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ABSTRACTING U2A WIND CHARTS USING THE MODEL II DIGITIZER

by

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Introduction

The digitizer is an instrument used for the rapid and efficient conversion of graphic records into a digital format suitable for input to a computer. The strip charts from the U2A wind system will now be abstracted using the digitizer interfaced with a 029 IBM keypunch. As the wind directions and speeds are digitized they will be automatically punched on cards, so there will no longer be any need to copy data on form 2306.

Procedure

Before commencing the digitizing of a strip chart the operator should proceed with the following:

1. A header card for the month's data is punched on the keypunch using the following format:

   Column

   1 and 2 - Number of "days" in month

   4 to 13 - The "month" being digitized

   15 to 18 - The "Year"

   20 to 53 - The name of "Station" and "Province"

   55 to 59 - The speed in "knots"

   An example of a header card (Fig. 1) is attached for your convenience.

2. The digitizer is placed in an "ON" position by depressing power button located on the lower right hand corner of the digitizer table.

3. The program card (Fig.2) is then mounted on the program drum and placed in the program unit of the keypunch.

4. At all times be sure there are sufficient data cards in the card hopper of the keypunch.

5. Place the card punch in the upper case mode by moving the lever to the left which is located under the unit containing the program drum.

6. Activate the first card in a ready position for punching, following this as the chart is digitized, punch cards will automatically fall into position for punching.

In digitizing the U2A chart, four punch cards are required for every 24 hours of data. The procedure to follow is to digitize the first 12 hours of wind speed for the day and then the corresponding 12 hours of wind direction.

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Then proceed to the 13th hour and digitize the last 12 hours of wind speed for the day and then the 12 hours of wind directions. In digitizing the following steps should be followed at all times:

1. Only the "Y" or the "UP/Down" axis of the digitizer is required so the left hand side of the console the "Z" or zero key (Fig.3) is fully depressed. To ensure that it is operational the "X" portion of the "NIXIE DISPLAY" (Fig.3) should be displaying four "5's" and should always remain in this position while digitizing the chart.

2. The U2A chart is mounted on the chart rolls (attached to digitizer table) so that the chart can be wound from right to left, the wind speed portion of the chart on the bottom. Before each 24 hour period is digitized make sure it is lined up with the bottom of the plexiglass on the digitizer table.

3. The first four columns of each card will be used to identify the data. This is to be punched manually using the digitizer console (Fig.3) in the following format:

   Columns

   1 and 2 - the "date" of the month.

   3 - card number, "1 or 2" depending on what 12 hour period of data. The first 12 hour period will be numbered "1" whether wind speed or direction. Card number "2" will be the last 12 hours of data whether speed or direction.

   4 - Figure "8" will be used to identify wind speed and a "9" when identifying wind direction.

   5 - A blank to be punched using space bar on the digitizer console.

   An example of the cards for a 24 hour period of wind speed and direction is attached (Fig. 4 & 5).

4. Line up the cursor (digitizer table) with 0/zero wind speed and depress the right hand portion of the Z/zero key on the digitizer console (Fig.3). This will set the digitizer on zero. Four zeros (0000) should show up on the "Y" portion of the "NIXIE DISPLAY" on the console.

5. Proceed with the digitizing of the first 12 hours of wind speed by moving cursor upwards until the wind speed for the hour is encountered doing a 1 hour, 10 minute or 2 minute mean for the hour whatever mean is required.

6. When the mean has been determined log the information on the card by using the foot pedal or the "LOG" key on the console and the data will be automatically punched onto the card.

7. Then proceed to the next hour until the 12 hours of wind speed has been digitized.

8. When the wind speed is calm four 0's (0000) will have to be either logged or manually punched using console. Preferably logged by setting your cursor on zero, since if you do it manually you have to be positive to put a space after the zeros.

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9. When the wind speed is missing,then by using the console you have to manually punch on the card four 9's (9999) and a space. This holds true also for wind direction, but doesn't have to be both, e.g., if only speed is missing, then enter 9's only for speed or vice versa.

10. After the 12 hours of wind speed have been digitized move the cursor upwards to the wind direction beginning at hour one (1).

11. Place the cursor on the bottom N (north, 360^{o}) line direction and depress the right hand portion of Z or zero key on the console (Fig.3). The digitizer is now set on zero and proceed with the digitizing of wind directions.

12. As in digitizing wind speed select what mean you want and proceed as in 5 and 6.

13. If the wind speed was calm, the corresponding wind direction does not have to be entered in the form of zero's. This will be taken care of in the computer program, when a calm wind speed is encountered it will automatically disregard the direction for that hour.

14. After completing the first 12 hours of wind speed and direction go to the 13th hour and follow the same directions as above.

Comments

Please note the position of the cursor may be controlled by direct movement of the cursor or by the X and Y axis handwheels. Make sure the axis locks are in the FREE position before attempting to move the cursor.

If a mean wind speed or direction has been erroneously logged, remove the card containing the error and retrace that 12 hour period where the error has occurred.

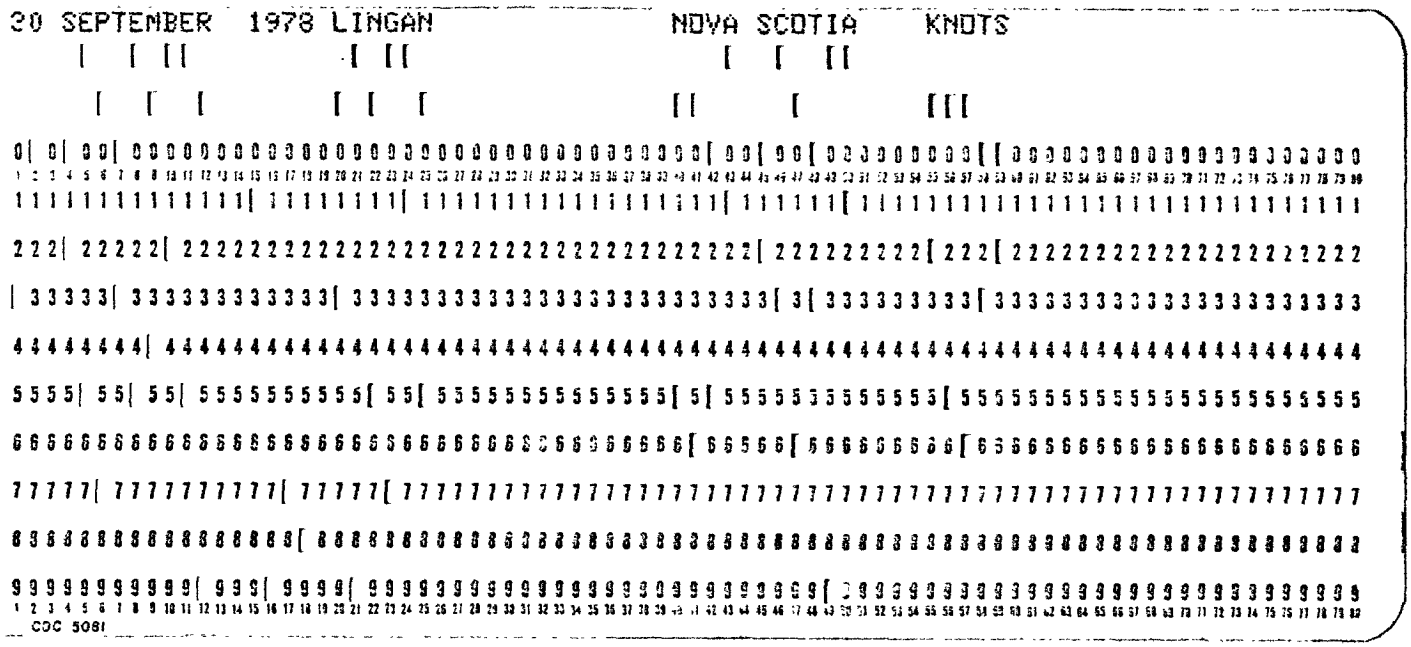


Fig.1: Header Card

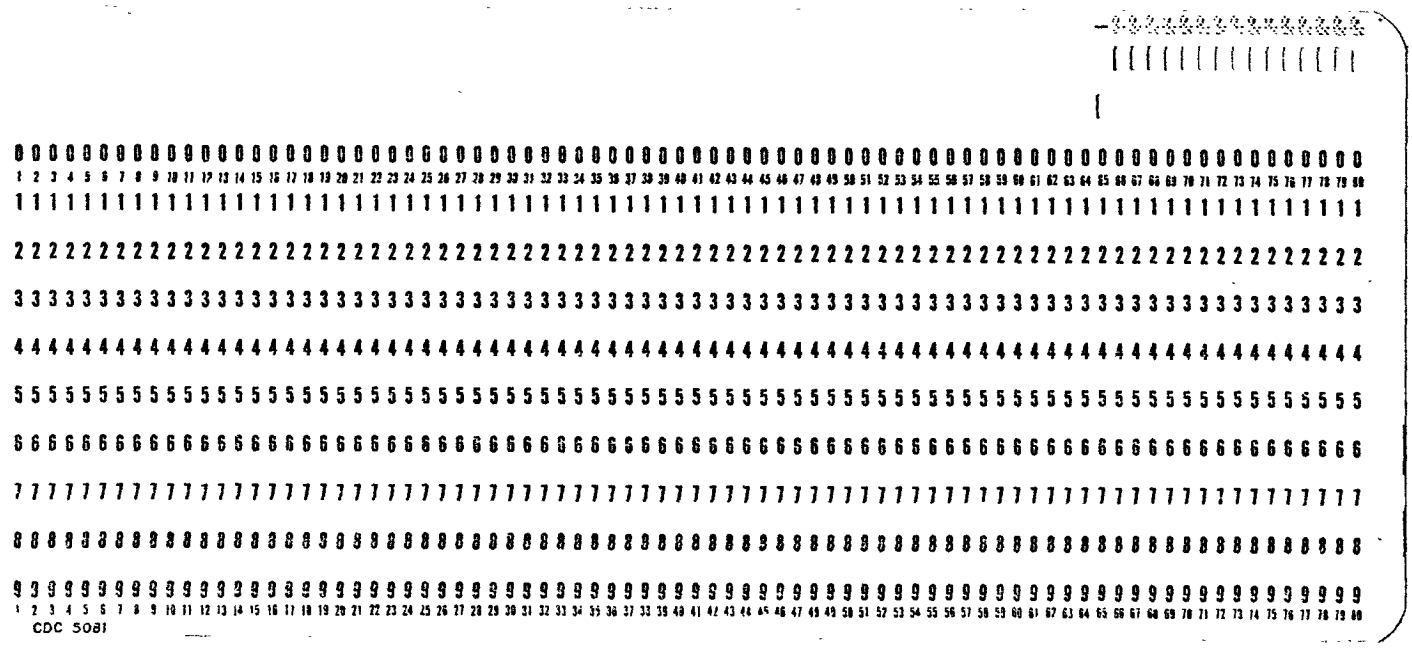
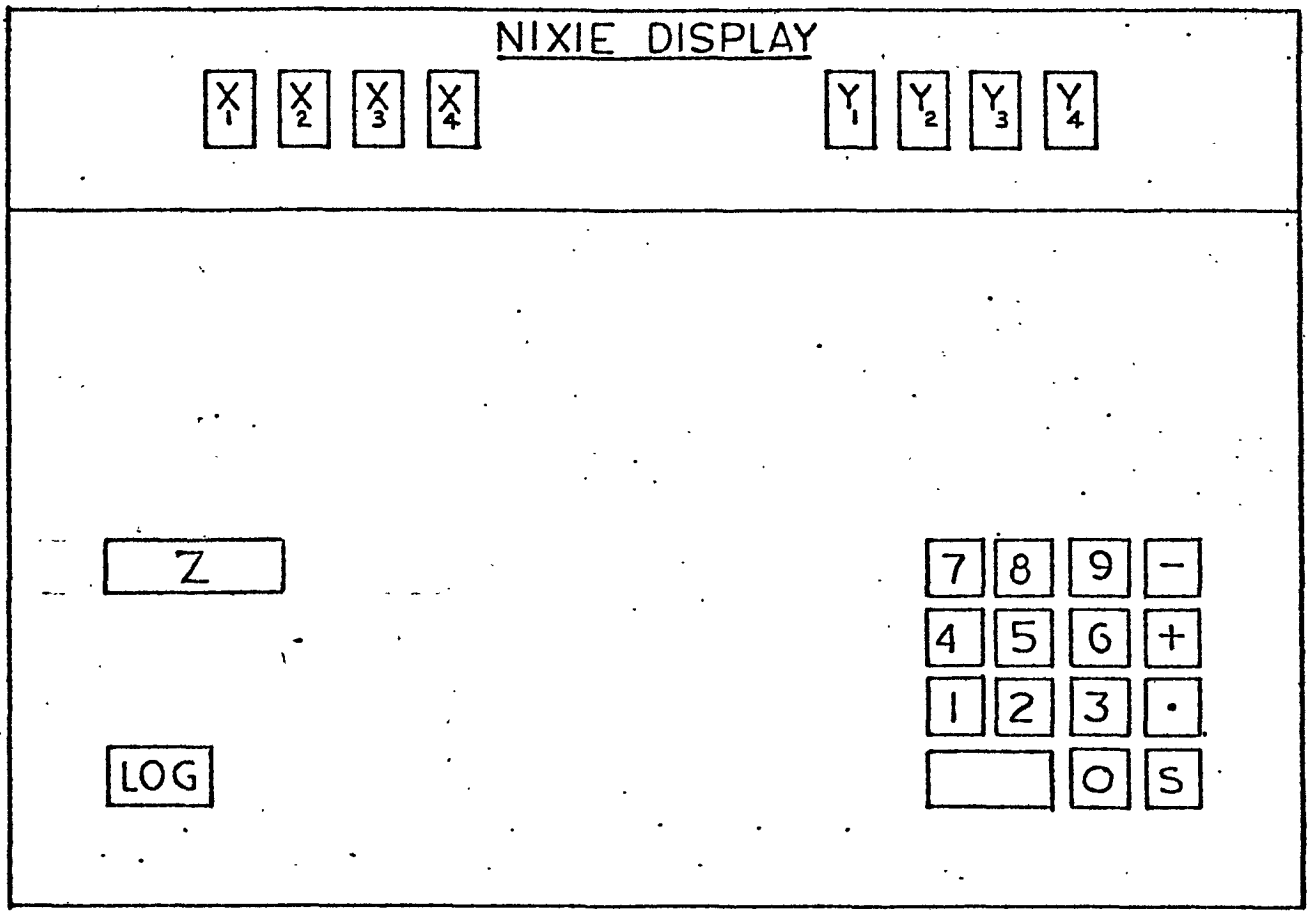


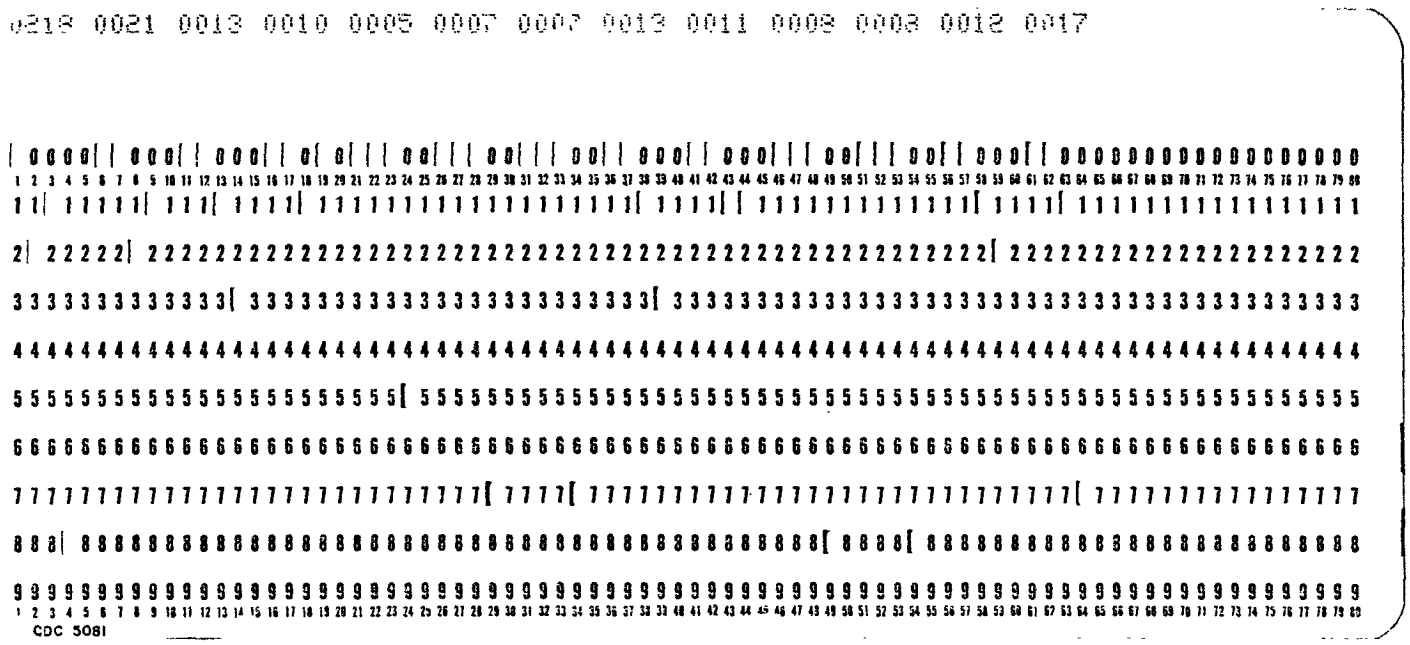
Fig.2: Program Card



KEYBOARD CONTROL CONSOLE

CARD PUNCH OUTPUT

Fig.3: Ditigizer control console



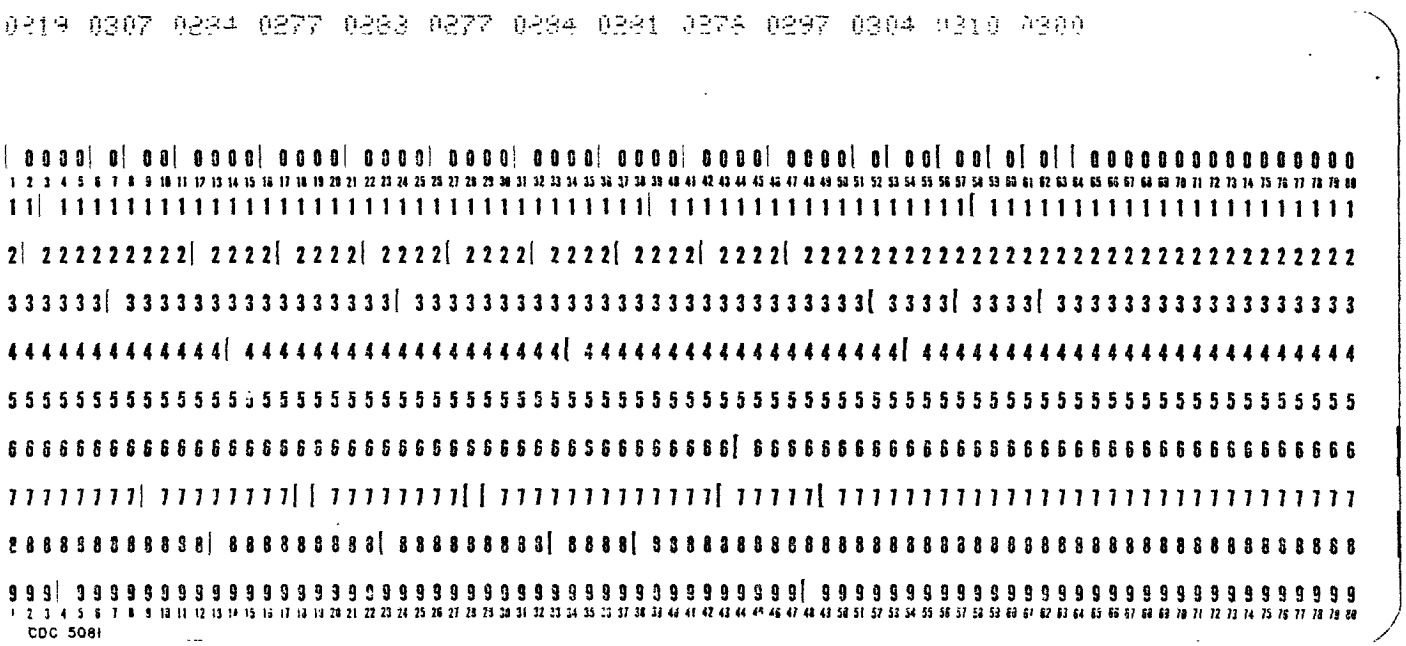


Fig.4: Data Card

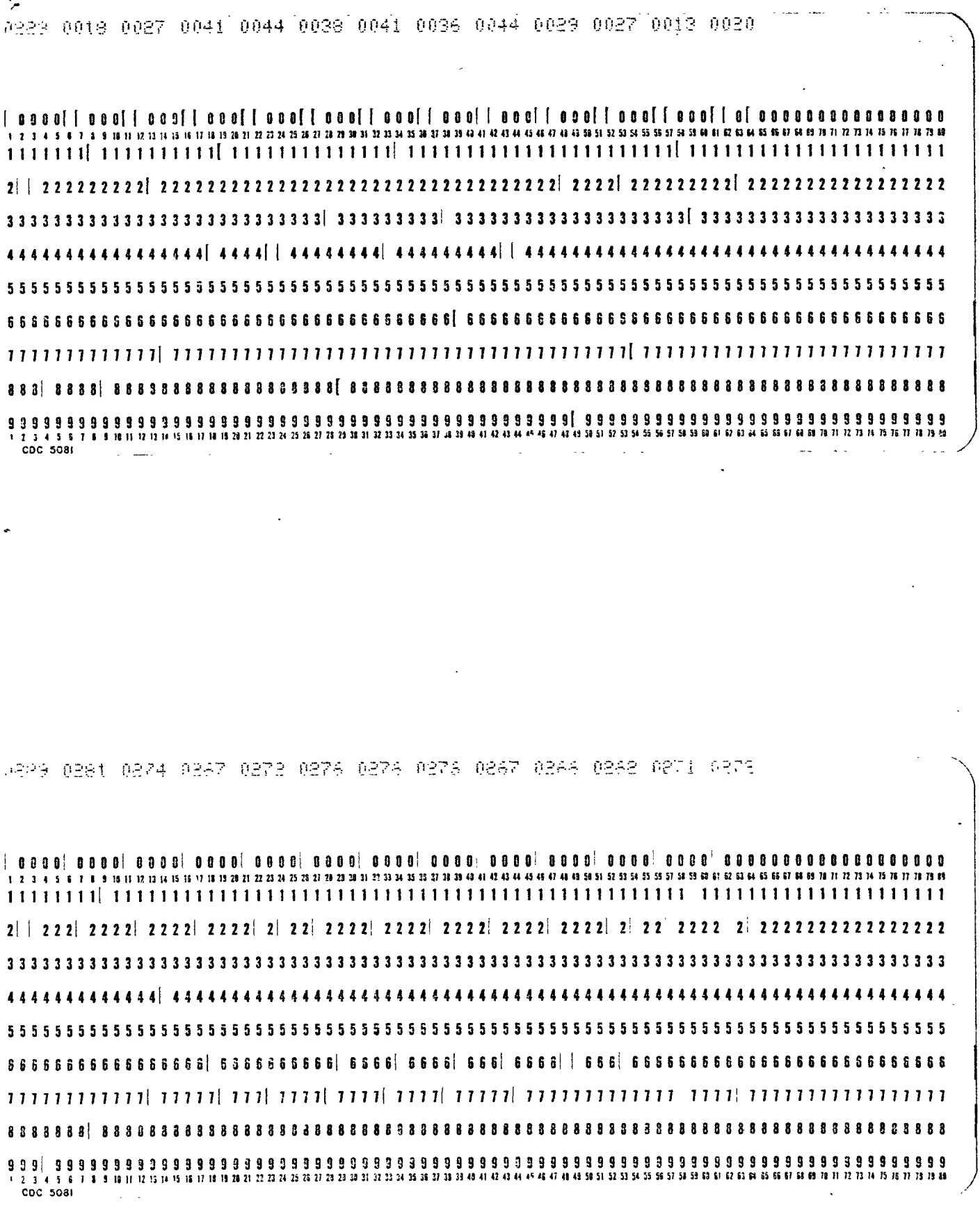


Fig.5: Data card