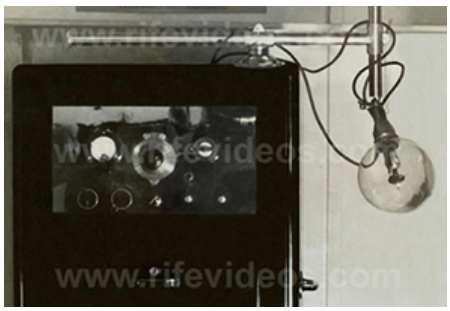
Kapitel #18

Leitungs -, Induktions- und HF-Frequenzen verstehen



Leitung

Die Informationen in diesem Kapitel stehen in direktem Zusammenhang mit Kapitel 17 und Kapitel 1. Im letzten Kapitel haben wir gezeigt, dass das falsche Verständnis des "Skin-Effekts" mit Frequenzen für 1 MHz bis mindestens in den 3000-MHz-Bereich wissenschaftlich falsch ist. Wir lesen auch aus den wissenschaftlichen Berichten, dass Frequenzen in allen Frequenzbereichen, die Dr. Rife verwendet hat, durch die Haut tief in das Gewebe des Körpers gehen. Nachdem diese Tatsachen bewiesen wurden, können wir nun verstehen, wie "Leitung" und "Induktion" funktionieren, wenn wir die Frequenzen von Dr. Rife verwenden. Dr. Rife und seine beiden Geschäftspartner aus den 1950er Jahren, John Crane und John Marsh, nutzten zwei Methoden, um Frequenzen zu liefern. Die erste ist die direkte "Leitungs-" oder Kontaktmethode, bei der Metall-Handelektroden mit einem positiven und einem negativen Ergebnis verwendet werden. Die zweite ist die induzierte "Induktion", bei der eine HF-Plasmastrahlröhre verwendet wird. Wir werden zuerst auf die "Conduction"-Methode eingehen. Aus der Enzyklopädie erhalten wir die Definition von Leitung. Wir zitieren:

LEITUNG: *"In der Wissenschaft bewegt sich Energie von einem Ort zum anderen. Wärme und Elektrizität sind zwei Arten von Energie, die sich durch Wärmeleitung bewegen. Etwas, durch das sich Energie leicht bewegen kann, ist ein guter Leiter. Metall ist ein guter Leiter.*

Ein Isolator ist ein schlechter Leiter. Energie kann sich nicht schnell durch einen Isolator bewegen. Kunststoffe sind eine Art Isolator."

In leicht verständlichen Begriffen ist "Leitung" die Bewegung von Energie oder Elektrizität durch einen guten Leiter wie Metall. Alle elektromagnetischen Frequenzen sind Elektrizität. Man kann das eine nicht ohne das andere haben. Einige Leute behaupten, dass elektromagnetische Frequenzen nur "einfache alte Elektrizität" sind. Sie verstehen die Wissenschaft hinter elektromagnetischen Frequenzen nicht. Alle Frequenzen sind elektrisch, aber es sind die Zyklen pro Sekunde, die sich in den Frequenzen ändern. Egal, ob Sie 1 Hertz oder 1.000.000 Hertz verwenden, es sind alles elektromagnetische Frequenzen, die Elektrizität verbrauchen. Die Verwendung des Wortes "einfache alte Elektrizität" ist also falsch, wenn es darum geht, die Wissenschaft der elektromagnetischen Frequenzen zu verstehen.

Aus der Definition "Leitung" lernen wir, dass Kunststoff oder sogar Glas ein schlechter Leiter ist und als Isolator wirkt. Der Leser muss die Tatsache im Auge behalten, dass Glas und Kunststoff schlechte Leiter sind, wenn er die "Leitungs"- oder Kontaktmethode verwendet, bei der Frequenzen durch eine positive und eine negative Verbindung mit Metallhandzylindern oder Elektroden abgegeben werden. Aus diesem Grund ist ein elektrisches Kabel mit Gummi oder flexiblem Kunststoff überzogen, um Menschen vor Stromschlägen zu schützen. Wenn der "Skin-Effekt" so funktionieren würde, wie manche Leute behaupten, dann würde niemand jemals einen Stromschlag erleiden, weil die elektrische Frequenz von 120 Volt bei 60 Hertz (60 Hertz ist die Frequenz unserer Steckdosen) niemals mehr als einen Bruchteil eines Zentimeters durchdringen und jemanden töten würde. Wenn wir an "Leitung" und Handzylinder oder Elektroden aus Metall denken, sollten wir an ein Positiv und ein Negativ denken.

Jeder versteht, dass man einen elektrischen Schlag erhält, wenn man sowohl das Positive als auch das Negative gleichzeitig berührt. Das liegt daran, dass dein Körper direkt gekoppelt ist und den Kreislauf schließt, indem er sowohl das Positive als auch das Negative gleichzeitig berührt. Das ist "Leitung" in schlichten und einfachen Worten. Das Gleiche passiert, wenn Sie beide Drähte berühren, die aus einer Steckdose kommen. Wenn sie nackt sind, schließt der Körper den Stromkreis und 120 Volt und Ampere gelangen in Ihren Körper, was Sie töten kann. Die Tatsache, dass Elektrizität, wenn sie mit zu viel Strom verwendet wird, töten kann, zeigt, dass Frequenzen die Haut tief in biologisches Gewebe eindringen. Die "Leitungs-" oder Kontaktmethode mit einem Metallleiter ist also eine gute Methode, um elektrische Frequenzen in biologisches Gewebe zu bekommen, aber der Strom muss begrenzt werden, damit sie sicher verwendet werden kann. Die Mehrheit der Menschen, die Frequenzgeneratoren

kaufen, verwenden eine Art tragbare Metall- oder Klebeelektroden. In diesem Kapitel, um "Leitung" zu beschreiben, können wir Metallelektroden oder Metallhandzylinder sagen, damit Sie verstehen, wovon wir sprechen.

Induktion

Kommen wir nun zur zweiten Methode der Abgabe elektromagnetischer Frequenzen, die als induzierte "Induktion" oder berührungslose Methode bezeichnet wird. Diese Methode der Frequenzabgabe kann eine Plasmastrahlröhre verwenden und erfordert "Induktion", da Sie einen Isolator wie Glas verwenden. Wenn wir von "Induktion" sprechen, können wir Plasmastrahlröhre sagen. Aus der Enzyklopädie erhalten wir die Definition von "Induktion". Wir zitieren:

INDUCTION: *"Electromagnetic induction is the production of a potential difference (voltage) across a conductor when it is exposed to a varying magnetic field. In electrical engineering, two conductors are referred to as mutual-inductively coupled or magnetically coupled when they are configured such that change in current flow through one wire induces a voltage across the ends of the other wire through electromagnetic induction. The amount of inductive coupling between two conductors is measured by their mutual inductance.*

Electromagnetic induction is proportional to the intensity of the current and voltage in the conductor which produces the fields and to the frequency. The higher the frequency the more intense the induction effect. The coupling between two wires can be increased by winding them into coils and placing them close together on a common axis, so the magnetic field of one coil passes through the other coil. The two coils may be physically contained in a single unit, as in the primary and secondary sides of a transformer, or may be separated."

In simple terms, electrical frequencies can go through plastic or glass by “Induction” if the proper method is used. From the above definition, we learn that the higher the frequency the more intense the "Induction" effect. We also learn conductors such as two insulated wires need to be close together in order for the electromagnetic “Induction” to work with full transfer of electromagnetic energy. The fact that the conductors must be close together when using this method is very important for the transfer of the frequencies.

There are some companies that use a single ray tube and others that use two hand-held plasma ray tubes. Those that use a single ray tube use a single circuit for the ray tube and the frequencies enter the body by “Induction” because the frequencies are broadcast through

the air like a radio station. Those that use two hand-held ray tubes generally use two separate circuits, one for each ray tube. They pulse the frequencies back and forth between the two hand-held ray tubs. When one ray tube is on the other ray tube is off. This alternating back and forth between the two hand-held ray tubes creates a very intense electromagnetic field. By doing this the hand-held ray tubes become highly conductive and work on about 50% "Conduction" and 50% "Induction" where a standard single ray tube will only work on about 9% "Conduction" and 91% "Induction" when held in the hands of the user. By using this method of alternating the frequencies back and forth between the two hand-held ray tubes the person receives the frequencies by both "Conduction" or contact and "Induction" or non-contact. By the methods of "Conduction" and "Induction", the frequencies enter the body. Dr. Rife's original 1930's/1950's RF plasma ray tube instruments only used "Induction" because the user did not hold the ray tube in their hands with any direct contact. To learn more about how metal hand cylinders and hand-held ray tubes work click on the link below.

Metal Hand Cylinders or Hand Held Ray Tubes.

Dr. Rife used this "Induction" method with his powerful 50 to 500-watt ray tube instruments. But the user must understand that they are not directly coupled to the circuit. This is not how a single ray tube circuit works. In order to directly couple with the circuit and receive 100% of the energy, you must have a direct physical connection with metal conductors that work as a positive and negative. Ray tubes do not work on this scientific principle. Though there is a small amount of coupling to the body, but the 50 to 500-watts will not directly couple to the body like a metal positive and a negative electrode does. In the scientific paper "Absorption of RF Radiation" which was put out by Harvard education courses we find it is very difficult to determine how much energy actually couples to the body by the non-contact "Induction" method. They state the following. We quote:

HARVARD: *"The magnetic permeability of most tissues is practically equal to that of free space, meaning that tissue is essentially nonmagnetic. Interactions at high radiofrequencies occur through the electric field, which therefore describes the exposure field interactions with the tissue. Frequency characteristics, modulation characteristics, and modulation frequency of the external field are also important in determining interactions with tissue.*

A radio wave in space is characterized by its frequency, intensity of electric and magnetic fields, direction, and polarization. The interaction of external radio waves with biological bodies produces internal electric and magnetic fields, which can be calculated by

solving Maxwell's equations for the given boundary conditions. This becomes a complex problem, however, because biological bodies are heterogeneous and complex in shape, making an exact solution impossible. In addition, the intensity of the internal field is greatly dependent on the boundary conditions under which the external field is applied. The frequency, intensity, and polarization of the field, in addition to the size, shape, dielectric properties of the exposed body, the spatial configuration of the exposure source and the body, and the presence of other objects in the vicinity, play a big role in the effect the radio waves will have on the body. For this reason, the internal field created in a mouse under a given external field will be much different than the internal field created in a man under the same external field.

We are interested in how external fields couple with biological bodies to create internal fields. The field strength inside a cell nucleus, for example, would be needed to judge any effects on genetic information. Likewise, the field strength across the cell membrane would be needed to evaluate possible membrane excitation phenomena. So we must first be able to figure out the field strength inside the human body and then how this is related to membrane potentials etc.

Internal field strength increases proportionally with the external field strength, but the internal field is not necessarily uniform even if the incident field is uniform.

Exact field strength is dependent on local geometry: in a man standing in a field perpendicular to the ground, the average current density in the legs is greater than in the trunk, by a factor that corresponds to the ratio of the cross sectional areas of the trunk and leg. Absorbed energy depends on the size of the body, curvature of its surface, ratio of body size to wavelength, and the source characteristics."

(Absorption of RF Radiation, Harvard report link).

From this quote, we can see that it is very difficult to know exactly how much RF energy couples to the body with the non-contact "Induction" method. Another thing that is pointed out is the body is non-magnetic. Dr. Rife started with 8 to 10-watts and finally built his Rife Ray #3 instrument that put out about 50-watts. That instrument was used in the 1934 clinic. These instruments were tested for penetration so it is apparent that less than 50-watts using a ray tube would not be sufficient power to devitalize microorganisms deep into the tissues of the body. Dr. Rife's Rife Ray #4 was built in 1935 and could output 500-watts. The Rife Ray #5 was built in 1936 and it was reduced back to about 75-watts output and was the only instrument used by doctors or individuals. This indicates that 50 to 75-watts is

enough power to devitalize the microorganisms in the body of anyone that was treated with the instrument. With 50-watts as our minimum measuring stick, a person would not expect an RF ray tube instrument that did not output at least 50-watts to be powerful enough to do what Dr. Rife's instruments were capable of doing. If you measure how much energy couples to the body through direct contact from holding a single ray tube in your hands it will be about 3% if no grounding plate is used.

We decided to do a few tests. A single ray tube like the one Dr. Rife used was tested first. We found that with a single ray tube the person had to be grounded in order to have the greatest amount of power transfer through the "Conduction" contact method. Using an oscilloscope a variable 20 to 103-watt circuit was measured. The voltage to the ray tube was 1370 volts at 85-watts. Several readings were taken and averaged. When the ray tube was held in both hands the average voltage dropped from 1370 volts down to 1250 volts. This was an 8.76% drop. This 8.76% voltage drop represents the minimum amount of power or energy which coupled to the body of the user through "Conduction." This 8.76 % represents 7.44 watts. So from this test, we get the minimum amount of power that will couple to the body through direct contact with the ray tube.

What must be understood is the insulating less conductive properties of the glass that the ray tube is made of will only allow approximately 9% of the energy to couple or enter the body through direct contact with the skin. The remaining about 91% of the power output by the ray tube is only partially absorbed into the body through the "Induction" non-contact method which is determined and governed by the "Inverse Square Law" of how close the ray tube is to the body of the user. We will discuss this scientific law later in this chapter.

There are a few different instruments that use hand-held ray tubes and they claim their power ranges are from about 2-watts too 30-watts? or higher. As mentioned before the two hand-held ray tube method works differently than the single ray tube method. They are constantly reversing polarity over and over again. This results in an intense magnetic field between them as opposed to a single ray tube. A few of these hand-held ray tube instruments were measured. The tests were done using an oscilloscope and they verify that this method of reversing polarity over and over significantly increases the energy coupling through the "Conduction" or direct contact with the two glass hand-held ray tubes.

For the greatest conductivity, every hand-held ray tube had wet terry cloth covers put on them. The actual circuit voltage was first measured at the circuit before the ray tubes. The voltage was then measured by touching the oscilloscope probes to the surface of the

ray tubes. One probe was placed on each ray tube. By doing this we were able to measure how much the power dropped due to the insulating properties of the glass. This power drop showed how much power or voltage was on the surface of the glass conductor or ray tubes. Since it is impossible to receive more power than is on the surface of a conductor then the voltage on the surface of the ray tube determines how much power could actually couple to the body through "Conduction" or direct contact with the hand-held ray tubes.

The combined voltage to the ray tubes was measured which varied due to the different power output of the instruments. The voltage at the circuits varied in their range from about 1500 volts to 10,000 volts. When the voltage on the surface of the ray tubes was measured, the voltage had dropped by an average of about 53%. This test showed that the glass was an insulator and dropped the voltage by about 53%. So from this test, we find that about 47% of the energy or watts that are put into hand-held ray tubes will couple to the body by "Conduction" or direct contact with the ray tubes. This 47% represents the power that is coupled to the body by "Conduction" using hand-held ray tubes. This test gives us the maximum amount of energy that could couple through "Conduction" to the body of the user when holding hand-held ray tubes.

The tests also showed how well the reversing polarity method works. If you compare both methods without using a ground plate then you only have about 3% coupling with a single ray tube compared to about 47% coupling with hand-held ray tubes. That is almost 6 times more power coupling through "Conduction" than a single ray tube if no ground plate is used.

These tests show that the power transfer ratio for hand-held ray tubes is about 47% through "Conduction" or direct contact with the skin of the user and 53% through "Induction" or the non-contact method governed by the "Inverse Square Law." If you compare this 47% "Conduction" or energy transfer to an instrument that only uses metal hand-cylinders then this is how they would compare. A metal hand-cylinder instrument has about 53% more power that will couple to the body through "Conduction" than a two hand-held ray tube instrument. The fact that you have a metal conductor vs. a glass conductor is the reason for the power drop. A metal conductor will always conduct more energy than a glass conductor and this can be verified using an oscilloscope.

After we did the tests on single ray tubes and hand-held ray tubes we tested metal hand-cylinders. We measured a 3.1 MHz 15-watt RF amplifier using metal-hand cylinders. The instrument voltage, when measured with an oscilloscope, was 330 volts at the circuit and about 330 volts at the metal hand-cylinders. Because of the direct contact

with a positive and a negative almost 100% or about 330 volts or 15 watts directly coupled through "Conduction" to the body of the user instead of only about 7% with a single ray tube or about 47% with two hand-held glass ray tubes. The body under these conditions becomes an antenna. To verify this we used an Elenco F-2800 1 MHz to 3 GHz handheld frequency counter to see how far the signal could be read off of the body. When the hand cylinders were read, with no contact with the user, the signal was only readable within a few inches of the metal hand-cylinders. But when the metal-hand cylinders were held in the hands by the user, the 3.1 MHz carrier frequency could be read for over 12 feet from the person holding the metal hand-cylinders. This verifies that the body does become an antenna.

These tests now give us a reasonable comparison of how much energy couples to the body through "Conduction" with a single ray tube, hand-held ray tubes, and metal hand-cylinders.

1. With a single ray tube, about 7% of the energy will couple with the body through "Conduction" from holding the ray tube in the hands as long as a ground plate is used.

2. With hand-held ray tubes using the reversing polarity method about 47% of the energy will couple to the body through "Conduction" when holding the two hand-held ray tubes in the hands.

3. With metal hand cylinders about 100% of the energy will couple to the body through "Conduction" from holding the metal hand-cylinders in the hands.

Dr. Rife used the glass ray tube method because it was less conductive and safe to use next to people or animals. He also used instruments that were 50 to 500-watts. If someone touched a metal antenna with this amount of power they would receive instant third-degree RF burns. For this reason, you would never want to be directly coupled to a ray tube instrument.

All of the tests that were done fully verify how "Conduction" and “Induction” work. The fact that the glass kept from 53% to 91% of the energy from directly coupling to the body clearly demonstrates the reason why Dr. Rife used a minimum of 50-watts with his ray tube instruments. Though this method of testing does not take everything into consideration it gives us a very close measurement of how much energy directly couples to the body, through “Conduction” when you hold a single ray tube or two small hand-held ray tubes in your hands.

Some people think that hand-held ray tubes using the reversing polarity method do not work as a point source because of the polarity

change. Below is the definition of a point source:

POINT SOURCE: *"Any point source which spreads its influence equally in all directions without a limit to its range will obey the inverse square law. This comes from strictly geometrical considerations. The intensity of the influence at any given radius is the source strength divided by the area of the sphere. Being strictly geometric in its origin, the inverse square law applies to diverse phenomena. Point sources of gravitational force, electric field, light, sound or radiation obey the inverse square law."*

Even though the hand-held ray tubes do have an intense field between them they also radiate in all directions (360 degrees) like a point source because about 53% of the energy is output from the ray tubes using the "Induction" method. This was easily proven by doing another simple test. We put the hand-held ray tubes within two inches of each other, where the intense magnetic field is the strongest, and we were able to pick up the frequencies broadcasting off the hand-held ray tubes 10 feet away with the oscilloscope probes. We were also able to easily read the frequencies with a hand-held frequency counter. These tests prove that they are also a point source that radiates in all directions. Logically, if they didn't radiate the frequencies out in all directions then they wouldn't be called ray tubes and they also wouldn't work on about 53% "Induction." All ray tubes, in one degree or another, also work as a point source.

In the "Point Source" definition it also mentioned the “Inverse Square Law.” This law deals with power loss and distance. We will give a simple explanation which should make it so the reader can understand how this law works. If we use 100-watts as an example this is what happens to the power output. At one foot away from the ray tube, you would have 100-watts of RF radiant power. At two feet you only have 25-watts and at 3 feet you only have 11.11-watts of penetrating power from the ray tube. You can see that the power drops off very quickly when using the "Induction" method of delivering frequencies into the body with a ray tube. Because of this law of physics, it is easy to understand that whatever power level is output by a ray tube, or two hand-held ray tubes will never be coupled to the body by “Induction.” What must be considered is there is significant power loss using the “Induction” method that must be overcome by using more power. Another factor of power loss that also needs to be understood is the energy coming out of the ray tubes is being radiated out in a 360-degree radius. So even if the ray tube is kept close there is significant power loss that must be taken into consideration. Anyone reading this can understand that the laws of physics are important to understand when considering power loss with ray tubes. No matter what anyone may think the law of physics applies to all ray tubes. Regardless of what may be claimed when you

use the non-contact "Induction" method of delivering frequencies to the body, it does not work the same as having a direct physical connection to the positive and negative terminals. The energy or frequencies are radiated out from the ray tube, or tubes, and enter the body without directly coupling with the person using them.

Once it is understood how the science of “Induction” really works it is easy to understand the limits of this method unless you use the power levels of Dr. Rife’s 1930/1950’s equipment used which was 50 to 500-watts. At the lower power levels of 2 to about 30-watts a single ray tube, or two small hand-held ray tubes, would be greatly underpowered compared to Dr. Rife’s equipment. Though Dr. Rife used higher power levels he did not drop below 50-watts once he reached this power level.

When both methods of delivering frequencies are understood we find the “Conduction” method of using metal hand cylinders is about 53% more efficient than the “Induction” method which uses hand-held plasma ray tubes. The reason for this is you can put more power directly into the body using metal hand-cylinders within certain power ranges. This is due to the fact that the “Conduction” method has no insulators to keep the electrical frequencies from going into the tissue of the body. Metal hand-cylinders are like touching bare electrical wires where one is positive and the other is negative. There is nothing to keep the electrical frequencies from going into the body. Because of this “Conduction" or direct contact method more power is transferred into the person even though a frequency generator may be using a lot less power. What we are trying to explain is, one method is direct coupling or direct contact with the electrical current, and the other is non-contact coupling with the electrical current.

All tests show that contact coupling or “Conduction” will always work better than non-contact coupling or “Induction”, within certain distances and power ranges. We said certain power ranges because Dr. Rife’s 1930’s/1950’s equipment used the non-contact or "Induction" method with a great deal more power than 30-watts of energy. He used 50 to 75-watts with all the machines that were sold to doctors or individuals. With the “Conduction” method of using hand-held metal electrodes more than 15 to 20-watts of energy would not be advisable to use in direct contact with the skin. Above this 15 to 20-watt power level, a person would want to use at least 50-watts. Dr. Rife fully understood the limitations of this “Induction” method and this is why he used 50 to 500-watts. At these levels then the “Induction” method of using a ray tube is superior to using two hand-held ray tubes. The reader should not believe that we are pro one method over the other. Both methods work to deliver frequencies to the body but when you use either method of “Conduction” or

“Induction” you must have the proper power levels for the specific method used otherwise you will not get the maximum benefit.

Even if a hand-held ray tube instrument could output 30-watts, because of the 53% induction power loss it would be no more powerful than a metal hand-cylinder instrument that output 15-watts. When using metal hand-cylinders 100% of the energy is directly coupled to the person using it. Now if you move up to Dr. Rife’s 50 to 75-watt range using a ray tube it will be superior to the direct contact method because of the superior power output. It is the understanding of how “Conduction” and “Induction” works make it easier to understand the two methods that were used by Dr. Rife, John Crane, and John Marsh.

Chapter Summary: Understanding “Conduction” and “Induction” makes it possible to understand how both ray tube and metal hand-cylinder or footplates work to deliver frequencies. “Conduction” is the direct contact or coupling method which uses metal hand-cylinders with a positive and negative. “Induction” is the plasma ray tube method which is not directly coupled to the body using a positive or a negative. It uses the radiant method of delivering frequencies. Both methods were used by Dr. Rife’s business partners. Dr. Rife preferred the “Induction” method which used 50 to 100-watts of RF power output through a ray tube. His two business partners, John Crane, and John Marsh built frequency generators that used the “Conduction” method of using metal hand-cylinders or metal disks.

In chapter 19, Dr. Rife's Gating will be explained.

(To read chapter 19)