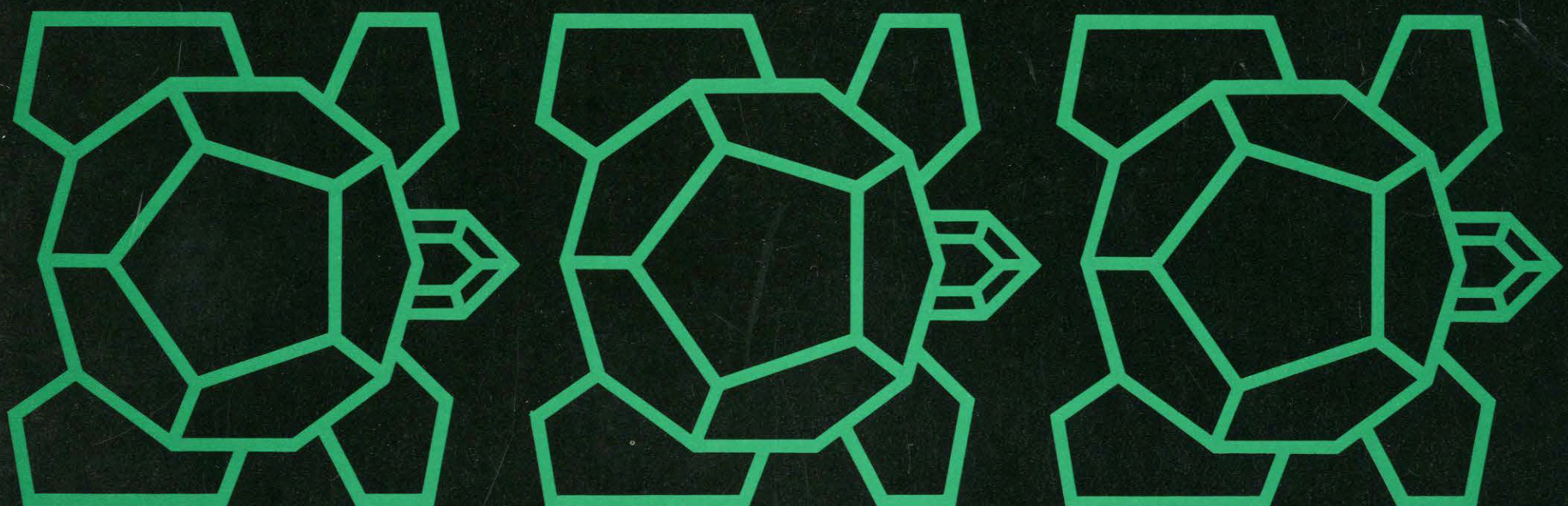
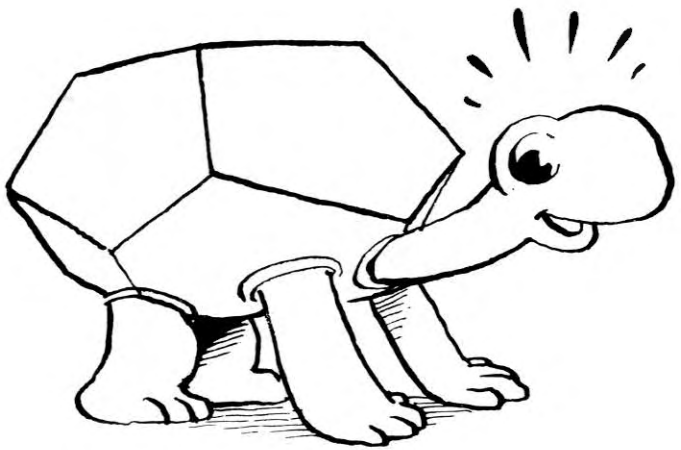
VALIANT TURTLE ...USER GUIDE



INTRODUCTION



The cybernetic "turtle" is now accepted as the ideal tool for introducing children to computer programming. It is the gateway into the powerful programming language LOGO, which is becoming accepted as standard in primary education.

The Valiant Turtle is the world's first mass-produced, remote-controlled Turtle. It performs in a range of activities impossible for a "cord controlled" Turtle.

Infra-red signals from the computer are converted into moves, turns and pen action by the Turtle's logic control.

The Valiant Turtle is powered by two stepper motors which can be adjusted to give maximum accuracy during drawing.

The ten rechargeable nickel-cadmium batteries can be recharged by plugging a power adaptor into a socket on the Valiant Turtle.

The Valiant Turtle's two illuminated eyes serve as power indicators, going out before any other function fails.

The Valiant Turtle can be interfaced with most popular microcomputer systems. Valiant provide "Turtle Graphics" software to drive the Turtle and an interface disc to enable it to run from popular versions of LOGO. Some manufacturers incorporate driver routines for the Valiant Turtle in their versions of LOGO.

The Valiant Turtle draws with all types of Berol pen except the Fineline and the Highlighter.

The Valiant Turtle moves in units of 1cm but can be reprogrammed with the Valiant Turtle Graphics software to move in units of 1", 1mm or 1m.

CONTENTS

UNPACKING

The Valiant Turtle comes ready for use with any compatible micro-computer system that has a disc drive or cassette recorder.

The complete Turtle package comes in two boxes and one plastic wallet. The three packages can be bought separately.

The smaller box and wallet contain equipment and software which is specific to the make of micro-computer. Check that the names correspond to your machine. Consult your dealer if in doubt.

A) The largest box, labelled "THE VALIANT TURTLE" contains:

1. The Valiant Turtle, containing ten rechargeable batteries.

2. Two manuals: The Users Guide, and Penup, an introduction to LOGO and the Valiant Turtle for parents, teachers and children.

3. Berol pen.

4. Screwdriver, for adjusting the wheels.

5. Checklist.

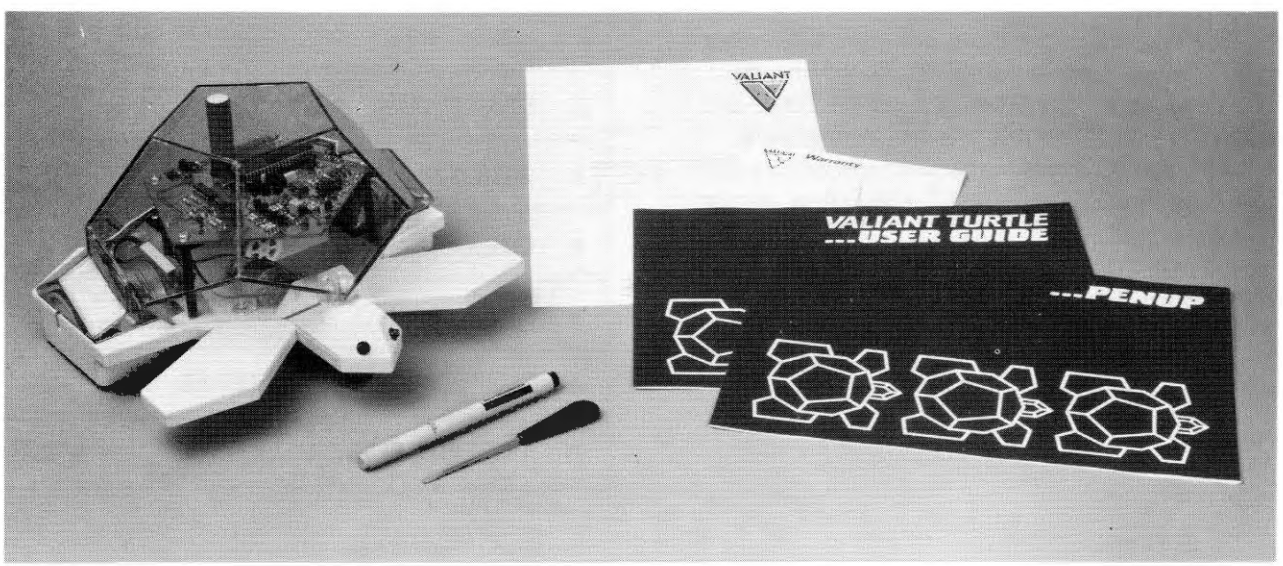
B) The smaller box labelled "VALIANT TURTLE COMMUNICATOR AND POWER ADAPTOR" contains:

1. The infra-red communicator. This is a flat plastic box with a transparent red screen on the front and a cable at the back. It connects to a port on the computer and transmits infra-red signals to the Turtle.

2. The power supply adaptor. This is a black box with two cables attached. This performs two separate functions: to connect the infra-red communicator to the mains power supply, and to connect the Turtle to the mains power supply when recharging the batteries. The hollow jack-plug on the end of the thin cable connects to sockets on the communicator and the Turtle.

Connect the adaptor to the power supply using a 13 amp plug WITH A 3AMP FUSE.

3. Checklist.



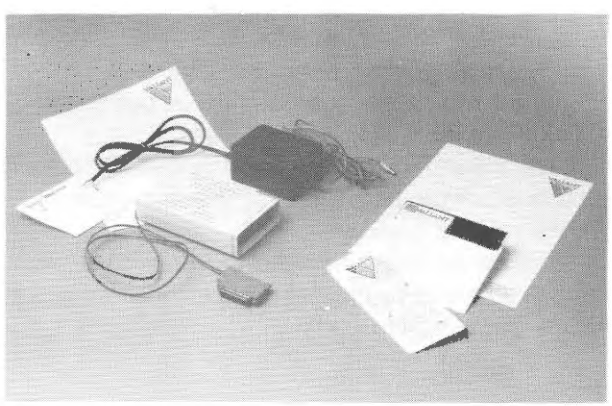
C) The plastic wallet labelled "VALIANT TURTLE INTERFACE KIT" contains:

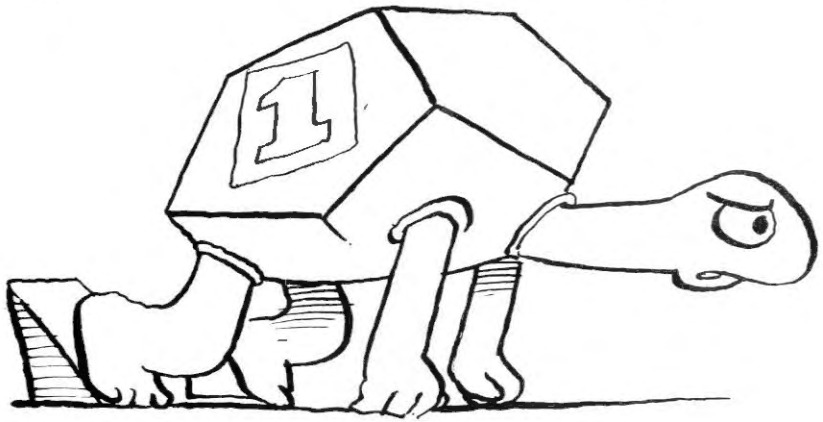
1. Disc or cassette with LOGO interface software and Valiant Turtle Graphics software. Copy this immediately in case the original becomes damaged.

2. Leaflet with instructions on how to run the Valiant Turtle with your machine and software.

3. Checklist.

If the contents of any package are missing or damaged consult your dealer.





STARTING

Before starting the Turtle for the first time charge the batteries for at least one hour, as described in section 6.

THE COMPUTER SYSTEM SHOULD BE SWITCHED OFF.

1. Connect the Communicator to the Computer.

A lead on the Communicator connects to a port on the computer. The method of connection will depend on the make. Consult the machine specific instructions in the interface kit.

2. Connect the power adaptor to the mains power supply and turn on power.

DO NOT CONNECT THE POWER ADAPTOR TO THE COMMUNICATOR YET.

3. Remove the pen top.

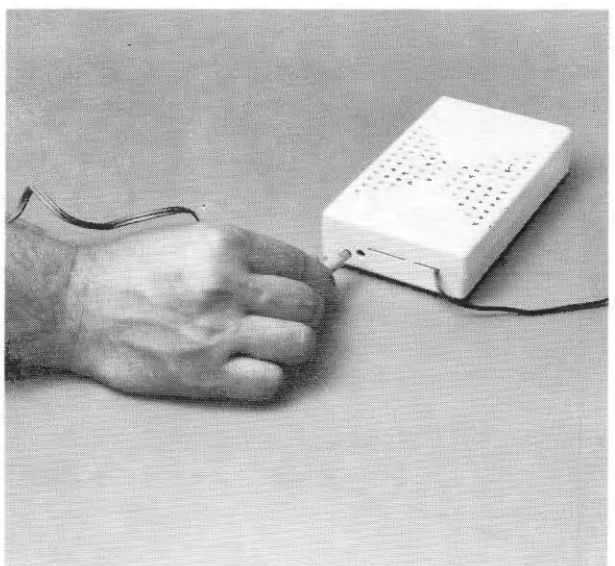
4. Switch on your computer system.

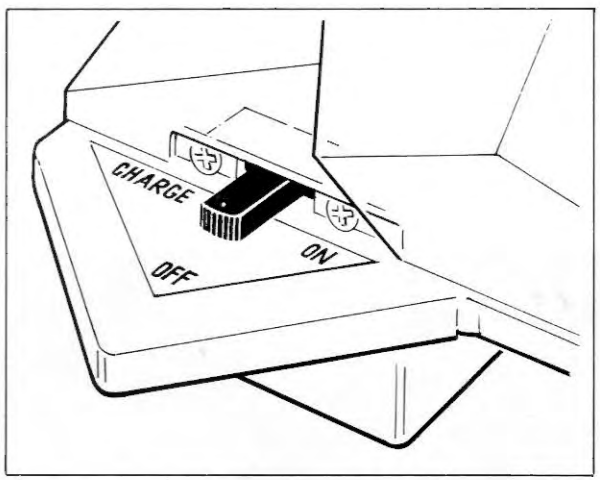
5. Load the LOGO software.

If the LOGO software requires an interface disk, load as described in the software documentation.

Valiant Turtle Graphics software has its own instructions.

6. Connect the jack plug from the power adaptor to the socket at the rear of the communicator. A red light behind the communicator screen will go on. If not, check the power supply and the connection to the communicator. If the light still does not glow, consult your dealer.





7. On the left rear flipper of the turtle is a three way switch, labelled ON, OFF and CHARGE. Move the switch to the ON position. The turtle's eyes will glow and a small red light on the pentagonal control board inside the turtle will illuminate.

Before giving any command to the Turtle, instruct it to raise the pen (usually PENUP). This synchronises the Turtle with the software.

The Turtle is ready to go.

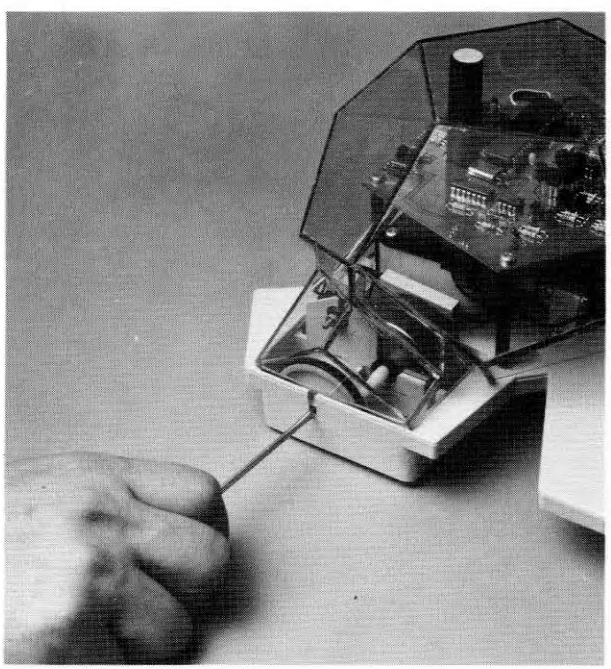
If the eyes do not glow the Turtle needs recharging.

8. Running the Turtle. The software documentation will show how to instruct the Turtle.

ADJUSTING THE ACCURACY

There are two U-shaped slots in the base which give access to screws on the wheel hubs (see diag). Using the screwdriver supplied, turn the screws to adjust the wheels in the method described so that the Turtle performs with maximum accuracy.

Turn each screw up to 1/4 of a revolution at a time when adjusting the wheels.



1. Switch on the computer system and the Turtle.

2. Place the Turtle on a smooth piece of paper, on a level surface, lower the pen, and command it to move, turn RIGHT through 90 degrees and move again. E.g. PD (to lower the pen) FD 10 RT 90 FD 10.

If a sharp angle is drawn (fig. 1) the pen is centred, so proceed directly to section 3, "Checking the angle."

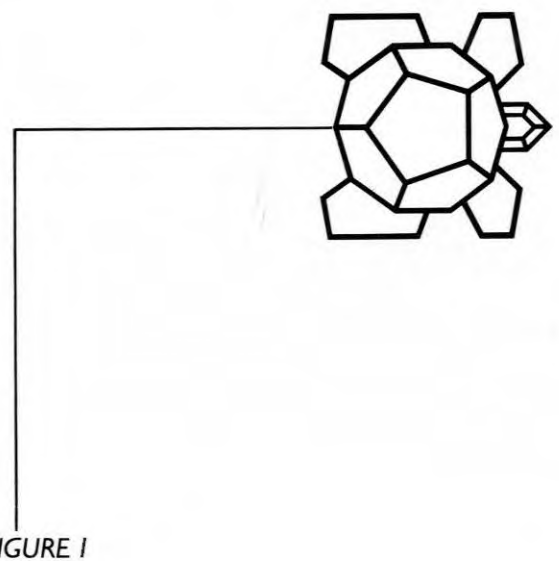


FIGURE 1

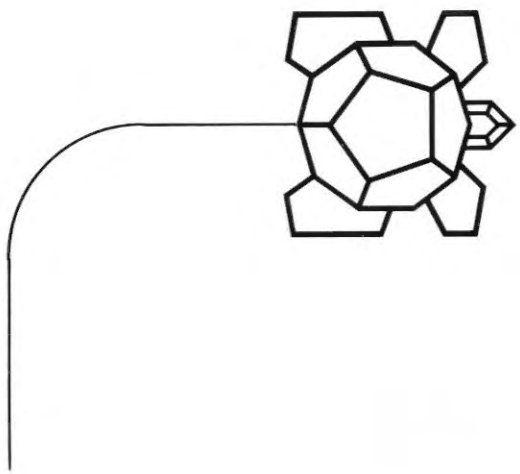


FIGURE 2

If a convex curve is drawn (fig.2) turn the screw over the left hub anti-clockwise or the screw over the right hub clockwise.

ADJUSTING THE ACCURACY

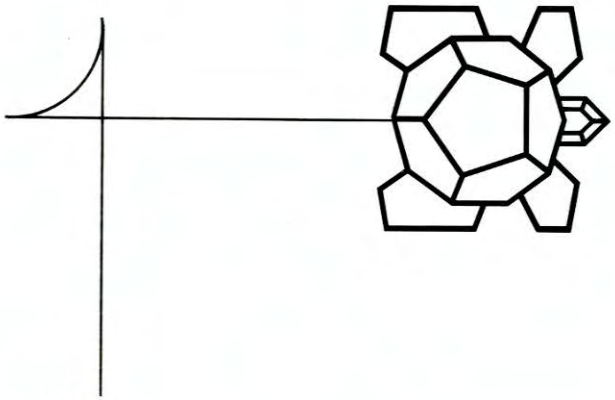


FIGURE 3

If a concave curve is drawn (fig. 3) turn the screw over the left hub clockwise or turn the screw over the right hub anti-clockwise.

Adjust the wheels until a sharp angle is produced.

3. Checking the angle.

Command the Turtle to draw a square. E.g. REPEAT 4 [FD 30 RT 90]

If the Turtle closes the square neatly it is correctly adjusted.

If the Turtle turns angles less than 90 degrees (fig. 4) turn the screws on the wheel hubs anti-clockwise. Ensure that you turn each screw the same amount.

If the Turtle turns more than 90 degrees (fig. 5) turn the screws clockwise. Again ensure that each screw is turned the same amount.

Adjust the wheels in this way until the Turtle closes a square accurately.

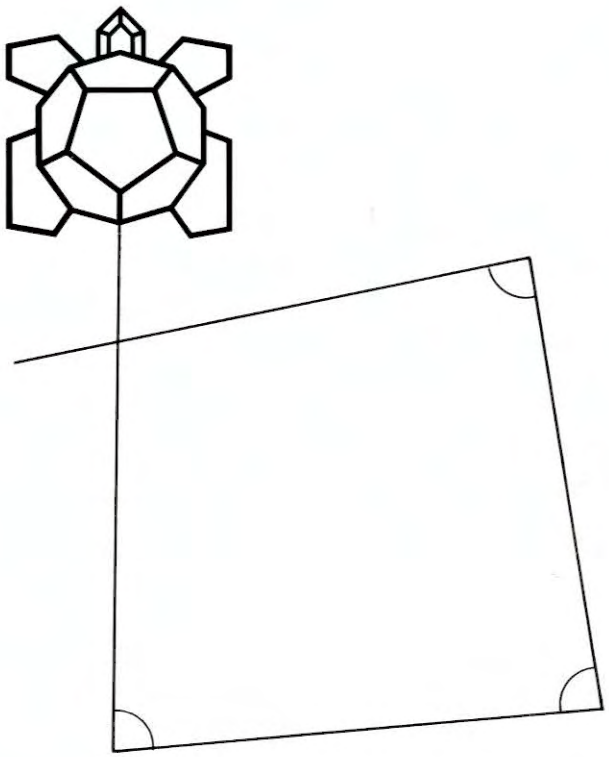


FIGURE 4

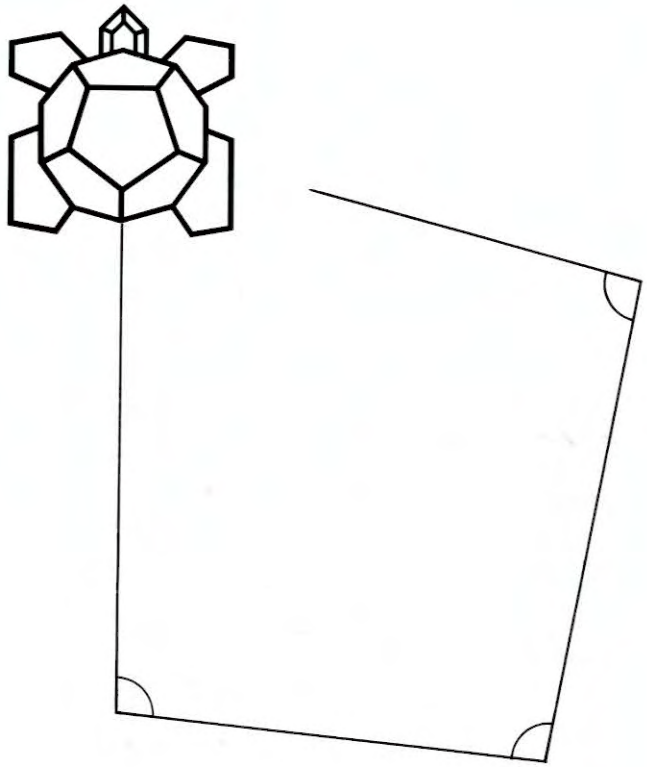
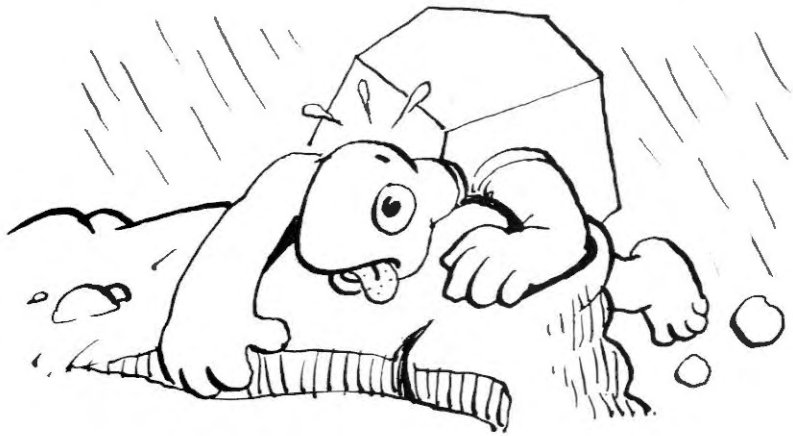


FIGURE 5

OPERATING CONDITIONS



The Valiant Turtle is robustly built. If carefully looked after it will last for many years. Pressure should not be applied to the top of the turtle. This can bend the axles. Children should not try to ride on it.

The Valiant Turtle should be run on a firm, flat, surface.

Murphy's law states, "If you run the Valiant Turtle on a table it will fall off." If you run the Turtle on a table, watch it carefully at all times, or put a rim around the table's edge.

If there is no suitable floor surface place the paper on a piece of laminated board.

Running the Valiant Turtle in strong direct sunlight, or near to an electric fire, may interfere with the infra-red signals and cause inaccuracy.

Do not run the Turtle on deep pile carpets. Hair and fluff will tangle around the axles.

Inspect the axles at regular intervals and remove any fibres.

Always lower the pen (usually PENDOWN) before removing it from the Turtle.

Switch the Turtle off if it is not being used for a period of time. It can be turned off and on without reloading the software or re-connecting the Communicator. Remember to raise the pen before giving any other commands.

Do not raise and lower the pen many times in succession without any commands in between. This is not good for the pen mechanism.

The power adaptor should be connected to the mains before the jack plug is connected to the Communicator.

The Communicator operates over a range of about 6m. It should point roughly in the direction of the Turtle and not be obstructed. Walking between the Communicator and the Turtle will not usually hinder its performance.

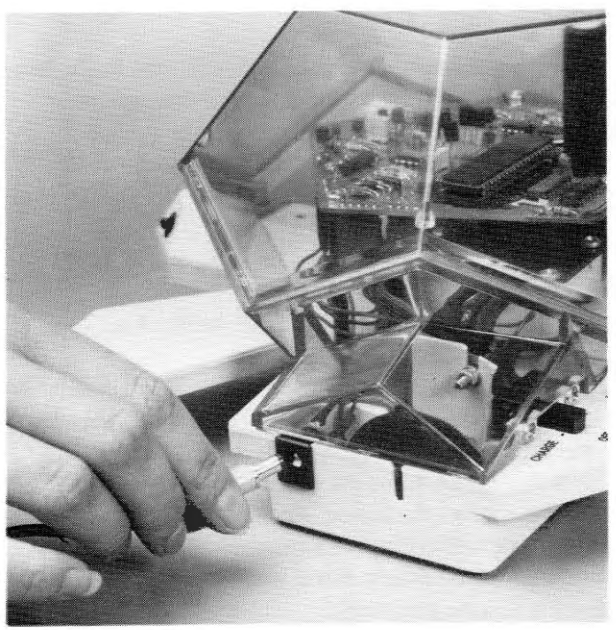
If the Communicator is used on a table place the front over the edge.

Never remove the Turtle's shell or the Communicator cover. This will invalidate the warranty. Consult your dealer about any problems.

Never remove the cover of the power adaptor. This could result in a severe electric shock.

Never cover the Communicator when it is switched on, as this will cause it to overheat.

To change the pen: Use any type of Berol pen (except Fineline and Highlighter). Turn the Turtle upside down. The socket for the pen is in the centre of the Turtle between the two wheels. Pull the old pen out and push the flat end of the new pen into the pen socket with a gentle twisting motion. Do not force the pen.



RECHARGING & CHANGING THE BATTERIES

The batteries can be recharged about 350 times before they need replacing. This should give at least two years of "classroom life". As the batteries approach the end of their life they will run for progressively shorter periods.

The Valiant Turtle uses any make of NICKEL-CADMIUM RECHARGEABLE BATTERIES, AA size, 1.2 volt, 500 mA.

Turn the Turtle upside down and point its head toward you. Two small rectangular plates will be visible, each secured by four screws. Remove the plates. There are ten batteries, six beneath the left plate and four beneath the right. Remove the old batteries and insert the replacements taking care to follow diagram. Replace the covers, charge the turtle for one hour and then test it. If there is no response, check that the batteries have been positioned correctly.

The Turtle's eyes act as a power supply indicator. The eyes will go out when the battery power becomes low.

The batteries will recharge to about 75 percent of their power in one hour, fully in six hours.

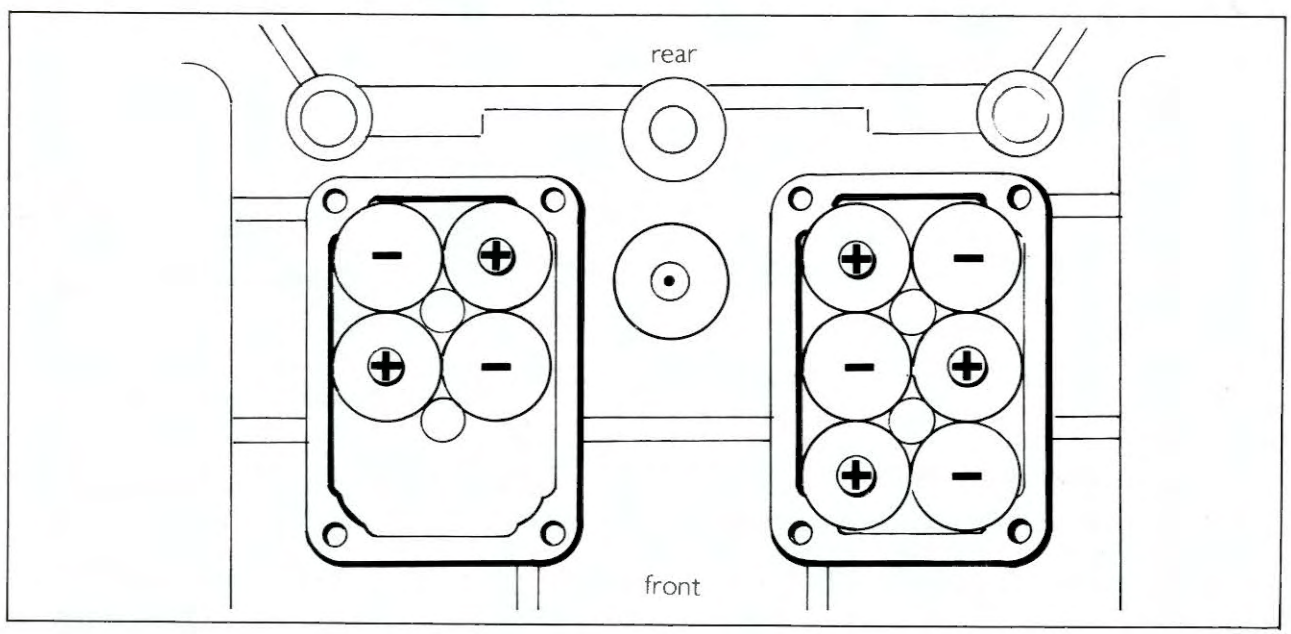
To recharge the Turtle:

1. Switch the control switch on the Turtle's left rear flipper to CHARGE. A small yellow light on the pentagonal control board inside the Turtle will illuminate. This light goes out after the Turtle is about 75 percent recharged.

2. Plug the power supply adaptor into the mains electricity supply and switch on the mains supply.

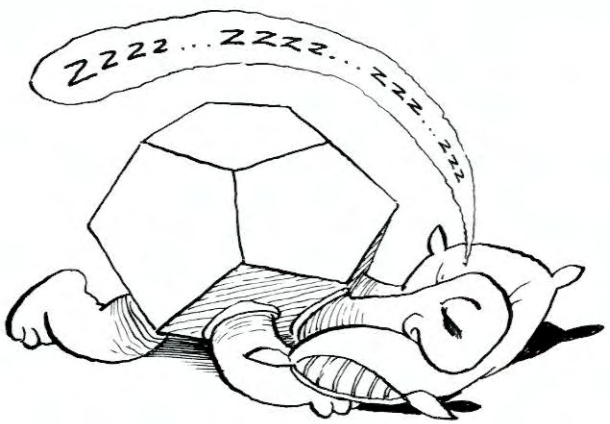
3. Connect the hollow jack plug from the power adaptor to the socket above the Turtle's left driver wheel.

It is safe to leave the Turtle charging overnight.



TROUBLE SHOOTING

PROBLEM After loading the software the Turtle does not respond.



CAUSE 1. Low battery voltage, indicated by Turtle's eyes not illuminating.

REMEDY Recharge the batteries.

CAUSE 2. If the light inside the Communicator does not respond to instructions by "flickering", the Communicator system has failed to initialise (synchronise itself with the computer).

REMEDY Disconnect the Communicator, switch off the Turtle, return to the software instruction to switch on. Try again. Type PENUP before any other instruction.

CAUSE 3. Communicator obstructed.

REMEDY Remove obstruction.

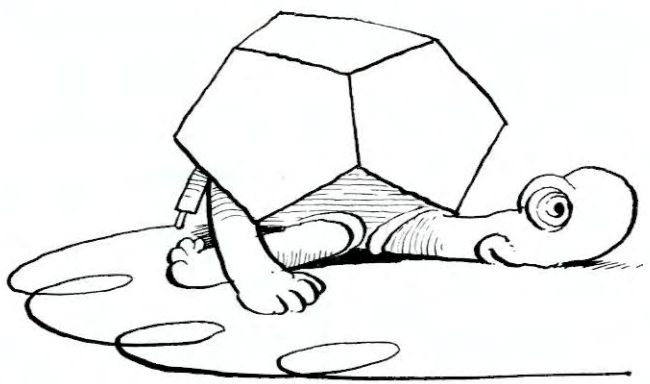
CAUSE 4. Turtle is out of range.

REMEDY Move it nearer to the Communicator.

CAUSE 5. Faulty power supply.

REMEDY Check power supply with another appliance. Check connection and fuse in the plug.

PROBLEM Turtle behaves erratically.

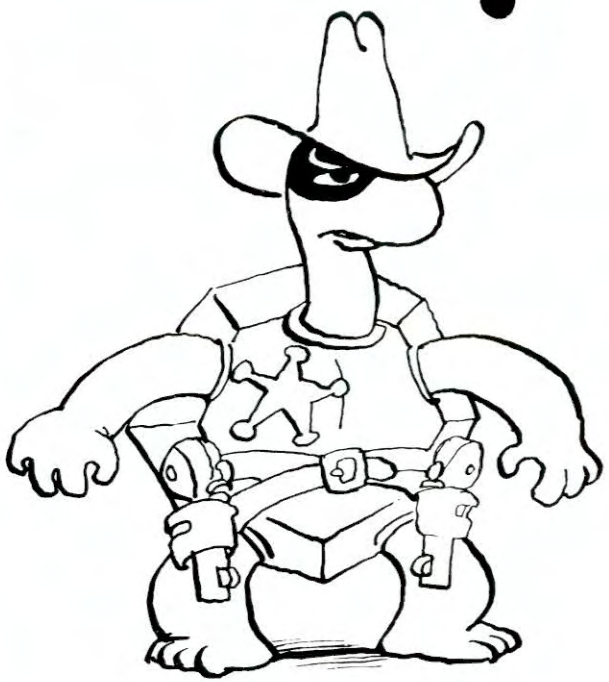


CAUSE 1. Obstructed Communicator.

REMEDY Remove obstruction.

CAUSE 2. Turtle is out of range.

REMEDY Move the Turtle.



CAUSE 3. Infra-red interference from electric fire or strong direct sunlight.

REMEDY Move Turtle out of the light. Switch off fire.

CAUSE 4. The batteries have been inserted incorrectly.

REMEDY Consult the manual and position them correctly.

CAUSE 5. Incorrect battery type.

REMEDY Change the batteries for nickel-cadmium rechargeable, AA size, 1.2 volt, 500 mA.

TROUBLE SHOOTING

PROBLEM. Battery charge diminishes quickly.

CAUSE 1. Old batteries.

REMEDY Replace batteries.

CAUSE 2. The batteries have been inserted incorrectly.

REMEDY Consult manual and reposition batteries.

CAUSE 3. New batteries defective.

REMEDY Consult your dealer.

CAUSE Incorrect battery type.

REMEDY Change the batteries for nickel-cadmium rechargeable, AA size, 1.2 volt, 500mAz batteries.

PROBLEM. Turtle draws inaccurately.

CAUSE 1. Wheels set incorrectly.

REMEDY Adjust the wheels.

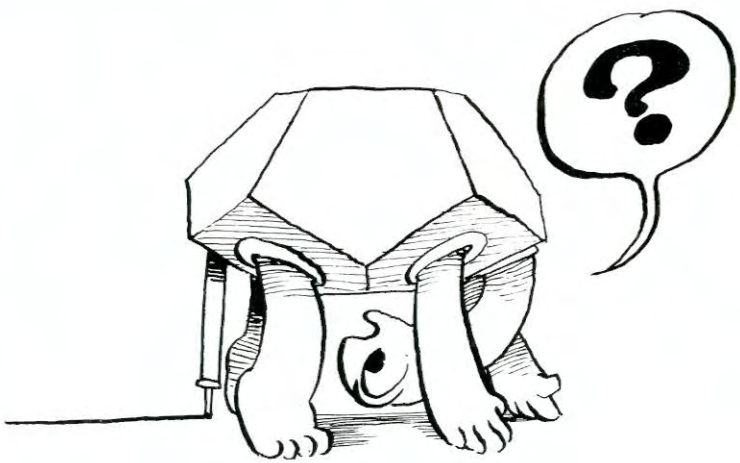
CAUSE 2. Wheel obstruction.

REMEDY Remove any hair etc from axle. Clean tyres.

CAUSE 3. Damaged axles.

REMEDY Consult your dealer.

PROBLEM Pen will not raise.



CAUSE 1. Pen not fully in socket.

REMEDY Push it fully in.

CAUSE 2. Incorrect pen type.

REMEDY Change pen.

CAUSE 3. Uneven drawing surface.

REMEDY Tape paper to flat surface.

CAUSE 4. Damaged pen mechanism.

REMEDY Consult your dealer.