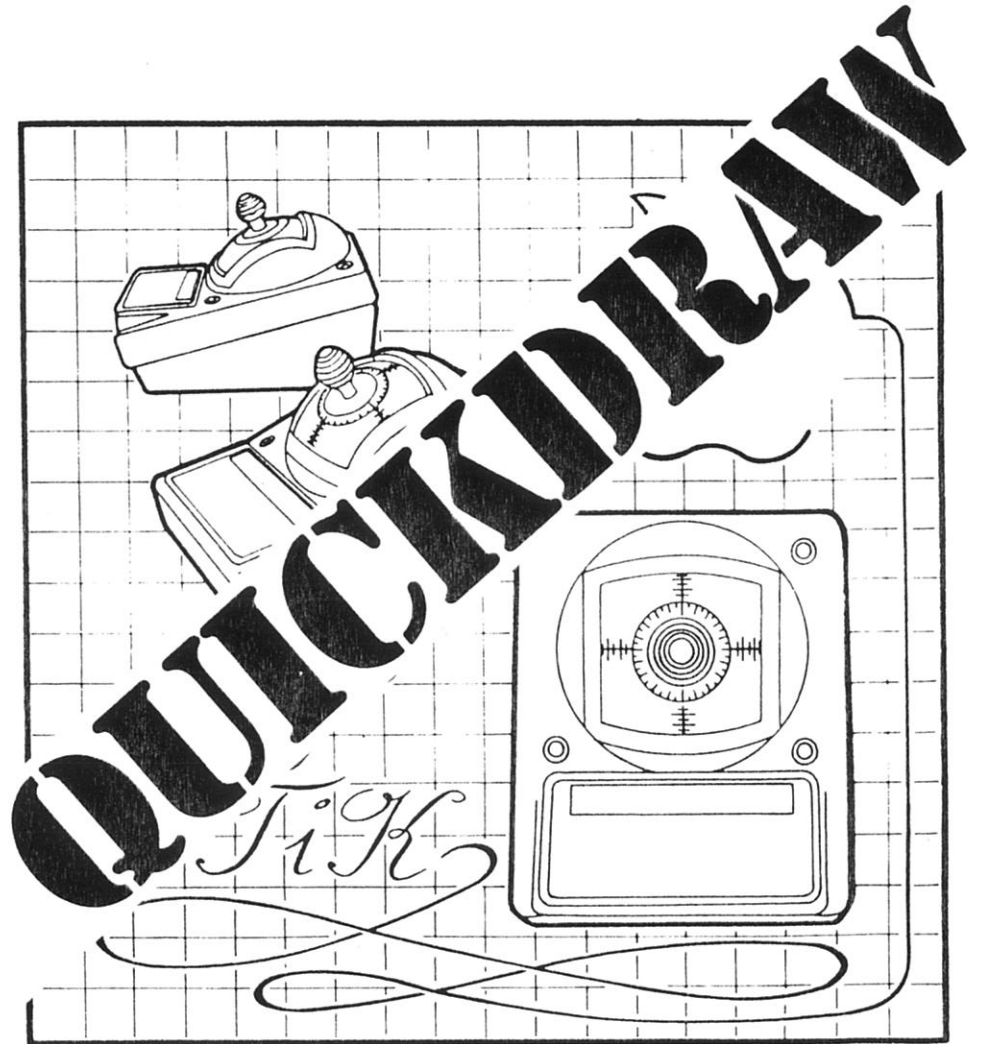


ROBO

BIT STiK 1.1

Interactive Graphics
System for Apple II



QUICK DRAW

THIS BOOKLET IS A SHORT, HANDS-ON INTRODUCTION TO THE BIT STIK GRAPHICS SYSTEM. IT IS ASSUMED THAT THE CONTROLLER HAS ALREADY BEEN CONNECTED TO THE APPLE AND TRIMMING HAS BEEN DONE. - IF YOU HAVE THIS TO DO SEE PAGES 4 AND 9 OF THE REFERENCE MANUAL AND USE THE TRIM "BIT STIK" ROUTINE ON THE SYSTEM MASTER DISC. YOU SHOULD ONLY NEED TO TRIM THE BIT STIK ONCE - WHEN IT IS FIRST CONNECTED TO THE APPLE.

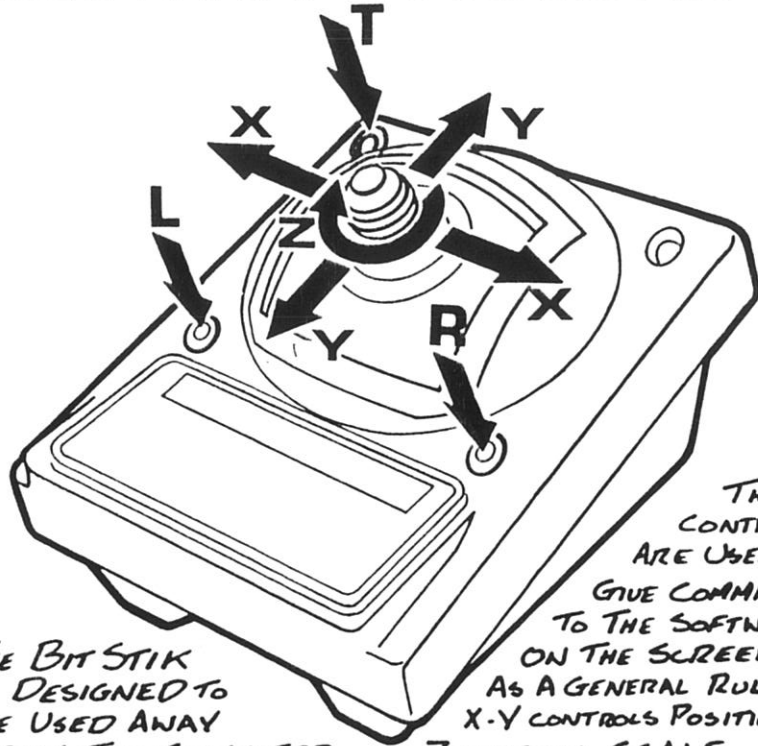
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THE BIT STIK GRAPHICS SYSTEM IS VERY COMP-REHENSIVE AND HAS MANY FEATURES THAT ARE NOT HANDLED IN THIS QUICKDRAW MANUAL. THE REFERENCE MANUAL GIVES FULL DETAILS OF ALL THE FEATURES - HOWEVER A FEW MINUTES PRACTICE WITH THE BIT STIK AND THIS MANUAL WILL GIVE YOU THE BASIC KNOWLEDGE TO PRODUCE GRAPHICS STRAIGHT ONTO THE SCREEN.

DON'T BE AFRAID TO EXPERIMENT - YOUR MATERIALS ARE CHEAP AND ERASING MISTAKES IS EASY.

BIT STIK CONTROLS



THE BIT STIK IS DESIGNED TO BE USED AWAY FROM THE COMPUTER SO YOU CAN MAKE YOURSELF COMFORTABLE AND CONCENTRATE ON THE SCREEN. TRY TO OPERATE THE CONTROLS BY TOUCH - KEEPING YOUR EYES ON THE SCREEN - YOU WILL SOON BE USING THE BIT STIK AS FLUIDLY AS A PENCIL.

TIP - WHEN TWO BUTTONS NEED PRESSING USE THE SAME HAND FOR BOTH OF THEM.

THE CONTROLS ARE USED TO GIVE COMMANDS TO THE SOFTWARE ON THE SCREEN. AS A GENERAL RULE: X-Y CONTROLS POSITION Z CONTROLS SCALE, ROTATION AND COMPRESSION PRESS T TO DRAW PRESS L TO CONFIRM R HAS VARIOUS FUNCTIONS

SYMBOLS ARE USED THROUGHOUT TO DENOTE THE CONTROLS:-

- ☐ TURN KNOB
- Ⓣ PRESS
- Ⓣ PRESS AND HOLD
- Ⓣ RELEASE
- Ⓛ LEFT BUTTON
- Ⓡ RIGHT BUTTON
- Ⓣ TOP BUTTON.

DISKS

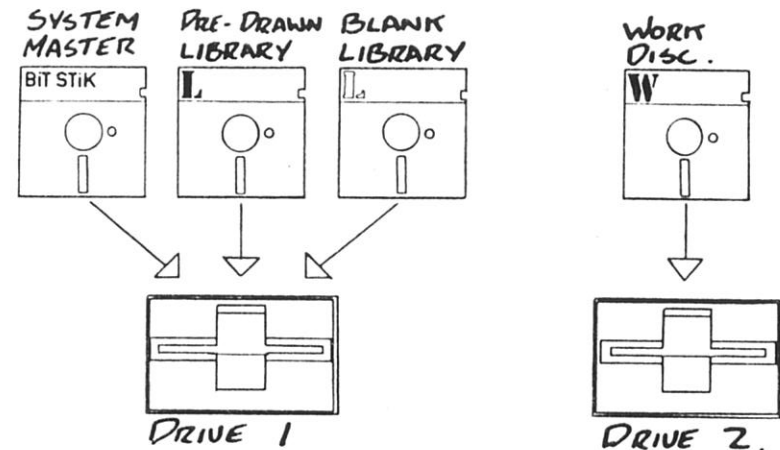
THE BIT STIK SYSTEM SOFTWARE IS SUPPLIED ON A FLOPPY DISK LABELLED 'SYSTEM MASTER'. IN ADDITION THE SYSTEM USES TWO OTHER TYPES OF DISK - LIBRARY DISKS AND WORK DISKS. THESE ARE ORDINARY DISKS WHICH HAVE BEEN INITIALIZED IN THE NORMAL WAY (SEE APPLE MANUAL) AND HAVE THEN BEEN FORMATTED AS EITHER LIBRARY OR WORK DISKS USING ROUTINES ON THE MASTER DISK. FOR FULL DETAILS SEE REFERENCE MANUAL PAGES 5-8.

PRESUMING THAT YOU HAVE AT LEAST ONE LIBRARY AND ONE WORK DISK PREPARED - PROCEED AS FOLLOWS.

INSERT SYSTEM MASTER INTO DRIVE 1 - CLOSE FLAP SWITCH THE APPLE ON (SWITCH AT THE BACK) SWITCH T.V. ON. A TITLE PAGE WILL BE DISPLAYED. PRESS RETURN TO LOAD THE SOFTWARE.

WHEN IT HAS LOADED - THE DRIVE WILL STOP. REMOVE THE MASTER AND PUT IT SOMEWHERE SAFE.

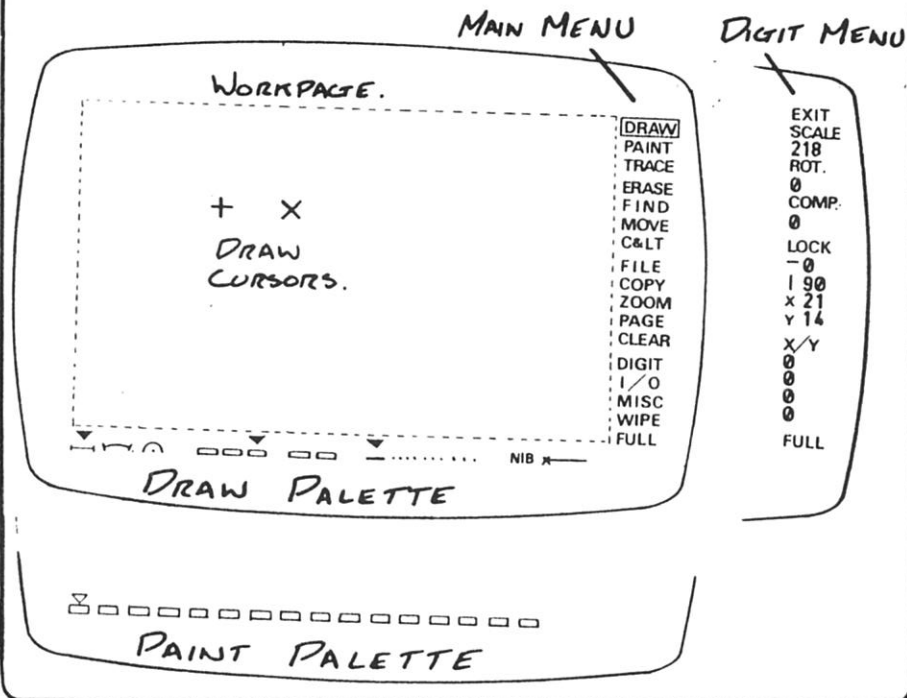
INSERT THE LIBRARY DISK IN DRIVE 1 - CLOSE FLAP INSERT THE WORK DISK IN DRIVE 2 - CLOSE FLAP PRESS RETURN. THE SYSTEM IS NOW READY.



ON THE SCREEN

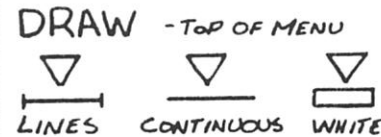
ONCE THE SOFTWARE HAS BEEN LOADED YOU WILL SEE A LIST OF ITEMS DOWN THE RIGHT OF THE SCREEN AND GROUPS OF ITEMS ALONG THE BOTTOM - THESE ARE THE MAIN MENU AND DRAW PALETTE RESPECTIVELY. THE MAIN AREA OF THE SCREEN IS CALLED THE WORKPAGE - THIS IS WHERE YOU DO YOUR DRAWINGS.

YOU CAN MAKE SELECTIONS FROM THE PALETTE AND MENU USING THE CURSOR TO POINT TO THE REQUIRED ITEM - THE CURSORS ARE ALSO USED TO DRAW ON THE WORKPAGE ALL THIS IS FULLY EXPLAINED ON THE FOLLOWING PAGES - SO DON'T WORRY. A SECONDARY PAINT PALETTE AND DIGIT MENU WILL DISPLAY WHEN YOU SELECT PAINT OR DIGIT FROM THE MAIN MENU.

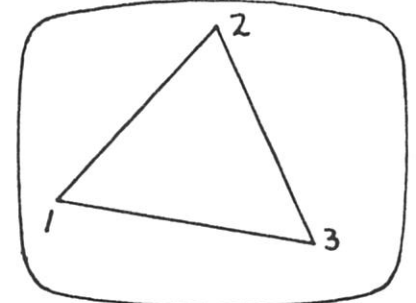


DRAW LINES

WHEN YOU START WITH A FRESH WORKPAGE THE SYSTEM IS SET TO:-



YOU CAN CHANGE THESE SETTINGS AT ANY TIME, BUT LEAVE THEM FOR NOW. - TRY DRAWING A TRIANGLE FOR STARTERS.



DRAW A TRIANGLE

- MOVE + TO 1.
- Ⓢ Ⓛ TO PLANT ✕
- MOVE + TO 2.
- Ⓢ Ⓢ TO DRAW LINE
- MOVE + TO 3.
- Ⓢ Ⓢ TO DRAW LINE
- MOVE + TO 1.
- Ⓢ Ⓢ TO DRAW LINE

WHEN YOU ARE HAPPY WITH THE SHAPE YOU CAN SAVE IT USING FILE ON THE NEXT PAGE.

ERASE

IF YOU GET A LINE WRONG DON'T WORRY - USE ERASE.

MOVE + TO ERASE
A WHITE BOX SHOWS PROPER SELECTION. HOLD THE BOX OVER ERASE AND Ⓢ Ⓛ TO CONFIRM SELECTION.

TWO SMALL CURSORS
○ ○ WILL MARK THE ENDS OF THE LAST LINE ENTERED.

- Ⓢ Ⓛ TO STEP BACK
- Ⓢ Ⓡ TO STEP FORWARD
- Ⓢ Ⓢ TO ERASE LINE
- Ⓢ Ⓛ + Ⓡ TOGETHER TO RETURN TO DRAW.

A diagram of a key with a jagged blade. To its right is a 'KEY' section with the following instructions: Ⓢ PRESS ONCE, Ⓢ PRESS AND HOLD, Ⓢ RELEASE, Ⓛ LEFT BUTTON, Ⓡ RIGHT BUTTON, Ⓢ TOP BUTTON (RED). Below this is the text: 'CURSORS ARE SHOWN AS THEY APPEAR ON THE SCREEN.'

FILE

ONCE YOU HAVE ENTERED A DRAWING ON THE SCREEN YOU CAN FILE IT.

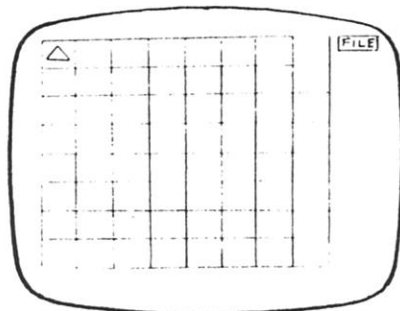
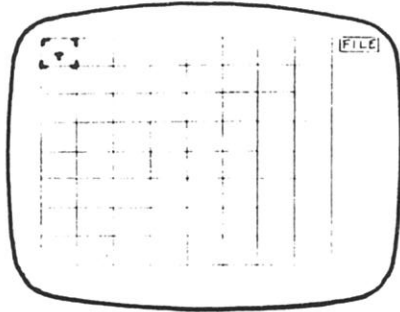
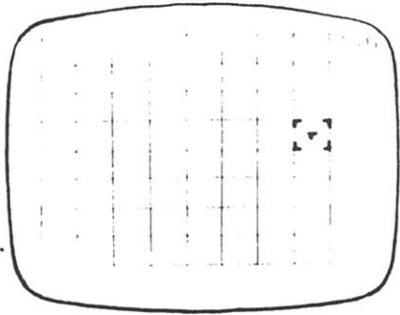
MOVE + TO FILE ON THE MENU.
A WHITE BOX SHOWS PROPER SELECTION.
⬇ ⬅ TO CONFIRM.

THE WORKPAGE WILL BE REPLACED BY A GRAPHIC INDEX.
MOVE THE CURSOR [T]
TO AN EMPTY BOX
USING THE BIT STIK

⬇ ⬅ TO FILE THE DRAWING INTO THE BOX

WHEN FILING IS COMPLETE THE WORKPAGE WILL REPLACE THE GRAPHIC INDEX. - YOU CAN NOW CONTINUE DRAWINGS AND FILING IF YOU WANT.

NOW TRY COPY ON THE NEXT PAGE.



COPY

YOU CAN COPY DRAWINGS FROM AN INDEX ONTO THE WORKPAGE AT ANY TIME.

MOVE + TO COPY ON THE MENU.
A WHITE BOX SHOWS PROPER SELECTION
⬇ ⬅ TO CONFIRM.

THE INDEX REPLACES THE WORKPAGE.
SELECT INDEX A, B OR C WITH ⬅ OR Ⓡ

POSITION THE CURSOR OVER THE REQUIRED PICTURE UNIT
⬇ Ⓡ TO PICK IT UP

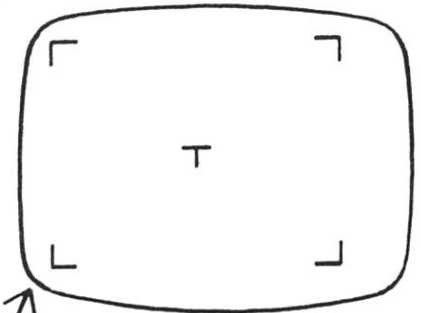
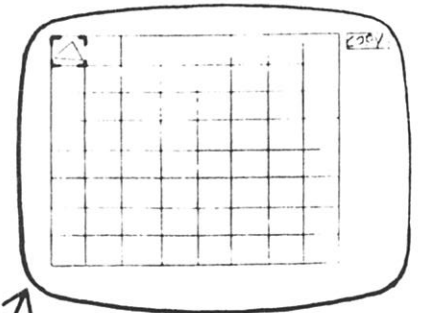
THE WORKPAGE REPLACES THE INDEX

THE COPY CURSOR NOW SHOWS YOU WHERE THE PICTURE UNIT WILL APPEAR.

TURN THE BIT STIK KNOB TO ALTER THE SCALE. POSITION THE CURSOR ON THE WORKPAGE AND ⬇ Ⓡ TO DRAW THE PICTURE.

YOU CAN REPEAT AS OFTEN AS YOU LIKE USING SCALE, ROTATION AND COMPRESSION IN ANY COMBINATION.

TO EXIT COPY ⬇ Ⓡ AND Ⓡ TOGETHER.



TO ROTATE THE CURSOR
⬇ Ⓡ AND TURN KNOB
⬇ Ⓡ AT REQUIRED ROT.
⬇ Ⓡ TO DRAW ROTATED PICTURE.

TO COMPRESS THE CURSOR.
⬇ Ⓡ AND TURN KNOB
⬇ Ⓡ AT REQUIRED COMP.
⬇ Ⓡ TO DRAW COMPRESSED PICTURE.

MOVE

JUST AS YOU CAN USE ERASE ON NEW DATA YOU CAN USE MOVE ON ANY COPIED PICTURE UNITS.

TO ERASE OR MOVE A PICTURE UNIT SELECT MOVE FROM THE MENU
↓ ↓ TO CONFIRM

A CURSOR WILL APPEAR MARKING THE LAST PICTURE UNIT THAT WAS PLANTED.

↓ ↓ TO STEP BACK
↓ ↑ TO STEP FORWARD

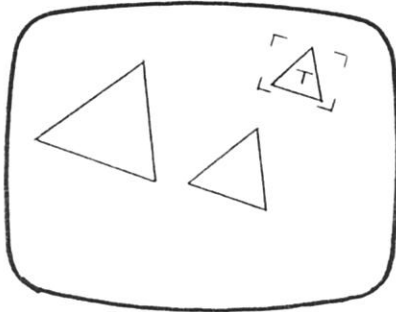
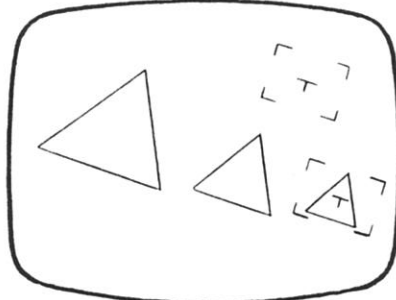
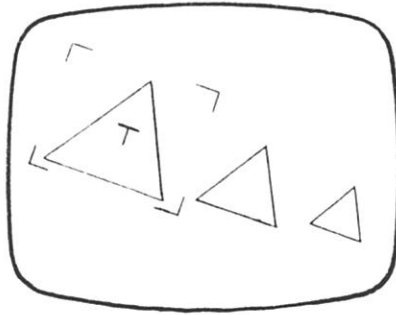
WHEN YOU HAVE THE REQUIRED UNIT ↓ ↓

YOU NOW HAVE CONTROL OF THE COPY CURSOR

TO ERASE THE UNIT EXIT MOVE BY ↓ ↓ AND ↑ ↑ OR.

TO MOVE THE UNIT PLACE THE CURSOR AT THE NEW POSITION (AT ANY SCALE, ROTATION OR COMPRESSION) THEN ↓ ↓

THE OLD UNIT WILL ERASE AND BE RE-DRAWN AT THE NEW POSITION.



THE COPY CURSOR WILL RETURN - USE IT TO DRAW MORE UNITS AT WILL OR RETURN TO DRAW BY ↓ ↓ AND ↑ ↑ TOGETHER.

CLEAR THE PAGE.

WIPE

THIS CLEARS OUT ALL THE NEW DATA (BUT NOT COPIED PICTURE UNITS).

SELECT WIPE ON THE MENU
↓ ↓ TO CONFIRM

NEW SESSION

THIS CLEARS EVERYTHING OUT (NEW DATA AND PICTURE UNITS). NEW SESSION IS ACCESSED THROUGH THE MISCELLANEOUS FUNCTION.

SELECT MISC ON THE MENU
↓ ↓ TO CONFIRM

TYPE 1 ON THE KEYBOARD YOU CAN CHANGE THE LIBRARY DISK IF YOU WANT. PRESS RETURN.

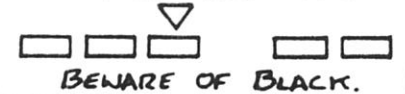
A NEW WORKPAGE IS DISPLAYED WITH MENU AND PALETTE RESET TO DRAW LINES.

THE NEXT PAGES SHOW YOU HOW TO USE THE VARIOUS DRAWING METHODS - BUT FIRST SOME THINGS YOU SHOULD KNOW.

COLOUR

YOU CAN CHANGE THE COLOUR AT ANYTIME WHILE YOU ARE DRAWING

MOVE + TO REQUIRED COLOUR
↓ WILL INDICATE SETTINGS
MOVE + STRAIGHT UP.



LINE TYPE

YOU HAVE A CHOICE OF 4 LINE TYPES: CONTINUOUS AND 3 DOT SPACES. SELECT AS FOR COLOUR



LINE QUALITY.

DUE TO THE WAY THE APPLE DISPLAYS GRAPHICS ON THE SCREEN ANGLED LINES AND CURVES MAY APPEAR IN STEPS. THIS IS A DISPLAY EFFECT ONLY AND ALL LINES WILL BE DRAWN OUT SMOOTHLY ON A PLOTTER.

DRAWINGS WITH ARCS

FIRST SELECT ARCS FROM THE PALETTE.



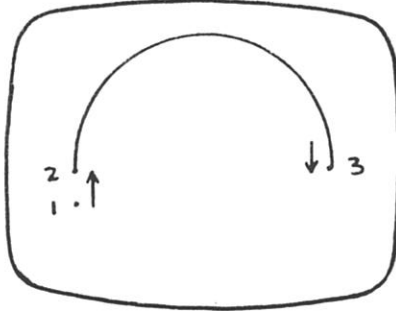
YOU HAVE THE SAME CURSORS AS WHEN DRAWING WITH LINES BUT WHEN YOU $\uparrow \downarrow$ TO DRAW, AN ARC WILL APPEAR STARTING AT \times AND ENDING AT $+$

THE ARC STARTS IN THE DIRECTION THAT THE PREVIOUS LINE OR ARC FINISHED.

TO START AN ARC IN SPACE YOU MUST FIRST INDICATE THE DIRECTION BY PLANTING THE \times AT TWO POINTS - TRY THE EXAMPLE.

YOU CAN RE-DIRECT THE ARC AT ANY TIME IN THE SAME WAY.

ERASE WORKS WITH ARCS AS IT DOES WITH LINES.



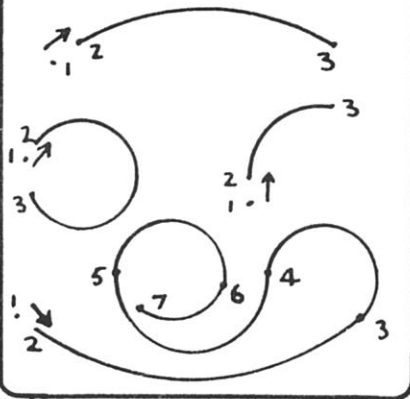
TRY THIS:

MOVE $+$ TO 1.
 $\uparrow \downarrow$ TO PLANT \times

MOVE $+$ TO 2.
 $\uparrow \downarrow$ TO PLANT \times

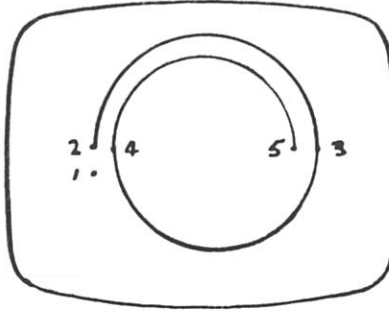
MOVE $+$ TO 3.
 $\uparrow \downarrow$ TO DRAW ARC.

NOW TRY THESE ARCS.



YOU WILL SOON BE DRAWING ANY ARC YOU WANT BY JUDGING THE START DIRECTION AND THE END POINT.

MORE ARCS



TRY THIS:-

MOVE $+$ TO 1.
 $\uparrow \downarrow$ TO PLANT \times

MOVE $+$ TO 2.
 $\uparrow \downarrow$ TO PLANT \times

MOVE $+$ TO 3.
 $\uparrow \downarrow$ TO DRAW ARC

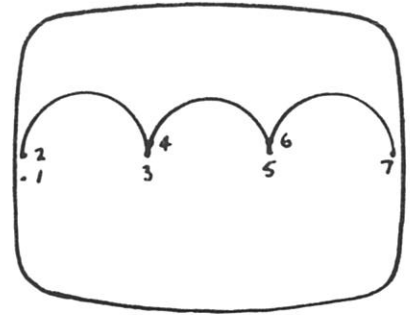
MOVE $+$ TO 4.
 $\uparrow \downarrow$ TO DRAW ARC

MOVE $+$ TO 5.
 $\uparrow \downarrow$ TO DRAW ARC.

CONTINUE AT WILL.

TRY CHANGING THE COLOUR OR LINE TYPE BEFORE DRAWING EACH ARC.

REMEMBER: YOU CAN MIX ARCS AND LINES TOGETHER AT WILL BY RE-SELECTING ON THE PALETTE.



AND THIS:-

MOVE $+$ TO 1.
 $\uparrow \downarrow$ TO PLANT \times

MOVE $+$ TO 2.
 $\uparrow \downarrow$ TO PLANT \times

MOVE $+$ TO 3.
 $\uparrow \downarrow$ TO DRAW ARC

MOVE $+$ TO 4.
 $\uparrow \downarrow$ TO PLANT \times

MOVE $+$ TO 5.
 $\uparrow \downarrow$ TO DRAW ARC

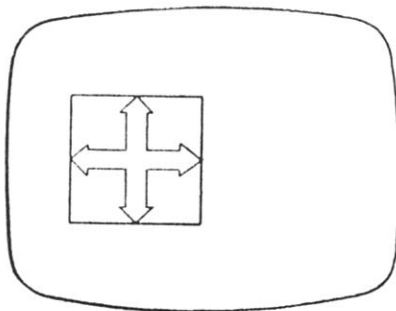
MOVE $+$ TO 6.
 $\uparrow \downarrow$ TO PLANT \times

MOVE $+$ TO 7.
 $\uparrow \downarrow$ TO DRAW ARC.

AN AID TO ACCURACY

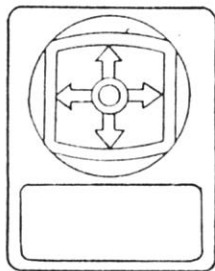
TO HELP YOU POSITION THE MORE ACCURATELY A FUNCTION CALLED SCALE WINDOW IS AVAILABLE WHEN YOU ARE DRAWING.

THIS WINDOW SCALES THE ACTION OF THE BIT STIK TO GIVE YOU TIGHTER CURSOR CONTROL.



(T) (R) TO ENABLE THE SCALE WINDOW.

ALTER THE SIZE BY TURNING THE KNOBS (WHILE STILL (T) (R))



POSITION THE WINDOW AROUND THE REQUIRED AREA

(I) (R) TO FIX WINDOW.

YOU NOW HAVE BETTER CURSOR CONTROL WITHIN THE AREA.
- IDEAL FOR ACCURATE JOINING UP, DIRECTING ARCS AND DELICATE STREAM DRAWING.

TO SWITCH SCALE WINDOW OFF SIMPLY TURN THE KNOBS FULLY CLOCKWISE.

CIRCLES

CIRCLES CAN OF COURSE BE DRAWN WITH TWO ARCS.

YOU CAN DRAW CIRCLES UP TO A CERTAIN SIZE DIRECTLY BY SELECTING:

(I) ON THE PALETTE

THE CURSOR BECOMES A CIRCLE. (O)

TURN THE BIT STIK KNOB TO ALTER THE CIRCLE SIZE - POSITION IT WHERE YOU WANT.

(I) (I) TO DRAW THE CIRCLE

REPEAT AT WILL.

EXIT CIRCLES BY SELECTING LINES OR ARCS

ERASE WILL REMOVE A WHOLE CIRCLE AS IT WAS DRAWN.

ELLIPSES CAN BE PRODUCED BY FILING A CIRCLE ON THE INDEX (ONE IS ALREADY FILED ON THE INTRODUCTORY DISC). YOU CAN THEN USE COPY TO COMPRESS AND ROTATE THE CIRCLE AT WILL.

STREAM

STREAM LETS YOU DRAW A CONTINUOUS LINE AS YOU MOVE THE STIK.

ENTER STREAM WITH LINES (V) SELECTED.

MOVE + TO START POINT

(I) (I) THEN (I) (I)

KEEP BOTH BUTTONS DOWN AND MOVE THE STIK TO DRAW



USE STREAM TO DRAW FREEHAND - TRY WRITING YOUR NAME.

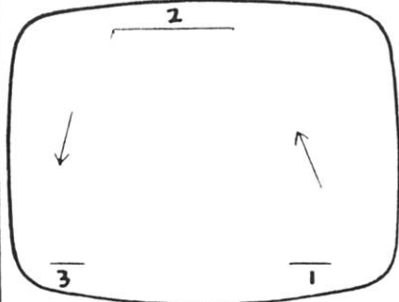
USE STREAM FOR SMALL DETAIL AND COLOURING SMALL AREAS. (ESPECIALLY GOOD WITH A SCALE WINDOW).

BLACK STREAM IS A GOOD ERASER - USE IT TO CLEAN UP DRAWINGS (BUT NOT IF YOU INTEND TO PLOT THEM).

NIB DRAWING.

AN UNUSUAL - BUT VERY USEFUL BIT STIK SOFTWARE FEATURE IS THE NIB. WITH A NIB YOU CAN DRAW BLOCKS OF COLOUR OR TONE IN A SINGLE STROKE.

TRY THIS:-



SELECT NIB (SEE OPPOSITE)

POSITION NIB AT 1.

Ⓜ Ⓛ TO PLANT ORIGIN.

POSITION NIB AT 2.

TURN KNOB TO ALTER NIB LENGTH.

Ⓜ Ⓜ TO DRAW NIB STROKE

POSITION NIB AT 3.

TURN KNOB TO SET LENGTH

Ⓜ Ⓜ TO DRAW NIB STROKE

AS WELL AS CHANGING THE NIB LENGTH YOU CAN ALSO CHANGE IT'S ANGLE.

NIB

TO SELECT:

MOVE + STRAIGHT DOWN TO THE NIB LEGEND.

THE WHITE INDICATOR SHOWS SELECTION.

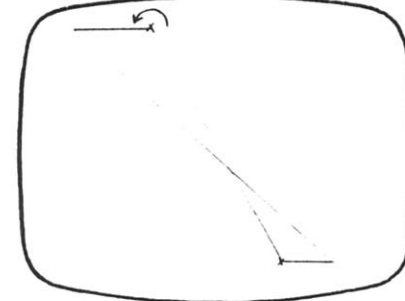
MOVE THE STIK STRAIGHT UP - THE + IS REPLACED BY A NIB CURSOR.

(YOU CAN USE THIS CURSOR TO MAKE PALETTE AND MENU SELECTIONS AS WELL AS FOR DRAWING).

EXIT NIB - BY MOVING CURSOR TO NIB LEGEND THEN STRAIGHT UP.

TRY THIS:-

(FIRST - WIPE THE PAGE)



POSITION NIB AT 1.

TURN KNOB TO ADJUST LENGTH

Ⓜ Ⓛ TO PLANT ORIGIN

POSITION NIB AT 2.

Ⓜ Ⓡ AND TURN KNOB TO ROTATE NIB (ABOUT 180°)

Ⓜ Ⓜ TO DRAW

MORE NIBS

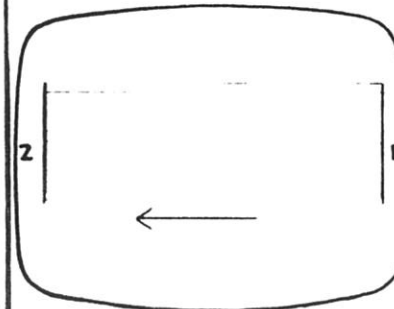
YOU CAN CREATE A LARGE RANGE OF TEXTURES AND EFFECTS USING NIBS WITH DIFFERENT COLOURS, LINE TYPES AND NIB SPACINGS.

TRY THIS:-

SET COLOUR TO GREEN



SET LINETYPE TO 3.



Ⓜ Ⓡ AND Ⓜ Ⓡ TO ROTATE NIB
POSITION NIB AT 1.

Ⓜ Ⓛ TO PLANT ORIGIN

MOVE NIB TO 2.

Ⓜ Ⓜ TO DRAW STRIPES.

NOW TRY DRAWING MORE STROKES WITH OTHER COLOURS AND LINE TYPES AT VARIOUS ANGLES - NO END OF FUN.

TO SET NIB SPACING

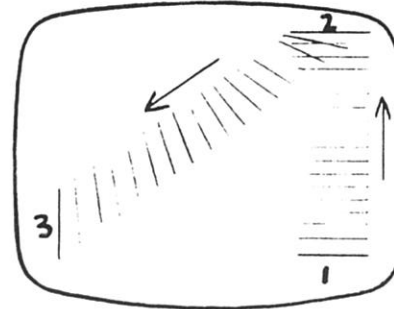
NIB

MOVE CURSOR TO NIB LEGEND
WHITE INDICATOR FLASHES
HOLD THIS POSITION

Ⓜ Ⓛ AND TURN THE KNOB.

THE LINE TO THE RIGHT OF NIB WILL VARY FROM CONTINUOUS TO A WIDE DOT - THIS INDICATES THE SPACING THAT WILL OCCUR BETWEEN STROKES WHEN YOU DRAW.

TRY THIS:-



SET NIB SPACING TO A MEDIUM DOT.

POSITION NIB AT 1.

Ⓜ Ⓛ TO PLANT ORIGIN

POSITION NIB AT 2.

Ⓜ Ⓜ TO DRAW

POSITION NIB AT 3.

Ⓜ Ⓡ AND TURN KNOB.

Ⓜ Ⓜ TO DRAW.

PAINTING.

THE PAINT FUNCTION LETS YOU AUTOMATICALLY FILL ANY ENCLOSED SHAPE WITH COLOUR. IF THERE IS A GAP IN THE BOUNDARY THE COLOUR WILL LEAK OUT AND FILL THE SCREEN - SO BE CAREFULL.

YOU CAN REMOVE A COLOUR ENTRY WITH ERASE BUT THE COLOUR WILL REMAIN ON THE SCREEN UNTIL YOU REPLAY THE DRAWING BY SELECTING PAGE.

ONCE AN AREA IS FILLED WITH COLOUR YOU CANNOT FILL IT WITH ANOTHER COLOUR UNTIL YOU ERASE THE FIRST.

THE EXCEPTION TO THIS IS BLACK. OVER-PAINTING A COLOUR WITH BLACK WILL CAUSE THE FIRST COLOUR AND ITS BOUNDARY LINE TO DISAPPEAR. - TRY IT.

(YOU CAN REMOVE THE BLACK WITH ERASE THEN SELECT PAGE TO RESTORE THE ORIGINAL COLOUR.)

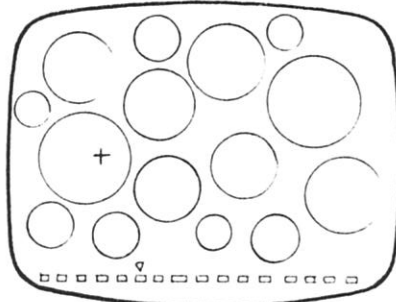
YOU WILL HAVE TO EXPERIMENT WITH PAINT TO DISCOVER ALL ITS POSSIBILITIES - SO BE AMBITIOUS YOU CAN ALWAYS ERASE IF YOU MAKE A MESS.

TO SELECT:
MOVE + TO PAINT ON THE MENU.
Ⓢ Ⓣ TO CONFIRM.

THE PALETTE WILL CHANGE TO GIVE A CHOICE OF 16 COLOURS.

YOU ONLY HAVE ONE CURSOR + WITH PAINT. USE IT TO SELECT YOUR COLOUR ON THE PALETTE (STRAIGHT DOWN - STRAIGHT UP)

TRY THIS:-



FIRST DRAW SOME CIRCLES. (SEE CIRCLES).

SELECT PAINT ON THE MENU
SELECT A COLOUR.
POSITION THE CURSOR +
INSIDE A CIRCLE
Ⓢ Ⓣ TO FILL THE CIRCLE
WITH COLOUR.
SELECT ANOTHER COLOUR
FILL ANOTHER CIRCLE.

LOCKS

A BRIEF INTRODUCTION - SEE REFERENCE MANUAL FOR FULL DETAILS

THIS FUNCTION CAN BE SET TO ACT LIKE A RULER, SET-SQUARE OR FULL GRID TO HELP YOU PRODUCE ACCURATE, REPEATABLE DRAWINGS.

TO SET UP A GRID,
FIRST SELECT DIGIT ON THE MENU.
Ⓢ Ⓣ TO CONFIRM.
THE MAIN MENU IS REPLACED BY THE DIGIT MENU - (YOU CAN RETURN TO THE MAIN MENU AT ANY TIME BY MOVING THE CURSOR TO EXIT THEN AWAY AGAIN).

IN THE MIDDLE OF THE DIGIT MENU YOU WILL SEE A BLOCK OF SELECTIONS LIKE THIS:-

LEGEND	LOCK
X ANGLE	- 0
Y ANGLE	1 90
X SPACING	x 16
Y SPACING	y 12

EACH ITEM CAN BE SWITCHED ON BY TOUCHING IT WITH THE CURSOR - THEN AWAY. A WHITE BOX SHOWS SELECTION. ONCE ON AN ITEM MAY BE SWITCHED OFF IN THE SAME WAY: CURSOR IN THEN AWAY AGAIN

THE ANGLE AND SPACE VALUES CAN BE ALTERED BEFORE YOU SWITCH THE LOCK LEGEND ON.

TRY THIS:-
SETTING AN ISOMETRIC GRID

MOVE + TO - 0 (X ANGLE)
Ⓢ Ⓣ AND TURN KNOB TO CHANGE SETTING TO \ 30
Ⓢ Ⓣ AND MOVE CURSOR AWAY - LEAVING ITEM ON.

MOVE + TO x 16 (X SPACING)
Ⓢ Ⓣ AND TURN KNOB TO CHANGE SETTING TO x 12
Ⓢ Ⓣ AND MOVE CURSOR AWAY - LEAVING ITEM ON.

NOW SWITCH Y ANGLE AND SPACING ON WITH CURSOR (DO NOT ALTER VALUES).

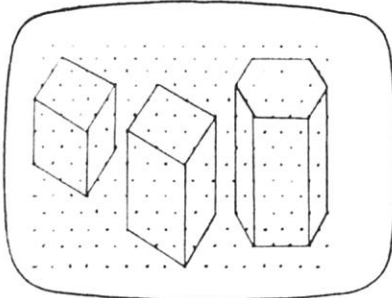
MOVE + TO HARD TOP LEFT CORNER OF SCREEN
Ⓢ Ⓣ TO PLANT ORIGIN

FINALLY SWITCH LOCK LEGEND ON WITH THE CURSOR. - A GRID WILL APPEAR ON THE SCREEN. - NOW TURN THE PAGE.

DRAWING ON A GRID.

WHEN THE GRID HAS PRINTED ON THE SCREEN YOU WILL FIND THAT THE CURSOR CAN ONLY BE MOVED TO THE GRID POINTS. YOU CAN PLANT THE ORIGIN AND DRAW IN THE NORMAL WAY BUT THE GRID ENSURES THAT YOUR LINES ARE PARALLEL AND ALL THE POINTS JOIN.

TRY DRAWING:-



Ⓣ Ⓡ To TEMPORARILY RELEASE THE CURSOR FROM THE LOCK SO YOU CAN MAKE PALETTE AND MENU SELECTIONS.

RELEASE THE LOCK TOTALLY BY SWITCHING THE LOCK LEGEND OFF
Ⓣ Ⓡ AND MOVE + TO LOCK THEN MOVE + AWAY. THE GRID DOTS WILL REMAIN ON SCREEN UNTIL YOU SELECT PAGE.

SYMBOL SET

HERE IS ONE WAY TO USE THE SYSTEM TO PRODUCE A SYMBOL SET. FIRST:-
SELECT NEW SESSION (SEE PAGE 9.)

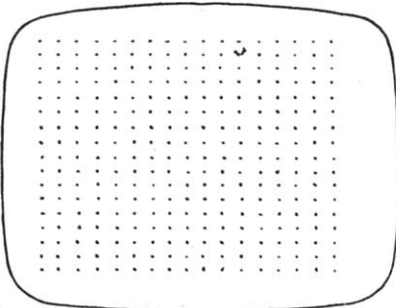
SELECT DIGIT ON MENU

SELECT FULL AT THE BOTTOM OF THE MENU - THIS CLEARS THE PALETTE SO YOU CAN DRAW TO THE BOTTOM OF THE SCREEN.

SWITCH THE FOUR LOCK ITEMS ON (DON'T ALTER THE SETTINGS).

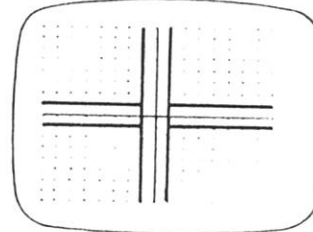
PLANT ORIGIN AT THE TOP LEFT CORNER.

SWITCH THE LOCK LEGEND ON. A STANDARD GRID WILL APPEAR ON THE SCREEN.



NOW START DRAWING. FIRST DRAW TWO GUIDELINES THROUGH THE CENTRE (ERASE THEM LATER)

NOW DRAW THIS SYMBOL



TAKE THE LINES UP TO THE WORKPAGE BOUNDARY (YOU WILL SEE WHY SOON).

NOW ERASE THE GUIDELINES (AND ANY MISTAKES).

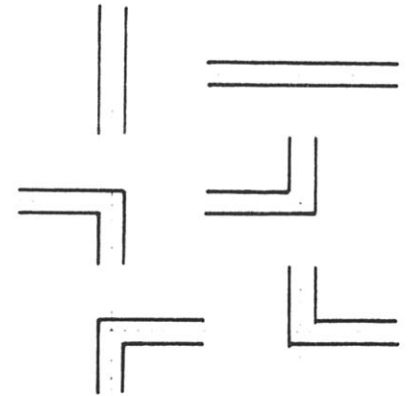
Ⓣ Ⓡ To RELEASE +
SELECT EXIT - PULL AWAY
SELECT ERASE

Ⓛ Ⓛ To CONFIRM
STEP BACK WITH Ⓛ
Ⓣ Ⓡ To ERASE LINES
Ⓛ Ⓛ AND Ⓡ Ⓡ To EXIT ERASE

NOW FILE THE SYMBOL

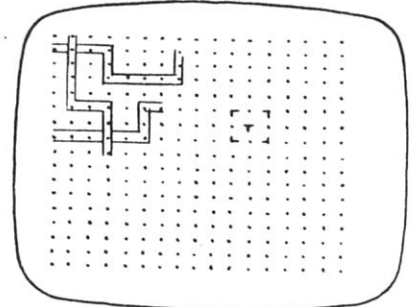
Ⓣ Ⓡ To RELEASE +
SELECT FILE
Ⓛ Ⓛ To CONFIRM
POSITION CURSOR ON EMPTY BOX
Ⓣ Ⓡ To FILE

WHEN THE WORKPAGE RETURNS - DRAW IN THE NEXT PICTURE AND FILE IT IN THE SAME WAY. CONTINUE TILL YOU HAVE A SET.



TO USE THE SYMBOLS, SET UP THE LOCK AS BEFORE.

Ⓣ Ⓡ To RELEASE.
SELECT COPY
PICK UP A SYMBOL
WHEN YOU RETURN TO THE WORKPAGE THE COPY CURSOR IS LOCKED TO THE GRID.
PLANT AS MANY SYMBOLS AS YOU LIKE (YOU CAN RETURN TO COPY DIRECT BY Ⓣ Ⓡ WHEN ON THIS GRID).



SEE HOW ALL THE SYMBOLS JOIN UP AUTOMATICALLY IF YOU HAVE DRAWN THEM CENTRALLY IN THE FIRST PLACE.

HINTS & TIPS

WHENEVER PRACTICAL FILE COMMON PICTURE UNITS LIKE OUTLINES, LABELS, SYMBOLS, ETC. ONTO THE LIBRARY DISK. KEEP EACH PICTURE UNIT AS SHORT AS POSSIBLE. LARGER PICTURES CAN THEN BE EASILY ASSEMBLED AND CORRECTED WITHOUT HAVING TO RE-DRAW EVERYTHING AS NEW DATA.

ARCS AND CIRCLES TAKE THE LONGEST TIME TO DRAW OUT. SO IF YOU WANT TO REPLAY YOUR DRAWINGS FAST TRY SYNTHESISING CURVES WITH SHORT STRAIGHT LINES OR STREAM.
(REPLAY SPEED IS NOT ALWAYS IMPORTANT)

YOU CAN ASSEMBLE DRAWINGS ON THE PAGE, WIPE THEM OUT WITH BLACK NIBS, THEN ADD MORE DRAWINGS TO PRODUCE SEQUENCES WHICH WILL REPLAY DYNAMICALLY. HOWEVER: ON REPLAY THE SYSTEM ALWAYS REDRAWN THE PICTURE UNITS FIRST THEN ADDS THE NEW DATA.

IF YOU WANT A BIT OF NEW DATA TO REPLAY IN BETWEEN PICTURE UNITS YOU MUST FIRST TURN THE NEW DATA INTO A PICTURE UNIT. FILE THE NEW DATA AS SOON AS YOU HAVE DRAWN IT. - SET A STANDARD LOCK. THEN COPY THE UNIT BACK ONTO THE WORKPAGE FULL-SIZE USING THE LOCK TO CENTRE IT PERFECTLY.

WHEN YOU MOVE A PICTURE UNIT YOU ALSO MOVE ITS POSITION DURING REPLAY TO THE END OF THE SEQUENCE.

SELECT PAGE AT ANY TIME TO REPLAY THE SEQUENCE YOU HAVE BUILT UP ON THE WORKPAGE AND ALSO TO REPLAY A PAGE THAT YOU MAY HAVE LOADED FROM THE WORKDISK.

YOU CAN HALT THE REPLAY AT ANY TIME BY PRESSING THE SPACE BAR ON THE APPLE - THIS DOES NOT EFFECT THE DATA IN MEMORY.