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5.3.5 UNCONDITIONAL PURGE OF A GROUP LIBRARY

To unconditionally purge the currently loaded Group Library, if any, and to load an updated Library from tape, insert the following cards before those shown in Section 5.3.4.

```
#MFDbaEVbua,0/n,/GLT  
#MFDbrVbua,
```

If any jobs are currently running linked to Group Library n, this release sequence will be delayed until all existing linkages to n have terminated.

5.3.6 GROUP LIBRARY 2 CONTENTS

00001	AIMAG		RB	00098
00002	ANDMP		ABS	00002
00003	ASM		ABS	00004
00004	BSAVERSTRB		RB	00100
00005	CABS		RB	00015
00006	CCBRT		RB	00017
00007	CEXP		RB	00097
00008	CHGOMEGA		ABS	00116
00009	CLOG		RB	00096
00010	CMPLX		RB	00095
00011	CONJG		RB	00094
00012	CONSTA		RB	00092
00013	CONVERT		ABS	00005
00014	CSIN		RB	00087
00015	CSQRT	IRDC1	RB	00110
00016	DABS		RB	00091
00017	DACOS		RB	00090
00018	DACOTA		RB	00089
00019	DASIN		RB	00088
00020	DATAN		RB	00086
00021	DATAN2		RB	00085
00022	DBLE		RB	00084
00023	DCBRT		RB	00016
00024	DEXP		RB	00083
00025	DIM		RB	00082
00026	DINT		RB	00081
00027	DLOG		RB	00080
00028	DLOG10		RB	00079
00029	DMAX0		RB	00078
00030	DMAX1		RB	00077
00031	DMIN0		RB	00076
00032	DMIN1		RB	00075
00033	DMOD		RB	00074
00034	DSIGN		RB	00073
00035	DSQRT		RB	00072
00036	DTRIGH		RB	00071
00037	DTRIGP	V7RDS	RB	00010
00038	ELM		ABS	00117
00039	FHI	RDU04	RB	00114
00040	FHIPD		RB	00105

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00041	FHIWR		RB	00106
00042	FIO\$ERRCNT	RDT0	RB	00112
00043	FLD		RB	00070
00044	FOR	DU2	ABS	00008
00045	FTIO	RDU13	RB	00113
00046	F\$DATEMR	71104	RB	00006
00047	HRSRH	R1DT	RB	00009
00048	IABS		RB	00069
00049	IDIM		RB	00068
00050	IOSUB	70327	RB	00007
00051	ISIGN		RB	00067
00052	MAX0		RB	00066
00053	MAX1		RB	00065
00054	MIN0		RB	00064
00055	MIN1		RB	00063
00056	MOD		RB	00062
00057	NTOX		RB	00061
00058	NTOXCI		RB	00104
00059	NTOXDI		RB	00058
00060	NTOXID		RB	00060
00061	NTOXII		RB	00059
00062	OVERFL		RB	00018
00063	PRPBA		ABS	00003
00064	RANDY	IRDC0	RB	00012
00065	SNGL		RB	00057
00066	SYSGEN		ABS	00115
00067	TAPECOPY	75258	ABS	00001
00068	V\$CA		RB	00055
00069	V\$CD		RB	00053
00070	V\$CF		RB	00056
00071	V\$CM		RB	00054
00072	V\$CS		RB	00051
00073	\$AT		RB	00045
00074	\$BA	IRDC2	RB	00014
00075	\$CA		RB	00093
00076	\$CC		RB	00103
00077	\$CD		RB	00047
00078	\$CE		RB	00099
00079	\$CF		RB	00107
00080	\$CK		RB	00046

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00081	\$CKDI		RB	00050
00082	\$CM		RB	00048
00083	\$CS		RB	00049
00084	\$CTODA		RB	00042
00085	\$CTODD		RB	00039
00086	\$CTODM		RB	00040
00087	\$CTODS		RB	00041
00088	\$CTOIA		RB	00102
00089	\$CTOID		RB	00043
00090	\$CTOIM		RB	00044
00091	\$CTOIS		RB	00101
00092	\$CTOR		RB	00038
00093	\$DEXT		RB	00052
00094	\$DFL		RB	00033
00095	\$DFX		RB	00031
00096	\$DIDAS		RB	00029
00097	\$DIDDV		RB	00028
00098	\$DIDMP		RB	00027
00099	\$DL		RB	00032
00100	\$DTOCA		RB	00037
00101	\$DTOCD		RB	00034
00102	\$DTOCM		RB	00035
00103	\$DTOCS		RB	00036
00104	\$DX		RB	00030
00105	\$EN	IRDC2	RB	00013
00106	\$ER	RDY1	RB	00111
00107	\$IEXT		RB	00020
00108	\$ITOC		RB	00026
00109	\$ITOCA		RB	00025
00110	\$ITOCD		RB	00022
00111	\$ITOCM		RB	00023
00112	\$ITOCS		RB	00024
00113	\$NCARG		RB	00019
00114	\$PA		RB	00109
00115	\$RE	IRDC2	RB	00011
00116	\$RTOC		RB	00021
00117	\$ST		RB	00108

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5.3.7 GROUP LIBRARY 3 CONTENTS

00001	CARDIN	74203	ABS	00049
00002	CARDLIST	69154	ABS	00018
00003	CARDLP	71349	ABS	00024
00004	CARDOUT	74203	ABS	00050
00005	CDF	73060	ABS	00030
00006	CLEARMASS	68150	ABS	00017
00007	COM	74199	ABS	00052
00008	COMPARE	74203	ABS	00046
00009	COPY	71081	ABS	00023
00010	DART	74050	ABS	00044
00011	DETAB	70224	ABS	00014
00012	D\$MSG00XXX	71083	SOU	00013
00013	D\$MSG00010	74042	ABS	00043
00014	D\$MSG00013		ABS	00053
00015	EEDIST	A5300	ABS	00007
00016	EESPLIT	71319	ABS	00022
00017	FILECOPY	74203	ABS	00048
00018	FILEEDIT	74203	ABS	00047
00019	FORMAT	70208	ABS	00031
00020	IBMUNV	72090	ABS	00032
00021	INFORM	73340	ABS	00035
00022	INFORM2	70099	ABS	00019
00023	JOBPRAM	A5330	ABS	00004
00024	JOBPRAMR	74042	RB	00040
00025	JPRAMTABL1	A5330	ABS	00003
00026	LABELBUR	73340	ABS	00037
00027	LABELIBM	73340	ABS	00038

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00028	LABEL360	73340	ABS	00039
00029	LABEL494	72167	ABS	00025
00030	LDP	72283	ABS	00028
00031	LISVLIB	72237	ABS	00027
00032	LOGOUT	A5300	ABS	00001
00033	MFDRJEBLD	72181	ABS	00026
00034	MFDSAVE	A5261	ABS	00006
00035	MICROFORM	75160	ABS	00009
00036	M			
00037	OPTFILES	73039	ABS	00029
00038	PAPERIN	73340	ABS	00036
00039	POEDIT	72019	ABS	00021
00040	PRINT	75030	ABS	00054
00041	RCAUNV	73340	ABS	00034
00042	SCRAM	74199	ABS	00051
00043	SELSORT	75293	ABS	00005
00044	SORCERER	71077	ABS	00012
00045	SPECLOG	A5300	ABS	00002
00046	SPURT	AXRX	ABS	00055
00047	TCERT	68331	ABS	00015
00048	TDC	74125	ABS	00045
00049	TDG	74042	ABS	00041
00050	TDL		ABS	00042
00051	TDUMP	68331	ABS	00016
00052	TRACEEDIT	75323	ABS	00008
00053	TRNTOIBM	71349	ABS	00033
00054	UNVTIN	75028	ABS	00011
00055	UNVTOUT	75062	ABS	00010

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5.3.8 GROUP LIBRARY 4 CONTENTS

00001	BADSPOT	J5300	SOU	00013
00002	BADSPOT	TEST	ABS	00044
00003	BADTRACK		ABS	00043
00004	BADTRACK	J5300	SOU	00015
00005	BOOTCOPY	J5300	SOU	00011
00006	CDJLOTS	A5135	ABS	00053
00007	CURLOG	J5160	SOU	00034
00008	CURLOGRT	J5160	SOU	00033
00009	CURLOG3	J5160	SOU	00032
00010	DISCRD	J5300	SOU	00012
00011	DISCRD	75135	ABS	00051
00012	DMPSPIGOTS	71179	ABS	00047
00013	DRUMLG	J5160	SOU	00027
00014	GETLOG	A5160	ABS	00025
00015	IBMSPY	J5300	SOU	00016
00016	IBMSPY	75250	ABS	00021
00017	LIBM	J5300	SOU	00009
00018	LOGOUT	A5300	ABS	00023
00019	LOGPOOLER	A5300	ABS	00022
00020	LOGPRT	A5300	ABS	00018
00021	LOGSORT1	A5135	ABS	00055
00022	LOGSORT2	A5135	ABS	00054
00023	PEEK	71179	ABS	00046
00024	PRTDRM	00005	SOU	00005
00025	PRTDRM	00006	SOU	00006
00026	PRTDRM	00007	SOU	00007
00027	PTEST	J5300	SOU	00017
00028	PTEST	68331	ABS	00048

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00029	RELABEL	ABS	ABS	00042
00030	RELABEL	J5300	SOU	00014
00031	RELLOGFILE	J5300	SOU	00001
00032	RELLOGOA	J5300	SOU	00003
00033	RELLOGTRB	J5300	SOU	00002
00034	SERRATA	J5300	SOU	00004
00035	SERRATA	75300	ABS	00024
00036	SLINKCOPY	J5300	SOU	00010
00037	SORTOTS	A5135	ABS	00052
00038	SPECLOG	A5300	ABS	00020
00039	STATFORM	73250	ABS	00056
00040	STATSORT	A5118	ABS	00050
00041	S			
00042	TAPELOG	J5160	SOU	00026
00043	TAPELOGM	J5160	SOU	00029
00044	TAPELOGM3	J5160	SOU	00028
00045	TAPELOGS	J5160	SOU	00031
00046	TAPELOGS3	J5160	SOU	00030
00047	TESTPX	70282	ABS	00049
00048	TRANSFER	J5300	SOU	00008
00049	TRANSFER	75293	ABS	00019
00050	05003J	J5160	SOU	00041
00051	05004J	J5160	SOU	00040
00052	05009J	J5160	SOU	00039
00053	05010J	J5160	SOU	00038
00054	05012J	J5160	SOU	00037
00055	05017J	J5160	SOU	00036
00056	05021J	J5160	SOU	00035

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5.3.9 GROUP LIBRARY 5 CONTENTS

00001	CDATEFD	70327	RB	00094
00002	CDATEFD16	70327	RB	00093
00003	CDATEYYDDD	70327	RB	00092
00004	CDAYYDDD16	67272	RB	00077
00005	CHGRACKR	71131	RB	00098
00006	COBCHGR	71131	RB	00097
00007	COBDUMP	69114	RB	00080
00008	COBERRTERM	68331	RB	00044
00009	COBJCL	R5330	RB	00001
00010	COBOLERRT	R5330	RB	00002
00011	COBVARREC	68110	RB	00045
00012	COLLA	R7T	RB	00011
00013	CONTROLDDD	R7T	RB	00014
00014	CONTROLTTT	R7T	RB	00012
00015	CORT	R7T	RB	00013
00016	C\$DATEMR	71104	RB	00096
00017	DPADD\$	67272	RB	00053
00018	DPAD\$	67272	RB	00055
00019	DPBINTOFD\$	69076	RB	00034
00020	DPDIV\$	67272	RB	00050
00021	DPFDTOBIN\$	69076	RB	00033
00022	DPMUL\$	67272	RB	00051
00023	DPSB\$	67272	RB	00054
00024	DPSUB\$	67272	RB	00052
00025	DPTOSP\$	67272	RB	00056
00026	DRUMPHDD	R7T	RB	00017
00027	DRUMPHTTT	R7T	RB	00016
00028	DUMMYTFCS	67339	RB	00078
00029	D\$MSG00005	A7	ABS	00024
00030	D\$MSG00006	A7	ABS	00025
00031	D\$MSG00007	A7	ABS	00026
00032	EQ\$FCPCR	74070	RB	00113
00033	FORSORT		RB	00104
00034	IBMLOUT	74042	RB	00109
00035	KEYPRC	R7T	RB	00015
00036	MACROS	74043	SOU	00008
00037	MERGE	R7	RB	00023
00038	OPTFILEC	72160	RB	00103

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00039	PFOUND	R7T	RB	00018
00040	RANOU	70128	RB	00088
00041	REXMACROS	74042	SOU	00007
00042	RW\$FCP	74070	RB	00112
00043	R\$FCP	74070	RB	00110
00044	SELECT	R7	RB	00019
00045	SEOCK	R7	RB	00027
00046	SOPCR	R7	RB	00020
00047	SORCE	74125	RB	00114
00048	SORIO	R7T	RB	00021
00049	SORTVAL	R7T	RB	00022
00050	SORT65KAAD	A7T	ABS	00009
00051	SORT65KAAT	A7T	ABS	00010
00052	TCSMACROS	69065	SOU	00031
00053	TFCS	69135	RB	00081
00054	W\$FCP	74070	RB	00111
00055	XA	74175	SOU	00006
00056	XB	74175	SOU	00005
00057	XC	74175	SOU	00004
00058	XS	72104	SOU	00028
00059	ZAGTBINDC	70208	RB	00032
00060	ZAGTDECBN	73190	RB	00108
00061	ZALPHANUM	70327	RB	00091
00062	ZBINDEC	67272	RB	00076
00063	ZBINDECN	67272	RB	00075
00064	ZBINDECSGN	67272	RB	00074
00065	ZBINDEC30	70327	RB	00090
00066	ZCHARACTER	67272	RB	00073
00067	ZCHAREXTA	67272	RB	00072
00068	ZCHKOPTSR	71218	RB	00100
00069	ZCKPT	70294	RB	00030
00070	ZCPNMASK	67272	RB	00071
00071	ZDATEADDM	67272	RB	00070
00072	ZDATEBIN	67272	RB	00069
00073	ZDATEFD	67272	RB	00068
00074	ZDATETABL1	67272	RB	00064
00075	ZDATEYMD	67272	RB	00067
00076	ZDATEYMDR	72255	RB	00105

00077	ZDATEYYDDD	67272	RB	00066
00078	ZDATE1STM	67272	RB	00065
00079	ZDECBINN\$	71258	RB	00101
00080	ZDECBIN1	67272	RB	00063
00081	ZDECBIN2	67272	RB	00062
00082	ZDPFROMSP\$	69076	RB	00036
00083	ZDPTOSP\$	69076	RB	00035
00084	ZERRTYPE	68025	RB	00046
00085	ZFABSFILEP	71152	RB	00099
00086	ZFLDALPHA	67272	RB	00061
00087	ZFLDNUMER	67272	RB	00060
00088	ZHMFPREMR	72280	RB	00107
00089	ZMFADDR	67272	RB	00059
00090	ZMFAREAS	70327	RB	00089
00091	ZMFPREMR	74211	RB	00003
00092	ZMOVBIFDP		RB	00102
00093	ZMOVBINFDP	69076	RB	00043
00094	ZMOVCHAR	69076	RB	00042
00095	ZMOVCHARBK	69076	RB	00041
00096	ZMOVCHARCL	69076	RB	00086
00097	ZMOVCHARSK	69076	RB	00040
00098	ZMOVCHFSC	69076	RB	00039
00099	ZMOVCHFS77	69265	RB	00087
00100	ZMOVR	72265	RB	00106
00101	ZOCTALFD	71075	RB	00095
00102	ZPC1	67272	RB	00048
00103	ZPC2	69220	RB	00082
00104	ZPC3	69220	RB	00083
00105	ZPC4	69220	RB	00084
00106	ZPC5	69220	RB	00085
00107	ZPC6	67272	RB	00047
00108	ZROUND	69076	RB	00038
00109	ZROUNDN	69076	RB	00037
00110	ZSPACES	67272	RB	00058
00111	ZSRCHFS77	70327	RB	00029
00112	ZSTORAGE	67272	RB	00057
00113	ZTENPOWER	69114	RB	00079
00114	ZYYDDDBIN	67272	RB	00049

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5.3.10 GROUP LIBRARY 7 CONTENTS

00001	COB	U6	ABS	00001
00002	Z\$ADSN	RB1	RB	00023
00003	Z\$ANCP		RB	00016
00004	Z\$ANMVOM	RB2	RB	00017
00005	Z\$ANMVS	RB2	RB	00018
00006	Z\$ANSM	RB1	RB	00013
00007	Z\$CKPT	R1	RB	00004
00008	Z\$COMOVE	R1	RB	00036
00009	Z\$CONTOM	RR1	RB	00032
00010	Z\$CONTSR	RB1	RB	00031
00011	Z\$COWS	U5A	RB	00003
00012	Z\$CTDM	R1	RB	00011
00013	Z\$DPAD	R2	RB	00012
00014	Z\$EDMV	RB3	RB	00033
00015	Z\$EXAMINE		RB	00026
00016	Z\$EXMOVE	RB1	RB	00009
00017	Z\$EXPAND	RB1	RB	00014
00018	Z\$FTB5	RB1	RB	00015
00019	Z\$LITMOM	RB1	RB	00030
00020	Z\$LITMSR	RB1	RB	00029
00021	Z\$LLASR		RB	00049
00022	Z\$MVS		RB	00019
00023	Z\$NUMCOM		RB	00008
00024	Z\$NUMCS	U6	RB	00055
00025	Z\$NUMCSR		RB	00020
00026	Z\$NUMTEST		RB	00028
00027	Z\$REPLACE		RB	00025
00028	Z\$RWCSOM	U5A	RB	00051
00029	Z\$RWCSSR	U5A	RB	00052
00030	Z\$RWMV	R1	RB	00010

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00031	Z\$SBSC	R1	RB	00037
00032	Z\$SGN1	RB1	RB	00022
00033	Z\$SGN2	RB3	RB	00005
00034	Z\$SINTST		RB	00027
00035	Z\$MSA	RB1	RB	00021
00036	Z\$SORT	U6	RB	00054
00037	Z\$SUSN	RB1	RB	00024
00038	Z\$ZAP	USA	RB	00053
00039	Z\$9ASB	RB3	RB	00006
00040	Z\$9ASF	RB1	RB	00048
00041	Z\$9RTFOM	RB2	RB	00045
00042	Z\$9RTFSET	RB2	RB	00034
00043	Z\$9RTFSR	RB2	RB	00046
00044	Z\$9CLEAR		RB	00050
00045	Z\$9DIV	USA	RB	00002
00046	Z\$9DTC	RB1	RB	00040
00047	Z\$9EDT	RB3	RB	00047
00048	Z\$9FTBOM	RB2	RB	00042
00049	Z\$9FTBSET	RB2	RB	00035
00050	Z\$9FTBSR	RB2	RB	00043
00051	Z\$9MUL	RB1	RB	00044
00052	Z\$9POW	RB1	RB	00007
00053	Z\$9SDW	RB2	RB	00041
00054	Z\$9SUPOM	RB2	RB	00038
00055	Z\$9SUPSR	RB2	RB	00039

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5.3.11 GROUP LIBRARY 36D CONTENTS

00001	CSDMSR	72260	RB	00012
00002	DBAOPT	72260	ABS	00003
00003	DMSBUILD	73225	ABS	00018
00004	DMSDUMP	71166	ABS	00011
00005	DMSI		RB	00013
00006	DMSINBLD	71006	ABS	00010
00007	DMSINDUMP	71166	ABS	00009
00008	DMSMAC		SOU	00016
00009	D\$MSG00001	CSDMS	ABS	00008
00010	D\$MSG00002	DMST	ABS	00007
00011	D\$MSG00003	DMSE	ABS	00006
00012	D\$MSG00004	DMSE	ABS	00005
00013	D\$MSG00011	BUILD	ABS	00017
00014	FORDMS		RB	00014
00015	FORDMSCNUP		RB	00015
00016	FREESYSAUD		ABS	00002
00017	MINIREMAP	71166	ABS	00004
00018	PRINTMSG	71145	ABS	00001

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5.4 GENERAL PROGRAM CONVENTIONS

5.4.1 PROGRAM SIZE

Maximum size for programs other than SORTS is 47000 (base 8).

Maximum size for SORTS is 65000 (base 8).

5.4.2 INPUT/OUTPUT RESTRICTIONS

- Input

Primary input may be used for data if the card volume does not exceed 1000 cards and no blank images are required.

Input data which exceeds the volume allowed for primary input should be transferred to tape using the CARDIN utility.

All paper tape input should be transferred to tape using the PAPERIN utility.

- Output

Secondary output may be used for data if the card volume does not exceed 1000 cards and no blank images are required.

Primary output may be used for data if the volume does not exceed 500 pages.

Card output which exceeds the allowed volume for secondary output will be written to a tape file and then punched using the CARDOUT utility. All card punching via CARDOUT is executed (except prints) after all other tasks have been completed and facilities which are no longer needed are released.

Printed output which exceeds the allowed volume for primary output will be written to a tape file and then printed using the PRINT utility. All prints are executed after all other tasks have been completed and facilities which are no longer needed are released.

5.4.3 OPERATOR INTERVENTION

The system should be designed so that operator intervention is not necessary. All decision logic should be built into the program.

5.4.4 MASS STORAGE PERIPHERAL ASSIGNMENTS

Any data file other than a SORT file is equal to the expected volume plus 15 per cent, but in no case is it greater than 7,000,000 decimal words on FASTRAND or 100,000 decimal words on drum. For SORT files, see Section 13.

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Use of any drum for data files must be approved by the Hardware/Software Unit of Support and Research.

- Tapes

For merge programs no more than six tapes are assigned at one time.

For other programs no more than four tapes are assigned at one time.

- Mnemonics

The following peripheral names are available for facility assignment in the Travelers Systems. (See the following pages.)

Facility Assignment mnemonics Systems 1 and 2 OMEGA 604Q

	1	2	3	4	5	6	7	8	9	10	11
RANM	880/C6	1782/C16	1782/C17	DISC/C10	FAST/C12						
RANMX	880/C6	1782/C17	1782/C16	DISC/C10	FAST/C12						
RANL	1782/C16	1782/C17	880/C6	DISC/C10	FAST/C12						
RANLX	1782/C17	1782/C16	880/C6	DISC/C10	FAST/C12						
MASS	FAST/C19	FAST/C18	DISC/C10	FAST/C12	DISC/C11A	DISC/C11B	FAST/C9	FAST/C8	1782/C17	FAST/C16	880/C6
MASSX	FAST/C18	FAST/C19	DISC/C11B	DISC/C11A	DISC/C10	FAST/C12	FAST/C8	FAST/C9	1782/C16	FAST/C17	880/C6
DISC	DISC/C10	DISC/C11B	DISC/C11A								
DISCX	DISC/C11A	DISC/C11B	DISC/C10								
DISK	DISC/C10	DISC/C11B	DISC/C11A								
DISKX	DISC/C11A	DISC/C11B	DISC/C10								

Channel 6 is available only on Real Time System.

Special additional mnemonics exist. For information on these, contact the Hardware/Software Section.

Facility Assignment Mnemonics

System 3

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
RAMN	1782/C9	1782/C8	8424/C12	8424/C11
RAMNX	1782/C8	1782/C9	8424/C11	8424/C12
RANL	1782/C9	1782/C8	8424/C12	8424/C11
RANLX	1782/C8	1782/C9	8424/C11	8424/C12
MASS	8424/C12	8424/C11	1782/C9	1782/C8
MASSX	8424/C11	8424/C12	1782/C8	1782/C9

Special additional mnemonics exist. For information on these, contact the Hardware/Software Section.

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5.5 FILE CONVENTIONS

5.5.1 GENERAL STANDARDS

- Registered Files

All requests for MFD user number/file number allocations must be made through Scheduling.

NOTE: For use of cataloged files in testing, refer to Section 9.10.

- Transient Files

Files which are less than 2,000,000 words in length and are used by a task within the job stream must use transient storage.

- Semi-permanent Files

Files which are less than a reel of tape and are registered in the MFD because they are used in a subsequent job in the cycle, but are not held beyond the cycle, use a peripheral type selected by Scheduling for production files.

- Permanent Files

Files of any size which must be held beyond the completion of the current cycle must go to tape.

- Optional Files

All optional files which are processed in parallel are assigned through JCL using OPTFILES. (See Section 7.)

- Non-optional Files

All non-optional files which are processed in parallel are assigned and freed using JCL.

For all non-optional files which are processed serially, the first file in the JCL should be assigned. Subsequent files should use #SWITCH between the CLOSE of the old and OPEN of the new. The last file should be freed in the JCL following the task.

5.5.2 NUMBER OF FILES

Maximum number of files is seven for any one program.

NOTE: All files which exceed a single reel and are not permanent mass storage files must be allocated to tape.

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5.5.3 FILE IDENTIFICATION

- Data Files

All data files are identified by a seven-digit file number, composed of the run numbers and the code type. If a specific file can be produced by more than one run, a special run number in the form xy777 will be used in the file number.

The code number consists of the two digits xy:

Where:

x = a digit, 1-9:

- 1 = a tape file which is edited as direct input to a print run
- 2 = a tape file which is edited as direct input to a card punch run
- 3 = a tape file produced from card input
- 4 = a tape file produced from paper tape input
- 5 = all other paper files
- 6 = paper tape files
- 7 = card files
- 8 = FASTRAND, disk, or data cell files
- 9 = FH432, FH880 or other drum files

y = a digit, 0-9. As each file is developed it is arbitrarily assigned in the sequence of digits 1 through 9, 0 is assigned to the tenth file.

- Program Files (Tape)

When Program Library Tapes (PLT's) and Group Library Tapes are created via #OUT or read via #IN, a PLT label is required in the JCL. The format of the label must be as follows:

JJJJJ-PLT-rrrrr

Where:

JJJJJ is a five-digit job number

rrrrr is a five-digit reel number (rrrrr may be GLTxx for group libraries only where xx is the library number)

NOTE: -PLT- must be characters 6 thru 10 to provide protection against automatic purge when using FILCOP.
rrrrr must be the five-digit reel number or GLTxx. Any five digits in this portion of the ID will be interpreted as the reel number if used with FILCOP at a later date.

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5.5.4 BUFFER SIZE

Maximum buffer size is 700 words. The optimum buffer size for tape, drum, or FASTRAND is between 600 or 800 words, but because of record sizes, an appropriate size below the maximum is allowable.

All files for the FASTRAND must have a multiple of 33 words for a buffer size.

5.5.5 PROGRAM LIBRARY TAPES

When Program Library Tapes are used, especially in production jobs, the elements needed to run the job should be specifically named on the #IN statement. This will reduce the amount of space occupied in the job library.

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either it is purged or the jobstream is terminated. Subsequent execution of JOBPRAM (absolute element) in the same jobstream results in the overlaying of the first job parameter by the latest.

6.8.1.1 JOB PARAMETER

The one word job parameter has the following formats:

Format A: bits 29-18 = system defined cycle
bits 17-15 = 0 (base 8)
bits 14-0 = equivalent octal rundate (Sec. 7.8)

or

Format B: nnnnn = five character field data system-defined
job parameter

6.8.1.2 JOBPRAM INPUT

Input to the absolute element JOBPRAM is by the #PRAM statement:

Direct - #PRAMbbccccrrrrr. (Format A results)

or

#PRAMbAbnnnnn. (Format B results)

Indirect - #PRAMbb7777777mm.

Where:

mm is a code designated by Hardware/Software.

6.8.1.3 INDIRECT JOBPRAM INPUT

- | | |
|---------|---|
| mm = 00 | An inquiry is made of the operator who enters a five character field data job parameter (normally a five digit decimal cycle number) which is passed through the JOBPRAM program and results in Format B in executive storage. |
| mm = 01 | An inquiry is made of the operator who enters a five digit decimal cycle number which is converted to octal and stored in the cycle portion of the job parameter (bits 29-18, Format A). Rundate portion (bits 14-0) is set to 00000. |
| mm = 61 | An inquiry is made of the operator who enters a five digit decimal cycle number. This number is used to search a table (Sec. 6.8.1.4) from which the correct |

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Job parameter in Format A, containing both cycle and rundate, is extracted and passed through JOBPRAM to executive storage.

6.8.1.4 CYCLE - RUNDATA TABLES

The cycle-rundate table is an absolute element called JPRAMTABLx, where x is a code assigned by Hardware/Software. The tables are updated periodically by 494 Scheduling. For the C-P Master File, this table is JPRAMTABL1 and is maintained on Group Library 3.

The form of the table is as follows:

Word 0	ending cycle * starting cycle
Word 1	first cycle * first rundate
Word N	nth cycle * nth rundate

The maximum value of n (number of entries) is currently 427D.

6.8.1.5 CYCLE CHECKING

Input file label checking occurs if and only if the cycle, in Format A, is supplied (through use of the JOBPRAM absolute element) and the input file FDU specifies the last five file I.D. characters as either nnnnC or Cnnnn (Sec. 8.1.1).

6.8.2 R B ELEMENT

The function of this RB element is to retrieve a one word job parameter from executive storage.

6.8.2.1 SPURT CALLING PROGRAM

- Call statement

RJP*JOBPRAM

or

EXECUTE*JOBPRAM

- Suggested XREF

JOBPRAM

- Data Stored

W(JOBPRAM)

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- Final register contents

A, Q, and B7 are destroyed.

ERROR\$ results if job parameter cannot be retrieved from executive storage.

A non-fatal version of RB JOBPRAM is available.

- Call Statement

RJP*JOBPRAMX

or

EXECUTE*JOBPRAMX

- Suggested XREFS

JOBPRAMX
JOBPRAM

- Data Stored

W(JOBPRAM)

- Final Register Contents

A contains the status of the RECEIVE without purge on key 70000.

Q and B7 are destroyed.

6.8.2.2 COBOL CALLING PROGRAM

- Call Statement

ENTER JOBPRAM

or

ENTER JOBPRAMX

- Data Stored

First word of blank COMMON.

6.9 TRACEEDIT - EXTRACT RECORDS

TRACEEDIT extracts a record or records from a standard Travelers 494 file based on criteria supplied by the user.

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6.9.1 INPUT

Travelers 494 file with filecode UI

Data card(s):

TRACE Card

c.c.1: TRACEoptionsba,b,c,d,e,fff,g, a through f

Options:

- E - Without the E option, the size of the output buffers is 753D words. The size of the input buffers and the work area will each be one-third of the remaining allocated core. The total allocated core is the embedded size (4015D) plus any #CORE provided by the user (modulo 100₈).

With the E option, the total buffer area is divided by 5 to provide equal input buffers, output buffers, and work area.

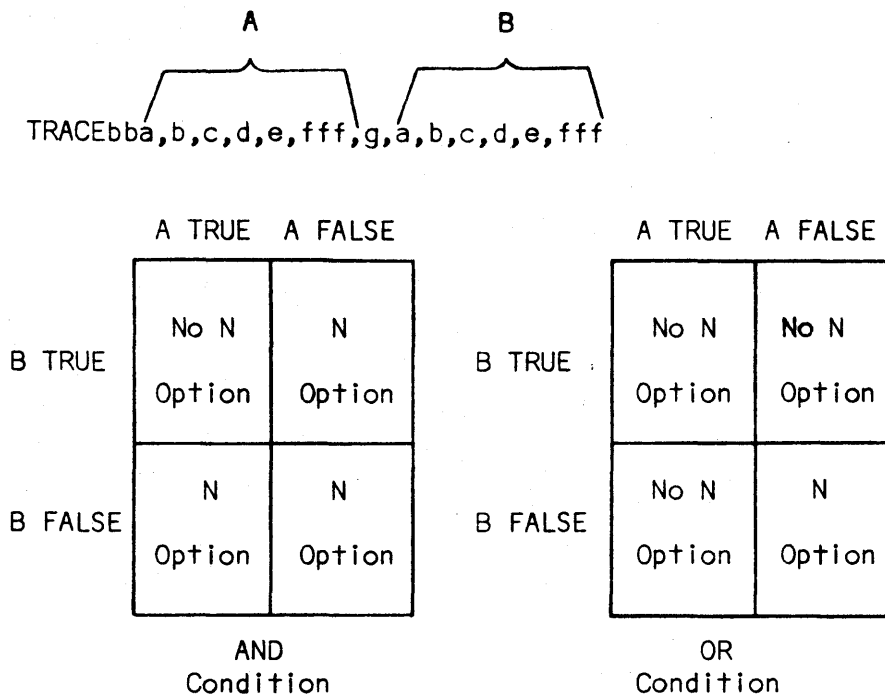
- P - This option provides a complete primary output report of extracted records identifying the selection criteria and the location of the record on the input and output files.

Without the P option, one page of the report will be provided. The report will only be printed if the "a" parameters are 0.

- N - Without the N option, TRACEEDIT extracts all records that meet the criteria specified on the TRACE card.

With the N option, only those records which do not meet the selection criteria are extracted. Record extraction is in accordance with the following rules:

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a through f parameters

Where:

- a = area code (see Section 6.9.4)
- b = increment to word containing the high order bit of the field to be checked
- c = starting bit of field to be checked (29D-0)
- d = number of bits in the field to be checked (1-30D)
- e = either the number of constants (f) to be checked against (maximum = 48D) or a 77. An e of 77 (base 8) means a between condition exists. (Record extracted if field to be tested is greater than or equal to the first constant and less than the second constant.)
- f = constants to be checked against (maximum = 48D)
- g = 1 for an AND condition
 2 for an OR condition
 If there is a (g) field, then a second (a) through (f) group is required.

NOTES: 1. (a) through (g) may be either octal or decimal. If decimal, the values must be followed by a D. The largest decimal value allowed is 536870911D.

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2. One continuation card is permitted. A single field may begin on the first TRACE card and extend to a second card if no blanks are inserted.
3. The AND condition means: Extract the record if the criteria of one from the first group is satisfied AND the criteria of one from the second group is satisfied.
4. The OR condition means: Extract the record if the criteria of one from the first group is satisfied OR the criteria of one from the second group is satisfied.
5. Only two distinct record fields can be tested on each run of TRACEEDIT. Additional fields can be tested by rerunning TRACEEDIT using the output from the first run as input to the next run (AND) or reusing the input (OR).
6. Presence or absence of a period after the last field is immaterial.
7. Leading zeros are not required.
8. Maximum standard allowable I/P record size is 7500.

BREAK card (Optional)

c.c.1: BREAKbbbbnnnnn

or

BREAK

Where:

nnnnn = a five-digit octal number with leading zeroes beginning in card column 11

TRACEEDIT extracts as many records of each type being sought as is specified by the BREAK card. If there is no specification on the BREAK card, TRACEEDIT extracts the sought record type until it encounters a record that does not satisfy the criteria. No BREAK card means that the output file is not closed until the end of the I/P file is reached.

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6.9.2 OUTPUT

Travelers 494 file with filecode U0

6.9.3 SAMPLE JOBSTREAM

```
#JOB...
#LINKbXb3,UJ
#END
#ASGbJH1bTAPE,UI,...
#ASGbJbMASS,U0,...
#GObbTRACEEDIT,3
TRACEbPEb0,3,23,200,4,1561,37001,
1601,105710
BREAKbbbbbb00001
#END
#MFDbCbU0,...
#FREEbbUI
```

In this example, one of each of the sought records is written, if found, to U0. Thus, U0 will contain four records if each type of record exists on UI. A primary output report will contain information concerning all the extracted records. The input buffers, output buffers, and work area will be equal in size.

Maximum standard I/P block size is 753D words. For larger I/P block sizes, a #CORE card should be used.

Without the E option, a #CORE card in the amount $3*(B-753D)$, where B is the size in question, should precede the #GO TRACEEDIT statement. Thus, for an I/P tape file with 1003D word blocks, the jobstream should be modified to:

```
#ASGbJbMASS,U0,...
#COREbb750D
#GObbTRACEEDIT,3
```

With the E option, a #CORE card in the amount $5*(B-753)$ should be used.

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6.9.4 CODE TABLE

<u>Code</u>	<u>Meaning</u>
00	Begin record
*01	History block
02	Agents record
03	Policy index
04	Policy area
05	Car 1
06	Car 2
07	Car 3
10	Car 4
11	General coverage
12	Special rating #1
13	Special rating #2
14	Special rating #3
15	Special rating #4
16	Special rating #5
17	Driver #1
20	Driver #2
21	Driver #3
22	Driver #4
23	Driver #5
24	Claim reg. #1
25	Claim reg. #2
26	Claim reg. #3
27	Claim reg. #4
30	Claim reg. #5
31	Edit error block
32	Billing block

* Codes 01 through 32 are for use with LP master file records only.

 NOTE: The primary output report will not be printed if either "a" parameter is anything other than 0 (Begin Record Code).

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6.10 SORCERER - CARD TO TAPE (SOURCE ELEMENT)

The SORCERER utility builds a tape file of source elements from card input without the restriction of a "#" in column 1.

6.10.1 FORMAT

```
#JOB
LINKbb3,UJ
#END
#ASGBHJbTAPE,0,,output tape number
GOBXbSORCERER,3
#END
#INbRPb0
#END
PRTb1bJOB
#END
#FIN
```

6.10.2 INPUT DECK

The input deck follows the Job Control deck. SORCERER reads from the card reader internally assigned to file 1.

```
#NVbbnnnnnnnnnnvvvvv      Source image cards for first element
#NVbbnnnnnnnnnnvvvvv      Source image cards for last element
#NV                          Two blank cards
```

Where:

nnnnnnnnnn = the element name left justified in columns 6-15

vvvvv = the element version left justified in columns
16-20

6.10.3 OUTPUT

SORCERER lists all element name/version cards (#NV) in primary output. The #IN lists all element/name versions actually generated; if any are missing that are listed by SORCERER no source images were supplied for that element. If any source image cards contain a "#" in column 1, ELEMENT CONTAINS JOB CONTROL CARDS is printed following the #NV for that element. This is valid for Job Control elements, but is invalid for elements to be used as data input.

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6.16.1.2 RESTRICTIONS

A maximum of three tape sequences are called, whether or not the tape reel numbers are specified.

The number of files saved is limited to 2500.

If both old and new parameter cards are needed for the same file in the list, the new parameter card must precede the old parameter card.

If a cataloged file contains a FILCOP data file and a preferred P-name is specified for restore, the preferred P-name must be the same one used when the file was created.

NOTE: If this step is not followed, restore catalogs the file as directed; FILCOP errors may result when the file is used as input to a program.

6.16.1.3 ERRORS

Parameter card errors are printed following the erroneous card.

Execution phase errors which apply to a specific file contain the user/file number involved.

FILCOP errors are displayed and terminated in the normal manner.

6.16.1.4 MESSAGES

All messages generated by MFDSAVE appear between #GO and #END.

All #ASG and #MFD messages appear between the "selected-at" stamp and the "completed-at" stamp.

NOTE: Program messages and system messages are intermixed and cause confusion if the P option is specified on the job card.

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After the close of the tape file, the following are displayed.

1. Number of files saved
2. Number of files not saved; probable cause
3. Drum usage by P-number and drum name
4. Systems messages followed by the program messages

6.16.2 MFDREST - RESTORE MASTER FILE DIRECTORY

MFDREST restores a series of specified cataloged mass storage files from tape(s). The files to be restored are specified by from 1 to n parameter cards.

Card input is fixed format with all fields right justified. Unused parameter fields must be left blank.

Standard FILCOP tape must be used with Travelers standard -T-format. The file name and age check appear on the MFDCTL card. Assignments, frees, acquires, and mass storage file code releases are performed internally by the program. Tape assignments and frees may optionally be performed in the job stream.

When a file is to be restored to disk because of either a specified PNAME in the file parameter card or because it was saved from disk, the user has the optional capability of specifying the PACKID's on which the file is to be restored.

6.16.2.1 INPUT

The following Job Control is input to MFDREST.

```
#ASGbHIJbTAPE,fc,,filename-1
#COREbLbn
#GOBHxbMFDREST
```

Tape Control Card
File Parameter Cards

```
#END
#FREEbbfc
```

Where:

n = the number of files that were saved multiplied by eight

The #ASG and #FREE cards are optional, but if the #ASG card is used, the #FREE must also be used. The file code (fc) and file name must agree with those on the MFDCTL card.

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Where:

xxxxxxx = the seven-digit input file ID

aabb = the two input file codes

c = the format parameter which can have the following values

0 = octal format, dump, check entire record (sort keys first)

1 = octal format, dump, check sort keys only

2 = octal format, no dump, check entire record (sort keys first)

3 = octal format, no dump, check sort keys only

4 = F.D. format, dump, check entire record (sort keys first)

5 = F.D. format, dump, check sort keys only

6 = octal format, dump, check to print terminator

7 = octal format, no dump, check to print terminator

8 = F.D. format, dump, check to print terminator

ddd(jjj) = the decimal increment of the word containing the high order bit of a sort key, 000-407, right-justified

ee(kk) = the decimal number of bits in the field to be checked, 01-99, right justified

ff(ll) = the decimal number of the high order bit, (30-1) in the word specified in ddd, right justified

A maximum of eight keys may be furnished.

It should be noted that the use of the old COMPARE data card, xxxxxx-T-aabb, will result in a default format parameter of 0 and an output similar to that of the old COMPARE.

Three output files are internally assigned (or may be assigned by the user) with file codes VX, VY, and VZ. VX contains records found on file code 1, but not on file code 2; VY contains records found on file code 2, but not on file code 1; VZ contains the records where sort keys compared but rest of record did not.

6.22.2 OUTPUT

Records that do not match are dumped to primary output under the following categories: (1) records found on file code 1, but not on file code 2; (2) records found on file code 2, but not on file code 1; and (3) unmatched records. The first eight words of the dump have a special meaning as follows:

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U(0): total record length
 L(0): file code of this record
 W(1), W(4), W(6): 0 unless other file is exhausted at this point; then 76767676
 W(2), W(3): input file ID
 W(5): input block number
 W(7): octal number of words that do not compare

6.22.3 CONTROL CARDS

```

#LINK 3,UJ
#END
#ASG JWH UN8C,filecode 1,,reel number
#ASG JWH UN8C,filecode 2,,reel number
#ASG JHW UN8C,VX,,OUTPUT1-0
#ASG JHW UN8C,VY,,OUTPUT2-0 optional
#ASG JHW UN8C,VZ,,OUTPUT3-0
#GO COMPARE,3
  
```

data card

#END

6.23 SELSORT - SORT PRINT FILES

The SELSORT utility accepts a 494 print file and sorts it by select code into the order specified by the input PRAM card.

6.23.1 FUNCTION

This utility is used to place files in the correct sequence for microfilming. It may also be used to sort multi-sequence, multi-select-code files to reduce operator intervention during a run of the PRINT utility.

6.23.2 JOB CONTROL

- Input PRAM Card

```
#PRAM AX a,b,c,d,e,f,g,g,...
```

Where:

a = seven-digit input file ID
 b = one - or two-character input file code
 c = seven-digit output file ID

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- d = one- or two-character output file code
- e = output hold: nnnnD or yyDDD
- f = decimal record length (no D), five digits, right-justified with leading zeros. 00000 = variable length file.
- g = up to 38D select codes, placed in the order in which they are to be sorted. A period or delta () should follow the last select code.

- Sample JCL

```
#JOB ...
#LINK X 3,UJ
#END
#ASG HIJ TAPE,b,,a-1 *
#ASG HIJ TAPE,d,,c-0
#PRAM AX ...
#GO SELSORT,3
#END
#FREE d
```

*The input file will be freed internally.

6.23.3 OUTPUT FILE

The output file contains all print records present on the input file whose select codes appear on the #PRAM card, sorted in the order specified. Note that any select codes present on the input file but not specified on the #PRAM card will not be present on the output file.

6.23.4 JOB STATISTICS

In addition to the normal Sort Statistics, the job prints three lines of statistics at EOJ, in the following format and order:

THESE CODES WERE ON THE TAPE BUT NOT THE PRAM CARD: aa bb ...

THESE CODES WERE NOT FOUND: cc dd ...

THESE CODES WERE SORTED: ee ff ...

6.23.5 MISCELLANEOUS

- This utility is a medium volume sort with an embedded bCORE L 10360, maximum input record size of 30D words, and link size of 10D words.

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- For fixed length files, the program modifies link size at execution time to eliminate core waste.
- Users may increase sort string length and data capacity by augmenting the CORE. Users may also override the sort size (D) option by specifying the C or E option on the #GO card.

6.24 UNVTIN - UNIVAC INPUT FILE TRANSLATION

The UNVTIN translation utility converts a tape resident standard IBM file to a UNIVAC 494 file.

6.24.1 INPUT

Input is a seven-track tape resident IBM formatted file with a maximum block size of 604 words. Records must have a fixed size and a multiple of five characters. Data size may be variable as described in Section 6.24.6.

6.24.2 CHECKPOINT/RESTART

When the input file to the utility exceeds a single tape reel, a checkpoint is taken at the end of processing each input sequence. Checkpoints are written to the UNIVAC 494 output file and are preceded and succeeded by standard BFH Bypass Sentinels. For multi-reel input files, the UNIVAC 494 file must be assigned to tape or the checkpoint will abort. Input assignments to UN6C, which cause problems on program restart and unnecessary facility allocation delays, should no longer be used. (See Section 6.24.3.)

6.24.3 JOB CONTROL

```
#JOB
#LINK X 03D,UJ
#END
#ASG EHJNUW TAPE,(b),,(a)-1*
#ASG HIJ TAPE,(d),,(c)51-0*
#CORE L nnnnD**
#GO UNVTIN,03D
DATA options (a),(b),(c),(d),(e),(f),(g),(h),(i)
```

Where:

```
options = E   for even-parity input data
              (no E - odd parity)
              V   for variable length records (see Section 6.24.6)
              (no V - fixed length records)
              P   for packed records (see Section 6.24.7)
```

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Y to continue processing when packed record exceeds size of workspace; a diagnostic is printed to inform the user of the number of such consecutive records

a = seven-character input file identification

b = one-letter input file code

c = five-digit job number (becomes first five digits of the output file number, last two digits = 51)

d = one-letter output file code

e = maximum acceptable age of the input file in decimal number of days (five digits)

f = number of decimal days to hold output file (PURGE - nnnnd)

g = input block size in decimal number of words (three digits)

h = output block size in decimal number of words (three digits)

i = input record length in decimal number of words (three digits)

* Reel numbers may be used in place of (a) and (c) only when running test jobs from an RJE terminal.

** A #CORE card is needed if nnnn is greater than 0 where $nnnn = 2*(g) + (i) + 2*(h) + (h) - 3$ for P option) - 3008D.

#END

#FREE I (b)

#FREE (d)

#FIN

6.24.4 OUTPUT

The output from the UNVTIN utility is a Travelers standard 494 file with a maximum block size of 604D words (including three block control words).

6.24.5 TRANSLATION TABLE

<u>EBCDIC Character</u>	<u>HEX Code</u>	<u>BCD Code</u>	<u>Octal Code</u>	<u>Fieldata Character</u>
A	C1	61	06	A
B	C2	62	07	B

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<u>EBCDIC Character</u>	<u>HEX Code</u>	<u>BCD Code</u>	<u>Octal Code</u>	<u>Fieldata Character</u>
C	C3	63	10	C
D	C4	64	11	D
E	C5	65	12	E
F	C6	66	13	F
G	C7	67	14	G
H	C8	70	15	H
I	C9	71	16	I
J	D1	41	17	J
K	D2	42	20	K
L	D3	43	21	L
M	D4	44	22	M
N	D5	45	23	N
O	D6	46	24	O
P	D7	47	25	P
Q	D8	50	26	Q
R	D9	51	27	R
S	E2	22	30	S
T	E3	23	31	T
U	E4	24	32	U
V	E5	25	33	V
W	E6	26	34	W
X	E7	27	35	X
Y	E8	30	36	Y
Z	E9	31	37	Z
0	F0	12	60	0
1	F1	01	61	1
2	F2	02	62	2
3	F3	03	63	3
4	F4	04	64	4
5	F5	05	65	5
6	F6	06	66	6
7	F7	07	67	7
8	F8	10	70	8
9	F9	11	71	9

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6.28 TAPECOPY - TAPE TO TAPE UTILITY

The TAPECOPY utility will copy any tape as well as perform special functions.

6.28.1 DATA CARDS

<u>c.c.1</u>	<u>c.c.10</u>	<u>c.c.15</u>	<u>Comment</u>
REW	a	b	Rewind tapes with file codes a and b.
COPY	a	b	Copy a to b up to and including first EOF.
COPYF	a	b	Copy a to b up to but excluding first EOF.
COPYA	a	b	Copy a to b up to and including first double EOF.
LIST	a		List a up to first EOF.
LISTA	a	b	List a up to first double EOF.
PASS	a		Skip to next EOF of a.
PASSA	a		Skip to next double EOF of a.
EOF		a	Write EOF to a.
COPYT	a	b	Data tape copy: checks purgeability; if T file, preserves correct reel number.
END			For orderly termination of TAPECOPY.

NOTES: 1. Column-15 entry is optional for REW, PASS, LIST; mandatory for EOF.

2. a and b represent any distinct one-character file codes.

6.28.2 JOB CONTROL

```
#LINK X 2,Y
#END
#ASG options TAPE,a,,reelnum-1 or -0
#ASG options TAPE,b,,reelnum-1 or -0
#GO TAPECOPY,2
```

data cards

```
END
#END
```

6.28.3 ERROR MESSAGES

All the error messages are self-explanatory except for the following:

1. BFH INP - SHOULD USE COPYT

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This message will appear if the input is a BFH tape and either COPY, COPYA, or COPYF option is used. TAPECOPY will abort; it should be retried using the COPYT option.

2. ADDITIONAL CORE REQUIRED

More core is needed to handle the block size. A #CORE card should be used to provide the additional core.

6.28.4 MISCELLANEOUS

TAPECOPY will write a nonpurgeable work tape. To be recognized as a work tape, the internal reel number must be 99xxx.

6.29 CARDLIST

The CARDLIST utility lists or lists and punches any deck of cards. The first card must be:

c.c.1: #LIST (list only)

or

c.c.1: #LISTDUP (list and duplicate)

The format for the job control is:

```
#LINK X 3,UJ
#END
#ASG CIN8,A
#GO CARDLIST,3
#END
#FIN
#LIST
```

deck to be listed

(#LISTDUP - deck to be punched and listed)

NOTES: 1. Generated listing is double spaced.

2. CARDLIST requires assigned card reader (file code A).
unlike the CARDLP utility (Section 6.19).