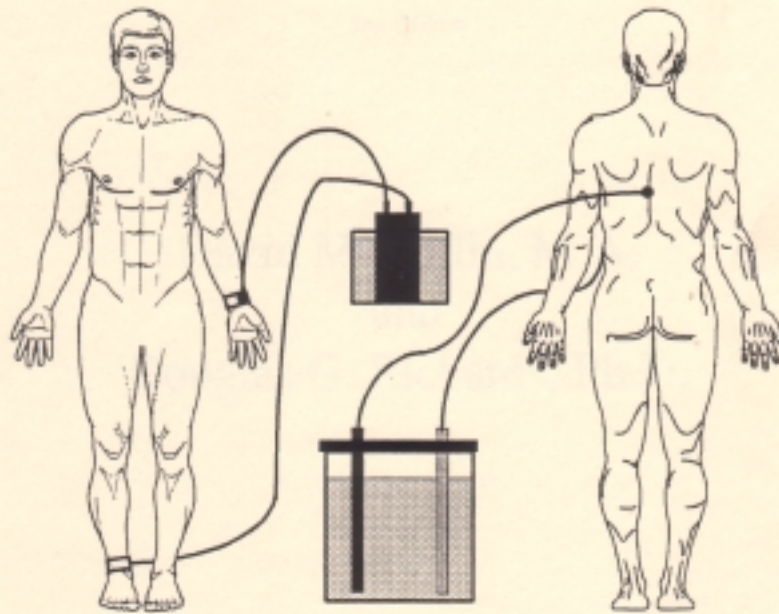

The Radial Appliance and Wet Cell Battery

Two Electrotherapeutic Devices Recommended by
Edgar Cayce



David McMillin, M.A.
and
Douglas G. Richards, Ph.D.

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Edgar Cayce**

2nd Edition

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Douglas G. Richards, Ph.D

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Virginia Beach
Virginia

DISCLAIMER: The reader should view the material contained herein as a report on research done by the authors into the psychic readings of Edgar Cayce. The authors are not reporting clinical research, and make no claims regarding the efficacy of the devices described in this material. This information should not be regarded as a guide for self-diagnosis or self-treatment. The cooperation of a qualified health care professional is essential if one wishes to apply the principles discussed in this book.

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PART 1: HOW TO USE THE APPLIANCES

SECTION 1.1

BASIC DESCRIPTION OF THE RADIAL APPLIANCE AND WET CELL BATTERY

Electrotherapy is a fundamental therapeutic modality in the readings of Edgar Cayce. Cayce's explanation of the importance of electricity in healing is that the body itself is an intricate electrical system. Illness is often associated with imbalances or incoordination in the energy patterns of the body. Treatment is aimed at correcting imbalance in the body so that the body's own natural healing processes can bring coordination and regeneration to the system.

Since many forms of electrotherapy were available during Edgar Cayce's career as a psychic diagnostician, he made use of a wide variety of commercial appliances and devices. Yet by far, he most often recommended two appliances which were not part of mainstream medical practice. In fact, the commercial manufacture and distribution of the Radial Appliance and Wet Cell Battery were initiated and sustained through the information provided in the Cayce material itself. Modern versions of these appliances are still evolving in their design and application. The purpose of this book is to provide basic information about using and building these appliances. This book discusses specific applications, but does not contain sufficient information for a treatment plan for any specific condition.

Figure 1.11 shows a basic Radial Appliance with the wire and disk components essential for its attachment to the body. Although it looks like a battery, and was occasionally referred to as such in the readings, Edgar Cayce insisted that it produces no electrical energy of its own. He said that it acts more like a magnet that draws energy from one

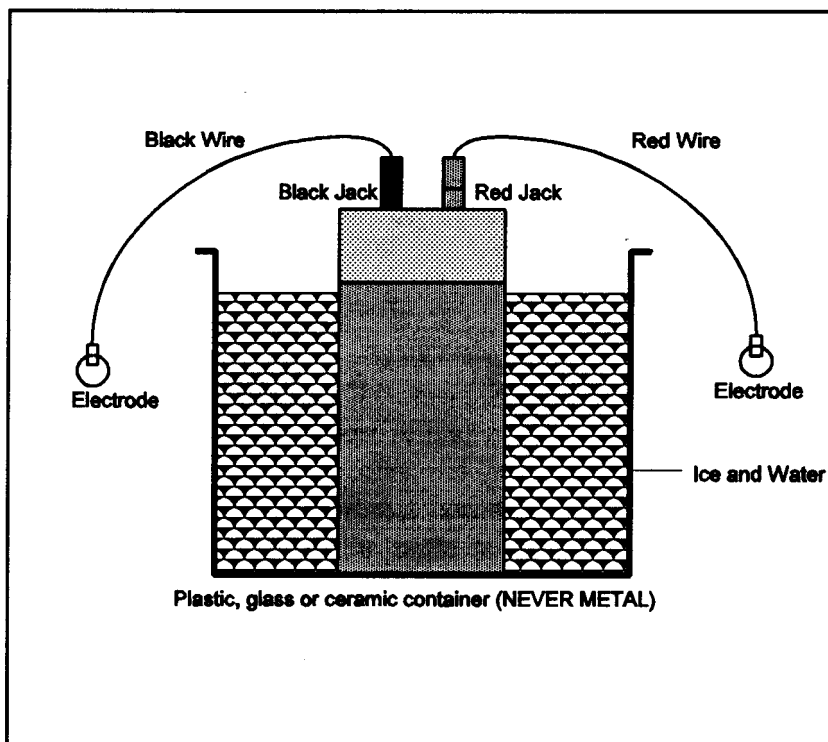


Figure 1.11: Basic Radial Appliance, activated in ice water, with two small German Silver electrodes.

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part of the body and redistributes it to other parts.

According to the readings, placing the appliance in a nonmetallic container full of ice water for about 20 minutes prior to attachment to the body chills the carbon steel core of the appliance. The steel core then becomes "electronized by ice or cold or water" (1800-4). Acting as a "radio magnet" (1800-28), the appliance can then affect the body's energy system when attached at definite anatomical centers on the surface of the body

On the other hand, the Wet Cell (Figure 1.12) is definitely an electrochemical battery which produces a measurable direct current (DC) output. However, the strength of the battery is quite low. Typically, the battery produces a DC voltage of about 1/50 the output of a common 1.5 volt flashlight battery.

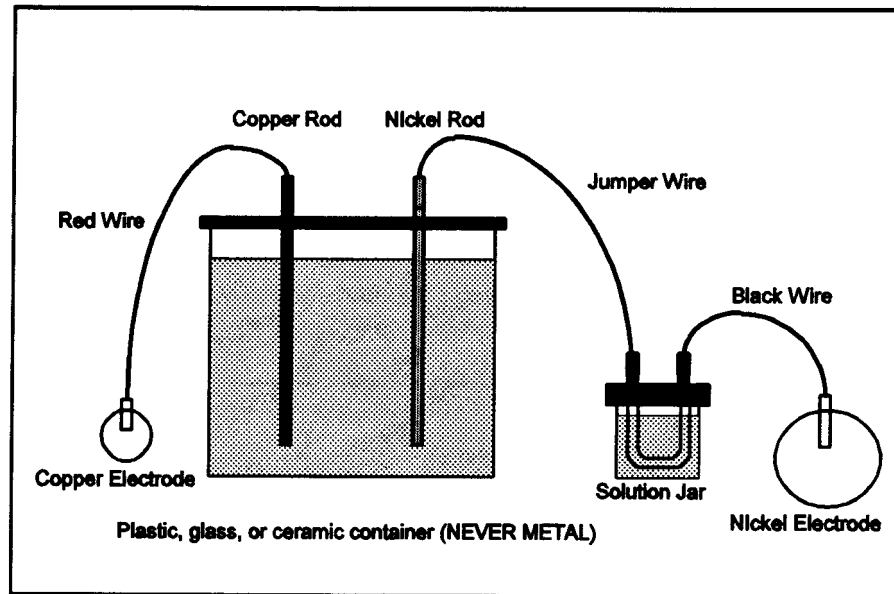


Figure 1.12: Basic Wet Cell Battery, with solution jar and small copper and large nickel electrodes.

As with the Radial Appliance, Cayce said that the Wet Cell Battery works with the "low" form of electrical energy or life force of the body. The primary difference between the appliances is that the Wet Cell has a stronger effect on the body. Thus the Wet Cell is used almost exclusively as a "curative" treatment for chronic and degenerative diseases whereas the Radial Appliance is most often utilized as a "preventative" measure with "curative" applications at times.

In the "preventative" mode, the Radial appliance can be used as a tool for stress management and as an aid to meditation. Edgar Cayce said that it "would be good for EVERYBODY! ... This assists in keeping an EQUILIBRIUM. Not that it is a curative, but it is CERTAINLY a PREVENTATIVE!" (202-7). Used on a regular basis, the Radial Appliance can play an important role in a general health maintenance program.

The Wet Cell Battery is strictly a "curative" treatment. In other words, if the body is already seriously ill and in need of regeneration, the Wet Cell may be included as part of a

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comprehensive treatment plan. Cayce seldom prescribed it as the sole therapeutic modality. Physiotherapies including bodywork (such as massage and spinal adjustment), hydrotherapy, and diet were regarded as essential components in the integrated treatment plans recommended by Edgar Cayce. Cayce would also typically bring in the mental and spiritual aspects of healing when making referrals for the Wet Cell Battery. In certain cases, he said that treatment with the Wet Cell Battery should not begin until some progress in the spiritual area had been achieved (e.g., 3684-1, 4014-1, 4036-1, 5064-1).

The therapeutic possibilities of Cayce's comprehensive and integrated approach were enormous. The readings stated that remarkable physical healing could be expected, even with extreme illness. For example, in severe neurological disorders such as dementia, Cayce consistently maintained that the nervous system could be regenerated and that in some cases, the brain itself could be "rebuilt." A later section will discuss some of the therapeutic principles and techniques involved in nervous system regeneration.

With this brief introduction to the appliances, it is easy to see why the Radial Appliance and Wet Cell Battery were so much preferred by Edgar Cayce. They were regarded as relatively mild and safe and yet possessing tremendous therapeutic and preventative potential.

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SECTION 1.2 GENERAL USE OF THE RADIAL APPLIANCE

This section will describe the general use of the Radial Appliance in a "preventative" or health maintenance application. Following are instructions that were sent out with each appliance by Marsden Godfrey. Godfrey was the last major appliance manufacturer during Edgar Cayce's lifetime. Hence, these instructions can be regarded as being implicitly accepted by Edgar Cayce as the standard application.

DIRECTIONS FOR USING THE RADIO_ACTIVE [RADIAL] APPLIANCE

The Appliance should be placed in the crock and surrounded with cracked ice. Add water until it reaches a level of about 2" from the [top of the] Appliance. Do not allow the water to come over the top of the Appliance. Let it stand in this manner for 15 to 20 minutes before attaching to the body; leaving it in the ice water during the time it is attached to the body.

When the Appliance is ready for use, insert the tips of the wires in the holes. DO NOT LET THE METAL DISCS OR PLATES TOUCH EACH OTHER AFTER THE WIRES HAVE BEEN FASTENED TO THE APPLIANCE!

The attachments would be made in this manner:

1st day: *The plate coming from the red pole would be attached FIRST, to the RIGHT WRIST; while the other plate coming from the black pole would be attached LAST, to the LEFT ANKLE.*

2nd day: *FIRST attachment (from the red pole) would be to the LEFT WRIST; LAST attachment (from the black pole) to the RIGHT ANKLE.*

3rd day: *Attach FIRST to the LEFT ANKLE; LAST to the RIGHT WRIST.*

4th day: *FIRST to the RIGHT ANKLE, LAST to the LEFT WRIST.*

Thus a circle of the body will have been made in the attachments. The first attachments becomes the positive, the last the negative. Thus always be sure to attach FIRST the plate coming from the RED pole, LAST the one coming from the black pole.

Alternate the attachments each day in the manner indicated, for one hour (1 hr.); unless otherwise specified for your particular case. Use for 3 to 4 rounds of the 4-day periods, then leave off a few days, then begin again.

It is preferable to remain quiet, in a prayerful, meditative and constructive attitude during the hour the Appliance is attached; while resting, or just before retiring at night.

Note: The plates are attached to the inside of the wrist, as near the pulse as possible, and to the inside of the ankle in the hollow just between the ankle joint and the tendon which runs down the back of the leg to the heel. Adjust the bands so that the discs are held securely in place against the skin.

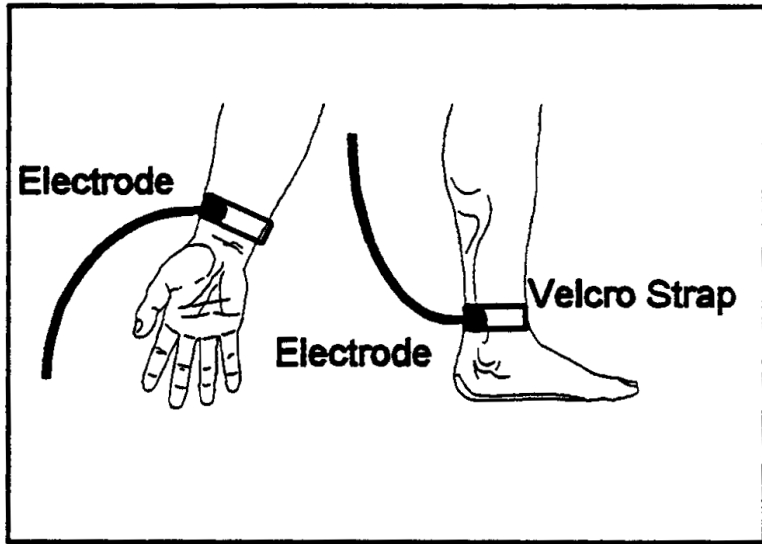
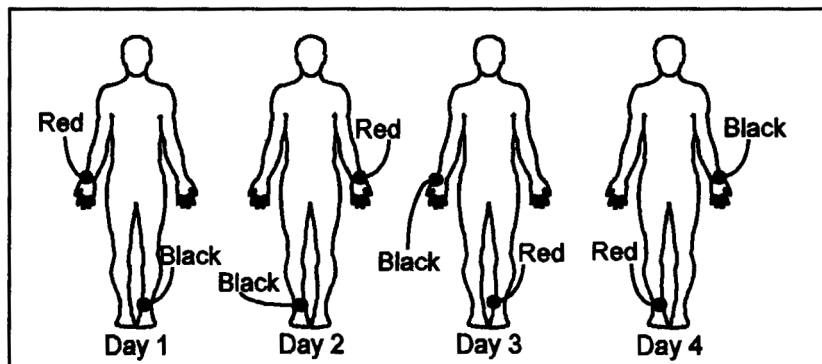


Figure 1.21: Electrode placement for Radial Appliance.

No sensation will be experienced by the body while using this Appliance, other than possibly a slight tingling in the extremities of the body (hands and feet) or a feeling of drowsiness slowly creeping over the body. Upon awakening the next morning the body will feel thoroughly relaxed and very much refreshed from the night's sleep.

When not using the Appliance disconnect the wires and if convenient place the unit in the sun for 20 to 30 minutes. This is all the recharging that will be necessary. Before and after each attachment, be sure the plates are cleaned or polished with the emery cloth which is provided. Special care should be taken not to let them become corroded by the acids and oils from the body.

The vibratory current of the body passes through the Appliance, the temperature of the Appliance being lower than that of the body, building up a low charge which is given off into the body through the other attachment completing the circuit. The effect of the Appliance is to equalize the circulation and relieve strain in any congested or taut areas of the nervous system. The action is that of equalizing the natural vibration or current of the body itself (Godfrey, 1943).



Figures 1.21 and 1.22 provide visual aid to the above instructions. Figure 1.21 shows where to attach the electrodes to

Figure 1.22: Daily rotation of electrodes with Radial Appliance.

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the wrists and ankles; note that the ankle attachment is on the inside of the ankle. Figure 1.22 gives the pattern of daily rotation.

Here are some additional practical pointers on how to adapt Godfrey's instructions to modern conditions.

The Appliance Container

The nonmetallic container in which the appliance is chilled need not necessarily be a ceramic crock. Keep in mind that small plastic containers were not readily available when Godfrey wrote his instructions. Small plastic paint pails with handles can be purchased at most hardware stores, K-mart, etc. They are typically about 7 inches tall with slightly over 1 gallon capacity.

If you are a stickler for tradition and want to use a ceramic crock, you can insert a small crock inside a plastic pail with a handle. This helps eliminate spilling and makes it easier to carry the container around (e.g., from the kitchen to the bedroom or wherever you are going to use it).

The Edgar Cayce Foundation has a very old appliance and ceramic crock container in its archives. The appliance and container are both about 6 inches tall. Cayce noted that if the container were no taller than the appliance, there would be less chance of water coming up over the top of the appliance.

Chilling the Appliance

Most appliances have a red line or some such indication near the top. This indicates the uppermost level for the ice and water. When preparing the appliance for use, place it in the container, fill with ice (cube or crushed) up to the line, and add tap water to the level of the ice. The readings specified that there should be more ice than water in the container.

The Setting

Choose a relaxing setting such as a bedroom or meditation area. A recliner chair that adjusts to a horizontal position can be very relaxing. Place the container and appliance on the floor next to the bed or recliner.

A plastic tray or larger plastic container is helpful. Rubbermaid products makes an attractive plastic box and lid It is called "Rough Tote" and is about the size of an ice chest. Place the pail and appliance inside it. Then you don't have to worry about the pail tipping

over and getting the floor wet. Between sessions, the "Rough Tote" can be used to store the appliance attachments and accessories.

Many people prefer to play some relaxing music during the session. A 45 - 60 minute cassette tape or CD also helps to define the length of the session. When the music stops, the session is over. Many music stores now contain one or more sections featuring music for meditation, relaxation (stress reduction), "night music" and so forth.

After the session, remove the appliance from the container and dispose of the ice water appropriately. Some people allow it to come to room temperature and then use it for watering plants. As a reminder, be sure to polish the metal disks before and after each session. Store them separately when not in use.

"Charging" the Appliance

When asked what to do to keep the appliance in good condition, Edgar Cayce responded, "When not in use keep them out of water, and dried, see, in sun, and not ever placed on metal, where the forces of the magnetic iron may not lose but may GAIN, see?" Some individuals have interpreted this statement to mean that the appliance must be "charged" by sunlight between each use. Of course, this can be quite a problem for persons living in areas where there is a high frequency of cloudy days.

It is worth noting that out of the hundreds of readings given where the Radial Appliance was recommended, Edgar Cayce did not seem to pay much attention to this aspect of appliance use. However, he consistently cautioned people about other basic principles of application such as keeping the disks well cleaned, preventing water from coming over the top of the appliance, making proper contact between the disks and the body, etc. And yet, he did not say things like, "be sure to keep the appliance out in the sun between uses." When making recommendations for other appliances (such as the Radium Pad, which had to be "charged" in sunlight before use), Cayce did explicitly remind people to be sure to place them in sunlight between applications.

A sensible approach is to place the Radial Appliance in sunlight between applications as an ideal. However, if weather conditions or other factors prevent its being "charged" this way, go ahead and use the appliance as normally indicated. Put it out in the sun at the next convenient opportunity.

Cycles of Application

The four day cycle described in Godfrey's instructions provides a good format for getting used to the appliance. It is a nice "breaking in" period which will allow you to learn

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how to chill the appliance and become comfortable with the sequence for making attachments, and so forth.

After this initial period, use the Radial Appliance as needed for stress management or as an aid to meditation. Edgar Cayce told one individual: "And then whenever there are periods of overtiredness, over_anxiety, the desire on the part of the body to make for real rest, use same - the [Radial] Appliance" (1022-1). In another instance he remarked that "if they [the appliance sessions] are taken the rest of [the life] experience it wouldn't be too long; for they are good for that tired feeling which comes at times from worriment. This is as much a preventative as a cure. If these are desired to be left off at any time, it may be done; but their helpfulness when once begun will be easily realized by the body" (1151-2).

To keep track of the sequence of attachments, it may be helpful to keep a pencil and paper pad with the appliance. Just note the date when the appliance was used and where the plates were attached. For example, if the appliance was used on January 4, 1994 with the red plated attached to the right wrist (1st day), it could be notated as: 1/4/94-1. The next time the appliance is used, write the date and 2. This way you can always know where you are in the sequence of attachments. If you skip taking the appliance, just pick up the sequence where you left off and continue the cycle.

These instructions are for the general use of the Radial Appliance (as a preventative, health maintenance measure). When using the appliance as part of a "curative" treatment regimen, the cycles of application are more closely structured as part of the total treatment plan. Curative applications will be discussed in a later section.

Because each person is an individual, find the patterns of application which work best for you. The readings stated that most people would not be able to feel anything while using the Radial Appliance. However, people could observe the beneficial effects by paying close attention to the daily activities of their lives. So, pay attention to sleep patterns, energy levels, stress levels, emotional patterns, etc. to determine how to use the appliance optimally for your situation.

Session Time

For general use, 45 - 60 minute sessions are appropriate. Cayce told some people that if they fell asleep with the appliance attached, not to worry. They were to remove the attachments when they woke up. If they slept through the night while on the appliance, they were to simply remove the connections in the normal way in the morning.

Attitude

Edgar Cayce insisted that anything that can be helpful or healing can also be detrimental if misused. This is particularly true of the electrotherapeutic appliances which presumably work to coordinate the mental, spiritual and physical forces of the body. Here is an example of Cayce's caution about having the proper mental and spiritual attitude while using the appliances:

This [Radial Appliance] is beneficial for ANYONE, PROPERLY used! It is harmful, improperly used. You can't use the [Radial] appliance and be a good "cusser" or "swearer," - neither can you use it and be a good hater. For it will work as a boomerang to the whole of the nervous system if used in conjunction with such an attitude. (361-8)

Remember that the Radial Appliance merely utilizes the body's own energy _ physically, mentally and spiritually. If there is negativity in the system, the appliance will only redistribute the negative effects throughout the whole body. Keep a positive, constructive attitude while using the appliance.

Edgar Cayce frequently recommended that the person using the appliance meditate during the session. Using positive affirmations and visualization is helpful. If you are in a negative frame of mind and can't consciously transition to a more positive consciousness, look for reading material or other resources that you find inspiring and uplifting. Cayce often suggested certain inspirational passages from the Bible, particularly the 30th chapter of Deuteronomy and the 14th, 15th, 16th and 17th chapters of John.

Obviously, inspiration is very individual. Look for reading material, music, or other resources that have a positive effect on you. If your life is so negative and out of control that none of the above suggestions work for you, you should probably consider seeking help such as counseling, therapy, a support group, etc. You may need more of a "curative" intervention rather than the general preventative, health maintenance application which has been presented in this section.

Alcohol and Appliance Use

The readings cautioned against using any form of electrotherapy while alcohol is in the system. So if you drink, don't drive; and don't use the appliance either.

One Appliance Per Person

Because the Radial Appliance uses the body's own energies, it is a personal device. Individuals should each have their own appliance. However, the readings stated that an

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appliance could be "rebuilt" and/or "demagnetized" and then used by another person.

Presumably, taking an appliance completely apart and then re-assembling it breaks up the personal vibratory patterns which may have accumulated in the core. This is a fairly messy and time consuming procedure. Often the canister is damaged in the process. Therefore, it may not be an economically feasible option. You will probably end up with a fairly expensive appliance made of used parts. Purchasing a new appliance often makes more sense.

Some appliance builders have used various methods to "demagnetize" appliances. The readings themselves do not define what "demagnetizing" is or how it can be done. Therefore, demagnetizing does not appear to be a reasonable option at this time. Unless a manufacturer can scientifically demonstrate that an appliance can be successfully demagnetized, this process should be viewed with caution.

SECTION 1.3
GENERAL INSTRUCTIONS FOR THE WET CELL BATTERY

There are two primary chemical processes involved in the Wet Cell Battery system. The first is the battery itself. The battery chemicals are mixed in a two gallon container. Copper and nickel rods are suspended into the battery mixture to produce a very small direct current.

The other primary chemical process takes place in the 4 - 6 ounce solution jar. The solution jar contains medicinal solutions such as gold, silver, camphor and iodine. A hollow lead wire passes through the solutions and interacts chemically, eventually being dissolved by the solutions.

The chemical battery and solution jar are joined in an electrical circuit via wires. The wires are connected to nickel and copper disks which are attached to the body during treatment sessions.

Instructions For Mixing the Battery

Here are general instructions for mixing and using the Wet Cell Battery:

1. *Unpack the Wet Cell container and wash it thoroughly; then dry with a clean cloth.*
2. *If the copper and nickel rods are not attached to the lid, fasten them securely as per the assembly instructions included with the battery (or if you are building you own battery, follow the assembly instructions in Section 3).*
3. *Be sure that the rods are sanded clean and bright.*
4. *Pour 1 1/2 gallons of DISTILLED WATER into the battery container. The container may have a mark to indicate this level.*
3. *Add the chemicals IN THE FOLLOWING ORDER:*
 1. *Copper Sulfate.....1 1/2 pounds,*
 2. *Sulphuric Acid (Chemically Pure).....4 ounces (25% dilution),*
 3. *Zinc.....30 grains,*
 4. *Willow Charcoal.....1/2 pound.*
4. *Stir this solution thoroughly with a wooden stick until a good part of the charcoal is dissolved.*
5. *Place the lid on the container, with the rods projecting down into the solution.*

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6. Allow the battery to set for at least 24 hours before the first session.
7. Avoid moving the battery during the 30 day cycle of application.
8. After 30 days empty the container and wash clean, then dry. Clean all corrosion from the poles by use of sandpaper or wire brush.

Then repeat the above steps for the next cycle.

Figure 1.31 provides a visual description of the mixing process. Mixing the chemicals is a simple process. Be sure to follow the exact order of mixing the chemicals. It is a good idea to wear rubber gloves and safety glasses to prevent bodily injury from spilled chemicals.

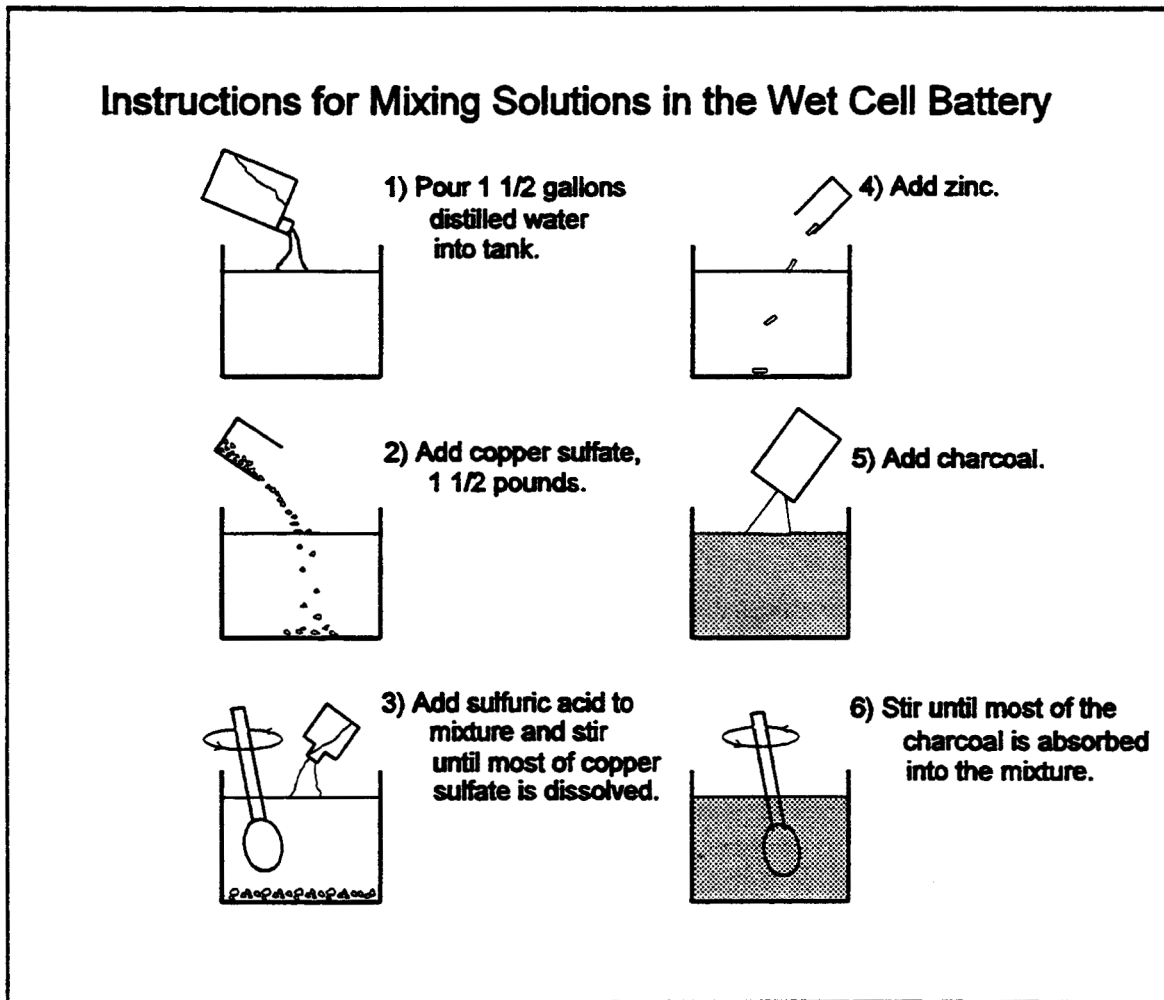


Figure 1.31: Mixing the solutions in the Wet Cell Battery.

It is also a good idea to use a large plastic tray or chest such as a Rubbermaid storage container (18 gallons; 24 inches x 16 inches x 16.5 inches). It is the same type mentioned previously ("Rough Tote") and can be purchased at K-Mart or other stores featuring Rubbermaid products. This type of container virtually eliminates serious spills that can occur when using the Wet Cell Battery.

Just place the empty Wet Cell into the storage container before mixing the chemicals. Leave the battery in this container until it is time to dump the chemicals (usually after 30 days). The Rough Tote even has handle grips to make it easy to carry the battery safely to the disposal area. There is usually enough extra room in the container for accessories such as wires, solution jars, etc. A matching lid covers everything, keeping the Wet Cell and accessories out of sight when not in use.

Instructions For Using The Solution Jar

In a few special cases, the Wet Cell as described above would be used in the same manner as the Radial Appliance. Wires and plates attached to the battery would be circulated around the extremities of the body. We will consider this special application in a later section.

Most often, the Wet Cell was used with a "solution jar" incorporated into the circuit. The jar typically has a four ounce capacity and contains three ounces of a medicinal solution.

The four primary solutions recommended by Edgar Cayce were gold chloride, silver nitrate, spirits of camphor, and atomidine (iodine). Other solutions were seldom used with the

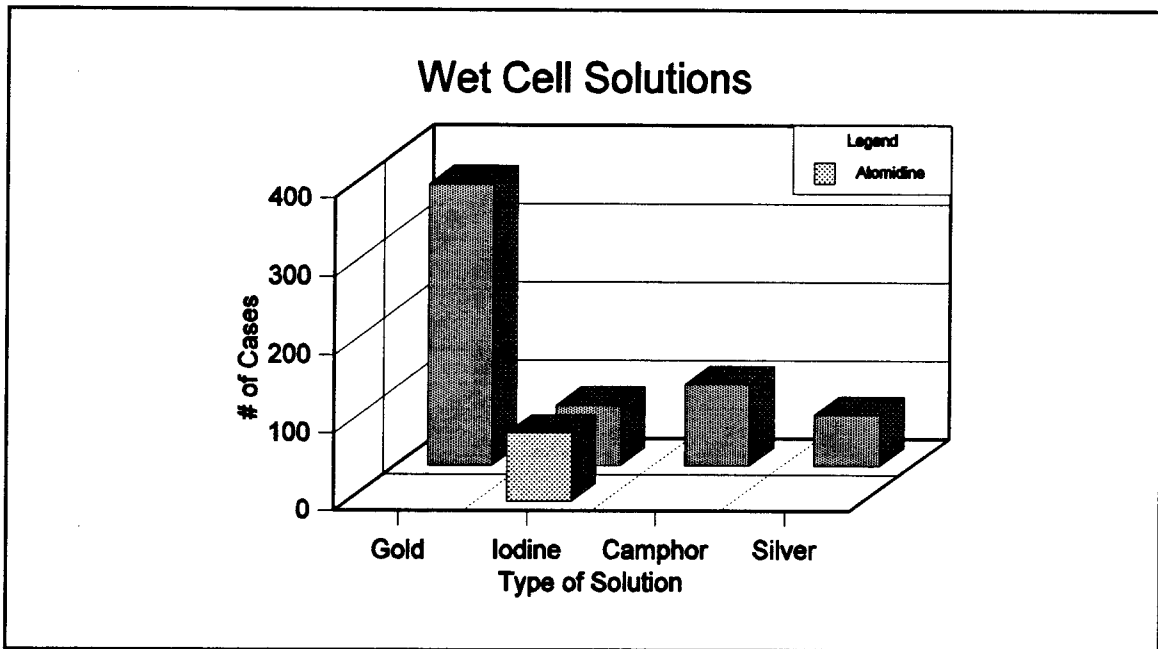


Figure 1.32: Relative frequency of the four main solutions used with the Wet Cell.

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Wet Cell. Figure 1.32 illustrates the relative frequency of the four main solutions used with the Wet Cell Battery.

Obviously gold chloride was the most commonly recommended solution. Notice that iodine was used in two ways. The most common application was with the solution jar using Atomidine. This is the application described in this section. The other technique utilizing iodine will be discussed later as a special application.

The first step is to determine which solution(s) is to be used and where the plates are to be attached to the body. Edgar Cayce generally provided this information as part of the reading for each individual. Figure 1.33 summarizes the number of readings recommending each of the major attachment sites on the spine for the copper electrode. (The nickel electrode connected to the solution jar was normally attached to the abdomen near the umbilicus.) This chart is only a summary, intended to show the diversity of Cayce recommendations. It does not show the appropriate attachment for a specific condition. Currently, four methods are commonly used to determine the type of solution and attachment patterns.

The most common method is the "case study" approach. This consists of searching through the readings and finding a reading which most closely resembles your condition. For a number of years, circulating files on the various illnesses have been the prime source of case studies. These files are available to members of the A.R.E. and can be obtained through the A.R.E. Library in Virginia Beach. Also, with the accessibility offered through the CD ROM version of the readings, more case studies are available with greater specificity as to each

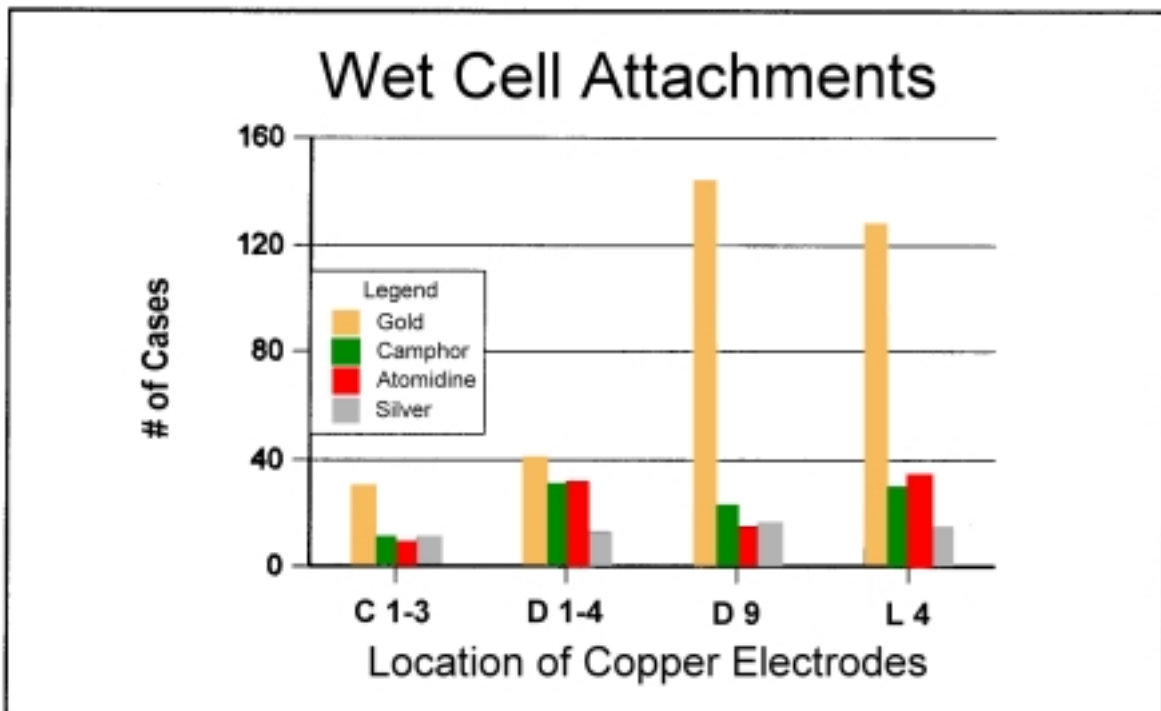


Figure 1.33: Summary of attachment locations of copper electrode for different solutions.

condition.

A second method is to seek out a psychic diagnostician to provide information on solutions and applications. Obviously, the trick is to find a psychic in whom you can have faith and who can provide useful information on the use of the appliances.

Another method for determining the appropriate solution and attachment pattern is to use applied kineseology. This approach is based upon the premise that the body knows what it needs and can communicate through involuntary muscle control ("muscle testing"). There are various techniques for utilizing kineseology. The common factor is that the patient is asked direct questions about the therapeutic options (such as which solution to use and where to place the metal plates), and the clinician's interpretation of the body's involuntary muscle response dictates the treatment regimen.

The fourth method for determining the correct solution and attachment pattern is to study the readings as a whole and seek to understand the reasoning and/or logic behind Cayce's system of electro-medicine. This "systems approach" takes into consideration the role of each solution and the anatomical and physiological effects of the battery on the nerve plexus and glands of the body.

Once the solution(s) and patterns of attachment have been determined and the battery mixture has been prepared (see previous section), you are ready for your first session. Here are some basic instructions for using the solution jar:

- 1. Twenty minutes prior to the session, screw the jar lid with the lead wire attachment onto the jar containing the solution.*
- 2. Sand or polish the copper and nickel plates.*
- 3. Hook up the wires as follows. The long red wire with the small copper plate is plugged into the red terminal (copper pole) of the battery. The short black wire is plugged into the black terminal of the battery (nickel pole) and into one of the terminals of the solution jar. The long black wire with the large nickel plate is plugged into the other terminal of the solution jar.*
- 4. To begin the session, attach the small copper plate (red wire) to the spinal center designated for your condition. You can use tape to hold the plate in place. Some Wet Cell Kits include an elastic strap which goes around the body and holds the plate in position. Use the method that works best for you.*
- 5. Then, attach the large nickel plate to the abdomen about three fingers to the right and two fingers above the navel. See Figure 1.34 for a visual representation of where to attach the plates. The large nickel plates is usually held in place with an elastic strap, but tape is*

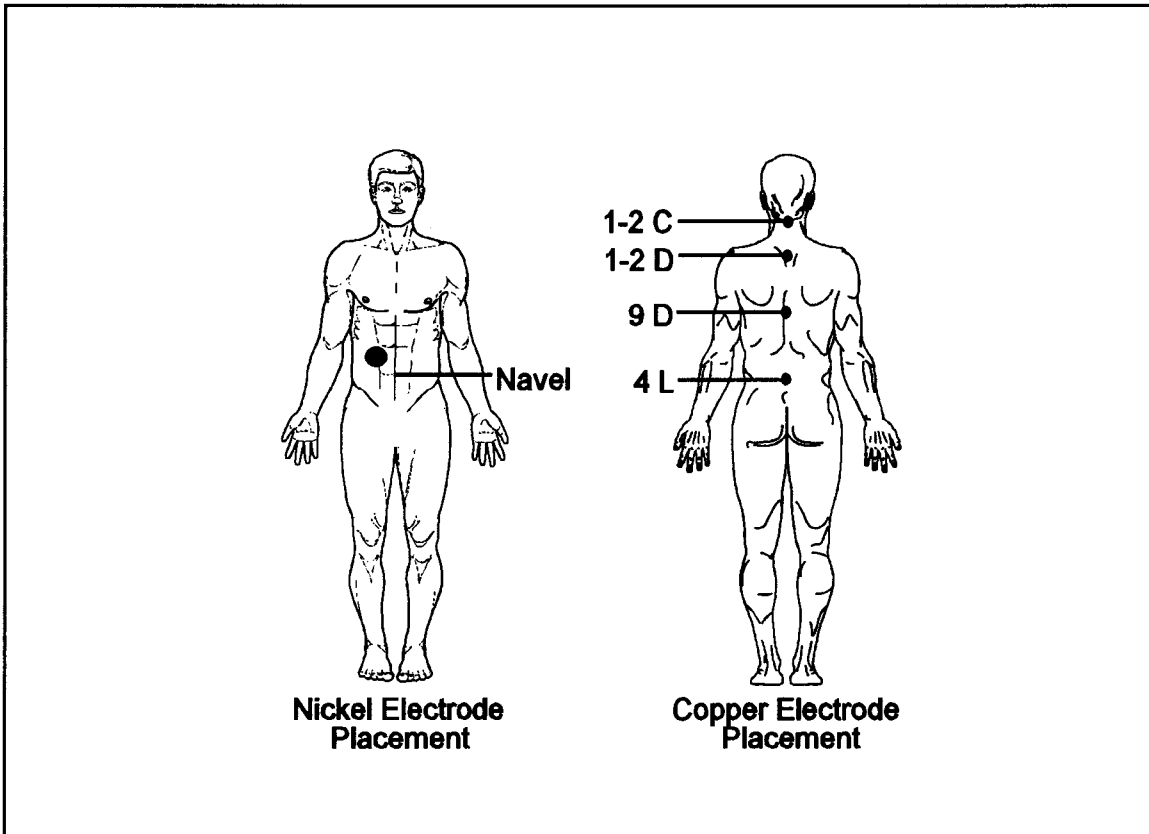


Figure 1.34: Attachment sites for the copper and nickel electrodes for the wet cell. The copper electrode is typically attached in one of the four locations on the back. The nickel electrode is typically attached about three fingers to the right and three fingers above the navel.

sometimes used. Again, use what works best for you.

6. *Lie on your back during the session.*

7. *Keep a constructive, positive attitude during the session. Use meditation, affirmations, visualization, or inspirational reading to facilitate the healing process.*

8. *A typical session lasts 30 minutes. Longer and shorter sessions will be addressed under special applications in a later section.*

9. *After the session, remove the plates and sand or polish them before storing them in separate containers (such as plastic sandwich bags). Do not allow the plates to touch each other, particularly during a session.*

10. *Remove the solution jar lid and cap the solution with a plain lid. Store in a safe place*

until the next use.

11. The lead wire that was in the solution must be cleaned before putting it away. It remains attached to the solution jar lid. Gently wipe off as much of the solution as possible. A fine wire brush (the kind plumbers use to clean copper tubing before soldering) can be used to remove the rest of the solution. The gold chloride and silver nitrate solutions react chemically with the lead wire and eventually destroy the lead wire. This is to be expected. Just replace the lead wire as necessary. Remember that lead is a toxic element. You may want to use rubber gloves when cleaning the wire. Holding the wire under running water eliminates the problem of lead dust which can result from cleaning the wire loop under dry conditions. After cleaning, store the wire loop and jar lid until the next session.

12. Occasionally, place the wires, plates and solution jar wire loop out in the sun for a couple of hours.

13. When using more than one solution, alternate the solutions. That is, use one solution one day and another solution the next day, and so forth. Always have a separate solution jar and wire loop for each solution.

Important

The connection between the lead wire in the solution jar and the binding posts on top easily becomes loose or corroded, allowing no current to pass. It is important to check each time you use the wet cell that the connection is good. The easiest way to do this is to measure the voltage (using a small digital voltmeter) at the copper and nickel electrodes just before you attach them to your skin. The voltage should be the same as that measured at the terminals at the top of the wet cell. Typically, this is between about -20 and -35 millivolts (more important than the exact voltage is that it be roughly the same at the skin electrodes as at the top of the wet cell). The digital meter is necessary to measure this small voltage. The least expensive digital meter from Radio Shack is adequate. If there is a bad connection, you will need to remove the top of the jar and use pliers to crimp the lead wire onto the binding posts more tightly. You may also need to check all the wire connections to make sure they are tight.

These basic instructions are suitable for most applications of the Wet Cell Battery. Following are some special instructions for adapting these instructions to individual cases.

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SECTION 1.4

ADAPTING THE WET CELL BATTERY TO INDIVIDUAL CASES

Similar versions of the preceding basic instructions were sent out with each Wet Cell Battery by the major appliance manufacturers during Edgar Cayce's lifetime. The readings themselves provided suggestions for adapting the instructions for particular cases.

Customizing the application was essential to address varying degrees and types of pathology. Here are some guidelines for adapting the battery for individual clinical application.

Strength Of The Battery

Prior to 1935, when the only reading was given for a standard Wet Cell Battery (1800-25), the chemical mixtures for the battery varied considerably. Subsequent standardization is reflected in the descriptions Cayce gave for battery applications. For example, after 1935 he sometimes used phrases to indicated the relative strength of the battery. Reading 849-41 (8/3/39) recommended that the battery be "a third stronger," reading 2248-1 (5/27/40) prescribed a "double strength" battery, and reading 3306-1 (10/21/43) suggested that "the charging solution for the Appliance would be regular." In each of these cases, the readings went on to give precise amounts relative to the standard as given in reading 1800-25. The standard amounts were included in an earlier section as part of the general instructions for mixing a Wet Cell Battery. For review, it is included here as Table 1.41.

TABLE 1.41

STANDARD WET CELL MIXTURE BASED ON READING 1800-25

Copper Sulfate 1 1/2 pounds,

Sulphuric Acid C.P. 1 ounce,

Zinc 30 grains.

(Note: although not mentioned in 1800-25, 1/2 pound of willow charcoal was routinely included as part of a standard battery charge kit supplied by the major appliance manufacturers.)

Edgar Cayce sometimes increased the strength of the battery mixture for severe and chronic conditions. For instance, in a case of polio involving a 29 year old woman (2778-1), he said to "double the regular strength, or:

Copper Sulfate 3 pounds,
Sulphuric Acid C.P. 2 ounces,
Zinc60 grains,
Willow Charcoal ... only 1/2 pound."

Note that each ingredient was doubled in amount except the willow charcoal. It usually remained at 1/2 pound, even when the other ingredients were increased. In a few cases where the other ingredients were increased, the willow charcoal was left out entirely (i.e., 2617-1, 2963-1, 2967-1, 3114-1, 3186-1, 3275-1). In these cases, the readings typically did not explain why the charcoal was to be omitted. In reading 3114-1 Cayce simply noted, "No willow charcoal in this strength here - this would only float."

In some readings requiring a stronger application, the copper sulfate amounts were given as either 2 pounds or 2 1/2 pounds. Usually, the other ingredients (except the willow charcoal) were increased in relative proportion.

In at least one reading, the battery charge was decreased from the standard. Reading 2832-1, given for a 1 year old suffering from hemophilia, stated that the battery should be made with a "low charge." The copper sulfate was lowered to 1/2 pound with 1 ounce of sulphuric acid and 15 grains of zinc. Willow charcoal was not included.

To summarize, the standard Wet Cell mixture is appropriate for many conditions requiring a "curative" regenerative intervention. However, the strength of the mixture can be varied to accommodate special cases as determined by the individual treatment plan. The treatment plan is developed by using one of the four major approaches discussed above (case study, psychic diagnosis, applied kinesiology, or the systems approach). The maximum strength recommended by Edgar Cayce was the "double charge" used in certain cases of severe pathology. The therapeutic principles and techniques which follow provide additional guidelines for adapting the Wet Cell application.

Adapting The Vibratory Solution

Another way of adapting the strength of the Wet Cell application is to alter the use of the solution jar. There are two primary ways of adapting the medicinal solutions: 1) vary the amount of the solution and 2) vary the chemical dilution of the solution.

The standard amount used is three ounces. However, the readings sometimes specified other quantities. For example, reading 1676-4 given for a 35 year old woman suffering from multiple sclerosis recommended that "at least" 4 - 6 ounces of chloride of gold be used in the solution jar. Reading 2028-2, given for a 5 year old specified a 6 ounce minimum for the gold chloride solution. Reading 3103-1, another case of multiple sclerosis, also specified "at least" 6 ounces of Gold Chloride. The battery charge for 3103-1 was

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"double charge" and the seriousness of the condition was emphasized. In fact, all of the above cases represent severe physical pathology. Although the readings did not explicitly state that increased amounts of solution were prescribed as a stronger intervention, it would appear that in practice this was the case. Therefore, from a clinical standpoint, increasing the amount of the vibratory solution is another way of adapting the Wet Cell application to individual cases.

The other adaptive measure involving the vibratory solutions is to vary the dilution. The standard strengths of the major solutions are listed in Table 1.42:

TABLE 1.42
STANDARD DILUTION OF MAJOR WET CELL MEDICINAL SOLUTIONS

Gold chloride: 1 grain gold chloride per ounce of distilled water

Silver nitrate: 10% silver nitrate in hydro-alcoholic solution (alcohol 50%)

Spirits of camphor: full commercial strength

Atomidine: full commercial strength

For severe conditions the strengths of the solutions were sometimes increased. Of the four major solutions, gold chloride was most often modified. Instead of the standard 1 to 1 dilution listed in Table 1.42, the readings occasionally specified a 2 to 1 dilution; that is, 2 grains of gold chloride to 1 ounce of distilled water (e.g., 357-8, 631-8, 683-1). The strongest solutions were a 3 to 1 ratio of gold chloride to distilled water (e.g., 528-4, 982-5, 1031-1, 1050-1). In a few of these cases, the quantity of solution was also increased (e.g., 631-8, 683-3, 1146-1) indicative of an overall increased therapeutic effect.

Silver nitrate was also offered in varied dilutions. The early readings relied heavily on the 10% dilution as the standard (see Table 1.41). After 1938, numerous readings also prescribed a 2% dilution. For instance, reading 1708-1 given on October 12, 1938 for a 61 year old man prescribed "a very weak solution, or a two percent Silver Nitrate solution." In reading 1698-1, given for a 62 year old woman, Cayce suggested that "only a two percent Silver Solution would be used in the beginning" (11/3/38). Presumably the strength of the solution would be increased later. At least 25 readings recommending a 2% silver nitrate solution were given between October, 1938 and September, 1944 (Edgar Cayce died in January, 1945). Whether the variation in strength was driven primarily by therapeutic considerations or a shortage of raw materials (due to the war), is not clear. The implication for modern clinicians is that a weaker solution may be appropriate for certain cases, particularly if there is a negative reaction at the 10% strength.

The dilution of the other two primary solutions were rarely modified. Atomidine and spirits of camphor are available in commercial strength from suppliers of Cayce oriented products. Tincture of iodine was sometimes provided as an alternative to Atomidine. The strength of the solution was not provided. A later section will discuss several readings in which tincture of iodine was charged directly into the Wet Cell Battery itself.

Length of Session

By far, Edgar Cayce's most common recommendation for length of session was 30 minutes. However, the range for individual cases varied from 1 minute (1500-1) to as much as 2 hours (3776-5). There were numerous recommendations for sessions up to 1 hour. Presumably, the longer the session, the stronger the effect of the battery.

In a couple of cases involving children, very short session times were recommended. 4140-1 was given for a 1 year old child and specified daily sessions of 2 - 10 minutes. Three minute sessions were recommended for a 3 year old child (395-2). Yet, in other cases involving children, the session length was comparable to that given for most adults. Obviously, these types of adaptations are highly individual.

There were other ways in which Cayce adapted session length for individual cases. On numerous occasions, he suggested that the initial sessions be shorter with later sessions increasing in length, allowing the person to eventually receive a stronger treatment (e.g., 386-1, 453-1, 2355-1, 2501-1). Of course, the session time could be adapted downward if the treatment was too strong (528-10).

The length of the session could sometimes be determined by the immediate response of the body. For example, in several cases involving cardiovascular illness, the readings recommended that the pulse be monitored and the length of the session be adapted accordingly (e.g., 742-2, 1071-1, 1103-5, 5498-2).

In a case of apoplexy (stroke), Edgar Cayce provided criteria for determining the length of the session when using the Wet Cell in a special application without a solution jar (see below):

Q. What causes, and what should be done for, skipping of heart beat?

A. ... As the active forces of the electricity are given to the extremities, alter from one side to the other, you see; watching the change in the circulation. This would be given not more than ten minutes in the beginning, gradually increasing as the pulsation or the heart's activity changes. For if a test would be taken it would be found that - in the skipping, as it is called - there is three beats less in the lower extremities than that in the wrist or the temple. This electrical application [Wet Cell Battery] is to equalize it. Increase the period gradually until

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thirty minutes may be given, by the time it is charged the third or fourth time.

(1103-5)

Reading 3842-1 was given for a 28 year old woman suffering from nerve exhaustion.

... we would first add those of the iodine to the system - through the low form of electrical vibration [Wet Cell Battery "charged" with iodine]. Do not add same at such periods, or for such length periods, as to overbalance the circulation-see; that is, when the pulsation or heart's action becomes fast; there will be one period - or a period - when it may be found that she may be able to take same for twenty minutes, again for thirty minutes, and then there will be periods found when not five or ten minutes may be long, or sufficiently long for the body to take same....

Q. How often should the battery be applied?

A. Twice each day.

Q. For how long?

A. Hasn't it just been outlined, that this is to be governed by the pulse of the body! It may be given once for five minutes, or it may be as long as forty minutes - but not LONGER than that. (3842-1)

Besides providing instructions for determining the length of the session by monitoring the pulse, this excerpt also mentioned two other important adaptations for Wet Cell use. "Charging" the battery with iodine will be discussed in a later section dealing with special applications of the battery. Presently, the discussion will focus on varying the frequency of the sessions, which can include multiple daily sessions.

Frequency of Sessions

Another way of adapting the amount of session time is to alter the frequency of sessions. On rare occasions, individuals were told to have more than one session per day (as in the previous case). Sometimes these sessions would utilize different solutions at opposite ends of the day (e.g., 465-1, 712-1, 731-1). For other conditions (such as general debilitation), no solution jar was used for the twice daily sessions (e.g., 3215-15, 3842-1).

While multiple daily sessions were rarely recommended, more commonly the sessions were spaced out to decrease the amount of time spent on the battery. For example, Cayce would frequently stipulate that the battery be used one, two or three times each week. Sometimes he would even give the days which were optimal because of scheduling other treatments. Integration of treatments will be discussed in a later section.

This brings up an important point regarding cycles of treatment. The battery sessions

were typically given in cycles of 30 days. Often the 30 day cycle was part of a larger cycle encompassing three or four 30 day cycles. Typically, a few days "rest period" was taken between 30 day cycles of the battery. A longer "rest period" was sometimes recommended after three or four 30 day cycles.

By varying the length and timing of the rest periods, the overall strength of the battery application can be adapted. For example, using the battery for three or four 30 day cycles with only a day or two of rest between cycles is a relatively strong intervention. Shortening the rest period between the larger cycles can also increase the strength of the application.

Of course, increasing the time of the rest periods could have the opposite effect. The desirability of long or short rest periods and total amount of treatment with the Wet Cell Battery is a highly individual matter. This type of adaptation is merely being pointed out here to illustrate that using the battery effectively can involve numerous therapeutic options.

Therapeutic Principles For Adapting the Wet Cell Application

In sorting out the various adaptive options discussed in this section, it is helpful to be aware of certain basic therapeutic principles which are the foundation of Cayce's approach to healing. These principles can serve as guidelines in developing and modifying a treatment plan.

The first and most important principle is that healing comes from within. Edgar Cayce put it this way:

Know that all strength, all healing of every nature is the changing of the vibrations from within, - the attuning of the divine within the living tissue of a body to Creative Energies. This alone is healing. Whether it is accomplished by the use of drugs, the knife or what not, it is the attuning of the atomic structure of the living cellular force to its spiritual heritage. (1893-1)

It is easy to view certain remedies such as the electrical appliances as possessing the power to heal. With this kind of thinking, a person may resort to the "more is better" approach to healing. This is a mistake. At best, the appliances can only help the body to heal itself. Keeping this principle in mind will help to prevent too-strong applications which can work against the body's own innate healing potential.

Honoring the principle of inner healing leads naturally to a second principle of "watch for the response of the body." In essence, this is what Edgar Cayce did when he gave a "check reading."

In adapting Wet Cell Applications for individual cases, Cayce encouraged the

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care-givers to watch for the response of the body and make adjustments accordingly. For example, reading 5498-2 was given for a 12 year old boy suffering neurological impairment. In this case the response of the body could be monitored immediately:

Q. How often should battery treatments be given?

A. They should be given according to the responses as are had by same, especially as to the pulsations that may be felt when battery treatments are applied in that portion OF system just below the liver, or in the region of the lacteals, see? As this responds to a near NORMALCY, the time may be increased - and the periods - but farther apart, see? (5498-2)

Of course, in many instances the response of the body may not be so immediate or so easily measured. Paying close attention to changes in signs, symptoms and behaviors is important. Sometimes medical or psychological tests can provide helpful feedback on the healing process which can be useful in making treatment adaptations.

Healing is an uncertain process, regardless of the therapeutic approach being used. Simply put, the body may or may not respond as expected. When Edgar Cayce gave a prognosis, he often qualified it by saying that it depended upon the response of the body to treatment. On certain occasions results were not forthcoming as expected. Cayce would simply note that the body's own healing processes had not responded. Treatments would often be adapted accordingly.

In other cases, the body responded well to treatment. Because the condition of the body had changed, the treatment plan (including the battery applications) would also be adapted to meet the new conditions.

There is no simple formula for determining how to make these adjustments. However, there are two additional principles to keep in mind which are helpful.

First, in making changes, be gradual. This is common sense. It is also a kindness to the body. Be gradual by starting with the standard or lower level of treatment strength. If the situation warrants a stronger intervention, increase the strength of the treatment in small increments (whether that means increasing the strength of the battery mixture, increasing the solution quantity or strength, increasing session length and frequency, or whatever).

The second principle has been touched upon in an earlier section. Provide the treatments in cycles which allow periods for the body to rest and re-establish its equilibrium. Stronger and longer is not necessarily better. Patience is essential. Gradual modifications in cycles of treatment with a careful eye to the response of the body is the key to making helpful adaptations.

**SECTION 1.5
SPECIAL APPLICATIONS OF THE APPLIANCES**

The preceding sections have dealt with general directions for using the Radial Appliance and Wet Cell Battery. The instructions and information which has been presented cover most applications of the appliances. However, Edgar Cayce recommended numerous other patterns of application for individual cases. This section will examine the major variants along with some highly unusual applications which demonstrate Cayce's flexibility in prescribing treatments.

Table 1.51 provides an overview of the two basic application formats and the major variants.

TABLE 1.51
BASIC AND SPECIAL APPLICATION FORMATS

BASIC FORMATS DISCUSSED IN PREVIOUS SECTIONS

1. **BASIC RADIAL APPLIANCE APPLICATION:** used without solution jar, plates circulated around the body to opposite extremities.
2. **BASIC WET CELL BATTERY APPLICATION:** used with solution jar, the small copper plate placed on one of major nerve centers along the spine and the large nickel plate (connected to the solution jar) placed on the abdomen just to the right of the navel.

SPECIAL APPLICATION FORMATS DISCUSSED IN THIS SECTION

1. **RADIAL APPLIANCE USED WITH SOLUTION JAR:** similar to the basic Wet Cell application, only milder; may be helpful as a preventative measure.
2. **RADIAL APPLIANCE USED FOR SEVERE NERVE AND/OR CIRCULATORY IMBALANCES:** used without a solution jar; due to the severity of the imbalance, the positive plate is always used on one portion of the body (i.e., always on the wrists or always on the ankles).
3. **WET CELL BATTERY USED AS A RADIAL APPLIANCE:** used without a solution jar to equalize and energize the system, two small plates are either circulated around the extremities or placed over the spinal and abdominal centers.
4. **WET CELL BATTERY CHARGED WITH IODINE:** a bottle of tincture of iodine is suspended into the Wet Cell Battery container and the battery is charged with an outside source of electricity (such as an automobile battery charger), sometimes used with a solution

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jar, can be used when the body requires iodine and electrified iodine ("Atomidine") is not available.

The Radial Appliance Used With A Solution Jar

Prior to 1925, the Radial Appliance was a very crude device, often consisting of little more than one or two pieces of carbon steel placed in cold water. In this form, the appliance was never used with a solution jar.

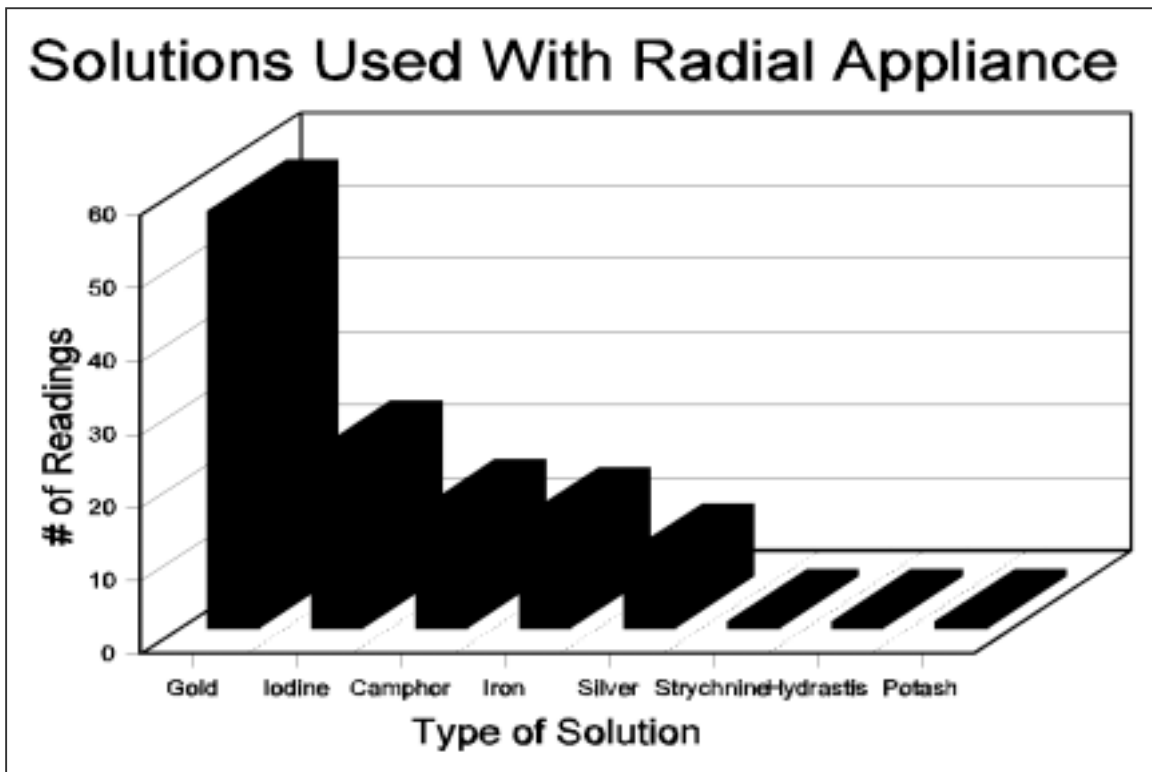


Figure 1.51: Types and relative frequency of solution use with the Radial Appliance.

The idea of using a solution jar as part of the appliance circuit was first presented by Edgar Cayce early in the 1800 series of readings given for the commercial manufacture and distribution of the appliances. Cayce provided a theoretical model of how to use certain "vibratory" solutions therapeutically. Almost immediately the readings began prescribing this form of "energy medicine" for persons suffering from a wide range of disorders. Figure 1.51 illustrates the types of solutions and relative frequency that each solution that was recommended for use with the Radial Appliance.

Interestingly, these early commercial Radial Appliances often used a solution jar. Yet the Wet Cell Batteries of that era did not include a solution jar as a separate component in the electrical circuit. Frequently a bottle of iodine was suspended into the battery mixture and then the battery was charged with an outside source of electricity. But there was no external solution jar in the circuit. Thus, the use of "vibratory" medicinal solutions with the appliances preceded the theoretical descriptions in the 1800 series of readings. However, it was with the Radial Appliance that the solution jar and a variety of medicinal substances was first mentioned in the readings.

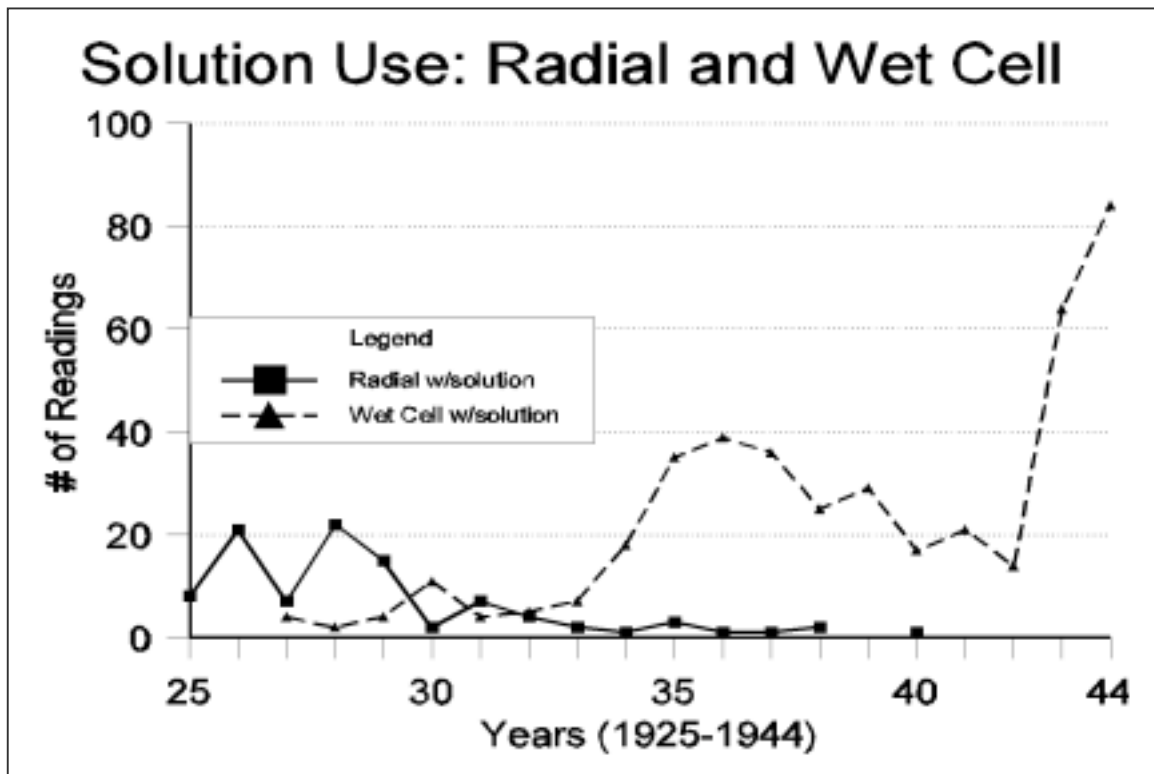


Figure 1.52: References to use of the solution jar with the Radial and Wet Cell Appliances.

This trend continued until about 1930 when the pattern of referral switched with the Wet Cell being used primarily with a solution jar and the Radial Appliance without the jar. Figure 1.52 illustrates this flip-flop in the pattern of referral.

Perhaps the reason for the change was in the nature of the appliances. The readings stated that both appliances worked with the "low electrical energy" of the body, only that the Wet Cell was more powerful in its effect on the body. Hence, the Radial Appliance was viewed primarily as a "preventative" while the Wet Cell was more of a "curative" application. Once the Wet Cell became standardized and was reliably available from a commercial distributor (Gray Salter), it was regularly used for the more serious conditions requiring the

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vibratory solutions. The role of the Radial Appliance reverted to more of an equalizer used as a preventative, for health maintenance.

Sections 2.2 and 3.2 discuss the evolution of the appliances. If the above information is confusing, it may be helpful to skip ahead and read the sections on the commercial development of the appliances. Grasping the context of the evolution of the appliances is helpful in understanding why Edgar Cayce made the recommendations as he did.

From a practical standpoint, modern use of the Radial Appliance with a solution jar focuses on two types of application. One is strictly a preventative measure. Quite often, the same basic treatments that are helpful for treating an illness can be used in a preventative way. For example, gold and silver were often recommended by Edgar Cayce for the treatment of severe neurological disorders such as dementia. If individuals have an hereditary predisposition or some other factor which may predispose them to experiencing dementia, gold and silver may help to prevent the illness, or at least lessen its effect.

This type of application has been described in *Alzheimer's Disease And The Dementias* (McMillin, 1994). The Radial Appliance provides an excellent means of delivering the solutions into the body. It is quite mild and easy to use.

Edgar Cayce made remarkable assertions about the preventative potential of gold and silver, even stating "these feed directly to the tissue of the brain ITSELF, and - given properly - silver and gold may almost lengthen life to its double, of its present endurance." This excerpt comes from reading 120-5 given for a 72 year old woman. So, in a preventative, health maintenance format the Radial Appliance may make a worthwhile contribution when used with a solution jar and the vibratory solutions.

The other primary use of the Radial Appliance with a solution jar is in a "curative" role. Because the Radial Appliance utilizes the body's own energy, it is milder in its action than the Wet Cell. In certain cases where the body itself is fragile (due to age or the degenerative effects of chronic illness) a milder intervention may be appropriate.

In the case of [1553], the Radial Appliance with gold chloride solution was recommended by Edgar Cayce due to the woman's age and general debilitation. Various forms of electrotherapy were suggested over the span of 27 readings given for this woman. At a certain point in her treatment, her physical condition was so weakened that the Radial Appliance was deemed appropriate. When her vitality was restored sufficiently, a stronger application was suggested using the Wet Cell Battery.

Thus this special application of the Radial Appliance with a solution jar may be particularly useful for children or the elderly in poor general health.

The Radial Appliance Used For Severe Imbalances

Another important special application of the Radial Appliance is for cases involving severe nerve or circulatory imbalances. Due to the nature and severity of the imbalance, the condition might be regarded as clinical pathology. Hence, a "curative" type of application is needed.

In its most common form, this pattern of special application is to restrict the positive and negative plates to one portion of the body rather than circulating around the extremities. For example, if there is extremely poor circulation to the lower portion of the body, Cayce would sometimes recommend that the positive plate (red wire) always be alternated between the wrists while the negative plate (black wire) would always be attached to the ankle on the opposite side of the body (e.g., 4116-1, 2740-1, 593-1, 774- 4, 539-4). For other individuals with extreme imbalances, the positive plate would always be alternated between the ankles with the negative plate to the opposite wrist (e.g., 906-1, 867-1, 600-1, 325-9, 93-1).

The theoretical basis for this type of application was provided in reading 1800-6:

Hence the first [plate] as is attached to the body becomes the positive, the last [plate] the negative, see? Hence when vibrations are necessary for the body, for these above the trunk portion, attach positive lower, those below attach [the positive] to upper, see? (1800-6)

Edgar Cayce said that the Radial Appliance worked by transferring energy from the portion of the body where the first plate is attached (the "positive" plate) to the area where the second plate is attached (the "negative" plate). When circulated fully around the extremities, the whole body will tend to be balanced. In cases of severe or chronic imbalance, a special application as noted above may be more even more effective in helping the body become equalized.

Reading 472-1 given for a woman experiencing poor circulation to the trunk and lower portion of the body. One of Cayce's primary recommendations was to use a special application of the Radial Appliance:

We would also find that there would be material aid to the body with the application of the Radio-Active [Radial] Appliance, for a creating of a normal balance in the circulation. Apply this to the extremities of the body, to be sure, and it will make for better rest, overcoming the tendencies of the easily making for taxation to the system, to those periods when insomnia disturbs the body; at other periods when the reactions of the system are towards so easily tiring out; heaviness in the feet, pains in the back, the fullness in the right side - would be overcome. Make the applications to the wrist each time first, then to the ankle, for at least thirty minutes to an hour each day.

In a similar case with this type of special application Cayce noted:

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While the Radio-Active [Radial] Appliance is non-electrical in its reaction, it does produce the PROPER coordination in the upper and lower portion of the circulation; thus is conducive to rest and ease. (515-1)

Here is an example of poor circulation to the upper portion of the body, in this case the brain:

Q. Why can't I remember what I read?

A. The disturbances in the circulation, which makes for a slowing of the vital forces through the brain reactions from IMPULSES in the sympathetic system. This should be improved, too, with the coordinating of the circulatory forces through the activity of the Radio-Active [Radial] forces, as well as from the manipulations and the activities of the glands of the system. (906-1)

For Ms. [906], a 53 year old woman suffering from obesity and periods of extreme nocturnal perspiration, the positive plate (red wire) was always attached first to the ankles with the negative plate (black wire) always to the opposite wrist. The effect would be to increase the amount of energy and circulation to the upper body.

Perhaps one of the most extreme examples of this type of special application for a severe imbalance is described in reading 867-1. According to Cayce, this 27 year old woman was suffering from elephantitis of the lower portion of the body. Elephantitis results from lymphatic obstruction producing massive subcutaneous edema and thickening of the skin. Usually affecting the lower extremities, the illness causes the legs to resemble those of an elephant.

Cayce noted that the condition was of a karmic origin manifesting through the glands in the reproductive system, affecting the circulation and nerve forces to the lower limbs. The Radial Appliance was one of the primary treatment modalities. Note also the mental and spiritual emphasis in this case of severe imbalance requiring a "curative" treatment plan:

First we would begin, then, with the use of those that will make for an altering of the circulatory forces as related to distribution of nerve energies in the system; that is, those vibrations from the Radio-Active [Radial] Appliance that will distribute energies for circulatory influences to the system. These must never be applied as rote. These must not be used just to get through with same, but in each application day by day see and feel constructive reactions taking place. For, remember, ever is this a growth in attitude, state of mind, the principles of mind as related to the desiring of, the expression of self in materiality. These attachments would be made to the ankle and to the opposite wrist; that is, the left ankle to the right wrist, always attaching to the ankle first. Then the next day to the right ankle and to the left wrist. The application would be for an hour each day. (867-1)

Presumably, the special application of the Radial Appliance in this case was intended to re-distribute the oversupply of nerve energies and circulatory forces in the lower limbs to the upper portions of the body.

Reading 93-1 was given for a person suffering from tuberculosis. The positive plate was always attached first to the ankles, apparently to distribute more energy to the respiratory system.

Ms. [325] was suffering from symptoms involving poor circulation to the face and ears. Reading 325-9 recommended that the positive plate always be attached to the ankles first to increase the circulation to the head.

These special applications emphasize the importance of polarity when using the appliances. Whereas the polarity of the Wet Cell is inherent in the design of the battery (because of the electrochemical nature of the battery), the polarity of the Radial appliance is neutral until it has been attached to the body. Once used, it is polarized with the side attached first becoming the positive. From then on, this plate is always attached first. Here is an excerpt which emphasizes the need to maintain proper polarity when using the Radial Appliance:

Each day use the Radio-Active [Radial] Appliance for at least an hour ... This is not a vibration of electrical forces except that impelled by the body-force itself, by the manner in which it is prepared - as to cause the formation of a magnet in the pulsation to become normal. It will be found that this will tend to put the body to sleep. Don't get the attachment plates crossed. Always attach the same anode first. If you attach it otherwise you will only spoil the Appliance and do yourself more harm than good. The same applicator [plate] is to be attached first each period. (3602-1)

The Wet Cell Battery Used As The Radial Appliance

The Wet Cell Battery was sometimes used without a solution jar in a similar manner to the standard Radial Appliance format. That is, the plates were circulated around the extremities to balance the body. There are over 40 cases in which the Wet Cell was recommended in this pattern. Reading 1780-1 states, "In this manner it [the battery] is adding to, now, and not merely equalizing, see? through these low electrical forces." This application works in a similar way to the Radial Appliance only it is stronger. It balances AND adds energy to the system.

Here is an excerpt from reading 1071-1 demonstrating this special application of the Wet Cell Battery. This man was suffering from angina pectoris (heart pain). The modifications to the battery are given and the therapeutic effect is described. Also note the recommendations for determining the length of the sessions by taking the pulse.

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Add the Wet Cell Appliance, or the galvanic activity of low electricity to the extremities - in the manner that the Radio-Active [Radial] Appliance is ordinarily applied. Have both of these anodes [plates] of nickel ... The attachments would be made to the opposite extremities.... One day the positive anode would be attached to the right wrist, while the negative would be to the opposite ankle. The next day the positive would be to the left wrist, while the negative would be to the right ankle. Alternate each day in this manner, or at each application - which may be for twenty to thirty minutes once or twice a day. This will pull the circulation through the extremities. If it makes for too GREAT a stimulation (watch the pulse action), then cut down the time of application. (1071-1)

The readings often compared the body to an intricate electrical system with the liver and kidneys as the positive and negative poles of the body's battery. In cases of general debilitation and exhaustion, the readings would even make the comment that the "BATTERIES of the body are rather rundown" (307-17). Both the Radial Appliance and Wet Cell Battery were recommended in such cases along with other physical therapies including hydrotherapy, massage, diet and spinal adjustments. In the case of [307], a 62 year old woman suffering from numerous physical complaints, Edgar Cayce noted:

We find that the low Wet Cell Appliance will be of material aid in regulating the circulation, as well as the digestive sources, PROVIDED consistency is used in regard to the giving of sufficient rest to the body in the open. That is needed more than anything else.

Use the Appliance one time to the extremities, the next time directly THROUGH the body, - that is, the one plate attached to the 9th dorsal, the other to the umbilical and lacteal duct plexus; for thirty to forty minutes at each period, but use it each day for at least a full period of the charge of the Appliance. (307-1)

Every other application would be addressed to the central organs of digestion and assimilation - to charge up the batteries of the body, as it were. While alternate treatments were to equalize the circulation by attaching the plates to the extremities as the Radial Appliance is typically used.

A similar pattern was recommended in reading 1119-1, a case of Parkinson's disease. However, in that case the placement of the positive plate along the spine was at the 4th dorsal (thoracic) center. On alternate days, the plates were attached to opposite extremities as the Radial is typically used.

The Wet Cell Battery Charged With Iodine

As has been mentioned in previous sections, many of the early readings on the Wet Cell Battery recommended that iodine be "charged" into the battery itself. In this application, tincture of iodine in an opaque glass bottle was suspended into the battery chemicals. The battery was then charged from an outside source of electricity such as an automobile battery

charger.

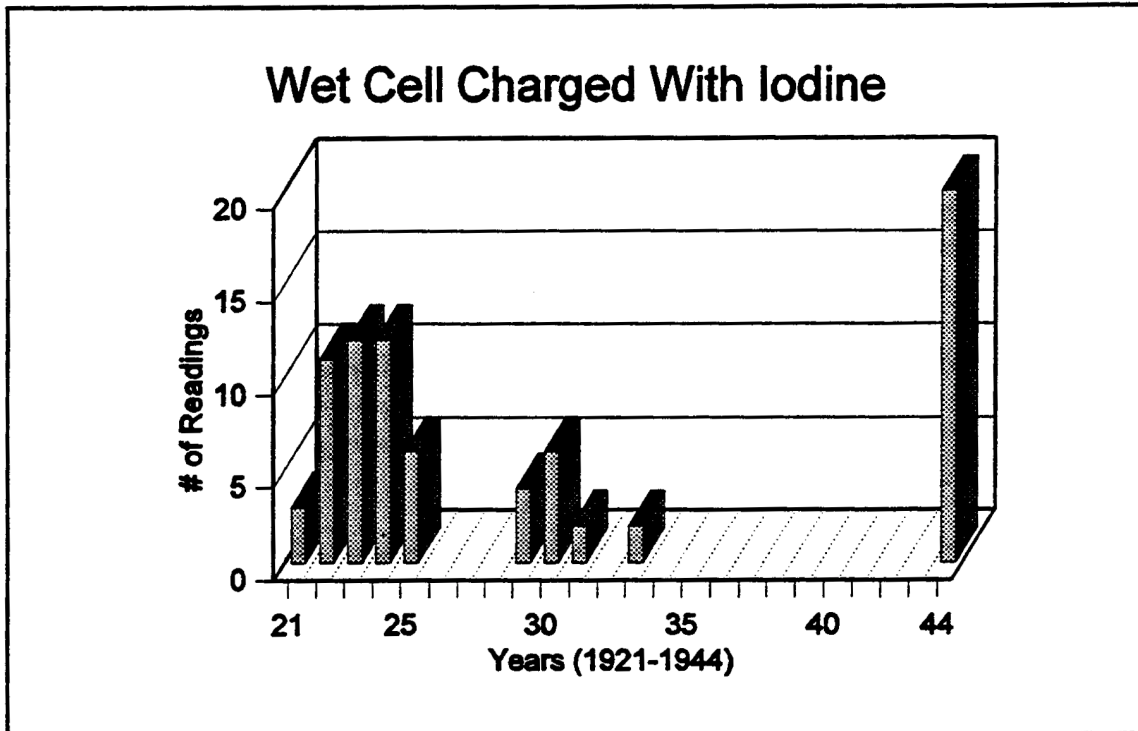


Figure 1.53: Number of readings per year in which iodine was charged in the Wet Cell.

Figure 1.53 illustrates the frequency of this type of special application. Before the 1800 series on vibratory solutions were given in 1925 and 1926, Edgar Cayce relied heavily on iodine charged into the Wet Cell as a means of delivering vibratory medicine into the body. With the advent of the commercial Radial Appliance and solution jar in 1926, emphasis shifted away from charging iodine into the Wet Cell. There was a brief revival of this special application during the era of the Cayce Hospital in 1929 and 1930 when Cayce gave many physical readings for persons suffering from serious disorders. Perhaps with the closing of the hospital, there was less need for this type of treatment.

The other major factor which undoubtedly influenced Cayce's decreasing reliance on the Wet Cell charged with iodine was the availability of a medicinal product named Atomidine. In 1931, Dr. Bisey requested readings on improving his commercial formula based on iodine and various Indian herbs. Edgar Cayce noted that the product was helpful but could be improved greatly by charging it in a large battery, a 5 gallon Wet Cell. Cayce said that this would "electrify" the iodine, significantly increasing its therapeutic efficacy. Essentially, Edgar Cayce was simply asking Dr. Bisey to do the same thing that Cayce had been recommending for the previous 10 years - charge the iodine in a chemical battery.

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Dr. Bisey utilized Cayce's advice and in the years that followed Cayce recommended charging iodine into the Wet Cell on only two occasions until 1944. During this period, Cayce gave many readings which prescribed Atomidine, both orally and vibratorily in a solution jar with the Wet Cell.

Between May 9 and August 26 of 1944, 20 readings were given recommending that iodine be charged directly into the battery. There was no reason given for the return to the earlier format of "electrifying" the iodine in the battery as opposed to using Atomidine in a solution jar. Perhaps with the war, there was a shortage of materials used in making Atomidine (particularly the exotic Indian ingredients).

Also, the correspondence from that period indicates that Dr. Bisey had died and the business was being operated by a son who was having trouble filling orders and badly wanted to sell the company. So perhaps with a shortage of commercial Atomidine, Edgar Cayce simply returned to the earlier method of producing "electrified" iodine (which he also referred to as "atomic iodine").

Whereas the earlier readings on charging the battery varied widely in details of construction and application, the latter group was extremely consistent. The earlier readings were given when this country's electrical power systems were unstandardized. Some parts of the country operated on direct current (DC) instead of alternating current (AC) which is now the standard. In many parts of the country, residential electricity was unavailable. Therefore, each battery was custom designed with precise instructions on how to charge the battery with the existing resources.

By 1944, automobile battery chargers were available and household electricity was standardized much as we have it today. Thus, the group of readings given in 1944 is not only internally consistent, but also conforms to our modern electrical standards.

TABLE 1.52 lists the 20 readings from 1944. Readers interested in this special application may wish to study these readings in more detail. The mechanical specifications for assembling the battery and charging it are included in a later section on research.

TABLE 1.52
CHARGING THE WET CELL WITH IODINE: 20 READINGS GIVEN IN 1944

5073-1 (5/9/44), 5108-1 (5/15/44), 5129-1 (5/17/44), 5120-1 (5/22/44), 5179-1 (5/24), 5150-1 (5/26/44), 5182-1 (5/29/44), 5173-1 (5/30/44), 5193-1 (6/3/44), 5238-1 (6/3/44), 5169-1 (6/7/44), 5209-1 (6/12/44), 5208-1 (6/15/44), 5269-1 (6/17/44), 5301-1 (6/26/44), 5289-1 (6/27/44), 5324-1 (7/5/44), 5341-1 (7/13/44), 3468-3 (8/25/44), 5403-1 (8/26/44)

As a whole, these readings were given for individuals with extremely severe conditions. Remember that this period was final months before Cayce's death in January of 1945. He was deluged with requests for readings and naturally focused his attention on the most serious (and sometimes hopeless) cases. Therefore, this group of readings was probably given for extremely desperate individuals.

In terms of modern application, this group of readings represents a way of introducing "electrified" or "atomic" iodine into the system vibratorily. Currently there is no commercial source for Atomidine as Edgar Cayce recommended it (that is, electrified in a Wet Cell Battery).

Many of the readings given in 1944 included other vibratory solutions with the iodine. Most often, gold chloride was included in a solution jar in the standard format. In one case (5324-1), silver nitrate, gold chloride and spirits of camphor were each included in the cycle of treatments in a battery charged with iodine.

The format of attachments also varied widely. Some of the cases used the standard solution jar format with a small copper plate attached at a spinal center and the larger nickel plate carrying a vibratory solution attached at the abdomen (e.g., 5209-1). In other instances, the Wet Cell was used more as the Radial Appliance with small plates circulated around the body to the opposite extremities (5173- 1). So this was a very flexible special application of the Wet Cell.

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SECTION 1.6 UNIQUE APPLICATIONS OF THE APPLIANCES

To this point, the discussion has focused on basic and special applications of the appliances. All of the above formats were recommended in at least several cases and therefore have value as general applications. This section will highlight some of the highly unique, idiosyncratic, and even peculiar applications which were made for individual cases. These examples illustrate the flexibility and adaptability of the appliances. They may also be helpful to persons whose illness closely resembles the condition for which each reading was given.

Some of the most interesting applications involved placing the large plate of the Wet Cell over diseased portions of the body. For instance, reading 264-34 was given for a 42 year old woman who had a tumor in her reproductive tract. The reading recommended shaping "the larger plate, rather cup, over the center - or over the portion of the swelling itself (the tumor) ... [the] plate sufficiently large to be gently cupped and placed over the portion or part itself that attaches itself to the Fallopian Tube."

In a later reading, 264-49, the instruction was given to place a "salt pad" under the small positive plate which was to be located at the 12th lumbar center. The pad was to consist of a piece of linen or cotton cloth dipped in saturated salt solution (sodium chloride).

Reading 655-1 was given for a 3 year old boy suffering from a developmental disorder which prevented him from speaking. His reading noted a karmic dimension to the condition in which this individual had been responsible for removing the tongues of others in a past life. From a treatment standpoint, reading 655-1 recommended that "the negative pole [plate] would be made in the shape of a clamp over the vocal box, in the throat, just above the Adam's apple and just below there towards the apex of the vocal box itself..."

Reading 5498-1 was given for an 11 year old boy who was developmentally retarded. Cayce noted that the pineal and pituitary glands in the brain were not functioning properly. Gold chloride and silver nitrate were prescribed with the Wet Cell. The plates were to be attached to the body in the regular fashion, except that:

Also, well would it be that this be altered occasionally, so that a clamp about the head - touching each side, just above the ear ... this vibration would act on the pituitaries - for these are two. While the pineal CENTER is one, acting THROUGH the system and through the brain itself. (5498-1)

Whereas patients were usually required to lie down flat on their backs, in at least two cases the individuals were required to lie on their right side during the Wet Cell sessions. Ms. [1355], who was suffering from a severe kidney disorder, was told to lie on her right side

while taking the Wet Cell session using Atomidine in the solution jar.

Ms. [1316] was having glandular problems, particularly with the adrenal and lacteal glands. She, too, was instructed to receive her Wet Cell treatments while lying on her right side. Her reading also contained useful information on determining the length of the sessions:

Keep this in the beginning for only twenty minutes. Longer period would tend to make for nausea and for dizziness. After the second charge, or after twenty-eight days the period of use may be increased gradually. (1316-1)

Reading 1302-1 was given for a 63 year old woman with considerable back pain and sensitivity throughout the upper body. Cayce's directions for using the Wet Cell stated that the sessions should be conducted, "With the body sitting erect, not lying down prone (unless the plates are made so they may be attached tersely to the body)... "

"Attached tersely" probably meant a "clean, neat" connection of the plates to the surface of the body. Perhaps lying down on the small plate attached to the lower back would have been too painful for this woman. Unless the plate could be cleanly manufactured without the usual unevenness associated with riveting the connectors and so forth, sitting up during the session would be preferable.

Reading 1031-4 was given for a 46 year old woman whose nervous system was degenerating. Her readings stated that the degeneration could be retarded and eventually reversed with consistent treatment with the Wet Cell using gold chloride and Atomidine. The unique aspect of this case is that reading 1031-4 recommended using two solution jars for Atomidine. Apparently, they were to be linked with short jumper wires between the battery and the large nickel plate attached to the body.

Whereas the Radial Appliance is a personal appliance to be used by only one individual, the Wet Cell Battery can be used by different people. Written correspondence associated with the readings indicates that it was a common practice for persons to loan or sell a used battery to another individual in need of same. Not necessarily that the same battery would be used by different people during the same cycle, but the battery could be re-assembled with new chemicals and used by someone else. However, on at least one occasion Edgar Cayce cautioned that the battery used by a certain person should not be used by anyone else.

Reading 3117-1 was given for a 7 year old girl who apparently suffered trauma at birth. Cayce's description of the source of the problem and his treatment recommendations are worth noting:

As we find, there may be a great deal of help for this body. This is the bungle of the doctor, not of this soul- entity. Someone must eventually pay, much, for this....

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True, there are adhesions, and there is the lack of the circulation through portions of the brain. But this is at the beginning of a cycle for body change. Each atom may be changed within seven years. If there are those interested in contributing to this, BEGIN. If you are not interested in doing it for fourteen, don't commence!

As to the applications necessary: Only prayer, and the vibrations of Gold Chloride to the body-forces, and massage.

The Gold should be applied vibratorially in the main part, through the Wet Cell Appliance. Do not, for this body, use an Appliance that is used on any OTHER body, EVER! For it has its OWN vibration, and those may name themselves fortunate or blessed even to attain to the care and the spiritual outlook for this body....

We will gradually see relaxing, we will see the change in the hearing, the ability to speak, the vision - these will come first. (3117-1)

It is not clear whether the restriction on the appliance being used by others was associated with the seriousness of the condition and length of treatment that would be required. Or perhaps, as the reading noted, there was something quite special about the child in that it "has its OWN vibration."

Reading 4767-2 was given for a 52 year old man with circulation problems to the head. "Now this may prove VERY detrimental, unless this can be changed so that the absorption from the blood that is used in brain is eliminated from same more normal, see? for we would form an accumulation - clot, or pressure, that would be detrimental ..." The Radial Appliance and osteopathic manipulations were recommended to relieve the pressure. Not surprisingly, the primary pattern for the appliance was to attach the positive plate to the wrists and the negative plate to the ankles. Theoretically, this would transfer energy to the lower part of the body away from the brain. However, Cayce provided a fascinating twist to the pattern.

Attach to wrist and to the ankle last, see? At times - that is, say every second or third day, it would be well that the anode be attached to ankle first, then to the 3rd cervical - may be attached to the side rather than to the direct center, see? for we will then reach that vibratory force as produce the pulsation in the upper portion of body. (4767-2)

Reading 1097-1 was given for 54 year old man suffering from apoplexy (stroke) with paralysis on the right side of the body. The Wet Cell Battery was prescribed with Gold Chloride solution:

And in making the applications each day, be very specific that the applicator through which the Gold passes is attached to that side of the body that is deficient in activity; that is: The anode NOT carrying the Gold Solution would be attached first, to the left ankle; while the anode CARRYING the Gold Solution ... would be attached last, to the right wrist. The next

day the anode NOT carrying the Gold Solution would be attached first, to the left wrist; while the anode CARRYING the Gold Solution would be attached last, to the right ankle. Continue to alternate in this manner, with the Gold Solution attachment always to the right side of the body. (1097-7)

There are numerous readings which emphasize the importance of the upper/lower polarity when using the appliances. [1097] is one of the few cases which focus on the lateral (left/right) aspects of polarity.

An interesting variation on lateral polarity was given in reading 4799-1. The Radial Appliance was recommended with both plates attached to either the upper or lower portion of the body. Hence, if the positive was attached to the right wrist, the negative would be attached to the left wrist. When attached to the right ankle, the other plate would go to the left ankle. This 27 year old woman was deaf, but no particular reason was given for the unusual pattern of attaching the plates.

Many other unique applications could be cited here. The point is that the appliances can be adapted to many situations on an a highly individual basis.

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SECTION 1.7

SIDE-EFFECTS OF USING THE APPLIANCES

Although Edgar Cayce gave hundreds of readings recommending the Radial Appliance and Wet Cell Battery, on a very few occasions he cautioned that the person might experience side-effects. In most cases, the effect was not particularly dangerous, only uncomfortable. The rationale was that as the body healed it would naturally change. The change could be unpleasant for a period until the system established a new equilibrium.

For example, Ms. 147 was deaf and was using the Wet Cell Battery charged with iodine as recommended in her readings. Reading 147-3 cautioned "The body will become nauseous after the third or fourth day - this is only the reaction or revibration of the circulation carrying its proper distribution forces." Being forewarned, she was to continue with the treatments. The nausea would decrease as the body adjusted to the changed vibration in the system.

As has been noted in previous sections, the pulse was an important indicator of the body's response to treatment with the Wet Cell. Cayce's usual advice was to decrease the length of the session if the pulse became too fast. As the body adjusted to the changed vibration, increase the length of treatment accordingly.

There were several cases involving the Radial Appliance where the readings predicted negative side-effects. [2587] was an eight year old girl prone to emotional outbursts. Her reading described injuries to the nervous system and problems with her stomach that produced a "great nervous strain on the body." Because she was of a "high emotional nature" which "becomes almost hysterical in its nature at times," her reading also observed that using the Radial Appliance would produce irritation during the first few sessions:

Within the next ten days or three weeks, begin also with the use of the Radio-Active [Radial] Appliance when ready to retire. At first this will tend to irritate rather than to quiet, but if the body will keep this on for thirty minutes to an hour for the first three times, then it will be found that it will aid in equalizing the circulation - that will have been set up generally by the osteopathic corrections being made - and bring beneficial effects to the body. (2587-1)

Ms. [1010] was 71 years old when she complained that after using the Radial Appliance for a few sessions it made her "nervous and jerky." Edgar Cayce responded, "If taken for a few minutes twice a day, it is not too much! provided the body rests before and after taking same. But take for only a few minutes at the time, see?" (1010-20). Cayce went on to remind her to keep the regular rotation of the plates around the body. Apparently she was mixing the pattern of rotation.

The strategy of using shorter multiple daily sessions was also advocated for Ms. [264]. She was told to use the Radial Appliance 2 or 3 times each day for 20 - 30 minutes to prevent

the session from becoming "antagonistic to the body."

Ms. [808] was on the verge of a nervous breakdown with "continual aggravation that exists in the system." Reading 808-5 told her to occasionally use the Radial Appliance. However, it also noted the possibility that the it could have a "tendency towards aggravating the body. When it does, remove - rather than forcing self to take" (808-5).

Although it was not mentioned in the readings, modern anecdotal accounts indicate that some persons may experience a tightness of the back muscles in the area where the positive plate of the Wet Cell Battery is attached. Perhaps this is one of the reasons that Edgar Cayce so frequently recommended a massage after Wet Cell treatments.

These cases exemplify the therapeutic principles presented in a previous section. Be kind to the body. Be gentle by making gradual modifications. Pay attention to the response of the body. Some reactions can be expected as the body changes in response to the treatments. If the reaction is "too aggravating," don't use the appliances. Utilize other therapies and re-evaluate the possibility of using the appliances at a later date. Do all the treatments (such as the spinal massage after Wet Cell sessions) in a comprehensive and integrated manner. This final point is addressed in the next section.

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SECTION 1.8

ADJUNCT THERAPIES FOR CURATIVE APPLICATIONS

It is important to keep in mind that most of the applications discussed in the above sections are "curative" in nature. Therefore, the electrotherapeutic modalities are only one aspect of a total treatment plan which necessarily includes other primary therapies.

This point is sometimes overlooked by enthusiastic and well-intentioned promoters of the appliances. Occasionally the message that gets communicated to the consumer/client is that all that is necessary to cure a serious illness is to hook up to a Radial Appliance or Wet Cell Battery. This is entirely inconsistent with the Cayce readings and is a great disservice to persons seeking help in applying Cayce's approach to healing.

The reality is that the curative applications of the appliances involve other therapies. Persons who use the case study approach to formulating a treatment plan will not easily miss this point. The readings themselves almost always advocate a comprehensive approach with integrated treatments.

The case of [271] exemplifies the necessity of using a comprehensive approach with integrated treatments. This young man was suffering from dementia praecox (now called schizophrenia). As was typical with this diagnosis, Edgar Cayce noted the degeneration of the brain and the need for regeneration of nerve tissue. He recommended a full array of treatments including the Wet Cell Battery with gold chloride and the Radial Appliance in the standard application.

The persons administering the treatments did not provide all the treatments as given in the readings. Reading 271-3 bluntly reminded them that "it is presumed that all [treatments] will be adhered to in the manner given; and one activity becomes then dependent upon another." One of the primary treatments that was not being provided was the hypnotic suggestions that were to be given during the battery sessions.

In a sense, Cayce was saying that the battery treatments could regenerate nerve tissue (the "hardware" of the nervous system), yet without the hypnotic suggestions (the "software"), the body would be irrational and out of control. "For, without this there comes that of not knowing what to do with the impulses; and the body then becomes at times irresponsible for the activities of the mental reaction." Cayce told them to do all the treatments. "Either DO it, or don't try to do it!"

This case resembles numerous others where Cayce was careful to point out that anything that can be helpful and healing can also be destructive and make the condition worse if done improperly. This is the real issue in working with the body, adapting to the response of the body, and seeking healing from within the body. It usually requires a holistic, comprehensive approach.

This approach is also apparent in a remarkable reading which describes the essentials of nerve regeneration. Reading 1800-16 addresses the use of electro-medicine in treating "senility," a condition which we now call Alzheimer's disease:

The PRINCIPLE [of using electrotherapy with gold and silver] being that these change the vibratory forces as they add to or take from impulses within the system, from which those of the sensory [nervous] system, or senses, react in the brain itself, and which takes place much as has been given with gold and silver in their varied conditions as may be applied to the system. We will find that impulse, whether as to that of senility when produced from age alone or whether senility as produced by conditions produced in the brain itself; for WITH the proper manipulations to PRODUCE coordination WITH drainage in the system, as may be given through manipulation osteopathically, or neuropathically given to the system under various stages, may create for the body almost a new brain, will the patience, the suggestion, the activities in the system BE carried out according to the conditions as necessary to be met. (1800-16)

Note the therapies mentioned in this excerpt: electrotherapy with gold and silver, osteopathic or neuropathic manipulations to produce "coordination WITH drainage in the system," patience, suggestion, and activities in the system (such as diet and medication)." This is a comprehensive approach with treatments that must be integrated together appropriately for each case. It is not enough to hook a person up to an appliance and expect "curative" results.

Edgar Cayce's own readings for himself contain an excellent example of the need for integrating treatments. He sometimes had problems with toxicity in the system. His readings recommended basic cleansing treatments such as hydrotherapy, massage, diet, etc. In reading 294-69 he was asked if the Radial Appliance would be helpful:

Q. Should the battery [Radial Appliance] be used at present?

A. WHEN the properties are applied in the system that will cleanse system more properly, THEN we would use battery. Not with the system re-absorbing poisons in same. For, the battery vibration is to equalize. With poisons in same, ALL become poisoned by being equalized. And with the system at the state of LOW resistance, this would be more detrimental than beneficial. (294-69)

It is only common sense that if the Radial Appliance improves circulation and the body is toxic, using the appliance will only help to circulate the toxins, making the whole body toxic. Coordinate the treatments, for "one activity becomes then dependent upon another."

The various principles and techniques for developing and implementing a comprehensive treatment approach have been described elsewhere. Such a discussion is beyond the scope of this book. Readers interested in this aspect of Cayce's electro-medicine

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may wish to pursue other resources describing Cayce holistic approach to healing. (e.g., McMillin 1991a, McMillin 1991b, McMillin 1994).

PART 2: CONSTRUCTION PARAMETERS FOR THE RADIAL APPLIANCE

SECTION 2.1 SPECIFICATIONS AND ASSEMBLY INSTRUCTIONS FOR THE RADIAL APPLIANCE

Numerous readings were given on how to construct the Radial Appliance. Although there was some variation, the basic design was remarkably consistent. A later section will address some of the variations in appliance construction over the decades.

This section will provide a listing of materials, manufacturing processes and specifications that is consistent with the recommendations of Edgar Cayce. The emphasis is on identifying materials and suppliers that are readily available to persons wishing to build appliances. Even so, most suppliers prefer to deal in wholesale quantities which often means purchasing enough material to build 25 to 50 or more appliances. Fortunately, some of the appliance builders are willing to sell components in smaller quantities to help individuals get started in the business.

The following assembly process has been used in many workshops where individuals have made their own Radial Appliances. Words are a poor substitute for visual aids. Perhaps the following description and figures will suffice to convey the basics of Radial Appliance assembly. With this basic overview in mind, we will then look more closely at the specifications of materials and manufacturing processes required to build the basic Radial Appliance.

The first and primary consideration in building appliances is to develop and maintain a constructive mental attitude. Meditation is a helpful preparation for building appliances. Work with your ideals, particularly your purpose for building appliances. If you are having trouble maintaining a positive attitude, don't build appliances. If you are angry or upset, don't build appliances. Wait until you are in a constructive frame of mind.

From a technical standpoint, the basic Radial Appliance consists of a core, charcoal packing, a metal canister, wire and electrical connectors and "German Silver" (nickel silver) disks. Figure 2.11 illustrates the construction of the appliance. Also see Figure 1.11 for an illustration of the appliance connected to the wires and disk electrodes

The core consists of two pieces of carbon steel separated by two pieces of single strength glass surrounded by 1/4 inch carbon pieces. Masking tape completely surrounds the carbon pieces. The steel bars are drilled and tapped to accommodate plastic binding posts.

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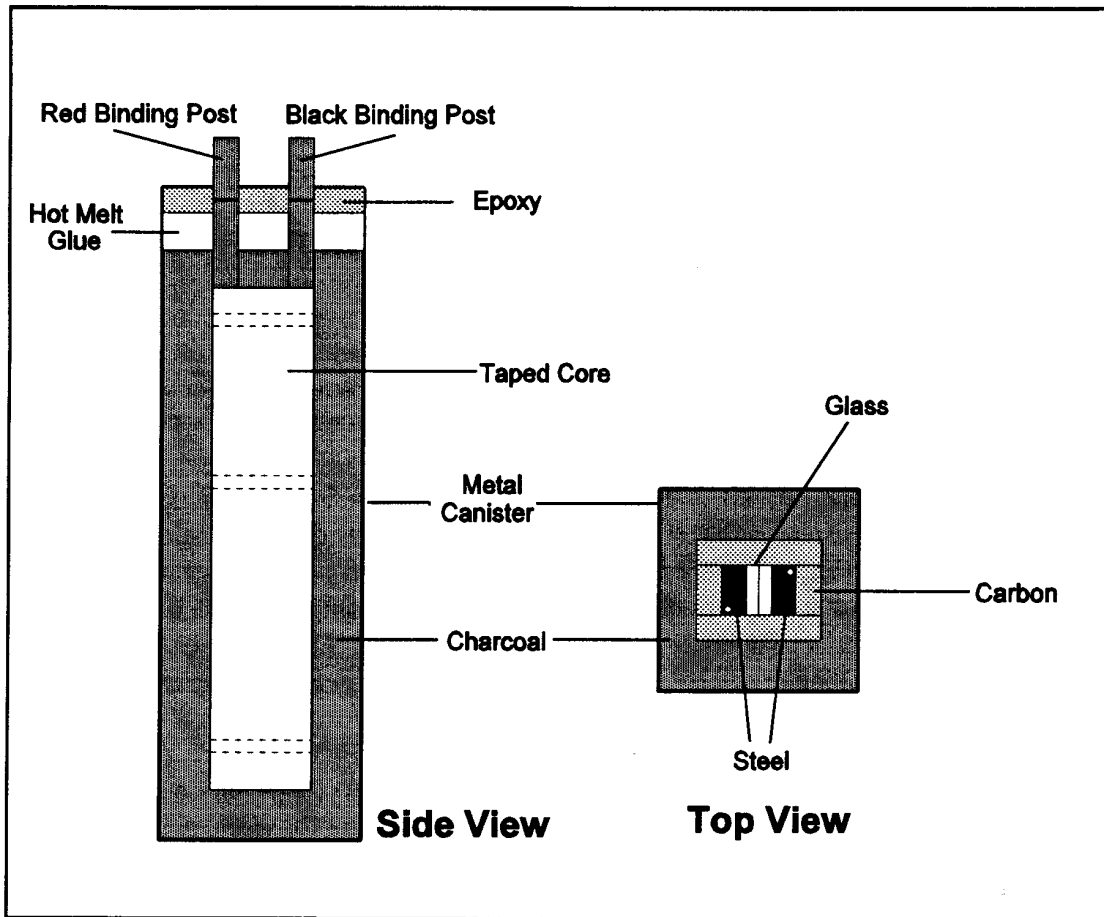


Figure 2.11: Radial Appliance assembly. Side view showing inside of assembled appliance, with core surrounded by tape to prevent contact with charcoal. Top view, showing arrangement of carbon pieces, steel, and glass – with holes drilled in steel for insertion of binding posts.

After the core is assembled, it is placed inside a prefabricated canister approximately 2 inches x 2 inches x 6 1/2 inches. One half inch of activated charcoal is placed into the canister before insertion of the core. Charcoal is gradually poured into the space around the core and tamped tightly with a wooden stick. The charcoal extends over the core approximately one half inch.

Three eighths of an inch of hot melt glue is squirted over the charcoal and around the binding posts. After the glue has dried (approximately ten minutes), epoxy potting compound is then squirted over the glue. It tends to be self-leveling and should be even or slightly above the top of the canister. Drying time for the epoxy is about three hours.

The wires and connectors are standard electronic items and will be described in detail below as will the metal disks which are attached to the users' wrists and ankles.

The material specifications and manufacturing processes for the above components are as follows:

The Carbon Steel

Each appliance requires two pieces of 1060 carbon steel 5 inches long, 1/2 inch wide and 1/4 inch thick. The steel may be obtained from:

Admiral Steel
4152 West 123 Street
Chicago, IL 60658
Phone: (312) 928-9600

Like most of the materials for the appliance, in order to purchase wholesale, you must buy in quantity. In placing a minimum order you may specify:

2 pieces of 1060 carbon steel
each piece is 1/4" x 5" x 60"
HRP & O (hot rolled pickled & oiled)
annealed, shear cut and flattened (not laser or torch cut);
tolerances - thickness: 1/4 " +/- .012; width: 5" +/-1/32"

This amount of steel is enough for about 100 appliances. Admiral will ship UPS. Unless you have access to an industrial grade metal cutting bandsaw, you will probably want to take the pieces to a local machine shop and have them sawn into 1/2 inch wide bars. The bars generally come back with some burrs on the edges. Use a belt sander turned upside down to remove the burrs. Wipe off any excess oil on the pieces before drilling.

A standard drill press with a medium sized vise clamped to the pedestal will work nicely for drilling the steel. Drill a 7/64 inch hole 1/2 inch deep into the corner of each steel bar to maximize the distance between the binding posts which will be screwed into the bar. Tap out the hole with a hand tap. The diameter of the tap will be determined by the type of binding post you use. A standard Radio Shack Nylon binding post will usually require a 3 mm x .5 mm tap which can be obtained (or ordered) at hardware stores carrying metric tools.

Don't weld or solder a metal tab onto the top of the carbon steel bars as some appliance builders have done. Reading 1800-25 specified "that the tips, to which the wires are to be attached, be screwed on - rather than soldered. These may be screwed into the top or to the side, so that they project above one end of the steel plate."

After the steel is drilled and tapped, sand it on the belt sander (medium grit) until all

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surfaces are clean and bright. The steel is ready for assembly.

The Glass

The readings recommended that two pieces of single strength glass be placed between the pieces of carbon steel. Unless you are skilled and equipped for cutting glass, have the glass cut professionally at a shop specializing in window replacement glass. It should be cut to match the steel, that is, 5 inches long and 1/2 inch wide. Reading 1800-10 noted that the glass should be 1/16 - 1/8 inch thick, which is the standard for most single strength glass.

The Carbon Pieces

Each appliance will require two pieces of carbon block 5 inches long x 1/2 inch wide x 1/4 inch thick and two pieces of carbon block 5 inches long x 1 1/4 inches wide x 1/4 inch thick. Cayce gave no particular specifications for the carbon blocks. There are many kinds of carbon with a variety of mechanical and electrical properties. Many of the companies carrying this material prefer to offer a graphite form of carbon stating that it is cheaper and easier to mill. Anecdotal reports from individuals who have used appliances made with graphite indicate that this form of carbon is suitable.

One manufacturer has developed a booklet including material specifications for the Radial Appliance (Myers, 1969). "Electric motor brush carbon" is cited as the preferable form of carbon. Anecdotal reports also appear to indicate that this is an acceptable carbon for the appliance. Pending further research, it would appear that either brush carbon or graphite are suitable forms of carbon.

Here is a company which has offered various forms of carbon block as specified above:

ROC Carbon
1605 Brittmore
Houston, TX 77043-3107
Phone: (713) 468-7744
Contact person: Wayne Odem

These companies sometimes change grades and specifications depending upon availability of materials. It is always a good idea when ordering materials to insist upon a certificate indicating the type, grade, and so forth.

The Tape

The masking tape which is wrapped around the core is available in any hardware store. A simple taping pattern is to use 1 inch tape at the top and bottom with two rows of 2 inch tape in the middle. Be sure to tape the top and bottom of the appliance core. After taping there should be no carbon, glass or steel showing.

The Binding Posts

Standard Radio Shack nylon binding posts are screwed into the top of the appliance after the tape is applied. The catalog number for the posts is 274-662. They come in red and black pairs - one packet does one appliance. Of course, most electronic stores carry comparable components. Radio Shack parts have been specified here simply because cost, quality and accessibility are acceptable.

The Canister

For most people, making the canister is the most complex process in manufacturing a Radial Appliance. Of course, it can be a very simple process. Just take the specifications to a sheet metal shop and write them a check a few days later when the canisters are completed. In addition to being simple, it is also a costly process.

Although more complex, here is an alternative approach which can also result in an attractive and durable canister at a fraction of the cost. First, obtain some 2 inch square tubular brass. Suppliers will usually cut it into six foot lengths which can be shipped UPS. Here is a source for tubular brass:

Lewis Brass and Copper
69-61 78th Street
Middle Village, NY 11379
Phone: (800) 221-5579
Contact person: Mary Robinson

Apparently, K & S Engineering of Chicago also handles this type of brass tubing.

When ordering, specify seamless yellow square brass tubing - alloy # 272; 2" x .040 x 12 foot (to be cut in 6 foot lengths and shipped UPS). If you don't need to use UPS, you may choose not to have the pieces cut (which will save you a small cutting fee).

Which ever way the tubing comes, it will have to be cut into shorter lengths approximately 6 1/2 inches long. You can cut it yourself using a reciprocating saw with fine

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tooth metal cutting blade. However, for most people it will be preferable to use a machine shop which charges a reasonable fee (usually about \$1.00 per appliance).

As with the steel bars, the tubing will have burrs on it after it is sawn. Use a belt sander to "clean up" the outside edges and a metal file on the inner edges.

K & S Engineering of Chicago manufactures brass components which are useful for completing the canister. Many arts and craft stores carry K & S products. Specifically, use 1/8 inch angle brass for around the top of the canister and .025 brass sheeting for the bottom.

The brass angle makes a nice lip for bonding to the potting compound and sealing off the appliance from moisture. The lip should be about 1/8 inch down inside the canister. This can be accomplished by cutting the angle brass slightly smaller than the inside dimension of the brass tubing. Then place a wooden block which is about 3/16" shorter than the tubing inside the tubing. Allow just enough space around the inside perimeter so that the wooden block will hold the brass angle in place during soldering. This sounds very elaborate, yet it is really quite simple in practice. When the process is demonstrated, people usually learn it quite easily.

A similar process is used to install the bottom of the canister. Cut the sheet brass so that it will fit snugly into the bottom end of the canister. Use a wooden block that is about 3/16" shorter than the tubing to hold the bottom in place during soldering.

For soldering, use standard soldering equipment which can be purchased for a few dollars at any home improvement centers. Oatey brand "Safe Flow" silver alloy solder and Oatey lead free tinning flux (No. 95) works quite well. Silver alloy is stronger than lead solder and is commonly available as lead based solder is prohibited for use with potable water lines in many parts of the country.

After soldering, clean the inside of the canister with a soap and water solution and baby bottle scrubber and tooth brush. You can clean up the outside of the canister on a bench grinder fitted with a fine wire wheel. If you don't have this equipment, fine sandpaper may be used. Wear gloves during this stage to keep the canister clean (i.e., to avoid a buildup of oil from your skin which prevents paint from adhering to the brass). The canister is now ready for painting.

The Paint

There are numerous paint and lacquer products which can be used on the appliance canister. Krylon brand spray paint (available at K-Mart and home improvement centers) works quite well and is relatively inexpensive. Krylon "True Blue" (#1910) is a pretty shade. Two to three coats of primer with several coats of the blue makes an attractive and fairly durable coating. Of course, allow ample ventilation and follow manufacturer's instructions.

For most people this is really the only unpleasant part of the manufacturing process. If you are going to do the appliances in any quantity, it may be worthwhile to take them to an automotive body shop and have them commercially painted. Some appliance builders are also experimenting with dipping and other coating processes.

The Charcoal

With a completed canister and fully assembled core, the next step is to put about 1/2 inch of activated charcoal into the canister. Then place the core into the center of the canister. Wooden spacers can be used to hold the core in place (equidistant from the sides of the canister). The charcoal is then gradually poured around the sides of the core and tamped tightly into place with a wooden stick until the charcoal is approximately 1/2 inch over the top of the core.

Activated charcoal is preferable because it is cleaner and more uniform than hand crushed charcoal. If you decide to make your own charcoal filler material, go to a health food store and purchase charcoal without the chemicals that are usually added to make it start easier. You can crush it with a board (such as a 4 x 4). If you make your own, be prepared to get dirty and have a lot of charcoal dust in your work area.

On the other hand, activated charcoal can be purchased from:

Barnaby & Sutcliffe Corporation
PO Box 2526
Columbus, Ohio 43216-2526
Phone: (614) 258-9501
Contact person: Becky Sexton

A fifty pound bag is the minimum quantity. Specify Type 3036 Activated Coconut Charcoal, 20 x 50 mesh, water-washed. Coconut charcoal is used in filtration systems and is reputed to be one of the most effective filtering materials available. Request water-washed instead of acid-washed to keep it as natural as possible.

The Glue Topping

There are various ways of sealing the top of the canister. One highly effective method is to use a standard hot melt glue with a layer of epoxy coating on top.

Almost any model hot melt glue gun will work. Stanley's GR 70 model retails for under \$15.00 and is easy to use. The "all purpose" hot melt glue can be obtained at any hardware or craft store. Be sure to follow the directions that come with the gun as the tip will become quite

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hot when the gun is plugged in.

Hot melt glue works so well as a substrate topping because it does not seep down into the charcoal nor does it appear to interact chemically with the charcoal (as some other toppings do). It is strong and bonds well to the plastic binding posts. The glue cools quickly and is ready for the final topping in about ten minutes.

The Epoxy Topcoat

Appliance manufacturers have used a variety of topping compounds. Epoxy potting compound is one of the best because it is easy to use, is an excellent insulating material, is durable, and looks nice.

It can be purchased in small tubes and applied with a metal "gun" applicator. A plastic mixing nozzle allows the epoxy components to be mixed perfectly and squirted into place with minimal mess. These materials can be purchased from:

WACO, Inc.
5450 Lewis Road
PO Box 836
Sandstone, VA 23150
Phone: (804) 623-0763
Contact person: Dexter

The epoxy comes in 12 cartridge boxes. The specifications are Scotch-Weld Duo-Pak Adhesive; Electronics - Bonding and Potting; DP - 270; Black. The plastic mixing nozzles are called EPX mixing nozzles and can be purchased separately.

The Wires and Electrical Connectors

The wires and connectors are standard items and may be obtained at most electronic stores. Reading 1800-24 recommended that "the plates to be attached are made so they are in socket, or so that they make direct connection rather than being soldered to same, it would be much better - and this would apply with the battery ..." Thus, standard electrical connectors such as binding posts, banana plugs, and quick disconnect terminals are suitable for the appliance.

Two seven foot lengths of sixteen or eighteen gauge stranded copper wire connect the appliance to one inch "German Silver" (nickel silver) disks. Standard red and black colored components maintain the polarity of the system. That is, attach a red banana plug to the red wire and always plug it into the red binding post. Do the same with the black components. The disks

are attached to the wires with steel rivets and standard male and female disconnect terminals.

Strips of velcro may be attached to the wire by making a quarter inch slit in the middle of the velcro and sliding it onto the male disconnect terminal prior to connection with the female fitting. The Metal Disks

The two metal disks at the end of each wire are the only parts of the appliance system which actually contact the body. Cayce repeatedly specified "German Silver" as the preferred material. This is actually an alloy of nickel, copper, and zinc, containing no silver. The common trade name for this alloy is nickel silver.

The disks are approximately one inch in diameter with a small hole drilled in the center. A steel rivet connects the male disconnect fitting to the disk.

David McMillin has had a machine die made for manufacturing the disks. A batch of 500 disks were manufactured. When sufficient of these disks have been sold to cover the initial set-up cost, the die will be placed in public domain. The die is held by:

Boker's Inc.
3104 Snelling Avenue
Minneapolis, Minnesota 55406
(800) 927-4377
Contact person: Ron Hahn

Accessories

A very fine emery cloth sandpaper is useful to keep the disks polished before and after each use. This can be obtained at any hardware or auto-parts store.

Cardboard boxes are handy for storing or shipping the appliances. They can be purchased from:

Box Board Products
7102 Cessna Drive
PO Box 18863
Greensboro, North Carolina 27409
Phone: (800) 234-5269

When ordering, specify 8 1/4 inch x 5 inch x 3 1/2 inch "multi-video" boxes. 100 boxes is a minimum order.

In summary, the above description of specifications and manufacturing processes is one

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of numerous possible ways to construct a Radial Appliance. The following sections will examine the evolution of the appliance and the design variations associated with its development.

SECTION 2.2 EVOLUTION OF THE RADIAL APPLIANCE

The specifications given above are a synthesis derived from a series of readings given on the construction of the Radial Appliance. Actually, there is no single design or set of specifications for the appliance. This becomes very clear upon review of the evolution of the appliance design from its beginnings in 1921.

In essence, the Radial Appliance consists of two carbon steel pieces separated by an insulating material such as glass. The pieces of steel are connected to thin copper wires which have small metal disks attached at the end of each wire. After the steel pieces are chilled down in ice water, the metal disks are attached to the extremities of the body.

This is the essential Radial Appliance as recommended in several readings between 1921 and 1925 (i.e., 195-15, 4225-1, 4229-1, 4273-1, 5740-1). These early versions had no canister. The steel core was simply dropped into a container of cold water before attachment to the body.

Sometimes there was only one piece of steel with one metal disk (i.e., 247-1, 4899-1). To complete the circuit, the patient had to put part of the body into the water.

There were obvious drawbacks in these early designs (such as having to put hands or feet in cold water). The steel would also tend to become rusty, detracting from its appearance and creating cleanliness problems.

And yet, these crude appliances apparently worked. In fact, one of the individuals who was helped recognized the commercial possibilities and approached Edgar Cayce for a series of readings on the manufacture and distribution of the appliance. Thus, Thomas Brown, a businessman from Akron, Ohio made a major contribution to the evolution of the Radial Appliance.

The first of Brown's Radial Appliance readings was given on July 27, 1925 at 11:20 A.M. Reading 1800-4 discussed the "scope and field" of the contribution to the human race that could be made by the Radial Appliance. The reading was basically a theoretical treatise on the nature of the energy utilized by the appliance, its therapeutic effects on the body, and the range of medical disorders which could be treated.

Interestingly, twenty minutes previously Ms. [538] had received a reading which included a recommendation for the Radial Appliance. Without prompting or questions about how to construct the appliance, a complete technical description for a commercial Radial Appliance was spontaneously given. With the technical aspects out of the way, a few minutes later Edgar Cayce went on to give reading 1800-4 which contained tantalizing information about widespread medical applications. Mr. Brown was so impressed that he requested several

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additional readings on specifications and construction details, specific medical applications, and business opportunities regarding the appliance. Over the next fifteen months, he obtained ten more readings on all aspects of construction and therapeutic application. Most of the fundamental information that was given about the appliance came as a direct result of this man's profound interest and commitment to Cayce's statements about the possibilities of vibratory medicine. Individuals who later received benefit from the appliances owed much to Thomas Brown.

In terms of the evolution of the design, Brown's method for refining the appliance was simple. He built appliances and brought them before Cayce for a psychic critique. Cayce would give a reading pointing out problems with the design and/or construction and provide suggestions for further improvement. This interactive process is typical of the Cayce material as a whole. The desire and intent of those seeking information affected the quality and quantity of help which was provided. Most importantly, it was Brown's consistent application of the information that drew, as it were, additional information from the Cayce source.

Brown's strategy of bringing his models before Cayce for critique was adopted by subsequent appliance builders. So with each new manufacturer, we have one or more readings which update the evolution of the appliance. As new materials and techniques became available, Cayce would typically make recommendations for improving the appliance design.

Thus, the design specifications provided above are the result of an evolutionary process which started in 1921, progressed rapidly under the initiative of Thomas Brown during the mid to late 1920s and continued to evolve with subsequent builders during Edgar Cayce's lifetime. As late as December 7, 1936, the readings noted: "In those experimentations of the RADIO-ACTIVE APPLIANCE: Not near sufficient experimentation has been given these products for commercial distribution" (1800-28). So as we look more closely at the design and specification variations of the Radial Appliance, keep in mind that it is still an evolutionary process that is in need of further experimentation and refinement.

SECTION 2.3 DESIGN AND SPECIFICATION VARIATIONS DURING EDGAR CAYCE'S LIFETIME

The first major variation in the evolution of the appliance involved the canister. Whereas reading 538-1 had recommended a metal canister to contain the carbon steel core, Brown had other ideas. The first appliance that he brought to Cayce for a critique consisted of the carbon steel core surrounded by strips of carbon. In the pre-commercial versions of the appliance (including the specifications given for 538-12), carbon was used as a "nonconductor" between the pieces of steel. Perhaps feeling that a metal container was too difficult to manufacture or was too expensive, Brown's innovation was to use carbon strips between and around the steel pieces. Reading 1800-6 noted that this "gives the same [therapeutic] effect" but for a commercial product the "looks of same would be improved by placing same inside of container." Cayce went on to state that glass could also be used between the steel pieces. In later versions, Cayce kept the carbon pieces around the steel bars but insisted that a canister be used to encase these core components. So we have yet another example of how the readings utilized the intent, desire and application of the person seeking the information as part of the evolutionary process for developing the appliance.

Since the carbon pieces were unsuitable as an encasement for the appliance, Brown chose another variation. Reading 1800-5 (August 1, 1925) had allowed that the core could be "encased in tin or metal or rubber container." Brown decided on a rubber container. Keep in mind that he lived in Akron, Ohio, a major manufacturing center for automobile tires. Therefore it is natural that he would want to use materials that were familiar and accessible.

However, he must have underestimated the difficulty in producing rubber containers. A letter dated November 13, 1925 states, "The moulds for the battery box are not coming along very fast for reason that the engineers and mould die manufactures can't agree as to how to get rubber in and leave an outlet for overflow ..." From the background information and reports, it is not clear as to whether Brown was able to resolve the technical and commercial challenges of manufacturing a proper rubber canister.

Reading 1800-9 contains a splendid example of Cayce's flexibility and wit in response to Brown's frustration at trying to design a rubber canister. Since the pre-commercial versions of the appliance allowed the cold water to come in direct contact with the carbon steel, Brown thought that his rubber model would have to have holes in it to allow the water inside. He asked Edgar Cayce, "Will the charcoal come out of these holes?" Cayce responded, "If there's not any [holes] in it, would it?" Cayce explained that it was not necessary for the water to contact the steel, only that the steel be sufficiently chilled by keeping it longer in the ice water before attaching to the body.

Brown's creative input into the evolution of the appliance is apparent in a letter to Edgar Cayce dated November 14, 1925: "In making up of these batteries I hit onto various refinements

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- consequently in the future the contrivance will look fine." Obviously, although Brown respected the information he obtained in his readings, he was not hesitant to use his own ingenuity and resources to produce the best batteries that he could under the circumstances. Perhaps this was one of the reasons that he received so much help from the readings. He seems to have maintained an exemplary attitude toward his work - creative yet practical; persistent but not obsessive; entrepreneurial without losing track of his ideal of service to humanity. It's no wonder that he and Edgar Cayce had such a close personal relationship as evidenced by the frequent exchange of correspondence over the years.

The next major era in the evolution of the Radial Appliance was brought about by the opening of the Cayce Hospital in Virginia Beach and the arrival of Edgar Cayce's cousin Gray Salter. Salter assumed the role of primary appliance manufacturer in about 1930. He followed Brown's lead of bringing an appliance before Cayce for analysis. In reading 1800-17 (July 25, 1930), Cayce was supportive of Salter's effort stating that the appliance was "good - excellent." And then he went on to provide specific suggestions for improvement.

The first criticism was that the tape around the core was too heavy. It was not only insulating electrically, but thermally as well. The reading noted that it would work, but would require that the appliance be chilled down for a longer period of time before attaching to the body. The tape used by Salter was probably "friction" tape, a common form of electrical insulator made with a cloth type fabric base. Less wrapping around the core was suggested.

Cayce noted that Salter's intent was good - the core must be electrically sealed off from the rest of the appliance. Specifically, the tape must effectively insulate the core. If charcoal packing around the core made contact both with the metal container and the carbon pieces around the steel, the effectiveness of the appliance would be diminished. At a later date with a different appliance, Cayce complained that the charcoal was touching the glass pieces between the steel bars. So it is important that the whole core assembly (steel bars, glass insulators, and carbon pieces) be totally sealed off from the rest of the appliance materials.

The next criticism of Salter's appliance was that he should have used another topping material over the core assembly. Apparently he had used sealing wax. Cayce recommended using paraffin over the core with a topping of sealing wax. He then went on to note that "vulcanization" (rubber) would be even better at sealing off the top of the canister. Keep in mind that in these early appliances, metal tabs or strips were attached to the carbon steel bars in the core. These tabs protruded through the top of the appliance and made the connection with the wires for attachment to the body. Completely sealing off around the metal tabs would have been quite difficult to accomplish with a coarse tape (such as friction tape). Paraffin, or some material, could be used as a sealant.

In the design specifications provided in an earlier section, the use of plastic binding posts with masking tape around the core effectively seals the core. In one reading (1800-6), Cayce recommended that an "insulation tube" be used to insulate the metal tabs in the upper

portion of the appliance as they extended above the core. Again, modern plastic binding posts serve the same function.

The final criticism of Gray Salter's early appliance was that the canister shape could have been better. We don't know what the configuration was. Perhaps it was round (such as a round plumbing pipe). Cayce simply noted: "Container is very good. Be better if it were square."

The Edgar Cayce Foundation has a very old appliance in its archives that was probably built during Edgar Cayce's lifetime. The canister is square (2 inches x 2 inches) and about 6 inches tall.

In continuing with variations in the evolution of the Radial Appliance, R. N. Ladd (an associate of Harold J. Reilly) sought a critique of one of his appliances on April 26, 1935. For reading 1800-24, the hypnotic suggestion was given to Edgar Cayce requesting information on the "Radio- Active Battery." As Cayce began the reading, he quickly asserted: "This should never be called battery. APPLIANCE - Radio-Active Appliance!"

The reading went on to state that "sixty percent carbon tool steel" was appropriate. As has been noted by Edgar Evans Cayce, son of Edgar Cayce and an electrical engineer, the actual carbon content of the steel is about .6% carbon (commonly known as 1060 or C-60 carbon steel; see E. E. Cayce's notes regarding carbon content in reading 1800-8). Edgar Cayce observed that the carbon content of Ladd's steel was "less but will work ..." It would have been helpful if the actual carbon content of the steel used in this appliance had been given as this has been an area of controversy in recent years.

Ladd had a piece of carbon steel with him during the reading. When asked if it was appropriate for use in the appliance, Cayce replied, "Not satisfactory. This is only about thirty-six percent [.36%], you see. Use sixty percent [.6%] carbon TOOL STEEL." This crucial issue will be revisited when we consider the next major appliance builder.

Continuing with Ladd's appliance, Cayce insisted that two strips of glass be used between the steel bars. The carbon pieces were correct.

However, Ladd's canister came up for criticism. Again, we don't know the specifications of his unit. However, he may have used a rather heavy square iron tube. Cayce suggested that future appliances be made with a lighter weight material that would not rust.

The wires should have been more flexible and the connections "made so they are in socket, or so that they make direct connection rather than being soldered to same."

Ladd asked about the type of charcoal used as a packing material around the core. Cayce responded that the charcoal need not necessarily be willow charcoal (as is often used with

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the Wet Cell Battery), but should be fine particles, "preferably that NOT powdered."

As with previous builders, Ladd was concerned about using a proper topping material. He wondered, "Would some kind of Insulating compound as made by Mitchell-Rand Co. serve to seal the top of can better than sealing wax ...?" Cayce answered, "This would be much preferable." He went on to recommend making flanges around the top of the canister to help maintain a waterproof seal.

Apparently, the Mitchell-Rand compound was a "rubberoid" type of material. Thus, Cayce was open to utilizing new products as they became commercially available.

Ladd's extensive reading went on to critique the type of metal used for the disks. Cayce maintained that "German Silver" was the best material for the plates. Upon further questioning by Ladd, Cayce became even more insistent: "As indicated, use the German Silver for the plates. When it's necessary to use copper or nickel on other, why we will give it!" German Silver is still commercially available, although it is now most often referred to as nickel silver. It is an alloy of approximately 2/3 copper and 1/6 nickel and 1/6 zinc. Interestingly, these are key elements specified for use in the Wet Cell Battery.

R.N. Ladd's term as primary appliance builder was short. Within five months, Health Home Remedies Company requested a reading on the Radial Appliance and other Cayce oriented products including the Wet Cell Battery. Two of the company's principals, Harry Storey and Hugh Lynn Cayce, were especially interested in the appliances. Reading 1800-25 began with the admonition that, "These individuals in the present should attempt to, and should, make the Appliances in a more UNIFORM way and manner." There followed a complete and highly specific design for building the Radial appliance. It was in essential agreement with previous descriptions except that the carbon content of the steel was significantly less than otherwise given. In this reading, Cayce specified "thirty to fifty percent [.30 - .50% carbon steel]." While this is still a rather high carbon steel, it is unclear why this reading varied from numerous other readings which consistently recommended the .60% carbon steel.

One explanation that has been put forth is that this reading was for a "general" appliance that would be helpful for the general population whereas the other versions were for sick persons requiring a "stronger" appliance. Yet, in several other readings the .60% carbon steel was clearly intended for general use.

Another explanation is that this reading was the culmination of the evolutionary process. Hence it was final word on the subject and should be regarded as the standard. However, a reading given the following year (1800-28; December 7, 1936) went back to the .60% steel as the standard. At this point in time, it would seem reasonable to stay with the .60% carbon steel as the standard until further research can help us to understand the significance of the carbon content.

Reading 1800-28 also again demonstrates Cayce's utilization of new materials in the appliance. He recommended that "bakelite or its equivalent will be found to be much more considerate when ye are making same [the Radial Appliance] for commercial use." Bakelite was the first commercial plastic. The reading asserted that it could be used in place of the charcoal as a packing material inside the canister.

Reading 1800-28 continued the pattern of insisting upon a more refined commercial Radial Appliance. "Experimentations here are necessary that in making for a commercial product it is not carrying so much then the appearance of being handmade, or amateurish - so as to be considered not worthy of consideration." Even at this relatively late date, the readings insisted, "Not near sufficient experimentation has been given these products for commercial distribution."

This theme is carried over in the next reading in the appliance series (1800-32; October 26, 1937). The question was asked, "Any other suggestions at this time regarding the experiments or perfecting the Radio-Active Appliance?" Cayce's answer suggested that the evolution of the appliance was still an open process. "Well, much might be given - this depends upon that sought and applied. It is only by application and experimentation that any development may be gained respecting any such Appliance."

One has to wonder how much "experimentation" and "development" occurred in the ensuing years. The final reading on the Radial Appliance in the 1800 series was given for Marsden Godfrey on October 14, 1941. Godfrey was the last of the principle appliance builders during Edgar Cayce's lifetime. As with the other builders, he brought samples for Cayce's analysis. He was probably somewhat relieved to hear Cayce report, "... these are well constructed, and in keeping with those suggestions made." The only constructive criticism was a recommendation for painting the appliances. "Whatever color is desirable; any would be well, but blue would be very good, if heavy enough, - and then red from there up (within 1 1/2 to 2 inches of the top)."

In summary, the design and specifications of the Radial Appliance has been an evolutionary process. Progress was made dependent upon the desire, intent and application of those seeking the information. As new materials and processes became available, the readings incorporated these advances into the design. The essential components varied little (that is the high carbon steel bars with insulating materials such as glass between the steel). Wires were attached to the steel and plates to the wires. Ice water chilled the steel before attaching the plates to the body. All the other components of the appliance were refinements to this essential design. Many of the improvements were of a commercial nature, to improve the appearance and durability of the product.

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SECTION 2.4 THE EVOLUTION CONTINUES

Consistent with the directive of the readings, further experimentation and development has been carried out. Appliance builders have utilized new products such as epoxy topping compound, plastic binding posts, plastic coated wires and modern electrical connectors. Activated charcoal (which is cleaner and more consistent in texture than crushed charcoal) is often used as a packing material inside the canister. One manufacturer has developed a plastic molding for the outside of the appliance.

With these changes, there is a continual need for further experimentation and quality control measures. Some of the research done by the authors and others is reviewed in a later section.

PART 3: CONSTRUCTION PARAMETERS FOR THE WET CELL BATTERY

SECTION 3.1 SPECIFICATIONS AND ASSEMBLY INSTRUCTIONS FOR THE WET CELL BATTERY

The following material specifications and assembly instructions are taken from 1800-25, the only reading specifically given on how to build of a Wet Cell Battery for general use. Since the reading was given in 1935, after the development of basic synthetic materials, the specifications are remarkably similar to modern versions of the battery.

The Battery Container

Reading 1800-25 specified that the container "should be made of a composition, or rubberoid, that does not break or become changed" and that the "top of the container should PREFERABLY be of the same material." The shape and size were also given: "preferably made to specifications of a square or an oblong container that would hold two gallons, see? Marked or the measurement given on same so that the gallon and a half is indicated when the quantity of water is put in same."

Consolidated Plastics, Inc. manufactures a "Rubbermaid" brand container which meets Cayce's specifications. It is a durable plastic two gallon bucket, oblong in shape with a tight fitting lid. The lid is strong enough to support the weight of the metal poles without additional reinforcing. The container is marked on the side with 1/2 gallon gradations. These containers can be ordered from:

Consolidated Plastics Company, Inc.
8181 Darrow Road
Twinsburg, Ohio 44087
(800) 362-1000

The order can be placed by phone and the company accepts major credit cards. Orders usually arrive within a week by UPS. The minimum order is \$20.00. For about \$25.00 you can get three containers with lids. The order specifications for the containers are: 8-quart container (clear), part number 51463WL; the matching lid part number is 51493WL.

It would be a good idea to call and request a free catalog before placing the order (to make sure that part numbers and prices are current).

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After obtaining the container, the only mechanical processing required is to drill two holes in the lid. The holes should be slightly larger than the threaded end of the plastic binding posts (usually about 1/8" diameter). Center the holes about four inches apart.

Earthenware ceramic containers ("crocks") were often used by the major appliance builders during Edgar Cayce's lifetime. This type of container is relatively easy to obtain and adapt for battery usage. However, be sure to check for leakage before mixing the battery chemicals in the container. They do tend to leak, sometimes very gradually. Wood was used for the top; some modern builders use plexiglass. Just drill the holes slightly larger than the copper and nickel rods. Tight fitting rubber "O-rings" can be purchased from most hardware stores. The O-rings can be slipped over the end of the rods and will hold the rods in place when they are suspended down into the solution.

A fairly tall ceramic container sometimes referred to as a "Chinese umbrella stand" can also be adapted as a battery container. These containers are usually about 16 - 18 inches tall and about 6 inches in diameter. They can be purchased from stores specializing in imported products. Sometime they can be found at K-mart and other general retail stores. As with the earthenware crocks, be sure to check for leaks before adding the chemicals. Wood or plexiglass can be used for the top. This type of container will usually accommodate longer poles (14 - 16 inches).

The Battery Poles

The battery poles are attached to the container lid and extend down into the container when the battery is being used. Reading 1800-25 specified that the poles be 1/2 inch in diameter. One rod is nickel, the other copper. The length was not specified, only that they should fit the container "whether the container is high or low, square or round, or what!"

Pole length has become a somewhat controversial subject and will be dealt with in a later section. For now, we will simply follow the specifications given in reading 1800-25 and make the poles fit the container. For the Rubbermaid container, nine inch poles are appropriate.

Half inch copper and nickel rod can be ordered from:

Standard Metals, Inc.
440 Ledyard Street
Hartford, CT 06114
(203) 296-566

or

Sterling Aircraft
157 Keyland Court
Bohemia, New York 11716

Prices vary and most companies will want to sell you at least several feet in quantity. It may be worth your while to go to the public library and look through the Thomas Registry. The Thomas Registry has extensive listings for commercial suppliers of such materials. It pays to shop around when ordering expensive materials such as nickel rod. When ordering, specify relatively pure materials such as nickel 200 and copper C-110. Cayce did not give strict purity standards but the above specifications guarantee 99% or better purity.

To process the rods for use in the battery, cut them to the desired length and drill one end of each to prepare for tapping. The diameter of the hole and size of tap will depend upon the size of the threaded end of the binding post. First obtain a sturdy binding post from an electronics store and match the threads to a tap and bit. Drill and tap as per the instructions that come with the tap. Or, you may prefer to take the rods to a machine shop and have them drilled and tapped to match the binding posts. A local machine shop in Virginia Beach charges \$7.00 per rod for drilling and tapping.

The Wires and Connectors

As with the Radial Appliance, standard wires and connectors are appropriate. Stranded 16 or 18 gauge insulated copper wire is cut into six foot lengths (one red and one black length per battery). Additionally, a short 18 inch black wire serves as a "jumper cable" between the battery and solution jar. Attach matching colored banana plugs to one end of the longer wires. The short jumper cable will have banana plugs on both ends. On the bare end of the longer wires crimp a female disconnect (such as a Vaco C- 68302 insulated female disconnect terminal). Radio Shack also carries wire, banana plugs and disconnect terminals.

Nickel and copper disks are attached to the wires with male disconnect terminals that are riveted to the disks with steel rivets.

The Solution Jar

A four to six ounce glass jar is incorporated into the battery circuit between the short black jumper cable and the longer black wire attached to the large nickel disk. Four ounce jars with plastic lids are most commonly used by modern battery builders and can be ordered from:

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Freund Can Company
199 West 84th Street
Chicago, Illinois 60620
(312) 224-4230

When ordering, specify #39004 Flint S/S Squat Jar (four ounce). There is an extra charge for small quantities. It would be a good idea to request a free catalog before ordering make sure prices and item numbers are current. Also, you may want to consult the Thomas Registry for other suppliers. It pays to shop around.

Once you have obtained some jars, some of the lids will need to be drilled to accommodate two plastic binding posts. Be sure to leave some of the lids undrilled for storing the solutions when not in use (see instructions for using the appliance in Section 1).

For the four ounce jar lids, center the holes about 1 1/4" apart. The diameter of the holes will depend upon the size of the binding posts. If you use Radio Shack binding posts (#274-662), the holes should be about 5/16" in diameter.

The final material needed to make a solution jar is hollow lead tubing. It can be obtained from:

Crown Metal
21 East Washington Street
Milwaukee, Wisconsin 53204
(414) 384-6500

When ordering, specify 3/16" O.D. (outside diameter) and 1/8" I.D. (inside diameter). When you have material, it should be cut into a short pieces (usually about 7 1/2 inches depending upon the size of the solution jar). The hollow lead tube is curled into a "hair pin loop" which can be accomplished by wrapping it around a 3/4" wooden dowel. The ends of the loop are threaded onto the binding posts and protrude down into the solution jar. Lightly crimp the hollow lead tube onto the end of the binding posts. The binding posts and lead wire loop are fastened to the plastic jar lid with the nuts furnished with the binding posts.

In a couple of cases, the readings recommended using other metals for the wire loop in the solution jar. For example, reading 271-1 specified a copper wire for the gold chloride solution in a case of dementia praecox (schizophrenia). Reading 465-1 said to use a nickel wire in a case of anemia where Atomidine and camphor were prescribed for the solution jar. A couple of the early readings in the 1800 series mentioned nickel and silver as ideal for use with the Radial Appliance and the primary solutions (e.g., 1800- 8). On the other hand, numerous readings specified lead tubing for use with the Wet Cell and solution jar (i.e., 569- 24, 862-5, 988-10, 1001-1, 1134-1, 1455-3, 2389-2, 3056-1, 4613-3) so it is recommended here as the standard material for the wire loop.

The Solution Disks

A 1 inch copper disk is attached to the long red wire via male disconnect terminal and steel rivet. A 2 1/2 inch nickel disk is similarly attached to the end of long black wire. Reading 1800-25 provided explicit descriptions for the size and shape of the disks:

A Nickel plate, larger, would be attached to the Nickel Pole; always the negative, and would be that which would pass through a solution or go plain - dependent upon the order of same. This plate should be at least two and a half or three inches (2 1/2" or 3") in diameter, circular; preferably made so that it is just a little bit cupped, so that the attachments to same would be on the back side and NOT on the edges. These attachments would be fastened either by the countersinking and a pole, or by the soldering or the projections on same so that these may be tied or the plates applied on any portions of the body, see?

Both plates should be fixed in the same manner, though the Copper Plate would not be larger than an inch (1") - the whole plate. But these should be made so they form a cup, or a sort of a roll, you see, so that the attachments make them directly in connection with the body itself; forming, as it were, a little vacuum UNDER the plate WHERE attached to the body.

At the present time, the only source for these disks is directly from the major appliance manufacturers (see appendix). Perhaps in the future other sources will become available (such as Boker's Inc.; see Radial Appliance specifications).

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SECTION 3.2 EVOLUTION OF THE WET CELL BATTERY

There are notable similarities in the evolution of the Radial Appliance and Wet Cell Battery. Both appliances were first mentioned in readings given during 1921. The development of a commercial form of each appliance was largely dependent upon the interest, intent and desires of those seeking information on their construction. In both appliances, Edgar Cayce utilized new materials as they became available.

Some of the early batteries were even a blend of both the Radial Appliance and Wet Cell. For example, Cayce sometimes utilized carbon steel poles and ice in certain instances. So in a few cases, the distinction between the two appliances was even blurred.

The primary difference is that Wet Cell Battery was recommended almost entirely for "curative" purposes while the Radial Appliances was often used as a "preventative." In terms of construction and application parameters, this means that there is more variability in the design and use of the Wet Cell because it had to be adapted to individual cases of severe and persistent illness. Reading 1800-25 acknowledged this variability: "As we have indicated, the Radio-Active Appliance may be given or prepared in a commercial way and manner; while the Wet Cell Appliance is builded in most cases for specific conditions - and for general use at times."

In theory, the specifications given in the above section for a "general" Wet Cell Battery is a commercial design that might need to be adapted to individual cases. In practice, this variability usually manifested in nonstructural parameters such as changes in the strength of the battery solution, the type and strength of the medicinal solution in the solution jar, the placement of the disks, cycles of applications, etc. (see Section 5 for information on these types of variability).

From the standpoint of the evolution of the battery components, the overall trend was toward standardization and uniformity. The early batteries exhibited considerable variability in regards to the type of container used, metals specified for the poles, and chemicals for the battery solution itself.

With the opening of the Cayce Hospital in 1929 and the entrance of Gray Salter onto the scene as the primary appliance manufacturer, the Wet Cell became more standardized in all respects. Previously, the batteries were usually put together by whomever was handy at the location of the person receiving the reading. On one occasion, when asked who could build the battery, Cayce remarked, "Anyone can do it" (3855-1 given on 5/9/23). So in these early batteries, Cayce typically described each battery design in detail so that the local handyman or electrician could assemble to the specifications in the reading.

Apparently, Thomas Brown did manufacture some Wet Cells as part of his appliance business. However, Brown's primary interests seems to have been the Radial Appliance.

Consequently, he did not have a major influence in the evolution of the Wet Cell Battery.

It was Gray Salter who first took on the role of assembling and shipping out the batteries on a fully commercial basis. He standardized the battery ingredients as well as the design parameters of the battery. At about this time, the direction of the readings changed in regards to the types of referrals that were made in the readings. Whereas previously, the Radial Appliance was the dominant electrotherapeutic means of delivering vibratory solutions into the body. As Thomas Brown's influence decreased and Gray Salter became the primary commercial distributor, Cayce made increasingly more frequent referrals for the Wet Cell.

Furthermore, with a commercial supplier producing a standardized battery, Cayce did not have to give the specifications for each battery. Salter knew his business and did not have to be reminded with each reading. Only if there were some problem, or if the battery had to be adapted for an individual case did the readings give specific construction details. Such descriptions are rare after Salter established his business circa 1930.

This background provides a context for understanding reading 1800-25 given in 1935 for Health Home Products. It helps to explain why only this single reading was given on how to make a commercial or "general use" Wet Cell Battery. The standard battery construction parameters had already been well established by Gray Salter.

However, there were a couple of significant changes in the specifications given in this reading and Salter's previous standards. The most obvious alteration is Cayce's insistence upon a "composition or rubberoid" container. Previously, a two gallon earthenware container was most often used. Sometimes referred to as a ceramic "pickle jar" or crock, these containers were commonly available for use in the kitchens of that era. Glass containers were also sometimes used, although Salter and later builders relied almost exclusively on the earthenware containers.

The problem with ceramic or glass containers was that they sometimes leaked or became broken. The background information and reports on the readings contain examples of these types of problems. Cayce explained the reason for preferring a rubberoid type container in reading 2963-1:

If practical, have the container for the charging solution made of rubberoid or glass (though glass, with the changes, would be apt to crack; and a crock, for this strength, would not be so well, and a metal container may not be used).

These types of problems still exist as some builders insist on using glass or ceramic containers. As a result, disgruntled consumers have complained of problems such as glass breakage. In our research efforts, during one experiment, four out of five ceramic jars developed gradual leaks making a considerable mess in our lab. Thus, there are practical reasons for

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preferring a flexible yet durable container.

SECTION 3.3 WET CELL VARIATIONS

The standards for use and construction which have been provided to this point reflect the most common patterns found in the Cayce material. However, there were variations as Edgar Cayce adapted the Wet Cell for individual cases. The nature of the evolutionary process also contributed to certain variations. This section will address some of the major variations encountered by modern appliance builders.

The Pole Length Controversy

Although it wasn't an issue during Edgar Cayce's lifetime, the question of "proper" wet cell pole length has led to considerable controversy in recent years. The debate has focused on whether the standard 8 - 10 inch copper and nickel poles used by several major wet cell manufacturers since Edgar Cayce's death are long enough to be optimally effective. The recent argument has been that longer poles (14 inch - 16 inch) more appropriately reflect the readings' specifications and the type of battery that was routinely produced during Edgar Cayce's lifetime.

This section will provide a review of the relevant information from the readings as well as facts from related sources.

There are only a few readings which even address the issue of pole length in the wet cell battery. In fact, there appear to be only three wet cell readings which directly mention pole length. Reading 4355-1 specified 8 - 10 inch poles, reading 5485-1 specified 14 inch poles, and reading 161-5 specified 16 inch poles. All of these readings were given for individual cases. There are no readings which give an ideal pole length for general use.

As has been noted, reading 1800-25 is the only reading that was given where information was sought on how to build a general wet cell. This reading gave explicit specifications on virtually every aspect of the battery except the pole length. Even the width of the poles was specified. Yet, an ideal pole length was not given or even mentioned as a possibility. Pole length merely depended upon the size and shape of the container, which was variable:

The poles used would be half inch (1/2") rods, square or circular dependent upon which is the easier to procure. But make the specifications so that these are uniform; dependent of course, upon whether the container is high or low, square or round, or what!

Apparently, pole length was not considered a critical factor in making a standard wet cell for general use (sometimes referred to in the readings as a "regular" battery). Earlier in reading 1800-25, the remark was made that "varied manners have been used in the construction of same [the electrical appliances]." Presumably, the early builders had used whatever type of container was readily available at the time (whether "high or low, square or round, what!"). Naturally, there would have been some variability of pole length to fit the wide variety of containers available

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during this era. Remember that during the 1920's and 1930's synthetic materials (e.g., "Rubbermaid") were not readily available. Hence a wide variety of crockery and glass containers were commonplace kitchen utensils. In particular, the rather squat two gallon earthenware "pickle jar" (8 inch tall ceramic crock) was commonplace and appears to have been a standard wet cell container. While it is almost certain that 8 - 10 inch poles were most often used in these early batteries, it is also likely that taller containers and longer poles were used in some instances. Again, it appears that the availability of the container was the key factor in determining pole length.

The fact that pole length was hardly ever mentioned in the 944 readings indexed under Wet Cell Battery further indicates that pole length was not deemed a crucial factor. These numerous readings did repeatedly emphasize other details such as the strength of the battery charge, quantity and type of vibratory solutions, placements of the plates, importance of polishing plates before and after use, etc. So it isn't a matter of the readings not paying attention to details and specifications in regards to the electrical appliances.

In addition to reading 1800-25, there appears to be at least three other readings which are also vague regarding pole length. Readings 4442-1, 4491-1 and 5547-1 are similar to 1800-25 in that while very specific instructions were given for most battery components, the pole length was not given. As with 1800-25, the main criterion seemed to be that the poles fit the container. In other words, the poles should reach to near the bottom of the container and extend above the cover far enough so that the wire leads can be easily attached.

Although the readings seldom referred to pole length, there are some important collateral sources of information on the subject. From these sources it is clear that the most common pole length used in the wet cell battery during Edgar Cayce's lifetime was 8 -10 inches.

Edgar Evans Cayce, an electrical engineer and son of Edgar Cayce, participated in the building of wet cells for many years, assisting the major manufacturers of the appliances. Edgar Evans provides the following documentation regarding pole length and battery construction during Edgar Cayce's lifetime:

Figure 3.31
LETTER BY EDGAR EVANS CAYCE SPECIFYING POLE LENGTH IN THE WET CELL
BATTERY

August 9, 1994

To Whom It May Concern:

I worked with the three major builders of Wet Cell Batteries during the time my father, Edgar Cayce, was giving readings. Gray Salter, Health Home Remedies Co., and Marsden Godfrey typically used an eight to ten inch earthenware crock as a container for the battery. The copper and nickel poles were made to fit the container, that is, they were also in the eight to ten inch range.

Edgar Evans Cayce
Edgar Evans Cayce

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A second significant source of information on Wet Cell pole length comes from the archives of the Edgar Cayce Foundation. Therein is found descriptions of batteries and accessories from Edgar Cayce's lifetime. The archives also contain a very old battery which exactly fits these descriptions and specifications. The battery consists of an eight inch tall ceramic crock with a wooden top and eight inch copper and nickel poles.

The third source of supplementary information comes from a booklet entitled The Radio-Active and Wet Cell Appliances by Edgar Evans Cayce (1957). The drawings and specifications included in this document depict a 10 inch tall earthenware crock with poles that extend to near the bottom of the container. The length of the poles is not given, however, by scale they are approximately nine inches long. As this booklet was readily available while many other knowledgeable individuals were still alive (including Marsden Godfrey and Hugh Lynn Cayce, Edgar Cayce's other son who also manufactured wet cell batteries as a participant in the Health Home Products venture), any discrepancy in pole length from the standard used during Edgar Cayce's era would certainly have been noted and corrected.

In conclusion, there is not necessarily one correct/ideal pole length for the wet cell battery. As reading 1800-25 pointed out, "the Wet Cell Appliance is builded in most cases for specific conditions - and for general use at times." In terms of "general use," 8 - 10 inch poles were commonly used by the major manufacturers during and after Edgar Cayce's lifetime. Presumably, if this length was not acceptable, the readings would have called attention to the fact and made corrective recommendations. Thus, the evidence at hand would indicate that the 8 - 10 inch length is acceptable for a standard Wet Cell Battery. Perhaps longer or shorter poles may be appropriate for "specific conditions." However, at this point it is not clear as to what these "specific conditions" might be and how the pole length would be adapted. As with much of the appliance material, more research is essential for a better understanding and more effective clinical application of these therapeutic devices.

An Early Formula For The Wet Cell Mixture

The general Wet Cell mixture specified in Section 1.3 was based upon instructions from reading 1800-25. However, another formula was used by Gray Salter.

Gray Salter was one of the earliest manufacturers of wet cell batteries, having built these appliances commercially from about 1929 to 1935. In many respects, the Wet Cell became standardized during Salter's period as primary supplier of the battery. Here are his specifications for the Wet Cell chemicals as given in reading 465-1, Report #3:

- #1 - 1 lb. Copper Sulphate (lump)*
- #2 - 1 ounce Sulphuric Acid*
- #3 - Common Zinc Metal 10.6 grams*
- #4 - 1/2 lb. Willow Charcoal*

Note that he used only 1 pound of copper sulphate instead of the 1 1/2 pounds specified in 1800-25. Also note the reference to "lump" copper sulphate. We do not know what the alternative might have been during his era. Perhaps it was available in "chunks" or liquid, or in the more uniform type which some modern suppliers offer.

Salter's use of 1/2 pound of willow charcoal as a standard was significant. The early readings which recommended the Wet Cell were highly variable in this area. Some recommended willow charcoal. At other times, plain hardwood charcoal was specified. Occasionally no charcoal was used. Apparently, Gray Salter helped to establish 1/2 pound of willow charcoal as the standard.

The final variation in Salter's specifications was the amount of zinc. He was sending out 10.6 grams (6 drams) as a standard amount. Reading 1800-25 specified 30 grains. Modern suppliers have used 1 ounce as a standard. These variations will be discussed below.

The Zinc Controversy

As with virtually every other aspect of the Wet Cell evolution, the amount of zinc varied greatly during the early years prior to commercial development. Once a reliable supplier became available, the readings provided fewer detailed instructions on how to build and use the battery. So the readings prior to Gray Salter's standardization contain numerous references with wide variations in all respects, including the amount of zinc.

The evolution of the Wet Cell Battery can be thought of in terms of three periods. The first period is from 1921, when the first appliance readings were given, until 1929, when Gray Salter established his appliance business. The second period (Gray Salter's era) lasted until 1935 when reading 1800-25 gave a revised standard for the Wet Cell. The final period was from 1935 until Edgar Cayce's death in 1945. During the final period the two primary suppliers were Health Home Remedies Company (which requested reading 1800- 25) and Marsden Godfrey (who became established circa 1941). The latter suppliers essentially followed the specifications given in reading 1800-25.

Figure 3.32 helps to illustrate these three periods. During the first period (1921 - 1928), almost every reading specified the amount of zinc. There was no commercial source for the Wet Cell and each appliance was built "in the field" by local electricians or whomever was available. The readings had to specify the zinc amounts (and all of the other ingredients and specifications) to ensure that the battery would be made properly.

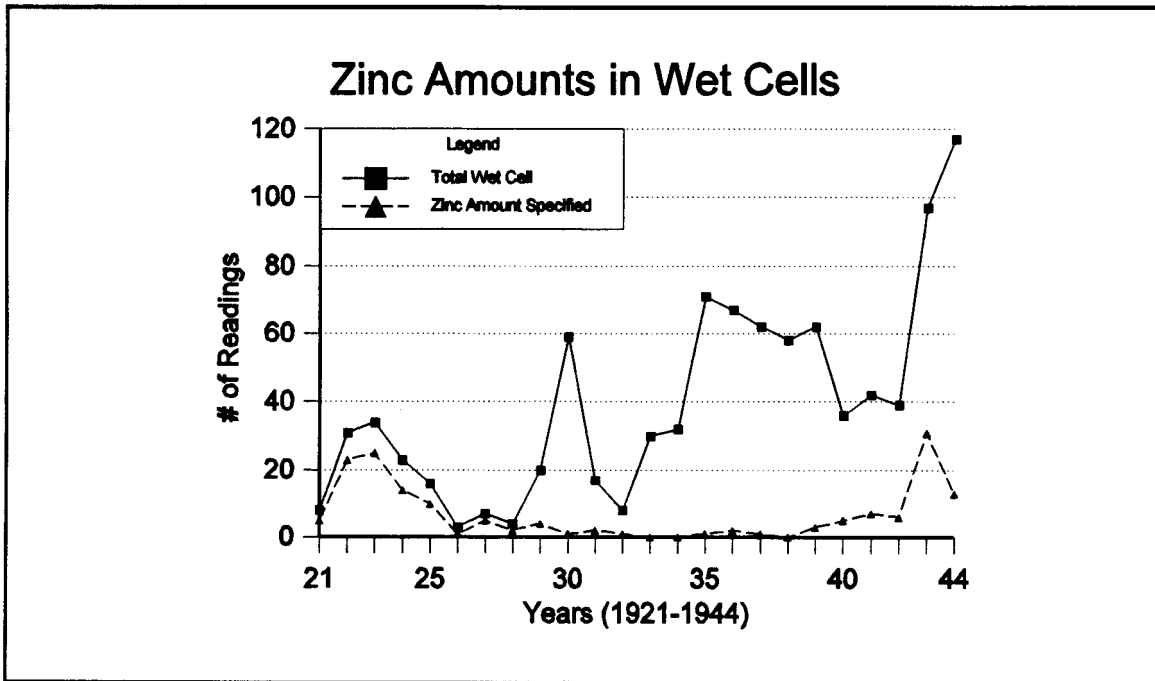


Figure 3.32: Comparison of the number of readings recommending a specific amount of zinc for the Wet Cell, with the total number of Wet Cell readings.

There was a significant increase in the number of readings recommending the Wet Cell while the Cayce Hospital was in operation from 1929 - 1931. This was the beginning of Gray Salter's period as primary supplier. Yet, with the Salter's standardization, Cayce seldom had to specify the amount of zinc or the other ingredients.

This pattern continued into the next period after reading 1800-25 was given. Note that there was another sharp increase in the number of readings recommending the Wet Cell in 1935. With the founding of Health Home Remedies Company, there was a greater utilization of the curative potential of the battery. Yet, with the zinc standard well established by reading 1800-25, Cayce seldom had to specify the amount.

There was an increase in the number of readings which provided specific amounts of zinc during the last few years of Edgar Cayce's life. Remember that during these years Cayce was deluged with requests for physical readings. Many of the readings were given for cases that were very serious, sometimes nearly hopeless. Therefore, he often increased the strength of the battery as described in Section 1.4. Typically, all the chemical ingredients of the battery were increased, thus accounting for the increase in the number of readings where specific zinc amounts were given.

In terms of the zinc amount, the first period of the Wet Cell Battery represents wide variations ranging from 1 dram to 10 ounces. Six drams was the most frequently recommended

quantity.

The second period under Gray Salter established 10.6 grams as the standard. There were approximately 118 readings given during Salter's period which did not mention specific zinc amounts. Presumably, 10.6 grams would have shipped with the battery in these cases.

Reading 1800-25 was given on September 20, 1935 and established 30 grains as the standard. After this date, approximately 304 readings recommending the Wet Cell were given which did not mention zinc amounts. By sheer numbers, 30 grains would have to be considered as the standard for a "general" battery mixture.

Table 3.31 lists the number of times the varying amounts were recommended in the readings during the early pre- commercial period prior to 1929.

**TABLE 3.31
CHRONOLOGICAL SURVEY OF SPECIFIC ZINC AMOUNTS RECOMMENDED FOR
THE WET CELL BATTERY BETWEEN 1921 AND 1928**

YEAR	AMOUNT OF ZINC	NUMBER OF READINGS
1921	1 dram	* = 1
	3 drams	* = 1
	6 drams	** = 2
	2 ounces	* = 1
1922	3 drams	* = 1
	4 drams	* = 1
	5 drams	* = 1
	6 drams	***** = 10
	1/2 ounce	*** = 3
	1 ounce	***** = 5
	6 ounces	* = 1
1/2 pound	* = 1	
1923	3 drams	** = 2
	4 drams	* = 1
	6 drams	***** = 16
	8 drams	*** = 3
	9 drams	** = 2
	10 ounces	* = 1
1924	3 drams	* = 1

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	4 drams	* = 1
	6 drams	***** = 5
	8 drams	* = 1
	10 drams	* = 1
	11 drams	**** = 4
	12 drams	* = 1
1925	4 drams	* = 1
	6 drams	***** = 8
	8 drams	* = 1
1926	3 drams	* = 1
1927	3 drams	* = 1
	5 drams	* = 1
	6 drams	** = 2
	15 grains with 3 drams added at 3 weeks	* = 1
1928	3 drams	* = 1
	6 drams	* = 1

Table 3.31 shows why Gray Salter chose 10.6 grams as his standard. By far, the most commonly recommended amount of zinc recommended before 1929 was 6 drams which equals approximately 10.6 grams (avoirdupois measurement). Avoirdupois is one of three standards for determining weights (Troy and Apothecary are the other measures of mass). Since the Troy method does not include drams as a unit of measurement, it is unlikely that Cayce was referring to this scale. Apothecary measurement was used during Cayce's time for medicines. However, the Avoirdupois system was also used "for measuring all coarse and heavy articles.... Some medicines are bought and sold by avoirdupois weight." (Taber's Cyclopedic Medical Dictionary, 12 Edition, 1973).

This is more than an academic point. Six drams of zinc using the apothecary system equals 23.328 grams or over twice the amount that Gray Salter was providing as a standard. So it is important to be clear about which system of weight is accepted as a standard.

This is even more crucial considering that contemporary suppliers are providing 1 ounce of zinc as a standard amount. One ounce by the modern U.S. Customary System equals 28.35 grams. By whatever standard of measurement one chooses to employ, most modern suppliers are shipping out significantly more zinc than was commonly recommended by Edgar Cayce.

The situation is even more alarming when one compares 1 ounce to the 30 grains recommended in reading 1800-25. Thirty grains equals approximately 1.94 grams. Thus an ounce by today's system would be over fourteen times (14x) too much zinc as a standard amount for the wet cell battery as compared to the 30 grains specified in reading 1800-25.

The zinc controversy began in February, 1968 when Dr. William McGarey wrote to Gladys Davis Turner (Edgar Cayce's personal secretary) informing her of an apparent error in the amount of zinc that was being used with the Wet Cell Battery. Since Edgar Cayce's death in 1945, Marsden Godfrey and subsequent suppliers had been holding to the 30 grain standard given in reading 1800-25. Dr. McGarey believed that the reading really meant 30 grams which is close to being 1 ounce. Dr. McGarey pointed out that some of the readings had specified 1 ounce and that this was a reasonable amount to use (see the year 1922 in Table 3.31).

Ms. Turner initially held to the 30 grain amount, but later gave in and accepted 1 ounce as the standard. Several letters documenting this exchange can be found in the Reports section of reading 1800-25 (Reports 39 - 44).

With the use of the CD-ROM, which includes all of the Cayce readings and associated documents, it now appears that Ms. Davis was correct after all. The 1 ounce amount was only used in the early period of the battery during 1922. Salter's 10.6 gram (6 dram) standard and the 30 grain specification in reading 1800-25 are more indicative of the amounts for a general Wet Cell Battery.

In support of this view, correspondence to and from Marsden Godfrey clearly indicates that he was using 30 grain pieces of zinc metal as his standard (e.g., Background document for reading 5341-1 and Report #6 for reading 3111- 1). Note that Godfrey was using zinc pieces in conformity to reading 1800-25 which specified "pieces of zinc tin or zinc may be cut." Gray Salter was also using "small metal cuts" of zinc in his standard charge kit for the Wet Cell (e.g., Report #2 to reading 4410-1).

In addition to quantity, other aspects of the zinc standard have recently drawn attention. The specifications for zinc in reading 1800-25 used the expression "common zinc." In another reading, Cayce stated that the zinc should not be "rectified" (758-12). Rectified means "made pure" and refers to the "process of refining or purifying a substance" (Tabor's Cyclopedic Medical Dictionary). In contrast to the above standards, modern Wet Cell manufacturers have typically supplied 1 ounce of pure powdered zinc in their Wet Cell charge kits.

In summary, some modern suppliers of Wet Cell chemicals have provided zinc of a different type and in a larger amount than was generally used by the appliance builders during Edgar Cayce's lifetime. According to the readings, the zinc should be of a "common" commercial type in the form of small metal pieces. Gray Salter's standard amount was 10.6 grams. In 1935, reading 1800-25 established 30 grains as the standard for a general Wet Cell charge. After reading 1800- 25 set the standard, the commercial suppliers of appliances used 30 grain pieces

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of common zinc in their charge kits. In numerous instances where the strength of the battery was adapted for individual cases, the amount of the zinc was modified in proportion to the other ingredients (see 1.4; Adapting The Wet Cell Battery To Individual Cases).

We have done research on the electrical effects of using various kinds and amounts of zinc. Some of these preliminary results will be presented in a later section. Based on research thus far, it seems reasonable to use either the 30 grain or 10.6 gram amount as the standard quantity of zinc. Both of these amounts are substantially less than the 1 ounce that has been used in recent years. Furthermore, the zinc should be in the form of small metal pieces.

Paxton Company of Norfolk, Virginia offers a form of common zinc used by local shipbuilders. It is relatively pure but not "rectified" in the sense of being used for medicinal or laboratory purposes. It comes in a variety of tubes and blocks which can be cut into small pieces.

Paxton sells zinc in small pencil-like rods which are about 1/4 inch thick and 2 inches long. This size is particularly handy for cutting into pieces.

The company can be reached at:

Paxton Company
1111 Ingleside Road
Norfolk, Virginia 23502-0103
(804) 853-6781

PART 4: REVIEW OF ELECTROMEDICINE RESEARCH RELEVANT TO THE APPLIANCES

The body is an electrochemical system, and there are two basic approaches to physiology: the chemical and the electrical. Most of modern medical research focuses on the chemical approach, looking at genes, enzymes, and neurotransmitters, and at drugs which can supplement defective or absent chemicals. The alternative approach is to look at the body as an electrical system. The electrical approach to physiology was actually more popular than the chemical one in the 19th century and early years of the 20th century when Cayce was alive. This section reviews research published in the scientific literature relevant to Cayce's electrotherapies.

The use of electricity in medicine goes back to at least the year 1743 in Germany. Light (1983) cites 923 historical references to electrotherapy. The Frenchman Duchenne (for whom Duchenne's muscular dystrophy is named) was a pioneer in electrotherapy. "Duchenne's book of 1855 was the major electrotherapy event of the century; it established electrotherapy" (Light, 1983, p. 28). At times, e.g., in the late 19th century, electricity was used as a treatment for virtually all conditions (Beckwith, 1871). Since that time, electricity has waxed and waned in popularity as a therapeutic modality. High voltage electrical stimulation is still very much a part of mainstream medicine. Defibrillation to restart the heart's normal beat in heart attacks is a common procedure. Electroconvulsive therapy in cases of severe depression is also a well-accepted procedure.

Our primary concern here is with the use of very low voltages for therapeutic purposes, and with devices using the body's natural electricity. A number of researchers have explored the utility of applying low external voltages to heal specific conditions. For example, Becker (1961, 1990) has shown the effectiveness of electricity in the healing of bones. Particularly relevant to the Radial Appliance is the work of Eeman (1947) who developed a "biocircuit," a passive electrical device with therapeutic properties.

Section 4.1 Historical Perspective

The first form of electricity discovered - at least as far back as ancient Greece - was static electricity. This is the type produced by rubbing amber with fur, or by scuffing your feet across the floor. It is typically very high voltage, but low current - sparks of brief duration. Many different types of static electricity machines have been developed for therapeutic purposes. "By the turn of the century [1900] most practitioners in America had a static electricity machine in their offices....As the 19th century ended...electrotherapy reached the peak of its popularity; it was used for everything" (Light, 1983, p. 20). Conditions treated ranged from psoriasis to

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neurasthenia.

The form of static electricity therapy most commonly mentioned in the Cayce readings is the "violet ray." The violet ray is a high-voltage, high-frequency generator with a glass tube at one end. When the tube is brought near the skin, a violet electrical discharge and numerous small sparks pass between the glass and the skin. The device was invented in 1897, and was in common use as late as 1937 (Light, 1983). It is still available.

The low voltage approach, e.g., that of the Cayce Wet Cell appliance, relies on electric current, rather than static electricity. Luigi Galvani discovered electrical current in 1794, in a biological system. Galvani found that the voltage produced by the dissected-out spinal cord in a frog whose legs had been amputated could cause the legs to contract. He called the phenomenon that flowed from injured tissue "animal electricity."

Alessandro Volta in 1796 demonstrated that an animal was not necessary to produce electricity when he invented the first wet cell battery - an early version of the Cayce device, consisting of two dissimilar metals separated by a solution called an electrolyte. In the early 1800s batteries were used to stimulate paralyzed muscles.

Since Galvani's time it has been known that nerves could produce electricity. The nerve impulse was thought to be purely electrical, transmitted down the nerve as if it were a wire. In 1871 Julius Bernstein first came up with the alternative idea that the nerve impulse was electrochemical. Unlike the current flowing in a wire, the nerve impulse consisted of movement of ions (charged atoms of potassium, sodium and chloride) moving across the membrane of nerve cells. This is now understood to be the correct explanation of nerve impulse transmission.

But this is not the only type of electrical activity in the body. Robert Becker (1990) has shown the importance of the direct current (DC) system originally discovered by Galvani. In particular, Becker has shown that the DC system of the body is essential for growth and healing. It is this system most likely influenced by the Cayce appliances.

Robert Becker's Work

Robert Becker is one of the key figures in the recent study of bioelectricity. An orthopedist, his initial interest was in the healing of bones. In the process of learning about healing and regeneration of limbs, however, he made many new discoveries about the DC electrical system of the body. One of Becker's primary conclusions is that extremely small electrical currents have a variety of major biological effects.

Becker began his work with salamanders and frogs, looking at bone healing. The skeletons of these animals are in the same pattern as the human, and are just as complex. The

nervous system is also in the same pattern, though not as developed.

Becker found that an electrical potential is produced by amputation of the limbs of salamanders, and that the potential varies between about +22 and -32 millivolts as healing progresses (Becker & Selden, 1985, p. 73). In an intact salamander, there is a positive potential along the center line (spinal cord) of the body, and a negative potential of -8 to 10 millivolts at each extremity at the skin surface. Becker found the same polarity pattern in humans as well. These are radial differences in polarity, from the central nervous system to the extremities, and may be relevant to the operation of the Cayce Radial appliance. These voltages are in the same range as the -27 millivolts typically produced by the Cayce Wet Cell appliance, applied to the skin surface.

Becker implanted tiny batteries in the amputated forelimbs of rats, supplying only 1 nanoampere of current, and was able to stimulate some regeneration of the limb (Becker & Selden, 1985, p. 152). Becker showed that tiny amounts of current (billionths of an ampere) could also stimulate limb regeneration in the frog, and that greater amounts of electricity were not useful (Becker, 1990, p. 41). The need was for the right polarity and the right amount of current in the right place. Becker (1990) said, "The perineural cells - in this case, the Schwann cells - carry the electrical signals that cause fractures to heal. The nerve has nothing to do with it" (p. 64).

In 1971, Dr. Zachary Friedenberg reported the first successful treatment electrically stimulating the healing of a fracture in a human. He used 10 microamperes of DC current, with the electrode embedded in the bone at the fracture site. Becker (1990) frequently emphasizes that such high levels of current are not necessary. He was able to stimulate bone growth with 1 and 3 microamperes of current with an electrode implanted in a dog's femur. In other animals, Becker was able to show that much lower currents - he used 0.1 microampere - would still result in bone growth and healing. Becker said, "I believe that with this technique, we were actually turning on the growth-control system, rather than overloading the system with far too much energy and thus producing damage" (Becker, 1990, p. 153).

Becker's measurements of electrical skin potentials also point to the spinal centers described by Cayce and the osteopaths. He said, "...the cervical enlargement in the spinal cord ... and the lumbar enlargement. These were all found to be positive in the human being, with the nerve-fiber outflows from each increasingly negative the farther out we placed our measuring electrode" (Becker, 1990, p. 87).

In summary, Becker found that there exists a skin potential which gradates radially from the spinal cord to the extremities, with natural voltages comparable to those produced by the wet cell. Application of very tiny voltages directly to wounded bones stimulates healing. Complete citations of Becker's work can be found in this reference section of this report.

Becker also found a relationship between the level of consciousness in a human being and

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the strength of the DC potential. "Sleep produced a modest drop, and deep general anesthesia resulted in a drop in the potentials to zero" (Becker, 1990, p. 88). This is relevant to the Radial Appliance, which, according to Cayce, equalizes potentials in the extremities and induces sleep. The use of low voltages to induce sleep has been explored by Frostig et al. (1941) and Paterson and Milligan (1947).

Becker and his colleagues, with a grant from the National Institutes of Health, also researched acupuncture points and meridians - concepts from Chinese medicine (Reichmanis et al., 1976, 1977). These are relevant to the Cayce concepts because they are electrically active points on the skin surface, with therapeutic connections to deeper organs. Becker's group found that many of the traditional acupuncture points could be distinguished by their electrical characteristics from other points on the skin. The meridians were conducting current, with a flow into the central nervous system (that is, minus polarity at the extremities and positive at the central nervous system). Becker sees this as the DC control system of the body, distinct from the impulse-carrying neurons, and based on the perineural cells surrounding the neurons.

Transcutaneous Electrical Nerve Stimulation (TENS)

Dr. C. Norman Shealy invented the TENS device in the 1960s (Long, 1974; Shealy, 1973). "Transcutaneous" means "across the skin" and the device works by applying a voltage to the surface of the skin. The intention of the device is to reduce pain by stimulating sensory nerves to block pain impulses. TENS units are now common in mainstream medicine, and often provide considerable relief of chronic pain. A wide variety of waveforms, pulse shapes, frequencies, and current densities are used. In general, the voltage in TENS is substantially higher than in the Cayce appliances. But the basic principle - that current from electrodes on the skin surface can therapeutically affect the nervous system - is similar. TENS devices are used by some practitioners for many conditions other than pain, though little research has been done to confirm the efficacy of these applications. Becker (1990) warns about the possible dangerous side effects of high intensity electrical stimulation, and favors much lower levels of current.

The Eeman Biocircuit

Leon E. Eeman (1947) developed a "biocircuit," a passive electrical device with therapeutic properties. He worked with patients from the 1920s until his death in 1958. Eeman's thesis was that human beings radiate energy, and that this energy accumulates more readily at specific areas of the body. These locations can be linked together to create a circuit that enhances recuperative processes and produces a flow of energy. Eeman used copper wires to link the hands to copper mats at the base and top of the spine. He experimented on himself, and found that his circuit enhanced relaxation and his own recovery from a serious illness. One of its effects, similar to that of the Radial Appliance, was to induce sleep. Becker's work provides some data that tend

to confirm Eeman's theories. According to Becker's measurements, Eeman chose locations for connecting his circuit that would maximize the electrical potential differences and cause a small current to flow.

There is anecdotal evidence for the effectiveness of the Eeman biocircuit (Patten & Patten, 1988), but little scientific research outside of Eeman's own studies. Recently, however, Eeman's biocircuit has been tested in a controlled, double-blind study. Isaacs and Patten (1991) found significant changes in forehead electromyogram (EMG) and in dominance of parietal (P3) theta brain waves. Skin conductance data were promising, though not quite statistically significant. Subjective measures were also significant; these included relaxation depth, sensations of warmth, perceived benefit, and perceived effectiveness.

Section 4.2

Studies Relevant To Solutions and the Solution Jar

Both the Radial and the Wet Cell appliances can be connected directly to the body in a simple circuit. This is the standard configuration for the Radial appliance. For the Wet Cell (and occasionally for the Radial), an additional component called a "solution jar" was often connected into the circuit. This jar contains solutions of medications (e.g., gold chloride or iodine), and the intent is for the "vibration" of the solutions to be carried into the body. However, there is no direct contact between the solution and the skin, only an electrical connection through a wire.

The solution jar is more problematic than either of the appliances. The effects of both appliances can be plausibly explained, at least partially, by the principles of electricity and physiology discussed above. The solution jar, on the other hand, is connected into the circuit in a way that would not appear to have an electrical influence. There are, however, some experiments and theories which may offer some hope of understanding the function of the solution jar.

The following studies support two basic concepts: (1) that transfer of medication across the skin electrically is a well-established principle, and (2) that there is evidence for "vibrations" in a solution which are not yet well-explained by chemical/physical theories.

Iontophoresis

Introduction of medication into the body by means of electric current was first accomplished by the Frenchman Fabre-Palaprat in 1833. He claimed that he was able to carry iodine and quinine by galvanic current through the skin into the body. Since that time, this method has been used with numerous medications. Various terms have been used for this method, including "dielectrolysis," "ionization" and "cataphoric medication." Thomas Alva Edison read a paper at the International Congress of Electricity at Berlin in August, 1890, in which he claimed to have improved gouty joints with electrically introduced lithium ions. He called the process "endosmosis" (Light, 1983). The common term now is iontophoresis.

Iontophoresis relies on a direct contact of the solution with the skin, e.g., with a soaked sponge on the electrode. The Cayce solution jar apparently relies on a different principle, but the basic idea of carrying medication into the body with electricity has a long history, and was common practice in Cayce's time.

Homeopathic Dilutions

Homeopathy is a form of therapy based on the use of extremely diluted substances as

medicines. The dilutions are so extreme that typically not a single molecule of the original substance remains in the homeopathic remedy. Presumably the water itself holds some form of "vibrational" information. The principal, similar to that of the Cayce solution jar, is that the homeopathic remedy stimulates the body to heal itself; it does not add the chemical directly to the system. Medical science has been quite skeptical of homeopathy since there was apparently no physical explanation of the effectiveness of the remedies. Results were therefore attributed to the placebo effect.

Recently there have been well-controlled studies suggesting some truth to homeopathic claims, published in major journals, though the area remains quite controversial. Under double-blind, controlled conditions, Reilly et al. (1986) show the clinical effectiveness of a homeopathic remedy. In another study, a group led by Jacques Benveniste in France showed that an immune response could be elicited by a homeopathic dilution (Davenas et al., 1978). The controversy continues, with a challenge by the editor of the journal in which Benveniste published (Maddox et al., 1988).

If homeopathy does prove to have a physical basis, this might be a promising avenue to explore to understand the solution jar. Research designs for testing homeopathic claims might also prove useful for testing the effectiveness of the solution jar.

Schwartz's Experiment

Another piece of evidence that water can hold some form of subtle vibration related to healing was demonstrated in a well-controlled experiment by Schwartz et al. (1990). They placed vials of sterile water in gloves next to the hands of "energy" or "psychic" healers while they were healing a patient. The infrared spectrum of the "healed" water differed from control samples, suggesting that the healing imparted some form of energy to the water.

The Relevance of Radionics to The Solution Jar

One of the difficulties in working with the therapeutic properties of very low voltages is that the biological effect may often greatly exceed any obvious transfer of energy. The term "radionics" has often been used to refer to devices which apparently involve electromagnetic energy, but may involve some more subtle form of energy as well. Cayce uses both the terms radionics and "etheronics" in referring to the Radial Appliance. For example:

"This [restlessness at night] would be materially aided by the use of the very LOWEST form of electrical vibration, or that which would stimulate the vibrations in the body-forces themselves - as the Radio-Active [Radial] Appliance OR the radionics..." (1997-3, January 10, 1941).

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The operation of the solution jar could also well be explained by some subtle form of energy related to radionics.

Radionics originated with Dr. Albert Abrams, a medical doctor, in the 1920s, who developed what he called the "oscilloclast." The device contained calibrated resistances to measure resonances with the response of the human body to various substances and diseases. The devices were considered quackery by the medical establishment since some did not appear to contain functioning electrical circuits. From the beginning, Abrams and the other radionics practitioners realized that radionics was not purely electrical. There was an important component of human thought, and the success of the apparatus depended on the mind of the operator. Such a device would be very difficult to study in controlled conditions; the problems are similar to those faced by parapsychologists in the study of psychic phenomena (psi). The Cayce readings address this issue:

(Q) Is a Radionic analysis a true diagnostic method, or is it just another outfit to fool the patient?

(A) This depends upon the technician with same. The ability may be developed in the technician or physician using same. To one it may be a perfect attunement and get at least eighty percent of correct diagnosis, and to another it wouldn't get ten percent! It is a good instrument, but about one in five hundred will know how to use it! (589-3, August 24, 1934)

Since Abrams' time, the claims for radionics devices have become more and more extreme, and less and less believable to conventional science. There have been extensive studies by practitioners like George de la Warr in England, and radionics still has a substantial following, but modern medicine has taken little notice. Russell (1973) has written a good review of the growth of radionics. Acceptance by science is hindered by the fact that some radionics devices use no electronic components at all, but simply contain drawings of circuits! Nevertheless, a number of Cayce readings suggest that there is some value to radionics. Perhaps it is simply psychic ability, with the machines as a psychological crutch?

The difficulty with radionics is that, if an effect can be demonstrated, it is not clear whether it is purely psi, or whether the equipment is necessary. If it is psi, then the concept of radionics does not explain anything. Parapsychology has demonstrated that psi does indeed exist, and can affect electrical devices and human healing. But we do not know what form of energy psi actually is, and the radionics devices may be obscuring the problem more than they are helping to solve it. Still, if Radionics practitioners can demonstrate stronger, more replicable results than parapsychologists, this would argue for the usefulness of their devices even if the mechanism is via psi.

At any rate, if there are subtle energies - related to but not identical to electromagnetic energy - radionics is an area worth investigating. At present, however, the concept has little explanatory value.

Solutions

Gold, silver and iodine were frequently-recommended solutions for the solution jar. There is evidence for therapeutic effectiveness of these solutions when electrically-delivered, though so far no studies of the solution jar method have been performed.

Silver

Silver has long been known to have antibacterial properties, and was frequently used in the pre-antibiotic days of Cayce. Silver nitrate eyedrops are still used to prevent eye infections in infants. Since the advent of modern antibiotics, however, silver has fallen into disuse because it is difficult to deliver adequately to the site of infection.

Becker (1990) used a silver electrode to electrically generate silver ions in bone tissue, to kill antibiotic-resistant bacteria and stimulate bone growth. He found that the silver not only killed the bacteria, but it caused an extraordinarily high rate of healing in the wound.

Becker's experiment used direct electrical delivery of silver ions, whereas the solution jar delivers silver "vibrationally." Nevertheless, this is some evidence of healing with electrically-delivered silver.

Gold

Gold is the most frequently-mentioned chemical for use in the solution jar. One application for which gold was recommended with the wet cell is rheumatoid arthritis.

When Becker and his colleagues were experimenting with different metals for wires, they tried gold and found that it was not as effective as silver against bacteria. However, they knew that gold salts taken orally could sometimes control rheumatoid arthritis, but often produce toxic side effects. They reasoned that electrical injection of pure gold directly into the joint with no other ions might work better. In an experiment with rabbits, they found that about 70% of the arthritic knees treated with the gold electrically were markedly better than the untreated ones in the first 2 weeks, but they found that the treatment must be repeated for continued results (Becker & Selden, 1985, p. 188). Like the silver experiment, this is direct electrical injection of gold, not vibrationally as with the solution jar. Nevertheless, it is an interesting parallel to Cayce's electrical treatment for rheumatoid arthritis.

Iodine

The iodide ion was a favorite for experimentation with ion transfer through the skin by electricity (iontophoresis) in the late 1800s, because there was a dramatic and simple test for its presence in the urine. It was also possible to detect iodine in saliva (Light, 1983).

PART 5: RESEARCH ON THE APPLIANCES

Section 5.1 Research On The Radial Appliance

Electrical Properties

The Radial Appliance is not a battery, and would not be expected to produce a voltage. However, it does have electrical characteristics: capacitance and resistance.

The Fetzer Energy Medicine Research Institute (FEMRI) at the A.R.E. Clinic had Harry Latterman, an electronic engineering consultant, study the electrical properties of the Radial Appliance. Latterman measured voltage, current and internal resistance of 4 devices both alone and connected to a human body in actual use. Two of the appliances were provided by each of the two major manufacturers at that time. From each manufacturer, one was built to be a "dummy" appliance, with no internal connections, and one was built to be fully functional. Latterman had the following results:

Resistance: Internally, both dummy devices were open circuits (infinitely high resistance). One of the devices intended to be functional was also an open circuit, probably indicating a defective device. The other had a very low resistance of 1.1 ohm.

Voltage: When the devices were not connected in a circuit, there was no voltage produced across the terminals. When connected to a human body, voltages from 22 to 45 millivolts (averaged over 1 hour) were measured, but were considered by Latterman to be "noise," rather than produced by the appliance. Latterman did not discuss the naturally varying skin potentials in this voltage range.

Current: Using a Kiethly picoammeter no current could be measured through the human body circuit for any of the devices.

Our own measurements showed that the resistance between the terminals of a properly-built appliance is very low - around 4 ohms. This was surprising in the light of the concept that it is an impedance device, i.e., a capacitance produced by the two steel plates separated by the glass plates. However, the carbon plates (not the charcoal) surrounding the steel and glass are excellent conductors, resulting in a very low resistance between the plates. It is likely that the only properly-built device tested by Latterman was the one with the 1.1 ohm resistance between the terminals.

The readings are very specific about the need to not let the charcoal touch the glass or the steel, yet the carbon pieces result in almost an electrical short circuit. This suggests that the device is not purely electrical in nature, as we currently understand electricity. Nevertheless, it does have

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electrical properties, since Cayce frequently emphasized the need to keep the plates contacting the skin very clean.

In our measurements, we used an appliance built specially for research purposes. We do not recommend that you apply a voltage to the terminals of any appliance intended to be used for therapeutic purposes, since it might have an adverse effect on the energetic properties of the device.

Research On Activating The Radial Appliance

The Radial Appliance is activated by placing it in a crock filled with ice and water. The readings are explicit about the need for ice to charge the appliance. Simply cooling it in the refrigerator or outside in cool air is not adequate.

The readings generally say to cool the appliance for 20 to 30 minutes before using it; it stays in the ice-filled crock for the duration of the session (typically 1 hour). Some readings recommend shorter times - 10 to 15 minutes - but these seem to be with earlier designs that did not have the canister with the charcoal, which tends to slow the cooling. There is no way to directly measure whether the appliance has been activated properly - it does not produce a voltage. But it is possible to verify the Cayce recommendation to see whether cooling the appliance for the stated time produces a stable temperature over the hour during which the appliance will be used.

We experimented to see whether the size of the crock made a difference in the cooling rate. Special appliances were built with holes in the cores for the insertion of a thermometer probe. We inserted probes into the center of the core, and also into the top of the core. The thermometer was a Radio Shack indoor/outdoor thermometer.

The cooling rate did not depend on the size of the crock. As long as the ice is packed well around the appliance, up to the line, and water added, the cooling rate was the same for several different size crocks.

Figure 5.11 is an example of a typical cooling curve. As is evident from the curve, most of the cooling, down to about 40 degrees, occurs during the first 20 to 30 minutes, confirming the Cayce recommendation.

The cooling rate did depend somewhat on the initial temperature of the appliance. If it is warm, as in the summer, it might be good to allow an additional 5 minutes or so for cooling.

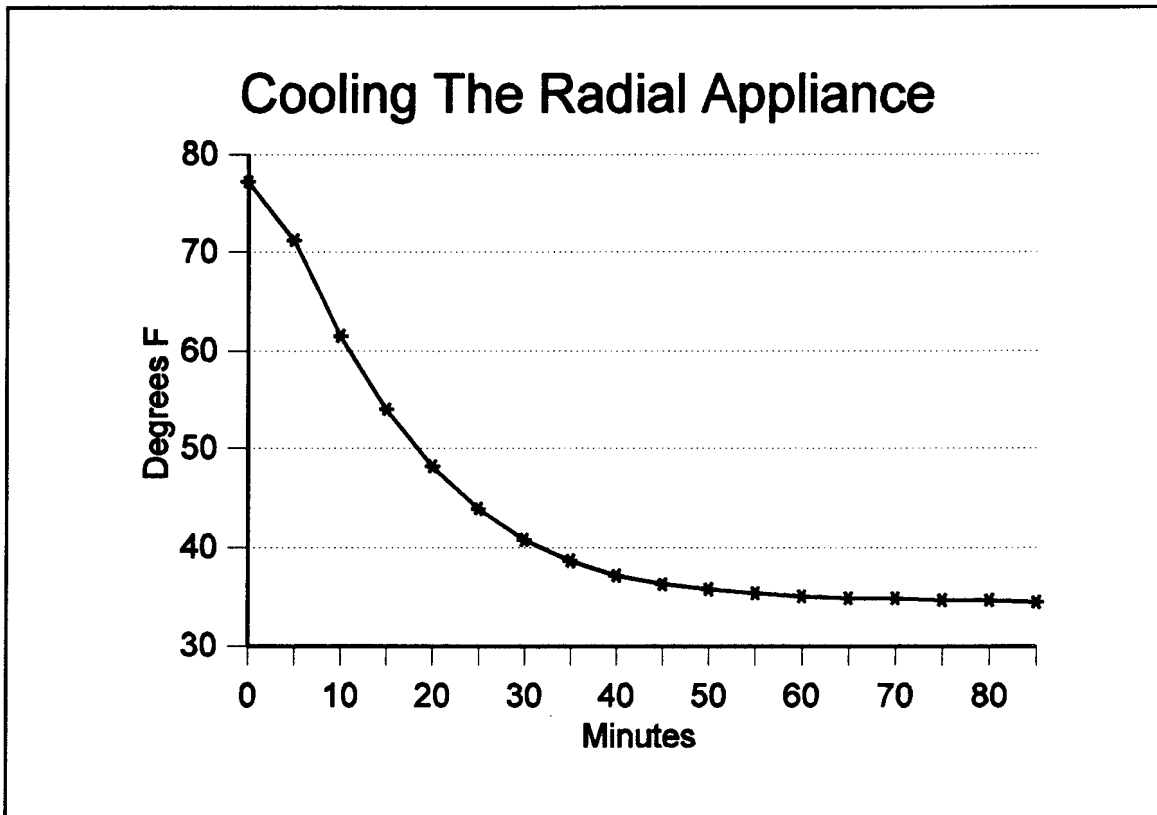


Figure 5.11: Cooling the Radial Appliance – temperature of steel core; 8” x 8” crock, ice cubes and water.

Current Flow Through The Radial Appliance

Although the Radial Appliance does not produce a voltage itself, an electrical potential between two different points on the skin should cause a current to flow. The resistance in the appliance is about 4 ohms, so the much higher resistance of the skin should be the controlling factor in the amount of current flowing.

We measured the skin resistance of a human being [Douglas Richards] with two German Silver electrodes connected in their typical configuration (one to the left wrist, the other to the right ankle). The electrodes were polished with emery paper and held next to the skin with the same pressure as in normal use (velcro strips). The resistance fluctuated somewhat, but was approximately 2 megohms (2×10^6 ohms).

The skin potential (voltage measured between two different points on the skin) will vary with the location of the electrodes. Becker (1990) has found that the midline of the body is positive with respect to the extremities, and that the acupuncture points and meridians have voltages distinguishable from the rest of the skin. According to Edgar Evans Cayce (1965), a

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study conducted by a medical student found that use of the Radial Appliance reduced the electrical potential by about 50% between the extremities of the spine of persons being tested.

We did not have equipment necessary to measure DC skin potentials. Based on a rough estimate from Becker's work, however, if there is a 10 millivolt potential between the 2 electrodes, this would generate a current of:

$$\text{Current} = \text{Voltage}/\text{Resistance} = (10 \times 10^{-3})/(2 \times 10^6) = 5 \times 10^{-9} \text{ Amperes}$$

Any electrical study of the Radial Appliance will require equipment able to accurately measure voltages and currents in this range.

Section 5.2 Research On The Wet Cell

Chemically Charging The Wet Cell

As discussed earlier, the recommended chemical charge for the Wet Cell depended on the condition being treated. Reading 1800-25 gives a "standard" charge, but there was a great deal of variability in the readings. We experimented to determine the effects of several different chemical charges on the output voltage. There may be other subtle energies carried by the Wet Cell, but at present the voltage is the only component that is measurable. We offer these measurements as an initial attempt to quantify the Wet Cell and establish some quality control for the charging chemicals.

Voltages were measured with a Radio Shack digital multimeter, with the red lead connected to the copper pole, and the black lead connected to the nickel pole.

Voltage Variability With The 1800-25 Standard Charge

Three batteries were charged with identical charge kits to 1800-25 specifications. These are:

Distilled Water	1.5 gallons
Copper Sulfate	1.5 pounds
Sulfuric Acid	1 ounce, concentrated
Zinc	30 grains (piece)

All chemicals were purchased by David McMillin directly from commercial chemical suppliers. The acid was the highest purity grade available (Cayce specified C.P. - chemically pure).

A fourth battery was charged with the same chemicals but using one ounce of zinc filings rather than a piece, obtained from one of the suppliers of Wet Cell charge kits.

The voltage results are graphed in Figure 5.21. While they all tend to eventually reach approximately the same voltage (-27 millivolts), there is some surprising variability in the charging rate. While most tend to charge fully within 24 hours, one of the batteries with a zinc piece, and the one with the zinc filings, took several days to come to the same voltage as the others. The difference in charging rates may reflect the differences in the zinc pieces and their rate of reaction.

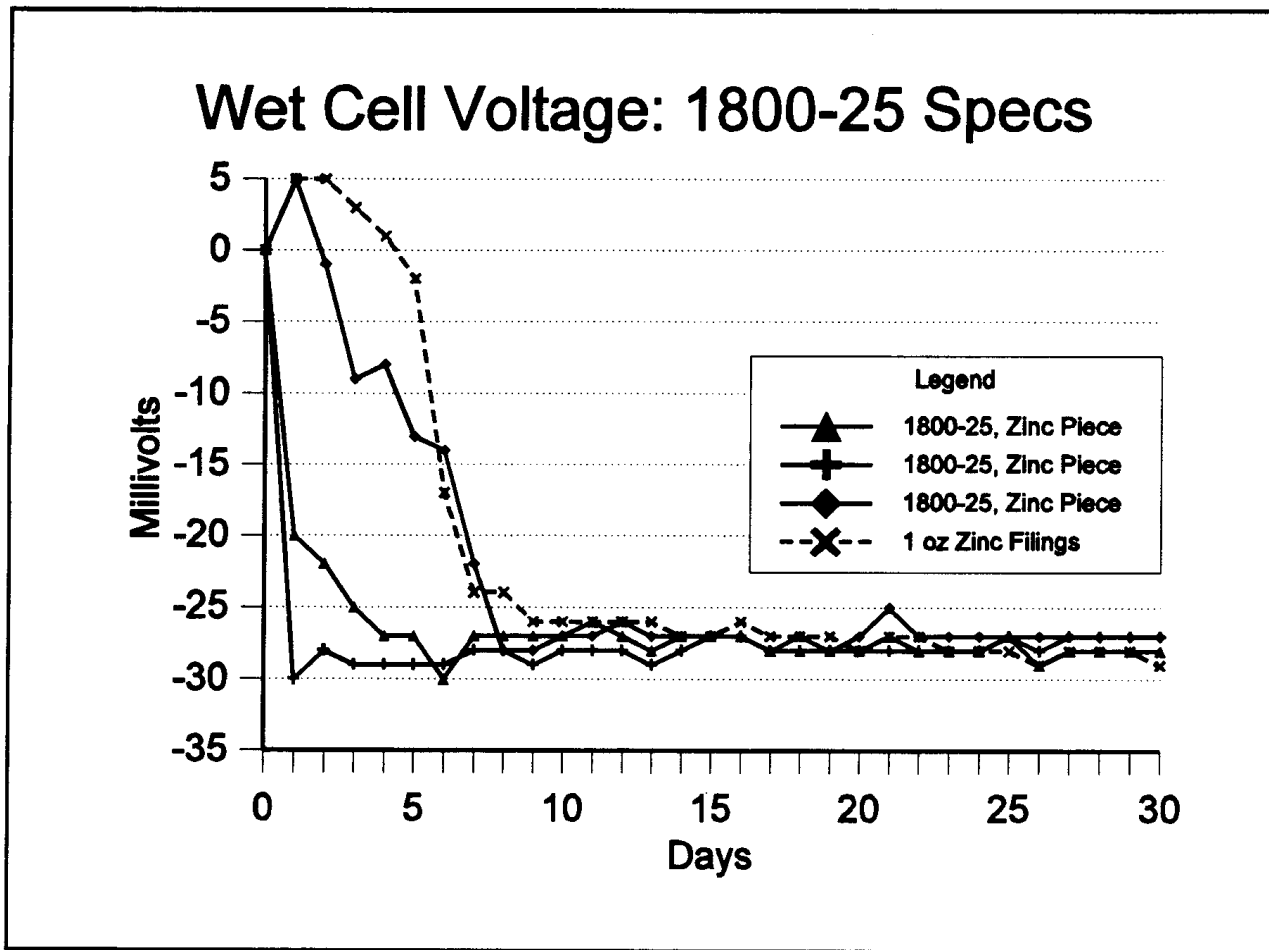


Figure 5.21: Voltages over a 30 day period for 3 Wet Cells charged according to 1800-25 specifications. A fourth battery is included in the graph, with 1 oz. of zinc filings rather than a 30 grain zinc piece.

Varying The Amount Of Zinc

As discussed previously, the amount of zinc changed over the years the readings were given. The most common amount of zinc in the early readings was 10.6 grams (Gray Salter's standard). The most common amount after 1935 was 30 grains (Health Home Remedies Co. and Marsden Godfrey's batteries - Reading 1800-25). The readings recommended unrectified (presumably unpurified) zinc, in the form of metal pieces (as used in the above experiment).

All the current major suppliers have been using 1 ounce of powdered zinc (presumably purified). One ounce is approximately 30 grams. This is apparently a mistake (the readings said 30 grains, not grams) based on correspondence between Edgar Evans Cayce and Dr. William McGarey (Reading 1800-25, Reports 39-44).

Does the amount of zinc make a difference? Three batteries were charged with the 1800-25 chemicals, with only the zinc varied. Figure 5.22 shows the voltages produced with the following amounts of zinc, over the first 30 hours of charging:

- 10.6 grams
- 30 grains
- 1 ounce

Taken together with the previous graph, it appears clear that the amount and type of zinc alters the charging rate and pattern, with not much effect on the final voltage after a few days. Of course, it is not known what effect this may have on the therapeutic properties of the battery, especially in the first few days.

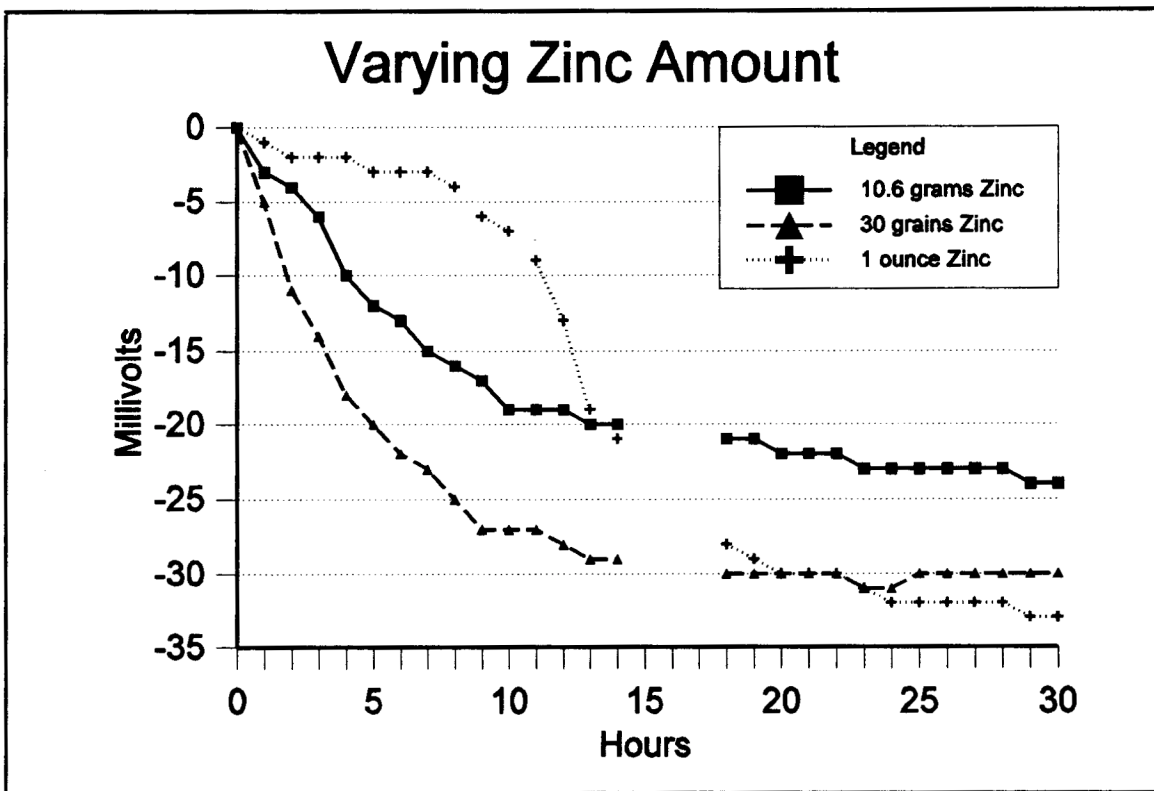


Figure 5.22: Varying the amount of zinc in the Wet Cell. (The 10.6 gram battery also contained 0.5 lb. of plain charcoal.) The three missing hours in the chart represent the middle of the night when measurements were not taken. Note that this chart is in hours rather than days.

Varying The Concentration of Sulfuric Acid

The readings specify Sulfuric Acid (C.P. - presumably "chemically pure"). Concentrated sulfuric acid is very dangerous, and cannot be shipped by mail for safety reasons. All major suppliers, therefore, use acid which has been diluted with water to 25% strength, with 4 ounces instead of one ounce. Since this acid is added to 1 and 1/2 gallons of water already in the battery, chemically this pre-dilution should have no measurable effect. Holding the other ingredients constant, we explored the difference between concentrated sulfuric acid and a 25% dilution. The results are given in Figure 5.23. There appears to be very little voltage difference.

Note that we used reagent grade sulfuric acid obtained from a chemical supply house. This is the closest we could come to "chemically pure," a term not in current use. Other forms of

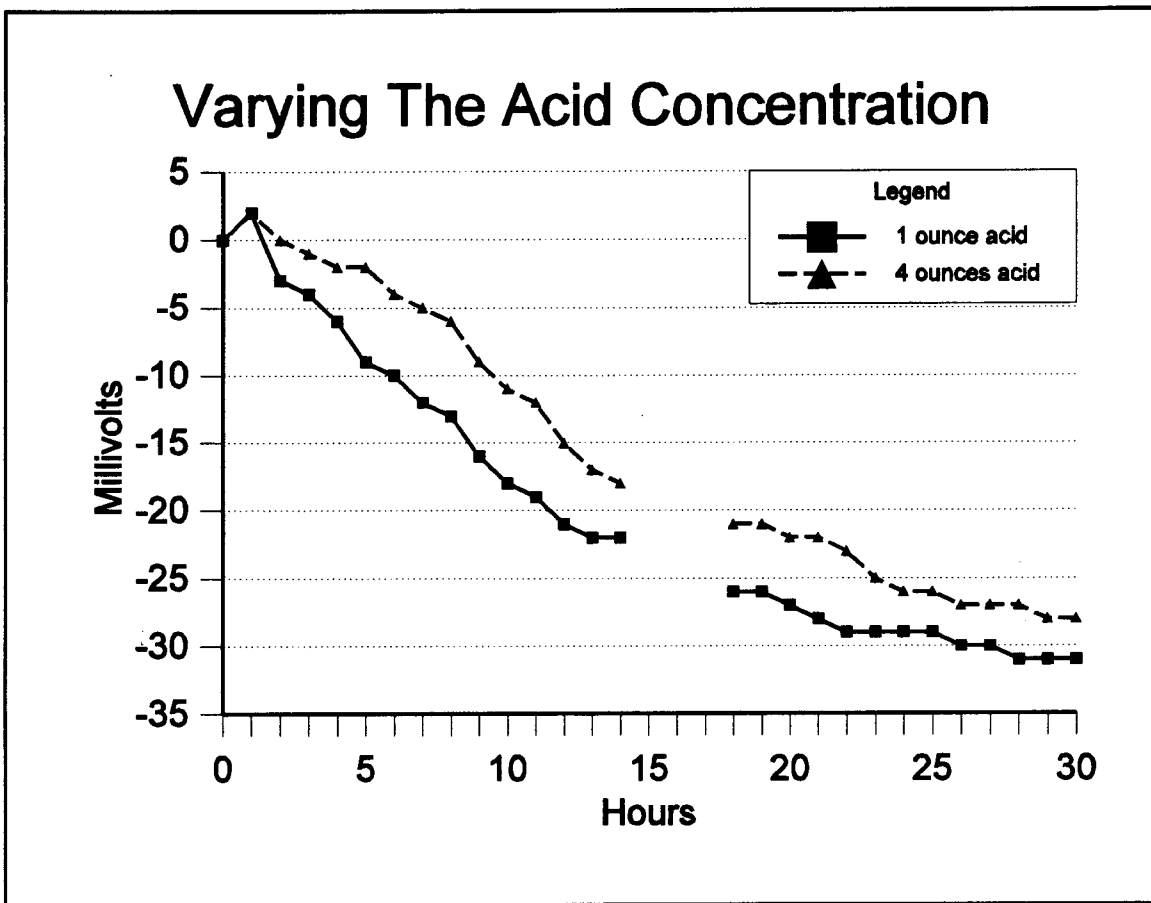


Figure 5.23: Comparison of 1 ounce of concentrated acid to 4 ounces of 25% acid. The three missing hours in the chart represent the middle of the night when measurements were not taken. Note that this chart is in hours rather than days.

sulfuric acid such as battery acid, though easily obtained, do not meet the Cayce specifications and might give different results.

Batteries Without Acid or With Only Acid

Chemistry principles say that a simple battery with copper and nickel poles with acid alone should produce a substantial voltage. What, then, is the role of the copper sulfate and zinc? We hypothesized that the variability in some of the charge kits from different suppliers was due to the acid. We therefore charged a battery without acid to see if this would resemble the anomalous charge patterns. We also charged a battery with only acid, to see if this would produce a significant voltage.

The battery without acid included:

Distilled Water	1.5 gallons
Copper Sulfate	1.5 pounds
Zinc	1 ounce powder

The battery with only acid included:

Distilled Water	1.5 gallons
Sulfuric Acid	1 ounce, concentrated

Figure 5.24 gives the results. Surprisingly, the battery without acid developed a much stronger charge than the standard battery. The battery with only acid also developed a strong charge, but in the opposite direction. Clearly the balanced mixture is what yields the 25-35 millivolt typical voltage.

The "Heavy" Charge

Some readings recommended a "heavy" charge for serious medical conditions, using 2 or more pounds of copper sulfate and the other ingredients in proportion. Figure 5.25 compares the voltages with a "heavy" charge of:

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Distilled Water	1.5 gallons
Copper Sulfate	3 pounds
Sulfuric Acid	2 ounces, concentrated
Zinc	10.6 grams (powder)

And a standard charge of:

Distilled Water	1.5 gallons
Copper Sulfate	1.5 pounds
Sulfuric Acid	1 ounce, concentrated
Zinc	1 ounce (powder)

The voltages and charging patterns are quite similar, with the voltage of the heavy charge rising more slowly. This suggests that the "heavy" aspect of the heavy charge is not a larger voltage. It may be the capability of delivering a higher current, or some unknown subtle energy aspect.

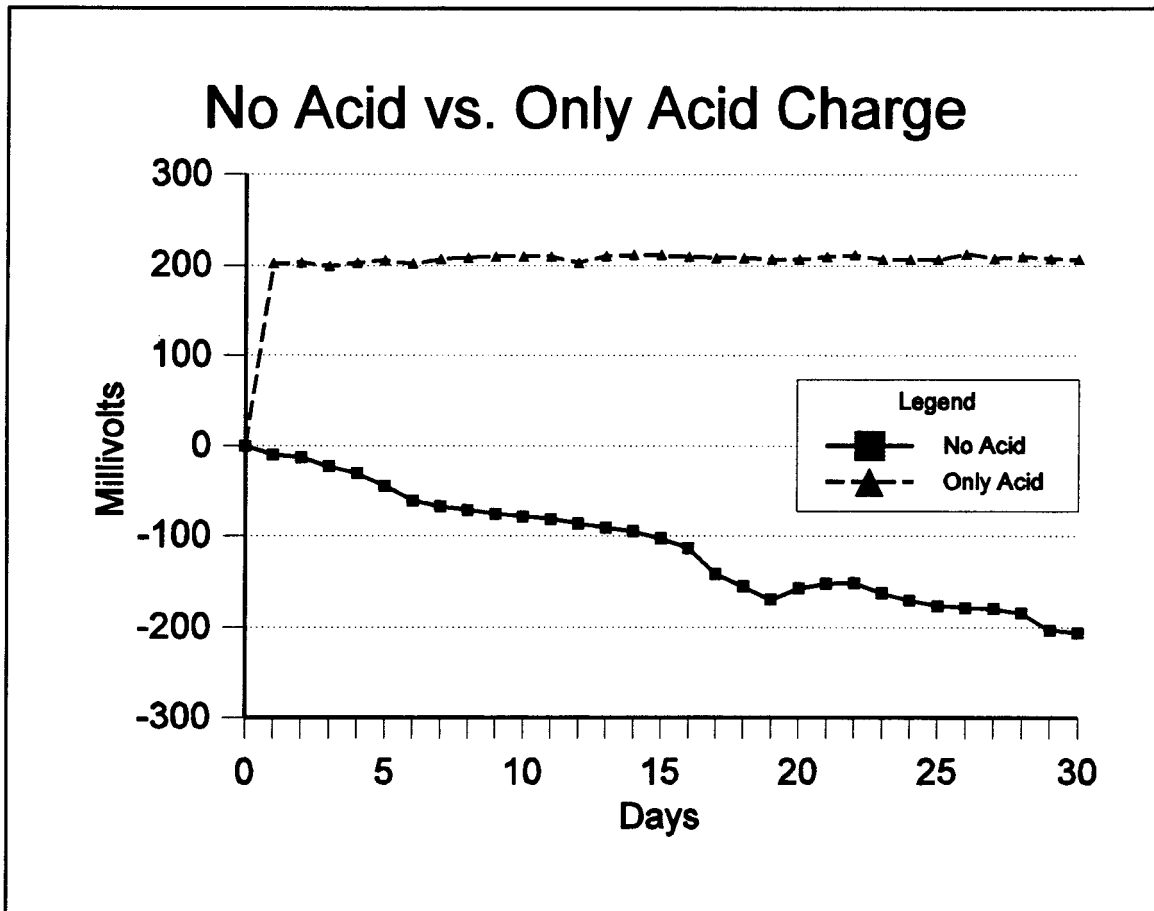


Figure 5.24: Comparison of batteries charged with no acid, and with only acid.

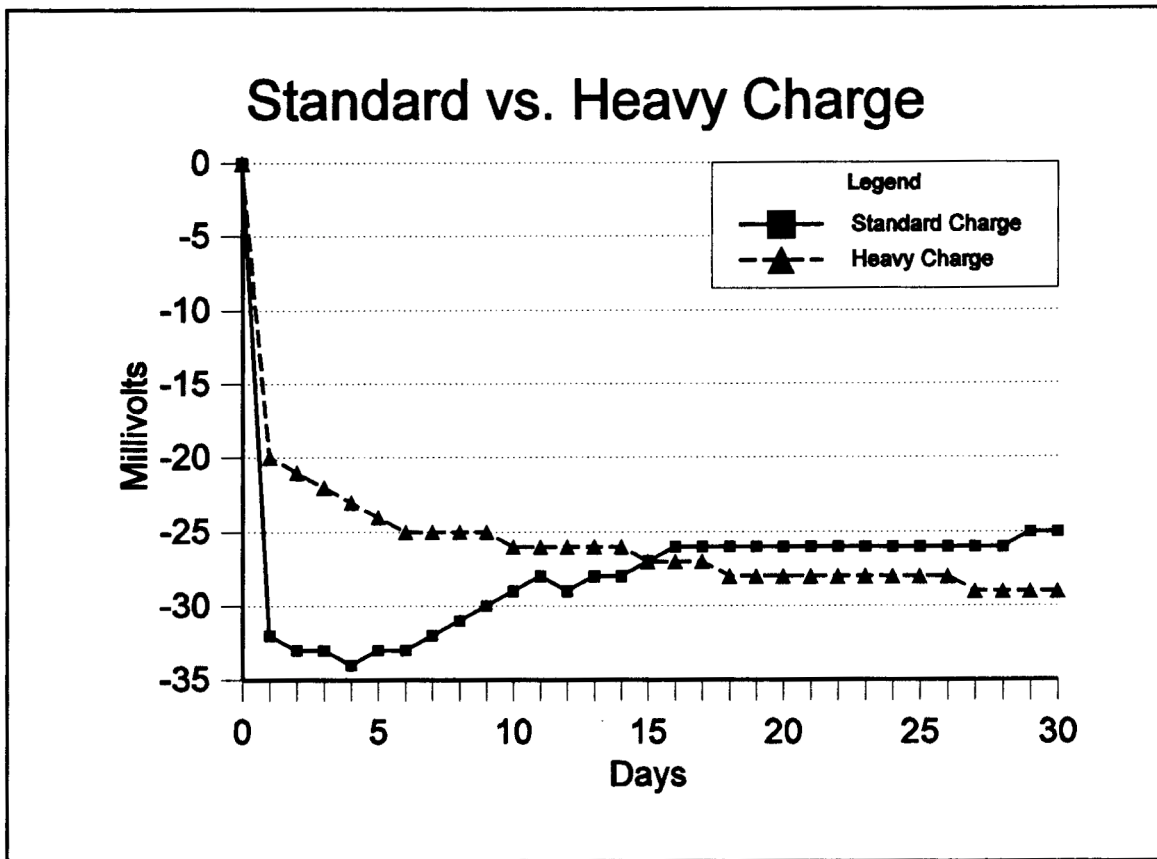


Figure 5.25: Comparison of standard and heavy charges of the Wet Cell.

Voltage Variability With Charge Kits From Different Suppliers

Most of our experiments were conducted with chemicals obtained directly from commercial chemical companies. We also conducted some tests with chemicals from suppliers of wet cell recharge kits. Some of the recharge kits charged much more slowly than the commercially purchased chemicals, and did not reach as high a final voltage. Since there was also variability with apparently identical 1800-25 charges using identical chemicals, it is hard to interpret this result. We suspect that the acid and the zinc play a role. At this point, we would encourage all suppliers to be careful about quality control, and to specify the sources of and compositions of their chemicals to all customers.

All the components make a contribution to the final voltage, which results from a balance of chemicals tending to produce a positive voltage and chemicals tending to produce a negative voltage. Until we understand more about the principle behind the need for the specific voltage and whatever other subtle energy components may be relevant, it makes sense to use the Cayce recommendations for standard and heavy charges, depending on the condition being treated.

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Diluting the acid for shipping purposes, done by all the suppliers for safety reasons, does not appear to affect the final voltage (since the same total acid is used, in a large amount of water), and is probably not a problem.

Current Produced By The Wet Cell

Does the Wet Cell produce enough current to be physiologically effective? The work by Becker (1990), reviewed in Section 2.1, demonstrates that voltages in the 25-35 millivolt range produced by the Wet Cell are physiologically meaningful. Actual physiological measurement will be required to determine whether this voltage produces a significant effect in the human body.

As a first step, to calculate the actual current being delivered, we measured the skin resistance of a human being [Douglas Richards] with the electrodes connected in their typical configuration (Nickel to umbilical area, Copper to 4th lumbar). The electrodes were polished with emery paper and held next to the skin with the same pressure as in normal use. The resistance fluctuated somewhat, but was approximately 1 megohm (1×10^6 ohms).

Therefore, by Ohm's law: Current = Voltage/Resistance,

$$\text{Current} = (30 \times 10^{-3}) / (1 \times 10^6) = 3 \times 10^{-8} \text{ Amperes}$$

Although low (less than a microampere (10^{-6} Amperes)), this is within the range Becker has found to be physiologically meaningful when delivered directly to wounds. The effect of application of this level of current through the skin surface is not known.

PART 5: RESEARCH ON THE APPLIANCES

Section 5.1 Research On The Radial Appliance

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The Fetzer Energy Medicine Research Institute (FEMRI) at the A.R.E. Clinic had Harry Latterman, an electronic engineering consultant, study the electrical properties of the Radial Appliance. Latterman measured voltage, current and internal resistance of 4 devices both alone and connected to a human body in actual use. Two of the appliances were provided by each of the two major manufacturers at that time. From each manufacturer, one was built to be a "dummy" appliance, with no internal connections, and one was built to be fully functional. Latterman had the following results:

Resistance: Internally, both dummy devices were open circuits (infinitely high resistance). One of the devices intended to be functional was also an open circuit, probably indicating a defective device. The other had a very low resistance of 1.1 ohm.

Voltage: When the devices were not connected in a circuit, there was no voltage produced across the terminals. When connected to a human body, voltages from 22 to 45 millivolts (averaged over 1 hour) were measured, but were considered by Latterman to be "noise," rather than produced by the appliance. Latterman did not discuss the naturally varying skin potentials in this voltage range.

Current: Using a Kiethly picoammeter no current could be measured through the human body circuit for any of the devices.

Our own measurements showed that the resistance between the terminals of a properly-built appliance is very low - around 4 ohms. This was surprising in the light of the concept that it is an impedance device, i.e., a capacitance produced by the two steel plates separated by the glass plates. However, the carbon plates (not the charcoal) surrounding the steel and glass are excellent conductors, resulting in a very low resistance between the plates. It is likely that the only properly-built device tested by Latterman was the one with the 1.1 ohm resistance between the terminals.

The readings are very specific about the need to not let the charcoal touch the glass or the steel, yet the carbon pieces result in almost an electrical short circuit. This suggests that the device

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is not purely electrical in nature, as we currently understand electricity. Nevertheless, it does have electrical properties, since Cayce frequently emphasized the need to keep the plates contacting the skin very clean.

In our measurements, we used an appliance built specially for research purposes. We do not recommend that you apply a voltage to the terminals of any appliance intended to be used for therapeutic purposes, since it might have an adverse effect on the energetic properties of the device.

Research On Activating The Radial Appliance

The Radial Appliance is activated by placing it in a crock filled with ice and water. The readings are explicit about the need for ice to charge the appliance. Simply cooling it in the refrigerator or outside in cool air is not adequate.

The readings generally say to cool the appliance for 20 to 30 minutes before using it; it stays in the ice-filled crock for the duration of the session (typically 1 hour). Some readings recommend shorter times - 10 to 15 minutes - but these seem to be with earlier designs that did not have the canister with the charcoal, which tends to slow the cooling. There is no way to directly measure whether the appliance has been activated properly - it does not produce a voltage. But it is possible to verify the Cayce recommendation to see whether cooling the appliance for the stated time produces a stable temperature over the hour during which the appliance will be used.

We experimented to see whether the size of the crock made a difference in the cooling rate. Special appliances were built with holes in the cores for the insertion of a thermometer probe. We inserted probes into the center of the core, and also into the top of the core. The thermometer was a Radio Shack indoor/outdoor thermometer.

The cooling rate did not depend on the size of the crock. As long as the ice is packed well around the appliance, up to the line, and water added, the cooling rate was the same for several different size crocks.

Figure 5.11 is an example of a typical cooling curve. As is evident from the curve, most of the cooling, down to about 40 degrees, occurs during the first 20 to 30 minutes, confirming the Cayce recommendation.

The cooling rate did depend somewhat on the initial temperature of the appliance. If it is warm, as in the summer, it might be good to allow an additional 5 minutes or so for cooling.

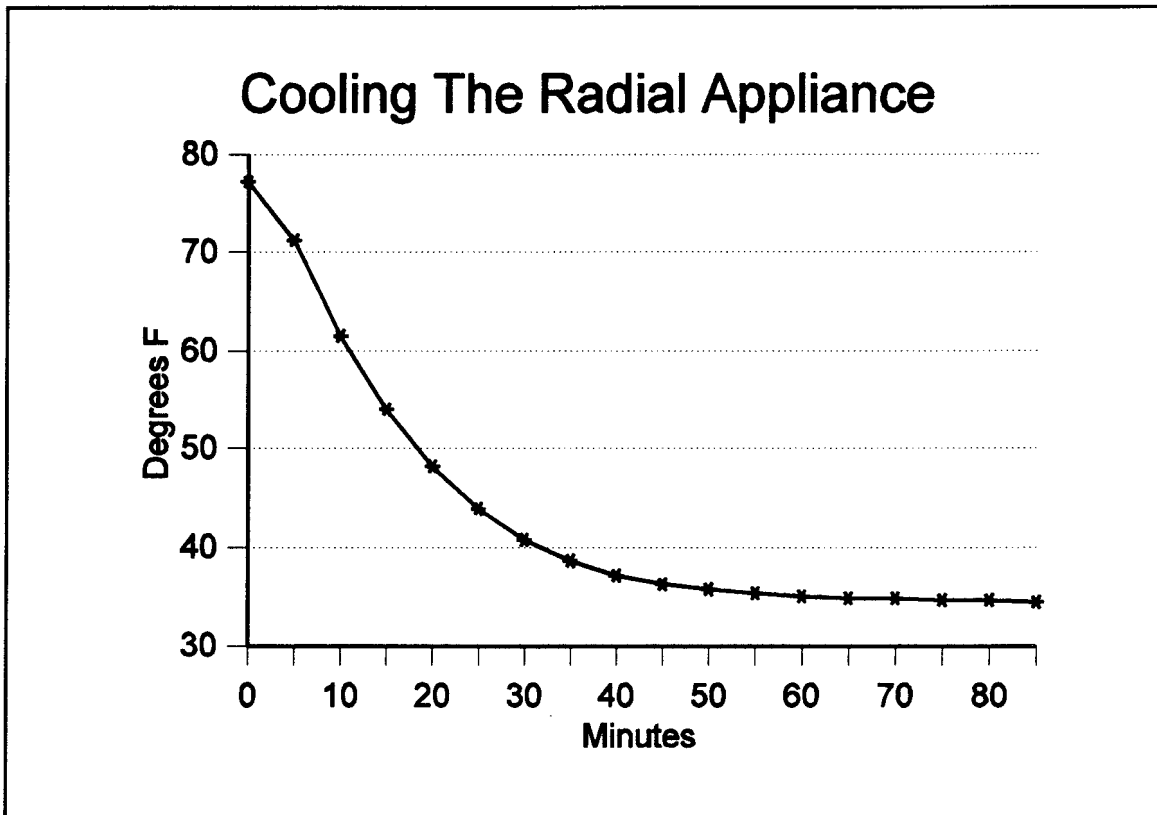


Figure 5.11: Cooling the Radial Appliance – temperature of steel core; 8” x 8” crock, ice cubes and water.

Current Flow Through The Radial Appliance

Although the Radial Appliance does not produce a voltage itself, an electrical potential between two different points on the skin should cause a current to flow. The resistance in the appliance is about 4 ohms, so the much higher resistance of the skin should be the controlling factor in the amount of current flowing.

We measured the skin resistance of a human being [Douglas Richards] with two German Silver electrodes connected in their typical configuration (one to the left wrist, the other to the right ankle). The electrodes were polished with emery paper and held next to the skin with the same pressure as in normal use (velcro strips). The resistance fluctuated somewhat, but was approximately 2 megohms (2×10^6 ohms).

The skin potential (voltage measured between two different points on the skin) will vary with the location of the electrodes. Becker (1990) has found that the midline of the body is positive with respect to the extremities, and that the acupuncture points and meridians have voltages distinguishable from the rest of the skin. According to Edgar Evans Cayce (1965), a

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study conducted by a medical student found that use of the Radial Appliance reduced the electrical potential by about 50% between the extremities of the spine of persons being tested.

We did not have equipment necessary to measure DC skin potentials. Based on a rough estimate from Becker's work, however, if there is a 10 millivolt potential between the 2 electrodes, this would generate a current of:

$$\text{Current} = \text{Voltage}/\text{Resistance} = (10 \times 10^{-3})/(2 \times 10^6) = 5 \times 10^{-9} \text{ Amperes}$$

Any electrical study of the Radial Appliance will require equipment able to accurately measure voltages and currents in this range.

Section 5.2 Research On The Wet Cell

Chemically Charging The Wet Cell

As discussed earlier, the recommended chemical charge for the Wet Cell depended on the condition being treated. Reading 1800-25 gives a "standard" charge, but there was a great deal of variability in the readings. We experimented to determine the effects of several different chemical charges on the output voltage. There may be other subtle energies carried by the Wet Cell, but at present the voltage is the only component that is measurable. We offer these measurements as an initial attempt to quantify the Wet Cell and establish some quality control for the charging chemicals.

Voltages were measured with a Radio Shack digital multimeter, with the red lead connected to the copper pole, and the black lead connected to the nickel pole.

Voltage Variability With The 1800-25 Standard Charge

Three batteries were charged with identical charge kits to 1800-25 specifications. These are:

Distilled Water	1.5 gallons
Copper Sulfate	1.5 pounds
Sulfuric Acid	1 ounce, concentrated
Zinc	30 grains (piece)

All chemicals were purchased by David McMillin directly from commercial chemical suppliers. The acid was the highest purity grade available (Cayce specified C.P. - chemically pure).

A fourth battery was charged with the same chemicals but using one ounce of zinc filings rather than a piece, obtained from one of the suppliers of Wet Cell charge kits.

The voltage results are graphed in Figure 5.21. While they all tend to eventually reach approximately the same voltage (-27 millivolts), there is some surprising variability in the charging rate. While most tend to charge fully within 24 hours, one of the batteries with a zinc piece, and the one with the zinc filings, took several days to come to the same voltage as the others. The difference in charging rates may reflect the differences in the zinc pieces and their rate of reaction.

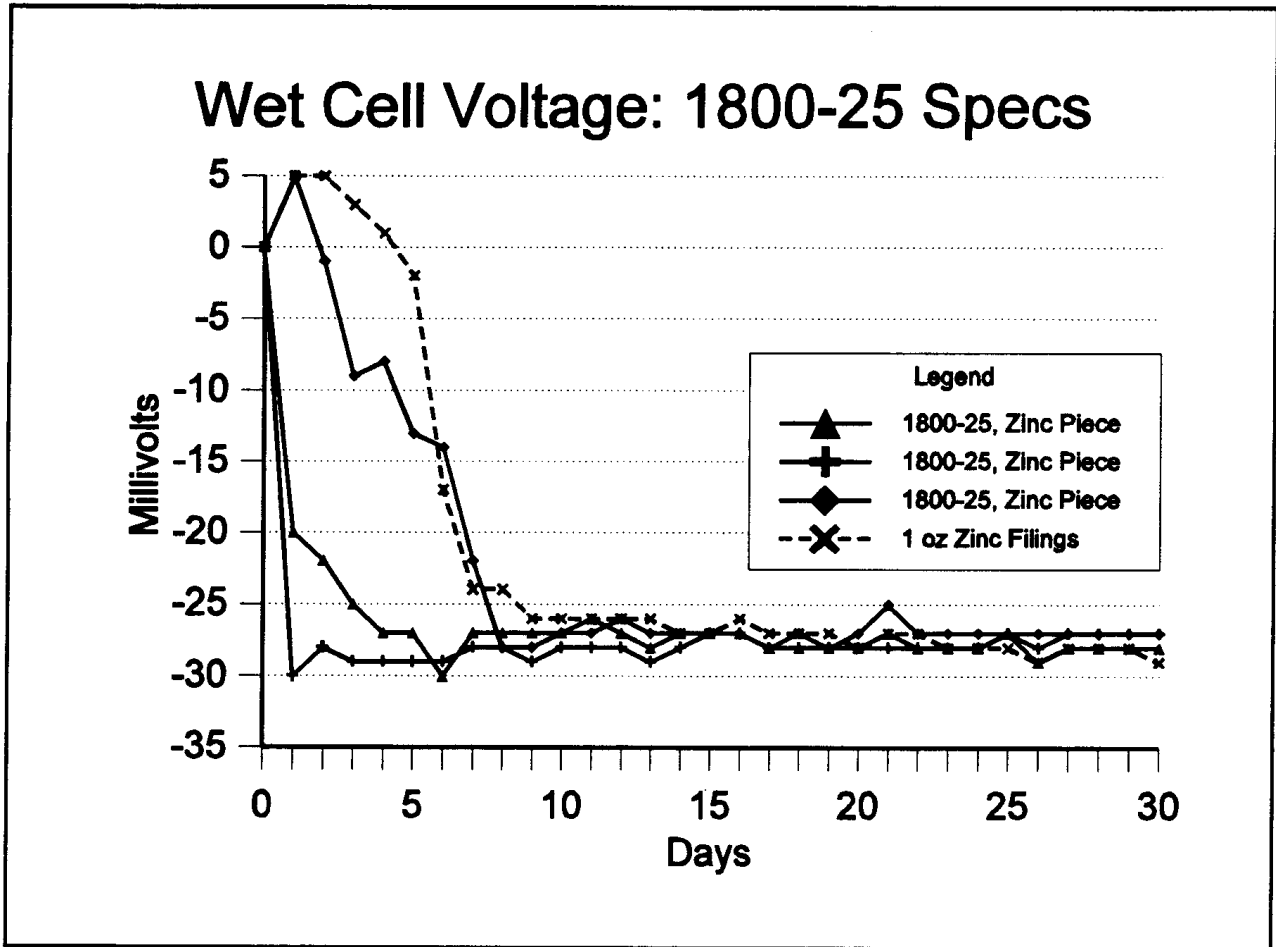


Figure 5.21: Voltages over a 30 day period for 3 Wet Cells charged according to 1800-25 specifications. A fourth battery is included in the graph, with 1 oz. of zinc filings rather than a 30 grain zinc piece.

Varying The Amount Of Zinc

As discussed previously, the amount of zinc changed over the years the readings were given. The most common amount of zinc in the early readings was 10.6 grams (Gray Salter's standard). The most common amount after 1935 was 30 grains (Health Home Remedies Co. and Marsden Godfrey's batteries - Reading 1800-25). The readings recommended unrectified (presumably unpurified) zinc, in the form of metal pieces (as used in the above experiment).

All the current major suppliers have been using 1 ounce of powdered zinc (presumably purified). One ounce is approximately 30 grams. This is apparently a mistake (the readings said 30 grains, not grams) based on correspondence between Edgar Evans Cayce and Dr. William

McGarey (Reading 1800-25, Reports 39-44).

Does the amount of zinc make a difference? Three batteries were charged with the 1800-25 chemicals, with only the zinc varied. Figure 5.22 shows the voltages produced with the following amounts of zinc, over the first 30 hours of charging:

- 10.6 grams
- 30 grains
- 1 ounce

Taken together with the previous graph, it appears clear that the amount and type of zinc alters the charging rate and pattern, with not much effect on the final voltage after a few days. Of course, it is not known what effect this may have on the therapeutic properties of the battery, especially in the first few days.

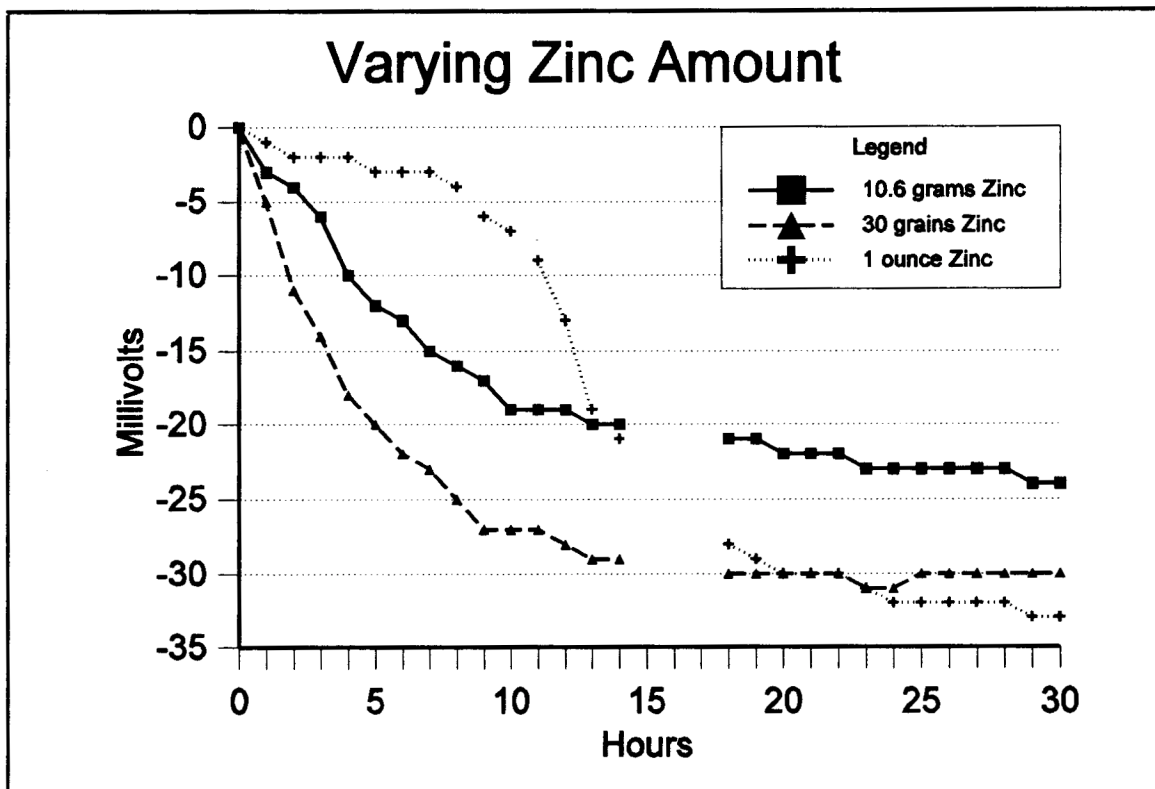


Figure 5.22: Varying the amount of zinc in the Wet Cell. (The 10.6 gram battery also contained 0.5 lb. of plain charcoal.) The three missing hours in the chart represent the middle of the night when measurements were not taken. Note that this chart is in hours rather than days.

Varying The Concentration of Sulfuric Acid

The readings specify Sulfuric Acid (C.P. - presumably "chemically pure"). Concentrated sulfuric acid is very dangerous, and cannot be shipped by mail for safety reasons. All major suppliers, therefore, use acid which has been diluted with water to 25% strength, with 4 ounces instead of one ounce. Since this acid is added to 1 and 1/2 gallons of water already in the battery, chemically this pre-dilution should have no measurable effect. Holding the other ingredients constant, we explored the difference between concentrated sulfuric acid and a 25% dilution. The results are given in Figure 5.23. There appears to be very little voltage difference.

Note that we used reagent grade sulfuric acid obtained from a chemical supply house. This is the closest we could come to "chemically pure," a term not in current use. Other forms of sulfuric acid such as battery acid, though easily obtained, do not meet the Cayce specifications

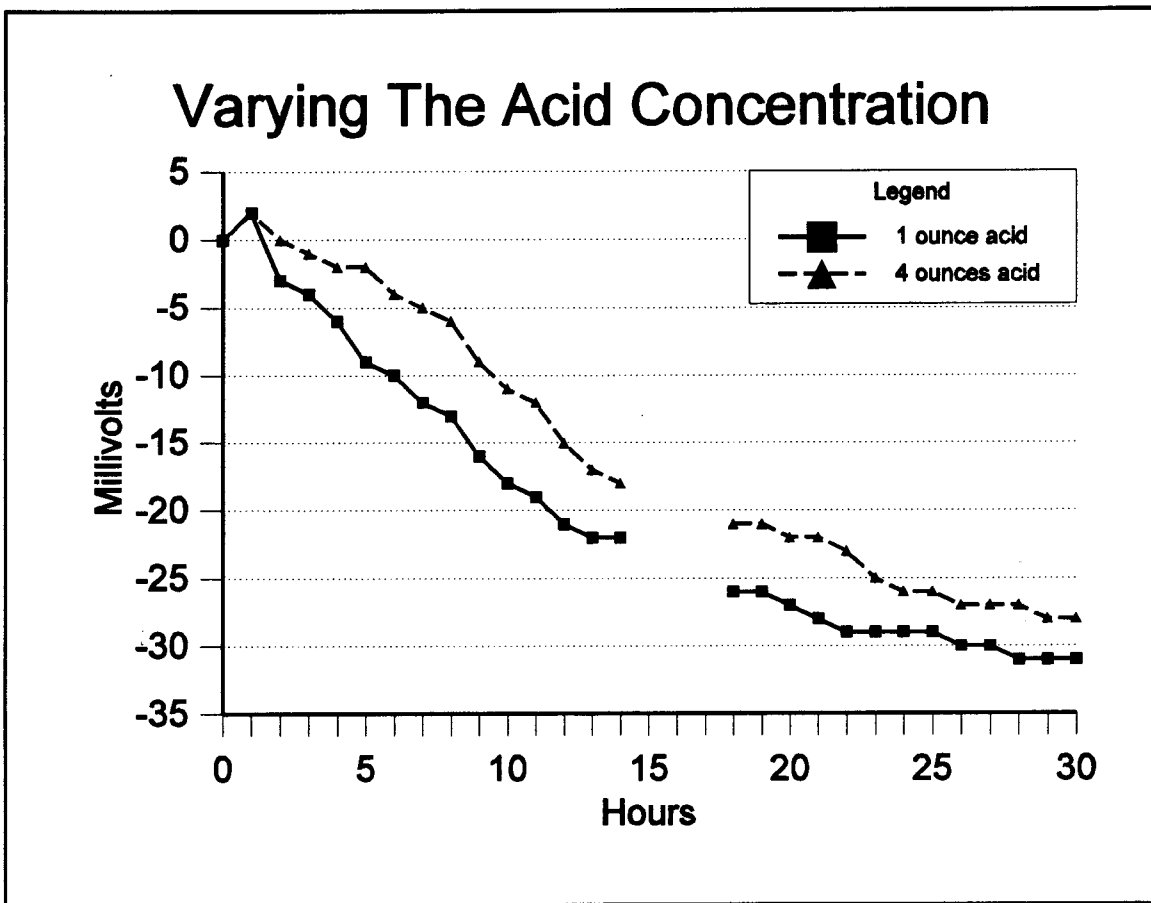


Figure 5.23: Comparison of 1 ounce of concentrated acid to 4 ounces of 25% acid. The three missing hours in the chart represent the middle of the night when measurements were not taken. Note that this chart is in hours rather than days.

and might give different results.

Batteries Without Acid or With Only Acid

Chemistry principles say that a simple battery with copper and nickel poles with acid alone should produce a substantial voltage. What, then, is the role of the copper sulfate and zinc? We hypothesized that the variability in some of the charge kits from different suppliers was due to the acid. We therefore charged a battery without acid to see if this would resemble the anomalous charge patterns. We also charged a battery with only acid, to see if this would produce a significant voltage.

The battery without acid included:

Distilled Water	1.5 gallons
Copper Sulfate	1.5 pounds
Zinc	1 ounce powder

The battery with only acid included:

Distilled Water	1.5 gallons
Sulfuric Acid	1 ounce, concentrated

Figure 5.24 gives the results. Surprisingly, the battery without acid developed a much stronger charge than the standard battery. The battery with only acid also developed a strong charge, but in the opposite direction. Clearly the balanced mixture is what yields the 25-35 millivolt typical voltage.

The "Heavy" Charge

Some readings recommended a "heavy" charge for serious medical conditions, using 2 or more pounds of copper sulfate and the other ingredients in proportion. Figure 5.25 compares the voltages with a "heavy" charge of:

Distilled Water	1.5 gallons
Copper Sulfate	3 pounds
Sulfuric Acid	2 ounces, concentrated
Zinc	10.6 grams (powder)

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And a standard charge of:

Distilled Water	1.5 gallons
Copper Sulfate	1.5 pounds
Sulfuric Acid	1 ounce, concentrated
Zinc	1 ounce (powder)

The voltages and charging patterns are quite similar, with the voltage of the heavy charge rising more slowly. This suggests that the "heavy" aspect of the heavy charge is not a larger voltage. It may be the capability of delivering a higher current, or some unknown subtle energy aspect.

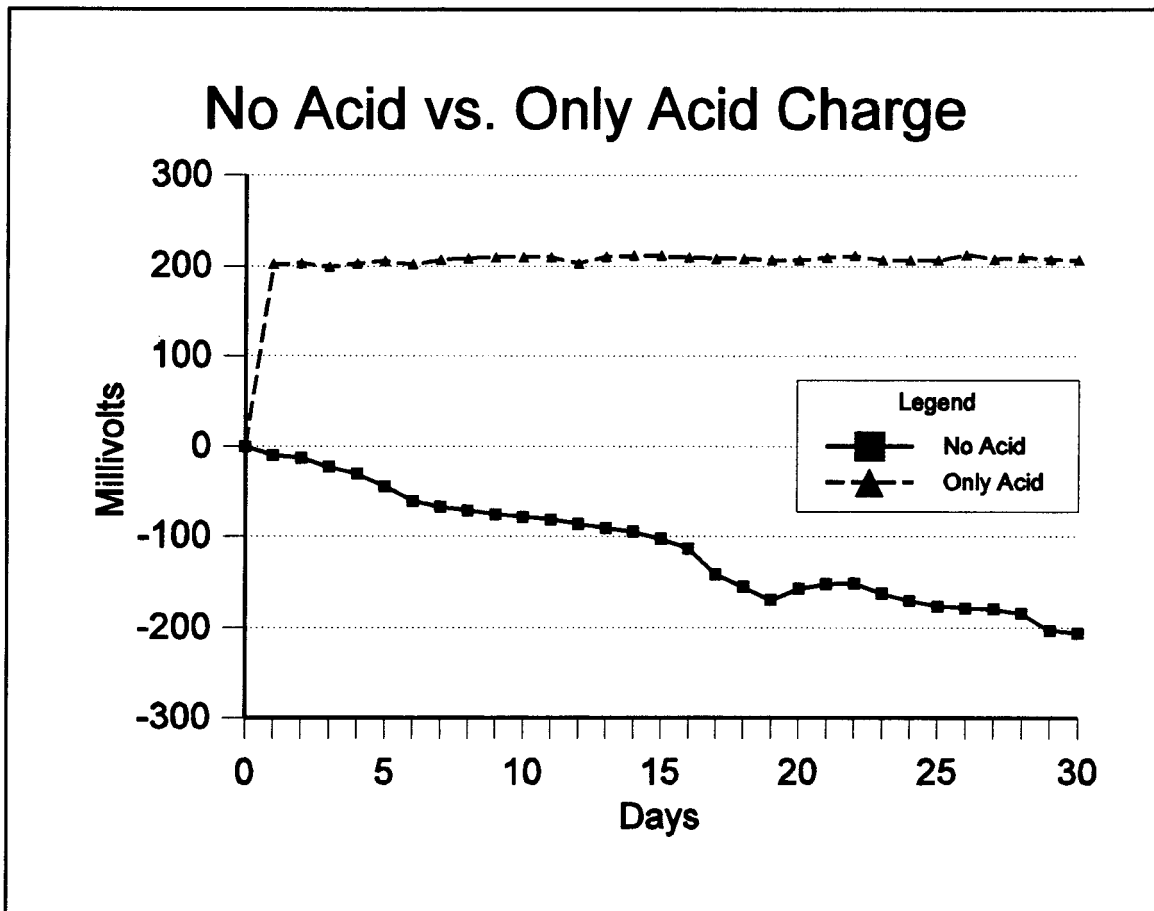


Figure 5.24: Comparison of batteries charged with no acid, and with only acid.

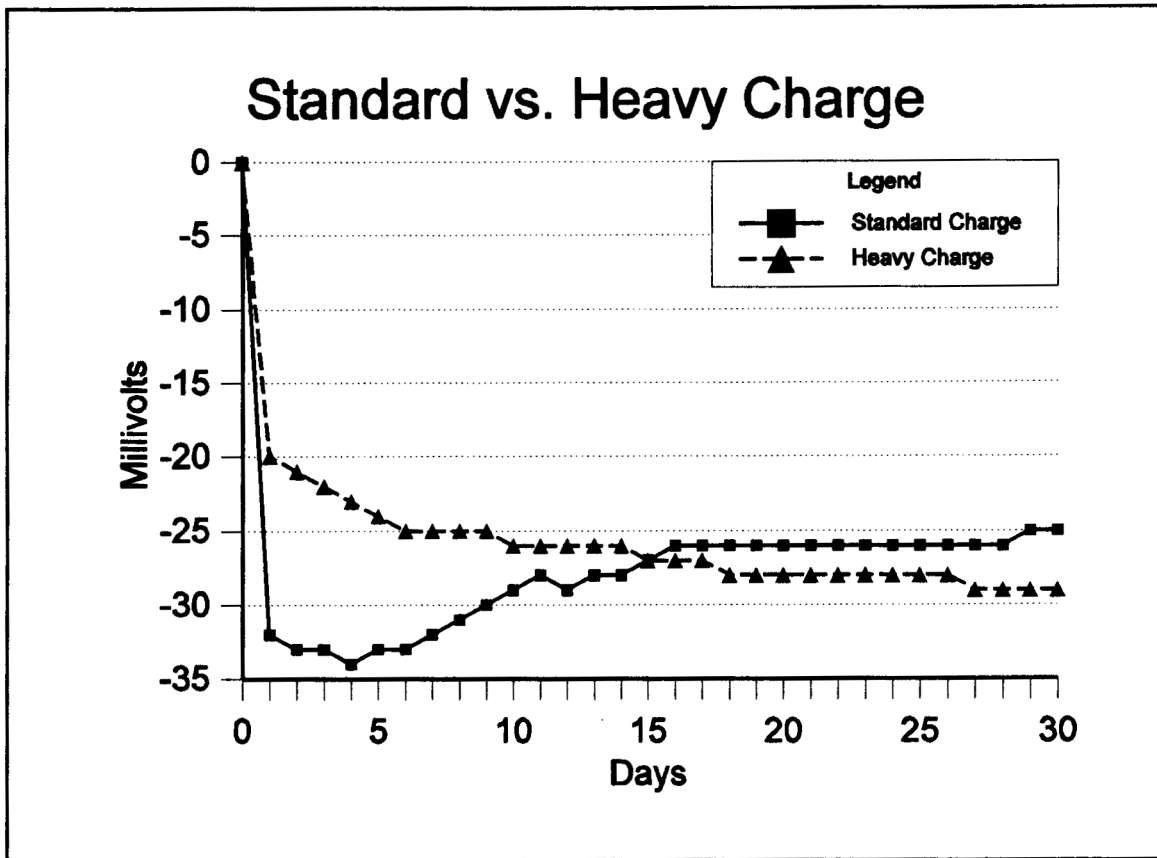


Figure 5.25: Comparison of standard and heavy charges of the Wet Cell.

Voltage Variability With Charge Kits From Different Suppliers

Most of our experiments were conducted with chemicals obtained directly from commercial chemical companies. We also conducted some tests with chemicals from suppliers of wet cell recharge kits. Some of the recharge kits charged much more slowly than the commercially purchased chemicals, and did not reach as high a final voltage. Since there was also variability with apparently identical 1800-25 charges using identical chemicals, it is hard to interpret this result. We suspect that the acid and the zinc play a role. At this point, we would encourage all suppliers to be careful about quality control, and to specify the sources of and compositions of their chemicals to all customers.

All the components make a contribution to the final voltage, which results from a balance of chemicals tending to produce a positive voltage and chemicals tending to produce a negative voltage. Until we understand more about the principle behind the need for the specific voltage and whatever other subtle energy components may be relevant, it makes sense to use the Cayce recommendations for standard and heavy charges, depending on the condition being treated.

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Diluting the acid for shipping purposes, done by all the suppliers for safety reasons, does not appear to affect the final voltage (since the same total acid is used, in a large amount of water), and is probably not a problem.

Current Produced By The Wet Cell

Does the Wet Cell produce enough current to be physiologically effective? The work by Becker (1990), reviewed in Section 2.1, demonstrates that voltages in the 25-35 millivolt range produced by the Wet Cell are physiologically meaningful. Actual physiological measurement will be required to determine whether this voltage produces a significant effect in the human body.

As a first step, to calculate the actual current being delivered, we measured the skin resistance of a human being [Douglas Richards] with the electrodes connected in their typical configuration (Nickel to umbilical area, Copper to 4th lumbar). The electrodes were polished with emery paper and held next to the skin with the same pressure as in normal use. The resistance fluctuated somewhat, but was approximately 1 megohm (1×10^6 ohms).

Therefore, by Ohm's law: Current = Voltage/Resistance,

$$\text{Current} = (30 \times 10^{-3}) / (1 \times 10^6) = 3 \times 10^{-8} \text{ Amperes}$$

Although low (less than a microampere (10^{-6} Amperes)), this is within the range Becker has found to be physiologically meaningful when delivered directly to wounds. The effect of application of this level of current through the skin surface is not known.

Section 5.3: Charging Iodine In The Wet Cell

Iodine is second only to gold in being recommended as a vibrational solution for the wet cell. Iodine was used in two ways. Most commonly, it was one of the solutions recommended for use in the solution jar external to the wet cell. In some readings, however, it was put in a stoppered bottle within the wet cell. In these cases, in addition to the normal chemical charge, Cayce recommended a separate electrical charge of the wet cell to activate the iodine.

The choice of the mode of charging the iodine is related to the historical period in which the reading was given. The very earliest wet cell readings were given before the concept of a solution jar had been introduced. There was quite a bit of variability in wet cell design and in the method of charging it with iodine. When Cayce introduced the solution jar in 1925, the number of readings recommending iodine charged in the wet cell dropped off. In 1926 no readings were given recommending charging iodine in the wet cell, and only a few were given for the next several years. Instead, iodine was used in the solution jar for both the wet cell and the radio-active appliance.

The use of iodine in the wet cell is also related to the development of Atomidine, a form of iodine solution. In 1931, Dr. Sunkar Bisey asked Cayce for a reading on Atomidine, a formula which he had invented. Cayce recommended charging the Atomidine in a large wet cell. Here, the jar of Atomidine was removed after the charging, and Atomidine could be taken by mouth or used with the solution jar. Following his improvement of Atomidine, Cayce did not recommend charging a wet cell with iodine in it until 1944, a few months before his last reading. In 1944, the readings with iodine charged in the wet cell represent about a third of the total wet cell readings for that year. It is not known why Cayce returned to this procedure. One speculation is that during the war years Atomidine (which contained herbs from India) became hard to obtain. The report from Reading 3198-1 suggests that there also may have been business difficulties in the company which made Atomidine.

Figure 5.31 shows the number of readings recommending charging iodine in the Wet Cell, for each year from 1921 to 1944.

The 20 readings given in 1944 present a straightforward, consistent way of charging the wet cell with iodine, in contrast to the variability of the 1920s. It should be noted that, due to the huge demand for readings, in 1944 Cayce was only giving readings for the most serious cases, and the readings were very short and to the point.

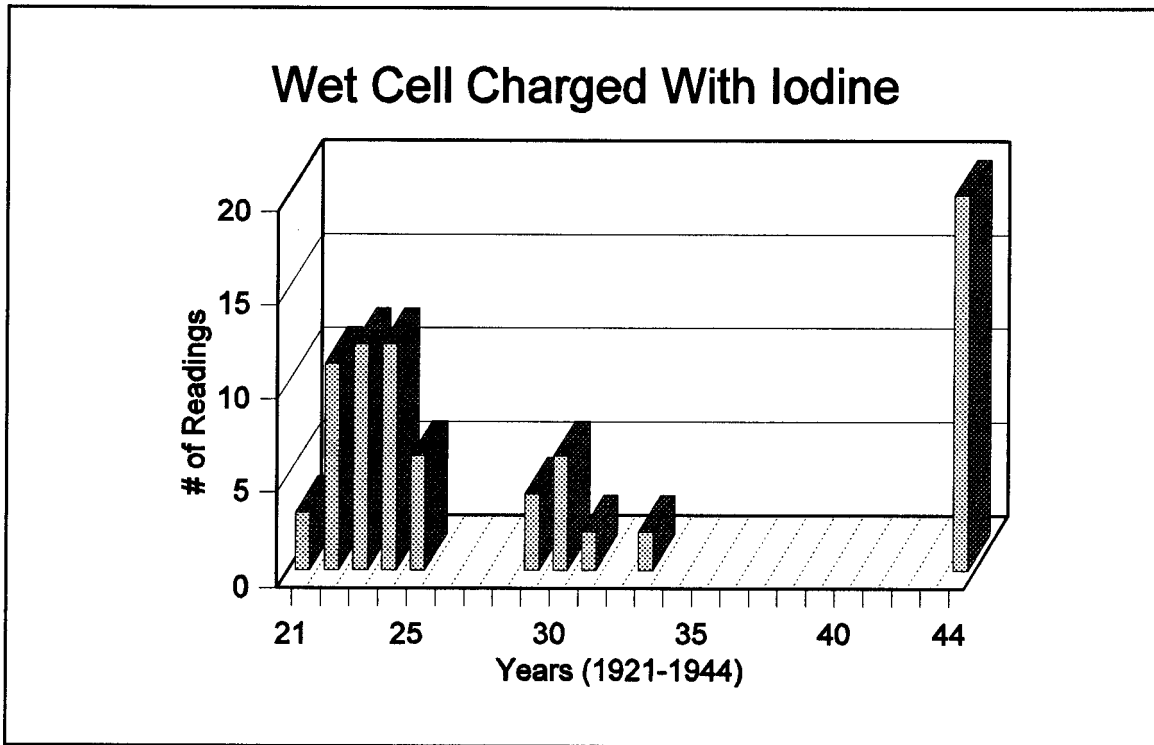


Figure 5.31: Number of readings per year in which iodine was charged in the Wet Cell.

The 1944 readings recommended a "heavy" chemical charge for the wet cell. For example (5073-1, 5/9/44):

- 1 1/2 gallons distilled water
- 2 lbs copper sulfate
- 6 drams (10.6 g.) zinc
- 1 1/2 ounce sulfuric acid
- No charcoal

Often the statement "two pounds of copper sulfate the others in proportion" (5120-1, 5/22/44) was given.

The readings recommended suspending a stoppered bottle (preferably glass stoppered) containing 3 oz. Tincture of Iodine in the wet cell, then charging. The following are typical descriptions of charging:

"This should therefore be put on the low charge, as charging an auto battery. Keep on for at least thirty minutes." (5 120-1, 5/22/44)

"Regular charge for a battery of a car, for an hour. " (5 073 -1, 5/9/44)

"Thirty minutes charge, on the low battery charge, not the high." (5209-1, 6/12/44)

"Three amperes for thirty minutes on the low or slow charge." (5208-1, 6/15/44)

"Low, or about three amperes for thirty minutes. " (5269-1, 6/17/44)

Experiment In Charging Iodine In The Wet Cell

On January 15, 1994, David McMillin and Douglas Richards charged iodine in a wet cell according to the chemical specifications given above, from reading 5 073 - 1. The iodine was 7% (strong) tincture of iodine, in a brown glass bottle with a plastic screw cap (not a glass stopper as the readings recommended). The bottle was suspended from the wet cell cover by a nylon thread. The wet cell was attached to a battery charger after chemically charging for one hour (to -4 millivolts), and charged for 1/2 hour. The charger was set on the low (6-volt) setting, with the positive (red) wire to the copper (red) terminal on the wet cell, and the negative (black) wire on the battery charger to the nickel (black) terminal on the wet cell. The ammeter on the charger read almost exactly 3 amperes at the beginning, and dropped to about 2-1/2 amperes during the charging. This was encouraging confirmation of the accuracy of the Cayce readings.

The voltage produced by the wet cell was also measured, and after electrical charging showed a pattern very different from the normal chemically charged wet cell. A normal chemical charge yields a voltage of -25 to -35 millivolts after 24 hours. The electrically charged wet cell yielded a voltage of only +6 millivolts. Upon disassembling the battery, we discovered that the copper from the copper sulfate solution had electroplated onto the nickel rod, effectively producing a copper rod which might well affect the voltage of the battery.

To avoid the electroplating effect, you can attach the positive (red) wire from the battery charger to the nickel (black) pole of the wet cell, and the negative (black) wire from the battery charger to the copper (red) pole of the wet cell. Although this would damage a car battery, it should not cause a problem in the wet cell because of the small voltage produced chemically. This has been tried in one experiment, and the wet cell appeared to chemically charge to roughly the normal voltage. The Cayce readings did not specify which poles to attach the charger to, and we do not know to what degree charging with reversed poles might affect the battery in a therapeutic situation. After electrically charging the battery, it is probably good to allow 24 hours for the chemical charge to recover before using the battery, although Cayce did not give any specific instructions.

Regarding the effect of charging on the iodine itself, since basic chemistry and physics would suggest that iodine sealed in a glass jar could not receive any effect, Cayce said, "This will

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receive the charge although it may not appear to do so." (5341-1, 7/13/44)

Additional Observations On The 1944 Iodine/Wet Cell Readings

These readings show a number of consistent features:

1. The medical conditions were all very serious, and many were problems with locomotion involving the legs. They include:

Multiple sclerosis (5073-1, 5108-1, 5238-1, 5324-1, 5403-1)
Arthritis (including rheumatoid) (5129-1, 5120-1, 5150-1, 5169-1)
Locomotion: Impaired (5179-1)
Polio: After-effects (5182-1)
Atrophy: Muscular (5193-1)
Cerebral Palsy (5209-1)
Paralysis/Injuries (5208-1)
Parkinson's Disease (3468-3)
Asthenia (tiredness) (5289-1)
Diabetes (5341-1)
Goitre (5173-1)
Glands (5269-1)
Blepharitis (eyes) (5301-1)

2. The chemical charge was a "heavy" charge, with 2 lbs of copper sulfate.

3. Charcoal was not included.

4. Chloride of Gold was recommended for the solution jar in all but one reading (5208- 1). Two readings also recommended Silver Nitrate (3468-3 and 5324-1), and one reading also recommended Camphor (5324-1).

5. Massage was always recommended (except in 5341-1, where the appliance was attached to the extremities like the Radio-Active). Peanut oil, sometimes mixed with Olive Oil and Lanolin, was the massage oil. The pattern varied with the condition.

APPENDIX A REFERENCES

The following reference list includes all references cited in the text. It also includes some incomplete references cited by Becker (1990), with descriptions by Becker of their content. These are provided as resources for those who wish to do more in-depth research.

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APPENDIX B THEORY AND APPLICATION OF THE APPLIANCES AS DESCRIBED BY HUGH LYNN CAYCE

Hugh Lynn Cayce was Edgar Cayce's oldest son and a primary influence in the commercial development of certain commercial products mentioned in the readings. His participation in the Health Home Remedies Company gave a strong impetus to the standardization of the Radial Appliance and the Wet Cell Battery.

He also wrote excellent treatises on the theory and application of the appliances. This appendix contains some examples of his written work describing the appliances. This type of documentation is extremely important. It comes from an acknowledged authority on the appliances who wrote and distributed the information during Edgar Cayce's lifetime. Presumably, any errors or distortion in the ideas presented would have been addressed by Edgar in his psychic discourses. Furthermore, Hugh Lynn was a very effective writer with a wonderful knack for excerpting and summarizing material from the readings. So the material which follows is both authoritative and readable.

Keep in mind that the appliance which we are calling the Radial Appliance was referred to as the Radio-Active Appliance during Hugh Lynn's era. The earlier name does not refer in any way to atomic radiation as we know it (e.g., the atomic bomb, atomic reactors, etc.). Rather, it was simply a term associated with vibratory therapeutics during the early decades of this century. In the years following Edgar Cayce's death in 1945, the Radial Appliance has been called by other names including the Impedance Device, the Radial Active Appliance, and so forth.

The first sample of Hugh Lynn Cayce's writings on the appliances was published in September, 1935. Along with several other important historical documents on the theory and application of the appliances, it is currently included as R.5 in the reports section of reading 1800-24.

An Early Version Of Hugh Lynn Cayce's Perspective On The Theory And Application Of The Appliances

ELECTRICAL APPLIANCES - By Hugh Lynn Cayce September 1935

INTRODUCTION

For many years the importance of low electrical vibrations in relieving certain types of human

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suffering has been emphasized through the psychic readings of Edgar Cayce. Fifteen years ago the first description of an appliance for introducing into the system a low electrical current was given. Since 1925, experimentation and research have improved the usefulness and widened the possible application of these appliances. The results of the work in this field are briefly presented here.

Let us compare the nerves with a telegraph system, with the brain as the central receiving and sending station. Within a human body there is the central nervous system, consisting of the brain and the spinal cord; and the peripheral system, consisting of the cerebrospinal and sympathetic nerve fibers. The brain sends and receives messages along the large spinal cord which in turn is connected at various plexes or stations with the nerves of the cerebrospinal and sympathetic which pass to all parts of the body, forming a complete network of tiny nerve fibers. Along the various branches of this network vibrations pass with lightning rapidity to and from the various sub-stations and the central station, the brain. In the telegraph system a weak place or break in the wires will cause a short circuit. Similarly in a body a pressure, impaction or inflammation will result in imperfect nerve responses.

All matter, whether organic or inorganic, has a period of vibration or frequency. When this is changed, the entire structure changes and a reaction takes place. For example, water may be heated until it is reduced to steam. The vibratory rate or period of frequency has been altered. Every particle of matter has its peculiar vibratory rate.

"The human body is made up of electronic vibrations, with each atom and element of the body, each organ and organism of same, having its electronic unit of vibration necessary for the sustenance of, and equilibrium in, that particular organism. Each unit, then, being a cell or a unit of life in itself, has its capacity of reproducing itself by the first law as is known of reproduction - division. When a force in any organ, or element of the body, becomes deficient in its ability to reproduce that equilibrium necessary for the sustenance of the physical existence and reproduction of same, that portion becomes deficient through electronic energy as is necessary. This may come by injury or by disease, received from external forces. It may come from internal forces through lack of eliminations as are produced in the system, or by the lack of other agencies to meet the requirements of same in the body." 1800-4.

In the body even a strain or binding will cause incoordination. Impulses, as messages, will not reach the different parts of the body properly. The circulation is thus affected and inflammation results.

The action of both types of appliances which will be described here deals with a vibratory theory. The nervous systems, the circulatory and the ductless glands are the parts of the body particularly involved.

Radio Active Appliances

The Radio Active Appliance is made up of two insulated steel bars packed in charcoal and held in a metal container. Flexible wire leads are attached to each bar and are connected to the body by means of a small silver plate. The appliance is placed in ice water and allowed to remain for fifteen minutes before being used. Where medical properties are to be carried into the body one of the wires passes through a container in which a solution of the medication is contained.

The plain appliance directly affects the circulation. The vibratory current of the body passes through the appliance, the temperature of the appliance being lower than that of the body, building up a low charge which is given off into the body through the other anode completing the circuit. The construction of the appliance makes it possible for these charges to be regular and even in pulsation. Thus a low electrical current can be taken into the body without discomfort or tensing of the nerves and muscles as results from contact with most electrical currents. The effect of this appliance is to equalize the circulation and relieve strain in any congested or taut areas of the nervous system. The action is that of equalizing the natural vibration or current of the body itself.

One of the early readings on this appliance describes its action as follows: "The vibrations resulting from a combination of the ice with steel affect the blood in which iron is one of the most important elements. The connection produces an equilibrium in the human body to relieve any tension as is caused in the deficiency or over proficiency of any electronic agent as is set forth by any of the organisms as are found in the human body. Then the action is as this, that organ which is deficient may receive sufficient electronic agents (vibrations) to increase and assist it in gaining its perfect equilibrium, acting as the same principle to the body as this: the electronic forces of the deficient organism are balanced as necessary for sufficient rest in that called sleep to recuperate the energies of the whole body. This application produces, then, the same effect in the system." 1800-4.

The use of this appliance is recommended in cases of rheumatism, neuralgia, headaches, colds, insomnia, tiredness and overwrought nerves. The preventive value of the appliance is emphasized. Whenever a body is over-taxed mentally or physically this appliance is helpful.

Perhaps the most important development in relation with the Radio Active Appliance is in the use of medical properties in solution. In a number of individual cases recommendations have been made to pass the wire lead from the appliance to the body through a solution of chloride of gold, iodine, spirits of camphor, nitrate of silver and the like. The theory advanced was that the vibrations of these properties would be picked up and sent into the body with beneficial results. The solutions differed in various types of ailments. The following extract from early readings explain the details of this type of treatment.

"In adding medical properties in connection with the appliance first attach the small anode to arm

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or leg (alternately), then attach the negative anode (on the wire lead) to the central portion of the body to the right or left of the umbilical center, using a wider silver plate than on the regular appliance. The solution carrying the tincture of iron would cure anemia, even in a virulent state.

Of necessity this would be of greater value as a preventive rather than curative though with the application of this we gradually build that condition in the system to overcome, or add iron to the system. Tincture of iodine cures and prevents goiter. This, as we find, would reduce in any condition that affects the ductless glands and would also prove preventive in cases first beginning of appendicitis, or of any condition relating to either the thyroid or the appendix. Silver nitrate is a nerve stimulant and would be beneficial in any condition relating to the nerves. The chloride of gold would be beneficial in cases bordering on rheumatics or the necessity of rejuvenating any organ of the system showing delinquency in action. Alternating solutions of gold and silver would be helpful in cases of neuritis, enlarged joints, muscles or tissue, or any protuberance as comes to portions of the body. Spirits of camphor would be helpful in cases of nausea, intestinal disturbances and diarrhea." 1800-6.

An interesting statement of the action of this appliance with the medical properties is given as follows: "The vibration as given off creates the same vibration giving action with the elements in the system that create iron (or other properties) in the system - These should be applied through cold, using ice created by the manufacturer for it carries the properties necessary to act best with these various properties. All vibration carrying, then, some form of this nature that adds vibration to the organisms in the system, for all are units of a vibratory force. Many conditions may be relieved where alcoholic stimulants have destroyed the tissue in the central portion of the body or in the re-creative forces in the generatory system, or where tissue has been destroyed in the brain itself. The alternating of the silver and gold will aid in rebuilding and rejuvenating such a system." 1800-6.

In a subsequent reading further description of the theory of this appliance is given: "The theory, or the therapy, of this vibrator (appliance) is from that of the atomic force or vibration as is produced by various chemical compounds and their application through electronic forces to the body - the electronic forces being produced by the action of certain grades of steel and their combination with ice. In passing through this vibration as set up partakes of that of the chemical through which it passes, and is distributed to the body from that center of the body in the solar plexus brain, or from those centers about the umbilicus, which are the centers of the electronic and atomic vibratory radiations of a human body." 1800-15.

Detailed description follows as to the preparation of the various solutions. A specific example of the action of one of the compounds is also given. "In the nerve system, the brain is the head, and the active force through which all the conscious sensory consciousness is received. To see someone eating produces that vibration in the saliva glands that stimulates the gastric juices of the stomach - one becomes hungry. In the central brain the knowledge of subconscious action in the body is located.

When the blood becomes deficient, or anemic, the addition of iron, or of gold, or silver, in various forms or various conditions, adds, through this electronic atomic force, that same action in that portion of the system that creates that reaction in the building or plasm cell in the system as is created in the gland by the action of the nerve system carrying that variation as seen." 1800-15.

It is interesting to note that with different solutions various types of metal anodes are used. Evidently the atomic vibration from these various chemical compounds is passed into the body and reacts on the brain and nerve centers controlling the ductless glands whose activity governs the increase or decrease of certain chemicals in the body. Further details of the activity of various solutions in connection with this appliance must be omitted here but are available for those who desire to investigate these appliances further.

Very favorable reports have been received from those who have used both the plain appliance and that carrying medical properties. In one instance the appliance carrying iodine was an important part of the treatment suggested for an individual with serious disorders of the ductless glands. This patient has shown remarkable improvement. In another instance the plain appliance was suggested for aiding in recovery from a nervous breakdown. The individual has not slept without sedatives for months, but with a few days' use of the appliance was able to discontinue the sedatives and relax in normal sleep. Such instances are not rare cases but regular wherever the Radio Active Appliance is recommended. There are a number of individuals who have been using these appliances for years and would not be without them. A most interesting case was reported recently of a serious condition of poor circulation. After two weeks' use of the appliance the individual reported that he was relieved of severe pains and numbness in various portions of the system for the first time in over two years. From our reports these appliances have proven especially helpful in cases of general nervousness and irregular circulation. Such conditions are so prevalent that we look forward to a time when these appliances will be used by large numbers of individuals.

Wet Cell Appliance

The Wet Cell Appliance is made up on a slightly different principle from the Radio Active. This appliance is used with a solution which in itself generates a low electrical current. The ingredients contained in the solution are Copper Sulfate, Sulphuric Acid, Willow Charcoal, Zinc and Salt. Two poles of nickel and copper extend into the solution contained in a heavy crock. To the ends of the poles wire leads are attached and extend to the body of the individual. Chemical compounds may also be carried through this appliance in a similar manner to that used with the Radio Active; i.e., one of the leads from the appliance passes through a container holding the desired solution of the chemical. To the ends of the wire leads various types of metal anodes are attached according to the chemical being used.

It is interesting to note that the anodes of this appliance are placed at special nerve centers along

the cerebrospinal system and over ducts and glands in the frontal portion of a body. The impulse of the low electrical current is sent direct to the centers needing attention and works through the nervous systems rather than through the circulatory system. The principle of the influence of the atomic vibrations is the same as with the Radio Active Appliance. The difference lies primarily we believe in that the Radio Active works through the circulation and the Wet Cell through the nervous systems direct to the ducts and glands affected.

The Wet Cell appliances have been given in serious cases of incoordination with underdeveloped children, in paralytic cases, for gland conditions and serious nervous disorders involving insanity. We have in our files reports on cases involving arthritis, paralysis, and brain disorders where definite help has been received. Where this type of treatment is involved the case is generally of a very serious nature and requires patience and persistence in carrying out the needed treatments.

Conclusion

The research work connected with these appliances is still in elementary stages. In keeping with the general policy of the Association for Research and Enlightenment, Incorporated, the cooperation and interest of all members interested in this phase of the work will be most welcome. These appliances have been developed from detailed descriptions and explanations through the psychic readings of Edgar Cayce. They have been used with highly gratifying results by members over a period of many years. The work of presenting these appliances to the scientific world and to the thousands who may benefit from using them becomes one of the privileges and duties of those who glimpse a vision of their possible value to humanity.

A Revised Version Of Hugh Lynn Cayce's Theory And Application Of The Appliances

In 1940, the above article was expanded as follows. The revised version was mailed with each reading which called for the use of either of the Appliances. It is currently included as R.6 in the reports section of reading 1800-24.

THE RADIO-ACTIVE APPLIANCE - by Hugh Lynn Cayce

HISTORY: The Radio-Active Appliance was first described in individual psychic readings given by Edgar Cayce over twenty years ago. The crude form of the first Appliance has been greatly improved through the years. Research work on this Appliance was done in 1928, 1929, and 1930 in the Cayce Hospital at Virginia Beach, Virginia. Under the direction of physicians and technicians excellent test conditions were set up and valuable reports secured. This Appliance has proven so helpful in individual cases that Mr. Mardsen Godfrey has undertaken to develop

it for commercial distribution.

CONSTRUCTION AND OPERATION: The Appliance is made up of two insulated steel bars packed in charcoal in a metal container. Flexible wire leads are attached to each bar and are connected to the body by means of small silver plates. The Appliance is placed in a small jar of cracked ice and allowed to remain for fifteen minutes before being used

The Radio-Active Appliance directly affects the circulation. The vibratory current of the body passes through it, the temperature of the Appliance being lower than that of the body, building up a low impulse which is given off through the anodes attached to the extremities of the body. The construction of this Appliance makes it possible for the impulses to be regular and even. It is thus effective without the tensing of nerves and muscles which is frequently the case where high frequency currents are used. The Appliance is not connected with any electric current and causes no discomfort to the body while treatments are being taken, producing rest and relaxation instead.

WHEN TO BE USED: Whenever a body is overtaxed mentally or physically the Radio-Active Appliance is helpful to produce normal rest. The Appliance is designed to equalize the circulatory vibrations of a body; hence any condition which directly disturbs the circulation is improved through its regular use. It has been used successfully in the treatment of rheumatism, neuralgia, headaches, colds, insomnia, fatigue, and over wrought nerves

In some instances the Radio-Active Appliance directions call for the use of a solution, such as Gold Chloride, Iodine, Camphor, etc. When this is the case, be sure to specify it when ordering the appliance, so that a special attachment can be supplied with the Appliance. This special attachment consists of a small jar holding the solution, through which passes a hollow lead tubing. One wire from the appliance is attached to the solution so that the current from the body passes through it.

DIRECTIONS FOR USING THE RADIO-ACTIVE APPLIANCE

The Appliance should be placed in the crock and surround with cracked ice. Add water until it reaches a level of about 2 inches from the top of the Appliance. Do not allow the water to come over the top of the Appliance. Let it stand in this manner for 15 to 20 minutes before attaching to the body; leaving it in the ice water during the time it is attached to the body.

When the Appliance is ready for use, insert the tips of the wires in the holes. **DO NOT LET THE METAL DISCS OR PLATES TOUCH EACH OTHER AFTER THE WIRES HAVE BEEN FASTENED TO THE APPLIANCE!**

The attachments would be made in this manner:

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1st day: The plate coming from the red pole would be attached FIRST, to the RIGHT WRIST; while the other plate coming from the black pole would be attached LAST, to the LEFT ANKLE.

2nd day: FIRST attachment (from the red pole) would be to the LEFT WRIST; LAST attachment (from the black pole) to the RIGHT ANKLE.

3rd day: Attach FIRST to the LEFT ANKLE; LAST to the RIGHT WRIST.

4th day: FIRST to the RIGHT ANKLE; LAST to the LEFT WRIST.

Thus a circle of the body will have been made in the attachments. The first attachment becomes the positive, the last the negative. Thus always be sure to attach FIRST the plate coming from the RED pole, LAST the one coming from the black pole.

Alternate the attachments each day in the manner indicated, for one hour (1 hr.); unless otherwise specified for your particular case. Use for 3 to 4 rounds of the 4-day periods, then leave off a few days, then begin again.

It is preferable to remain quiet, in a prayerful, meditative and constructive attitude during the hour the Appliance is attached; while resting, or just before retiring at night.

Note: The plates are attached to the inside of the wrist, as near the pulse as possible, and to the inside of the ankle - in the hollow just between the ankle joint and the tendon which runs down the back of the leg to the heel. Adjust the bands so that the discs are held securely in place against the skin.

No sensation will be experienced by the body while using this Appliance, other than possibly a slight tingling in the extremities of the body (hands and feet) or a feeling of drowsiness slowly creeping over the body. Upon awakening the next morning the body will feel thoroughly relaxed and very much refreshed from the night's sleep.

When not using the Appliance disconnect the wires and if convenient place the unit in the sun for 20 to 30 minutes. This is all the recharging that will be necessary. Before and after each attachment, be sure the plates are cleaned or polished with the emery cloth which is provided. Special care should be taken not to let them become corroded by the acids and oils from the body.

The vibratory current of the body passes through the Appliance, the temperature of the Appliance being lower than that of the body, building up a low charge which is given off into the body through the other attachment completing the circuit. The effect of the Appliance is to equalize the circulation and relieve strain in any congested or taut areas of the nervous system. The action is that of equalizing the natural vibration or current of the body itself.

WET CELL APPLIANCES - By Hugh Lynn Cayce

For many years the importance of low electrical vibrations in relieving certain types of human suffering has been emphasized through the psychic readings of Edgar Cayce. Fifteen years ago the first description of an appliance for introducing into the system a low electrical current was given. Since 1925, experimentation and research have improved the usefulness and widened the possible application of these appliances. The results of the work in this field are briefly presented here

Let us compare the nerves with a telegraph system, with the brain as the central receiving and sending station. Within a human body there is the central nervous system, consisting of the brain and the spinal cord; and the peripheral system, consisting of the cerebrospinal and sympathetic nerve fibers. The brain sends and receives messages along the large spinal cord which in turn is connected at various plexes or stations with the nerves of the cerebrospinal and sympathetic which pass to all parts of the body, forming a complete network of tiny nerve fibers. Along the various branches of this network vibrations pass with lightning rapidity to and from the various substations and the central station, the brain. In the telegraph system a weak place or break in the wires will cause a short circuit. Similarly in a body a pressure, impaction or inflammation will result in imperfect nerve responses.

All matter, whether organic or inorganic, has a period of vibration or frequency. When this is changed, the entire structure changes and a reaction takes place. For example, water may be heated until it is reduced to steam. The vibratory rate or period of frequency has been altered. Every particle of matter has its peculiar vibratory rate.

Extract from reading 1800-4: "The human body is made up of electronic vibrations, with each atom and element of the body, each organ and organism of same, having its electronic unit of vibration necessary for the sustenance of, and equilibrium in, that particular organism. Each unit, then, being a cell or a unit of life in itself, has its capacity of reproducing itself by the first law as is known of reproduction - division. When a force in any organ, or element of the body, becomes deficient in its ability to reproduce that equilibrium necessary for the sustenance of the physical existence and reproduction of same, that portion becomes deficient through electronic energy as is necessary. This may come by injury or by disease, received from external forces. It may come from internal forces through lack of eliminations as are produced in the system, or by the lack of other agencies to meet the requirements of same in the body."

Even a strain or binding will cause incoordination. Impulses, as messages, will not reach the different parts of the body properly. The circulation will thus be affected and inflammation will result.

The action of the Wet Cell appliance, described here, deals with a vibratory theory. The nervous systems, the circulatory and the ductless glands are the parts of the body particularly involved

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This appliance is used with a solution which in itself generates a low electrical current. The ingredients are Copper Sulphate, Sulphuric Acid, Willow Charcoal, and Zinc. Two poles of nickel and copper extend into the solution contained in a heavy crock. To the ends of the poles wire leads are attached and extend to the body of the individual. Chemical compounds may also be carried through this Appliance.

One of the leads from the Appliance passes through a container holding the desired chemical solution. To the ends of the wire leads various types of metal anodes are attached, according to the chemical being used.

It is interesting to note that the anodes of this Appliance are placed at special nerve centers along the cerebrospinal system and over ducts and glands in the frontal portion of a body. The impulse of the low electrical current is sent direct to the centers needing attention, and works through the nervous systems rather than through the circulatory system. The principle of the influence of the atomic vibrations is the same as with the Radio-Active appliance (another type of appliance which has evolved from the study and the application of Mr. Cayce's Readings.) The difference lies primarily, we believe, in that the Radio-Active works through the circulation and the Wet Cell through the nervous systems direct to the ducts and glands affected.

The Wet Cell Appliance have been recommended in serious cases of incoordination with undeveloped children, in paralytic cases, for gland conditions and serious nervous disorders involving insanity. We have in our files reports on cases of arthritis, paralysis, and brain disorders, where definite help has been received. Where this type of treatment is recommended, the case is generally of a very serious nature and requires patience and persistence in carrying out the needed treatments.

Research work on these appliances is still in elementary stages. In keeping with the general policy of the Association we welcome the cooperation and interest of all members interested in this phase of the work. These appliances (The Radio-Active and the Wet Cell) have been developed from detailed descriptions and explanations given through the psychic Readings of Edgar Cayce. They have been used with highly gratifying results by members over a period of many years. The work of presenting these appliances to the scientific world, and to the thousands who may benefit from using them, becomes one of the privileges and duties of those who glimpse a vision of their possible value to humanity.

DIRECTION FOR USING THE WET CELL APPLIANCE

1. Unpack the Appliance and wash the jar thoroughly; then dry with a clean cloth.
2. Pour 1 1/2 gallons of DISTILLED WATER into the jar. This amount of water will fill the jar

to a point opposite the mark on the outside.

3. Add the chemicals IN THE FOLLOWING ORDER; unless otherwise specified in your case:

1. Copper Sulphate.....1 1/2 pounds,
2. Sulphuric Acid C.P.....1 ounce,
(this can not be shipped, so purchase it from
nearest drug store,)
3. Zinc.....30 grains, [6 drams]
4. Willow Charcoal.....1/2 pound.

Stir this solution thoroughly with stick provided, until a good part of the charcoal is dissolved.

4. Place the jar in the box container, put cover on and attach the wire leads to the connections on the inside of the box. Important: Be sure that the wire from the nickel (negative -) pole is attached to the connection marked (-) on the outside of the box, and that the wire from the copper (positive --) pole is attached to the connection marked (--) on the outside of the box.

5. Close the top and set the Appliance to charge itself for at least twelve hours before taking the first treatment.

6. When ready to take the first treatment, attach the anodes as directed for your individual case. Adjust the wire connections to the anodes and then fasten the other ends of the leads to the Appliance by unscrewing the connections and then tightening them on the wire tips so that they are held securely. Make the attachments to the body first, as directed in the Reading given by Mr. Cayce. Remember, the wire to the larger or nickel plate is always to be attached to negative (-) connection. The wire to the smaller copper plate is always attached to the positive (--) connection. Do not allow the anodes to come in contact with one another after the wire leads have been connected to the Appliance.

7. After each treatment disconnect the wires from the Appliance. Keep the anodes which come in contact with the body, polished with the emery cloth. Do this each time before and after using.

8. This Appliance should be recharged every thirty days. Empty the old solution from the jar and wash it clean. Remove all accumulations from the poles with the emery cloth or with a file if necessary. Repeat the mixing of the solution as before. The ingredients packed separately in the proper quantities may be ordered from us

9. In some instances where the Wet Cell Appliance is suggested, certain auxiliary solutions are used with it separate containers. The wire going to the negative anode always passes through the solution. Where different solutions are used on alternate days, separate containers are furnished but the same wires may be used. These solutions ... such as Atomidine, Gold Chloride,

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Camphor, Silver Nitrate, etc ... are varied as to price and consequently are NOT covered by the price of the Appliance.

APPENDIX C

SOME EXCERPTS ON THE RADIAL APPLIANCE

Edgar Cayce had many wonderful things to say about the Radial Appliance. This appendix contains examples of the many benefits which the readings said could be expected with regular use of the appliance. Most of the selections fall under the category of "preventative" or general health maintenance measures (also referred to as the "plain" Radial Appliance - that is, without the solution jar). A few of the later excerpts fall more into the "curative" type of application, particularly when integrated with other treatments intended to address a definite illness or pathology.

As with earlier sections, the use of the term "Radio Active Appliance" in these selections does not in any way refer to atomic energy as we commonly know it today. To avoid such negative connotations, we now use more neutral terminology such as the Radial Appliance.

"GOOD FOR EVERYBODY"

202-7

Q. Is it necessary for the body to take the Radio-Active battery treatment?

A. The Radio-Active battery would be good for EVERYBODY! and would be especially good for this body. This assists in keeping an EQUILIBRIUM. Not that it is a curative, but it is CERTAINLY a PREVENTATIVE!

600-1

Q. Would a Radio-Active Appliance be beneficial?

A. Of course, the Radio-Active Appliance is beneficial to EVERYBODY, as we have given. Such applications would be more to KEEP a balance.

1158-11

Q. Is it desirable to use the Radio-Active Appliance?

A. As given respecting the use of the Radio-Active Appliance, the vibrations created by same are NOT curatives - these are EQUALIZERS. If the body is tired, if the body grows weary, mentally or physically, this will be found to be MOST beneficial - it is for ANY body, and it would be extremely well then for this body. If there are periods when there is weariness, if there is the tendency for an overnervousness, use same. This only stimulates the activity of the nerve or vibratory forces of the low electrical energies in the system to UNIFY their purposes.

Hence we find these are helpful and beneficial ever.

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826-3

The Radio-Active Appliance is good for everyone, and especially for those that tire or need an equalizing of the circulation; which is necessary for anyone that uses the brain a great deal - or that is unactive on the feet as much as is sufficient to keep the proper circulation. Best to use same occasionally ...

STRESS MANAGEMENT

5086-3

For the using of the Radio-Active Appliance with the ice, and keeping plates very clean and using this regularly when the body is tired, will bring rest and build energies for the body. The use of this should be, when it is used, a half hour to an hour. Use this as the body would rest, and use that same period for meditation or for reading or for analyzing, but not for analyzing business problems, nor as periods when you would argufy with anyone, but creative forces: as study of self, study of purposes, study of ideals.

5117-1

Take regularly the Radio Active Appliance. This is to be taken when the body rests, whether the afternoon or at night, but whenever there is tiring, whenever there are the upsets.

1800-28

And this will be ... a type of appliance for bringing rest to the weary, rest to those who have been inclined to depend upon sedatives, and narcotics for rest; to those who have been under great periods of stress and strain; to those who seek to find an equalizing influence that will assist them in producing a coordination in their physical and mental beings with the spiritual affluence and effects of its activity of spirituality upon the body-physical.

823-1

And if the body were to use for its own physical body the Radio-Active Appliance ... it may keep its body in almost perfect accord for many - many - many - many - many days.

826-7

Take the Radio-Active Appliance to rest the body at any time.

1022-1

And then whenever there are periods of overtiredness, over-anxiety, the desire on the part of the body to make for real rest, use same - the [Radial] Appliance.

1151-2

Q. How many weeks should the Radio-Active treatments be taken?

A. Well, if they are taken the rest of [the person's] experience it wouldn't be too long; for they are good for that tired feeling which comes at times from worriment. This is as much a

preventative as a cure. If these are desired to be left off at any time, it may be done; but their helpfulness when once begun will be easily realized by the body.

AID FOR MEDITATION

603-3

During these whole periods - the treatment periods and the rest periods - we would have those activities from the Radio-Active Appliance.

And in the use of the Appliance, as it aids in making for an equalization in the sympathetic or vegetative nerve system, use that as a period of meditation. For as there is created a balance in the flows through the circulatory system and the coordination is being created, we may make for greater constructive experiences as well as the manifestations of same in the emotional as well as the physical forces of the body....

Use the Radio-Active Appliance about one hour each day. Let the meditation period, of course, be expressed in self's own way and manner, but follow close in these words or thoughts; realizing, seeing, experiencing that given in expression in these words - or like same:

"FATHER-MOTHER GOD, IN THY CARE, THY KEEPING, I COMMIT MY BODY, MY MIND, MY SOUL! LET THE THOUGHTS, THE ACTS, THE UNDERSTANDING, BE IN KEEPING WITH THE PURPOSES FOR WHICH THOU HAST BROUGHT ME INTO PHYSICAL EXPERIENCE. "LET MY BODY BE SO USED IN EVERY MANNER THAT IT MAY BE A LIVING EXAMPLE OF THY LOVE, FOR THY SERVICE, THY CHILDREN, IN THE EARTH! "LET THE WORKS OF MY HAND, OF MY MIND, OF MY BODY, BE WHOLLY ACCEPTABLE UNTO THEE, IN EVERY WAY, IN EVERY MANNER."

920-10

First, it is well that the body have those periods of relaxation or rest during each day. The time as we find would be preferably in the afternoons; and at such a time it is well to use the Radio-Active Appliance as has been indicated, keeping the anodes very clear. Use this for thirty minutes to an hour each day. These vibrations are very helpful.

Also this should be the period for the meditation upon constructive forces, or the mental and spiritual application of Creative Forces within the activity of self as to its relationships to the material world and the mental world. This is the period for such. For the application of the vibratory forces of the bodily function itself is brought more in accord by the unification of the circulatory forces to the extremities of the body, in not only the superficial circulation but the lymph and the nerve forces also. As it produces coordination, so do the meditations - by the raising of the vibrations of self to communion with the activities of influences about the body.

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1020-1

Do these things materially. And, as indicated, during the periods of the application of the Radio-Active Appliance, MEDITATE.

MEDITATION means, then, the entering within self to seek for the Creative Forces; or to seek that God may make for the using of the body - mentally, physically, spiritually - as a greater manifestation of His love in and among men.

1211-2

Also we would find the use of the Radio-Active Appliance to be most helpful. This would be used each evening as the body rests, applied to opposite extremities; right wrist, left ankle; left wrist, right ankle. Keep the anodes clean, putting the appliance in the ice about five minutes before being attached to the body; with the body lying resting for about thirty minutes to an hour. Have that as the period of meditation. Follow these thoughts in thine own words; not only in words but in intent and purpose:

OUR FATHER WHO ART IN HEAVEN, HALLOWED BE THY NAME! MAY THE LOVE, O GOD, THOU HAS SHOWN TO THE SONS OF MEN, BE MANIFESTED IN ME AND MY BODY IN SUCH MEASURES THAT I MAY SHOW FORTH TO MY FELLOW MEN THY LOVE AS IS MANIFESTED THROUGH THE GIFT OF THY SON TO THOSE WHO HAVE LOST THEIR WAY. MAY MY BODY, MY MIND, BE USED IN A SERVICE TO THEE, THROUGH THE KINDNESSES, THE GENTLENESSES, THOSE HOPES THAT MAY BE BROUGHT TO MY FELLOW MEN BY AND THROUGH THE EFFORTS OF MY BODY, MY MIND, MY ACTIVITIES; THAT ALL THE GLORY MAY BE TO THEE. IN HIS NAME WE SEEK, O GOD!

This would be the manner then of the attitude, that the will of the Father may be done. For he knoweth what each hath need of, even before we ask; but by the attuning of the vital forces of the body by those energizing experiences of the metals in the Radio-Active appliance we attune the Infinite within self to the Infinite without. Then the words of the meditation and prayer create that vibration, the emotions so that the influences that may be applied externally, internally, through the diet, through all portions of the activities, may bring coordination, cooperation in the physical forces of the body.

2703-1

Also obtain in the near future the Radio-Active Appliance, and use this daily as the body rests. Attach the anodes or plates to the right wrist, left ankle; left wrist, right ankle. Prepare it at least twenty minutes before it is to be attached to the body. Keep the plates clean. Do not bind too tightly, but keep well in contact. When not in use, keep the Appliance dry. Keep this on for an hour each day, and let it be the same period each day, to be sure. And use this hour as the special period for meditation; that there be that awakening, that awareness within of the purposes

the Divine has with thee. This is to be that which will enable the circulations to be so stimulated as to RENEW energies through the body, equalizing the activities.

Even if you go to sleep during the period of using the Appliance, it does not matter; for even in thy vision or dream ye may be shown the way - as to what He would have thee do.

The Appliance would be used at whatever hour of the day is chosen as the period for rest and meditation, but let it be the same time each day.

TOOL FOR PERSONAL TRANSFORMATION

1330-1

During the whole period use the Radio-Active Appliance for thirty minutes to an hour each day; and let these be the periods for meditation - as the body rests each day.

And the main or principal thoughts, or the basis of such meditation during the period the Appliance is attached to the body, should be - though put same in thine own words:

"FATHER, GOD, THE MAKER OF ALL THE FORCES, HEAR THE PLEA OF THY CHILD. MAKE MY BODY IN EVERY MANNER FUNCTION IN THE WAY THAT IT MAY BE THE MORE PERFECT CHANNEL FOR THE MANIFESTING OF THY FORCE, THY INFLUENCE AS MANIFESTED IN THE CHRIST JESUS - NOW!

And see the flow of the energies sought in the prayer.

As these are accomplished we will find those feelings of being deficient, those feelings of suppression of activity will become passive, the feelings of being inferior will pass away; the feelings of being suppressed in mind, in body, in abilities to command the respect of others will be overcome. But do not demand; rather COMMAND self to be patient, persistent, showing brotherly love, showing friendliness, showing thoughtfulness, showing carefulness in every detail. And just be kind, just be thoughtful, just be patient - with self, with others.

1473-1

Q. How may I improve my memory and power of concentration?

A. By more and more turning within. This would apply to material as well as mental and spiritual aids:

Use a Radio-Active Appliance for ATTUNING the body. And during the use of same, whether used daily or at set periods (as may be given in circling the body), use that period as a period of DEEP meditation; gradually raising, through the system, opening the centers of the body for better understanding.

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Then the activity of the bodily forces as attuned to concentration will make for not only a better feeling, physically, but an adaptability of the spiritual DEVELOPMENTS of the body TO the material surroundings.

Resentments and slurs will be more easily negative forces or forgotten forces, and the more positive aspect of Creative Energies flowing through the system become apparent. Q. What causes my inferiority complex? A. It is NOT an inferiority complex; rather the lack of giving or allowing full expression of that INNATELY known to the entity from its deep experiences in matter and the activities of the many. Because of the FEAR of convention and what others will say. Hence one of the greater forces as may be had, allowing self to be loosed by the influences of the vibrations of the body - in the Appliance - and the abilities to unify the concentrated efforts, ye may indeed learn the lesson as that Teacher of Teachers gave; that abiding in the truth, it SHALL make you free, and will bring to thy remembrance ALL that is helpful since the foundations of that ye know as the earth!

(Q) How may I overcome this, and also my outstanding faults?

(A) Just as indicated.

During such periods of using the Appliance, open thyself to those tenets. Look upon them not as of a man, not as of an entity even, but rather as a universal consciousness to thee in those things given in the 30th chapter of Deuteronomy, in the 150th Psalm, in the 14th, 15th, 16th and 17th of that book called John.

And then the Revelation; knowing THIS - the Revelation - is a description of, a possibility of, thy own consciousness; and not as a historical fact, not as a fancy, but as that thy own soul has sought throughout its experiences, through the phases of thy abilities, the faculties of thy mind and body, the emotions of all of thy complex - as it may appear - system.

And ye will find PEACE, and an awakening -beautiful!

1632-2

As ye take the Radio-Active Appliance, that is to quiet, that is to unify thy mental and thy physical emotions, let this be the manner of thy meditation, thy prayer, but in thy own words:

"O FATHER, GOD! LET MY BODY, MY MIND, BE OPENED TO THE BEAUTIES OF THY PURPOSES WITH ME! LET IT BE AS A SHINING LIGHT BEFORE ME!!! "CREATE WITHIN ME A NEW REVELATION! RENEW THE RIGHTEOUS SPIRIT WITHIN ME!"

Not only say that but see it, KNOW it is taking place! and ye will find thy life, thy purpose, - yea, thy friends, thy foes, thy brethren will grow and grow in beauty before thee; and Life - as the expression of the Father - will not only become more precious but more beautiful, because of all the beauty and joy and love and hope that is thine - if ye will but embrace it!

3384-1

Also we would have a very low form of electrical forces, or the low body electrical forces produced by the use of the Radio-Active Appliance. There's not a physical defect, not a mental defect, but an incoordination between the imaginative and the central nervous system. Use the Radio-Active Appliance an hour each day, making the attachments to the left ankle and right wrist, the next time the left wrist and right ankle, and so on, but be sure that the same connections are used each time.

And use this hour as the period of meditation. Read and study carefully the 30th of Deuteronomy, also the 14th, 15th, 16th, and 17th of John. Know, as ye read that these words are applicable to yourself indeed. Not that you attempt to hypnotize yourself, but rather knowing deep within the soul-self that all the forces or powers of creative energies that give life itself are within yourself; that you can trust wholly in the Creator, the divine within. Make those choices that ye must in every activity of body, mind, soul, trust wholly in Him - that ye must let thy will be one with Him, without reservation, WITHOUT reservation.

As ye apply these suggestions, as ye read, as ye meditate, during the period of the application of the Radio-Active Appliance, do make personal application, practical application of such tenets and truths and ye will come out, - ye will know that the ability is within self. Do that....

Do not trust in forces other than those that are within self. Remember, thy body is the temple of the living God. And He promises to meet you. As you attune yourself by the outer circulation, the inner circulation (through the use of the vibrations set up in the Radio Active Appliance), ye may easily attune the divine in thee to the divine that is of the universal consciousness. Ye can by the will of self make self in accord. Do it. Live it. Be it.

3440-1

Each day following the Pine Oil Bath, attach the Radio-Active Appliance for one hour - and go to sleep. This will put the body to sleep. This will regain a great deal of that rest which the body in the last ten years has lost. This will make better coordination between the extremities of the body, through the circulation - the lymph and deeper circulation....

Do not use the Appliance for more than an hour and a half, and sleep through most of that period - do use the period for rest and meditation, to meditate on making self into those activities which it hopes to accomplish (and that it may!) in relation to art and music. Meditate on these. For, you can even learn to sing and play the piano and never sing a note or touch a piano - in the mind! and then you can put it into practice when the body is better attuned. For music and art must come from the soul, to be worth while.

HOLISTIC EFFECTS PRODUCED BY THE APPLIANCE

1711-3

Also we would use the Radio-Active Appliance ... This should aid the body in keeping a better equilibrium as to nerve forces, and as to the ability for rest. Use that period for the meditation and prayer. For, as it unifies the activities and nerve energies of the body, by the normal flow, it also unifies the mental and spiritual purposes within self. 1844-2 Q. How often and how much longer should Radio-Active Appliance be used? A. If it is NOT to the advantage of the body in that it gives an opportunity for the use of its spiritual balance, leave it off! For it can be made very detrimental!

But if it is used at the period for the body to meditate and pray, thus making a better coordination between all of its mental and spiritual and physical forces, the longer it is used the better! not at one period, of course, but continuously over a long period, for the whole of the mental and spiritual and physical reactions.

This is beneficial to ANYONE, PROPERLY used! It is harmful, improperly used.

You can't use the Radio-Active Appliance and be a good "cusser" or "swearer," - neither can you use it and be a good hater. For it will work as a boomerang to the whole of the nervous system if used in conjunction with such an attitude.

It is the coordinating effect of the balancing powers in the nervous system, as related to the mental and physical and spiritual bodies, that becomes active with the use of such an Appliance.

1173-8

This [Radial Appliance] keeps a normal balance and is most effective for resting, and is a good aid when meditation is desirable.

For as we find, the body is as a triune. As the Father, the Son, the Holy Spirit, so the body, the mind, the soul. If they are as one - body, mind, soul - as the effective activity of a low current of electrical reaction or radiation is created in the active forces of the Radio-Active Appliance - it brings to the system just those influences; the tendency to make the body-physical, the body-mental, and the mental-spiritual forces more and more in accord by a unison.

Hence in the use of this [Appliance], use these as the periods of thy meditations, and in thy reading of the Scriptures ...

REVITALIZING THE BODY THROUGH IONIZATION

1055-3

Each day we would use the Radio-Active Appliance to keep a normal balance in the circulation and to re-ionize as it were the whole of the vibratory forces of the body. In the use of the Appliance the plates should be kept very close in contact when attached to the opposite sides of the body, yet not so binding as to hinder the pulsation or circulation.

1125-2

Not necessary that there be a great number of these applications, but when tired - when the energies are used whether in the exercising of the mental body or the physical - every day or every other day - use those vibrations as may be set up by the Radio-Active Appliance as may be attached to the body for the attuning or ionizing or re-electrifying of the energies of the system. Use for thirty minutes to an hour, whether each day or every other day. Keep the anodes or plates very clean.

And when the Radio-Active Appliance is used, use such periods as the rest periods and for the MEDITATING upon spiritual aspects of the physical life in its relationships to those things about it.

1384-2

Each day we would use the Radio-Active Appliance for one hour, attached to opposite sides of the body; right wrist, left ankle; left wrist, right ankle. This is to create - by the body-vibrations, that are brought to activative forces of forcing through the whole of the circulatory forces that renewal of energy and vitality - re-ionizing of the vital forces.

1390-1

For one hour each evening when ready to retire we would use the Radio-Active Appliance for the re-ionizing of the body itself and to produce the better vibratory forces throughout the system.

1472-2

Q. What can I do to revitalize my nervous system?

A. Use that re-ionizer, the Radio-Active Appliance, as has been given.

This REVITALIZES the system throughout! For it coordinates impulses. As the cycle of impulse through the system flows through same, the Appliance, it is that which aids the vitality or vibratory forces of the body to be renewed or to coordinate and cooperate.

Hence at such periods that this Appliance is used, we would use the same periods for the deep meditation. And as the Mind is the Builder, we will find that the revitalizing of the body

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will bring for the whole of the nervous system and also the whole regenerative system NEW LIFE, new energies awakened in same....

Q. How can I become rid of the following conditions: First, distressing dreams?

A. By attuning each portion of the system to a oneness of energy. By the meditation and coordination of the activities in the system.

1477-

... the Radio-Active Appliance, which as we have indicated would be well for almost every system....

Hence with the use of the vibrations of the body, unified through the use of the Radio-Active Appliance, we will find these irritations disappearing from an influence in the body

Q. What causes stiffness in right side of neck?

A. The same as just indicated; and the use of the unifying, by the attachments of the Appliance to the extremities in the manners indicated for the use of same, will cause the flow of energies in the body to re-ionize or revitalize by the very low vibrations of the electrical forces TONING the system such as to RENEW the energies of the body.

RELIEF FROM ANXIETY AND NERVOUSNESS

457-4

And we would use the Radio-Active Appliance to bring an aid in coordinating the mental AND the physical forces of the body; keeping the plates clean before and after attaching to the body each time this is used. Use whenever tired, fatigued, or when there is any feeling of great MENTAL anxiety; twenty to fifty to sixty minutes at a time when practical.

1062-1

First, we would use a low electrical force that may be had by the body from the Radio-Active Appliance, that EQUALIZES the circulations from the extremities. This should be taken of evenings as the body rests, just before retiring. But do not attach same and then continue to work the body mentally or to make for conversations that tend to create this flow of the circulation to the mind's activities. But let the body REST during those thirty to sixty minute periods that this is applied to the body. Keep the anodes or plates very clean; and close in contact with the wrist and the ankle. And we will find that these vibrations WILL rest the body, making for a more even flow....

Q. What causes restlessness and nervousness, and what should be done to correct same?

A. This has been described, as to how there is the incoordination between the deeper circulation or the arterial and the venous circulation. So this slowing up of the arterial activity, or the calling away of the blood - as it were - from the superficial activity, produces portions on the body where

there is not exactly an itch but an IRRITATION. This naturally produces restlessness, insomnia.

Hence the equalizing of the circulation through the bodily vibratory forces, created by the low form of electric activity FROM THE BODY ITSELF, will aid in overcoming these disturbances....

Q. What can be done to enable the body to relax?

A. If you once tie one of these Appliances on him correctly, he will relax!

1246-1

Also use each evening, just before retiring, the Radio-Active Appliance that makes for the correcting of the vibratory rate of the circulatory system, by equalizing the vibrations in the extremities....

Q. How can I escape nervous tension?

A. By having those pressures removed that exist in the coccyx and lumbar area, and by eliminating from the system the irritations that produce the pressures upon the nerve forces and by equalizing the circulation and vibratory forces as has been indicated.

1267-1

There will be periods when there will be some irritation, some discouragements, but the use of the Radio-Active Appliance will quiet the body; not necessitating then any sedatives.

1275-

Q. How often should the Radio-Active be used, and for how long a period at a time?

A. This should be used each day, for thirty minutes to an hour each evening, or a thirty minute period morning and evening if the body rests. This makes for quieting, easing the body, and will make for the MENTAL reactions capable of being much more rationally in accord with the activities of the body.

2025-2

Q. Is there anything I can do to overcome extreme nervousness?

A. This is more from the reactions to the general conditions than anything else. The relaxing of the body is the better influence for overcoming these nervous tensions.

At times, if it is necessary, the use of the Radio-Active Appliance would be most helpful in overcoming the nervous disturbance. If used, this may be used for a few minutes two to three times a day - but circulating the attachments about the body in the ordinary manner, changing the attachment with each application, even though used two or three times a day; and this will quiet the nerves and also allow the body to rest. Of course, the body should rest during the period the Appliance is applied, preferably reclining.

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2094-1

When there are the nervous spells, and the tendency for the lack of proper rest, or the overtiring that comes from exercise at times, use the Radio-Active Appliance as an equalizer. Take it for thirty minutes to an hour. If it is for insomnia, or nervousness, or the hot and cold flushes, take it for an hour. If it is for tiredness, take for thirty minutes, - but, of course, lie prone during the time it is taken; and use that period as the period for creative, constructive or spiritual meditation.

1110-4 The Appliance will aid in relieving nervousness ...

BETTER SLEEP

811-1

Q. What shall I do to make me sleep well?

A. Tie the Radio-Active Appliance or battery onto the body, as given, and you'll sleep well! That's what it's given for! For, as indicated, these disturbances keep the constant irritation, you see, throughout the system. And hence we have the application for the nerve forces from the electrical forces themselves, and from the very low electrical vibration as indicated by the use of the Radio-Active Appliance to equalize the circulation and give rest.

1364-2

Q. Sleeplessness?

A. As we find this arises from poisons and irritations that arise from the general nervous disturbance produced by the pressures upon the bodily forces themselves.

The Radio-Active Appliance, as we find, would be most helpful in this direction - if kept consistently in proper relationships to the activities of the body.

1663-5

The use of the Radio-Active Appliance would eliminate the insomnia and relieve the nervous disturbance, if used when ready to retire, or when resting during the day.

1695-2

If there is something needed for rest, use the Radio-Active Appliance - and you'll go to sleep, and it'll be real sleep!

2305-1

As an aid to equalizing the circulation through the body, we would use the Radio-Active Appliance. Use this whenever tired, or when desiring to sleep well. Keep the attachment plates very clean. When this is applied, use that period for meditation and prayer.

2538-2

As soon as practical, obtain and use the Radio-Active Appliance. This is to act on the nerve forces, aiding to energize same.... There is NO feeling, or no electricity save the vibratory forces of the body when in use. But this will prevent the necessity of using sleeping powders or any sedative.

3256-1

And we will find that the use of the Radio-Active Appliance as a means for producing sleep will be much better for the body than the sedatives. This may be used for thirty minutes twice a day, in case the body wishes to rest during the day, or for one hour in the evening when ready to retire. But alternate the attachments in each application; that is the same connection that was made to the right wrist at the first application should be made to the left wrist at the next application and so on. It would be better to use this for thirty minutes of morning and for thirty minutes just before retiring. Remain quiet and use that as the period of meditation as a prayer period, as a study period of the spiritual associations of body and mind with the Creative Forces, or God. And we will find a better outlook in every way. Need especially the 14th, 15th, 16th and 17th of John. And know that these words are directed to thee. Learn them so that you may repeat them, but most of all live them.

1176-1

To make the body REST or sleep better, the Radio-Active Appliance given each day when the body is prepared for retiring, for an hour, will be most helpful.

1229-1

For the insomnia, for the disturbances as produced by the activities from loss of rest, use each evening the Radio-Active Appliance. Apply this for one hour each afternoon or evening.

3630-1

Use the Radio-Active Appliance to cause the body to sleep of evening. If this is left on over night, don't worry about it. If after the first application or two there is the tendency for this to irritate the body, take it off after using it for an hour - but it will aid in distributing or equalizing circulation throughout the body.

1845-

[The Appliance] will put the body to sleep - and not be an active force in the nature of a sedative but equalizing the vibratory forces of the system.

WEIGHT CONTROL

718-1

Then we would aid the circulatory system by adding the low form of electrical vibration

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in the Radio-Active Appliance (plain), that would be attached to the body for thirty minutes to an hour each day; for periods of two to three weeks at a time, with a rest period of two to three days between each....

Q. Are the glands of the body functioning normally?

A. There are those tendencies as indicated, of the glands in the circulatory area, through the assimilation, through the lacteal area; those in the liver with the pancreatic effects are in excess. Hence the necessity of equalizing same through the Radio-Active attachments to the extremities, that will make - with the differentiations in the activities in the diet - an equalizing of the conditions; for if this outline is followed we can find a decrease in the circulatory pressure and a decrease in the weight WITHOUT making for detrimental conditions to the body!

1040-1

ALSO we would use the Radio-Active Appliance once or twice a day, or whenever the body feels a bit tired or fagged; either from too great an exertion physically or from WORRY. For this will bring REST to the body by EQUALIZING the circulation.

To be sure, the Appliance would be attached to the extremities in the usual manner; right wrist, left ankle; left wrist, right ankle - the small plates on same. Keep same on for thirty minutes to an hour. Or should the body take this when resting during the evening, or afternoon, if it remains an hour it is not too great a strain. Rather will it be found to produce those reactions (for no sensation is felt at the time) which will make for REST and STRENGTH and the vitality necessary to carry on the mental and spiritual and physical activities of the body.

During such periods that the Radio-Active forces are taken, PREFERABLY rest and meditate, rather than having too great an amount of conversation. However, if through such a period there is required that there be conversation, it is better that the Appliance be used then than not at all....

Q. What means should I take to rid myself of this excess weight?

A. Use these properties indicated, and the vibrations from the Appliance - which will EQUALIZE. And it will be found that the tendencies may be towards LACK of even the normal weight; though, as indicated, these applications will care for the condition if they are applied consistently.

Q. Would that be the means of relieving myself of this excess weight?

A. As given, if this is done it will relieve the body of the excess weight - if it is done!

1151-2

Use the Radio-Active Appliance to equalize the circulation as well as to make for vibrations throughout the system that will aid in creating a normal balance. We would attach same EACH day. Keep the anodes or plates very clean, and a very positive connection. Take for

an hour before retiring each evening.

Q. How many weeks should the Radio-Active treatments be taken?

A. Well, if they are taken the rest of his experience it wouldn't be too long; for they are GOOD for that tired feeling which comes at times from worriment. This is as much a PREVENTATIVE as a cure. If these are desired to be left off at any time, it may be done; but their HELPFULNESS when once begun will be easily realized by the body.

Q. Is it important for me to substantially reduce my weight?

A. If there are those applications made as indicated, especially with the Radio-Active forces, the normal weight for the body and that which is best for the activities will be gradually assumed. The Radio-Active is an equalizer and a distributor, as we have indicated, for energies, influences and activities of the body.

1183-2

These as we find may be best adjusted by the use of the Radio-Active Appliance, which makes for a coordination by the vibratory forces of the body; re-ionizing (which is revitalizing) by the changing of the vibration in the electrical forces of electrical vibrations of the circulatory forces as related to the lymph and the nerve supply, to magnify and to ratify the glandular forces for a more normal activity. The action of the Radio-Active Appliance will be much preferable in the matter of equalizing the proper weight than any character of injections that have been at times indicated, yea at times used, which have proven now to some of the undoing of the body's better conditions.

3193-1

Q. Is it important for him to lose weight?

A. Not important, but with the equalizer (Radio-Active Appliance) and the massage, he should lose - in ten to twelve weeks - a dozen pounds or more.

877-18

The use of the Radio-Active Appliance keeps nearer the normalcy as to weight, if any pressures are removed along the cerebrospinal system. This would be true for most any body...

AN AID FOR MENSTRUAL PROBLEMS

854-1

We would also use each day the Radio-Active Appliance. This we would use on the extremities of the body; right wrist, left ankle; left wrist and the right ankle. About four days before the regular time for the menstrual period, make the application of the anodes to the 4th lumbar area and to the frontal bone of the body; so that the periods will be less severe, more regular, carrying the vibrations from the 4th lumbar to the puba or frontal puba bone, so that the

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nerve forces react through these. The plain vibrations to the extremities would be taken every day, while those in the lumbar and frontal bone would be taken extra for the three or four days previous to the periods.

1389-1

Just a few days before each menstrual period, and during that period, we would use the Radio-Active Appliance. Attach one anode to the 4th lumbar plexus, the other anode to the pubic bone or center - just above the labium and on the nerve center as to same. This will produce rest, make for an easing of the period as well as an equalizing of the general circulatory forces of the body. This would only be used during the periods, you see, for the first few months - only the week of the period; beginning a few days before - two to three days before -and using throughout the period that there is the flow. Keep this on for an hour at least at a time, or longer if necessary.

Do not apply until the Appliance has been in the ice for fifteen or twenty minutes. Keep the plates very clean, polished, not binding upon the body but in perfect contact.

THE APPLIANCE IS AN EQUALIZER

1481-1

Then in the mental attitudes, we find that - as the physical conditions are allayed - the occasional use of the Radio-Active Appliance, as the body would go to rest, or as the body rests during the evening before retiring, would make for an equalization of nerve energies; by the applying of same to the pulsations or vibratory centers in the extremities - opposite extremities.... Keep the anodes clean. But use this while reading or meditating. Not while there is the use of the high mental faculties in the study of PROBLEMS, but when there are the relaxing periods. It will relax the body, tone the system, and as we find aid the body in coming to a more perfect balance; not building these resistances mentally to its trainings as it were in the spiritual and mental attitudes in relationships to others.

1845-1

Also we would use the Radio-Active Appliance, which will bring for the body those periods of rest and relaxation by the equalization of the circulatory forces. This we would use for an hour, about two or three afternoons each week, - AS the body rests in the afternoon preferably.

Circulate the attachments about the body, from one period to another, as has been indicated for the use of same....

(Q) What suggestions would you make for controlling the attacks of melancholia and her extreme impatience and irritability?

(A) As indicated, if these pressures are removed and the vibratory forces of the Appliance used for the equalization, these should disappear gradually.

The use of the Appliance at such a time will be MOST beneficial, as this will put the body

to sleep, - and not be an active force in the nature of a sedative but equalizing the vibratory forces of the system.

1853-2

Use also the radionics, but those that are of the nature that will make for equalizing the pulsation in extremities of the body. This as we find may be best done through the use of the Radio-Active Appliance, which is the radionic activity but is that builded or supplied FROM the body-vibrations themselves, by the very nature of the construction of the Appliance. This will ease the tendency of the weakness in the system, equalizing the circulation, especially when the body lies prone, with that existent when the body is erect and in motion.

Q. What causes my eyes to have spells occasionally when starry figures circle around in front of them, and sometimes everything goes black?

A. The circulation, - and those things indicated will relieve these disturbances.

1997-1

USE the Radio-Active Appliance for the body electrical vibrations to equalize the circulation through the extremities. Hence in the application for this body, use it for thirty minutes twice each day; circulating the attachments around the body in the ordinary manner, - that is, the applicator marked to always be attached first, would be attached first to the right wrist, and the next half hour (at another period of the day, you see) attached first to the left wrist, the next day to the left ankle, the next time to the right ankle, and so on about the body; while the last attachment would always be to the opposite extremity, see? Keep the plates very clean and polished, before each attachment. There will NOT be felt any vibration from the Appliance, you see; but it builds and discharges as would an electronic energy builder for the system to equalize it through the extremities of the body.

3105-1

For, as the vibrations are controlled through the activity of the Radio-Active Appliance, this takes energies in portions of the body, builds up and discharges body electrical energies that re-vivify portions of the body where there is a lack of energies stored.

3119-1

And we would add the use of the Radio-Active Appliance, which we would have built for the body. This use consistently, daily. Do not use it for another body. Do keep the attachment plates clean. Polish them when they are attached, and again when they are taken off - clean them thoroughly with the emery paper. The jar with the ice should be prepared and the Appliance set in it twenty minutes before it is attached to the body.

Use the Appliance for one hour each day, and let this be the period for prayer and meditation; not only by the body itself but those who have been and are aiding or who are ministering to the better welfare of the body.

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These are those things to EXPECT of the Appliance: There is nothing in the Appliance of itself. For, know, as you are told in the Book, in the law, - all that is within heaven and earth, as well as hell, is within the body of the living individual. To cause same to respond to those vibration cells of creative energies, so that each corpuscle of the building, of the staying, or of the resisting variety, is aware of its purpose to renew itself, may BEST be attained from its own source of supply - which is within.

The activity of the Appliance, then, is to build that low form of energy (which is electrical in itself) as to build up in one extremity and discharge in the other.

3171-1

Also we would use daily the reactions from the Radio-Active Appliance. Attach this preferably in the evening as the body rests, or just before retiring, for one hour. These vibrations of the body-forces themselves are to coordinate and discharge in the area where the less coordination is accomplished or carried on in the present. Let this period be used for the meditation. And let the prayer be on this order, though in the entity's own words:

FATHER, GOD! IN THY LOVE, IN THY MERCY, I SEEK TO BE USED AS AN INSTRUMENT OF THY LOVE; THAT I MAY, IN SINCERITY OF PURPOSE USE THE OPPORTUNITIES GIVEN ME AS A CHANNEL OF BLESSINGS TO OTHERS - THAT THEY, TOO, MAY KNOW THEE IN THAT MANNER WHICH MAY BRING TO THEM AN OPPORTUNITY FOR A BIGGER, BETTER, BROADER SERVICE TO THEE.

3254-1

Throughout the rest periods, or beginning when there is the first three weeks rest period from the hydrotherapy treatments, - use the Radio-Active Appliance for at least thirty to sixty minutes each day. Use those periods for meditating, - that is, while the Radio-Active Appliance is being used for equalizing the circulation in the lymph and the nerve forces through the body.

Keep the attachment plates very clean or polished each time before and after using. Alternate the attachments; right wrist, left ankle; left wrist, right ankle; and so on.

3264-1

As we find, while there are disturbances physically we find that these may be best met with the general attitude of the body if there are the body electrical forces applied; that is, with the Radio-Active Appliance. Use this for thirty minutes twice each day, and let those periods be set aside for prayer and meditation. Thus we will bring a better balance to these body forces. The frayed or weary nerve centers will be rejuvenated. The body forces and circulations, where irritations have caused weakness in the limbs, will be much bettered.

3459-1

Then in the physical self, the nerve energies of the body are oftentimes disturbed. Use the Radio-Active Appliance an hour each day. The anodes or connections should be kept very clean,

and should be prepared occasionally. Do not allow the ice to come over the top of the Appliance. This merely equalizes the vibrations of the body. It is only active when attached to the body, building up energies in the extremities of the body. Literally as also figuratively, it is taking the extremes - in anxieties, or even pain - and equalizing them throughout the body, by using the very energies of the body to build up as a magnet and discharge in the other extremities to make or bring about equalization.

3602-1

Each day use the Radio-Active Appliance for at least an hour, to cause these properties to react in the digestive forces of the body. This is not a vibration of electrical forces except that impelled by the body-force itself, by the manner in which it is prepared - as to cause the formation of a magnet in the pulsation to become normal. It will be found that this will tend to put the body to sleep. Don't get the attachment plates crossed. Always attach the same anode first. If you attach it otherwise you will only spoil the Appliance and do yourself more harm than good. The same applicator is to be attached first each period. Do keep the plates clean. Clean them before they are put on the body. Clean them when they are taken from the body. Put the Appliance in the ice at least twenty to thirty minutes before it is attached to the body.

5158-1

We would add to these the effect of the Radio-Active Appliance to equalize. This does not add other to the system than that of equalizing the energies which will be added through the administrations being given, and to prevent unequalized activity in the extremities of the body. Do keep the anodes very clean. Do attach the same plate first each time. First to the right wrist, left ankle; left wrist, right ankle; then to the left ankle, and last to the right wrist. These should be kept. Do not use this Appliance on other than the individual entity to whom it is first applied. For this builds to vibrations. It is that in the form of the magnet of body energies equalized, built up, discharged in their correct way in the system.

5370-1

Use the Radio-Active Appliance as an equalizer. This is to be attached to the body to the right wrist, left ankle, left wrist, right ankle. Do this as the body rests once each day, or twice each day. If taken once a day use one hour and if taken twice a day use for thirty minutes each period.... Do keep the plates very clean. Do prepare at least twenty minutes before it is attached to the body. Don't allow the water or ice to get over the top or the connections to become submerged in any way. Do attach the same plate first each time, whether it is to the right or left wrist or to the left or right ankle. Be sure this is attached first, the same plate, and don't let other people use it either. Disconnect it when not in use.

**THE APPLIANCE IS OFTEN INTEGRATED
WITH OTHER THERAPEUTIC MODALITIES**

906-1

Also we would have the Radio-Active Appliance, making the attachments (this is specific) each time to the ankle before attaching to the wrist on the opposite side of the body; that is, attach to the right ankle and left wrist, the next time to the left ankle and right wrist. This should be with the body lying or reclining: not wholly reclining but resting when it is taken; each day for forty-five minutes to an hour, or an hour and a half is not too long. It may be attached each day, or it may be taken as the body is ready to retire.

(Q) Why can't I remember what I read?

(A) The disturbances in the circulation, which makes for a slowing of the vital forces through the brain reactions from IMPULSES in the sympathetic system. This should be improved, too, with the coordinating of the circulatory forces through the activity of the Radio-Active forces, as well as from the manipulations and the activities of the glands of the system.

1480-1

These [osteopathic corrections] RELAX the system, so that - WITH the application of the low vibratory forces from the Radio-Active Appliance (which is only to make for rest in the body-functioning) - we create a normal balance between the upper and the lower pressures, the upper and the lower portions of the system as related to the vibratory forces of the body; by these two applications (the corrections AND the Appliance) being taken coordinately one with another.

1648-3

Q. I sleep very fitfully and not very soundly. Is there anything I can do to help this condition?

A. This is from nerve conditions, and with the applications as indicated should be very much improved.

Also the use of the Radio-Active Appliance would be of great benefit in this direction, but this only begun AFTER the beginning - or at the beginning of the second series of the osteopathic adjustments.

APPENDIX D MATERIAL SPECIFICATIONS FOR BUILDING THE RADIAL APPLIANCE

Section 2.1 provided a standard set of material specifications and manufacturing procedures for the Radial Appliance. As noted, these specifications are actually a synthesis and adaptation based upon numerous readings given during the evolution of the appliance .

This appendix is for those individuals interested in all the specifications that were given for the Radial Appliance. This extensive listing helps to convey the evolutionary development of the appliance while providing a deeper level of understanding for persons interested in manufacturing and/or researching the appliances .

Each material or component is listed separately in chronological order. Keep in mind that readings dated before July 27, 1925 were of the pre-commercial variety (before use of a canister, carbon and charcoal filling material, etc.) .

THE STEEL POLES

5688-1 8/29/23

Two pieces of steel, carbon preferred, tempered; 1/2 inch wide, 1/4 inch thick, 4 1/2 inches long; fasten together with a nonconductor between .

1800-5 8/1/25

Using two pieces carbon steel (plain, see?). These will take the magnetic forces, or supply magnetic forces the better than hardened or tool steel, and these should be at least 4 1/2" to 5" in length, 1/4" to 5/8" wide, with thickness of 1/4" to 1/2", see? ..

(Q) Should this be carbon steel or tool steel?

(A) Carbon Steel. That known as carbon run, or carbon steel. Not tool steel. Sixty - fifth-eight, sixty to sixty- five percent carbon [0.60 to 0.65 [0.6% - 0.65%?]] (change made by E. E. Cayce 1/57)], see?

(Q) Is rust injurious to the iron?

(A) This should be cleansed before placed or attached. Afterward, we would not find rust detrimental, for rarely would there, with packing properly, be rust.

1800-8 9/24/25

Q. You will please tell us the character and kind of steel that should be used and where same may

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be obtained.

A. As given, this should run from fifty-six to sixty percent (56 to 60%) carbon steel, and may be obtained from any rod or steel mills. Bethlehem, Pittsburgh, Gadsden, Anniston, Birmingham, Lancaster, all or any of these, with their regular run, would and could supply such for these applicators [0.56 to 0.60 -0.5% to 0.6% (0.5% to 0.6%) Noted by Edgar Evans Cayce].

1800-10 9/29/25

Q. What is the percent of carbon steel in this battery?

A. Fifty-seven and five-eighths percent (57 & 5/8%).

1800-24 4/26/35

Q. Is steel, glass and carbon being used the best suited to the needs?

A. The steel, glass and carbon are suited. As to the BEST suited, as has been given, that in its construction which shows the sixty percent (60%) carbon tool steel. This [carbon content] is less but will work with same, see....

Q. Is bar of steel which lays across my legs as good, better or not satisfactory for use in these batteries?

A. Not satisfactory. This is only about thirty-six percent (36%), you see. Use sixty percent (60%) carbon TOOL STEEL.

1800-25 9/20/35

First we would have two (2) pieces of Tool Steel, thirty to fifty percent (30% to 50%) carbon steel. It would be more preferable to have these made into pieces half an inch (1/2") wide, quarter of an inch (1/4") thick, four and a half to five inches (4 1/2" to 5") long. This variation is to conform to the cuttings for containers for same.

1800-28 12/07/36

... the sixty percent carbon steel that will vibrate to that activity of the bodily function itself...

"TIPS" (BINDING POSTS) FOR THE TOPS OF THE STEEL BARS

1800-25 9/20/35

In the construction it is preferable that the tips, to which the wires are to be attached, be screwed on - rather than soldered. These may be screwed into the top or to the side, so that they project above one end of the steel plate.

THE INSULATOR BETWEEN THE STEEL POLES

5688-1 8/29/23

... fasten [the carbon steel bars] together with a nonconductor between.

1800-5 8/1/25

... with carbon or insulation between each [piece of steel].

1800-7 8/28/25

... [use a] non-conductor between same [steel poles]...

1800-8 9/24/25

(A) This would give desired results, provided same is kept apart, or insulated with two pieces glass, see? Not one - TWO.

1800-13 12/1/25

... with the 2 pieces of glass between these 2 pieces of steel

1800-10 9/29/25

The thickness of the glass, we see, we would use the single strength glass, see? This does not matter, but two pieces should be used, see? the single strength - sixteenth to an eighth of an inch (16th to 1/8th inch) thick, see? each piece.

1800-24 4/26/35

The glass is correct; it should be single strength - TWO strips, not one but TWO strips between each piece of steel, you see. The carbons are correct. These are well constructed.

1800-25 9/20/35

Two (2) pieces of Glass, single thickness, half inch (1/2"), the same length as the steel, would be placed between the Steels...

1800-28 12/07/36

Do not build same so that they short circuit in their very activity, as has been indicated by there not being at all times the proper consideration to the insulations between the sixty percent carbon steel... [As in 261-26.]

THE CARBON PIECES AROUND THE STEEL AND GLASS

1800-6 8/8/25

Q. Will the battery as prepared at present, having the carbon steel completely surrounded with strips of carbon, give the same results as the two pieces of carbon steel insulated by a strip of

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carbon and placed in a rubber container and packed with charcoal?

A. Gives the same effect, as given, save in using as a commercial form or looks of same would be improved by placing same inside of container, see? for the charcoal acts as a restrainer and clarifies the vibration. The strip of carbon between steel is necessary, or glass may be used. Two strips of glass would act in same manner.

1800-25 9/20/35

... two (2) pieces of Carbon, quarter inch (1/4"), half inch (1/2") wide or the width of the steel, would be placed on either side.

Then the width of the other two carbons would be that as to proportion from the outer edges of the carbon ON the Steel. These would be taped together securely.

THE TAPE FOR CONTAINING THE STEEL, GLASS AND CARBON PIECES

1800-7 8/28/25

... fastened with tape, or non-conducting tape.

1800-17 7/25/30

In some respects the present one [appliance], as we find, is good-excellent; but too heavy is the taping in and about same, see? While there should not be allowed the packing, or the charcoal about same, to come in contact, both with container and with the carbons as build up same, yet these may be made too heavy....

Q. Is this Radio-Active Appliance made up according to specifications?

A. Well, this has just been given - that there is too much bandage about same. This will ACT, but it PREVENTS that of the USAGE of same to its maximum usage, or requires that there be a LONGER period in the cooling of same; but IMMEDIATELY same is put in the ice, there begins -with the connection to the body - a change in both the appliance and the body, see?

1800-24 4/26/35

Q. Is method of winding with gummed rubber tape satisfactory?

A. It's very good.

THE CHARCOAL FILLER MATERIAL

1800-5 8/1/25

... packed with charcoal (plain)...

1800-7 8/28/25

This encased in a jacket surrounded with charcoal, to prevent induction or cross current and clarifying the vibration as set in motion by same, see?

1800-10 9/29/25

Q. What should be the thickness of the charcoal gasket, between the walls of the rubber container and the steel?

A. From quarter to three-quarter (1/4 to 3/4) around same, see? That is, in the position or formation of steel, unless made half round would make a condition wherein that on edges would be thinner than on sides, see? Of course steel could be prepared in a manner, when they are placed together with the glass between them, that the whole, with the steel or the gasket, would be quarter to three-quarters (1/4 to 3/4) around. Just so it does not become bunglesome, see? Would make a more symmetrical article were the steel prepared in that manner....

There may be much said regarding these applicators. The charcoal should be in bottom and in top, same as on sides, see? that we may have the well set up, or the prevention from any contact with outside forces as would apply to steel to prevent short circuiting, see? Charcoal should be pounded or ground and placed in container, to be sure, see? Where holes are made in same, it would act, of course, more quickly, yet not necessary, for within fifteen-to twenty minutes, when the applicator is placed on ice, we would find the battery giving off that charge necessary to create the equilibrium in the human body, giving that form of rest or recuperation as is found in sleep. Hence this is best be applied to assist through same - sleep, see?

1800-13 12/1/25

The steels encased in the charcoal gasket, as given,

758-12 2/17/30

Q. Is Radio-Active Appliance in my hand made according to specifications?

A. This is well accomplished. There needs be the proper precaution taken in the packing of charcoal ABOUT the battery, or about those plates as are to build up and discharge. None of same should CONTACT the glass that is BETWEEN the carbon steel!

1800-24 4/26/35

Q. Is it necessary to use Willow Charcoal, or would some other commercial grade of powdered charcoal be as good or better?

A. Preferably that NOT powdered, but as may be broken in fine particles; not necessarily Willow. Necessary to use Willow Charcoal in other appliances, as has been suggested.

1800-25 9/20/35

Then a half inch (1/2") should be allowed on either side in the container, in which there would be packed Powdered Charcoal, you see.

THE APPLIANCE CANISTER

1800-5 8/1/25

These [components] encased in tin or metal or rubber container...

1800-6 8/8/25

To be used, this, in this form, would prove bunglesome to handle. The iron or the poles that produce the magnetic forces that bring about vibration had best, as given, be placed in a casing with gasket of charcoal, either of tin or of rubber, with an insulation tube in the upper portion of same...

1800-8 9/24/25

Q. In rubber container that is to be packed with charcoal, what size holes should be in same?

A. If any, very small. Not necessary that the water or solution is in the connection with battery, but that same be in ice and water when applied to body, see?

Q. Will the charcoal come out of these holes?

A. If there's not any in it, would it?

1800-10

Q. Would it be necessary in preparing these for the rubber container to have holes in it at all? Would this work as well without holes as with holes?

A. Work as well without holes as with holes - only necessary that the applicator be longer in the solution, so that the cold may act on the steel and produce the vibration necessary, see?

1800-13 12/1/25

... with an outside container of metal or rubber.

1800-17 7/25/30

Q. Is the container properly made?

A. Container is very good. Be better if it were square.

1800-24 4/26/35

In making an improvement in same, if the container is made from the copper tin that does not rust - and of a lighter weight - this would be much preferable....

And there should be a mark-a red mark - an inch and a half or an inch from the top, so that it does not go below this in the ice and water; or better still the containers of china or glass - (those that are used in the present are alright; some are a little bit too deep), so that when they sit in this container in which the ice is put they do not go BELOW that point in said container....

Q. If cans were made of Tin, Brass, Copper or Zinc and Chromium plated after fabrication, would it be as satisfactory as the 18-8 Stainless metal?

A. As indicated, make these of copper and tin, you see, so they do not rust.

1800-25 9/20/35 The container may be of tin or copper tin, PREFERABLY made of a material that does not rust. Or any rough or rust proof material may be used for the container.

THE SEALANT FOR THE TOP OF THE CANISTER

1800-17 7/25/30

It will also be found that, were there put over the top of those of the coverings, before the application of sealing wax, that of paraffin, these would be better. Of course, the BETTER combination would be to vulcanize same with rubber, see? rather than that of the sealing wax. All other connections, all other conditions, are very good. This vulcanizing may be accomplished very easily if a vulcanizing machine is used for same, or a RUBBER machine, see?

1800-24 4/26/35

(Q) Would some kind of Insulating compound as made by Mitchell-Rand Co. serve to seal the top of can better than sealing wax at present in use?

(A) This would be much preferable. For that as is used in the sealing wax, with the jar and a great deal of change in the temperatures, makes for loosening; while the compound that is of rubberoid - especially if flanges are used at the top of containers or cans, you see, so that this is UNDER the flanges - would be much better.

1800-25 9/20/35

The top of same, then, would be sealed either with rubber or the sealing wax, rubberized on top of same.

THE CONNECTING WIRES

1800-5 8/1/25

These then should have small wire (copper -insulated) attached to each piece of steel.

1800-6 8/8/25

... connections with the poles made with finer wire or connection, that this would be more flexible...

Q. What size wire would give the best results?

A. The size, as to results, does not enter. Only that as would be used for the more easily being handled for the patient, see? Hence the suggestion as given. The very fine, with a covering, see?

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1800-24 4/26/3

As to the leads from each of the steel connections, if these are the more flexible type - or that used in the construction of the lengths of the attachments in radio for the larger sounding boards - this type is more preferable....

Q. Are wire leads as per sample satisfactory or would a tinsel conductor be better?

A. As given. These will work. Plain wire without the insulation will work too! but the more flexible these are the better; as those that are used in the radio or as the silk cord that is still more flexible, see - a little more expensive but still more flexible - is much preferable.

1800-25 9/20/35

To the ends of same (that is, of the Steel, you see, on the tips) there would be attached to each tip a very FLEXIBLE cord (of course with the wire running through same).

Preferably these would be tipped on both ends and set so they may be removed from either end, either from the tips or plates that are attached to the extremities of the body.

THE PLATES FOR ATTACHING THE APPLIANCE TO THE BODY

1800-5 8/1/25

In turn, small plates attached to each end of the wire (loose, see?). This then may be attached to the body.

1800-6 8/8/25

... the same vibration will be received in system by the smaller connection and the terminal or the connection with both may be made in form of plate of German Silver or of metal...

1800-9 9/25/25

The plate, or the anode that would be attached to the body here should be at least one and a half to one and three- quarter inches (1 & 1/2 to 1 & 3/4") in diameter, of circular nature, and the wire or attachment to battery must enter or come to central portion of such a plate...

The positive or the smaller plate would be about the size of the twenty five cent or five cent piece, and attached to the center of same. This may be made, preferably, of German Silver, see? The plates that attach to central portion would be of nickel or of German Silver, see? thin, sufficient weight to give the perfect connection with the body, see? 1800-24 4/26/35 Q. Are there any particular fixed specifications for the following elements? Nickel silver. Its kind, percentage of Nickel and Copper and its temper? A. As indicated, the German Silver is preferable. Ordinary German Silver, or the German Silver for watch cases, you see; German Silver for platings that are used for the basis for silverware, or the like. Not plated, but just a German Silver.

Q. Copper. Its kind, percentage, or temper?

A. As indicated, use the German Silver for the plates. When it's necessary to use copper or nickel on others, why we will give it!...

Q. Are the arm and leg plates or electrodes made of correct material and is method of attaching lead wire terminals as per sample an improvement?

A. Arm and leg plates, these are made of the correct material; or if these are made of the german silver it would be more in order.

THE FASTENERS FOR CONNECTING THE WIRES TO THE POLES AND PLATES

1800-6 8/8/25

The connections as enter for the steel must be secure more than on this. The connections as enter on the terminals should be more secure, see? Also there needs be a rubber or an insulation where the wires, or connections, from steel come out, that these may not touch, see?

1800-24 4/26/35

If the fasteners that are made to the plates to be attached are made so they are in socket, or so that they make direct connection rather than being soldered to same, it would be much better - and this would apply with the battery; but this for the appliance would be much preferable....

The GREATER change may be made in the manner in which the plate (that attached to the body) is attached to the end of the wire, you see. If this is in socket, somewhat after the manner of that which has been used (though that portion is patented - but this may be used in a socket), it will be MUCH preferable.

STRAPS FOR ATTACHING PLATES TO THE BODY

1800-6 8/8/25

... to which cord or tape may be attached to adjust same to the body, without reducing the efficiency of same.

1800-9 9/25/25

... with those connections that will make same attach to the body or hold in place by long tapes that would be tied from either side of plate, see?

1800-24 4/26/35

Q. What should be the composition of the buckles on the band?

A. It doesn't matter. This doesn't make any difference.

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The preferable or the cheaper would be bone, or those that are the combination of cellulose.

Q. Any other suggestions?

A. The more these are made as to be the least disturbing to the individual using same, the better, see?

Q. Are elastic bands attached to electrodes for securing to wrist or ankle an improvement over tapes and are there any suggested improvements for this?

A. These are very good. It would be more preferable to use buckles on same, so they would be a little more adjustable, than just the elastic band, see? so that once set they only have to be attached each time, see?

1800-25 9/20/35

These tips would be so that the tape on same would be adjust-able either by tying or by an elastic. Tying is preferable, for they should be in such a way that when tied they hold their place in PERFECT contact with the body, and not so that the tapes that are tied to the plate hold same just touching the body. They should be held AGAINST the body, you see.

THE SOLUTION JAR

1800-8 9/24/25

Q. Would a nickel anode or a silver anode be the correct material to use in every case? If not, which metal should be used in the following solutions: Tincture -

A. (interrupting) Use the nickel anode or nickel connection for ALL solution vibrations, letting same be place in at least a two-ounce, wide-mouth, container with rubber or cork and rubber stopper. The anode or connection in solution of a nickel or silver, either will give the correct vibration, see? Wire in shape hairpin, see? with loop to within one- eighth of an inch of bottom of bottle or container. The connection on negative wire would be attached to each side of anode or wire in such solutions, see? This includes, then, all solutions that are soluble in alcohol, or are of a metal put in solution, such as Silver Nitrate, as Gold Chloride, as Tincture of Iron, as of all that may be soluble in alcohol, or a metal in solution, whether alcohol or plain water, see?

1800-9 9/25/25

Q. What size and thickness would anodes be?

A. As given, of the silver or nickel wire, made in form of hairpin loop, that would extend into the container with solution ends of same through cork or cork and rubber, and the wire from the battery attached to one side and the other that attaches to the body on the other side.

PROBLEMS IN THE CONSTRUCTION OF THE APPLIANCES

261-26 11/7/36

We find also that in the application of the Radio-Active Appliance, this has not been in keeping with the manner of the preparations for same - in the appliance itself. This should be re-checked and the proper combinations put in the metals AND the glass in between same. Then this used properly we find would equalize the circulatory forces as to be beneficial. As it is in the present we are performing that as may be called a short circuit in portions of the bodily reactions to the vibratory forces of the content in same.

In those making the appliance some precautions of greater measures should be taken in this direction....

Q. Has my application of the Appliance been correct, or have I been applying it correctly?

A. The application is very good; but as has been indicated, it is the fault here in the Appliance not being properly adjusted. It is short circuiting. You see the combinations, the way these are built - they should be so that, as the bodily vibration builds up in the carbon and in the metal-through the manner of the building or compiling of same, there are discharges to the system. Short circuit same and we have a drawing upon one or the other anode or lead, thus producing IRRITATION rather than producing sleep and rest and the proper vibrations through the system.

Q. Just with this specific Appliance, what was done wrong?

A. As has just been indicated; these have built so it short circuits....

Q. How may I be sure the Radio-Active Appliance is working properly?

A. This may be tested, of course, by the galvanic metal. But if they are built properly, they will work properly!