THE VALIANT TURTLE ON THE BBC

The Valiant Turtle can run from most microcomputers. It is
interfaced to various LOGOs and LOGO-type languages.

The performance of the Valiant Turtle is affected by the
software with which it is used. To obtain optimum performance,
you should use a full implementation of LOGO.

These instructions cover the operation of the Valiant Turtle
on the BBC Model B and BBC Master with:

1)   Logotron LOGO and Serial Interface

2)   Logotron LOGO and Parallel Interface

3)   LSL (LOGOsoft) LOGO

4)   Acornsoft LOGO

5)   DART

6)   Valiant Mover Program.

We have recommended the adoption of a one-centimetre Turtle
step as standard. You will find, however, that both the
Logotron Serial Interface and DART default to a Turtle step of
one millimetre. Using the software, in most cases you can
alter the set Turtle step to your preference.

Unlike some other computer equipment, the Valiant Turtle has a
VERY PRECISE START-UP PROCEDURE. It is important to follow the
instructions given step by step unless you are very confident
in using the equipment. This is because the Valiant Turtle is
remote-controlled. The Communicator has to be synchronised with
the computer if the Turtle is to receive intelligible signals.

If the Turtle does not respond after you have carried out the
various instructions IN THE CORRECT ORDER, consult the Trouble-
shooting section at the back of the Valiant Turtle User Guide.

The Valiant Turtle on the BBC

I N D E X

1   Switch the computer OFF.

2   Position the 4 small coloured switches on the side of the Communicator
as follows (see Fig. 1):

Switches 1 & 2 ON

Switches 3 & 4 OFF
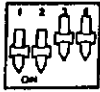
Fig. 1   Fig. 2   Fig. 3

3   Set both switches underneath the Turtle to OFF (see Fig 2).

4   Insert the end of the Communicator lead which corresponds to Fig. 3 into
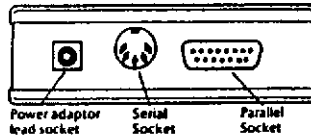the Serial socket on the Communicator (see Fig. 4).

Fig. 4

Power adaptor   Serial   Parallel
lead socket   Socket   Socket

Fig. 5

5   Insert the other end of the Communicator lead (Fig. 5)
into the RS423 socket at the back of the microcomputer.

IMPORTANT NOTE: (a)   If you are using a BBC 'B' computer, FACE THE NOTCH
TOWARDS THE RGB SOCKET (on the left hand side when viewed from the rear of
the computer).
                  (b)   If you are using a BBC MASTER computer, FACE THE NOTCH
AWAY FROM THE RGB SOCKET (on the right hand side when viewed from the rear of
the computer).
                  Care MUST be taken since it is possible for the lead to be
plugged in the wrong way round, when no signals will be transmitted to the Turtle.

6   Switch ON the computer.

7   Plug the Valiant power adaptor into your mains supply and turn on the
power.

8   Push the jack plug on the end of the power adaptor's lead firmly into
the power socket at the rear of the Communicator (see Fig. 4).

9   If the red light behind the red Communicator screen does not illuminate,
consult the Troubleshooting section of the Valiant Turtle User Guide.

10 You may switch on your Turtle any time from now.

11 Type *LOGO and press the RETURN key.

12 Insert EITHER the Valiant BBC software disc 29903 issue J or later OR
Logotron LOGO Extension disc (from your LOGO pack) into the disc drive.

13 If you have inserted the Valiant disc, type USE "VALIANT and press the
RETURN key.

    If you have inserted the Logotron Extension disc, type USE "uVAL and
press the RETURN key.

14 Your Turtle system is now ready for use.

Remember your special Floor Turtle primitives in the Serial Interface: FLOOR,
SCREEN, BOTH, SCALE, SETSCALE. The turtle's steps are set at 1mm. Typing
SCALE tells you this is 3 units. So typing SETSCALE 30, for example, will
set the turtle's steps at 1 centimetre.

1   Switch the computer OFF.

2   Position the 4 small coloured switches on the side of the Communicator
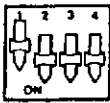as follows (see Fig. 1):

Switch 1 OFF

Switches 2, 3 & 4 ON

Fig. 1

Fig. 2   Fig. 3

3   Set both small switches underneath the Turtle to OFF (see Fig.2).

4   Insert the end of the Communicator lead with 15 holes (see Fig. 3) into
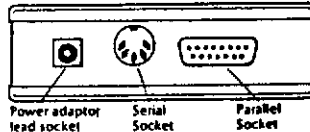the D-shaped ("Parallel") socket on the Communicator (see Fig. 4).

Fig. 4

Power adaptor   Serial   Parallel
lead socket   Socket   Socket

5   Insert the other end of the Communicator lead into the socket marked
'User Port' located underneath the computer.

6   Switch ON the computer.

7   Plug the Valiant power adaptor into your mains supply and turn on the
power.

8   Push the jack plug on the end of the power adaptor's lead firmly into
the power socket at the rear of the Communicator (see Fig. 4).

9   If the red light behind the red Communicator screen does not illuminate,
consult the Troubleshooting section of the Valiant Turtle User Guide.

10   You may switch on your Turtle any time from now.

11   Type *LOGO and press the RETURN key.

12   Insert the Valiant BBC software disc 29903 OR the Logotron LOGO
Extension disc (from your LOGO pack) into the disc drive.

13   If you have inserted the Valiant disc, type USE "VALIAN1 and press the
RETURN key.

     If you have inserted the Logotron Extension disc, type USE "uV.PARA
* and press the RETURN key.

14   Your Turtle system is now ready for use.

The special Valiant floor turtle primitives in the Parallel Interface are:
TURTLEON (floor and screen turtles follow LOGO commands), TURTLEOFF (screen
turtle only), SCALE (tells you the size of the turtle's steps in millimetres),
and SETSCALE (allows you to set the size of the turtle's steps in whole
millimetres - decimal places are not effective).

* Note: If you have an early version of the Logotron Extension disc, you
  may find that you need to type USE "uVAL to find the Valiant Parallel
  Interface. On later versions, uVAL is used only for the Serial Interface.

3) <u>Starting the Valiant Turtle with LSL (LOGOsoft) LOGO</u>

Note: You will need the Valiant BBC Serial Interface Kit.

1   Switch the computer OFF.

2   Position the 4 small coloured switches on the side of the Communicator
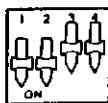as follows (see Fig. 1):

Switches 1 & 2 ON

Switches 3 & 4 OFF

Fig. 1   Fig. 2   Fig. 3

3   Set both switches underneath the Turtle to OFF (see Fig. 2).

4   Insert the end of the Communicator lead which corresponds to Fig. 3 into
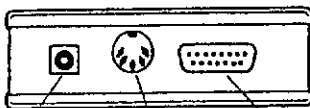the Serial socket on the Communicator (see Fig. 4).

Fig. 4

Fig. 5

Power adaptor   Serial   Parallel
lead socket   Socket   Socket

5   Insert the other end of the Communicator lead (Fig. 5) into the RS423
socket at the back of the microcomputer.

IMPORTANT NOTE: (a)   If you are using a <u>BBC 'B'</u> computer, FACE THE NOTCH
<u>TOWARDS THE RGB SOCKET</u> (on the left hand side when viewed from the rear of
the computer).

                  (b)   If you are using a <u>BBC MASTER</u> computer, FACE THE NOTCH
<u>AWAY FROM</u> THE RGB SOCKET (on the right hand side when viewed from the rear of
the computer).

                  Care must be taken since it is possible for the lead to be
plugged in the wrong way round, when no signals will be transmitted to the Turtle.

6   Switch ON the computer.

7   Plug the Valiant power adaptor into your mains supply and turn on the
power.

8   Push the jack plug on the end of the power adaptor's lead firmly into
the power socket at the rear of the Communicator (see Fig. 4).

9   If the red light behind the red Communicator screen does not illuminate,
consult the Troubleshooting section of the Valiant Turtle User Guide.

10   You may switch on your Turtle any time from now.

11   Type *LOGO and press the RETURN key.

12   If you have LSL LOGO version 1.0, insert the Valiant BBC software disc
29903 issue I or later into the disc drive.

      If you have LSL LOGO version 1.2 or later, insert the LOGOsoft Toolkit
Disc 1 (comes with your LOGO pack) into the disc drive.

13   If you have inserted the Valiant disc, type *EXEC LSL and press RETURN.

      If you have inserted the LOGOsoft disc, EITHER type *EXEC VALOBJ
OR hold down the SHIFT key and press the BREAK key (called "SHIFT-BREAK").

14   Your Turtle system is now ready for use.

Your special floor turtle commands added to LOGO are: TURTLE OFF (stops
the floor turtle moving), TURTLE ON (starts it again), and UNITS (turtle's
steps are 1cm - or UNITS 10. Size of step can be changed by typing UNITS
and a new number.).

4)   Starting the Valiant Turtle with Acornsoft LOGO

Note: You will need the Valiant BBC Parallel interface Kit.

1   Switch the computer OFF.

2   Position the 4 small coloured switches on the side of the Communicator
as follows (see Fig. 1):

Switches 1 & 2 OFF

Switches 3 and 4 ON

Fig. 1   Fig. 2   Fig. 3

3   Set both small switches underneath the Turtle to OFF (see Fig. 2).

4   Insert the end of the Communicator lead with 15 holes (see Fig. 3) into
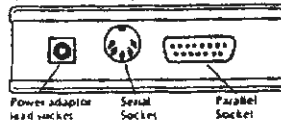the D-shaped ("Parallel") socket on the Communicator (see Fig. 4).

Fig. 4

Power adaptor   Serial   Parallel
lead socket   Socket   Socket

5   Insert the other end of the Communicator lead into the socket marked
'User Port' located underneath the computer.

6   Switch ON the computer.

7   Plug the Valiant power adaptor into your mains supply and turn on the
power.

8   Push the jack plug on the end of the power adaptor lead firmly into the
power socket at the rear of the Communicator (see Fig. 4).

9   If the red light behind the red Communicator screen does not illuminate,
consult the Troubleshooting section of the Valiant Turtle User Guide.

10   You may switch on your Turtle any time from now.

11   Type *LOGO and press the RETURN key.

12   Insert the disc provided with Acornsoft LOGO into the disc drive.

13   Type LOAD "VALIANT and press the RETURN key. Type FLOOR and press RETURN.

14   Your Turtle system is now ready for use.

For details of the special Valiant floor turtle options, see your Acornsoft
LOGO manual.

Using Multiple Turtles with Acornsoft LOGO

You can program up to 4 Valiant Turtles independently using Acornsoft
LOGO. See Chapter 12 in the Acornsoft LOGO manual for information.

Follow the instructions above, but set the small switches underneath each
Turtle as follows (see Fig. 5):

Fig. 5

5)   Starting the Valiant Turtle with DART

Note: You will need the Valiant BBC SERIAL Interface Kit.
         You will need a BASIC 2 chip in your BBC Model B computer unless
         you have Valiant BBC software disc 29903 (or 29908) ISSUE K or
         later.

TO MAKE A VALIANT TURTLE DRIVER FILE ON THE DART DISC

(a) If you have DART version 2.4 or later versions -

     Type CHAIN "DART" . DART will then ask you to select which floor
     turtle you want to use. Select 3   for the Valiant Turtle and follow
     the instructions in the program. You will finish up with a file
     saved onto disc or tape called DART3 .

(b) If you have DART version 2.3 -

     Type LOAD "DART" . Then type

     22020A%=13:CALL&FFEE:PROCdy(100):A%=85:CALL&FFEE:PROCdy(100):A%=0:
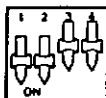   CALL&FFEE:A%=-p%*16:CALL&FFEE:*FX3,0

     then type SAVE "DART" . Now follow the instructions above for DART
     version 2.4 or later versions.

(c) If you have DART version 2.2 or earlier versions, you will not be able
     to drive the Valiant Turtle from your copy of DART. Please contact
     The Advisory Unit at Hatfield, Herts., telephone (07072) 65443, who
     will advise you about obtaining an up to date version.

The steps outlined above need only be performed once. When they have been
completed and when you subsequently want to use the Valiant Turtle, please
follow the instructions overleaf (pages 8 and 9).

TO START UP THE TURTLE SYSTEM

1   Switch the computer OFF.

2   Position the 4 small coloured switches on the side of the Communicator as follows (see Fig. 1):

Switches 1 & 2 ON

Switches 3 & 4 OFF
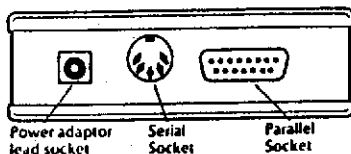
Fig. 1   Fig. 2   Fig. 3

3   Set both switches underneath the Turtle to OFF (see Fig. 2).

4   Insert the end of the Communicator lead which corresponds to Fig. 3 into the Serial socket on the Communicator (see Fig. 4).

Fig. 4

Power adaptor   Serial   Parallel
lead socket   Socket   Socket

Fig. 5

5   Insert the other end of the Communicator lead (Fig. 5) into the RS423 socket at the back of the computer.

IMPORTANT NOTE: (a) If you are using a BBC 'B' computer, FACE THE NOTCH TOWARDS THE RGB SOCKET (on the left hand side when viewed from the rear of the computer).
                   (b) If you are using a BBC MASTER computer, FACE THE NOTCH AWAY FROM THE RGB SOCKET (on the right hand side when viewed from the rear of the computer).
                   Care must be taken since it is possible for the lead to be plugged in the other way round, when no signal will be transmitted to the Turtle

6   Switch ON the computer.

7   Plug the Valiant power adaptor into your mains supply and turn on the power.

8   Push the jack plug on the end of the power adaptor's lead firmly into the power socket at the rear of the Communicator (see Fig. 4).

9   If the red light behind the red Communicator screen does not illuminate, consult the Troubleshooting section of the Valiant Turtle User Guide.

10   You may switch on your Turtle any time from now.

11   Insert the DART disc into the disc drive.

12   Type CHAIN "DART3" and press the RETURN key.

13   When you wish to start the floor turtle, type TURTLE ON and press the RETURN key.

14   Your Turtle system is now ready for use.

This software was written before any full LOGOs for the BBC were available. The program is limited and is not recommended for long-term use. It will move the Valiant Turtle, however, in the absence of an alternative.

Note - You will need the BBC SERIAL Interface kit.
        Unless you have Valiant BBC software disc 29903 (or 29908) issue K or later, you will need a BASIC 2 chip in your BBC Model B computer.

1   Switch the computer OFF.

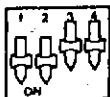2   Position the 4 small coloured switches on the side of the Communicator as follows (see Fig. 1):

Switches 1 & 2 ON

Switches 3 & 4 OFF

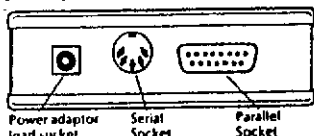Fig. 1   Fig. 2   Fig. 3

3   Set both switches underneath the Turtle to OFF (see Fig. 2).

4   Insert the end of the Communicator lead which corresponds to Fig. 3 into the Serial socket on the Communicator (see Fig. 4).

Fig. 4

Fig. 5

Power adaptor   Serial   Parallel
lead socket   Socket   Socket

5   Insert the other end of the Communicator lead (Fig. 5) into the RS423 socket at the back of the computer.

IMPORTANT NOTE: If you are using a BBC Model B computer, FACE THE NOTCH TOWARDS THE RGB SOCKET (on the left hand side when viewed from the rear of the computer).
                      If you are using a BBC Master computer, FACE THE NOTCH AWAY FROM THE RGB SOCKET (on the right hand side when viewed from the rear of the computer).
                      Care must be taken since it is possible for the lead to be plugged in the wrong way round, when the Turtle will not respond to commands.

6   Switch ON the computer.

7   Plug the Valiant power adaptor into your mains supply and turn on the power.

8   Push the jack plug on the end of the power adaptor lead firmly into the power socket at the rear of the Communicator (see Fig. 4).

9   If the red light behind the red Communicator screen does not illuminate, consult the Troubleshooting section of the Valiant Turtle User Guide.

10   You may switch on your Turtle any time from now.

11   Insert the Valiant BBC Software disc (or tape) into the disc drive (or tape recorder).

12   Type CHAIN "TURTLE" and press the RETURN key. With the disc version, you can save time by holding down the SHIFT key and then pressing BREAK (called "SHIFT-BREAK").

13   The screen will tell you to check the Communicator and Turtle are both switched on. Then press the RETURN key.

14   Your Turtle system is now ready for use.   (More details overleaf/..)

USING THE VALIANT MOVER PROGRAM

Note: With the disc version of the Valiant Mover Program if you have any problems keep the disc in the disc drive, type HELP and then press the RETURN key.

Once you have the Valiant Mover Program started, you will see a menu of commands at your disposal. This is a guide to the use of these commands.

FORWARD (FD) and BACK (BK)	Both of these commands need to be given a number. This number represents the distance in 'turtle steps' that the Turtle will move. You need to put a space between the command and the number, e.g. FD 10
RIGHT (RT) and LEFT (LT)	These two commands require a number which is the number of degrees that the Turtle is to turn. As with FORWARD and BACK, you must put a space between the command and the number, e.g. RT 90
PENUP (PU) and PENDOWN (PD)	These commands make the Turtle raise and lower its pen. They do not need any other information and so should be entered on their own.
SCALE	This command allows you to change the size of the Turtle's steps (set automatically to 10mm, 1cm). Just enter the word SCALE on its own and the computer will tell you what the current size of a Turtle step is and give you the opportunity to change it if you wish.
QUIT	When you have finished using the Turtle, type QUIT. The computer will ask if you are sure you want to QUIT. Enter YES or you will be returned to the menu. The command QUIT allows you to leave the Valiant Mover Program. It will erase all the procedures in the computer's memory.
HELP (disc only)	HELP will tell you how to get information on any command.
HELP (disc only)	HELP followed by a command will give you information on how to use that command, e.g. HELP FD will tell you how to use FORWARD.
EDIT (ED) and TO	It is possible to define a 'procedure'. This is a way of stringing several commands together. To write a procedure, type TO followed by the name of your procedure, or EDIT followed by the name of the procedure.
	This will get you into the 'Editor'. The Editor will allow you to enter text using the alphabetic and numeric keys, and to change text using the cursor keys and DELETE key. In the Editor, the DELETE key deletes the character behind the cursor.
	The backslash key can be used to insert spaces into your procedure.

CURSOR KEYS   ← ↑ ↓ →

BACKSLASH KEY   \

USING THE VALIANT MOVER PROGRAM (/continued)

Your procedures should comprise one command to a line and
may not exceed the size of the screen.

When you have finished writing or editing your procedure,
press f0, or if you want to leave the Editor without
saving the procedure, press f9.

If subsequently you wish to change your procedure, you can
do so by entering
EDIT and the procedure name.

Note: (i) To repeat a routine a number of times, type
           REPEAT space number space $<$ space routine space $>$
           e.g.

           TO SQUARE
           REPEAT 4 $<$ FD 10 RT 90 $>$

           You must insert a space before and after each
           angular bracket.

           (ii) To input a variable to a procedure, type :
           and the variable name in the title line of the
           procedure, e.g.

           TO SQUARE :SIDE
           REPEAT 4 $<$ FD :SIDE RT 90 $>$

           SQUARE will then require a numeric input, e.g.
           SQUARE 20

           You may use more than one input with a procedure, e.g.
           TO POLY :NUMBER :SIDE :ANGLE

PROCS (PR)   This command gives a list of the procedures in the
                  computer's memory. It does not need any other information.

ERASE (ER)   This command needs the name of a procedure to follow it,
                  e.g. ERASE SQUARE. ERASE will make the computer forget
                  that procedure.

                  Note: Use this command with care. Once erased, a
                  procedure cannot be got back again.

SAVE   This command will allow you to save either a specific
                  procedure (e.g. SAVE SQUARE), or all the procedures
                  currently in the computer's memory , on disc or tape
                  under the chosen file name (e.g. SAVE FILENAME).

LOAD   This command will allow you to load the procedure you
                  have saved on disc or tape back into the computer, e.g.
                  LOAD SQUARE , or all the procedures saved under the
                  chosen file name, e.g. LOAD FILENAME.

                  Note: Any procedure(s) already of that file name in the
                  computer's memory will thereby be erased.