AVL GENESIS SYSTEM

PROGRAMMING MULTI-IMAGE SHOWS

Audio Visual Laboratories, Inc.

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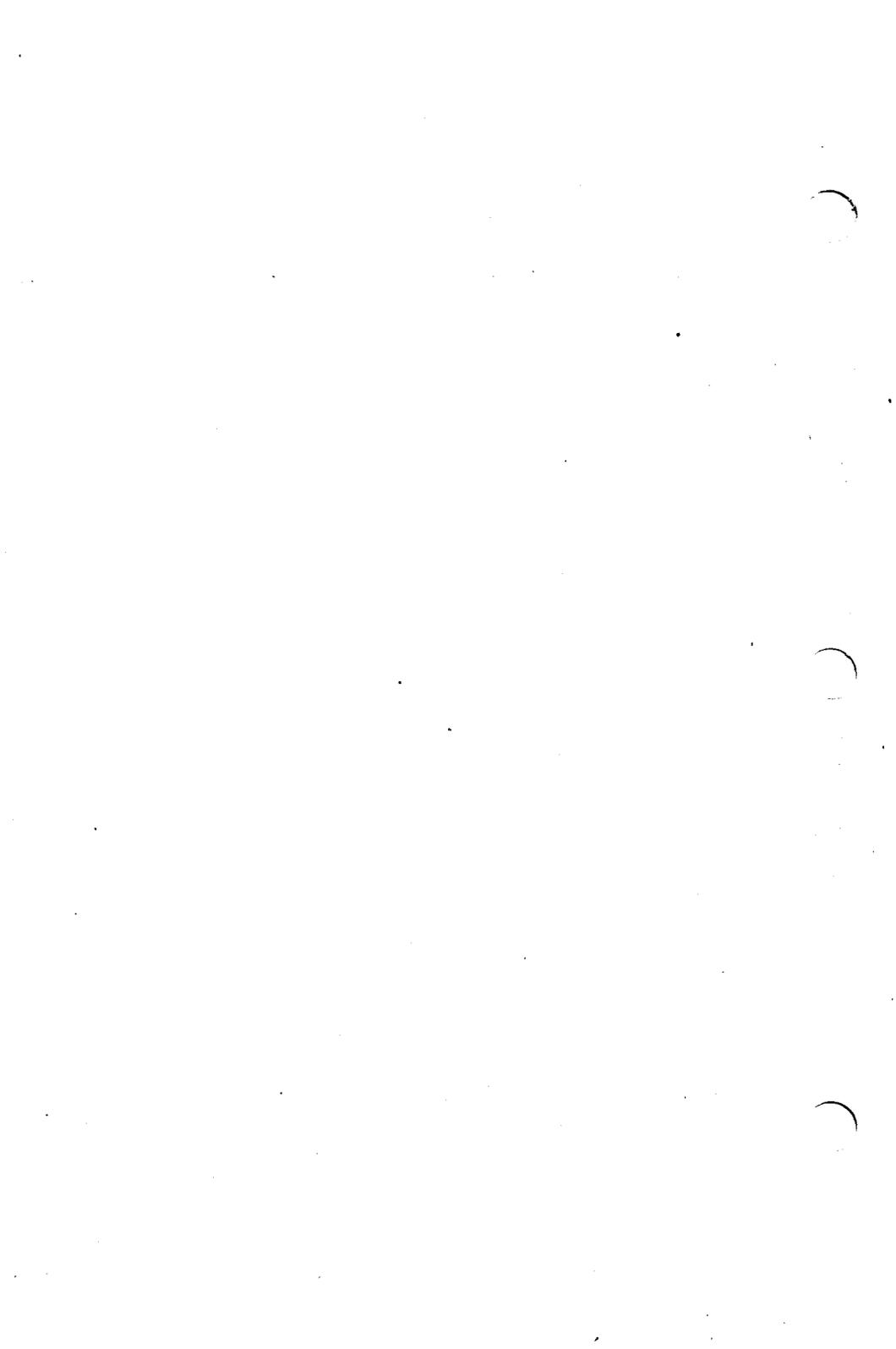
CHAPTER 1

INTRODUCTION TO MULTI-IMAGE
PRESENTATIONS

1.1 GENERAL

After the slides have been created for
your show, there are a number of steps
to be completed to convert them into an
attractive,   effective   Multi-Image
Presentation or Show.

The process, in general, is as follows:

   * Load the Slide Trays

   * Register the Projected Images

   * Program the Show

   * Edit if necessary

   * Synchronize the Show

   * Save the Show in Memory to
      Tape and Disk.

   * Load the Show into the Computer
      for later Presentation.

We'll cover each step in turn in this
manual.

1.2 THE PRESENTATION

The actual running of your slide shows
or modules should be well planned for
the audience to be able to comprehend
what they are experiencing. The key to
effective presentation is not in what
they see, but in what they retain!
Please don't overload your audience with
information. Give it to them in
digestible servings where they will have
a chance to absorb it, then move on to
the next subject or module.

Mixing of canned (automated) show
segments with live segments gives your
audience a welcome change of pace.
Always leave them wanting more, not
saying - when does it all end?

1.3 FACTS ABOUT TRAY LOADING

Loading your slides into Slide Trays
sounds easy, and it is. It's just that
it must be done in the correct sequence
and very accurately.

Virtually every Programming System
utilizes the same sequential pattern for
showing slides.

1.3.1 TWO PROJECTOR CYCLE

If you are using just 2 projectors, the first projector turned ON will be the TOP or LEFT projector depending on whether your projectors are stacked one over the other, or side by side. Thereafter, the system simply alternates between the two projectors.

1.3.2 THREE PROJECTOR CYCLE

In a 3 projector stack, again the TOP projector is turned ON first, then the CENTER, then the BOTTOM, but the next cycle is BACK TO THE TOP, NOT THE CENTER! The cycle is Top to Center to Bottom, and back to the Top.
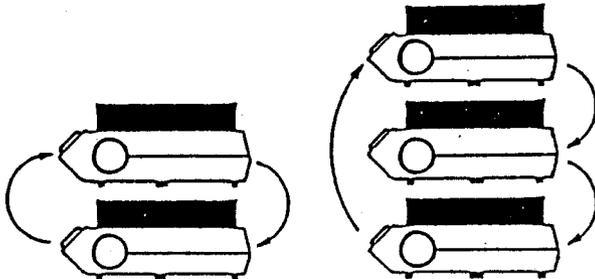
1.3.3 LOADING THE SLIDES IN TRAYS

With your slides laid out in the order you wish them to appear on the screen, mark your Trays:

a. TOP/LEFT or BOTTOM/RIGHT when
    using two projectors, and load
    the first slide in the TOP or
    LEFT tray alternating each
    succeeding slide between the
    trays.

b. TOP, CENTER, and BOTTOM, when
    using three projectors,
    loading then becomes First
    Slide in the TOP Tray, Second
    Slide in the CENTER Tray,
    Third Slide in the BOTTOM
    Tray, Fourth Slide in the TOP
    Tray and so on.

Use care! One slide in the wrong tray
and you start all over again!

1.4 THE PRESENTATION ENVIRONMENT - SCREENING YOUR SHOW

Now that your slides are all in the
correct Trays, you must get your image
to the screen. This section will give
you some helpful information on the
Projected Image and how to set up your
Presentation Room for maximum effect.

1.4.1 PROJECTION ANGLE

It is important for the quality of your
images and the comfort of your audience
that you project your images with as
little   distortion   as   possible.
Essentially this means the projectors
should be situated as nearly as possible
at right angles to the screen, both up
and down, and right and left. This may
necessitate elevating your projectors.
The diagrams illustrate the ideal setup.
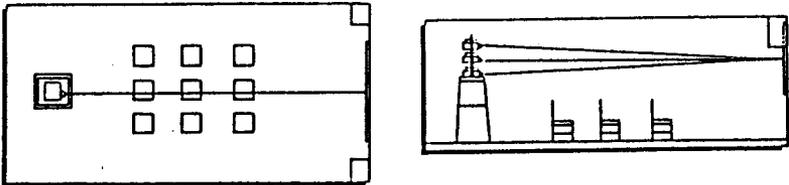
1.4.2 IMAGE REGISTRATION

Make the effort to adjust lenses for
image size and focus as accurately as
possible. Project one image, then match
the others to the first, one at a time.
This is called Registration, and though
they won't know why, your audience will
love you for it. Unregistered images
are very uncomfortable to watch.

We would suggest you obtain several
Industry Standard Alignment Slides from
your AV Dealer. They will make the task
of registration much easier and more
consistent.

1.4.3 SOUND SYSTEM

Speakers for any sound accompanying your
show should be placed on either side of
the screen and preferably elevated. A
test for adequate, not dominating, sound
levels should be done before your
audience arrives.

1.4.4 ROOM ENVIRONMENT

It is critical for effective
presentation, that the room be
comfortable. Don't make it cold in the
mistaken belief that it will keep the
audience awake. All that would do is
force their attention to the
temperature, not the presentation.
Comfortable seating, and tables, if note
taking is required will add immeasurably
to the receptiveness of your audience.

Variable light controls are ideal if
they are available. Try to keep some
slight ambient light in the room so it
is not completely dark. A floor lamp
with low wattage lamps will help. The

audience will not tire as easily under
these conditions.

Remember, if a person gets turned off
once to your style of presentation, it
will take a long time to get them back.

1.5   PROJECTOR CONTROL

It can be very helpful if you understand
how we control projector lamps and the
slide changing process. The few simple
facts presented here will go a long way
toward dispelling the mystery that seems
to surround Audio Visual Programming.

1.5.1 LAMP ON/OFF - ADVANCE/REVERSE

As   far   as   a Slide   Projector   is
concerned, we can only do two things
with it. We can turn THE LAMP ON or OFF,
or we can ADVANCE it or REVERSE it.
That's all. Nothing more, nothing less.
Surprised? It's true.

The   magnificent effects you may have
seen on a screen are made possible by
HOW we turn the lamp On and Off, and HOW
and WHEN we Advance it and Reverse it.
The specifics of how we do this will be
demonstrated   when   we   get into   actual
Programming.

1.5.2 PROJECTOR DESIGNATIONS

Programming, in many cases, requires individual projectors to be designated in cues. If we designate a single projector or any combination of projectors in a single cue, they will be the only ones to react. All others will remain as they are. This is the secret of Special Effects Programming.

The AVL GENESIS System provides full 30 projector capability. For programming purposes, these projectors are divided into two Banks of 15 projectors each, Bank A and Bank B.

	BANK A	BANK B
DOVE NO.	1 2 3 4 5	1 2 3 4 5
PROJECTOR	A D G J M	A D G J M
LETTER	B E H K N	B E H K N
	C F I L O	C F I L O

Within each Bank, the 15 projectors can be designated by a DOVE (Screen) Number 1 thru 5, to control 5 separate Systems of 3 projectors each, or, individual projectors may be designated and accessed by Letter, A thru O.

We cannot include Dove numbers in the same Cue line with projector letters. Genesis will not accept the Cue. This

allows us to designate any one or more
projectors individually by Letter, or, a
System of 3 projectors by Dove Number.

System and Individual Projector control
will become very important as we get
deeper into programming.

1.5.3   THE DOVE-X PROJECTOR CONTROL UNIT

The DOVE-X is the projector control unit
for your GENESIS System. It reads the
data from the System or from Magnetic
Tape and converts it into actions on the
projectors.

The significant controls and their
functions are shown with the
illustrations.
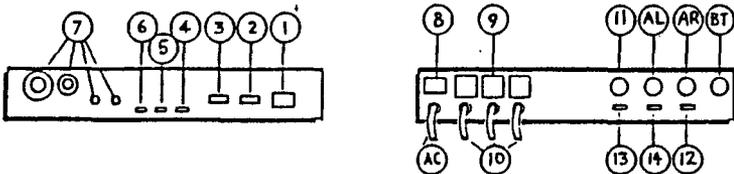
1 - DOVE Number Switch -
This thumbwheel assigns the
DOVE a screen number. It will
read only data assigned to
that number and ignore all
else.

2 - Setup Switch -
Turns on all three projector
lamps for registering images
and checking that all is
operating as it should.
Pressed a second time it
returns the lamps to their
normal position.

3 - Reset Button -
Returns all projectors and
lamps to the starting
position.

4 - Ready L.E.D. -
Indicates power in the initial
stage and that the projector
has advanced during
programming.

5 - Amp L.E.D. -
Indicates the DOVE is
receiving data.

6 - MT Error L.E.D. -
Indicates bad data is being
received from the Mag Tape.

7 - Play Link -
    These connectors are the
    inputs to the DOVE. Either
    connector will receive data,
    or act as a daisy chain
    connection to another DOVE.

8 - On/Off Power Switch.

9 - AC Convenience Outlets -
    Allow plugging of the projec-
    tors into a consistent power
    source with the same circuit
    and phase.

10 - Projector Cables -
    These cables plug into the
    back of the projectors and
    provide the instructions from
    the DOVE.

11 - Remote Cue -
    A standard Kodak Hand Control
    may be plugged here to cycle
    between projectors. Forward
    starts a 2 Second Dissolve.
    Reverse starts a Cut. Focus
    starts a sequential reverse.

12 - Sequence 2/3 -
    This switch tells the DOVE to
    cycle thru all 3 projectors
    (3) or only the Top and Bottom
    projectors (2).

13 - Lamp 115/24 -
This switch customizes the
electronic dissolve curve to
fit the type of projector you
are using. The 115 position
should be used with Ekta-
graphic B2, E2, AF2, and B2AR
projectors. The 24 position
should be used with Kodak SAV
or E3 projectors.

14 - Posi-Trak On/Off -
Posi-Trak locks the program to
the Audio Track and Automati-
cally re-syncs the projectors
should any problem occur
during the running of the
show. This switch turns Posi-
Trak on or off.

AL - Auxiliary Left -
where we can control
additional equipment.

AR - Auxiliary Right control.

AC - AC Power Cord.

BT - Battery Plug.

Finally, the DOVE has a Cycle-Trak
feature which senses an advance of the
projector. Should a projector fail to
advance, the DOVE recognizes it, and
when the problem is resolved, auto-

matically advances it to its proper
posiiton.

1.6 CONVENTIONS USED IN MANUAL

The following conventions are used in
this manual.

    CONTROL/C   A slash between the names
of the keys indicate that
the keys, in this case
Control and C, must be
pressed simultaneously.

    <Ret>   This syntax means that
the Return key must be<
pressed to initiate the
command or complete the<
statement.

    <Ret> (2)   If Return is followed by
a number enclosed in
parenthesis, Return must
be pressed that many
times to complete the
CUE.

NOTES:

CHAPTER 2

AUDIO VISUAL SHOW PROGRAMMING

2.1 GENERAL

You now have some knowledge regarding AV
Presentations, Projector Control, and
setting up the Presentation environment.
It's time to put this knowledge to use
and add a lot more to it using the
Effects we have to work with and by
seeing how Programming really works.

2.2 THE EFFECTS

In Audio Visual Programming we will be
working with the four most popular
effects.

Cuts   -The instantaneous change
                from one image to the
                next with an Advance on
                the downgoing projector.

Dissolves   -The gradual change of
                images at different rates
                of speed with an Advance
                on the downgoing
                projector.

Alternates   -Instant   change   with   no
               projector advance.

Alternate
Dissolves   -Gradual   change of images
               with no projector
               advance.

2.2.1 THE CUT EFFECT

There are three different types of CUTS
available to us:

The Cut   -An   instantaneous   change
               from one projector to the
               next   with   an   automatic
               slide   advance   on   the
               downgoing projector.

Soft Cut   -This is not really a CUT.
               It   is   more   like   Fast
               dissolve. Where a CUT is
               instantaneous, a SOFT CUT
               takes   approximately   1/2
               second,   and   gives   a
               smooth   yet   rapid
               transition from one image
               to   the   next.   A   very
               useful tool.

Hard Cut   -Almost   the   same   as the
               Cut but the downgoing
               projector   starts   its
               advance before the effect

is visible on the screen.
It is most often used   as
a Programming tool in
sophisticated
Programming.   It shortens
the advance time   of   the
downgoing projector.

2.2.2   THE DISSOLVE EFFECT

The   DISSOLVE, a gradual   transition   of
images, allows us to control the pace of
a show, time sequences within   the show,
and   provide   our   audience   with   a
beautiful, ever-changing visual display.

There   is   an entire range   of   dissolve
speeds   available   to us. If we   include
CUTS in the range it looks like this:

 Hard Cut   1 Sec. 3 Sec.   6 Sec. 16 Sec.
 Cut   2 Sec. 4 Sec.   8 Sec. 32 Sec.
 Soft Cut

2.2.3   THE ALTERNATE AND ALTERNATE
        DISSOLVE EFFECTS

These two effects correspond   to the CUT
and the DISSOLVE except that here there
is NO SLIDE ADVANCE AT THE   END   OF   THE
CYCLE.   The   used slide is still in   the
gate ready to be used again.   The entire

range of speeds noted under Dissolve is
available to us for these two effects.

2.3 THE KEYBOARD FUNCTIONS

The Keyboard of your computer is
completely functional for the GENESIS
system. We simply use letters and
numbers to designate what we want to
happen. The functions we will be using
are listed with their Keyboard
designations.

Code Heading Entries:

FA	Fast Alternate	CT	Cut
AT	Alternate	HC	Hard Cut
SA	Soft Alternate	SC	Soft Cut
1A	1 Sec. Alt.	1D	1 Sec. Dis.
2A	2 Sec. Alt.	2D	2 Sec. Dis.
3A	3 Sec. Alt.	3D	3 Sec. Dis.
4A	4 Sec. Alt.	4D	4 Sec. Dis.
6A	6 Sec. Alt.	6D	6 Sec. Dis.
8A	8 Sec. Alt.	8D	8 Sec. Dis.
16A	16 Sec. Alt.	16D	16 Sec. Dis.
32A	32 Sec. Alt.	32D	32 Sec. Dis.
N	No Operation	PF	Proj.Forward
HOME	Prog. Home	PR	Proj. Reverse
S10	10 Cues/Sec.	W.05	Wait .05 increments
S20	20 Cues/Sec.	W10	Wait 10 Sec.

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Screen Heading Entries:

A thru O   Projector Designation on
                  Bank A and Bank B
12345   Dove (Screen) Numbers on
                  Bank A and Bank B

R Run - S Stop

2.4 THE MONITOR

This is the diagram of the Monitor with
its area definitions. Since we will
utilize much of the basic programming
capability of GENESIS, it will be a
simple matter to expand your experience
beyond the Basic level.

```
 1 - Program Name
 2 - Operator Name
 3 - Operating Mode
 4 - Where you talk to GENESIS
 5 - GENESIS talks to you
 6 - Clock
 7 - Projector Status
 8 - Screen or DOVE Numbers
 9 - Projector Designations
10 - Tray Positions
11 - Cue Numbers
12 - Short Definition of Function
13 - Expanded Definition
14 - Projector Designation Fields
15 - Cue Sequence Designation
```

PROGRAM NAME: DIM 1   OPERATOR: XX

MODE: MI BYPASS   0:00

CONTROL COMMAND: GX1 :00 1

STATUS:

════════ BANK A STATUS ════════   ════ BANK B STATUS ════

1 2 3 4 5   1 2 3 4 5
ABDBGBJBMF   ABDBGBJBMB
BBISNBKDNB   BBIPHBKBNB
CBFBIBLBDF   CBIBIFLBDF

══CUE #══CODE══STATEMENT══ ══BANK A══ ══BANK B══ ══RUN══
─ ─ ─ ─
─ ─ ─ ─
─ ─ ─ ─
─ ─ ─ ─
─ ─ ─ ─
─ ─ ─ ─
  1
  2
  3
  4
  5
  6
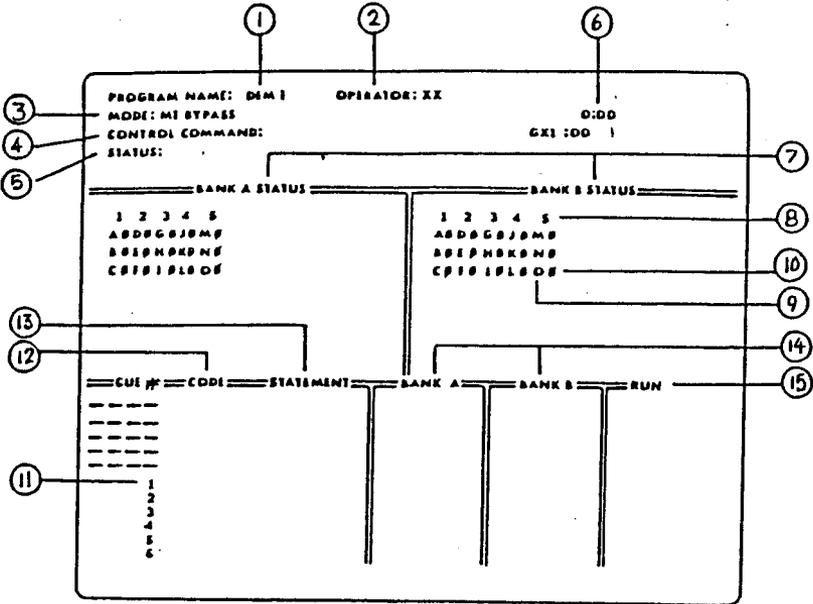
The first series of Cues we program will
make the Monitor very understandable.

2-6

2.5 PROGRAMMING - GETTING STARTED

To get started on Programming, we will
use the following Cue Demonstration form
until you become familiar with the
process, then we will simplify it
somewhat.

Throughout these demonstration
sequences, the designation <Ret> is
short for the RETURN Key and we will use
Dove 1 and projectors A, B, and C on
Bank A.

To perform a 2 Second Dissolve on the
Top Projector (A), Dove 1, Bank A:

 (Keys)   (Code) (Stmt)   (Scrn)(Actn)

2D 1<Ret>(2)   2D   2 Sec Dis 1   Top
                                       Proj
                                       (A)
                              Comes On.

It's as simple as that! Decide WHAT you
want to do, WHERE you want to do it, and
push the appropriate keys. Certain
aspects of programming will be covered
in detail as the need arises - Editing,
Cue-to-Cue Time, Sequence Programming,
etc.

It would be helpful if you can work with
a Projector setup as shown in the
accompanying assembly diagram and enter

the Cues as we go along. Occasionally we
will use functions that have not been
explained. Enter them as indicated, they
are used to control the Cue Lists and
will be explained under Editing.
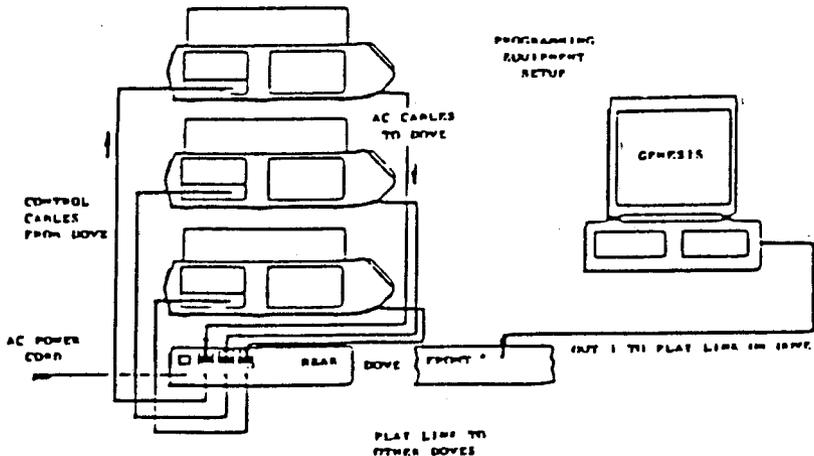
The Keys F9 and F10 will allow you to
move Forward and Backward thru the Cue
List to check it for accuracy. F9 moves
Backward one step at a time if
programmed in single steps, or to the
beginning of the current Sequence or RUN
Cue. F10 moves Forward in the same
manner.

Q and CTRL/Q perform the same function
except that they will move us Forward or
Back ONLY ONE STEP AT A TIME whether in
a Run or Single Step. Also, by pressing

Q or CTRL and Q, and holding them down,
we can move thru the Program in Fast
Forward or Fast Reverse Mode until you
reach the desired point in the Program.

2.6   TWO TYPES OF PROJECTOR CONTROL!

It is important that you know there are
two types of projector control. They
are:

- Independent Projector Control
- System Projector Control

2.6.1   INDEPENDENT PROJECTOR CONTROL

By designating PROJECTORS A thru O, on
each Bank, we can restrict action to any
number of specific projectors. When we
do this, only those projectors
designated will react, all others remain
as they are.

2.6.2   SYSTEM PROJECTOR CONTROL

By designating DOVE NUMBERS 1,2,3,4,5
for each Bank, we can allow the Genesis
to cycle automatically thru all three
projectors controlled by a single DOVE,
Top to Center to Bottom, and back to the
Top again, etc.

2.7 EASY THREE PROJECTOR PROGRAMMING USING CUTS ONLY

(Keys)	(Statement)	(Screen)	(Action)
CT 1<Ret>(2)	CUT	1	TOP Proj. (A) Comes ON.
CT 1<Ret>(2)	CUT	1	A OFF and advances B comes ON
CT 1<Ret>(2)	CUT	1	B OFF and Advances C comes ON
CT 1<Ret>(2)	CUT	1	C OFF and Advances A comes ON

In the example above, we have designated a 1 under the Screen Heading, therefore Genesis will automatically cycle thru all 3 projectors connected to Dove 1.

2.8 EASY THREE PROJECTOR PROGRAMMING USING DISSOLVES

By simply changing the Function we wish to do from CT to D (Dissolve) and adding a Dissolve Speed, we can change the entire character of the presentation. (At this point the Top projector (A)

should be ON.)

```
4D  1<Ret>(2)    4 Sec Dis   1     A goes OFF
                                   - Advances
                                   B comes ON
                                     in 4 Sec.

3D  1<Ret>(2)    3 Sec Dis   1     B goes OFF
                                   - Advances
                                   C comes ON
                                     in 3 Sec.

6D  1<Ret>(2)    6 Sec Dis   1     C goes OFF
                                   - Advances
                                   A comes ON
                                     in 6 Sec.

2D  1<Ret>(2)    2 Sec Dis   1     A goes OFF
                                   - Advances
                                   B comes ON
                                     in 2 Sec.
```

CUTS and DISSOLVES at different speeds can be intermixed to create a presentation paced to the speaker or the sound track music or voice.

2.9 ALTERNATES

Up to now we have programmed those functions that normally end up in an Advance of the downgoing projector. Alternates and Alternate Dissolves allow us to program sequences using LAMP

CONTROL only – no advance cycles. When
we program Alternates we are simply
turning the Lamp On or Off. When the
sequence has been completed, we add a
standard Cut or Dissolve Cue to Advance
the downgoing projectors.

First, let's Clear the Memory.

CTRL/C then type CAC<Ret> Projectors
                              to Start and
                           Memory Clear.

Here is what an Alternate looks like
Programmed for a System cycle (3
Projectors), on Dove 1:

AT 1<Ret>(2) Alternate 1 A comes ON
                              at CUT speed

AT 1<Ret>(2) Alternate 1 A OFF, No
                                Advance
                              B ON at CUT
                                Speed

AT 1<Ret>(2) Alternate 1 A OFF, No
                                Advance
                              C ON at CUT
                                Speed

AT 1<Ret>(2) Alternate 1 C OFF, No
                                Advance
                              A ON at CUT
                                Speed

By simply designating a single
projector, A, B, or C, we can apply
Alternates to a single projector. This
is how we Flash an image.

```
AT A<Ret>(2)   Alternate  A   A OFF, No
                                   Advance

AT A<Ret>(2)   Alternate  A   A comes ON
                               at CUT Speed
```

This single Cue can be repeated as many
times as you wish to continue Flashing
the image in the A projector. In a
minute we will do this effect
automatically and continuously, but
first let's look at an Alternate
Dissolve.

2.10 ALTERNATE DISSOLVES

Again, by simply adding a Rate of Speed
to the A in Alternate, we create a
Dissolve with NO ADVANCE, or, an
Alternate Dissolve. A should be ON.

```
2A A<Ret>(2)   2 Sec Alt   A   A OFF in
                                  2 Sec.
                              No Advance


6A A<Ret>(2)   6 Sec Alt   A   A ON in
                                  6 Sec.
```

```
4A A<Ret>(2)   4 Sec Alt    A     A OFF in
                                    4 Sec.
                                 No Advance
```

Once more, by designating only a Dove
number and no projector letter, we can
perform Alternate Dissolves using an
entire System.

```
3A 1<Ret>(2)   3 Sec Alt    1     A ON in
                                    3 Sec.


2A 1<Ret>(2)   2 Sec Alt    1     A OFF in
                                    2 Sec.
                                 No Advance
                                  B ON in
                                    2 Sec.

6A 1<Ret>(2)   6 Sec Alt    1     B OFF in
                                    6 Sec.
                                 No Advance
                                  C ON in
                                    6 Sec.

16A 1<Ret>(2) 16 Sec Alt    1     C OFF in
                                   16 Sec.
                                 No Advance
                                  A ON in
                                   16 Sec.
```

This style of Programming is effective
while learning, but will soon give way
to the next Functions we will cover.

CHAPTER 3

PROGRAMMING SEQUENTIAL CUES

3.1   GENERAL

Thus far we have covered Single Step
Cues where we program functions one step
at a time and they are played back a
Single Step at a time using the F10 key.

Now we will connect a series of Cues and
cause all of them to perform with only
one push of the F10 key. This is a
Sequence Cue.

3.2   SEQUENTIAL PROGRAMMING FUNCTIONS

There are several aspects of Sequential
Programming that must be understood
before we Program it. We'll cover these
functions first.

3.2.1   RUN and STOP

Sequential Programming requires
something to Start the sequence and
after it is completed, something to Stop
it. RUN starts the sequence and STOP
stops it.

These two functions are included in the Cue list under the Monitor heading -RUN. A RUN Cue at the start of a sequence performs all Programmed Functions continuously, one at a time, at 1/10th or 1/20th of a second intervals, (see the section on Advanced Programming Tools), without stopping, until the GENESIS reads a STOP at the end of the sequence.

RUN and STOP Cues can be included in the Cue List two ways. First, they can be included as part of the 1st Cue and last Cue or, as separate Cue lines by Programming N (No Operation) in the Code Field and RUN or STOP in the RUN Field. N is useful when Cues are still being changed in the early stages of Programming and take 1/10th or 1/20th of a second.

3.2.2 CUE TO CUE TIME

Whenever we Program a function on a projector or System of projectors, it takes a certain amount of time for that function to take place. A 4 Second Dissolve takes 4 seconds. However, when the projector is going OFF, it also takes slightly more than 1 second for it to Advance.

While these two things are happening,

the projector cannot do anything else.
You must wait to give it another Cue
until it has finished its function.
This is called CUE TO CUE TIME and is
critical in the smooth presentation of
your show.

To find the Cue to Cue Time, add the
LENGTH OF THE EFFECT to 1.2 seconds.
That is the Cue to Cue Time you MUST
WAIT before going BACK to THAT
projector. Of course, you can address
any other projector in the System that
is not in the middle of a function.

3.2.3   WAITS

Cue to Cue Time means we must have
periods of time between functions so
that the projectors can finish their
function and Advance cycle. If we were
to Program a RUN, then 6 consecutive 2
Second Dissolves, and finally a STOP,
the GENESIS would read and execute all 6
of those cue lines in less than 1
second, actually, .6 seconds. It would
appear on the screen as a jumble of
images.

WAIT Times were created to provide the
correct amounts of time to be inserted
between functions to allow for Cue to
Cue Time requirements.

Any WAIT Time needed can be Programmed
in 1/20 of a second increments, up to 10
full seconds. If longer WAIT Times are
necessary, multiple WAIT Cues can be
entered in the Cue List.

3.2.4 CUE AND REVERSE CUE

During programming, we must have the
ability to move back and forth thru the
Cue List at will. To do this, we use
two different controls depending on what
we wish to do.

3.2.4.1 F9 and F10

After a number of cues have been
programmed, we must check them for
accuracy. F9 allows us to move backward
thru the cue list either one step if
programmed in single step or an entire
sequence if programmed with a RUN and
STOP. F10 allows us to move forward in
the same fashion.

F9 and F10 are the keys we use to run
the Program.

3.2.4.2 Q and CONTROL/Q

Q allows us to move forward one step at
a time whether in single step or in

sequence.

CONTROL/Q allows us to move backward   in
the same fashion.

Q   and CONTROL/Q can move   us   thru   the
Program continuously,   when   pressed and
held down.

That covers the functions   necessary   to
Program Sequence Cues, so let's do it!

3.3   PROGRAMMING SEQUENCES

All   of   the   Cue   List examples we have
Programmed thus far could be turned into
Sequence Cues by adding a   RUN   at   the
beginning which signifies   that all   cues
after   it will happen automatically   and
continuously until a STOP is read by the
Programmer. This requires   WAITS between
functions, and a STOP at the   end of the
sequence.

Here is what a Sequence looks like.

1	N R<RET>(2)	NO OPERATION	RUN
2	2D 1<RET>(2)	2 SEC DIS 1	A On −2 Sec.
3	W3.3<RET>	WAIT 3.3 SEC	
4	CT ABC<RET>(2)	CUT ABC	A OFF −Adv. B−C ON−1/2 Sec
5	W2<RET>	WAIT 2.0 SEC	
6	4D ABC<RET>(2)	4 SEC DIS ABC	BC OFF −Adv. A ON−4 Sec
7	W5.5<RET>	WAIT 5.5 SEC	
8	CT 1<RET>(2)	CUT 1	A OFF −Adv. B ON−Cut
9	W1.5<RET>	WAIT 1.5 SEC	
10	2D C<RET>(2)	2 SEC DIS C	C Supers −2 Sec
11	W3<RET>	WAIT 3.0 SEC	
12	2D C<RET>(2)	2 SEC DIS C	C OFF −Adv −2 Sec
13	W1<RET>	WAIT 1.0 Sec	

```
14  4D B<RET>(2)    4 SEC DIS B       B OFF
                                       -Adv
                                       -4 Sec

15  N S<RET>(2)    NO OPERATION        STOP
```

Significant points about this Sequence:

Cue 1   - The RUN could have been
           included as part of Cue 2.

Cue 4,6 - We controlled all three
           projectors in one Cue.
           One OFF, two ON.

Cue 10   - B is ON and we created a
           Superimposition with C.

Cue 12   - We removed only the Super.

Cue 13   - We waited only 1 second before
           going to Cue 14.

Cue 14   - We took B to Black. Cue to Cue
           Time was not a factor since B
           was not in a function.

Experiment with the F9 and F10 and Q and
CTRL/Q controls to see how easily they
enable you to move thru the Program.

3.3.1 ALTERNATES AND REPEATS

In the last example we used Cuts and
Dissolves. In the next example, we'll
get into Alternates and a fantastic
Programming tool called a REPEAT. There
are three ways to use REPEAT. At this
point we will explain only one. The
other two will be explained in the full
GENESIS Manual.

By simply pushing R and P and a Number,
we can cause a single Cue or a Sequence
of Cues to automatically repeat itself
the number of times we have chosen.

For example, if we wanted to flash the
Lamp of a projector On and Off 20 times,
we would have to enter 40 Cues to do it.
Using REPEAT, we enter only 4 Cues. It
looks like this:

1. N R <Ret>(2) NO OPERATION   RUN

2. AT A <Ret>(2)   ALT   A

3. RP39 <Ret>(2) REPEAT 39 TIMES

4. N S <RET>(2) NO OPERATION   STOP

In Cue 1 a No Operation RUN is entered
since Repeat always begins at the
previous RUN.

In Cue 3 we specified only 39 Repeats.
Why? CUE 2 IS ALSO AN ALTERNATE so we
only needed 39 Repeats to complete the
total of 40.

That's all there is to it!

REPEAT can also be used to repeat a
sequence of Cues within a Sequence.
Here's what we mean. We can Program a
Sequence using many functions, and right
in the middle of it, we can create a
Super and flash it as many times as we
wish, and not disturb the overall
continuing Cue List.

3.3.2   THE FREEZE

The Freeze allows you to start a lamp ON
or OFF in a Dissolve and stop it at any
level of intensity. Then, for maximum
control, you may unfreeze it and
continue the Dissolve in the same
direction at the same or different rate
of speed, or reverse the direction at
the same or different rate of speed.

The important part is the change in
Directions and Rates Of Speed. This will
help you remember.

After starting the initial Dissolve and
Freezing it, to continue:

    -same rate and direction -
            Program Freeze, Projector

    -different rate, same direction -
            Program a Dissolve Rate,
            NO Projector

    -same rate, different direction -
            Program Same Rate,
            Projector

    -different rate/different direction-
            Program New Rate, Projector

Here is an example to see how it works.

```
 1.   4D  A       4 SEC DIS      A      RUN
 2.   W6           WAIT 6.0 SEC
 3.   8A  A       8 SEC ALT      A
 4.   W3           WAIT 3.0 SEC
 5.   FZ  A    `  FREEZE         A
 6.   W5           WAIT 5.0 SEC
 7.   FZ  A       FREEZE         A
 8.   W2           WAIT 2.0 SEC
 9.   FZ  A       FREEZE         A
10.   W5           WAIT 5.0 SEC
11.   6D  A       6 SEC DIS      A
12.   W2           WAIT 2.0 SEC
13.   FZ  A       FREEZE         A
14.   W6           WAIT 6.0 SEC
15.   8D  A       8 SEC DIS      A
16.   N  S        NO OPERATION          STOP
```

Following is the explanation of the above FREEZE sequence.

CUE 1 – Projector A dissolves full UP in 4 seconds and sequence runs

CUE 2 – Projector A stays full UP for 6 seconds.

CUE 3 – Projector A starts dissolving DOWN.

CUE 4 – Projector A continues to dissolve DOWN for 3 seconds.

CUE 5 – Projector A is frozen in its intensity.

CUE 6 – Projector A stays at the same intensity for 5 seconds.

CUE 7 – Projector A is unfrozen and starts to dissolve DOWN again.

CUE 8 – Projector A continues to dissolve DOWN for 2 seconds.

CUE 9 – Projector A is frozen in its intensity.

CUE 10 – Projector A stays at the same intensity for 5 seconds.

CUE 11 - Projector a changes direction
          and starts to dissolve UP.

CUE 12 - Projector A continues to
          dissolve UP for 2 seconds.

CUE 13 - Projector A is frozen in
          intensity.

CUE 14 - Projector A stays at the same
          intensity for 6 seconds.

CUE 15 - Projector A starts to dissolve
          DOWN.

CUE 16 - Projector A goes to full OFF,
          the projector advances, and
          the sequence stops.

You can do some marvelous things with
the FREEZE. Experiment; don't be afraid
to play with it and develop your own
sequences. It's particularly great for
lowering the intensity of one image
while you do a Super over it with
another.

3.4 EDITING PROGRAMMED SEQUENCES

Suppose you have just finished
Programming a number of Sequences and
you discover when playing them back, you
have some areas that need changing. It
happens all the time. That's the reason
for Editing Commands. They allow you to
add to, delete from, or change your Cue
List or Programming features at will.

In this Programming we will be using the
following Editing Commands. They are
listed with their Keys indicated and a
complete description of their function.
We suggest you Program some Single Step
Cues and some Sequences, then practice
each of the Commands a few times. They
are not complex to use, and will make
Programming changes a joy. The Monitor
will indicate the Commands you have
chosen.

CTRL/C   – Allows you to give
                  instructions to the
                  GENESIS using the Command
                  Area of the Monitor.
                  Control Commands will be
                  covered in the next
                  Section.

CTRL/A   – To add a Cue to your Cue
                  List, simply move the
                  program so the cursor
                  points to the spot where

you wish to add a Cue.
Push Ctrl and A, and the
Cue List will open up to
accept your new Cue. All
subsequent Cue Numbers
will be changed.

CTRL/D   — To Delete a Cue or Cues,
                move the program so the
                cursor points to the
                offending Cue, push CTRL
                and D, and the Cue is
                deleted from the list.
                Be careful! This could
                be a dangerous function.

CTRL/G   — Cue Lists can be hundreds
                or thousands of Cues in
                length. CTRL G allows us
                to move to any point in
                the Cue list at will.
                Simply push Ctrl and G.
                The Monitor instantly
                displays GO TO. Enter
                the Number of the Cue you
                wish to reach, and the
                projectors and Program
                will correctly
                reestablish themselves at
                that point.

CTRL/G <RET> — This is similar to Ctrl G
                except that this Command
CTRL/G 0<RET> always sends the Program
                and the projectors HOME,

that is, to the starting point of the show. The other two Commands are different ways to accomplish the same result.

Q   - When Editing, it is vital that we be able to step through the Cues, one at a time. Pressing Q moves forward through the Cue List one step at a time whether we are in a RUN or in Single Step.

CTRL/Q   - Q moves us forward, Ctrl/Q moves us backward one step at a time.

              REMEMBER - Q or CTRL and Q pressed and held down will Fast Forward or Reverse thru the Program.

CTRL/R   - If a Cue Line needs to be repeated just a few times, it is convenient to duplicate it by pushing Ctrl and R. If you hold Ctrl down, it will duplicate the last preceding Cue each time you push R.

CTRL/S   - This Command turns all
the projector lamps off
but the advance and
reverse still functions.
It is convenient for a
Break during a show, or
when you wish to move
thru the Cue List with-
out pictures flashing on
the screen.

F9   - This Key moves us back
through the program or up
the Monitor, depending on
whether we are in Single
Step or .a RUN sequence.
It moves us one step in
Single Step and to the
next preceding RUN if we
are in a sequence.

F10   - The opposite of F9. In
this case we move forward
in the same fashion.

3.5   CONTROL COMMANDS

Do you recall CTRL/C from the previous
section? Well, here it is again in a
more definitive form. We will discuss
the Control Commands necessary to make
your Programming even more convenient.

There are more Control Commands than we
will use here. The higher the level of
sophistication you use in your
Programming, the more Control Commands
you will use. For now these will be
more than adequate for our needs. For
further information on additional
Control Commands consult your Pocket
PROCALL.

> IMPORTANT! Enter the commands
> exactly as indicated, with no
> special characters or spaces.

CTRL/C must be pushed first to gain
access to the Command Area, then the
individual Command is entered by typing
the appropriate keys.

CAC<Ret>   - CAC stands for CLEAR ALL
                    CUES -it means just that!
                    Be very sure of yourself
                    when using this Command.
                    Any Cues that have not
                    been Saved will be
                    Cleared from the System,

never to be seen again.
All projectors will re-
turn to Tray Position #1.

IAM<Ret>   - I AM allows us to change
              the name of the Program-
              mer person under the
              heading - Operator.

PGM (Name)<Ret>
             - PGM permits changing the
              name of the Program. It
              is useful for renaming a
              show when a few changes
              have been made and you
              still wish to retain the
              original version.

AP (Name)<Ret>
             - AP for Append allows us
              to add Cues or a show
              from disk memory to the
              end of the Cue List on
              the Monitor.

              Important - A Sequence or
              Show must be Saved onto a
              Disk before it can be
              Appended. This is
              convenient for difficult
              sequences that must be
              repeated several times.

DEL (Name)<Ret>
                    - Another one to be careful
                      with. It will cause Shows
                      or Cue Lists to be
                      deleted from the disk.
                      Careful! Once Deleted,
                      they are gone, never
                      to be seen again!

LD (Name)<Ret>
                    - This Command stands for
                      Load. We use it to
                      retrieve Cues or Shows
                      from the disk for dis-
                      play on the Monitor. LOAD
                      clears the memory, Homes
                      the projectors, and loads
                      the new show into memory.

LIB<Ret>   - Short for Library. Using
                      LIB displays the names of
                      all Programs and Cue
                      Lists stored on the disks

SV (Name)<Ret>
                    - This is important! After
                      hours of Programming, we
                      use this function to
                      store our Program on the
                      disk.

                      (We recommend you save
                      your programming often,
                      in batches as you prog-
                      gram, for protection.)

SV saves the Program
under the Name on the
Monitor.

SV xxxxxxxx saves the
Program under the Name
entered with a maximum
length of 8 characters.

SV xx.xx. xxxxxxxx saves
a section of Cues from
number xx to number xx,
under the Name xxxxxxxx.

You will use these Commands often.
Trying each of them once or twice will
make them second nature.

CHAPTER 4

ADVANCED PROGRAMMING TOOLS

4.1 GENERAL

By now you have been exposed to the vast majority of Cue information you will ever use. However, there are a few effects that are better placed in a separate section. Here we are going to add a few more functions to your arsenal of Show Control tools.

We will look at: Multi-Screen Control, 20 Cues Per Second, Fast Alternate, and Looping.

4.2 MULTI-SCREEN CONTROL

The most important thing to remember in Programming Multiple Screens is the DIFFERENCE between accessing Projectors and Doves (Screens).

To repeat, in the Standard X Format, when you wish to address a Single Projector or a number of Single Projectors, you must use the LETTER designation – A thru O. When you wish to address a System of 3 Projectors, you must use Dove numbers 1, 2, 3, 4, or 5. This applies to both Banks A and B.

If an error in entry is made, the Cue
line must be Cleared before the correct
designation can be entered.

Other than this aspect, Programming
Multiple Screens is as simple as a
Single Screen. Here is an example
controlling all 5 Doves on Bank A, in
effect, 5 Screens:

    2D 12345   2 SEC DIS 12345   A 2 Second
                                   Dissolve
                                   will start
                                   on all 5
                                   Screens on
                                   Bank A.

To access individual projectors, the
projector letter - A thru O, must be
included in the Cue Line under each
Bank.

    2D ACFKM   2 SEC DIS ACFKM   The desig-
                                   nated Pro-
                                   jectors
                                   start a 2
                                   Second Dis.

4.3   20 CUES PER SECOND

The GENESIS System normally operates at
10 Cues Per Second. That is, it reads
Cues at the rate of 1 Cue Line every
1/10 of a second. For most purposes this
speed is more than sufficient. However,

there are times when 20 Cues Per Second can be invaluable.

We can shift from 10 CPS to 20 CPS by simply inserting S10 or S20 in the Cue List, and we can shift as often as necessary. The primary need for 20 CPS is in the Programming of special effects.

4.4   FAST ALTERNATE

The Alternate is one area that can benefit from 20 CPS. You remember Alternate? Lamp ON or OFF with no advance of the projector.

A normal Alternate sequence operates at 10 Cues Per Second and is plainly visible and a good special effects tool. However, there, are times when a higher speed Alternate sequence is desired. That requires a different approach.

Due to the nature of the projector lamp and how it goes OFF and comes ON, a 20 Cues Per Second Alternate cannot be seen. The lamp doesn't have enough time to go all the way OFF before it has to come back ON. The answer is – shorten the length of time it takes to go completely OFF and completely ON.

Enter, the FAST ALTERNATE.

Fast Alternate does shorten that time
and therefore the Alternate Cycle can be
seen at 20 Cues Per Second.

Program the following sequence and watch
the screen carefully when you play it
back. It will demonstrate the difference
in Alternates for you.

10 Cues Per Second, Single Projector:

  1. N R<Ret>(2)   NO OPERATION   RUN

  2. AT A<Ret>(2)   ALT   A   A Proj.ON

  3. RP99<Ret>   Repeat 99 TIMES A ON
                                and OFF

  4. N R<Ret>(2)   No Operation   STOP

10 Cues Per Second, System:

  1. N R<Ret>(2)   NO OPERATION   RUN

  2. AT 1<Ret>(2)   ALT   1   A Proj.ON

  3. RP98<RET>   Repeat 98 TIMES
                      System cycles
                        thru all 3
                        projectors

  4. N S<Ret>(2)   NO OPERATION   STOP

20 Cues Per Second, Single Projector:

1. S20<RET>   SPEED=20 CPS

2. N R<RET>(2)   NO OPERATION   RUN

3. AT A<RET>(2)   ALT   A   A Proj.ON

4. RP99<RET>   REPEAT 99 TIMES   A ON
                                      and OFF

5. N S<RET>(2)   NO OPERATION   STOP

20 Cues Per Second, System:

1. N R<Ret>(2)   NO OPERATION   RUN

2. AT 1<Ret>(2)   ALT   1   A Proj.ON

3. RP99<Ret>   REPEAT 98 TIMES
                           System cycles
                              thru all 3
                              projectors

4. N S<Ret>(2)   NO OPERATION   STOP

Run through these sequences several
times. You'll see the difference. It is
also important to note that normal
Programming can be continued whether you
are in 10 CPS or 20 CPS.

4.5 LOOPING

There are many techniques available to
you that have not been explored in this
Guide. We suggest you work with the
information given to this point till you
are comfortable with it, then refer to
the Technical Manual for additional
techniques That will enable you to
realize the full capability of the
complete GENESIS Programming System.

An example of these higher techniques is
the LOOP.

A Loop is defined as a series of Cues
(maximum of 100) that may be assigned to
a Dove X to carry out a given function
exclusive of the continuing operation of
GENESIS. Each Dove can store and execute
3 Loops, one for each projector. It is
important to note that all Loops must be
programmed using Independent Projector
designations A thru O, not Dove numbers.

Simply stated, Loops are created using 4
programming elements:

1. LL (Load Loop) - This tells GENESIS a
                    Loop will follow.

2. Program the desired action - maximum
                               100 Cues.

3. LG (Loop Go)   - This starts the Loop

4. LS (Loop Stop) - This stops the Loop.

An additional Cue - LPxx will cause a
Dove to execute a Loop a specific number
of times then return to GENESIS control.

Here are a few examples of simple Loops:

(Assume Projector A is presently
UP and we are at Cue 10.)

10	LL	LOOP LOAD	A B C
11	4A	4 SEC ALT	A B
12	W3	WAIT 3.0 SEC	
13	4A	4 SEC ALT	B C
14	W3	WAIT 3.0	
15	4A	4 SEC ALT	A C
16	W3	WAIT 3.0	
17	LG	LOOP GO	A B C

When you wish this Loop to Stop, program
a LS ABC. This stops the Loop, however,
if you substitute an LP12 (no ABC), for
the LOOP GO in Cue 17, the Loop will
execute 12 times and stop automatically.

Any and all functions already described
in this Guide as well as a number of
effects explained in the PROCALL Manuals
can be utilized with Loops.

REMEMBER: Loops may be programmed up to
but not exceeding 100 Cue Lines includ-
ing the Loop Go (LG) Command and must be
programmed using Independent Projector
Designations.

CHAPTER 5

RECORDING AND SYNCHRONIZING YOUR SHOW

5.1   GENERAL

Once you have Programmed your show and
SAVED it, you are ready to prepare it
for presentation. There are a number of
ways to use this SAVED Program. For
now, we will look at three of them.
The First does not require Magnetic Tape
as a storage device, the Second and
Third do.

1.   By simply retrieving the Program
      from Diskette Memory and hooking
      GENESIS directly up to a Dove
      Control Module and projectors, we
      can run the show from the keyboard
      by pushing F10 for each Cue. This
      is Manual Cueing and does not
      require Mag Tape storage.

2.   The Second method allows you to
      store your Program on Mag Tape for
      later, convenient transportation
      and storage, and reloading of the
      Memory as needed wherever your Show
      is to be presented.

The Mag Tape Commands described in
Paragraph 3.2 will be sufficient for you
to simply store your Program on Mag Tape

or use the Third method, Synchronizing
your Program to a sound track.

IMPORTANT! We must use Recording
Equipment that has independent
Recording and Playback controls
for each Track.

Specific instructions and a setup
diagram for your Recording Equipment are
included in the sections on
synchronizing.

5.2 MAG TAPE COMMANDS

Here are the Mag Tape Commands we will
use to store a program on Mag Tape.

MSV   This Command allows us
(Mag Tape Save)   to transfer all Data in
                         memory directly on to
                         Magnetic Tape using any
                         standard Recorder. The
                         data can be loaded back
                         into Genesis, Eagle or
                         Road Runner, as needed.

MLD   This Command allows us
(Mag Tape Load)   to retrieve the Program
                         from Magnetic Tape and
                         load it into GENESIS'
                         Memory.

VER
(Verify)

This function permits
us to check the quality
the data recorded using
MSV. It will tell us ·
if the Program has been
recorded properly.

STL
(Set Level)

Every recorded signal
needs to be recorded at
a level high enough for
accurate reproduction,
yet not so high as to
cause distortion ·in the
recorded signal.
GENESIS will transmit a
continuous signal that
will allow accurate
setting of the Record-
ing Level on the
· Recorder.

Data must be recorded
at whatever level is
necessary to obtain a
"0" db playback level
on recorders with a VU
meter, or the Red/Green
line on those that do
not.

5.3 MAG TAPE SAVE

To do a straight Mag Tape transfer of all your Show Data for storage or retrieval purposes, place a WAIT Time at the end of your Program to allow all functions to end, then enter a HOME Cue.

W2. <Ret>

Type in: HOME <Ret>

1. Plug one end of a cable into the OUT 1 Jack of GENESIS, and the other end to the Input Jack of the appropriate track of the Tape Recorder. Industry Standards suggest Track 4 when using a 4-Track Deck or the Right Channel of Stereo Decks.

    If you wish, you can plug a second cable from the Output of Track 4 to the DATA IN jack of GENESIS. You will use it in a moment.

    The illustration shows only the first cable for clarity.

5-4

```
         SPEAKERS              MAG TAPE SAVE
                          AMPLIFIER

     ( O )   ( O )            GENESIS

       TAPE DECK
     INPUT═══OUTPUT
     1 2 3 4 | 1 2 3 4
     • • • • ══ • • • • |
```

OUT 1 TO INPUT TRACK 4 or RIGHT
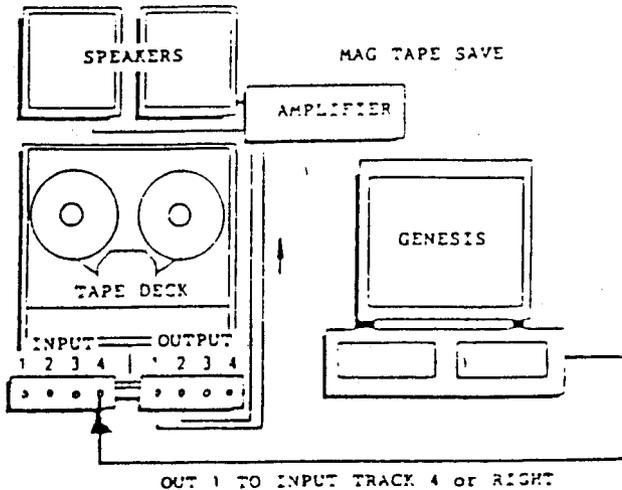
2.   To set an accurate Recording Level,
      follow these Commands:

      CTRL/C STL<Ret>   GENESIS is send-
                         ing a continuous
                         signal to the
                         Tape Recorder.

      Set the Level on the recorder to
      approximately +2 db if you have a
      VU Meter, or to the approximate
      middle of the Volume Range if you
      have an Automatic Level Control
      Recorder (see Set Levels under Mag
      Tape Commands). Switch the ALC
      OFF! After setting, push ESCAPE to
      terminate the. signal.

3. To   perform   the   actual   Data
    transfer, first enter this Command
    without using Return.

    CTRL/C   MSV   GENESIS is ready
                       to send the Data.

4. Start the Recorder in Record Mode.
    Count   5 slowly then push RETURN or
    F10 on GENESIS.   The   data will be
    recorded. When completed, stop the
    recorder.

5.4   VERIFICATION

Now that the Data has been recorded, it
should be verified. The HOME Cue has
returned the Program to the beginning.
Here is the procedure for verifying the
accuracy of the transfer.

1. Rewind the Tape.

2. If the cable for Playback has not
    been   connected to the Output of
    Track 4 and the DATA IN jack of
    GENESIS, you can simply replug the
    existing cable.

VERIFICATION

SPEAKERS

AMPLIFIER

GENESIS

TAPE DECK

INPUT OUTPUT
1 2 3 4   1 2 3 4

OUTPUT TRACK 4 TO DATA IN
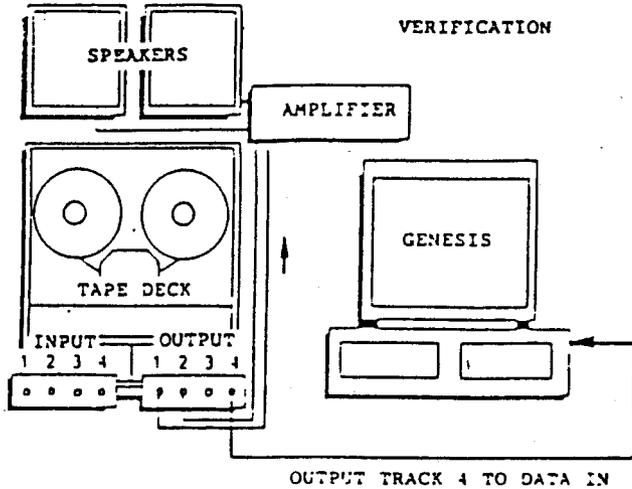
3. Go to Control Command:

   CTRL/C   VER<RET>   GENESIS is ready
                           to verify.

4. Start the Recorder in Play Mode.
   GENESIS will compare each bit of
   Data from the Tape with its
   corresponding bit in Memory. The
   Monitor will tell you if all is
   well.

   If not, simply follow the Recording
   procedure using different Recording
   Levels until you find one that is
   accurate. Different Recorders have
   different characteristics.

5. When the Tape is accurate, we
    suggest you record this Data
    several times by simply pressing
    RETURN or F10 when the Monitor
    shows the Program is back at Start.

5.5 MAG TAPE LOAD

To Load the Program back into Memory
from Mag Tape, simply use the PLAYBACK
Mode and the following Command:

        CTRL/C MLD<Ret>   Start the
                           Recorder in Play.

The Data will be loaded back into
Memory.

5.6 SYNCHRONIZING

The Show is Programmed and the Sound
Track is done. Now we have to put the
two together on one Reel or Cassette of
Magnetic Tape for automatic playback.
These procedures will constitute the
Second and Third procedures mentioned
earlier.

To repeat, a Multi-Track Recorder with
INDEPENDENT RECORD CONTROL for each
Track is necessary since we must have at
least one Track for the sound, and one
Track for the Data, and they must be

Synchronized so that projected images
match the sound track. This is
Synchronizing.

The illustration shows normal track
configurations for Stereo (2 track), and
Quad (4 track) recorders. The 2 track
allows one track for sound (Mono), and
one track for Data. 4 track allows two
tracks for sound (Stereo), and two other
tracks for Data manipulation.
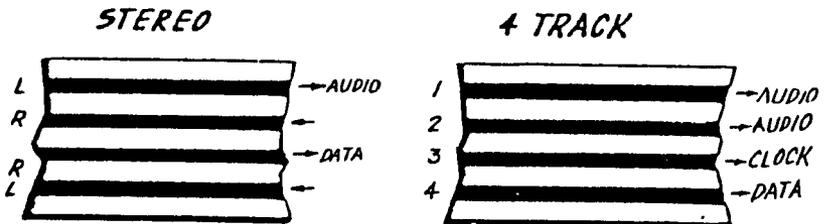
Here is Synchronizing procedure No. 1.
It is outlined here for convenience. We
recommend the use of Clock Trak as a
more accurate and practical method of
synchronizing. It will be covered as a
separate section when we complete this
procedure.

1. Set up the GENESIS, a Dove, Projectors, and the Recorder as shown in the Diagram.

SPEAKERS

SYNCHRONIZING

AMPLIFIER

AC CABLES TO DOVE

GENESIS

TAPE DECK

CONTROL CABLES FROM DOVE

INPUT   OUTPUT
1 2 3 4   1 2 3 4

OUTPUT 4 TO DATA IN

OUT 1 TO INPUT 4

AC POWER CORD

REAR   DOVE   FRONT

OUT 1 TO DOVE PLAY LINK

"Y" CONNECTOR

PLAY LINK TO OTHER DOVES
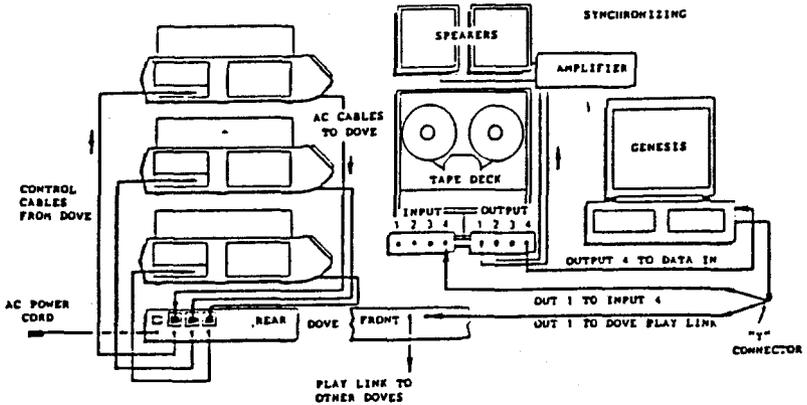
2. By now, you should know where you wish slides to appear in relation to the sound track. MARK YOUR SCRIPT WITH AN INDICATOR AT EACH POINT YOU WISH A CUE OR SEQUENCE TO START. Place your indicator at least one word in advance of the actual point. This allows for tape displacement and reaction time.

3. Set the Recording Level of the Data Track as described earlier.

4. Start the Recorder in RECORD MODE on the DATA TRACK ONLY! We don't want to cause problems on the Sound Track!

5.. As you listen to the Sound, push the F10 key each time you come to an indicator in your script. This will cause the Data you have Programmed to be transferred to the tape. When all Cues have been transferred, stop the Recorder.

5.7 PLAYBACK

Playing back you synchronized show is easy.

1. Rewind the tape. If you used a HOME Cue at the end of the show, all projectors and the Monitor should be back to the start of the show. If not, push CTRL/G <Ret>, and everything will go HOME.

2. The default Operating Mode for GENESIS is Mag Tape Bypass which means the signal you have just recorded can be played back into GENESIS without disturbing the

Program in Memory.

Start the Recorder in Play Mode and watch your Show.

Synchronizing is, in many cases, a trial and error process. It may be necessary for you to go back into the Program and change some Effects or Waits if you don't have enough time in the sound track for everything to happen. Don't despair, it is all a part of the art of Programming.

5.8 CLOCK-TRAK

Now we'll move on to the second method of Synchronizing - CLOCK-TRAK.

In the preceding procedure, should an error be made in the placing of a cue on the data track, it would be necessary to go thru the process again till it is correct.

The procedure we will detail now makes it possible to literally place a cue or sequence in exactly the right place relative to the sound track, without disturbing the rest of the show.

Simply stated, we will lay down a Clock Track from a point in front of the start of the sound track, to a point after the

sound track has ended, then we will add
Time Cues to the Program at each point
we want to synchronize a cue or
sequence.

GENESIS will then read the time cues and
play the show back perfectly. If it is
not accurate, or we want to change the
start of a cue or sequence, we simply go
back to the Program and change a Time
Cue. It's as simple as that.

Here is the procedure. It's more
difficult to explain than it is to do
and you should use a 4-Track recorder.

1.   Go back to your Program and, using
     Add-A-Cue, insert a TX at each
     synchronizing point you have
     indicated in your Script. This TX
     will ultimately be resolved into an
     actual Time Cue.

2.   Connect a cable from the Out 1 of
     GENESIS to the Input on Track 3 of
     your recorder.
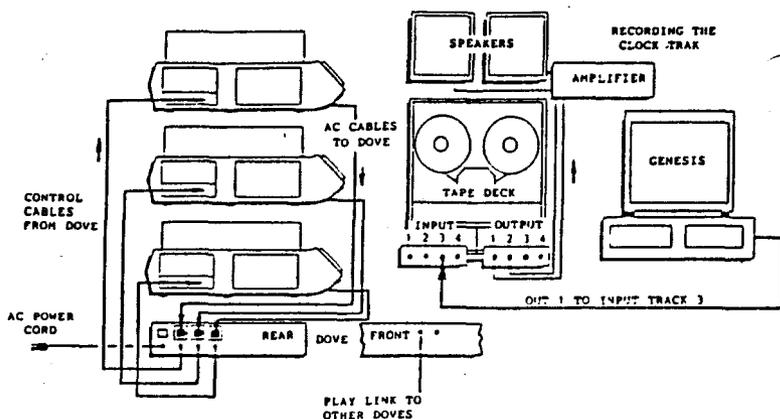
3. Go to Control Command — Ctrl C, then type COM (Clock Output Mode).

4. Rewind the Tape to a point AT LEAST 5 seconds before the sound starts.

5. Start the recorder in Record Mode on Track 3, and push return on GENESIS. A Clock Signal will be recorded on Track 3. Allow the recording to proceed beyond the end of the sound track.

6. Stop the recorder and rewind the tape to the beginning.

7. Press Escape on GENESIS.

8. GENESIS is still in Control Command so type CEM — (Clock Edit Mode).

9. Reconnect the cable from the Output of Track 3 to the Data In jack of GENESIS.
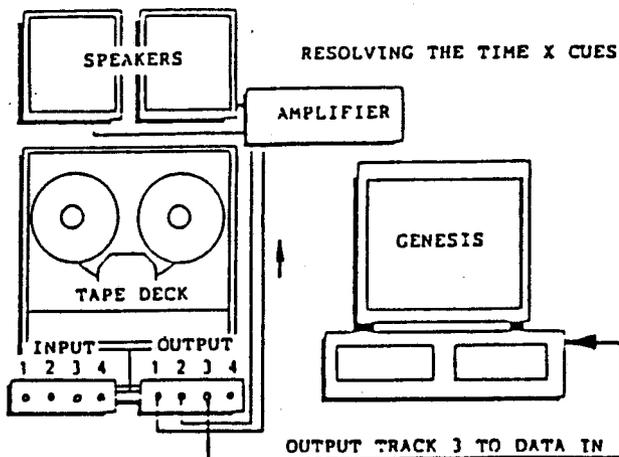
10. With your Script, with its synchronizing points indicated, in front of you, start the recorder in Playback Mode, and, as each sync point comes up push the F10 key. Continue thru to the end of your Program.

11. The HOME Cue sends the projectors and Program back to the beginning. You now have a Program where GENESIS has read the Clock Trak on Track 3 each time you pressed F10, and has entered that time in place of each TX in the Program.

5-15

It's possible you might have made some errors in synchronizing and the Time Cues are incorrect, there are two Editing Commands that can greatly simplify the process of correcting the errant Time Cues.

5.9   TIME OFFSET CUES

Time Offset Cue (TOC) gives us the ability to change the time cues between any two Cue lines. By entering:

       CTRL/C, then type:

       TOCxx   (Cue   number),   xx   (Cue number), + or - .TT (Time)

       Example: TOC15,25,-.05 <Ret>

If there are many errors and it would be more practical to re-sync the entire show, it would be laborious to replace each Time Cue with a Time X. RTC saves us all that time. Here is how it works.

Replace Time Cues (RTC) is similar to TOC in that we can replace any number of Time Cues with a TX, either 1 Cue or many Cues between two Cue lines, or the entire show.

CTRL/C, then type:

RTCxx (Cue number), xx (Cue number) <Ret>

Example: RTC15,25 <Ret>

All Time Cues between Line 15 and 25 will be replaced by TX ready for re-synchronizing.

Now the Program can be played back using only the Track 3 Output. In Playback, GENESIS will continuously monitor the ClockTrak from Track 3 and the Time Cues in the Program and will initiate actions as each Time Cue and the Clock Trak coincide.

1. With GENESIS still in Clock Edit Mode (CEM), and the Program back to the beginning, rewind the tape to the beginning and start the recorder in Play Mode. GENESIS will read the Clock Trak and the Time Cues and play back the entire Show just as you synchronized it.

2. After viewing the timed Program, some cues may not be correct. THERE IS NO NEED TO DO ANY MORE RECORDED CHANGES. Simply go to the incorrect Time Cue and change it. Add time to make the Cue start later, or subtract time to make it

start earlier. You now have the
ability to synchronize each Cue or
Sequence down to 1/100th of a
second in accuracy.

3.   When all Time Cues are correct and
the Show is just the way you want
it, you can record a final Data
Track on Track 4 of your recorder.
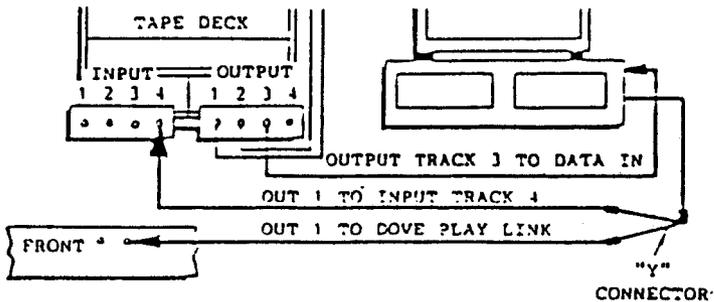
Connect your System as shown in the
illustration. With the recorder in SYNC
Record Mode on Track 4 and Play Mode on
Track 3, the entire Program will be
recorded automatically.

GENESIS will simultaneously read the
Clock-Trak and the Time Cues, start the
action, and output the Data for the Data
track 4.

As you gain more experience, show timing
and Synchronizing will become an
instinct and only minor adjustments will
need to be made.

For the person who has only Stereo
equipment, the use of Clock Trak can
present a problem. One track has Audio,
the other, Clock Trak. In order to play
back the show, a GENESIS 'must be
present. To utilize Clock Trak to make
a final dub of Audio and Data that may
be used without a GENESIS, two tape
recorders must be used.

In all recording cases, proper record
levels must be used. See the procedure
already outlined.

RECORDING CLOCK TRAK ON
FIRST RECORDER

OUT 1 TO INPUT -RIGHT Track
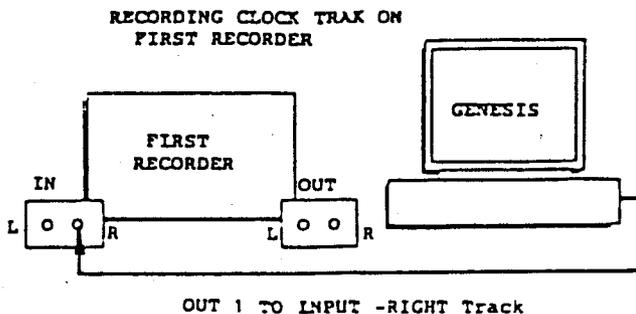
1. Record a Clock Trak on the Right
   Channel of the First Stereo
   recorder.

RECORDING AUDIO
AND DATA TRACKS -
SIMULTANEOUSLY

FIRST RECORDER

IN   OUT
L   R   L   R   GENESIS

AUDIO TRACK

SECOND RECORDER

IN   OUT
L   R   L   R   CLOCK TRAK

DATA TRACK
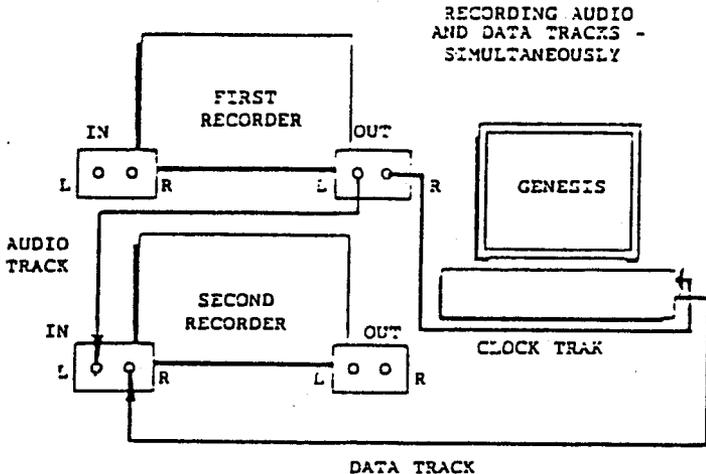
2. When the Clock-Trak has been
   recorded, plug a cable from the
   Output of the Clock-Trak (R) on the
   First recorder to the Data In·jack
   of GENESIS.

3. Plug a second cable from the Output
   of the Audio Track (L) of the First
   recorder to the Left Track of the
   Input on the Second recorder.

4. Plug a third cable from the OUT 1 jack of GENESIS to the Right Track Input of the Second recorder.

Start the First recorder in Play mode and the Second in Record mode on both tracks and the Clock Trak will cause GENESIS to run the show and record a data track while the Audio Track is also being recorded.

NOTES: