

# AVS

**Auditory / Visual Stimulation**

**Winter '01**

**Vol. 1, #2**

**Includes:**

**An Interview with Robert Austin**

**Sportslink: Olympic Update**

**Wired For Sound**

**& New Product Information**

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## **AVS Journal Vol. 1, #2 Winter '01**

Welcome to the second edition of the AVS Journal. To all of you who have subscribed - thank you! And to the professionals who contributed articles or submitted advertisements for this issue, you have my utmost appreciation. Please visit the web sites of these leaders in AVS research and sales for they are the hard-working members of the AVS community that are here to promote light and sound technology.

This issue contains information about several aspects of light and sound stimulation, and then some. Last issue, Jeff Labno wrote about light stimulation. This issue he follows up with his insights regarding 'quality sound'. Dr. Jeff Thompson takes sound stimulation another step further, describing his success using sound for healing. You will learn what the Echofone is from the builder himself - Andy Dolan. And you will learn how Larry Shultz, the creator of Symmetron technology, became interested in developing tactile stimulation and motion systems. Of course there is Michael Stevens, again sharing his knowledge about 'anchors' and how they can be used to enhance the quality of your life. But this issue would not be complete without Dr. Rayma Ditson-Sommer. Her Sportslink instrument aided several US athletes at the Sydney 2000 Olympics. You get to find out how. And please remember, the contact information for these professionals appears at the end of each article. Should you have any questions, concerns or comments, they all invite you to contact them directly.

We also have some new sections this time, and with any luck, they will get bigger with each new issue. There are some new products featured that are well-worth checking out, a couple of interesting questions to kick-off the Reader's Forum and also some nice deals in the classified ads section.

Now I would like to turn away from what is inside this issue and share with you two valuable light / sound commodities. The first is Ruth Olmstead's web site: [www.enlightenedbrain.com](http://www.enlightenedbrain.com). Ruth has created a site that is packed with information regarding light and sound research in the medical community. I highly recommend you stop by for a look, you will certainly learn some new information. The second involves an egroupp. There are plenty of them on the net, and they can sure pile up our email in-boxes, but there is one out there that always has interesting, oftentimes unique, and sometimes downright bizarre ideas, questions and discussions going on. This egroupp is the Mind-I list, moderated by Andy Dolan (see Echofone article for contact information). Some of the biggest names and finest minds in light / sound share their views on the Mind-I list. Some are not. But it makes for quite a mix of interesting thoughts and opinions. I must say, however, that if you are the slightest bit sensitive or have a hard time handling constructive criticism, be careful what you post. Some responses can get brutal! It's a great egroupp for simultaneously learning about new products and applications, and having fun.

I hope all of you find this issue of the AVS Journal enjoyable and informative. And again, thank you!

- Michael Landgraf  
Editor

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Cover design: created entirely by Chris Oliver. Mr. Oliver is known in the light / sound community for his talent in designing l/s sessions (including sessions in the Muse#, Nova Pro, 515 and Halcyon) and musical compositions (Space Journey and L/S Voyager). Chris' latest work "Audio Sessions for EEG/neurofeedback Training" is featured in the New Products section of this issue. He is also an accomplished web site designer, computer troubleshooter and Microsoft software instructor. Chris Oliver can be contacted at: 972/355-5520.



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# **Wired For Sound**

**by Jeff Labno**

In the late 50's, when researchers first experimented with AVS machines (Brainwave Synchronizers), clicks or tones were used for audio stimulation.

In the mid 80's, when entrepreneurs first began marketing AVS machines to the public, manufacturers began offering a choice of a few audio stimulation sounds. The two most common were a tone (a note such as middle C) and surf (pink noise).

Many of today's machines offer a wide array of sounds. You'll find tones with variable pitch, surf, chords with variable intervals, heartbeat, Schumann Resonance, binaural beats, dual independent binaural beats, dual monaural beats, and computer sound synthesizers...

When listening to these sounds, you will find that while you like some, there are also those you may dislike. Sound waves are processed by our emotional brain (limbic). Sound therefore, triggers emotion. When we hear something we like, the response is pleasure. When we hear something we don't like, the response is irritation.

To get more out of your light and sound sessions, listen to each of the sounds in your machine noting which sounds you prefer. When sharing your machine with others, let each person choose their own sounds.

Here is a basic description of some of the sounds:

Tone is the most common. Some machines offer several octaves of pitch control. Ability to change the pitch of the tone comes in handy when introducing external music. Adjust the pitch of the tone so it blends with the music (consonant). Men generally prefer lower pitches, and women prefer higher pitches. Lower pitches have a calming effect, while higher pitches are energizing.

Surf is pink noise. Pink noise is the hissing sound heard when all audible frequencies (excluding extremely high and extremely low) are represented at the same intensity. Surf blocks out your awareness of other sounds. It is a good choice when doing sessions in noisy environments.

Heartbeat with variable speed can be used to keep someone more alert in any brain state. The heartbeat has mostly been used by therapists. You can set the heart rate a little faster than the resting heart rate to make a patient more conscious during deep theta sessions when you are resolving emotional trauma.

You can set the heart rate a little slower than the resting heart rate during beta energy /focus sessions. This will help hyperactive people to focus faster, and a lot more comfortably. A great plus for SMR training.

Chords are several notes, which you hear at the same time. Chords can be set at different intervals such as thirds, and fifths. In music, chords make the melody more complex. Complex melodies (chords) are useful to engage and quiet an active mind where many thoughts are present. Single tones in the melody are useful when the mind is already calm, single tones enhance contemplation and meditation.

The Schumann Resonance in AVS machines is a program where the strobe rate of the sound and/or light is set at 7.83 Hertz. It is said this is the frequency of the Earth and using these programs is healing, deepens meditations, and brings out psychic awareness.

In nature, the Schumann Resonances are a sequence of eleven ubiquitous atmospheric resonances precipitated by the global sound of thunder in our atmosphere. These resonances were named after the German physicist Schumann in 1957. The base frequency is 7.83 Hertz, plus or minus 0.5 Hertz. Ten additional frequencies resonate from this base. Some New Age references cite that this base frequency is rising; not substantiated by the University of Berkeley web site, which publishes these resonances daily.

In my experience, AVS users comment positively about Schumann Resonance programs, more so than any other types of programs. The hypnogogic state where consciousness and unconsciousness coincide, occurs between 6.8 and 8.3 Hertz, which is precisely the upper and lower range of the base Schumann frequency.

Binaural beats are generated by the interaction of two sound waves similar in pitch. This interaction causes a raising and lowering of pitch at the frequency matching the difference of the two pitches. If pitch one is 200 Hertz and pitch two is 205 Hertz, the beat frequency generated will be 5 Hertz. Beat frequencies result by any two sound waves whose pitches vary by 30 cycles per second or less. Because beat frequencies are sinusoidal (gradually moving up and down), they are generally more pleasing than strobing sounds, which are square waves (suddenly on, then off).

Dual binaural beats consist of two binaural beats at the same time. One beat frequency might be in beta, and the other in theta; the idea being to produce an alert dream state.

Dual monaural beats are a new innovation in AVS. This technology allows you to create a beat frequency in one ear separate to that of the other ear. You can create a delta frequency in the right ear to shut-off the left-brain, and create a low alpha frequency in the left ear to accentuate right brain creativity.

There are more sounds in AVS machines, but we have considered the most important ones.

Using your own music is one of the easiest ways to do your own programming. Use any tapes or CDs you choose, mixing it in with your AVS experience. Using a stereo patch cord, plug your AVS machine into the headphone jack of any cassette, CD, radio, TV ...and turn down the strobe sound so it is in the background. Choose the AVS program which makes the most sense to you.

### Choosing a program for your tapes / CDs (examples):

Tape/ CD/ Radio/TV Benefit	AVS Program
-----	
----- Foreign language	
Focus (beta)/learning (alpha)	Learn pronunciation faster
Self improvement	Focus (beta)
Keeps you in the zone	
Radio show (information)	Focus (beta)
Keeps you razor sharp	
* Educational TV	Focus (beta)
Quick study	
Behavior modification	Learning (alpha)
Optimal learning	
Sports improvement	Learning (alpha)
Peak performance zone	
Creative visualization	Visual (theta)
Enhances visuals	
Hypnosis	Visual (theta)
Absorb information	
Music (learning)	Visual (theta)
Hearing it as if 'fresh'	
Radio drama	Visual (theta)
Enhances visuals	
Nature sounds	Clearing (delta)
Promotes healing	
Meditations	Clearing (delta)
Clear thinking	
Behavior modification	Clearing (delta)
Solving difficult problems	

----- \* Use audio portion of AVS  
machine only so you can enjoy the program as usual.

The best sound is what you are passionate about. Pick things which really interest you, and interest you greatly at the time you are doing your session. This assures peak experiences.

Most people use their favorite music with AVS sessions. Music has a definite impact on your mood. Here are a few examples of styles of music and their impact.

A few musical periods:

Era (approximate dates)	Some Composers
Effect on	



Gregorian (before 1550)	Church driven
Pensive, religious	
Renaissance (1550-1600)	Byrd, Morley
Renewal, revival	
Baroque (1650-1750)	Bach, Mozart
Organized, cheerful	
Classical (1750-1850)	Beethoven, Schubert
Imaginative, inspirational	
Romantic (1825-1900)	Chopin, Schumann
Fantasy, uplifting	
Impressionistic (1890-1920)	Debussy, Saint-Saens
Dreamy, reflective	
Popular (after 1920)	Andrews Sisters, Beatles
Uplifting, memories	

Quality headphones such as Sennheiser add untold value to your experiences. Hearing more sound frequencies (high and low end) means that you are experiencing sound just as if you are in the concert hall - live! The music seems vibrant and alive, versus hearing something as if it were background music.

The Neurophone is a spectacular addition to use with AVS. Small transducers are applied to the forehead using a headband. The music vibrates the skin and bones bypassing the ear, so you hear the music in the middle of your head.

The Neurophone accelerates learning languages, stories, music, or anything you use with it. When you use sound therapy tapes such as the Tomatis Effect, beat frequencies, or Ultra- Intelligence; you feel the effect of this therapy immediately.

Do not plug quality headphones into your AVS machine, please. AVS machines do not have the same high quality audio circuitry that your sound system does. Quality sound assurance requires a splitter cord to merge your sound system with your AVS machine into a single female plug, so your headphones maintain the fidelity of your quality sound system.

Sound beds use transducers, which transduce the electrical signal of sound (music) into mechanical motion or vibration. Transducers vibrate the skin, which feels like a musical massage.

Transducers can be an incredible addition to your AVS experience when used correctly. The skin is said to be the largest organ of the body, and therefore has the maximum capacity to promote relaxation. The base tones in music is what drives the transducers. Most music does not have sufficient bass to produce a consistent vibration. Beat frequencies are therefore a better choice to use with transducers because they provide consistent vibration.

You now have most of the tools you need to get the most from using quality sound with your AVS machine.

Enjoy!

Jeff Labno conducts product research and sales for Tools For Wellness, formerly known as Tools For Exploration. Currently, Jeff is writing the book "Encyclopedia of Light & Sound" and continues his research measuring light / sound session and equipment effectiveness.

## **An "E-Interview" with Robert Austin, President of Synetic Systems International, Inc.**

Editors Note: This is the first email-interview in what will become a continuing quarterly feature; with future email interviews highlighting other manufacturers, researchers, light / sound retailers and everyday people who use AVS.

I asked Robert to be a part of this first e-interview because there are a lot of Orion, Thoughtstream, Proteus, Voyager and Mind's Eye owners in this world. Here is your chance to learn a little about the person who manufactures those instruments, and read what some of his thoughts are about light and sound technology.

**Q:** What was your first experience with a light/sound instrument like? When was that and which instrument did you use?

**A:** "My earliest such experiences took place in the early '70s, and involved the use of strobe lights with music. I developed a strong interest in the nature of consciousness and altered states of consciousness while in college in the mid-70s, and during that phase had read W. Gray Walter's excellent book "The Living Brain," in which he described his experiments with driving a strobe light with human EEG (and this was published in the mid-50s!). My interest in the possible use of light and sound as consciousness altering technology was re-ignited when a friend suggested that I try one of the \$4000 machines that had just appeared on the market, and I remembered how powerful the experience could be. That must have been around 1986. My next step was to construct two machines for my own use, with the goal of doing away with that machine's requirement that someone else actually control the experience, and this eventually led to the development of the original Mind's Eye system, which we released in 1988."

**Q:** How soon after building those two machines did you realize you wanted to get into the manufacturing of light/sound instruments? How did the name "Synetic Systems" originate?

**A:** "There were two reasons for me to start manufacturing light and sound

instruments. The first was that the various friends I showed the Mind's Eye prototype to all insisted that they wanted one! The second was that I had spent several years developing electronic prototypes with the goal of going into business myself, only to find that large companies would enter the market just as I finished the prototype. So I felt that I would be filling a need by offering the (as far as I know) world's first programmable light and sound machine at a competitive price. We built 100 of them and sold out within two months, far faster than I had expected! At one point I actually built an attachment to my Amiga computer, driven by software, but decided not to release that as I felt that the Amiga had too limited a market (a supposition which obviously has not slowed Chuck Davis down!)."

Q: How often do you personally experience a light/sound session? Any favorite? Do you simultaneously utilize other modalities such as biofeedback or tactile stimulation and motion during sessions?

A: "My personal usage varies dramatically. During the first four or five years I used our equipment quite a lot, then dropped off as I spent more time meditating, or simply working (there were a lot of 80 to 100 hour weeks along the line). Recently I've been using the Proteus a lot because the intense color-shifts provide a much more compelling and profound experience. I've also spent a lot of time with the biofeedback driven systems we've prototyped, especially EEG driven systems, which we've been working with off and on since 1990. I'm personally convinced that multimodal biofeedback/ database-driven light sound systems will become the most powerful form for this technology, and kudos to Chuck Davis for actually marketing such a system, despite the fact that the FDA regards such as medical devices and could swoop down on him at any time, as they once did to us.

We haven't any forms of tactile stimulation, though this is an interesting concept; it would cost too much and the market would be therefore limited (this may not be the case if we had millions of dollars for marketing, though)."

Q: What's your definition of the perfect light/sound instrument? What would the Liteframes be like?

A: "It would include multiple forms of biofeedback, a large and carefully constructed multiuser database, lots of well-written software, and it would be internet driven. We're gradually working towards such a goal, but again money is always the controlling variable.

We've actually developed RGB Ganzfeld Liteframes (and filed a patent application for same), which I love! It's an eyes-open system, of course, which has its limitations, but when those pure, jewel-like colors fill your entire visual field, the effects are 'way beyond anything else I've tried, including the Proteus. Sort of like a personal, portable, programmable Lumatron, and I'm sure there are a lot of color-therapy applications for such a device as well."

Q: What considerations should someone new to L/S take into account when purchasing their first L/S instrument?



A: "They should have some idea of what they want to do with it. If they just want to relax, energize, or experiment with learning enhancement, a preset system could do the trick. If they want to write their own programs and otherwise experiment in more detail, then they should select a system which supports their needs. Most manufacturers have a return policy, so they might want to order several and return the ones which don't perform as advertised. I'd also suggest that they take the claims of some manufacturers with a grain of salt or two, or try to locate any research to support some of their more extreme claims for any 'special' features they offer!"

Q: What are the main differences between your instruments and those of other L/S manufacturers? Why should a customer consider a Synetic product?

A: "We've always tried to produce a balanced mixture of useful and innovative features at a low cost. Early on we decided to try to reach a larger audience and so have consistently produced systems at lower prices than our competitors; this has culminated in the Orion/Proteus series, which have proven extremely reliable and popular. The Orion in particular was intended as a sort of 'Swiss army knife' and has appealed to casual and serious users. The Proteus is oriented more towards the serious experimenter, and was intended in part to give the field a little 'kick' since essentially nothing new has been released by anyone for years. We also filed some patents this time, as what always occurred in the past is that other manufacturers would simply copy our innovations, and in at least one case proceed to claim that they had come up with them!

So a customer should purchase a Synetic product if they want an innovative, reliable and (with the latest generation) inherently upgradeable product from the company who has been making computerized light and sound equipment longer than anyone else in the world!"

Q: In 1991, the late Rob Robinson of InnerQuest told me the majority of his light/sound instruments were purchased by overseas customers. Do you see more of a balance between domestic and export sales today? How many light/sound instruments do you believe are sold annually - roughly? Over the years, approximately how many has Synetic sold?

A: "The domestic/overseas balance has varied a lot for us, and depends upon who is investing the most money in sales and marketing. Over the past year or two we've been selling about equally into both markets, and during the peak of US interest in light and sound in the early and mid-90s, we sold quite a few in the US. I'm afraid that the entry of Zygon into the field messed things up for the rest of us: aggressive and well-funded marketing, backed with shoddy products. According to their stock offering they sold \$19 million worth of machines the year before they collapsed, but that probably doesn't take into account the 25% return rate they were seeing! Then, when the FDA zapped us (and what a surprise that was) in 1994, we simply abandoned the US market for a period of time.

I don't really have a clear idea of the present size of the light/sound market, but would guess that worldwide it must be in the \$15-\$50 million range, with a strong emphasis on Asian sales. Synetic has sold more than 300,000 machines over our time in business, and with our low-price strategy have managed not to make much money despite that level of sales!"

Q: You have participated in many research studies utilizing light/sound. Is there one study in particular that left an indelible impression on you?

A: "I would have to say, the SBIR-funded studies utilizing our EEG-driven L&S system to treat Attention Deficit Disorder. We actually saw verbal IQ boosts of roughly ten percent in these studies, and I think the potential as a replacement for Ritalin is quite large. We're still working on that one!"

Q: I have often been asked if there is a combination EEG/light and sound unit available and understand you have been experimenting with just such an instrument. Can you tell us a little about it and when we can expect to see it on the market?

A: "It's true -we actually have an inventory of a design we created as a research tool. We've recently established a venture with Dr. Harold Russell's firm, and will seek FDA approval for treatment of ADHD with a similar system."

Q: What do you believe are the most important issues facing the light/sound industry today?

A: "It still inhabits a kind of 'fringe'. For some of us, that's part of its charm: light and sound can induce some pretty intense altered states of consciousness, and I've always seen the technology as one of the more powerful tools for exploring those states. But, in order to become 'legitimate' there will need to be more studies, and it's really hard to get funding (as we've discovered) unless you are trying to ameliorate a medical problem. Trouble is, once you take that approach and develop something with medical applications, you can't bring it to market without FDA approval, at least in the US. But assuming you can obtain that approval, the technology is now controlled, and available for only certain indications, and I'd hate to see light and sound devices becoming available only by prescription. So, the big challenge in my opinion will be making it available to treat the medical conditions that it works for (and Len Ochs has shown that you can use it to treat severe depression and post traumatic stress disorder, Harold Russell and Larry Micheletti and others have shown that you can use it to treat attention deficit disorder, stroke and head injuries), while further developing the psychotherapeutic, stress-reducing, ASC- inducing, and just plain fun aspects that we all know and love."

Q: What do you see the future of light/sound being?

A: "Personal growth and self-exploration, psychotherapeutic, and medical applications. The field needs more research and more investment; the wackier claims and the companies making them should be banished, and there should be more cooperation and collaboration between the various manufacturers. We're all too small to be banging away at each other; why not form a 'virtual corporation' and create a broad product line, rather than a series of 'me-too' products? I've tried to do this on several occasions with no success. I mean, it's a bit strange when competing products actually look identical, don't you think?"

I also think it is extremely important that these devices become embedded in a larger context. This is what Andrzej Slawinski (developer of Audiostrobe and Mental Games) and I are trying to do: integrate the technologies into a larger and broader training context, involving multimedia training software that's fully modular and extensible, and utilizes the considerable power of the internet and database technology."

To contact Robert Austin: Synetic Systems International, Inc. 170 Northwest 73rd Street. Seattle, WA. Phone: 206/632-1722. Fax: 206/632-1744. Web site: [www.syneticsystems.com](http://www.syneticsystems.com). Please check out Robert's advertisement on the opposite page. When you visit his web site, look over the old Mega-Brain Reports. With Robert's acquisition of their copyrights, he plans to be posting more in the future.

## **Motion: The Overlooked Sensory Input**

**by Larry Shultz, DC**

Motion is so fundamental in the scheme of the universe, it is easy to overlook just how essential it is to the developmental process. As a starter, consider the human experience. In utero, the developing fetus is in motion and suspended in a totally fluid medium. Embryologically, the first parts of the nervous system to develop involve tactile and the gravitational relationship mechanisms. For eons, mothers have instinctively used motion by rocking their infants for calming and comfort.

My interest in motion as a developmental sensory input goes back to my childhood. As a young ten year old boy, I was envious of the large swing set being installed in one of our neighbor's backyard. Interestingly enough, one of the parents made the comment that the swing was being installed not only as a recreational device, but that they believed the swinging motion would have a developmentally positive affect on their children. I didn't know much about sensory input as a developmental factor at that time, but I did know that swinging back and forth was a lot of fun.

It was later that as a stressed out newly employed college grad, I purchased a fifteen foot sailboat primarily because it was the one activity that allowed me to experience the most welcome calming relief that seemed to come from the gentle rocking of the sailboat. Could there be causal relationship going here? I didn't know and really didn't care as long as it worked.

It was as a newly commissioned ensign in the US Navy, that I began to look at this business of motion as a serious form of sensory input. I had made a commitment to myself that no matter what kind of aches, pains, and/or other symptoms that my body experienced, I would in no circumstances go to sickbay. I was going to work it out on my own. Fortunately, I was able to keep that commitment. I spent a lot of my time during that year aboard ship observing what my body was experiencing in relationship to the movement of the ship. Unlike what the other sailors were doing to offset the movement of



the ship, I would become part of the ship and go with it. Surprisingly, I experienced relief from a variety of symptoms as a result of relaxing and going with the motion of the ship. I can remember thinking at the time, "wouldn't it be wonderful if we could develop a machine that would feel like this ship". Because of the complex movements involved in the motion produced by the ever-restless ocean, I didn't give it any further thought.

As a student in chiropractic-college, I was always on the alert to see if motion was ever recognized as a form of therapeutic input. Guess what—NADA!! The one bit of encouragement I got was at a fund-raising auction. Here was a flat table that moved very rapidly in a back and forth and an up and down motion. It had been brought out with a lot of other old and obsolete equipment. I was the only bidder. So for fifteen dollars I bought the first mechanical motion machine that I had seen. It also convinced me that some-one-at-some-time thought that motion could be used therapeutically. After experimenting with it for a while, I finally concluded that it was interesting, but it didn't do what I wanted it to do. Unfortunately, I eventually dismantled it and used it for any parts that I could use for other purposes.

It was at a chiropractic convention in 1979 that an exhibitor had a motion machine on display. After experiencing for only a few minutes, I walked away with an excitement that I hadn't experienced in years. Here was a machine that produced a motion that put me in touch with some of the same neuro-physiological feelings that I had experienced while on board ship when I was in the Navy. From that time until the present day, I have in one way or another been involved in experimenting with and developing equipment that produces a motion induced sensory input. Until 1982, when I read "MegaBrain" by Michael Hutchinson, I felt pretty isolated in my search for information on motion. For those of you who are interested, he included an excellent chapter titled "Loop-to-Loop Learning". Jean Ayres, OT, Ph.D., has also written an interesting book titled "Sensory Integration and Learning Disabilities".

For those of you who might be interested in experiencing the added effect of motion to the light and sound experience, there are several practitioners who are using this equipment. You can contact Larry Shultz, CEO of Integrative Motion Systems, at 355 North Lantana, #600. Camarillo, CA. 93010. Phone: 805/933-2935. Fax: 805/987-2406. Email: [symmetron@earthlink.net](mailto:symmetron@earthlink.net)

Editor's note: The first time I saw the Symmetron recliner by Larry Shultz was in the late Rob Robinson's office at InnerQuest. That was around 1990. I purchased Larry's IMS bed in 1993 and have been truly amazed by how orbital motion and tactile stimulation can have such a profound effect on people. And how after more than two thousand sessions, the equipment runs just as smooth and responsive as the first time I used it. Yes, this is a plug for IMS / Symmetron technology. Why? Because no one else builds tactile stimulation and motion systems like Larry.

## **SportsLink at the Sydney 2000 Olympics**

**by Rayma Ditson-Sommer, Ph.D.**

It all started with Klete Keller winning a bronze in the 400-meter freestyle in the Sydney 2000 Olympics. Gary Hall Jr. and Anthony Ervin winning medal after medal until the 50-meter freestyle competition with the greatest swimmers in the world. As the gun went off, Gary and Anthony pulled side-by-side until they set a record winning pace and an upset in a tie for the gold medal.

As the Olympics ended, Rayma Ditson-Sommer, Ph.D., and her Arizona Mental Training Center office in Phoenix had coached athletes to 9 medal standings through the use of neurointegration and neurotechnology light and sound. All training was centered on timing with mental training protocols being included in all aspects of the daily workouts.

The outstanding difference in the approach to the 2000 Olympics training regimen of these medal winners was the daily use of Sportslink light and sound programs based on sports research for each program written by Dr. Ditson-Sommer.

The overall goal was the development of a relaxation response in each athlete with the addition of synchrony training. In this way the door to the zone was easily accessed and the key to this door found through synchrony.

Historically, athletes have used light and sound in various ways. This year's Olympic athletes used light and sound programs as a daily 'way of life' for travel, sleep, focus and performance readiness.

Daily usage involved training sessions in visualization and imagery with an individual protocol for each athlete. GSR biofeedback was used to record data on each individual, giving them reference points for improvement. By the end of the summer, before they left for Sydney, most of these athletes could keep their mental states at a synchronous level ready for competition for as long as thirty minutes at a session. This assured them that they could reach this same level when they wished.

The edge to performance came when the entire group of 13 athletes, sent to the Olympics from the Arizona Mental Training Center, arrived in Sydney with absolutely no jet lag and ready to begin training five days before any other teams. This was accomplished by prior charting of ultradian rhythms finding the trough and peak periods for each athlete. This information was used to designate a certain protocol using the Sportslink light and sound unit session before the trough time began. This practice allowed them to function at peak performance whenever necessary taking in account differing time zones, performance times and designated rest and sleep times in their schedules.

Light and sound programs have been written for many years. Some to provide entertainment, some to stimulate certain mental states. The programs used at the Sydney 2000 Olympic Games by different athletes ushered in the first use of this modality with such exciting results. Hopefully this will open the door to more specified program development with the individual user in mind. Such 'prescriptive' approaches can do nothing but supplement the positive utilization of this outstanding modality through the use of safe, reliable program development in the future.

Hopefully this is a never-ending story. The athletes are already setting their sights on Athens 2004 and are setting up training times in the Arizona Center. NBA team members are using the Sportslink to improve free throw shooting and NFL players are sitting in their locker rooms before a game stimulating synchronous states of mind for better performances.

Light and sound is a treasure, a gift and a miracle all rolled into one. The same program that brings an athlete a gold medal can enable a child to get better grades. Programs that allow relaxation and rest to the sleepless and anxious can provide mental comfort to children suffering from attachment disorders and post traumatic stress disorders. The greatness of this modality must be recognized and preserved through careful and meaningful use to ensure its presence and forward movement to a complete acceptance by all.

The Sportslink light and sound machine is alive and well and is a partner for many who strive for peak performances in their daily lives.

Dr. Rayma Ditson-Sommer is the Director of OPNET, Inc., in Phoenix, Arizona. In addition to her responsibilities at the Arizona Mental Training Center, Rayma continues her years of working with learning disabled and hyperactive children. Dr. Ditson-Sommer is a pioneer in the AVS field and can be contacted at: The Arizona Mental Training Center, 2902 East Campbell Avenue, Phoenix, AZ. 85016. Phone: 602/912-0609. Fax: 602/912-9533. Email: opnet2@aol.com.

## **SOUND / A New Medicine for the Millennium**

**by Dr. Jeffrey D. Thompson**

Human beings have been using sound to access deeper states of consciousness, expand awareness and heal the body for thousands of years. Using Chanting, toning, Tibetan singing bowls, Chinese meditation gongs, and mantras, are just a few examples of this use of sound. Today, with highly sophisticated technological equipment, we can not only observe the functioning of the body and the brain in unprecedented detail, but also measure the changes that take place in the mind and body in different states of consciousness and different states of health.

Research projects in major universities across the country have explored the neurophysiology of meditation, deep relaxation states and mind/body interactions during healing. In one study a simple relaxation technique used for 20 minutes a day caused profound changes in blood pressure, stress handling ability, immune response and feelings of well being - never mind using any kind of high-tech approach which could bring consciousness to very deep levels of relaxation. Using this technology as a daily tool for mind/body integration and stress reduction can have many



positive benefits.

Present technology allows us to affect the body/mind in two parallel ways:

1. Healing the body with physical resonance using sound frequency vibrations.
2. Changing states of consciousness using sound with sympathetic resonance of brainwave function - Brainwave Entrainment.

Physical resonance is like making a wine glass vibrate with the correct sound frequency. In this case, we can resonate different parts of the body with sound for healing. My first attempts with this were chiropractic spinal adjustments using sound. Each vertebra is a different size, density, and mass and, just like a wineglass, can be resonated with the correct sound. This causes the vertebra to vibrate back into position using only sound waves. Similarly, cranial bones and cerebro-spinal fluid can be influenced with sound resonance. Each organ is a different size, density and mass for each person and also has a fundamental frequency, which causes a balancing of the cellular function. These changes can be seen on a blood chemistry-screening test.

The brain itself is an organ. This organ also has a unique size, density and mass. What would the effect be of exposing the brain to its own fundamental frequency vibration pattern? A normalizing of its function as an organ, just as any other organ would respond. Since the brain's function is to coordinate and direct the function of all the other systems, we should see a global balancing of all the body's systems at the moment the brain is exposed to its own single fundamental sound frequency.

Using sound, it is possible to make profound changes in brainwave patterns and states of consciousness, observable on brainwave mapping equipment (EEG), as well as positive changes in the body measurable with blood tests, biofeedback equipment and other sophisticated procedures.

**BIO-TUNING** - Using the sound of your own voice to facilitate self-healing.

This process, which I called 'Bio-tuning', became the object of my full-time research after I moved from my Holistic Health Center in Virginia and established the Center for Neuroacoustic Research in San Diego, California in 1988.

With modern electronic equipment, we can test with frequencies accurate to 1/100th division of sharp or flat between two notes on the piano. To raise the accuracy and effect to a higher level, we must use a person's own voice singing this fundamental note which causes a healing / balancing effect in the body. This releases a unique set of harmonics and overtones, which only your own vocal cords can produce - a voice vibration fingerprint. This is an exact pattern match of your essential vibratory template - the one your "Biological Organic Intelligence" used in the first place to form your body from two cells and then to maintain it moment by moment thereafter. There is also a profound sense of recognition by the deep

subconscious of the vibration frequencies of your own voice.

We then use this voice - tone frequency, sounding the exact tone for balancing and healing, through a special sound-therapy table. This table has speakers built into it, so that you become the sound itself. It becomes difficult to distinguish where the body ends and the sound begins. There is a sense of melting into the vibration of your own sound and your own voice.

To me, this is what the Mantra really was. You go to the great master who sees that the entire world is vibratory patterns. He sees that you are a unique vibratory pattern in the universe. He sings the acoustic octave of this sound to you, you sing it back until you know it and memorize it, then you go off and meditate and chant this sound to yourself - resonate yourself from the inside out and balance yourself right down to the core of your consciousness.

The imbalances I may experience physically, emotionally, or mentally are external projections of the only real imbalance that can exist - in consciousness itself. Reaching this place and coming into balance - me with my Self - is the only way I can heal the real cause of my pain and suffering.

Sound frequency patterns built into music cause positive changes in brainwave function.

In a series of recordings based on these principles I have used sound frequency patterns built into the music that have been shown clinically to cause positive changes in consciousness and brainwave function.

By precisely altering the sound signals in the right and left ears, a "frequency modulated pulse" appears which causes a sympathetic response in the brain. This leads to coordination of right / left brainwave activity and a general slowing of brainwave activity, which is associated with deep relaxation, stress reduction, creativity, insight and problem solving. This phenomenon is called "brainwave entrainment".

A good part of the stress we all experience in the twentieth century is due to the advancements of our own technology. This same technology, combined with our traditional techniques for healing and achieving balance, may help neutralize the stress we have created.

In this series of recordings I have used three coordinated methods for bringing the mind / body into a state of deep relaxation and balance; "Primordial Sounds", "Brainwave Entrainment" and "Multi-layered Music" recorded in 3D.

Many of the sounds heard on these recordings are sounds you don't even notice. Certain sounds have the power to awaken deep levels of recognition in the subconscious mind. I call these sounds "Primordial Sounds", - ie., sounds that are primordially recognizable to the subconscious mind, regardless of race, sex or language.

"Primordial Sounds" awaken our organic / biological intelligence.

Our first sensory experience in life as a fetus in the womb is of sound and vibration. We float in body temperature amniotic fluid - weight-less. We have fluid in our nose and mouth, which eliminates the senses of smell and taste. We have our eyes closed and are in the dark - no sense of sight. We have fluid in our ears pressed right up against the eardrum - but sound travels through water five times more effectively than through air, therefore our sense of hearing is actually amplified. The symphony of sound patterns we experience at this time will be deeply embedded in our subconscious mind for the rest of our lives - the sound of water swishing, arterial pulse sounds and voices. These are our first experiences of "Primordial Sounds".

Recordings of these types of sounds form some of the "primordial sounds" heard on these recordings. Each of these sounds is intentionally altered and disguised by slowing them down and speeding them up. By changing the speed of these sounds we can side-step the rational / thinking mind, which will no longer recognize the sounds, and tap into the subconscious directly, with sounds it deeply recognizes and responds to. In one sense, the organic / biological intelligence, the same intelligence that grew our entire body out of two cells, will certainly be awakened with a recognition of sounds recorded from this body.

Experiments with sound have led to some startling revelations.

An interesting thing happens when recordings of people speaking are speeded up and slowed down. If these recordings are doubled in speed three times (raising the pitch by three octaves), human speech patterns sound remarkably like birds chirping. When raised in speed by eight octaves, these recordings sound just like crickets chirping. Slowed down from normal speed by three octaves they sound like dolphins and at eight octaves slowed down, sound like the ebb and flow of the ocean.

It's interesting that recordings from the human voice should sound like nature sounds. What happens if we take cricket sounds and slow them down? They sound like birds chirping. Bird sounds slowed down sound like dolphins, and dolphin sounds slowed down sound like people singing.

The famous psychiatrist, Karl Jung, would have been pleased - this seems to fall directly in line with his theory of the "collective unconscious". A level of the unconscious mind deeper than our personal unconscious shared by us all, populated with universal archetypal images ("primordially recognizable" images, just as these sounds seem to be "primordially recognizable" sounds). The collective unconscious in this sense would be access to my larger body / mind, the planetary level of my collective unconscious, which knows how to "grow" a planetary ecosystem of which my personal body is just a part. It's almost as if the whole universe is one organic being with many parts all designed from variations of the same blueprint.

Awakening the various levels of the subconscious mind.

In 1989 I came in contact with an aerospace engineer with sound recordings from the Voyager spacecraft. These recordings were taken as Voyager passed by the outer planets of our Solar System - Jupiter, Saturn,

Uranus and Neptune.

These NASA recordings from outer space, which were of charges electromagnetic particles (ions) in the magnetic fields of planets vibrating within the range of human hearing, sounded remarkably like ocean sounds, dolphins, choirs of voices singing, crickets and birds. There are also other sounds too strange to identify, but which seem very familiar. Interestingly enough, the rings of Uranus produce sounds like Tibetan bowl recordings that have been slowed to reflect their subtle harmonics. Could this be a deeper, vaster level of the collective unconscious mind which knows how to "grow" a planetary solar system of which Earth is just a part - and which my body grows out of?

Could these sounds be recognizable at a deeper level of the "collective unconscious"?

It is these three classes of sound ("Primordial Sounds", "Brainwave Entrainment" and "multi-layered music") that are embedded in the sound track of some of these recordings to awaken the various levels of the subconscious mind.

It is at this inner level of ourselves that our bodies are self-organized from two cells by the same inner system from which the daily functions of our body are coordinated and directed. It is from here that the knowledge of our problems and the answers and solutions to them reside.

This is what I mean by the use of "Primordial Sounds" to access a deep level of ourselves for healing, relaxation and balance.

These sounds are mixed into the soundtracks I've recorded in such a way that they can be heard but not necessarily recognized for what they are by the rational-thinking mind. Some of the nature sounds on these recordings are actually space-sound recordings or human body sounds.

Entrain your brain.

Brainwave Entrainment is part of a larger biological function called "Biological Sympathetic Oscillation". Our biological "clock" sets itself to external cosmic events; day length cycles, full moon cycles and seasonal cycles to name a few. The body will set itself to the most powerful external pulse cycle it is exposed to. In this case we can create powerful sound frequencies pulsing at exact brainwave speeds and cause the brainwaves to alter themselves to match the sound frequencies - that is, entrain themselves, to the sound pulses thereby altering one's state of consciousness.

We know from many research endeavors that certain deeply relaxed states of consciousness are associated with specific brainwave patterns on an EEG brain monitor. We also know that with brainwave entrainment we can cause brainwaves to sympathetically "lock on" to an external sound-pulse at a brainwave speed. This gives us the tools to gently guide brainwave function and states of consciousness into deeply relaxed and balanced states.

On all the soundtracks I have mentioned, all of the pulse frequencies

are built into every sound you hear, including each instrument sound, voice sound, nature sound and NASA space sound on the recording. The frequencies used mostly are low Alpha and Theta brain frequencies. The brain states associated with these frequencies are peaceful relaxation, heightened visualization / images, problem solving, insight and intense creativity.

When I compose and create these musical soundtracks, the brainwave entrainment pulses built into the instrument sounds entrain my own brainwaves and state of consciousness into a state of intense creativity—that's where the music on the CD's is coming from.

Certain types of sound and music have a proven effect in creating states of relaxation, balance, healing and visualization. Generally these include certain types of lyrical, Flowing melodies and chord arrangements. Certain chord arrangements can create an atmosphere of peace, mystery, awe and openness.

In a clinical therapeutic setting, I usually have my patients lying on the sound therapy table (which has low frequency transducers underneath in a right / left stereo configuration), with headphones on and with light glasses from the Synetic Systems Orion I/s machine. The Orion is set to "Color Pulse" which allows the music to drive the lights directly.

Now we have:

- 1). The special body balancing / healing tones recorded in the person's own voice, slowed by precise octaves for a low vibrational experience through the table.
- 2). Brainwave Entrainment Binaural Beats within the harmonics of this voice recording coming through the headphones, sound table and eye glasses as light pulses driven by the voice-tone.
- 3). The headphones cause a synchronicity of the electrical activity of the right / left temporal lobes of the brain (hearing processing centers), the sound table frequencies cause a synchronicity of the right / left brainstem areas (vibration sense processing centers) and the eye glasses driven by the same sounds cause a synchronicity of the right / left occipital areas of the cortex (visual processing centers). In addition, there is a default synchronicity of the cortex / brainstem since these centers are processing simultaneous information.
- 4). There is also a synchronicity of the visual / auditory / kinesthetic perceptual modes in the nervous system. These are the three major perceptual methods the body uses to perceive reality and balancing them causes core changes in the way the brain and body function.

## ABOUT THE AUTHOR

A pioneer in acoustic vibration research, Dr. Jeffrey Thompson uses the latest developments in the science and technology of mind / body balancing, combined with a new understanding of the nature of ancient practices in the art of healing and integrating mind, body and consciousness. In his private practice, Dr. Thompson brings together high-tech sound therapy, biomagnetics, musculo-skeletal balancing and nutritional counseling in a



state-of-the-art approach to healing.

Dr. Thompson's groundbreaking work with sound has gained him international recognition. His search for primordial sounds and vibrations led to NASA's interest in his work. He currently has over 60 audio tapes and compact disks for resonating brainwaves and expanding consciousness distributed in 26 countries around the world. His work is sold through Barnes & Noble, Borders, Waldenbooks, Best Buy, Sam Goody's, Tower Records, amazon.com and a host of catalogs.

Dr. Thompson teaches Master's degree and Ph.D. level courses in Behavioral Psychoacoustics and Neuroacoustic Therapy for the Clinical Psychology Program at the California Institute for Human Science in Encinitas, California. This is also where he has his private practice, research lab and faculty offices. Dr. Thompson has worked with Louise Hay, Deepak Chopra and representatives from NASA. His work has also been part of a project at the Neuropsychiatry Division of UCLA for heroin withdrawal and funded by congress through the CSCAT program (Center for the Study of Complementary and Alternative Therapies) at the University of Virginia Medical Center. His Sleep CD's have been researched at the Royal Ottawa Hospital Sleep Research Center and he is presently being funded for researching the effects of sound in healing by the National Institute for Healing through Scripps Hospital in San Diego, California.

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## **The Echofone**

**by Andy Dolan**

The inner ear plays a significant role in our being. It translates vibrations picked up by the skin, as well as the joints and muscles into cortical charge. This cortical charge builds, organizes and nourishes temporal-spatial organization for other senses and provides the background beat for learning. The purpose of the Echofone is to enhance the way we hear, to improve learning abilities, communication, and emotional behavior.

Originally designed by AquaThought Labs as a research tool, the Echofone provides accurate perception of frequencies which are ordinarily well above your hearing range. Incoming high frequency sound is converted to ultrasound and transmitted to transducers, which contact your skin. The ultrasound travels through your skin to the inner ear, where it is perceived as high frequency audible sound. With the Echofone you can generate sensation of sound through neural induction without any mechanical stimulation of the eardrum.

By allowing you to perceive spatial information embedded within high frequencies, music and sounds gain dimension. Much information about the

position of sounds in the recording environment is encoded in the overtones. These overtones can often be above your normal hearing range. However, with the Echofone you are able to perceive them. This perceptual expansion adds a sense of depth to many recordings. For example, with the Echofone you can close your eyes and actually sense where the instruments are located in a recorded orchestration. This can significantly affect one's emotional response to music because it involves you more within the music itself, resulting in a more profound psychologically and, perhaps, physiologically effect.

There are three times as many nerve connections between the ear and the brain than between the eye and the brain. According to Dr. Alfred Tomatis, a French ENT - brain researcher, the human ear's primary function is to transform sound energy into cortical charge which the brain then distributes throughout the body, toning up the entire neuromuscular system.

Sound brings with it an innate, deep resonance of understanding, which transcends the illumination of light. Murray Schafer, a Canadian composer, reminds us that with eyes we are always at the edge of the world looking in, while with our ears the world enters us and we dwell in the center.

The Echofone enhances the high frequencies in audio from a variety of sources. CD's or DVD's mastered entirely in the digital domain (labeled DDD) will provide exceptional results. An impeccable source of Classical recordings which wonderfully compliments the Echofone is "The Academy of Ancient Music" by Christopher Hogwood.

"Founded by Andy Dolan in January, 1994, Tools & Techniques began as a retail light and sound center operating in Bryn Mawr, Pennsylvania. Since that time Tools & Techniques has emerged into solely an e-commerce business operating from it's office in Valley Forge, Pennsylvania. Tools & Techniques is driven by its core values in serving all customers and inquirers with integrity, personalized attention, and competitive pricing."

## **Anchoring**

**by Michael Stevens**

Thanks to all of you who called or emailed to give me feedback about my last article. One topic I was asked about was applications..when, specifically is it best to use or "fire" the anchor. I thought of a few examples for you to experiment with. For those that don't remember what an anchor is, or didn't get the first issue, here's what an anchor is. It is a specific stimulus, which when applied, produces a specific response. To install the anchor, for convenience, in the last issue I basically told

people to choose either their right or left hand, let that hand remain open (either one will work, the one you choose will fire the anchor). Next, remember a positive memory you would like to feel during your light and sound session. This could be a happy memory from your childhood. As you recall that state, remember seeing what you saw, hearing what you heard, and feeling what you felt. When you're at the peak of intensely experiencing the memory, close the hand you chose into a tight fist. Hold for about 5 seconds, then relax the hand, and the memory. To test and make sure you got it, close the chosen hand tightly into a fist, and you should experience the same sensations of the memory again.

First, it may be exciting to use your anchor at the beginning of a l/s session where the lights and sound are intense and going very rapidly. I've used this several times and have found that it augments the thrilling affect of the pulsating lights kind of like the intense feeling when you get to the top of the ramp on a roller coaster and it begins that first big drop. Being an intense state, red LED color lightframes work best while orange LED lightframes yield an interesting rush of creative ideas.

Second, you can do it at the very end of a session. One of my favorite times to use this is to do a session with an ending that consists of a flurry of light and sound followed by immediate silence. Select a program that ends like this. Wait until the l/s program ends, when there is total blackness. Then when you are ready for one last rush, fire the anchor and enjoy the "after glow" of trance.

Anchors can also be used in your normal, everyday life. Let's say you need a little confidence. If you are a little anxious, simply fire your anchor off as you need it. If you fire it off once and it lasts, excellent. If your confidence waivers, simply fire it again. It works!

Michael Stevens is a Master NLP Practitioner, Master Hypnotherapist, and Time Line Therapy T Practitioner. Michael is well-known for making trance-formation entertaining and fun. You can contact Michael at MIND-EFX. Phone toll free: 866/646-3339. Direct: 818/367- 8447. Web site: [www.mindefx.com](http://www.mindefx.com).

## **NEW PRODUCTS**

"Audio Sessions for EEG/Neurofeedback Training":

Featuring LoopLogic (TM) CD technology. This 37-track / 37-session CD by Chris Oliver and Michael Landgraf consists of thirty-seven 2-minute dual independent binaural beat sessions that gently ramp within their one Hertz parameters. For example, track one equals 1 Hertz, track two equals 2 Hertz, track three equals 3 Hertz, and so forth, through track thirty-seven equaling 37 Hertz. By programming your CD player to repeat the track you have selected you can decide how long the session will last. You can also create a session by programming your CD player to play a specified set of tracks in a particular order. It is that easy!

This CD is the perfect compliment to EEG/neurofeedback training.



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# **Light, Sound & Fun**

## **The Original Light & Sound Coloring Book**



**Grab Your Crayons and Enjoy Light & Sound!**

**The Fossil Phil Way**

Whether you are training at 7Hz., 14Hz. or any other targeted frequency, the entrainment value of these audio sessions should improve the quality of each neurofeedback training session and quicken the pace of the treatment schedule. These sessions can also enhance meditative techniques and can be buried beneath music, further enhancing the mood you want your listeners to be in.

These audio sessions have been utilized in a variety of applications and like it's sister CD, the 515, have been proven effective and beneficial. Now available through Landgraf Enterprises, Mindmachines.com: \$39.95.

"The Mindmachines Europe L/S Harness":

By Chris and Elizabeth Stewart-Moffitt. I have been playing with light and sound for a few years now and find the whole subject fascinating. Trouble is those shiny plastic cases have been causing me a few problems. Maybe I fidget too much or get too excited but the plain fact of the matter is these instruments seem to be alive, sliding down the side of the chair, off the couch on to the floor or getting tangled in the duvet in bed.

The final straw was when a Nova Pro 100 dropped off the bed on to the floor with a mighty bang, waking my wife who had just got to sleep after a particularly long day at work. The subsequent light and sound show from Elizabeth, who normally humors me with my often strange fancies (no comments please), was something to behold.

I tried to drop off to sleep after that "light/sound experience of a lifetime"; amongst various muttered threats of death and mutilation and decided to make something to hold my light/sound gear in place, so as not to enrage my normally quiet wife.

Anyway, as I hope you can see from the picture in our advertisement, I designed a simple harness with a 7 x 4.5 inch back plate with adjustable straps fastened with Velcro. It's made from hard wearing Cordura fabric, comes with sticky-backed Velcro to attach your equipment and if you have more than one light/sound device then simply put Velcro on each and swap them whenever you want.

So whether you've had a light/sound session like I did, just broke your toe with a Nova Pro or smashed your Orion, you could save yourself a lot more trouble by wearing a Mindmachines Europe Harness. Available from mid-January '01 from our web site at: [www.MindmachinesEurope.co.uk](http://www.MindmachinesEurope.co.uk) or at other fine light/sound retailers. Trade inquiries welcome.

"Photosonix HemiStim Glasses":

Are now available. HemiStim operation is based on the way the optic nerve connects the light-sensing rods and cones in the retina of the eye to the visual cortex. The optic nerve from each eye splits, carrying impulses



from the left side of the retina of each eye to the left side of the brain, and impulses from the right side of each eye to the right side of the brain. Since light rays cross over in the lens of the eye, the result is that each hemisphere of the brain is processing visual information from the opposite visual field - the left cerebral hemisphere processes information from the right side of the visual field and vice versa. Similarly, auditory and tactile sensations cross over and are processed by the cerebral hemisphere on the opposite side.

An interesting possibility is giving different stimulation to the two hemispheres of the brain, for example energizing the right hemisphere and relaxing the left. To do this, the left visual field of each eye (the right side of each retina) should receive energizing stimulation and the right visual field relaxing stimulation. HemiStim glasses are wired to provide stimulation this way - the LEDs on the left side of each eye are controlled by the Left glasses signal, and the LEDs on the right side of each eye are controlled by the Right glasses signal. The glasses include a slide switch, so they can operate either in this HemiStim mode (switch up), or in the standard left eye / right eye mode (switch down). This operation is controlled entirely by the wiring of the glasses, which will work with any light / sound system with the matching polarity (common ground or common power).

Whenever alternating light / sound stimulation is provided, there is some effect from the HemiStim mode, but the most interesting effects arise when the two sides are driven at different frequencies. The dual monaural beats tone of the Nova Pro 100 sends frequency F1 to the left eye and ear, and frequency F2 to the right eye and ear. This capability used with HemiStim glasses with the switch in the up position will provide different frequency stimulation to the two hemispheres. The Nova Pro 100 has four sessions in the Special category: P7 Left Brain, P8 Right Brain, P9 Left Hemisphere and P10 Right Hemisphere as experimental offerings using this capability.

For maximum HemiStim effect, the eyes must be open (closed eyelids will diffuse any light source over the entire retina) and there should be minimal diffusion or reflection between the two sides of the eyes. For these reasons, HemiStim glasses are made like the peripheral vision stimulation (pvStim) glasses, with an open visual field in front of the eyes.

These glasses are manufactured under license from Comptronic Devices Limited which holds a US patent on the technology.

Jeff Labno from Tools For Wellness highly recommends HemiStim glasses: "The HemiStim light glasses are extremely impressive. First of all, they are the first light glasses where you use them with eyes open while getting specific left versus right brain stimulation.

Previous hemispheric stimulation glasses were compromised in function and usefulness because with eyes closed, the light stimulation spreads over the entire eye and you miss some of the benefits. Further, when you have a lens over the light source, even more light is spread over the entire eye, so the results cannot compare with eyes-open stimulation.

Using the Nova Pro 100, there are four programs allowing you to choose right brain stimulation or left brain stimulation. It is very interesting to

note the difference in how you feel just using them meditatively. However, using them to do work is quite magical.

You choose the hemisphere you wish to stimulate to match the task at hand. Right Brain for art, music, drawing, writing and creative thinking. Left Brain for math, writing checks, editing copy and analytical thinking.

This is the first system whereby you can choose hemispheric domination to match the chores you are doing. This is quite a breakthrough and should reveal to the individual better choices one can make for themselves lessening the length of time it takes to accomplish specific tasks."

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## **Reader's Forum**

"I understand there are four general brain wave states: beta, alpha, theta and delta, yet I keep coming across references citing gamma as being a higher state than beta. What is the frequency threshold between beta and gamma? What are the benefits of achieving the gamma state?"

New to L&S,  
Los Angeles, CA

Anyone care to comment? -Editor

"I own an Orion l/s machine and recently purchased a Nova Pro 100. Why won't the light glasses from my Orion work with my Nova Pro 100 and vice versa?"

Fred Williams,  
Eugene, OR

Because the polarity of the Orion is common power and the NP 100 is common ground. For the lightframes to work, you would need to reverse their polarity. Several I/s dealers carry polarity adapters for this situation. It is a lot cheaper than buying additional lightframes.

We invite you to share your thoughts and opinions about AVS with us, and also welcome your questions and concerns. We all have something to say about light and sound, biofeedback, eeg/neurofeedback, and/or learning/relaxation techniques in general. Here is your opportunity to speak out. Email to: [information@avsjournal.com](mailto:information@avsjournal.com) or fax: 818/831-1960.

## **CLASSIFIED ADS:**

For Sale: Looking for older light / sound instruments? Used InnerQuest equipment. Pro-S, IQ-III, 9110, "light goggles", written information, etc. Send inquiries to: [info@mindaware.com](mailto:info@mindaware.com)

Wanted: "Unique" light glasses. Hand-made, one-of-a-kind, prototypes. Must work! Send description and price to: [www.mindmachines.com](http://www.mindmachines.com)

## **Calendar of Events**

January 12-18 Dr. Jeffrey Thompson Bio-Tuning Sound Therapy Workshop in Encinitas, CA. 760/942-6749 (Please call for upcoming Workshop dates)

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February 1-2 Rob Kall / Futurehealth 4th Annual Optimal Functioning and Positive Psychology Meeting in Miami, FL. [www.futurehealth.org](http://www.futurehealth.org)

February 2-6 Rob Kall / Futurehealth 9th Annual Winter Brain Meeting in Miami, FL. [www.futurehealth.org](http://www.futurehealth.org)

February 3-9 Dave Siever / Comptronic "Brainchange" Workshop in Puerto Vallarta, MX. 800/661-6463

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March 17-21 Stens Corporation 5-Day Workshop in San Francisco, CA. 800/257-8367

March 22-26 Stens Corporation 5-Day / EEG Workshop in San Francisco, CA. 800/257-8367

March 29 - April 1 Dave Siever / Comptronic A.A.P.B. Meeting /North Carolina 800/661-6463

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May 12-16 Stens Corporation 5-Day Workshop in Denver, CO. 800/257-8367

May 17-19 Stens Corporation 3-Day / Incontinence Workshop in Denver, CO. 800/257-8367

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July 21-25 Stens Corporation 5-Day Workshop in St. Paul, MN. 800/257-8367

July 26-27 Stens Corporation 2-Day / Pediatrics Workshop in St. Paul, MN. 800/257-8367

July 28-Aug. 1 Stens Corporation 5-Day / EEG Workshop in St. Paul, MN. 800/257-8367

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