

Rochester Institute of Technology

RIT Digital Institutional Repository

Theses

1-1-1989

Multi-image animation: "Super Hero"

Jeannette M. Achurra

Follow this and additional works at: <https://repository.rit.edu/theses>

Recommended Citation

Achurra, Jeannette M., "Multi-image animation: "Super Hero"" (1989). Thesis. Rochester Institute of Technology. Accessed from

This Thesis is brought to you for free and open access by the RIT Libraries. For more information, please contact repository@rit.edu.

Rochester Institute Of Technology

A Thesis Submitted To The
Faculty Of The College Of Fine And Applied Arts
In Candidacy For The Degree Of
Master In Fine Art

Multi-Image Animation "Super Hero"

Jeannette M. Arosemena Achurra .
January, 1989

A P P R O V A L S

Advisor: Prof. James Ver Hague

Date 1/11/89

Associate Advisors: Prof. Robert Keough

Date 1-17-89

Prof. Erik Timmerman

Date 1/13/89

Graduate Academic Council Representative:

Prof. Philip Bornarth

Date 1/25/89

Dean, College of Fine & Applied Arts:

Dr. Robert Johnston.

Date January 26, 1989

I, Jeannette M. Arosemena A., hereby grant permission to the Wallace Memorial Library, of R.I.T., to reproduce my thesis in whole or in part. Any reproduction will not be for commercial use or profit.

Date: January, 1989

I would like to dedicate this work to my beloved parents

Carlos y Dora

Acknowledgements

I would like to thank:

All those persons that have to bear with me during the masochist experience of developing this piece of work. For all those ones that have stood by me in my bad, sad, weird, inspiring and limbo, fantasizing and happy moods... *my friends.*

Vesta E. Adu Gyamfi and Eyda L. Jove for the special gift of friendship, company, and a good ear too!

The members of my thesis committee: Professors *James Ver Hague, Robert Keough and Erik Timmerman* for their patience and good will.

The College of Graphic Arts And Photography
specially
Russ Lunn, Carlos Pinero and Chris Coffy
for their technical support, patience and good will.

Jay Chow, Katheleen Rose, Jane Wood, Lisa Vechionne and Kevin Spoor for their technical support.

Ms. Nancy Mills, Mary Ann Campbell, Barbara Letvin , Dr. Peter Giopulous, Ms. Nancy Rienzo
for their care and attention in times of advice.

The Institute of International Education, especially
The *Fulbright Scholarship Program* for believing in me and giving me the opportunity to learn not only from the academic but from the human point of view; about this country, its people and culture.

C O N T E N T S

Approvals_____	II
Dedication_____	III
Acknowledgements_____	IV
Contents_____	V
Personal statement_____	VI
1-Purpose_____	p 7
2-Types of Computer Graphics' images_____	p 8
3-Imagery's Characteristics of the systems used: Amiga and Genigraphics_____	p 11
4-Story concept_____	p 21
5-Development of the imagery _____	p 31
6-Animating with the Amiga and Genigraphics_____	p 44
7-Inconveniences, problems and solutions_____	p 49
8- Summary_____	p 55
9-Bibliography_____	p 56

_____ *Personal Statement:* _____

In search of the means for an expression of adventure, fantasy and experimentation, I found myself with the opportunity of combining different computer systems to create an animated video. This combination would be the start for an experiment bringing together two different image generating systems, these being the Genigraphics and Amiga computer graphic systems. The two systems differ on their levels of resolution and paint quality, as well as the the type of motion they produce in the development of an animated piece. Nevertheless, this difference is used to create an aesthetically animated piece exploring the many possibilities available within these two different systems. This experience enforces the idea that ...

DIFFERENCE DOES NOT NECESSARILY MEAN
INCOMPATIBILITY !

Jeannette M. Arosemena A.

Purpose...# 1

The purpose of this computerized animated piece, "Super Hero", is to develop an animated story using two different computer systems, Amiga and Genigraphics as tools. Included in this project is also an exploration of the painting capabilities, resolution and motion in the development of characters as well as backgrounds and special effects. All these elements will be combined to create an homogeneous and pleasing animated piece. My goal is to explore the characteristics of classical animation but with a touch of computer.

Types Of Computer Graphics'

Images

#2

As time goes by, things change and evolve pushing us forward. New concepts appear transforming ideas. (This state of constant change appears in modern art as well). The computer as a tool for an artist opens a new world of possibilities. This world of possibilities has grown through the different systems available in the market for painting and creating images. One of the main concerns for an artist is how his work will look. Having worked with different elements such as color, form, design, etc. the capabilities of computers to create images has never ceased to amaze and capture my attention.

Types Of Computer Graphics' Images

2

Therefore in order to be able to obtain the best results on the development of work through the use of a computer it is a good idea to be acquainted with the different types of systems to obtain the desired effects on the work's quality .

The way a computer stores and processes graphic information varies from machine to machine. There are also different ways in which images are created. The first one is the raster or bit mapped type of graphics. The second one is the the vector or display list type of graphics.

1-**{The** raster or the bit-mapped image is the definition and storage of dots called pixels which are positioned according to x,y coordinates in an area of the computer's memory. This is called the bit-map or frame buffer. If an image is made of more pixels it is sharper and the graphics are better. For this to be possible we need a larger frame buffer. Applications using color pixels to define images as in the raster processing programs are easier to use. The work is done from pixel to pixel to make a simple image.

The other system available to the user

Types Of Computer Graphics' Images.

2

is that which works with a vector or display image system. Under this system the images created are recorded as objects instead of pixelated color sections. The machine stores them in a frame buffer according to the size, color, place or position occupied by the objects that are part of the image. The graphics available under this system are affected by the output device due to the fact that the image created under a vector system is usually drawn to the highest level of graphics that the system may have.}

{p 524} NCGA Conference proceedings tutorials vol. II

To appreciate the quality of an image it is necessary to look for the efficient combination of the graphics and the amount of colors displayed. To get a large amount of color displayed it is necessary to have a larger frame buffer. Knowing this before hand it is possible to use these capabilities to our best interest in the composition or creation of interesting images.

Characteristics Of Amiga And Genigraphics Images

3

Working with the Amiga and Genigraphics systems was not as simple as it might sound. During the process of deciding which system was going to be used for the development of the story, two aspects were taken into consideration.

- 1-: which system offers enough flexibility to the moving object on the foreground
- 2-: which system offers enough flexibility with the use of color.

Characteristics Of Amiga And Genigraphics Images

#3

With these two aspects in mind, the rest of the job was just working your fingers to the bone.

To understand which system is more appropriate to use instead of the other we have to understand first how each system works. It is also important to know that each computer's software offers different paint and animation systems. Each played an important role in the visual development of the story. For the time being we will deal with the paint system.

***Paint** systems are raster applications used and designed to create artistic imagery. They can be used as image processors to manipulate and scan visual communication. The paint system simulates the artist's techniques and materials that would be used normally.

Characteristics Of Amiga And Genigraphics Images

3

At the same time the computer adds another asset to this system, and that is the use of software primitives as geometric shape functions. This use of the software makes possible rubber stamping effects, text, reduction and enlargement facilities and a refined use and control over color .

[p 524] NCGA Conference proceedings tutorials vol. II

The Amiga softwares used to develop the main character of the animated piece were called "Deluxe Video" and "Deluxe Paint" . This late software has two sections which are:

- a- the program which controls the computer's ability to work as a graphic work station.
- b- the data which is the set of images that can be stored for later use.

Characteristics Of Amiga And Genigraphics Images

#3

The color capability contained in the data is described as a color palette.

The color palette is composed of 32 colors. Available memory space determines the amount of colors that can be used at any given time. At the fullest memory, the machine organizes colors on the screen menu in this way: {4 columns of 8 color values }, and a 12 color value of the gray scale. The top color of the first row is the default color of the screen used as the canvas or page. The rest of the colors are for the brush which is controlled by the user. The page system in this particular software makes it possible to work with two pages . These two pages work relatively independently but share a common color palette .

{p 1.4} Amiga Commodore, "deluxe Paint" Manual

The level of the graphics resolution available in this system are lo-res, med-res, interlace and high-res. The screen resolution used to develop

Characteristics Of Amiga And Genigraphics

Images

3

the main character was a lo-res type of screen. This level of screen resolution is adequate for most graphic purposes.

*The pixel array of this screen resolution is of 320w x 200h and it accommodates up to 32 colors on a 13" monitor, at the same time. This means that in a 13" monitor the approximate size of a pixel would be .03 inches per side for a total area of .0009 .

"Deluxe Video" converts the 32 colors into sixteen in order to give more space to the memory. In total the whole system has the capability to work with a range of 4096 colors, permitting us to work with our own combination of 32 to 16 colors at the same time.

{p 1.4} Amiga Commodore, "deluxe Paint" Manual

Characteristics Of Amiga And Genigraphics

Images

3

In summary the " Deluxe Paint" software has the capacity to give a variety of colors that add up to 4096.

From this amount only thirty two colors can be used at a time to form a painted image. These thirty two colors will be reduced to sixteen to by the animation program. The program adjusts them to the graphics' resolution capability of the machine. This is possible through the default format of the low-res graphics and interlace format. This can be done on the basis of the memory's capacity and for desired special effects.

*In this paint system any color can be represented in terms of red, green or blue components. With this idea comes also the possibility of 16 shades into each component .

{p 2.15} Amiga Commodore, "deluxe Paint" Manual

Characteristics Of Amiga And Genigraphics

Images

#3

The available 100D+ Genigraphics color system allows the user create color spreads which can give subtle varieties to the hue values especially when creating gradation effects. The software calculates the number of steps in between the first and the last color selected for the spread as well as the intervening shades and hues. The Genigraphics' paint system is designed for graphics. The graphics are very clear and of high quality. Under this system the traditional object based art, ie. geometric shapes, can be combined with those founded on a pixel based image, a painting or a photographic image .

Characteristics Of Amiga And Genigraphics Images **#3**

The object-based art or vector art system uses geometric shapes to define the parts of an image. The pixel-based images or photo images are formed pixel by pixel. A pixel is the smallest element to which color can be assigned.

***The** color capability of this system offers a range of 16,000,000 colors. Due to the fact that each pixel has an assigned color, it is possible to display around 300,000 colors on the TV monitor at the same time.

The paint palette option from the Genigraphics offers also the alternative of using different types of brushes to paint with. The color palette available for this system uses: six base colors outlined in black, 210 intermediate color variation and a gray scale of values; all of them at hand for the artist.

Characteristics Of Amiga And Genigraphics Images

#3

The graphics resolution is independent on the Genigraphics. It is possible to see in detail all the parts of the object when the object based artwork is enlarged.

*The pixeled artwork has a fixed graphic resolution. The amount of pixels is not affected by the magnification or reduction. When magnified, the pixels are just bigger and there is not as much detail. Only color blocks can be seen of what originally was an image.

When the computer interprets the information concerning the reading of an object based image, it sizes accurately the images as much as the output system media will allow it. In a pixel based image, the output of the graphics depends on the sharpness of the input graphics.

[1-8]Genigraphics Paint System Manual

Characteristics Of Amiga And Genigraphics Images **#3**

Under the Genigraphics system it is possible to obtain a reading of 486 lines of resolution across the screen for an image. When the amount of lines of resolution exceeds this maximum value, the computer averages the scanned pixel data, softening the image resolution. This situation offers another alternative to be considered by the artist.

{1-9}Genigraphics Paint System Manual

The combination of the two systems' paint capabilities makes possible an interesting exploration of paint techniques.

S t o r y

C o n c e p t

#4

MY story begins up in the skies. A curtain of pastel color clouds opens the first scene of the story.

Scene one: One cloud after the other opens to give way to the new focal point. This movement reveals to the spectator's attention a blue globe in the middle of nowhere. As the camera approaches the blue sphere, a mass of land become recognizable.

Scene two: introduces us to a mainland panorama. A primitive scene opens up to reveal an impressive volcano which is throwing lava and smoke, surrounded by exotic vegetation dominating the whole view.

S t o r y

C o n c e p t

4

Scene three: finds our main character, "Super Hero" flying on a blue sky.

Scene four: camera glides over the top of the trees and implies our hero diving into the mass of trees at a great speed. Our hero will cross dangerous regions.

Scene five: our hero is crossing the deep forest.

Scene six: the hero is crossing the swamps defying its aquatic creatures with his speed.

Scene seven: shows a desert scene where columns of smoke threaten the flight of the hero.

Scene eight: our hero appears on the scene, over the clouds in the middle of a lightning storm

S t o r y

C o n c e p t

4

Scene nine: opens with a wipe effect of our hero swimming in the bottom of the sea.

Scene ten: main character emerges from the waters heading towards the horizon where an island sits. In its middle lies a can of Coke.

Scene eleven: shows a display of colors simulating fire works which uncover the giant can of Coke.

Scene twelve: our hero is grabbing the gigantic can of Coke .

This is a simple way of stating the story line of the piece "Super Hero". The whole work is the interrelation between the main character, which is a bird from no particular bird's family, and the different adven-

S t o r y

C o n c e p t

4

ture settings. All the story runs along the line of a satirical and ridiculous atmosphere. This atmosphere is dramatized with the help of the background music, the movement of the bird and its physical appearance purpose and the Diet Coke! This finale leaves us with the sensation of ...all this trouble for this!

The whole piece can be taken as a commercial attempt due to the last scene where the can of Coke is displayed but in fact the main purpose of the story is to back up the fun and experimentation of working with two different systems at the same time. From a practical point of view the experience of playing with colors and image generating capabilities, adds more interest to the development of the whole piece. Although

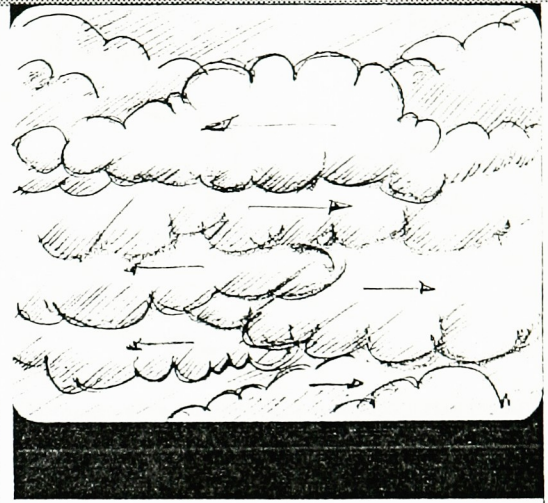
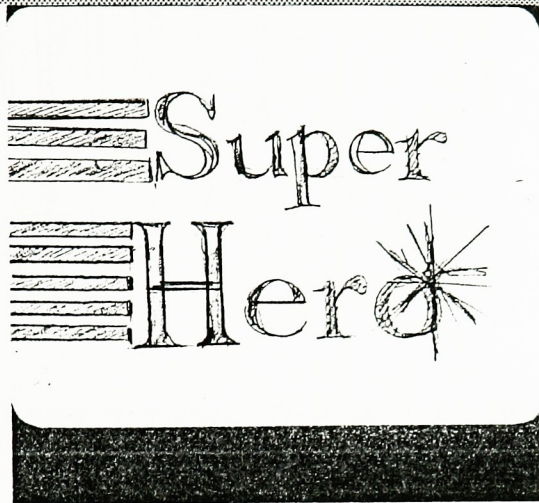
S t o r y

C o n c e p t

4

the piece was shown to an adult public audience, the work could be shown to children as well. This characteristic makes the whole project either an entertainment or commercial piece. The original purpose was intended for enjoyment.

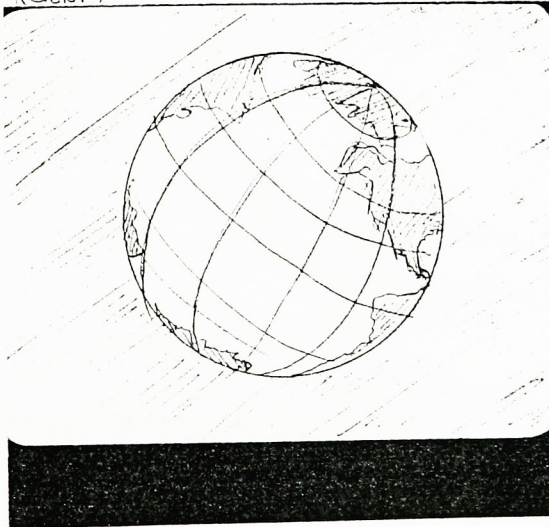
S t o r y
C o n c e p t
4



OPENING : BLUE GRAY SCREEN
music
TITLES START TO COME TO THE
SURFACE BECOMING EMBEDDED
LETTERS
FADING TAKING SPARKLE SHIMS
FROM THE 'O'

CLOUDS CURTAIN APPEARS
ONE BY ONE, THEY MOVE
OUT FROM THE SCREEN
ALTERNATING ^{from} LEFT & ^{to & vice versa} RIGHT

(GENI) "FADE OUT"



(GENI) (OBJECT CREATION)



ROTATING WORLD
Zoom in slowly
Close up towards
GLOBE - TO SECTION
OF LAND, BROWN (color)
FLOODS SCREEN IN

Zoom OUT TO FLOWERS
^{from Brown}
VEGETATION & VOLCANO
SCENE

SMOKE & LAVA COMING FROM
VOLCANO'S MOUTH
SHADES SKY

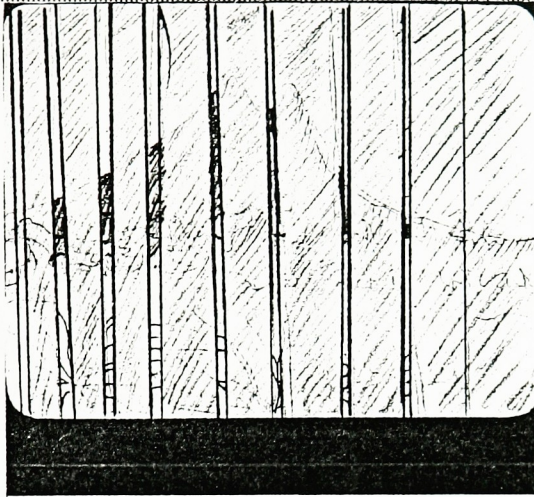
p26

(GENI) GLOBED IMAGE

(GENI) PAINT - IMAGE SYSTEM

S t o r y C o n c e p t

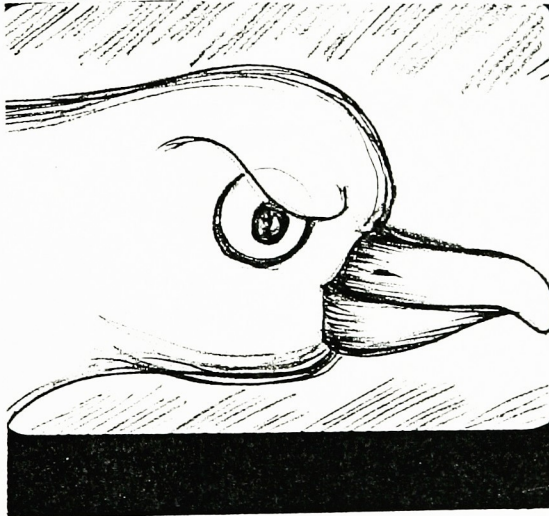
4



< CUT > *

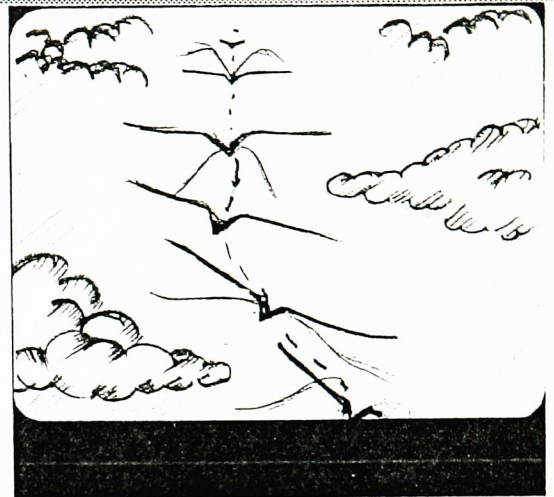
STRIPES (color BLUE GRAY) PANELS
move one by one to fill
SCREEN. UNTIL IT BECOMES
ONE SINGLE BLUE WALL OVER
VOLCANO SCENE

(PANI)



BIRD'S HEAD CLOSE UP
MOVEMENT OF THE EYE

p27 looking TOWARDS THE FRONT &
DOWN
< cut to air view of jungle >
(7a)



BIRD APPEARS ON SCREEN
GROWING FROM SMALL DOT TO
FULL SIZE
BIRD SHEDS OFF SCREEN

(AMIGA) + GENSI OBJECT SYSTEM



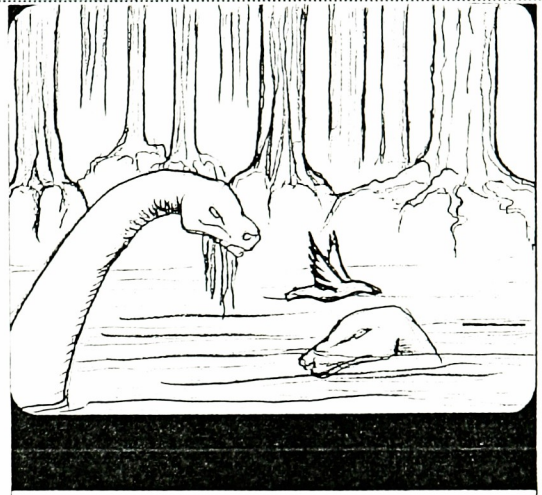
AIR VIEW OF JUNGLE
FRAME MOVEMENT FROM
LEFT TO RIGHT

CUT TO JUNGLE SCENE

S t o r y
C o n c e p t
4

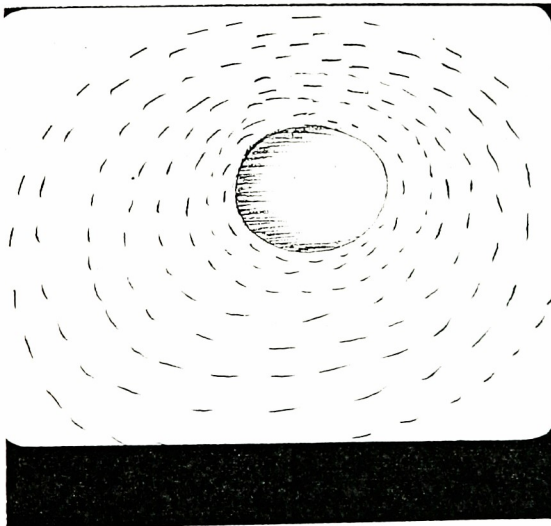


BIRD COMES THROUGH THE
TREES

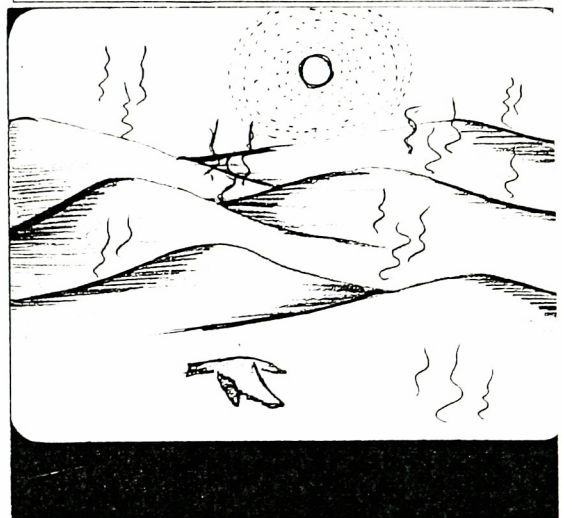


DINOSAURS AT SWAMP
AREA AS BACK SCENE
BIRD CROSSES BY THE FRONT

cut to → sun



zoom out from sun
(circle) yellow orange



(DESERT SCENE)

STEAM COMES OUT FROM
DUNES,

BIRD FLY (SIDE VIEW)

*SCENE FADES INTO WHITE

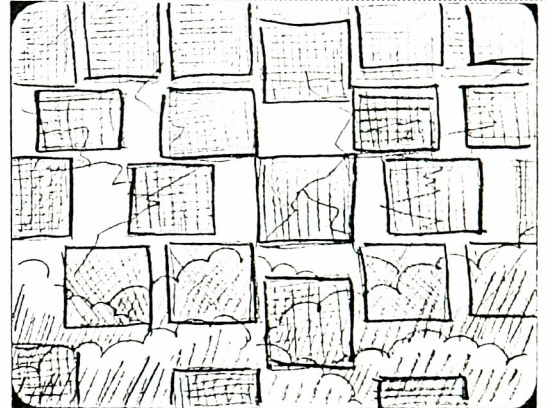
S t o r y C o n c e p t

4



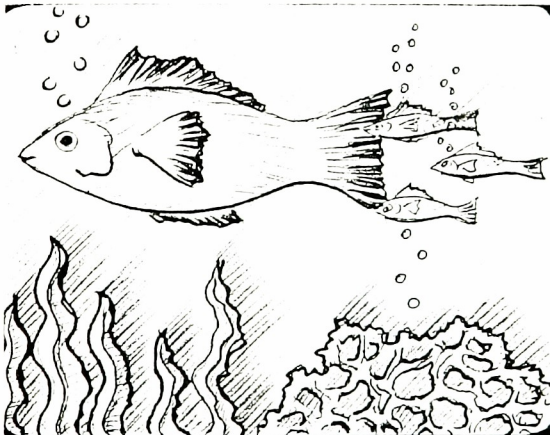
(GRABED Photo) light storm
OVER CLOUDS
BIRD DIVES INTO THE
CLOUDS

* cover lightnings sparkle effect *



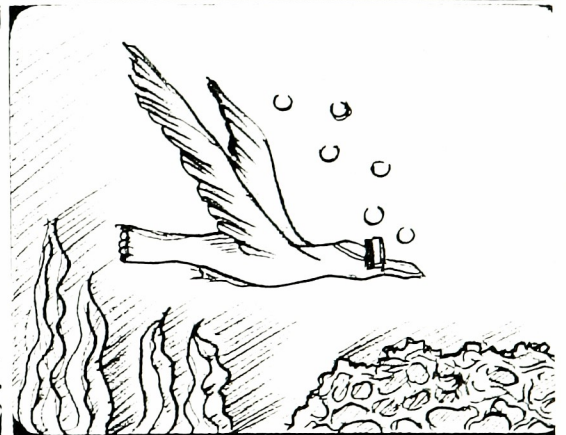
Squares (color DARK BLUE)
move one by one to fill
complete screen

CAMERA → FAST zoom in ①
Panning movement to the
right from dark blue to
blue gray ②



IMAGES FADE IN
SEE WEEDS & CORALS.
Fishes enter scene swimming *
OR FADE IN.

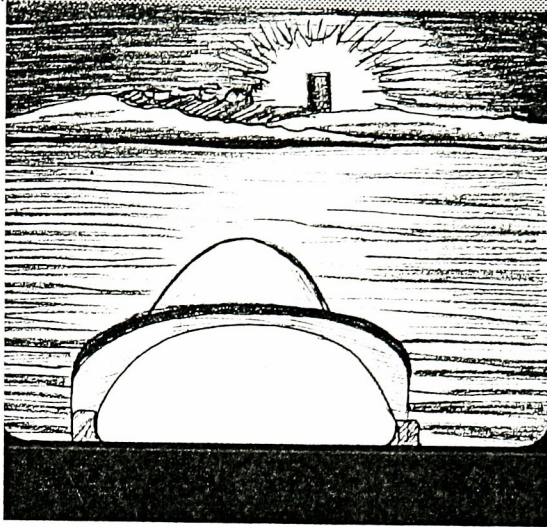
Fish's eye grows when
BIRD ENTERS SCENE



BIRD Flying UNDER
WATER.
<slow movements>

APPEARS FROM LEFT SIDE
WITH SNORKEL MASK

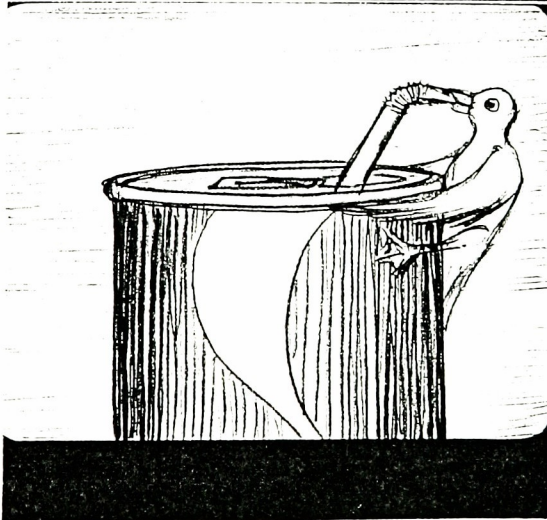
S t o r y
C o n c e p t
4



BIRDS HEAD IN FIRST
PLANE RISES OVER WATER*

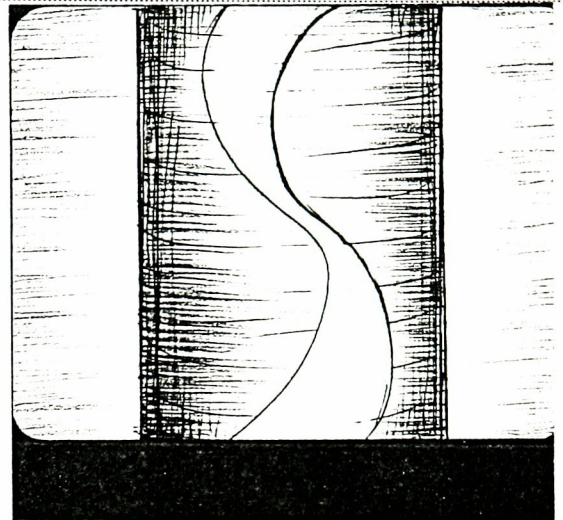
SECOND PLANE LAND &
UNIDENTIFIED OBJECT IN
DARKNESS. GLOW BEHIND
the object

BIRDS HEAD REDUCES IN SIZE TO
DISAPPEAR ↓



(BLUE SKY BACKGROUND —)

p3 PAN STOPS ON TOP OF CAN
SHOWING BIRD ON TOP OF
CAN SIPPING FROM IT.
BIRD IS GRABING CAN

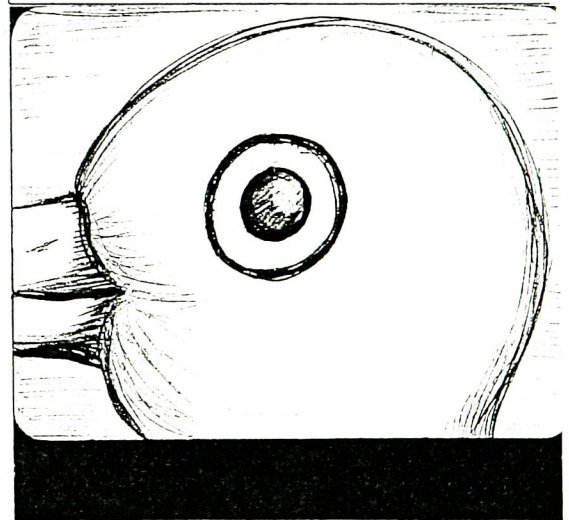


zoom in to medium shot
of can.

Can lightens up. Glow is
behind can

CAMERA moves up the can

cut to...



Zoom in TO BIRD'S
HEAD.

SCREEN GOES BLACK
TWICE, REPLACING

THE BLINK OF THE EYE
ON SECOND WINK SCREEN
STAYS BLACK TO GIVE
PLACE FOR CREDITS & etc
INFORMATION

Development Of The Imagery **# 5**

The imagery used for the animated piece "Super Hero" is developed in two different computer systems, the Amiga and Genigraphics.

The main character in "Super Hero" is in fact named Super Hero, it was developed on the Amiga Commodore computer system. Super Hero is a bird portraying no particular bird family. Its general features resemble a seagul in many ways as well as characteristic of the duck family. Super Hero was developed as a caricature, its body is plump and short. The wings are long and the beak has a slight curve pointing down. The color of the body is dominated by the gradation of black to white while the beak and leg's color are dominated by the gradation of yellow to dark orange. The amount of space on the color palette set for the

Development Of The Imagery

5

range of colors was thirty two. The thirty two color spaces were organized according to the space filled by the main colors. These colors also have control over the background's color and general text menu.

Super Hero's movements were determined by eight different drawings. Each one of the drawings worked as a normal cell animation interacting with each other. The only difference was that each of these drawings was created on the screen and the computer was responsible for the action, as if we were flipping the pages in front of our eyes; BUT AT A FAST RATE ! Each drawing represented a stage in the whole movement for a sequence. These movements were as follow:

- a- Front view, bird flying from a far away distance.
- b- Bird's head close up, movement of the bird's eye.

Development Of The Imagery

5

- c- Side view, bird flying over static back grounds.
- d- Back view, bird seen flying from far away distance.
- e- Full shot of the bird on top of the coke's can.

SIZE

The bird's size was varied according to the scene. Originally the bird was created with the idea that it should cover the whole screen. This was true in the scene showing the bird's head from a side view angle. This case was not the same for the rest of the scenes, where a general view was required and the amount of movements determined the amount of drawings that could be created. The amount of drawings are determined by the size of the objects and the smoothness of the movements.

The more drawings the smoother the movement. For this reason the size of the

Development Of The Imagery

5

bird was reduced and adjusted according to the needs.

BACKGROUNDS

The backgrounds displayed were all generated on the Genigraphics D+100 system. Some of the images' components used to build the background were grabbed through a camera connected to the computer. Some of the images were taken from photographs and later on manipulated. This can be seen in:- the opening scene of the earth and clouds, the swamp, the desert scene, the lightning storm and the sea scenes and those where the can of Coke appears. The rest of the scenes's elements were elaborated with the use of the paint system available on the Genigraphics D+100. These scenes were created not only with manipulated photographs and painted images but also with object oriented art.

Development Of The Imagery

5

- 1 - The opening scene of the globe and clouds, was made up by object oriented art and a grabbed photographic image.
- 2 - The scene of the volcano's eruption is developed completely through the use of the paint system. The cloudy smoke and lava was developed through the object based system.
- 3 - Static backgrounds such as the aerial view of the forest and the forest trail were developed on the paint system. An unlimited choice of sources were used to color the images which were developed in bright and vivid contrasting colors. The use of color helped to build up the feeling of tropical and primitive jungles.

In the development of the different sections, color was an element that made the backgrounds stand out by themselves . This element was used later in contrast

Development Of The Imagery

5

to the main character's graphics characteristic. The contrast between the main character and the background as well as the resolution from both systems set the two apart.

- 4-The development of the swamp scene was made with the use of the paint system's capabilities and manipulation of photographs. Elements of the photograph were used to create textures, new alternatives of color as well as new factors. These later became part of the elements that composed the whole picture. The bases of each tree on the swamp scene was constructed with different sections of a photograph. The dinosaurs were developed as object based art.

To create a slight sensation of volume, gradated color objects are positioned one on top of the other varying in size and position. The rest of the composition was

Development Of The Imagery

5

polished with the help of the paint system

- 5 .The desert image was a composition of photograph sections put together. The photograph used was the rim of a straw hat which was placed in layers upon layers to create the structure of the desert. This organization helped to build the sensation of desert dunes. The color which was added later, was used to help support this idea. The free interpretations of smoke columns appearing and disappearing, was created through the object based system of the computer. These objects had their own particular motion and color and interacted with the whole idea of the landscape

- 6.The lightning sequence was developed very simply. A black screen was used to cover the portion of the photograph occupied by the lightnings at intervals to create

Development Of The Imagery

5

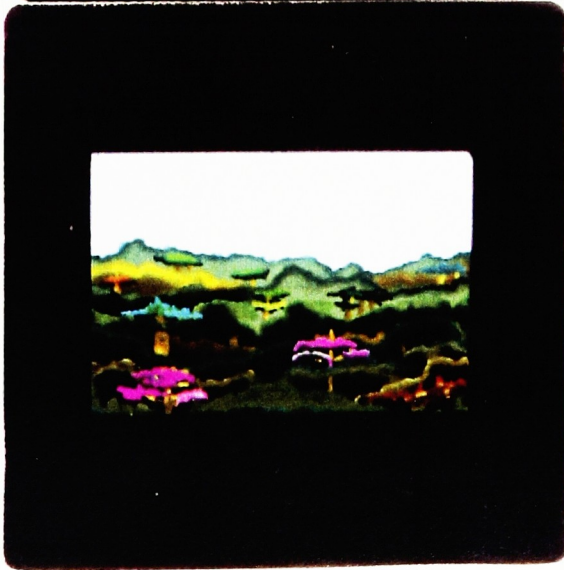
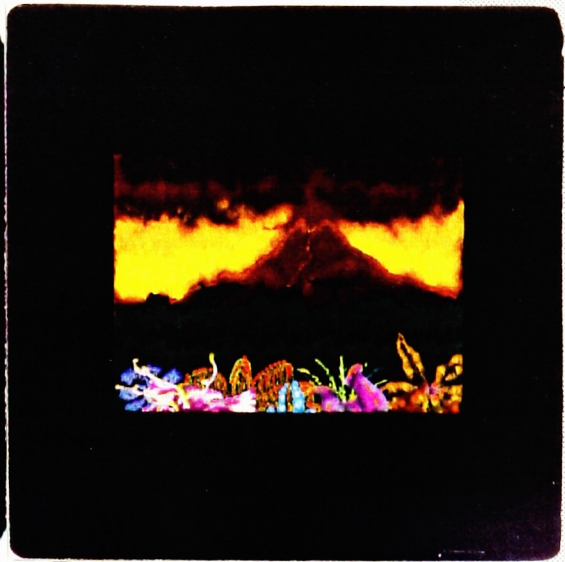
the illusion of appearing and disappearing.

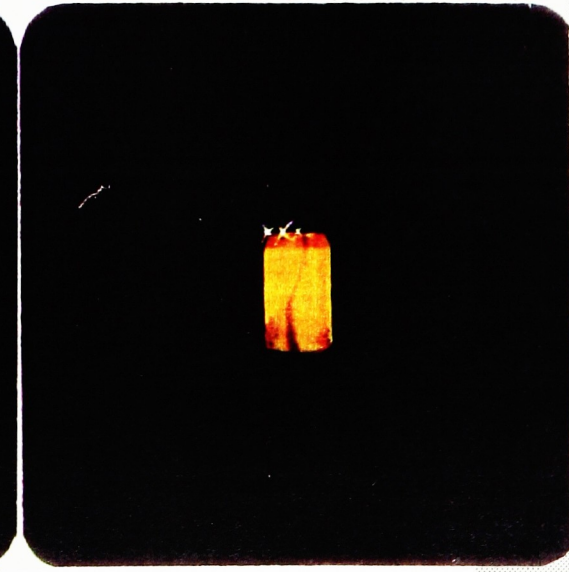
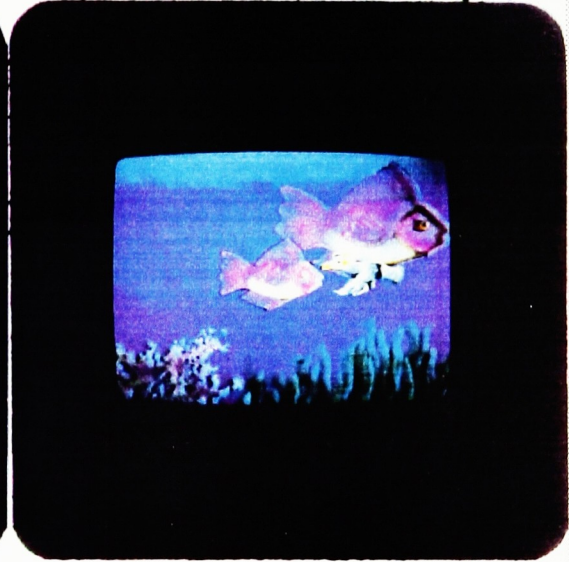
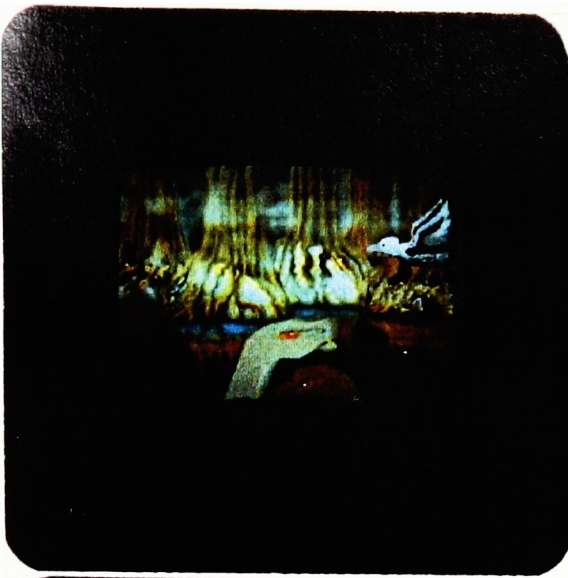
7. The sea image was developed through the help of the paint system and photographic images that were put together to create a single picture. The photograph was manipulated and sections of it were taken to create new ones, for i.e. the coral at the bottom part.
8. The scenes where the can of Coke appears were developed as a polarized picture while the island where the can of Coke was shown were created through the paint system.
9. The structure of the fire work sequence was made by different type of paint brushes and color values. The additional element was a sparkle effect which was created as an object based element and later animated.

Development Of The Imagery

5

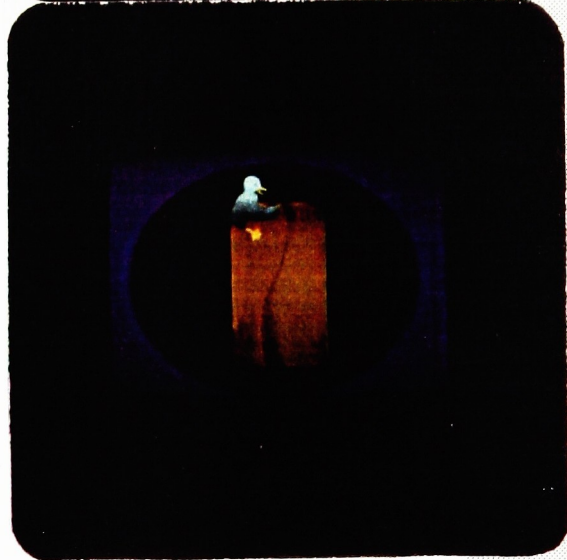
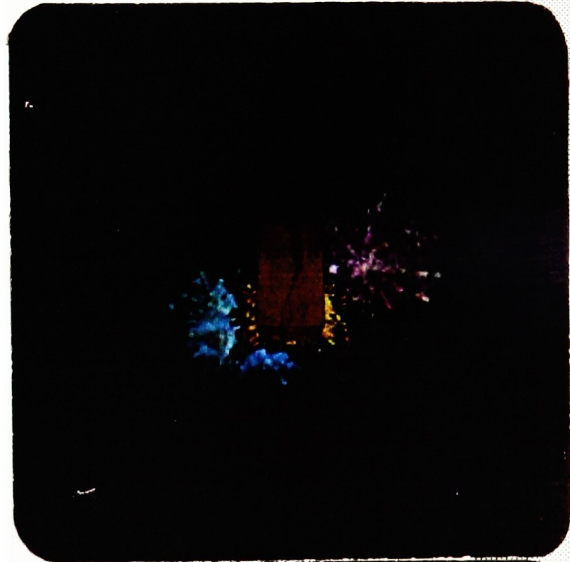
The two sections that make up this project have their own particularities that work together to create an homogeneous piece. We can evaluate this project as an experimental collage. The output of each one of the machines differs in graphics, and resolution; these differences joined together to create an aesthetically contrasting piece.





Development
Of The
Imagery

5



Development
Of The
Imagery

5

Animating With The Amiga & Genigraphics

#6

The Amiga gives you a fast feed back of what the movement, sequence, and timing are going to look like. The Genigraphics D+ lets you see in small steps the action which leads you to imagine how the end product would be like. This is even more time consuming because you have to wait till the action is recorded to see the results.

The Amiga Commodore animating system is based on a form of cell generated images, drawn on the screen. Each drawing represents a stage of a movement sequence. The more drawings the smoother the movement. It is necessary to pay attention to the space occupied by each drawing and the way in which they were organized on the computer's screen. If this is not taken into consideration you may end up redrawing or subtracting images. The software used for the Animation was Deluxe video .

Animating With The Amiga & Genigraphics

#6

The Deluxe Video uses less colors. Eight colors in the foreground and eight in the background. The color that is first selected is known as the color zero. This program does not merge each video signal into one.

The Deluxe Video program is made of three parts or disks:

- 1- The maker disk which lets you create and play back video.
- 2- The player disk which plays back the created sequence and saves it.
- 3- The parts and utilities: disk which contains special utilities like the vid-check, unpack and the framer which creates animated sequences to include in the videos you want to create.

*The Deluxe Video uses a display characteristic which is composed of a foreground and a background. Each one uses its own color palette and each one is composed at the same time by two memory areas: the visible and hidden spaces which applies to the two foregrounds and two

Animating With The Amiga & Genigraphics

#6

backgrounds. The two sections work together to create the effect of motion. This is possible by switching places instantly over and over again behaving as a page flipping device. An exception would be the hidden background which acts as a temporary buffer for an image using special effects i.e. dissolves, wipes, cuts, etc.

{p4.4} Amiga Commodore Deluxe Video Manual

The timing aspect is also very important under the Deluxe Video program. The Deluxe Video deals with two categories of time called Real and Normal time speed.

*Normal time speed- The Normal time speed pays no attention to the time it takes to load files from the disk. This program makes a comparison between the clock and the script. It redraws the drawings on the screen depending on the type and complexity of the desired special effects .

Real time speed- The Real time speed is the one run by a clock, it takes into consideration the amount of time spent reading the files from the disk. It also synchronizes the video with an external element such as a music track.

{p4.24} Amiga Commodore Deluxe Video Manual

Animating With The Amiga & Genigraphics

#6

The speed used for the project was the Real time.

The other system involved was the Genigraphics D+ animation system. With this computer's system the user makes the drawings and the machine performs and calculates the necessary changes ie. rotation, change of color or size, camera movements as panning, tilt, etc. With this process a lot of time spent in drawing is shortened.

*This system uses a key frame Animation program procedure to create frames for slides, video or film presentations. The key frame artwork is developed along with the function entries. These function entries are programmed to enter into an animation table which manipulates the artwork. The computer creates the inbetween frames allowing the functions to overlap in time and be combined. After all the changes have been determined, a real time reference display can be seen on the monitor at 24 or 30 frames per second.

{P1.7} Genigraphics Animation Primer Manual.

The use of computer animation over the other classic ones is a mere choice of taste

Animating With The Amiga & Genigraphics

#6

depending on the project to be developed. Each of the animation techniques has its use and charm. Each one is perfect for a specific purpose. The computer has become another tool available to create animated pieces and this only enriches the visual art media of animation.

7

For a person working on a thesis project life is not a rosy path. This person may find him/herself surrounded by inconveniences and problems that will make life a little bit...**MISERABLE !**

This situation was so with my thesis project. Nevertheless I became a masochist and enjoyed my time working on the thesis project very much. Anyhow I wish I would have had more time to work on other ideas that popped out along the way. Life became miserable for a while.

Problems evolved while using the Geni-graphics especially when moving a certain amount of objects in a single scene, also when positioning those objects before and after a movement. This is due to the overload of the memory.

#7

amount of objects or to divide the whole sequence into small sections. The simplification of the object configuration was another alternative that I tried. I used Geometric shapes to build up other complex ones. At the same time all the three pages were used taking good care of placing the elements in a strategical position.

The time spent by the machine to generate frame after frame when recording was a great setback . We were working against time! In my particular case, the process which involved the regeneration upon regeneration of the images was slower because: I was working with painted images which required a big amount of memory space every time a frame was to appear. To increase the speed of the regenerating time it was necessary to reframe the whole picture, situating it on the same position used by the default frame size. This frame was slightly bigger than the default frame used to record, just enough to occupy the whole

#7

screen. This was checked by a full screen regen test for each of the background images.

The graphics shown by the images were a problem too. The distortion of proportions and black borders surrounding the shapes when pasted on other images created an aesthetic inconsistency on the whole picture. Retouching was a good alternative to solve this situation. I decided to use the black border as a decorative element.

On the other hand the size of the bird in relation to the background was a constant concern. Because foregrounds and backgrounds were not done on the same machines, checks could not be made to view positions or sizes. This proved to be of no major problem at the time of recording. With the help of the animating program system, the special effects available on this particular software and the editing equipment available it was possible to change the

7

size of the bird, specially at the scene where it was to be positioned on top of the can.

The size of the bird in relation to the amount of drawings for a specific movement was something to consider seriously. Enough space was needed to contain the necessary amount of drawings for the specific movements on the screen. It was either, sacrifice the aesthetic proportions or the timing and smoothness of the movement. This problem was realized at the beginning but due to the character of the whole piece this fell into a second plane. Nevertheless the whole amount of drawings for each movement was reduced to its simplest form. Also the timing used helped to compensate for some of the missing drawings. These alternatives resulted in a proportional use of timing and space division.

Color was also a big inconvenience to deal

7

with. On both systems the path from the computer signal to the recording machine, (as in the Genigraphics), and from one program to the other, (as in the Amiga), brought as a result a change of color values. Even though color editing was done on the console the color varied considerably when output to video. The other reason was the non-calibration of the recording equipment necessary to send an accurate signal to the recording and editing equipment. The calibration problem lowered the level of image clarity of the image seen on the recorded image.

Without a test piece to work from the timing of the bird's movement on the Amiga was very difficult. The best path to follow was to create a tentative set of movement effects which could be modified when combining both systems.

Another problem related to both systems' art works, was the fact that the

7

frame of the screen on the Amiga was smaller than the video output of the Geni-graphics. Special effects facilities, available on the editing equipment made it possible to compensate this set back. The cropping effect alternative available on the editing station helped to cover certain discrepancies of border limits from the image generated on the Amiga. These cropping effect alternatives surrounded the desired areas of the background that needed to be covered. This was helpful in building up the character's image on the general piece.

Summary

8

**As a last word about the whole
experience.....**

I would like to state that more than ever the use of the computer in generating visual art forms is becoming stronger every day. There is still more to discover. We have to explore in depth the capabilities of the computers as art tools and our ability in expressing our creativity. The use of the computer as a means of art expression could be described as an open drawing pad whose pages are in blank and it is our privilege to fill them with our artistic abilities and aesthetic values, our fantasies and desire to discover new alternatives to solve design and art problems. The computer is our drawing tool just waiting to be used by us.

B i b l i o g r a p h y

1. ACM SIGGRAPH-Association for Computer Machinery.
Conferences Proceedings SIGGRAPH 1987
July 27-31, 1987. Anaheim Calif
2. ACM SIGGRAPH-Association for Computer Machinery.
Course Notes, Animation Appreciation #3
14th Annual Conference on Computer Graphics
& Interactive Techniques.
July 27- 31, 1987, Anaheim , Calif
3. NCGA- National Computer Graphics Association.
Conference Proceedings
Tutorial Volume II, 1987.
4. Ver Hague, James. "Paint System Image Enhancement"
STEP-bY-STEP , January 1988
5. Gibbons, Williams. " Amiga The Artist Friendly Computer"
How , May - June 1986.
6. Simon , Luisa. " The Best Byte"
How, July-August 1986.

B i b l i o g r a p h y

7. Crow, Frank & Csuri, Charles. "Backing Into Computer Graphics"
Displays On Displays, April 1986.
- 8 .List, Chad. " Temporal Synergy : Multi-system Animation Of Computer Generated Imagery. "
Thesis submitted , Rochester Institute Of Technology, June 1985