# **COURIER**

USER'S GUIDE



(206) 632-1722 PO Box 95530 Seattle, Washington 98145 The Courier Limited Warranty and Release from Liability

1. Repair of Defective Parts. The Courier is guaranteed free from manufacturing defects for a period of one year from the date of purchase. Any defective parts will be repaired free of charge (exclusive of shipping costs) during that one year period. This Limited Warranty does not cover defects caused by a purchaser's misuse or accident, or defects caused by fire, flood or other natural disaster. This limited warranty will be void if A) a power supply other than that provided by the manufacturer is used, or B) lights other than those provided by the manufacturer are used. In addition, the Warranty Card must be returned to the manufacturer for this Limited Warranty to apply. This warranty shall be the sole and exclusive remedy of purchaser for damages arising from or relating to the purchase of the Courier.

When shipping the Courier to the manufacturer, be sure to include name, address, telephone and a description of the problem. PURCHASER MUST CONTACT FACTORY FOR AUTHORIZATION BEFORE RETURNING COURIER FOR ANY REASON. Shipping address is as follows: 3822 Stone Way Seattle. WA 98103

- 2. DISCLAIMER. EXCEPT AS PROVIDED IN PARAGRAPH 1 ABOVE, THE PURCHASER ACKNOWLEDGES THAT HE/SHE IS PURCHASING THE COURIER "AS IS". THE MANUFACTURER AND SELLER SPECIFICALLY DISCLAIM ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE OR USE. THE MANUFACTURER AND SELLER ALSO ASSUME NO LIABILITY FOR ANY LOSS OR DAMAGE ARISING FROM THEORIES OF TORTIOUS CONDUCT, INCLUDING NEGLIGENCE AND STRICT CONDUCT.
- 3. Release From Liability. The purchaser is fully aware that the Courier is an experimental device that provides audio and visual stimuli to prompt electrical activity in the brain. Because the Courier is experimental, the purchaser understands that Synetic Systems, Inc. is not certain that it is suitable for all applications or users, each of whom may be affected differently by the Courier because of his/her unique physical and emotional makeup. Persons who have a history of seizures, hallucinations or other physical or mental problems should use the Courier only under medical supervision.

The purchaser further understands that Synetic Systems Inc., its agents and employees, will not be held liable in any way for any occurrence of any kind and nature whatsoever in connection with his/her use of the Courier, or another person's use of the Courier, that may result or ostensibly result in physical or emotional damage to the purchaser or others. Furthermore, in consideration of and part payment for the Courier, the purchaser hereby personally assumes all risks in connection with his/her use of the Courier, and shall advise other users of the Courier of the experimental nature of this device, especially regarding use by those with a history of seizures. Furthermore, the purchaser assumes all risks in connection with use of the Courier with other persons.

- 4. Limitation of Damages. If, notwithstanding the foregoing, there should arise any question of liability on the part of the manufacturer or seller, the purchaser agrees that such liability is limited to the cost of replacement of the Courier.
- Purchaser Representations. The purchaser represents that he/she is of legal age and legally competent, and understands that the terms set forth herein ar contractual and not mere recital. The purchaser has read or will fully read the User's Guide before using the Courier.

### Introduction

Congratulations! You have purchased the most advanced portable audio/visual stimulation device available. The Courier is a powerful tool in a contemporary, self-contained package. You can experience the factory preset programs immediately, or design sessions to your own personal specifications, by using the programming features described herein.

### Please read this brief guide before using your Courier.

### How Does It Work?

Many scientific studies have identified the frequencies of brainwave activity with specific states of consciousness. Our normal waking state is associated with Beta brainwave frequencies of 13+ Hz (pulses per second). Relaxation and some forms of meditation provoke activity in the 9-12 Hz Alpha range, while deep relaxation and certain kinds of mental imagery correspond to the 4-7 Hz Theta range. The Theta state is also believed to be connected with enhanced learning capabilities, the so-called "twilight learning" state. Below this lies the Delta range of 1-3 Hz, typically produced during sleep. The Courier can induce these mental states through a mechanism known as entrainment. This is the tendency for brainwave frequency activity to fall into step with the frequency of external light and sound pulses. The Courier provides these controlled pulses of light and sound. The factory presst sessions listed in (Figure 4) include suggested usage and length; we encourage you to modify them to best suit your tastes. Sessions named "HemiTone" are especially soothing, and include a special audio beat frequency in the Theta range (5 Hz).

A session is not only relaxing, it's entertaining; the pulsing lights generate a kaleidoscope of colorful, shifting patterns that seem to dance behind your closed eyelids. Most people find this imagery to be most intense in the 7-14 Hz range. Again, we encourage you to experiment!

# Plug CHARGER in here

# Getting Started

The Courier contains a rechargeable NiCad (nickel-cadmium) battery. Before using it for the first time, you should charge this battery by plugging it into the battery charger (Figure 1) for five to eight hours. Then, while pressing the load key,

press the on/off key. This step is only necessary when you first receive the machine, or if the batteries are completely discharged. You can also run your Courier with the battery charger connected, conserving battery life.

# Selecting a Session

Figure 4). You can load any one of them in the following manner:

The Courier comes with 16 factory preset sessions, numbered 1 to 16

- \* Press the SES SEL (Session Select) key. A number will appear.
- \* Use the UP and DN arrow keys to change the number in the display. When the desired session number is displayed, put on the LiteFrames and headphones, and press GO. It's that simple! BE SURE TO KEEP YOUR EYES CLOSED. Sessions numbered 1-5 include an additional automatic "speed up"

session saved to slots 1-5). This is intended to gently return the snoozing user to awareness (15 Hz), and lasts approximately 3 to 7 minutes. The exact length depends on your sessions target rate: the lower it is, the longer it takes to speed up.

feature at their conclusion; (this speed up ramp will be included in any custom

The Courier is in the "Session Select" mode when you first turn it on, so you can simply turn it on, select a session with the arrow keys, and go!

You can close the Courier case during your session, and control the lamp

brightness and sound volume with the two knobs at either side of the case

Changing Brightness and Volume

front. The left knob controls brightness, the right knob volume.

Stopping a Session

# You can stop your session at any time by pressing either the RESET key or

the ON/OFF key. When a session ends, it will return control to the keyboard for further programming or use.

# "Auto-Off" Feature

The Courier will shut itself off if a session is not running, and if no keystrokes have been entered for three minutes.

# Selecting a Sound

Although each session contains a pre-assigned sound, you may select a different one before starting your session, as follows:

\* Press the Sound SEL key. A number will appear. Use the UP and DN arrow keys to make your selection. Eight sounds are available, numbered 1 to 8. Sound 1 is a pure "sine wave" tone, while the others are more complex.

# Glossary

**Alpha** - Brainwaves of about 8-13 Hz, typically produced when relaxed, tranquil, daydreaming or during certain forms of meditation. **Beta** - Brainwave activity of 13 Hz, or more, associated with the normal waking

state, with attention directed to the surrounding world.

Binaural Beat - The perceived difference between two tones of slightly

Binaural Beat - The perceived difference between two tones of slightly differing frequencies being separately delivered to the left and right ears. For example, if one frequency is 200 Hz and the other is 204 Hz, the brain will "synthesize" the difference of 4 Hz. This tone will be perceived and the brainwave activity will tend to entrain to it.

Delta -  $\,$  Brainwaves of about 0.5-4 Hz, often associated with deep, dreamless sleep and certain types of trance state.

**Entrainment** - The tendency for brainwave activity to fall into step with pulsed light and sound.

Frequency Following Response - Same as "Entrainment."

**HemiTone** - Synetic Systems' trade name for binaural beat generation. **Hertz (Hz)** - A measure of frequency, in pulses per second. Often used to describe the pitch of sounds, the rate at which lights are flashing, radio

frequencies, etc. Also called cycles per second (cps).

Induction Period - The amount of time required for a given effect to take place, such as the onset of regular Theta wave production.

**LiteFrames** - Synetic Systems' trademark for our specially molded compact platform for the light emitting diodes (LED's).

Photic Driving - The process whereby flashing light can induce brainwave activity at the flash frequency.

**Ramp** - A smooth change in frequency over time. For example, a ramp from 10 Hz to 5 Hz over 10 minutes.

**Theta** - Brainwaves of about 4-8 Hz, associated with borderline sleep, meditative states with access to the unconscious; dreamlike fantasy and

Please note that this is an "orders only" number; technical support is provided for registered owners at 206-632-1722. Be sure to return your Warranty Card!

imagery; and sometimes with increased (twilight) learning.

Several accessories may be ordered for your Courier. You will find an order form included with the manual, or you may call 800-388-6345 with your order.

**Two User Package**. Includes one each LiteFrames and headphones, plus two special adaptor plugs. \$50.

**Extra LiteFrames.** Red LED LiteFrames, \$35. Special low-brightness green LED for light-sensitive eyes, \$35.

LED for light-sensitive eyes, \$35.

set the Sound Set key. A hidriber will appear. Ose the Or allo Divariow
to make your selection. Eight sounds are available, numbered 1 to 8.

Extra Headphones. Courier dynamic phones. \$15.

Synetic Systems InfoPack: describes our other mind-tech products. Free!

Figure 4: Table of Preset Sessions

Ramp

Time

15

5

15

20

10

Rate

8.0

5.0

4.0

8.0

7.0

Target Target Sound Lt/Snd

No.

8

2

7

2

7

Pat.

5

2

3

Time

15

10

30

10

35

Start

Rate

15.0

25.0

12.0

12.0

20.0

Length

30

15

45

30

45

Name

Relax 1

Creativity 1

Learning 1

Deep Relax

Creativity 2

multiple component values.

No.

6	Energize 1	45	8.0	25	15.0	20	8	5
7	Learning 2	60	15.0	15	6.0	45	1	2
8	Sleep Aid	60	12.0	25	3.0	35	4	3
9	Meditation	20	10.0	20	10.0	0	5	3
10	Imagery	45	25.0	10	8.0	35	6	3
11	HemiTone 1	25	17-12 <b>-</b> 8 12-4	3-2-3 3-4	12-8-12 4-15	2-2-4 2-0	1	3-2-3 3-1
12	Energize 2	45	12-18-7 12-10	7-4-5 5-5	18-7-20 20-18	3-6-3 7-0	8	6-3-3 1-3
13	Jet Lag	60	15-8-18 10-6	10-5-5 5-10	8-18-10 15-15	5-5-5 10-0	3	2-3-1 2-3
14	Relax 2	60	15-8-12 7-12	8-3-5 5-10	8-12-7 12-7	2-7-5 5-10	3	3-2-1 3-2
15	Kaleidoscope	30	15-6-6 14-8	5-3-3 5-6	6-12-14 4-18	2-2-2 2-0	5	3-2-1 3-1
16	HemiTone 2	60	15-8 12-6	10-10 10-5	8-12 6-18	10-10 5-0	1	2-3 1-2
Sessions 1 through 5 include a "speed-up" ramp at the end, which lasts from 3 to 5 minutes and ends at 15 Hz (low Beta).								

Sessions 11 through 16 are "complex sessions" in that they include

multiple start rates, ramps, target rates, and target times. Read the

values under the column headings (in succession) to correlate the

Changing the Pitch

If you want a higher or lower pitched sound, put on the headphones and press the Sound PITCH key. Use the UP and DN arrow keys to increase or decrease the pitch. For sounds 3 through 7, the tonal quality as well as pitch will change.

providing you with a broad range of sound possibilities from which to choose.

pattern 2 (Figure 3). You can change any of these numbers when creating your own sessions, and can save as many as ten of them, in session "slots" numbered 1-10. Your custom session will replace the factory preset session with the same number, until you decide to re-load the factory preset. In each of the following steps, use the UP and DN arrow keys to change the number in

through 5 will always include a "speed up" ramp when you calculate your

# **Custom Sessions**

You can create your own sessions, and store them for future use. A session there for another fifteen minutes. Session 1 also uses sound 2, and lamp

starts at one rate, ramps to another rate over a period of time, then stavs there for another period of time (see Figure 2). For example, Session 1 starts at 25 flashes per second (Hz), drops over a fifteen minute period to 8 Hz, and stays

the display.

- 1) Press the SES SEL key and enter the session number (1 to 10) you want
- to customize.
- 2) Press the START RATE key, and select the starting rate. This number may range from 0.10 to 30.0 flashes per second.
- 3) Press the RAMP TIME key, and select the number of minutes (0 to 60) it will take to move to the target rate.
- 4) Press the Target RATE key, and choose the target rate, from 0.10 to 30.0
- flashes per second.
- 5) Press the Target TIME key, and select the number of minutes (0 to 60) that you wish to stay at the target rate.
- 6) Press the Sound SEL key, and select the sound you wish to hear (1 to 8).

- 7) Press the LAMP PAT key, and select the lamp pattern (1 through 6) you

- wish to use (see Figure 3).

- - Of course, you don't need to change all of these values; any changes you do make to a session will be saved with that session number for future use. If you wish to re-load the factory preset settings, press SES SEL, enter the session
- - number you wish to re-load, and press LOAD. Remember that sessions 1

actual session length. You may also review settings for any session by entering the session number and pressing any of the above keys.

## When The Battery Is Low

The Courier batteries will power the unit for ten or more hours, (or for half that if two people are using it at once). Actual usage between charges will vary depending on the volume and brightness levels you select. For maximum battery life, we suggest that you completely discharge your batteries before recharging them. If the batteries run low during a session, the light and sound may stop abruptly. Should this happen, recharge as soon as possible. It is unlikely that the Courier will discharge below the level needed to retain your custom sessions in memory; however, should this happen, you will need to repeat the procedure given in "Getting Started," and re-enter your custom programs.

### **Taking Care of Your Courier**

The Courier was designed to provide many years of dependable service. There are several things you can do to help extend its useful life:

- \* Don't leave the Courier or LiteFrames in a very hot area, such as inside a car parked in direct sunlight. This could result in the softening of the keypad adhesive.
- \* Don't overcharge the unit's batteries. You can extend battery life by plugging the unit in while in use, but do not plug it in if you are not using it. MAXIMUM CHARGE TIME SHOULD NOT EXCEED EIGHT HOURS IF BATTERIES ARE COMPLETELY DISCHARGED.
- \* If you clean the keypad or LiteFrames, use a damp (not wet!) cloth, with a mild detergent. Do not use alcohol or other solvents.

# Who Should Not Use the Courier?

Persons with seizure disorders of any type should consult with their physician before using the Courier or any other strobe (flickering) light source. Likewise, some light-sensitive individuals may find the flashing red lights uncomfortable, even at minimum setting (see "accessories" section). Persons with a history of schizophrenia, bipolar syndrome, or other psychological condition requiring medical treatment should use this device only with professional guidance. This is an experimental device, and as such neither explicit nor implicit medical claims are being made for it.

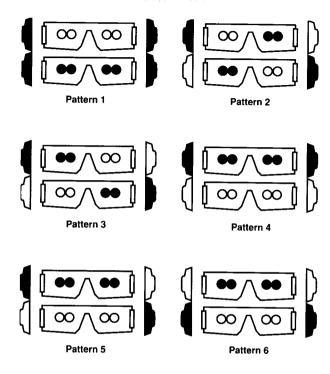


Fig. 3 Courier Light/Sound Patterns

- Pattern 1: Audio-Strobe; sound on always, lights on/off (used for HemiTone)
- Pattern 2: Ping-Pong; light moves right/left, sound left/right
- Pattern 3: Sweep; light and sound move together left/right
- Pattern 4: Strobe; light and sound on/off together
- Pattern 5: Sweep-Strobe; sound moves left/right, light on/off
- Pattern 6: Fusion; light on/off, sound off/on

- 9) **Meditation.** Alpha waves have long been associated with meditation, a gentle clearing of the mind. There is no ramp during the session. Try lamp patterns 4 and 6, and sounds 1 and 2.
- 10) Imagery. A colorful trip into Alpha, lots of visual imagery, which demonstrates that in addition to its other uses, the Courier can be fun and entertaining!

Sessions 11-16 move back and forth between various states, inducing relaxation but usually averting sleep much like the very expensive "mind spa" systems. With the exception of the sound pitch which may be changed, these sessions cannot be altered because of their complex ramping sequences.

- 11) HemiTone One. A very good "sampler" session, combining relaxation with constantly shifting, mandala-like imagery. A short ramp from low Beta to high Alpha. After a two minute pause, a further ramp to low Alpha. Another pause, then back to high Alpha; a further descent to Theta, then back to Beta.
- **12)** Energize Two. Several cycles from mid Beta down to Alpha and Theta and back again, emphasizing the higher frequencies. Try this after Energize 1, as the effect is more complex.
- 13) Jet Lag. Rhythmic cycling between Alpha and Beta, with emphasis on alternating between patterns 2 and 3. A "jump" near the end; a perk-up for the weary traveler.
- **14) Relax Two.** An hour long session, again cycling from low Beta to Alpha and Theta, moving through the patterns in a methodical manner.
- **15)** Kaleidoscope. This one's for fun, and is an especially effective visual pattern generator. Try this one instead of watching yet another TV rerun.
- 16) HemiTone Two. More relaxation. Most of the session is spent in Alpha, with a 5 Hz HemiTone binaural beat embedded in it to encourage further relaxation. Try both HemiTone sessions with your self-help cassettes.

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# User Programming Guidelines

The factory settings in your Courier are based upon two years of experience with our professional line of MindsEye machines. They are suggested applications only, and should be considered as approximations. The actual effect of each session will vary from person to person, depending upon individual temperament and a host of other factors. We strongly encourage you to experiment with the settings to find the results which are most appropriate for you. Here are a few suggested guidelines to help you get started.

### I. Session

Total session time should typically vary between 15 and 60 minutes, though sessions as long as two hours may be programmed. Calculate the total session time by adding the ramp time and target time together. If you are using sessions 1-5, then a speed-up section will be added at session's end. This feature is especially helpful if you tend to doze off and need to return to full awareness (for example, at the end of a lunch break). The length of the speed-up section depends upon your target frequency, and ends at 15 Hz.

About one minute passes for every two Hz change, so a speed-up from 5 to 15 Hz will take about five minutes, while a speed-up from 11 to 15 Hz adds about

Although ramps may increase in frequency as part of an "energize" session, the most common application is to decrease frequency. The ramp time is often referred to as the "induction time," which is the period required to reach the target rate. This varies considerably from person to person, and even over time

referred to as the "induction time," which is the period required to reach the target rate. This varies considerably from person to person, and even over t for a given person. For this reason the Courier may be adjusted to best suit your needs. If you are feeling especially anxious or have a "high-strung" personality, you will probably require a longer induction period. Light/sound technology is most effective at inducing Alpha activity; reaching Theta and Delta often requires a longer induction period.

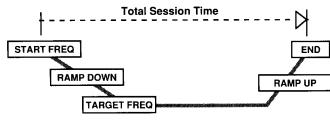


Fig. 2 Session Diagram

As a general guideline, try experimenting with 5 to 15 minute ramp times to Alpha, 10 to 30 minutes to Theta, and 15 to 45 minutes to Delta. Photic driving, (the process of entrainment by pulsing lights) becomes less effective above about 20 Hz (though the visual effects can be quite interesting). We also recommend that you experiment with maximum frequencies of 15 Hz at first.

## II. Sound Selection.

The Courier is capable of producing a broader range of synthesized sounds than any other portable light/sound machine. The eight basic sounds may be varied considerably via our unique SideBand Synthesis technique. There is something here for every taste! Sound #1 is a sine wave (pure tone); sound #2 is a two-note chord, and the other six sounds are more complex wave patterns. Their tonal qualities may actually be altered via the "pitch" control. Try varying the sound with a series of short keypresses to the up or down arrow keys while listening to the tone. Once you have altered a sound, it will automatically become part of the session you are manipulating. Try using sounds #1 and #2 for relaxation sessions and #5 and #7 for energizing sessions. Use the volume control knob on the right front side of the case to adjust sound level.

Sessions 11 and 16 include a HemiTone, binaural beat frequency. This technique presents each ear with a sine wave of slightly differing pitch; the difference between the two is perceived as a gently pulsing sound. The brain tends to entrain to the beat frequency, which in this case is set to a relaxing 5 Hz. Extensive research into the effects of binaural beat frequencies has been carried out at the Monroe Institute and other locations. The overall pitch of this HemiTone may be adjusted, but not the beat frequency. The binaural beat is most efficient at lower pitches.

An external audio source, such as a portable cassette or compact disc player, may be connected to the Courier. Use the stereo patch cord (included with your unit) to connect the headphone jack OUTPUT of your audio source to the audio INPUT jack of the Courier. Use the volume control of your audio source with the Courier volume control to set the overall volume level.

# III. Lamp Patterns.

The term "lamp pattern" actually refers to the relationship between the pulsing lights and sound. Figure 3 shows the relationship between light and sound for each pattern. Pulsing the light and sound together (pattern 4) is most effective at inducing the frequency following effect. It has been reported that pattern 6 has been associated with greater access to memory, pattern 3 with enhanced communication between the two hemispheres of the brain and creative thinking, and pattern 2 with forms of global or heightened awareness.

\*Research reported by Psych-Research, Inc. Little Rock, AR

# IV. Preset Session Descriptions.

The following is a description of the factory preset sessions. A complete summary of settings can be found in Preset Sessions Table (Figure 4). We recommend that, when first using your Courier, you set the lights to low brightness and gradually increase it as your eyes become accustomed to the light. REMEMBER TO KEEP YOUR EYES CLOSED.

- 1) Relax One. This session starts in low Beta (15 Hz) and ramps over 15 minutes to low Alpha/high Theta (8 Hz), where it stays for another 15 minutes. Total length, including speed-up section, is just over half an hour. This is an ideal quick relaxation session, and a good one to begin your experimentation with. Try lamp patterns 4 and 6.
- 2) Creativity One. A fast trip to the Theta state. Use this if you tend to be naturally quite relaxed, otherwise increase the ramp time. Try also experimenting with lower start rates, lamp pattern 3, and sound 1.
- 3) Learning One. Starting at 12 Hz, this program drops to 4 Hz over 15 minutes, where it stays for 30 minutes. Lamp pattern 3 is used, and sound 7 has been tuned to a shifting, hypnotic bubbling sound. Try varying the target time.
- 4) **Deep Relaxation**. Similar to session 1, this starts at high Alpha and undergoes a gradual (20 min) transition to high Theta. This session is especially useful in inducing imagery, so try experimenting with all lamp patterns. Sound 2 is tuned to a very low pitch; try increasing it.
- 5) Creativity Two. Starting at an attention-getting 20 Hz, this session ramps over 10 minutes to high Theta (7 Hz), and stays there for 35 minutes. Try this one with your motivational or other cassette tapes. This session has evoked vivid dream-like experiences in some users.
- 6) Energize One. Starting at 8 Hz, this gradually ramps to 15 Hz and leaves you there for 20 minutes. Sound 8 is set to a higher, more attention-getting pitch. For a natural pick-up, try this one as a substitute for your afternoon cup of coffee
- of coffee.

  7) Learning Two. A gradual (15 min.) descent to Theta, and a long (45 min.) stay there. Use this one in the evening, especially before bed, with language or
- 8) Sleep Aid. A long slow (25 min.) drop from Alpha to Delta, and a long stay there. Adjust ramp and target times to suit your needs and preferences, and use it if you wake up during the night and are unable to get back to sleep.

other learning tapes.