1.1  -0.
7  -8.7 347.8   5.0  -1.1  -0.8  -9.3 348.1   5.0  -1.0  -0.8  00D00E 22089 207  0 33 26  1   5.1
-8.3 347.4   5.0  -1.1  -0.7  -8.7 347.8   5.0  -1.1  -0.8  -9.3 348.1   5.0  -1.0  -0.8     13  00E
00D                       2   4.9  -9.4 350.8   4.8  -0.8  -0.8  -9.6 351.2   4.8  -0.7  -0.8 -10.1 3
51.6   4.8  -0.7  -0.9  00D00D                          3   4.9  -9.4 350.8   4.8  -0.8  -0.8  -9.6 351.
2   4.8  -0.7  -0.8 -10.1 351.6   4.8  -0.7  -0.9  00D00D                          4   4.9  -9.4 350.8
 4.8  -0.8  -0.8  -9.6 351.2   4.8  -0.7  -0.8 -10.1 351.6   4.8  -0.7  -0.9  00D00D
    5   4.8 -13.7 348.9   4.6  -0.9  -1.1 -14.0 349.5   4.6  -0.9  -1.2 -14.6 350.1   4.6  -0.8
-1.2  00D00D                          6   4.9  -9.4 350.8   4.8  -0.8  -0.8  -9.6 351.2   4.8  -0.7  -0.
8 -10.1 351.6   4.8  -0.7  -0.9  00D00D                          7   4.9  -9.4 350.8   4.8  -0.8  -0.8
-9.6 351.2   4.8  -0.7  -0.8 -10.1 351.6   4.8  -0.7  -0.9  00D00D                          8   4.8  -6.
7 344.6   4.6  -1.3  -0.6  -7.1 345.0   4.6  -1.2  -0.6  -7.9 345.2   4.6  -1.2  -0.7  00D00D
             9   4.8  -6.7 344.6   4.6  -1.3  -0.6  -7.1 345.0   4.6  -1.2  -0.6  -7.9 345.2   4.
6  -1.2  -0.7  00D00D                          10   5.1  -8.3 347.4   5.0  -1.1  -0.7  -8.7 347.8   5.0
-1.1  -0.8  -9.3 348.1   5.0  -1.0  -0.8  00D00D                          11   4.8 -13.7 348.9   4.6  -0.
9  -1.1 -14.0 349.5   4.6  -0.9  -1.2 -14.6 350.1   4.6  -0.8  -1.2  00D00D                          12
 4.9  -9.4 350.8   4.8  -0.8  -0.8  -9.6 351.2   4.8  -0.7  -0.8 -10.1 351.6   4.8  -0.7  -0.9  00D
00D                       13   4.9  -9.4 350.8   4.8  -0.8  -0.8  -9.6 351.2   4.8  -0.7  -0.8 -10.1 3
51.6   4.8  -0.7  -0.9  00D000000000000000000000000000000000000

 TAPE NO.   1              FILE NO.   2
 RECORD   1                LENGTH   2761                    7/27/07
```

```
3  45.1 300.4   1.4  -2.5   2.9  34.6 295.7   1.4  -3.0   2.3  00D00D                    10   3.9
43.9 284.4   0.7  -2.7   2.7  55.1 288.2   0.7  -2.1   3.2  43.7 284.3   0.7  -2.7   2.7  00D00D
                11   3.8  37.0 290.8   1.1  -2.8   2.3  47.7 294.9   1.1  -2.3   2.8  36.8 290.7
1.1  -2.9   2.3  00D00D                    12   3.9  29.4 286.4   0.9  -3.2   1.9  40.5 288.8   0.
9  -2.8   2.5  29.2 286.3   0.9  -3.2   1.9  00D00D                    13   3.5  26.0 301.9   1.6
-2.6   1.5  35.7 305.8   1.6  -2.3   2.  25.9 301.8   1.6  -2.6   1.5  00D00E 66426 249  0  4 29
1   3.6  18.2 306.0   2.0  -2.8   1.1  27.5 309.0   2.0  -2.5   1.7  18.1 305.9   2.0  -2.8   1.1
13  00E00D                    2   3.5  18.3 296.6   1.5  -3.0   1.1  28.6 298.9   1.5  -2.7   1.
7  18.1 296.6   1.5  -3.0   1.1  00D00D                    3   3.9  29.8 296.1   1.5  -3.0   1.9
40.1 299.9   1.5  -2.6   2.5  29.6 296.0   1.5  -3.0   1.9  00D00D                    4   3.9  29.
3 296.1   1.5  -3.0   1.9  40.1 299.9   1.5  -2.6   2.5  29.6 296.0   1.5  -3.0   1.9  00D00D
                5   3.6  31.8 291.1   1.1  -2.9   1.9  42.5 294.5   1.1  -2.4   2.4  31.6 291.0   1.
1  -2.9   1.9  00D00D                    6   3.9  29.8 296.1   1.5  -3.0   1.9  40.1 299.9   1.5
-2.6   2.5  29.6 296.0   1.5  -3.0   1.9  00D00D                    7   3.9  29.8 296.1   1.5  -3.
3   1.9  40.1 299.9   1.5  -2.6   2.5  29.6 296.0   1.5  -3.0   1.9  00D00D                    8
3.9  29.4 286.4   0.9  -3.2   1.9  40.5 288.8   0.9  -2.8   2.5  29.2 286.3   0.9  -3.2   1.9  00D
-0D                    9   4.1  27.8 291.3   1.3  -3.4   1.9  38.6 294.3   1.3  -2.9

 TAPE NO.   1              FILE NO.   8
 RECORD   3787             LENGTH   968
)2-0,=000000 9.8   56.0 357.2   6.8  -0.3   10.1  53.2 338.8   6.8  -2.6   9.8  -0D00D
7  12.0  43.3 330.1   7.5  -4.3   8.2  48.8 343.5   7.5  -2.2   9.0  43.6 330.7   7.5  -4.2
8.2  00D00D                    8  11.5  32.7 326.3   8.1  -5.4   6.2  39.5 335.2   8.1  -3.7   7.
3  33.0 326.6   8.1  -5.3   6.3  00D00D                    9  11.6  23.6 325.2   8.7  -6.1   4.7
31.0 331.4   8.7  -4.8   6.0  24.0 325.5   8.7  -6.0   4.7  00D00D                    10  11.5  21.
3 325.3   8.8  -6.1   4.3  29.2 330.9   8.8  -4.9   5.6  22.1 325.5   8.8  -6.0   4.3  00D00D
                11  11.6  30.2 329.0   8.6  -5.2   5.8  36.5 337.2   8.6  -3.6   6.9  30.5 329.4   8.
5  -5.1   5.9  00D00D                    12  11.6  50.5 338.0   6.9  -2.8   9.0  53.7 355.6   6.9
-0.5   9.4  50.7 338.8   6.9  -2.7   9.0  00D00D                    13  12.0  57.1 337.9   6.1  -2.
5  10.1  59.8   0.5   6.1   0.0  10.4  57.4 338.9   6.1  -2.3  10.1  00D00D

 TAPE NO.   1              FILE NO.   9                    9/14/68
 RECORD   1                LENGTH   2760
)8-0010000000000E 73840 256  0 33  4  1  12.7  41.3 326.3   8.0  -5.3   8.4  47.7 338.4   8.0  -3.
2   9.4  41.6 326.8   8.0  -5.2   8.5   14  00E00D                    2  12.7  41.5 328.7   8.1
-4.9   8.4  47.4 341.0   8.1  -2.8   9.3  41.8 329.2   8.1  -4.8   8.5  00D00D
3  12.6  44.0 328.2   7.7  -4.8   8.8  49.9 341.7   7.7  -2.6   9.7  44.4 328.8   7.7  -4.7   8.8
)0D00D                    4  12.3  45.2 327.8   7.4  -4.6   8.8  51.2 341.9   7.4  -2.4   9.6  45.
6 328.4   7.4  -4.5   8.8  00D00D                    5  12.5  42.1 323.4   7.4  -5.5   8.4  49.2 3
35.6   7.4  -3.4   9.4  42.5 323.9   7.4  -5.4   8.4  00D00D                    6  12.5  39.6 324.
)   7.8  -5.7   8.0  46.6 335.2   7.8  -3.6   9.1  40.0 324.5   7.8  -5.6   8.1  00D00D
7  12.3  40.3 321.1   7.3  -5.9   8.0  48.0 332.3   7.3  -3.8   9.1  40.7 321.5   7.3  -5.
3   8.0  00D00D                    8  12.5  42.1 323.4   7.4  -5.5   8.4  49.2 335.6   7.4  -3.4
9.4  42.5 323.9   7.4  -5.4   8.4  00D00D                    9  12.5  42.1 323.4   7.4  -5.5   8.
4  49.2 335.6   7.4  -3.4   9.4  42.5 323.9   7.4  -5.4   8.4  00D00D                    10  12.8
)1.0 324.0   7.8  -5.7   8.4  48.0 335.7   7.8  -3.5   9.5  41.4 324.4   7.8  -5.6   8.5  00D00D
11  12.8  41.0 324.0   7.8  -5.7   8.4  48.0 335.7   7.8  -3.5   9.5  41.4 324.4
7.8  -5.6   8.5  00D00D                    12  13.0  40.4 329.0   8.5  -5.1   8.4  46.3 340.9   8.
5  -2.9   9.4  40.7 329.5   8.5  -5.0   8.5  00D00D                    13  13.2  41.8 329.0   8.5
-5.1   8.8  47.6 341.4   8.5  -2.8   9.8  42.1 329.5   8.5  -5.0   8.9  00D00D                    1
#  13.2  41.9 331.3   8.6  -4.7   8.8  47.2 343.9   8.6  -2.5   9.7  42.3 331.8   8.6  -4.6   8.9
)0D00E 73841 256  0 34 25  1  12.9  42.9 328.6   8.1  -4.9   8.8  48.7 341.6   8.1  -2.7   9.7  43.
2 329.2   8.1  -4.8   8.9   13  00E00D                    2  13.2  41.8 329.0   8.5  -5.1   8.8
)7.6 341.4   8.5  -2.8   9.8  42.1 329.5   8.5  -5.0   8.9  00D00D                    3  12.9  45.
)  328.2   7.7  -4.8   9.2  51.2 342.3   7.7  -2.5  10.1  45.7 328.8   7.7  -4.7   9.2  00D00D
4  12.9  45.4 328.2   7.7  -4.8   9.2  51.2 342.3   7.7  -2.5  10.1  45.7 328.8   7.
7  -4.7   9.2  00D00D                    5  12.9  42.9 328.6   8.1  -4.9   8.8  48.7 341.6   8.1
-2.7   9.7  43.2 329.2   8.1  -4.8   8.9  00D00D                    6  13.2  41.8 329.0   8.5  -5.
1   8.8  47.6 341.4   8.5  -2.8   9.8  42.1 329.5   8.5  -5.0   8.9  00D00D                    7
13.0  40.4 329.0   8.5  -5.1   8.4  46.3 340.9   8.5  -2.9   9.4  40.7 329.5   8.5  -5.0   8.5  00D
-0D                    8  12.9  43.0 331.0   8.2  -4.6   8.8  48.4 344.2   8.2  -2.3

 TAPE NO.   1              FILE NO.   9
 RECORD   3825             LENGTH   8
)8-0,/00000064.0 224.3  -4.3  -4.2 -12.4 -71.7 183.9  -4.3  -0.3 -13.1  -0D0000
```

REQ. AGENT	RAND NO.	ACQ. AGENT
VJP	RC6568	JHK

IMP-E

82 SEC. AVGD. VECTORS, (REBLOCKED)

67-070A-03F

This data set consists of 20 IMP-E data tapes. The tapes are binary, 9 track, 1600 BPI and contains 1 file each. The tapes were created on the IBM/360 computer. These tapes were created from data set 67-070A-03C.

D#	C#	TIME SPAN
D-26560	C-18399	7/19/67 - 9/27/67
D-26561	C-18400	9/28/67 - 12/07/67
D-26562	C-18401	12/07/67 - 2/15/68
D-26563	C-18402	2/15/68-- 4/25/68
D-26564	C-18403	4/25/68 - 7/04/68
D-26565	C-18404	7/04/68 - 9/12/68
D-26566	C-18405	9/12/68 - 11/21/68
D-26567	C-18406	11/21/68 - 1/30/69
D-26568	C-18407	1/30/69 - 4/09/69
D-26569	C-18408	4/10/69 - 6/19/69
D-26570	C-18409	6/19/69 - 8/28/69
D-26571	C-18410	8/28/69 - 11/05/69
D-26572	C-18411	11/09/69 - 1/15/70
D-26573	C-18412	1/15/70 - 3/26/70
D-26574	C-18413	3/26/70 - 6/04/70
D-26575	C-18414	6/04/70 - 8/13/70
D-26576	C-18415	8/13/70 - 10/22/70

D#	C#	TIME SPAN
D-26577	C-18416	10/22/70 - 12/24/70
D-26578	C-18417	7/29/71 - 10/28/71
D-26579	C-18418	10/28/71 - 12/30/71

Imp E

82 Sec Averaged Vectors Reblock

67-070A-03F

This data set has been restored. There were originally 20 9-track, 1600 bpi tapes written in binary on an IBM 360 computer. There is now one restored tape, the DR is on a 3480 cartridge and the DS is on a 9-track tape written in EBCDIC. This data set was created from data set 67-070A-03C. Refer to 67-070A-03C for the docmentation. The DR and DS number along with the time spans and corresponding D numbers follow:

DR#	DS#	D#	FILES	TIME SPAN
DR03007	DS03007	D26560	1	07/19/67 - 09/27/67
		D26561	2	09/28/67 - 12/07/67
		D26562	3	12/07/67 - 02/15/68
		D26563	4	02/15/68 - 04/25/68
		D26564	5	04/25/68 - 07/04/68
		D26565	6	07/04/68 - 09/12/68
		D26566	7	09/12/68 - 11/21/68
		D26567	8	11/21/68 - 01/30/69
		D26568	9	01/30/69 - 04/09/69
		D26569	10	04/10/69 - 06/19/69
		D26570	11	06/19/69 - 08/28/69
		D26571	12	08/28/69 - 11/05/69
		D26572	13	11/06/69 - 01/15/70
		D26573	14	01/15/70 - 03/26/70
		D26574	15	03/26/70 - 06/04/70
		D26575	16	06/04/70 - 08/13/70
		D26576	17	08/13/70 - 10/22/70
		D26577	18	10/22/70 - 12/24/70
		D26578	19	07/29/71 - 10/28/71
		D26579	20	10/28/71 - 12/30/71

RC5299

FORMAT OF REBLOCKED IMP-E

67-070A-03F

The reblocked tape is an unlabelled 9-track, 1600 bpi, binary tape created on an IBM/360 computer. Each logical record consists of 6 control bytes and 132 bytes of data. There are 200 logical records in a physical record. DCB statement to create tape was

DCB=(DEN=3,RECFM=FB,LRECL=2760,BLKSIZE=27600)

FORMAT OF LOGICAL RECORD

BYTES	LENGTH	TYPE	DESCRIPTION	
1- 6	6	A	7094 Control characters	
7-13	7	I	Sequence Number	
14-17	4	I	Day	
18-20	3	I	Hour	
21-23	3	I	Minute	
24-26	3	I	Second	
27-31	5	I	Magnitude	
32-37	6	I	Theta	Solar Equatorial
38-43	6	I	PHI	
44-48	5	I	Y	
49-53	5	I	Z	
54-58	5	I	Dev Y	
59-63	5	I	Dev Z	
64-69	6	I	Theta	Solar Magnetospheric
70-75	6	I	PHI	
76-80	5	I	X	
81-85	5	I	Y	
86-90	5	I	Z	

BYTES	LENGTH	TYPE	DESCRIPTION	
91-95	5	I	Dev X	
96-100	5	I	Dev Y	
101-105	5	I	Dev Z	
106-111	6	I	Theta	
112-117	6	I	PHI	
118-122	5	I	Y	Solar
123	5	I	Z	Ecliptic
128-132	5	I	Dev Y	
133-137	5	I	Dev Z	
138	1	X	Blank	

67-676A-07F
DS003007

FILE 1 RECORD 1 27600 BYTES

```
00000F 14311 199 15 48 13 3431  511 1474 1060 2445 1148  198  461 1396-1659 1410 2262  749 1106  365  538 1536  822 2535 1162
   88 00F00F 14318 199 15 57 45 3229  380 1478 1348 1979  119  293  335 1431-2143 1608 1775  108  159  274  407 1517 1153 209
9  91 303 00F00F 14331 199 16 15 29 2596  348 1497  888 1229 1117  474  313 1460-1524 1026 1117  852 1068  576  375 1533  7
66 1308 1147 396 00F00F 14333 199 16 18 12 2366  386 2019 -451  962 1412  946  408 1967-1118 -335 1008  673 1437  908  363  2
058 -541 914 1383 987 00F00F 14341 199 16 29 7 2459  200 1524  991  779  660  515  171 1506-1898 1068  670  478  657  519
225 1543 912 871 660 516 00F00F 14346 199 16 35 56 860  480 1148  373  456  288  193  429 1125 -173  415  418  508  281
204 528 1177 328 489 294 183 00F00F 14347 199 16 37 18 2277  184 1479 1145  717  45  110  154 1465-1828 1209  604  41
  55 106 212 1496 1072 823  35 114 00F00F 14348 199 16 38 39 2155  242 1516  795  750  924  277  214 1495-1470  863  670
  665 901 347 267 1539 720 823 940 219 00F00F 14349 199 16 40 1 941  364 1418  443  528  132  139  330 1390 -564  48
9 486 238 119 150 396 1452 391 568 145 126 00F00F 14350 199 16 41 23 2211  57 1559  841  208  278  677  36 1555-18
86 857 130 252 338 649 79 1565 817 287 212 700 00F00F 14351 199 16 42 45 865  364 1219  462  402  234  244  319 1
201 -288 497 358 439 215 261 410 1243 422 444 251 226 00F00F 14354 199 16 46 50 1852  196 1474  860  569  484  317
169 1460-1347 906 494 531 461 351 225 1492 802 649 507 279 00F00F 14355 199 16 48 12 793  577 1655  67  427  470
182 562 1583 -261 103 420 369 460 207 587 1743 26 432 478 161 00F00F 14356 199 16 49 34 834  513 1727  42  422
 474 256 504 1668 -336 78 417 345 454 288 516 1796 2 424 491 220 00F00F 14357 199 16 50 56 1830  190 1509  842
  596 19 9 167 1496-1512 887 526 15 19 10 216 1527 781 673 20 8 00F00F 14358 199 16 52 18 906  313  152
7 354 471 2 5 291 1503 -688 391 441 2 2 4 337 1558 308 503 1 5 00F00F 14359 199 16 53 39 904  31
1 1529 353 467 2 5 289 1505 -689 389 437 2 3 5 335 1560 306 499 2 5 00F00F 14360 199 16 55 1 90
1 306 1531 350 459 2 5 285 1510 -693 384 431 2 2 5 329 1562 305 490 1 5 00F00F 14361 199 16 56
23 898 300 1535 347 449 1 4 280 1514 -696 379 422 1 2 5 323 1565 302 480 1 5 00F-0F 14362 199
16 57 45 886 299 1543 332 442 30 1 279 1522 -692 364 415 17 30 3 321 1574 288 471 30 1 -0F00F 1436
3 199 16 59 7 891 289 1542 339 431 0 0 269 1521 -702 371 404 0 0 0 311 1570 297 461 0 0 00F00F
  14364 199 17 0 28 1588 186 1525 694 508 11 5 167 1514-1336 727 457 11 11 5 211 1543 642 572 12 4
00F00F 14365 199 17 1 50 879 285 1551 324 419 29 3 267 1532 -701 353 396 16 28 5 307 1580 282 448 29
  3 00F00F 14366 199 17 3 12 884 276 1550 331 410 0 0 258 1532 -710 359 385 0 0 0 298 1578 290 43
9 0 0 00F00F 14369 199 17 7 17 838 321 1635 186 413 273 45 310 1613 -629 213 399 177 270 63 335 1669 1
46 428 276 20 00F00F 14370 199 17 8 39 1559 137 1797 5 259 801 640 137 1788-1057 22 258 569 804 636 137 1
810 -20 258 794 648 00F00F 14371 199 17 10 1 1425 223 1593 400 466 610 111 211 1580-1060 428 441 387 602 147
242 1615 354 502 618 54 00F00F 14372 199 17 11 23 1420 184 1553 560 447 81 82 169 1543-1220 586 412 146 76
 87 206 1571 514 498 88 75 00F00F 14374 199 17 14 7 285 114 2718 -193 39 104 150 148 2719 6 -190 50 101
 112 145 59 2718 -196 20 91 159 00F00F 14377 199 17 18 12 865 233 1575 303 342 1 3 221 1563 -734 322 325
  1 1 3 253 1598 269 370 1 3 00F00F 14378 199 17 19 34 856 230 1584 290 334 27 6 218 1572 -732 30
8 318 18 27 7 249 1607 256 360 28 4 00F00F 14379 199 17 20 56 853 226 1587 286 327 28 9 215 1576 -7
34 301 313 20 27 10 245 1610 253 353 28 6 00F00F 14380 199 17 22 17 1195 171 1559 466 352 6 6 160 1
550-1042 484 329 11 6 7 193 1575 431 395 7 6 00F00F 14381 199 17 23 39 860 214 1586 292 314 0 0
203 1576 -745 307 299 0 0 0 233 1607 260 341 0 0 00F00F 14382 199 17 25 1 858 209 1588 289 307 2
  5 200 1579 -747 303 294 2 2 5 229 1609 258 334 1 5 00F00F 14383 199 17 26 23 849 210 1596 276 305
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