

AQUARIUS ELECTRONICS

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Since 1969,

Pioneers in Reliable
Biofeedback Equipment



Biofeedback, like virtue, is largely its own reward.

Most people who use biofeedback enjoy benefits they can't describe to anyone else. These benefits have to do with the way they feel. They feel good, mentally and physically, using biofeedback instruments and techniques. The feeling has to be experienced to be appreciated.

There no longer is any real controversy in the scientific community over whether biofeedback really works. It is generally acknowledged that anyone, with a little practice, can learn to control his skin temperature, the electrical resistance of his skin, his heartbeat and the rate and amplitude of his brainwaves. Each type of biofeedback training requires its own specialized instrument.

Almost everyone enjoys the deep relaxation he experiences using an electromyograph (EMG),

or the sense of calmness from using temperature training. The reverie brought about when producing high-amplitude brainwaves is worthwhile for its own sake.

But there are other applications of biofeedback which, in the long run, may be as important as pure pleasure. Some seemed obvious at first blush, but needed scientific verification. If you read slowly because you subvocalize, then an EMG should make you aware of that fact, and allow you to learn to read faster. It does. If certain situations, such as speaking in public, or going in for a job interview, make you nervous or tense and, at the same time, make hand temperature drop, learning to warm your hands should help you be calm where before you were tense. In general, that's true too.

And now scientists, and interested non-scientists, are finding new things to do with biofeedback that weren't imagined at first. There are hints that biofeedback may help you control your desire for a cigarette or fattening food. It may also help teach you to gain a subtle thing called empathy, which would be useful for a psychologist, not to mention a real estate salesman.

Experimenters have made abstract designs on color television screens using brainwaves, and others have recorded "biomusic." On a more prosaic level, teachers have found a new tool to turn bored, troublesome youngsters into enthusiastic students, eager to learn things about themselves they never thought it possible to know. Also, educators with more sophisticated biofeedback and physiological monitoring devices hope to learn soon when a student is paying attention, so a teaching machine will not present information unless it actually is being absorbed.

Another benefit of biofeedback training is a sense of being in touch with one's self. You will learn to pay more attention to inner feelings. You'll be more aware of things you do to yourself and the situations you place yourself in which produce stress. You'll learn to be able to deal with stress more effectively and to recognize situations so stressful that they are beyond your control.

PLEASE NOTE: Aquarius Electronics manufactures biofeedback instruments for use by healthy people who wish to know more about themselves. Do not use biofeedback instruments in home medical self-treatment. If you have a medical problem, consult your doctor. Don't try to treat it yourself.

Our product line has expanded so greatly in the past two years that we no longer can afford to include complete specifications on each instrument in a catalog. We have changed our format in this brochure to give brief descriptions of each instrument. For more information on an instrument, fill out the data request form and mail it to us. We'll send you complete data sheets on the instruments you are interested in.

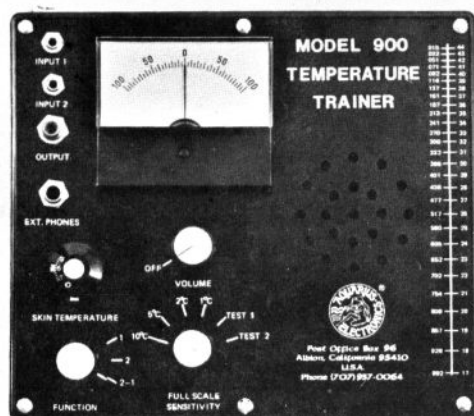
If you can describe the application you have for biofeedback or physiological monitoring systems, we will suggest the proper instrument or instruments to use for your job. If necessary, we will quote price and delivery terms on a custom designed instrument or system. We can't give medical advice, but we can give technical advice on how to measure or train a particular response or pattern of responses.

We also offer contract research services. If you have research you'd like done for you, let us know what you have in mind and we'll tell you if it is within our capabilities and quote cost and time required.

We have facilities at our headquarters which you can use. If you would like to visit Albion, California, we have a wide variety of instruments, including a computer system for data collection and analysis, which you can rent to use for pilot projects.

Finally, Aquarius will be happy to help you write a grant proposal.

Temperature



The Model 900 is a laboratory grade instrument which is in a price range most individuals can meet. It has an unusually fast and sensitive thermistor probe, which is the tiny thermometer that touches the skin. With it you can easily detect changes in temperature as small as 1/100th of a degree Celsius. It has a range high enough for students to use in experiments with mice or rabbits. There is sound feedback and a large meter. The instrument can use two temperature probes at the same time for differential measurements. It has an output jack

which can drive a chart recorder or the Model 1535 bio-train.

The Model 901 is a much smaller instrument, designed mainly for individual or student use. It has a light which turns on when skin temperature is above a point set by a pair of dials. It uses the same thermistor probe assembly as the Model 900, but has neither audio feedback nor a meter. The Model 901S is the same as the Model 901 but the temperature range is higher, for classroom use on animals. Both instruments can be equipped with an output jack which can drive other kinds of feedback devices, such as a tape recorder.



Electromyography

Aquarius' Model 300B EMG is another laboratory grade instrument at a fairly low price range. It is designed primarily to teach deep muscle relaxation. There are four feedback sounds to choose from, and there also is a jack where you can feed

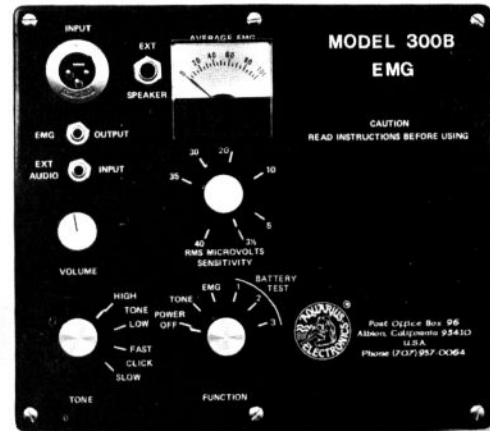
in another sound source, such as a cassette tape recorder. You might want to use this jack with a tape recording of autogenic phrases as your feedback.

When tension in a muscle being trained drops

below a threshold set by a dial on the front panel, all sound cuts off. Then you can set the tension threshold a little lower, by adjusting the sensitivity control, so a muscle must relax even more to get the silence reward.

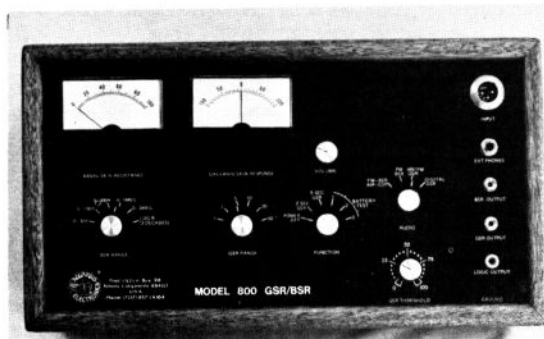
Finally, when a muscle is relaxed enough, you can switch to the raw EMG mode, using an external loudspeaker or earphones, and actually hear the individual motor neurons firing. With a little practice, you can learn to tell one from another and make each one fire only when you want it to. That is conscious control of individual nerve cells.

The EMG can be equipped with several modifications. The sensitivity range can be extended to train for an increase in muscle tension. A switch can be installed to let the sound feedback come on, rather than cut off, when you relax. The EMG



can be used to control television games such as Pong with a suitable controller.

Electrodermal Activity

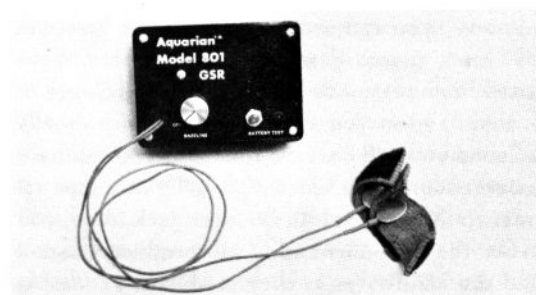


Our main electrodermal instrument is a bit more complicated. It is the Model 800 GSR/BSR. It displays both basal skin resistance (BSR) and galvanic

skin response (GSR). A special feature is the digital GSR sound feedback coupled with a logic output. This mode of operation, with an accessory we offer, lets arousal responses control other devices such as a slide projector. There are three other audio feedback modes and two large meters. BSR and GSR each are displayed over seven ranges of sensitivity. There are output jacks for BSR and GSR to drive chart recorders or computer interfaces.

BSR, by the way, is another good indication of relaxation. In fact, it goes up quickly with the onset of drowsiness. You might tell if you're too sleepy to drive by checking BSR.

The Model 801 basic GSR is a greatly simplified instrument which indicates gross galvanic skin response by a sound, but has no meters or output jacks. It does not show BSR directly, but is set by a baseline knob to the proper level for each individual using it. It does, however, allow a student to perform many of the popular experiments done in classrooms and laboratories with GSR. It can also be used in GSR relaxation training.



Electro-encephalography

Aquarius' top-of-the-line non-computerized instrument for encephalography is the Model 1001-CT or Model 1001DT ALPHAPHONE® brainwave analyzer. If you want to learn, or teach a subject, to produce brainwaves that are between 11.5 and 12.7 Hertz (cycles a second) and more than 45 microvolts, you would choose the continuously tunable Model 1001CT. With the discretely tunable Model 1001DT, you can quickly change the brainwave frequency boundaries in one-Hertz increments. Otherwise, both instruments are identical, and each has a wide selection of input and output jacks. Each filters out the 60 Hz. hum that is in the environment, and each eliminates such spurious signals as eyeblinks, which can look like brainwaves on poorly built machines.

A major advantage of all 1001 series is that the instrument does not just tell you whether or not the type of brainwave being detected is the kind you are looking for. It also tells you the category of brainwave of any brainwave, whether or not it falls within the boundaries you set. That is, if you are trying to produce alpha waves, the instrument will indicate whether the non-alpha waves are beta or theta or, perhaps, eyeblinks.

On the two tunable modes of the analyzer, you



can set frequency ranges for four categories of brainwaves, and the instrument will analyze each brainwave cycle, one at a time, and put it in a category, lighting the appropriate light at that time.

Also, during training for one particular type of

brainwave, you can set the machine so there will be either a sound or silence when you are in the desired brainwave state and, the reverse, silence or the sound, when you are not in that state. Usually the sound you will hear is a tone, but you can have whatever sound you like by plugging in a tape recorder to the External Audio Input jack. Also, you can set the instrument so it will produce a sound of all the brainwaves as they modulate a tone. At the same time, a meter will show what percentage of time is spent in the desired brainwave state.

You can even set the machine so there will be a modulated sound of all brainwaves, but only in the desired brainwave state. That way you can learn to detect subtle nuances within brainwave categories. Not all alpha is the same, for instance.

Each category has its own output jack which puts out a logic signal, that is, a signal that is on when you are in the desired brainwave state and off when you are not. There also is a jack to drive an EEG chart recorder with the raw EEG signal. The instrument has an FM EEG output so brainwaves may be recorded on a cassette tape recorder. There is a dial to control minimum amplitude of brainwaves. It can adjust down to zero, and up to 50 microvolts or more, depending on the frequency of the brainwaves.

These are only some of the jacks and modes of operation, but this description should give a taste of what a serious researcher can do with the instruments.



A little less sophisticated is the Model 1001A brainwave analyzer. It will do everything the tunable analyzers will do except let you change the boundaries of the brainwave category of frequen-

cies. The category boundaries are set at 4, 8 and 13 Hz.

The Model 1001A is the instrument we recommend for group training in brainwave control. One junior college with a program in biofeedback uses two of these instruments for 1,500 students in a semester, in a set-up much like a language lab. Each student puts in about half an hour a week on the machine.



The Model 102T ALPHAPHONE® headset is designed for individual use by persons who have the time to learn to distinguish one brainwave type from another by sound alone. The headset takes longer to learn to use, but it is lightweight and very portable. All the circuitry is inside the earcups of the headphone. There is a sensitivity control which you can use to distinguish high-amplitude brainwaves from low. Because alpha waves are usually bigger than beta, this helps distinguish one type from the other. There also is a tone control and there are output jacks to drive a loudspeaker or a tape recorder or a raw EEG chart recorder. It is possible to hook two headsets together to do some simple experiments on brainwave synchronization.

The Model 201 basic e.e.p. is our least expensive brainwave instrument. It produces the same sound as the Model 102T headset, but a separate

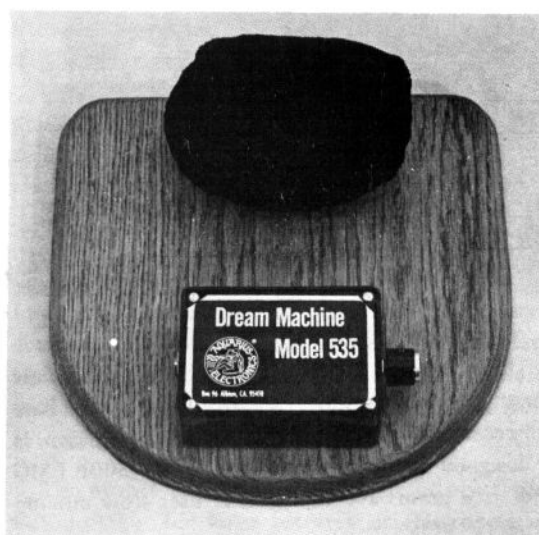
external earphone or external speaker and amplifier is required. There is a sensitivity control and one output jack, to drive the loudspeaker or earphones.



There is a state of consciousness, known as the hypnagogic state, that everyone experiences, usually once a day, but that almost no one remembers. It is the state between wakefulness and sleep. It is a period of high theta production and has been considered a period of creative activity.

The Model 535 dream machine is a device invented by Dr. Charles T. Tart for helping persons

learn to remain in the hypnagogic state for an extended time, and to help them stay awake long enough that they can fix the event in consciousness and not forget as they fall asleep completely. The device contains a delay control which allows the subject to fall deeper and deeper into sleep before being aroused, thus allowing various levels of the hypnagogic state to be investigated. (NOTE: A possible side effect of this type of training might be insomnia.)



Accessories

Except for the models 201, 801 and 901, all our instruments can drive chart recorders. Aquarius manufactures a wide variety, including custom instruments for special purposes. All of the Aquarius chart recorders now being produced are powerline operated. That means they must be and are optically isolated from the subject, both to prevent electrical shock hazard and to prevent interference from powerline hum.

The Model 700 EEG chart recorder is a high speed device which will record raw EEG data from

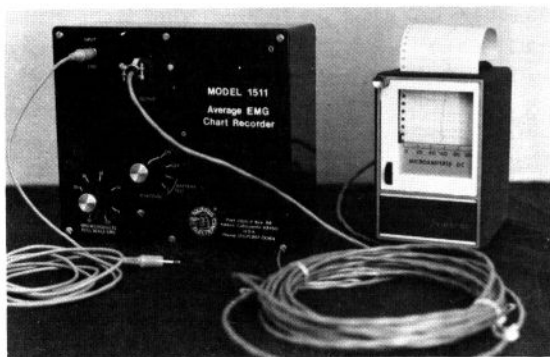


one location on the scalp. It is designed to be connected to the brainwave analyzer's EEG output.

The Model 1503A is a four-channel chart recorder with slowly moving chart paper. It is combined with a sophisticated power switching circuit. It is designed to keep a record of the percentage of time spent in four brainwave states. It includes circuitry also to drive a visual display and up to 10 other pieces of apparatus, using the logic signals from four category jacks.



The Model 1512 is a two-channel chart recorder. One channel records the percentage of time spent in one brainwave category. The other channel records the average EMG or muscle tension. It is designed to be connected to a Model 300B EMG and to a brainwave analyzer. It uses slow moving paper.

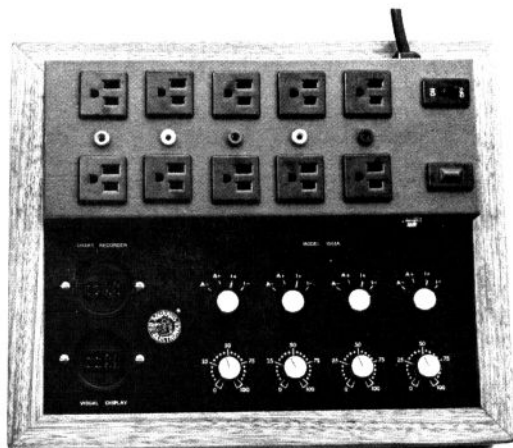


The Model 1511 is a one-channel chart recorder with slow moving paper to record average EMG. It connects to a Model 300B. The Model 1513 records on one channel the amount of time spent in one brainwave category and is used with a brainwave analyzer.

This is just a sample of Aquarius chart recorders.

With slow moving but sensitive chart paper, it is possible to multiplex one pen to make as many as four tracks simultaneously on chart paper, thus cutting costs sharply. We can also supply recorders which print a strip of numbers along the edge of the paper.

Because many accessories which plug into wall sockets must be isolated from the circuitry which is attached to the body, Aquarius produces a number of power switching circuits and photon couplers to optically isolate the circuits.

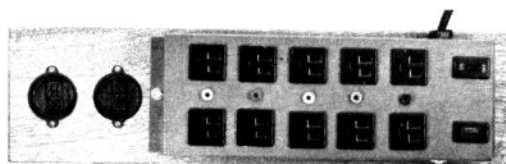


But power switching circuits have features of their own which a researcher may be interested in. A good example is the Model 1506. It is designed to be connected to a brainwave analyzer. It has an output to drive a Model 1504 visual display. There also is an output jack for a chart recorder, but the instrument does not contain the circuitry for the chart recorder unless the chart recorder also is purchased, in which case the instrument, including the chart recorder, becomes the Model 1503A. Also on the Model 1506 power switching circuit are 10 other outlets, each of which can drive another powerline operated device. Two of these outlets are always on when the circuit is on. The others, in pairs, turn on only when the appropriate category jack of the analyzer is on and when other criteria are met. It is the other criteria that are interesting. There is a percentage/time dial for each category, so that the plugs for that category can be

turned on, or off, only when the associated category is on a minimum percentage of the time.

Thus, you can shape the response in brainwave training by giving a feedback reward for a very simple task, perhaps introducing alpha only 10 per cent of the time, and then gradually make the task more difficult until the subject is producing alpha 80 or 90 per cent of the time before getting a feedback reward.

The Model 1506B is identical to the Model 1506, except that in place of the chart recorder output socket there is a switch letting you adjust the time period for averaging the percentage of time in a particular category.



The Model 1501 is similar to the Model 1506 except that there are no percent/time dials. The feedback is given only instantaneously when the category output gives the signal from the brainwave analyzer.

The Model 1500 is designed to drive only a visual display from an analyzer. The Model 1500S will drive two visual displays, or one stereo visual display, from two analyzers.

All the power switching circuits mentioned above are designed to isolate logic signals from the analyzers, that is, signals that are either on or off. That is the type of signal put out by the brainwave analyzers' category jacks.

A different kind of isolation is required to take care of signals that have a higher frequency than two Hertz, and which vary in amplitude, such as raw EEG signals, sounds, motor neurons firing in muscles, etc. The usual device for that kind of isolation is a photon coupler. The Model 502 photon

coupler is designed particularly for brainwaves. It is carefully adjusted so that its output is referenced to exactly zero volts. That lets you use an external EEG preamplifier to supply a signal to the External EEG Input jack of the brainwave analyzer. The Model 502 contains a special output amplifier for this purpose.

The Model 501A photon coupler is designed to provide isolation of analog signals from a variety of instruments. But it lacks the special amplifier or the special calibration required to be sure that zero crossing of brainwaves will be where they should be. It is perfectly adequate for isolating an AC powered hi-fi system or audio tape recorder from an analyzer, for instance, or for use with a chart recorder or oscilloscope.

Visual displays are devices designed to help you learn eyes-open brainwave techniques. You look at a mandala pattern of colored lights which changes as the brainwave pattern changes. Each visual display is designed to be driven by one or two brainwave analyzers through one or two power switching circuits.

The Model 1504SXL is a large stereo visual display suitable for large lectures or classrooms or other situations where its large display screen is needed or desired. It is designed to be driven by two brainwave analyzers, each of which has its own power-switching circuit or both of which are connected through a Model 1500S power switching circuit. Each analyzer controls four of the display's eight mandala patterns. Under most use, a particular color of light, such as blue, will come on for a particular brainwave state, such as alpha. The stereo system allows training of two parts of the brain simultaneously. The Model 1504S is similar to the Model 1504SXL, but smaller.

The Model 1504 is a visual display which is designed to be driven by one brainwave analyzer and power switching circuit. There is a set of four colored mandala patterns with no left-right orientation.

The Model 1504C is a simple visual display with no mandala pattern, but rather with four plexiglass bars which light up in different col-

ors for different brainwave states. It also requires one brainwave analyzer and one power switching circuit.



One use of the stereo visual display is to help a person learn to produce alpha, for instance, in both hemispheres of the brain simultaneously, or for two persons to learn to produce the same brainwave state at the same time.

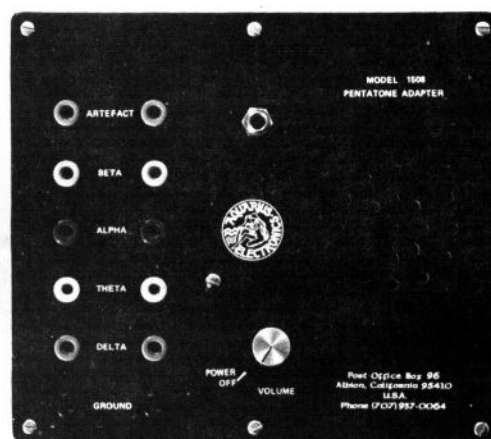
The Model 1510A brainwave comparator goes several steps beyond that goal. It is possible to learn to synchronize or phase lock brainwaves from two parts of the brain. It is also possible to learn to phase lock with another person's brainwaves. The Model 1510A is the feedback device which makes training in EEG symmetry or asymmetry possible. It is driven by two brainwave analyzers and has its own isolation. You can set a number of parameters which must be met before feedback occurs. An example would be to require high amplitude phase coherent alpha from both hemispheres, or you could require one hemisphere to produce high amplitude beta while the other must produce low amplitude alpha, if you wished to set the dials and switches that way.

Because many of the parameters are set by continuous dials, you can shape the feedback response gradually to more and more difficult tasks.

The Model 1525 bandpass amplitude accessory is a feedback device driven by a brainwave analyzer. It is designed to keep a running average of the brainwave amplitude within a given category and between maximum and minimum amplitudes you can set. When the brainwave signal frequency and amplitude fall within the criteria you set, there is a feedback tone, which rises as average ampli-

tude rises.

The Model 1508S decatone adaptor emits a different tone for each brainwave state detected by one of two brainwave analyzers, working together, plus tones for artefacts. Thus you get an audio signal, in addition to the visual signal from the lights on the front panel, for each brainwave state at two scalp locations.



The Model 1508 pentatone adaptor emits a different tone for each brainwave state detected by one brainwave analyzer, plus a tone for artefacts.

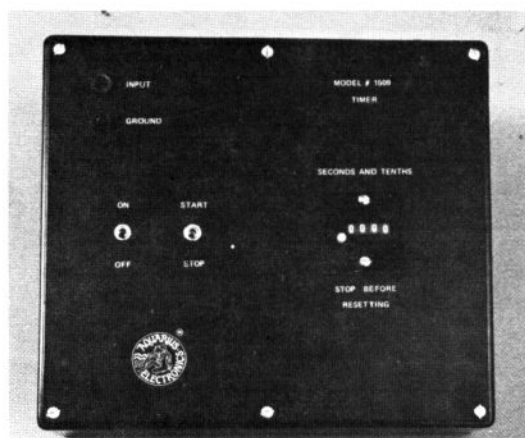
The Model 1532 peak reading meter tells the highest percentage of time spent in some selected brainwave category during the selected period of averaging time, whether 5, 10, 20 or 50 seconds.

The Model 1533 integrator is a meter which operates the same way as the integrated percent/time meter on the front panel of the brainwave analyzer, and it is an accessory to the analyzer. But it averages the percentage of time in a category over 5, 10, 20 or 50 seconds, and can be plugged into a different category than the one chosen for the meter on the analyzer.

The Model 1534 percent/time meter operates similarly to the percent/time meter on the front panel of the analyzer, but can be plugged into any category output except noise.

The Model 1509AS timer will display the amount of time, in hours, minutes, seconds and hundredths of seconds, spent in each of two categories, or in one category of each of two analyzers. It has two timers. If one timer is not plugged in, it will run open and measure simple elapsed time.

The Model 1509A is similar to the Model 1509-AS, except that it displays time in only one category.



The Model 1509S timer, which uses a mechanical counter, instead of an electronic circuit and seven-segment lighted displays, will display the amount of time in seconds and tenths of seconds spent in each of two categories, similarly to the Model 1509AS. Again, if one timer is not plugged in, it will show simple elapsed time.

The Model 1507 stereo audio gate lets you turn on and off a stereo sound system, such as a hi-fi system, when you are in, or out of, the desired brainwave state.

Because of the interest that has been shown in feedback modes other than simple sounds and flashing lights, Aquarius has been seeking ways to provide more interesting modes of feedback that you can use in a classroom or recreational situation.

The Model 1535 bio-train is the first of these. It is an accessory to either the brainwave analyzer or to the Model 900 temperature trainer. It is an HO gauge electric train which, in the brainwave mode,



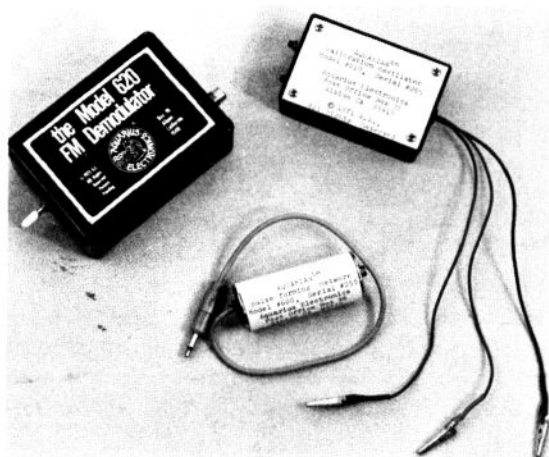
will run faster the higher percentage of time you spend in the chosen brainwave state. In the temperature mode, the train will run faster the more your skin temperature warms beyond the zero starting point on the meter. If your skin temperature cools, the train will run backward.

It is possible to interface other feedback devices than electric trains to Aquarius instruments. Among toys, slot cars and model airplanes can be used, along with video games such as Pong.



The Model 850 slide projector controller is an example. It is an accessory to the Model 800 GSR/BSR. It is controlled by the logic output of the GSR/BSR and, in turn, controls a Kodak Model 850H Carousel slide projector, which is set to advance slides over a fixed time period. Such a device, useful in desensitization training, will continue to advance slides until one of them causes a reaction which raises the GSR above the previously set threshold. Then the slide projector will back up until the GSR drops below threshold again. You will have to control arousal before you can get past any particular slide.

With the headset or brainwave analyzer, you can record a carrier tone frequency-modulated by



the brainwave signal. You can replay such a recording, made on a battery-operated cassette tape recorder, through a demodulator to recover the raw EEG signal which you can record on a chart recorder or watch on an oscilloscope.

The Model 600 pulse forming network changes the FM modulated signal so that the waveform is more symmetrical, making for a higher quality recording.

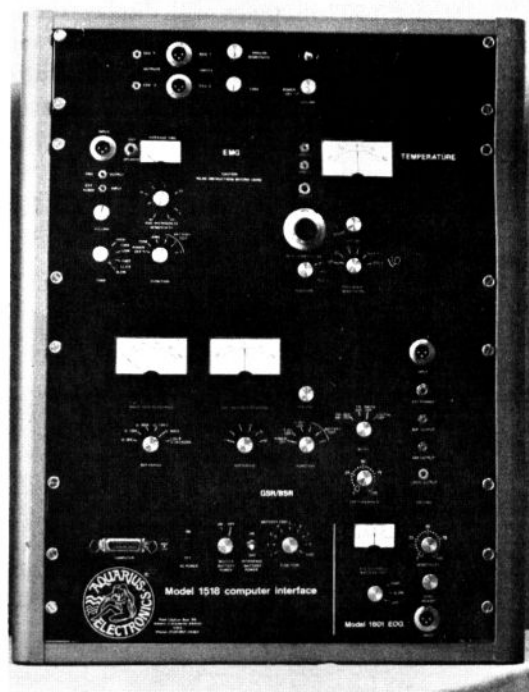
The Model 610 calibration oscillator emits a 40 microvolt 10 Hz. signal which you can use to calibrate an instrument or as a reference for a recording.

The Model 620 demodulator turns the FM modulated tone back into a raw EEG signal to be fed to a chart recorder or to an oscilloscope.

With one exception, Aquarius does not make telemetering equipment. The instruments must be attached to your body and then connected to accessories by wires.

The Model 301 FM transmitter is the exception. It is useful over short distances and is not controlled by the Federal Communication Commission. It can be attached to a headset or basic e.e.p. and the audio output signal can be played over a nearby FM radio on a part of the dial where there is no FM radio station interference.

Almost all the instruments Aquarius manufactures are designed to be interfaced to computers. Aquarius can supply a microcomputer or interface to a customer's computer.



The Model 1518 computer interface is an example of the latter device. It is designed to interface two high speed signals, such as brainwaves, and five low speed signals, such as skin temperature change, average EMG, eye movement, GSR or BSR, to a computer. The high speed signal is sampled and digitized at least 120 times a second. The slow speed signals are sampled and digitized 12 times a second.

Aquarius now offers instruments designed around microcomputers and microprocessors. Such systems offer great flexibility, because they can be reprogrammed, by the user in the case of microcomputers, or at our factory in the case of microprocessors, to change the job the instrument can do, without changing the hardware. Microcomputers also have the advantage of being able to do other bookkeeping and statistical analysis jobs in the laboratory when they are not being used for the specific biofeedback or physiological monitoring task for which they were purchased.

The Model 1536 correlator is a microprocessor instrument. It calculates a continuous correlation between two channels of EEG or between a single

channel of EEG and some other signal or template. At the end of each epoch, which you can set a time limit for, a thermal printer prints out the maximum correlation coefficient achieved during the epoch, and the average correlation coefficient. A chart recorder can be added to continuously record the correlation coefficient. The instrument also can be made, with longer epochs, to print out a 20 point power spectrum for one channel of EEG, with you setting the boundaries of the 20 frequency channels. The microprocessor also can print each epoch the maximum amplitude, power, percent/time, and average amplitude, power, percent/time and frequency in each channel, along with the number of cycles in each channel for each epoch. Minimum and maximum criteria for any factor can be set in advance, and printing will occur only when the data fall within the boundaries. Feedback signals also can be added, if desired. Epochs can be made to start at the time of some external stimulus, so that the response to the stimulus can be measured.

The Model 1537 power spectrum indicator will do all the tasks the Model 1536 can do, except compute the correlation coefficients.

The Model 1538 EEG microprocessor can do everything the Model 1537 can do except com-

pute the 20 channel power spectrum. Instead, it gives data for four channels, the four categories of the brainwave analyzer to which it is attached, along with artefacts treated as a fifth category.

The Model 1601 printer is a seven column thermal strip printer which prints three lines a second. It is complete with an interface for a microprocessor.

When Stanford Research Institute researchers David Hurt and Russell Targ did their study of man-machine non-sensory communication under a grant from the National Aeronautics and Space Administration, they came to Aquarius and asked us to produce a machine which would present a randomly selected target to test extra-sensory perception. The result was the Model 100A ESP teaching machine, which was used for the study and which was featured in the October 1975 issue of *Scientific American*.

A later accessory to the teaching machine, designed at Dr. Charles Tart's request, is the Model 1702 telepathy adaptor, which allows another subject, in another room, to know which target the teaching machine has selected before the original subject tries to pick the right target. Both instruments are examples of the custom design work Aquarius does for researchers.

Books

Aquarius also sells books in the field of biofeedback and changes in consciousness. They make a good introduction to the field and some are used as texts in courses on the subject.

ALPHA BRAIN WAVES by Jodi Lawrence. One of the best general discussions of brainwave biofeedback. But then we may be prejudiced because Ms. Lawrence visited us in collecting material for her book. She also discusses EMG feedback.

BIOFEEDBACK by Marvin Karlins and Lewis M. Andrews. A good general discussion of biofeedback which suffers only slightly from the author's failure to visit our factory. It includes a good section on EMG feedback and a short discussion of Dave Hurt and Russell Targ's ESP teaching machine.

ALTERED STATES OF CONSCIOUSNESS edited by Charles T. Tart, Ph.D. An excellent collection of papers covering the field of altered

states of consciousness (ASC). It includes hypnotic, hypnagogic and sleep states, drug induced states and biofeedback.

THE PSYCHOLOGY OF CONSCIOUSNESS by Robert E. Ornstein. An outstanding comparison of left hemisphere and right hemisphere thinking patterns, including a discussion of biofeedback.

SPEECH AND BRAIN MECHANISMS by Wilder Penfield and Lamar Roberts. A somewhat technical but engaging discussion of the geography of the brain. The book provides a basic understanding of current scientific knowledge of the functions of the different lobes of the human brain. Many drawings and photographs.

EEG TECHNOLOGY by Cooper, Osselton and Shaw. A handbook for EEG technicians which covers the hardware aspect of brainwave measurement rather well.

BRAINS OF ANIMALS AND MEN by Freedman and Moriss. A well illustrated, general introduction to the brain, written on a popular level.

MIND OF MAN by Nigel Calder. A very readable and not too technical review of recent research on the mind. Well illustrated.

ALTERED STATES OF AWARENESS, readings from Scientific American with introduction by Timothy J. Teyler. Excellent collection of articles with many illustrations.

NEW MIND, NEW BODY by Dr. Barbara H. Brown. The best-selling, controversial book by one of the founders of biofeedback. Dr. Brown takes her colleagues to task and isn't afraid to

discuss such topics as free will, which biofeedback has confronted psychologists with in spite of themselves.

BIOFEEDBACK & SELF-CONTROL Edited by Theodore Barber, et. al. A series of papers on biofeedback reprinted from scholarly journals. If you want to read much of the original work in the field, here it is.

BIOFEEDBACK & SELF-CONTROL, 1970, 1971, 1972, 1973, 1974, Aldine Annuals. The same as above, except containing papers from the year of the publication. As the subject of biofeedback has grown, so has the need for gathering the pertinent papers in one place, and Aldine Publishing Co. is trying mightily to fill that need.

We also offer the instruction manuals for the various Aquarius Electronics instruments separately for those who want to read them or listen to the instruction record without buying the instrument. If you buy the instrument later, the cost of the manual or record will be deducted.

We will send you, free of charge, data sheets on up to four instruments, giving the complete specifications and more information on applications. Included is a list of those data sheets available, along with information brochures describing packages of instruments for special purposes, such as education, counseling, entertainment, etc. If you want a complete set of data sheets, it is item D1 on our price list.

Also included with this brochure is a price list for all of our instruments, accessories and books, along with an order form. We accept Master Charge and BankAmericard, with a 5 percent surcharge.

WARRANTY

Aquarius Electronics warrants each instrument it manufactures against defects in workmanship and materials for a period of five years from the date of sale with the following exceptions:

1. The thermistor probe assembly for the temperature trainer and Item CN15 are warranted for 30 days.

2. Accessories, such as headphones and speaker amplifiers, not manufactured by Aquarius, carry no Aquarius warranty.

3. Chart drive mechanisms and printers which are parts of Aquarius instruments, but which are not manufactured by Aquarius Electronics, carry only the warranty of the original manufacturer. Such warranty is supplied with the instrument.

4. In instruments containing microprocessors or microcomputers, programable read-only memory (PROM) containing company-supplied firmware is warranted for one year.

5. Batteries and light bulbs, which normally must be replaced from time to time.

Our responsibility under this warranty is limited to repairs at our factory of any instrument that is found by our examination to be defective. These repairs will be made free of charge, except transportation and customs duties. Replacement parts carry only the unexpired portion of the warranty.

This warranty does not cover instruments that have been (1) damaged in transit, in which case the carrier is liable, (2) damaged by dropping, exposure to excessive heat, cold or moisture, or other accident, (3) damaged by defective or corroded batteries, (4) repaired or opened by anyone other than Aquarius Electronics factory personnel, other than instruments opened as directed by operating instructions to change batteries, (5) rented or leased, (6) misused or mishandled, including application of excessive power, (7) resold as a used instrument within the warranty period. In these cases, the regular factory repair charges will be made, after a cost estimate is made from the factory and a written repair authorization is received from the owner.

In order to effect the warranty, owner must return the service registration card within fifteen (15) days of receipt of the instrument.

If an instrument arrives damaged in transit from Aquarius Electronics, both Aquarius and the carrier should be notified immediately. The customer must make the insurance claim. In the case of delivery via the U.S. Postal Service, the insured number will be on the outside of the package. In the case of delivery by United Parcel Service, Aquarius Electronics' contract number is CA9-55-399.

For all instruments to be repaired or modified, whether under warranty or not, this procedure should be used:

1. Write a letter to Repair Service, Aquarius Electronics, Post Office Box 96, Albion, CA 95410, or telephone (707) 937-0064, (we do not accept collect calls) and describe the problem.

2. DO NOT ship an instrument to Aquarius Electronics for repair without first receiving authorization to do so from Aquarius.

3. If shipment for repair or modification is authorized, pack the instrument carefully, enclosing another letter describing in detail all symptoms of malfunction and all modifications requested, and stating the address the repaired instrument is to be returned to.

4. Send the instrument INSURED to Aquarius Electronics. If the instrument is shipped by U.S. Postal Service, it should be sent to Post Office Box 96, Albion CA 95410. If it is shipped by any other carrier, it should be shipped to 32191 Albion Ridge Road, Albion CA 95410.

Aquarius reserves the right to make modifications in its designs prior to delivery, in order to include mechanical or electrical improvements, but without incurring any liability to modify any equipment previously delivered or to supply new equipment according to old specifications.

This warranty takes the place of any other warranty, expressed or implied, and relieves us of any other liability based on the sale or use of this instrument. No warranties or representations by anyone other than Aquarius Electronics of Albion, California, will be binding on us.

Aquarius Electronics assumes no responsibility for any damage resulting from use of this instrument.

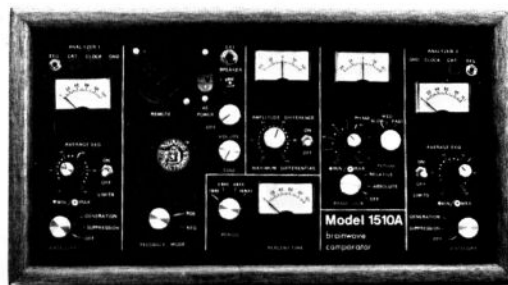


BioTrain

Page 11

Brainwave Comparator

Page 10



Basic Temperature Trainer

Page 3



Post Office Box 96
Albion, California 95410
U.S.A.
Phone (707) 937-0064