APPROVED BY
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IDENTIFICATION

Self Loading Binary Punch Routine, MU BPU3

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PURPOSE

To punch out a block of N words from magnetic core storage onto absolute binary cards. The loading address of the words is the same as the location of the words in storage.

RESTRICTIONS

This program overwrites memory location 0 - 40_{10} (0 - 50_8). The state of the console and index registers is not preserved.

This program cannot be used to punch itself out of the memory.

METHOD

Accuracy: Exact.

USAGE

Self-Loading: Place cards in the reader. Press LOAD CARDS button. At end-of-file the program will halt on HPR 32767_{10} (77777_8). Enter MQ with R (the initial location of the block of words in storage) in the address and N (the number of words in the block) in the decrement. Press the START button. When punching of the cards is completed the program stop on HPR 32767_{10} (77777_8) is again executed. Another block of words may then be punched onto cards by entering into the MQ register the appropriate numbers as described above.

Space Required: 0 - 40_{10} (0 - 50_8)

CODING INFORMATION

Timing: The punch operates at full speed (100 cards/min.).

If identifying punches in 9L1 - 9L12 are desired, card 41 of the MU BPU3 deck may be replaced by a card containing any octal number having digits in these positions. In the deck supplied to SHARE, card 41 is zero so that no identifying punches are generated. If this card were made

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then MURA binary cards (having 9L6 - 9L9 punches) would be the output.

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        REM BPU3 MURA SELF LOADING BINARY PUNCH                    MU   BPU3
BPU3    LXA 0,4          SET IR4=0                                 BPU3 0001
        CPY 2,4          COPY NEXT WORD                            BPU3 0002
        TXI 1,4,-1       ADD-1 TO IR4                              BPU3 0003
        TRA 6            HERE IF END OF FILE, TO HALT              BPU3 0004
        RCD              HERE IF END OF RECORD, SELECT READER      BPU3 0005
        TRA 1            TO COPY NEXT WORD                         BPU3 0006
        HPR 32767        HALT TO PUT R, N IN MQ                    BPU3 0007
        STQ 3                                                      BPU3 0008
        CLA 3                                                      BPU3 0009
        PDX 0,1          SET IR1=N                                 BPU3 0010
        STO 4            R TO 9L DECREMENT                         BPU3 0011
        ARS 18           N TO ADDRESS OF AC                        BPU3 0012
        ADD 4            R+N IN ADDRESS OF AC                      BPU3 0013
        STA 17           PLANT ADDRESS FOR CKS LOOP                BPU3 0014
        WPU              SELECT PUNCH                              BPU3 0015
        LXA 9,2          SET IR2=0                                 BPU3 0016
        PXD 0,0          CLEAR AC                                  BPU3 0017
        ACL 0,1          FORM CHECK SUM                            BPU3 0018
        TXI 19,2,1       ADD 1 TO IR2                              BPU3 0019
        TXH 21,2,21      TEST FOR FULL BINARY CARD                 BPU3 0020
        TIX 17,1,1       REPEAT UNTIL DONE                         BPU3 0021
        SLW 5            PARTIAL CHECK SUM TO 9R                   BPU3 0022
        PXD 0,2          V = NO. OF WORDS ON CARD                  BPU3 0023
        STD 4            V T  9L DECREMENT                         BPU3 0024
        ARS 18           SHIFT V TO ADDRESS OF AC                  BPU3 0025
        ADD 4            R+V IN ADDRESS OF AC                      BPU3 0026
        STA 34           PLANT ADDRESS FOR COPY LOOP               BPU3 0027
        CLA 40           IDENTIFICATION                            BPU3 0028
        ORS 4            COMPLETE 9L                               BPU3 0029
        CAL 4            ADD 9L TO                                 BPU3 0030
        ACL 5            PARTIAL CHECK SUM                         BPU3 0031
        SLW 5            TOTAL CHECK SUM TO 9R                     BPU3 0032
        CPY 4            COPY 9L                                   BPU3 0033
        CPY 5            COPY 9R                                   BPU3 0034
        CPY 0,2          START OF COPY LOOP                        BPU3 0035
        TIX 34,2,1       LOOP RE-ENTRY, OUT AFTER V PASSES         BPU3 0036
        CLA 34           R+V TO                                    BPU3 0037
        STA 4            NEXT 9L ADDRESS                           BPU3 0038
        TIX 14,1,1       REPEAT UNTIL DONE                         BPU3 0039
        TRA 6            TO HALT                                   BPU3 0040
        HTR 0            CONSTANT                                  BPU3 0041
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