

# TROJAN



**CADMASTER<sup>TM</sup>**  
**AMSTRAD**  
**CPC 464-664-6128**  
**(cassette based)**

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## USER INSTRUCTIONS

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PLEASE READ CAREFULLY

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The TROJAN CADMASTER package provides the hardware and software (in un-protected cassette format) to enable you to add the flexibility of a light pen to your own programs. The on-screen instruction pages demonstrate a few typical applications.

As an added extra, the package includes a simple 'screen designer' program using the light pen to perform numerous shape plotting, drawing, colour changing and filling operations.

Lastly, a simple strategy game (NIM) is provided, for which the player uses the light pen to make his/her choices in the game.

### **Connecting-up the light pen....**

The light pen should be plugged into the JOYSTICK socket on your computer (the joystick socket is marked **USER PORTS** on the CPC464).

### **Loading the software....**

**NOTE** - The software provided will not operate if your AMSTRAD computer is fitted with a serial interface or speech synthesiser.

If you are using the PEN with the CPC464, simply carry out the following instructions:

- 1 Insert the software tape provided into the cassette deck, and ensure that the tape is rewound.
- 2 Hold down the **[CTRL]** key then press the small **[ENTER]** key on the numeric keypad.
- 3 Press **PLAY** on the cassette deck, then any other key on the computer. The software will load in approximately four minutes.

**NOTE** - If you are loading the software from an **EXTERNAL** cassette deck, you should enter the command **!TAPE** before carrying out instructions 1 to 3 above.

## **When the program is loaded....**

You will see an opening menu of four options on the screen:

INSTRUCTIONS ■

MODE 0 ■

MODE 1 ■

NIM GAME ■

Using the light pen itself, select one of the options from the menu by placing the tip of the pen over the small white cursor which is next to your chosen option.

If you wish to further familiarise yourself with the LP-1, select the INSTRUCTIONS option. Note that you will hear a short 'beep' when an option has been successfully selected.

To advance to the next instruction page, simply place the pen over the cursor at the bottom right of the screen. At the end of the instructions, you will be returned to the opening menu.

## **Back to the opening menu....**

Selecting the options MODE 0 or MODE 1 from the opening menu enables you to enter the screen-designer mode in either 16 colours (MODE 0) or 4 colours (MODE 1).

## **The main menus....**

After you have selected MODE 0 or MODE 1, you will be taken to a main menu of drawing functions. There are in fact 2 main menus and you can switch between them by selecting the MENU 2 or MENU 1 option at the bottom of the screen.

## **Menu 1 options available....**

### **CHANGE PEN**

This option allows you to change the current pen used to draw on the screen. Each pen has a different colour associated with it. Mode 0 has 16 pens, and Mode 1 has 4 pens.

## **CHANGE INK**

This option allows you to change the ink colour in any of the pens except numbers 0 and 1 which are always black and white respectively. There are 27 colours available.

## **BOX**

- 1 Select **BOX** option.
- 2 Place the tip of the pen at the position on the screen where you require one corner of the box.
- 3 Press the space bar for a few seconds. A small flashing cursor will appear on the screen. (This can be repositioned by use of the cursor keys if required.)
- 4 Place the tip of the pen at the position you require the opposite corner of the box, then press the space bar again.
- 5 Press the space bar once again and the box will be drawn on the screen at the desired location.

You may press the space bar and repeat instructions 2 to 5 as often as required.

To delete the last box drawn, press the **[DEL]** key.

To leave the **BOX** option, press the **[ENTER]** key twice.

## **CIRCLE**

- 1 Select **CIRCLE** option.
- 2 Place the tip of the pen at the position on the screen where you require the centre of the circle.
- 3 Press the space bar. A small flashing cursor will appear on the screen. (This can be repositioned by use of the cursor keys if required.)
- 4 Place the tip of the pen at the position you require the circumference of the circle, then press the space bar again.
- 5 Press the space bar once again and the circle will be drawn on the screen at the desired location.

You may press the space bar and repeat instructions 2 to 5 as often as required.

To delete the last circle drawn, press the **[DEL]** key.

To leave the **CIRCLE** option, press the **[ENTER]** key twice.

## **HAND DRAW**

**NOTE** - For best results, use Mode 1 and ensure that the display brightness is at maximum.

- 1 Select **HAND DRAW** option.
- 2 Place the tip of the pen at the position on the screen where you require drawing to commence.
- 3 Hold down the space bar. A flashing cursor will appear on the screen under the tip of the pen.
- 4 You may draw by moving the pen smoothly over the screen at a speed that allows the cursor to follow the pen. Drawing will stop when the space bar is released. You may re-commence drawing from any point by repeating instructions 2 to 4.  
To delete the last item drawn, press the **[DEL]** key.
- 5 To leave the **HAND DRAW** option, press the **[ENTER]** key.

## **FILL AREA**

- 1 Select **FILL AREA** option.
- 2 Place the tip of the pen within the area to be filled (which must be an enclosed drawn area).
- 3 Press the space bar. A small flashing cursor will appear on the screen. (This can be repositioned by use of the cursor keys if required.)
- 4 Press the space bar again and the area will be filled by the current pen, on the current paper.  
You may press the space bar and repeat instructions 2 to 4 as often as required.  
To delete the last fill, press the **[DEL]** key.
- 5 To leave the **FILL AREA** option, press the **[ENTER]** key twice.

**NOTE** - The area to be filled must be in the current paper colour. You may abort the operation during filling by pressing the space bar.

## **DRAW LINE**

- 1 Select **DRAW LINE** option.

- 2 Place the tip of the pen at the position on the screen where you require the line to start.
- 3 Press the space bar. A small flashing cursor will appear on the screen. (This can be repositioned by use of the cursor keys if required.)
- 4 Place the tip of the pen at the position you require the other end of the line, then press the space bar again.
- 5 Press the space bar once again and the line will be drawn on the screen at the desired location.

You may press the space bar and repeat instructions 2 to 5 as often as required.

To delete the last line drawn, press the **[DEL]** key.

To leave the **DRAW LINE** option, press the **[ENTER]** key twice.

## **BANDING**

This option allows you to draw a succession of joined lines.

- 1 Select **BANDING** option.
- 2 Place the tip of the pen at the position on the screen where you require banding to start.
- 3 Press the space bar. A small flashing cursor will appear on the screen. (This can be repositioned by use of the cursor keys if required.)
- 4 Place the tip of the pen at the position you require the next point of the banding, then press the space bar again.
- 5 Press the space bar once again and a line will be drawn on the screen between the last two points.

You may press the space bar and repeat instructions 4 and 5 as often as required.

To delete the last line drawn, press the **[DEL]** key.

To leave the **BANDING** option, press the **[ENTER]** key twice.

## **RAYS**

This option allows you to draw a number of lines which meet at the same point.

- 1 Select RAYS option.
- 2 Place the tip of the pen at the position on the screen where you require the centre of the rays.
- 3 Press the space bar. A small flashing cursor will appear on the screen. (This can be repositioned by use of the cursor keys if required.)
- 4 Place the tip of the pen at the position you require the end of the ray, then press the space bar again.
- 5 Press the space bar once again and the ray will be drawn on the screen at the desired location.

You may press the space bar and repeat instructions 4 and 5 as often as required.

To delete the last ray drawn, press the [DEL] key.

To leave the RAYS option, press the [ENTER] key twice.

## **TRIANGLE**

- 1 Select TRIANGLE option.
- 2 Place the tip of the pen at the position on the screen where you require the corner of the triangle.
- 3 Press the space bar. A small flashing cursor will appear on the screen. (This can be repositioned by use of the cursor keys if required.)
- 4 Repeat instructions 2 and 3 for the second and third corners of the triangle.
- 5 Press the space bar and the triangle will be drawn on the screen at the desired location.

You may press the space bar and repeat instructions 2 to 5 as often as required.

To delete the last triangle drawn, press the [DEL] key.

To leave the TRIANGLE option, press the [ENTER] key twice.

## **MENU 2**

This option allows you to switch over to Menu 2.

## **Menu 2 options available....**

### **TEXT**

This option allows you to insert text on the display screen.

- 1 Select **TEXT** option.
- 2 The text cursor will appear at the top left corner of the screen, and can be moved to any position by use of the cursor keys.
- 3 Move the cursor to the position on the screen where you require the text to start.
- 4 Type in text at the keyboard.

You may repeat instructions 3 and 4 as often as required.

To delete the last word printed, press the **[DEL]** key.

To leave the **TEXT** option, press the **[ENTER]** key.

### **COPY**

This option allows you to copy one part of the screen to another.

- 1 Select **COPY** option.
- 2 Place the tip of the pen at the bottom left hand corner of the area on the screen to be copied.
- 3 Press the space bar. A small flashing cursor will appear on the screen. (This can be repositioned by use of the cursor keys if required.)
- 4 Place the tip of the pen at the top right hand corner of the area to be copied.
- 5 Press the space bar. A small flashing cursor will appear on the screen. (This can be repositioned by use of the cursor keys if required.)
- 6 Press the space bar. The border colour will change to red.
- 7 Place the tip of the pen at the bottom left hand corner of the area where you wish the copy to appear.
- 8 Press the space bar. A small flashing cursor will appear on the screen. (This can be repositioned by use of the cursor keys if required.)



- 9 Press the space bar once again. The border will change to yellow and copying will take place at the required location on the screen. The current paper colour will be ignored.
- 10 You may press the space bar and repeat instructions 7 to 9 as often as required.
- 11 To leave the COPY option, press the [ENTER] key twice.

## **MAG.FACTOR**

This option allows you to select the magnification factor used during copying (the COPY option).

- 1 Select MAG . FACTOR option.
- 2 Select the desired magnification factor.

## **NEW SCREEN**

This option allows you to clear the screen to the current paper colour.

- 1 Select NEW SCREEN option.
- 2 Confirm that you indeed wish to start a new screen by selecting YES.

## **PAPER**

This option allows you to select the paper colour for a new screen (the NEW SCREEN option).

- 1 Select PAPER option.
- 2 Select the paper colour by placing the tip of the pen on the white cursor next to the desired colour on the menu.

## **ZOOM**

This option allows you to 'zoom in' on an area of the screen.

- 1 Select ZOOM option.
- 2 Place the tip of the pen at the bottom left hand corner of the area to be zoomed.
- 3 Press the space bar. A box will appear around the area to be zoomed. (The box can be repositioned by use of the cursor keys if required.)

- 5 Press the space bar. The border colour will change to yellow and zooming will commence.
- 6 After a short period, the zoomed area will appear on the screen.
- 7 A flashing cursor will appear at the top left corner of the screen which can be moved around by use of the cursor keys.
- 8 To FORCE (which means plot) or ERASE the area under the cursor, press the [COPY] key.
- 9 To switch between FORCE and ERASE, press the [DEL] key.
- 10 When you have finished plotting or erasing, press the space bar. The border colour will change to yellow, and the plotted area will be transposed onto the normal sized display.
- 11 You may repeat instructions 3 to 10 as often as required.
- 12 To leave the ZOOM option, press the [ENTER] key twice.

## **PRINTER**

This option allows you to 'dump' the screen display (graphics and text) out to an AMSTRAD DMP-1 printer (which is equipped with graphics printing facilities). Other makes of printer cannot be used. Note that the display contents are printed sideways in order to more accurately reproduce the aspect ratio of the screen. Areas of the screen written in Paper 0 are not printed.

- 1 Select PRINTER option.
- 2 Select print size. Choose LARGE or SMALL for correctly proportioned output; choose HEIGHT\*2 or WIDTH\*2 for double-height or double-width output.

**NOTE** - If you have not connected your printer to the computer, you will not be able to break from the program using the [ESC] key - make sure that your printer is connected and switched on.

- 3 To abort during printing, hold down the space bar until printing stops.
- 4 To leave the PRINTER option, select RETURN from the menu of print options.

## **SAVE**

This option allows you to save the current screen to cassette or disc.

- 1 Select **SAVE** option.
- 2 Confirm that you indeed wish to save the screen by selecting **YES**.
- 3 Select either **DISC-DRIVE** or **TAPE-DECK** (do not select disc if you are using a CPC464 without a DDI-1 disc drive connected).
- 4 If you selected **TAPE-DECK**, press **RECORD** and **PLAY** on the cassette deck.
- 5 Enter your chosen filename for the screen to be saved. If the file is being saved to disc, ensure that the filename conforms to **AMSDOS** standards.
- 6 If you selected **TAPE-DECK**, you will be given the option to save at high speed (**SPEED WRITE 1**). If you wish to do so, select **YES**, otherwise select **NO**.

**NOTE** - The screen is saved (tape or disc) using the following format:

- (i) Data file is opened (your chosen filename plus **.DAT** suffix).
- (ii) Current screen mode setting is saved.
- (iii) Current colour number settings for pens 0 to 15 are saved.
- (iv) Current paper number setting is saved.
- (v) The data file is closed and a screen dump file is opened (your chosen filename plus **.SRN** suffix).
- (vi) The screen memory is saved as a binary file.

The save and load routines are at lines **11000** to **11290** in the program supplied.

## **LOAD**

This option allows you to load a screen from cassette or disc.

- 1 Select **LOAD** option.
- 2 Confirm that you indeed wish to load a screen by selecting **YES**.

- 3 Select either **DISC-DRIVE** or **TAPE-DECK** (do not select disc if you are using a CPC464 without a DDI-1 disc drive connected).
- 4 If you selected **TAPE-DECK**, press **PLAY** on the cassette deck.
- 5 Enter the filename of the screen to be loaded.

## **RETURN**

This option allows you to return to the opening menu.

- 1 Select **RETURN** option.
- 2 Confirm that you indeed wish to return to the opening menu by selecting **YES**.

**NOTE** - The **RETURN** option will erase the current screen.

## **Using discs....**

To convert this program from cassette to disc:

- 1 Switch the computer to cassette (if necessary) by entering the command **I TAPE**
- 2 Load the program from cassette
- 3 When the program has loaded, press the **[ESC]** key twice
- 4 Switch the computer to disc by entering the command **I DISC**
- 5 Type in the command **GOTO 40000**
- 6 The program will then be saved to disc

## **A few hints....**

Keep the tip of your light pen clean. When using the pen, always point it directly at the screen, holding it as you would a normal pen or pencil. Do not apply undue pressure on the tip of the pen - a light touch is all that's required.

The **PROGRAM-PACKAGING-INSTRUCTIONS** and **LIGHTPEN DESIGN** with **CADMASTER** are **STRICTLY** copyright and must not be copied in any way without the written permission of **TROJAN PRODUCTS**.