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TITLE   C528: PAPER TAPE CONVERSION
5 TRACK (SIRIUS) TO 8 TRACK (A.S.C.I.I.)

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SOURCE LANGUAGE   PAL-D

C528: PAPER TAPE CONVERSION – 5 TRACK (SIRIUS) TO 8 TRACK (A.S.C.I.I.)

<u>DECUS Program Library Write-up</u>   <u>DECUS No. 8-282</u>

ABSTRACT

5 track paper tape (Ferranti, Sirius) is translated into 8 track paper tape (ASCII). This is done by inverting the 5 track tape to make the 3 tracks and sprocket holes to coincide with the corresponding facilities of the 8 track tape readers of the PDP-8, in this case the high speed reader. It is important to ensure that alignment is maintained, hence reference in the specifications to a special attachment in the HSR pouch. This attachment merely guides the 5 track tape and any method which achieves this will do equally well.

<u>Punching Instructions (Creed)</u>

1. Run out a few inches of blank tape.

2. <u>Turn tape over</u> and mark with direction arrow ↓ .

3. Punch CR/LF.

4. Symbol equivalents where different:

<u>5 Track (Sirius)</u>	<u>8 Track (A.S.C.I.I.)</u>
≠	TAB
⌄v	;
⟶	BELL
x (multiply sign)	" (quotes)
n	' (single quote)
£	$

5. At end of a program or of data punch <u>at least 10 > symbols.</u>

6. Run out final few inches of blank tape.

<u>Tapes Required</u>

<u>Form of program</u> – The program is written in PDP-8 PALD Assembler language and will normally reside on the disk under the title C528. A master copy of the program is available.

<u>Form of data tape</u> – Any 5 Track tape complying with the requirements of Punching Instructions above.

<u>Operating Instructions</u>

Place 5 Track blank tape on the photo-electric sensor in the high speed reader (H.S.R.) with

the direction arrow uppermost and the sprockets correctly meshed in. The tape should be rolled, and special attachment used in H.S.R. pouch.

```
.LOAD
*IN-S:  C528
*
*OPT-1
ST = 200
↑ ↑(First up-arrow automatic.
|  |  Second up-arrow after CNTL P)
```
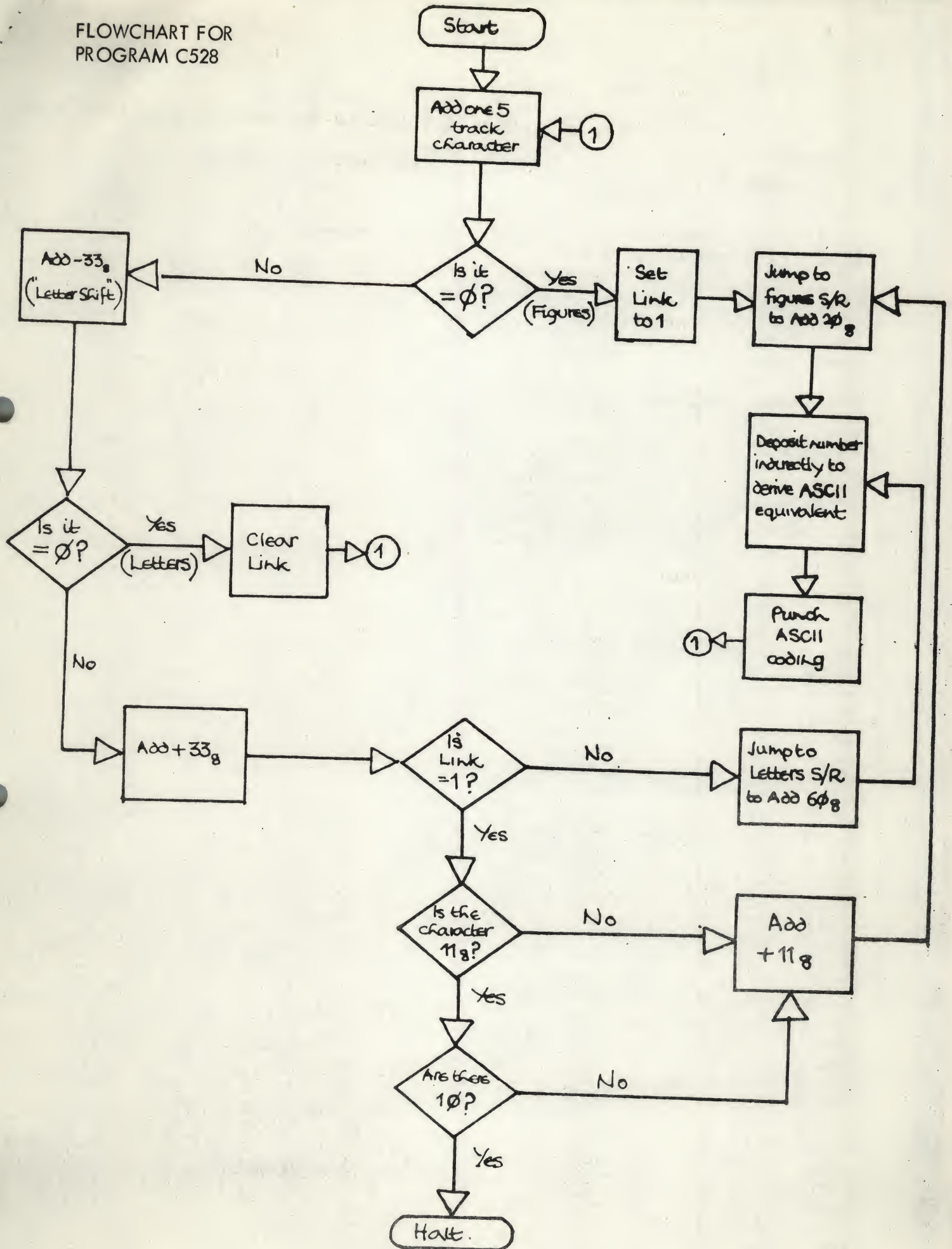
After the second up-arrow, switch on the high speed punch (H.S.P.) and then type CTRL P when the 5 Track tape will read in and 8 Track tape will be output. Ensure that the fan fold tape is folding properly or allow it to fall outside by lifting it out of the bin.

On completion of the conversion the 5 Track tape will stop reading in and should be removed. Run out blank 8 Track tape before removing from H.S.P.

With 7600 (Binary) toggled into the Switch Register (it will normally be in this condition) press LOAD ADD key then the START key when control will return to the monitor as indicated by a period . being typed by the teletype.

WARNING: 5 Track tapes should not be folded or stretched unduly by rolling too tightly, otherwise errors will occur in the conversion.

Start

Add one 5 track character ◁ ①

Is it = ∅?
— No → Add -33₈ ("Letter Shift")
— Yes (Figures) → Set Link to 1 → Jump to figures S/R to Add 2∅₈

Add -33₈ ("Letter Shift") →
Is it = ∅?
— Yes (Letters) → Clear Link → ①
— No → Add +33₈

Deposit number indirectly to derive ASCII equivalent → Punch ASCII coding → ①

Add +33₈ → Is Link = 1?
— No → Jump to Letters S/R to Add 6∅₈
— Yes → Is the character 11₈?
— No → Add +11₈
— Yes → Are there 1∅?
— No → (to Add +11₈)
— Yes → Halt.

```
                    *200
   0200   7300   BEGIN,  CLA CLL
   0201   1316           TAD SUBTR
   0202   3321           DCA KSUB
   0203   1317           TAD MCNT
   0204   3320           DCA CNTR
   0205   6026           PLS
   0206   6014           RFC
   0207   4261   BGLISN, JMS LISN
   0210   7440           SZA
   0211   5214           JMP.+3
   0212   4300           JMS FIGS
   0213   5215           JMP.+2
   0214   5217           JMP NONZER
   0215   4270   BGPNCH, JMS PUNCH
   0216   5207           JMP BGLISN


   0217   7041   NONZER, CIA
   0220   1327           TAD K33
   0221   7041           CIA
   0222   7440           SZA
   0223   5232           JMP RSTOR
   0224   3322           DCA L
   0225   4261           JMS LISN
   0226   7440           SZA
   0227   5231           JMP.+2
   0230   5300           JMP FIGS
   0231   5217           JMP NONZER
   0232   1327   RSTOR,  TAD K33
   0233   3324           DCA RESTR
   0234   1322           TAD L
   0235   7100           CLL
   0236   7010           RAR
   0237   7420           SNL
   0240   5255           JMP RSLTS
   0241   7300           CLA CLL
   0242   1324           TAD RESTR
   0243   7041           CIA            /ADD -11
   0244   1325           TAD K11        /
   0245   7041           CIA            /
   0246   7440           SZA            /IS IT ZERO?
   0247   5253           JMP.+4         /NO
   0250   2320           ISZ CNTR       /YES, ARE THERE 10?
   0251   5253           JMP.+2         /NO
   0252   7402           HLT            /YES
   0253   1325           TAD K11        /RESTORE NUMBER
   0254   5305           JMP SGIF
   0255   7300   RSLTS,  CLA CLL
   0256   1324           TAD RESTR
```

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```
0257   4311              JMS LETRS
0260   5215              JMP BGPNCH
0261   0000   LISN,      0
0262   6011              RSF
0263   5262              JMP.-1
0264   7200              CLA
0265   6016              RRB RFC
0266   0321              AND KSUB
0267   5661              JMP I LISN
0270   0000   PUNCH,     0
0271   6021              PSF
0272   5271              JMP.-1
0273   6026              PLS
0274   7200              CLA
0275   3323              DCA STORE
0276   3324              DCA RESTR
0277   5670              JMP I PUNCH

0300   0000   FIGS,      0
0301   3322              DCA L
0302   7120              STL
0303   7004              RAL
0304   3322              DCA L
0305   1330   SGIF,      TAD K60
0306   3323              DCA STORE
0307   1723              TAD I STORE
0310   5700              JMP I FIGS



0311   0000   LETRS,     0
0312   1326              TAD K20
0313   3323              DCA STORE
0314   1723              TAD I STORE
0315   5711              JMP I LETRS



0316   0037   SUBTR,     037
0317   7766   MCNT,      -12                /10 DECIMAL NUMBERS
0320   0000   CNTR,      0
0321   0000   KSUB,      0
0322   0000   L,         0
0323   0000   STORE,     0
0324   0000   RESTR,     0
0325   0011   K11,       11
0326   0020   K20,       20
0327   0033   K33,       33
0330   0060   K60,       60


                 *20
0020   0000   NBRS,      0000
0021   0320               0320
```

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0022	0310	0310
0023	0330	0330
0024	0304	0304
0025	0324	0324
0026	0314	0314
0027	0256	0256
0030	0302	0302
0031	0322	0322
0032	0312	0312
0033	0332	0332
0034	0306	0306
0035	0326	0326
0036	0316	0316
0037	0244	0244
0040	0301	0301
0041	0321	0321
0042	0311	0311
0043	0331	0331
0044	0305	0305
0045	0325	0325
0046	0315	0315
0047	0277	0277
0050	0303	0303
0051	0323	0323
0052	0313	0313
0053	0240	0240
0054	0307	0307
0055	0327	0327
0056	0317	0317
0057	0377	0377
0060	0000	0000
0061	0260	0260
0062	0270	0270
0063	0242	0242
0064	0264	0264
0065	0207	0207
0066	0273	0273
0067	0256	0256
0070	0262	0262
0071	0200	0200
0072	0275	0275
0073	0253	0253
0074	0251	0251
0075	0266	0266
0076	0240	0240
0077	0215	0215
0100	0261	0261
0101	0276	0276
0102	0211	0211
0103	0271	0271
0104	0250	0250
0105	0265	0265
0106	0212	0212
0107	0247	0247
0110	0252	0252
0111	0263	0263

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```
0112    0255            0255
0113    0240            0240
0114    0267            0267
0115    0257            0257
0116    0254            0254
0117    0377            0377
'BS
.
```