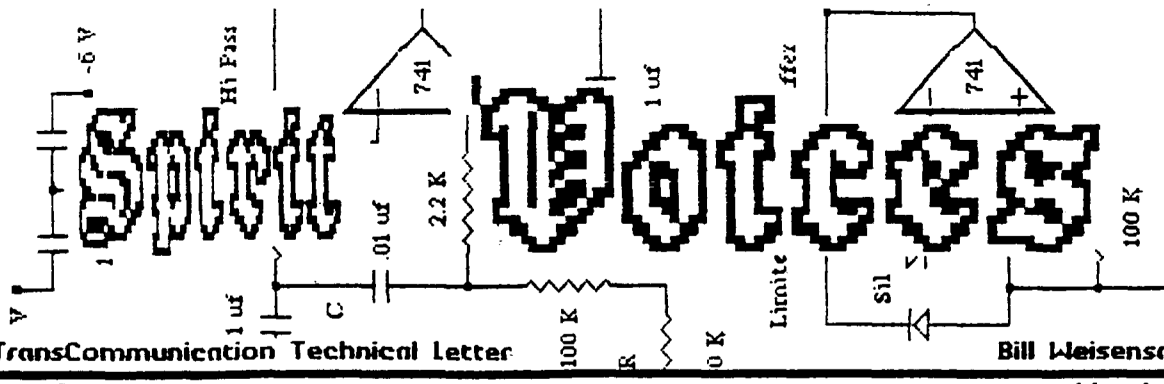


Number 8 March 1991

Application Of The Scientific Method In Transcommunication Electronics Research

Comment

In the early 1980s a Newsletter, The Spirit Voice, was initiated in an effort to fill the need for a combination general interest and technical, English language, information exchange for EVP Researchers. Initially it was intended to be published on a quarterly basis, but because of the considerable time required and limited amount available, this became impossible and publication was suspended after the first six issues. Fortunately, during the same time period, Sarah Estep picked up the torch, founded the AA-EVP, and since that time has published an excellent general interest quarterly Newsletter, which has been in no small part responsible for the growing American interest and research effort.

There still remains however, a need for a means of information exchange among the relative handful of us who are involved in Transcommunication electronics. For this reason The Spirit Voice, under a slightly different name, — Spirit Voices, is being revived. Since a general interest Newsletter already exists, Spirit Voices is free to concentrate on the technical aspects of Transcommunication. Because of the failure of an agriculture project started in the early 1980s, the author will probably still be stuck in a time consuming job as a Truck Driver, for the next several years. Time is still at a premium and because of this no attempt will be made to publish this paper at regular intervals. Rather it will be published on an "as time permits" basis. Also there will be no set subscription fee. However, donations to help cover the costs of printing and mailing will be accepted and appreciated.

It is my hope that our readers will consider this as "our" paper; as an open forum for the exchange and discussion of information, opinions, hypotheses, experimental results, computer programs, etc. If you agree or disagree, with what you read in this paper, let us know and tell us why, others will be interested in your opinions. Discussion is the driving engine of science and technology.

The Scientific Method

There probably isn't anyone who has ever worked on T.C. technology who has not ask the Spirits some variation of the question "How can I improve the quality of reception?". Also at least several of the Country's better Channelers have been consulted extensively, notably by Mr George Meek, in this same quest. The fact that researchers today are still using the same methods and essentially the same equipment as used in the days of Dr Raudive, attests to the outcome of these direct and indirect inquiries about how to build an efficient Transreceiver.

In scientific research, if nature refuses to answer a question, it is invariably because the question is being ask in the wrong way, or because the wrong question is being ask. In Transcommunication electronics we have most probably been asking the right question in the wrong way. In retrospect, it has now become obvious we are not going to be able to simply call up a Technical Representative somewhere out there in the Great Beyond, and learn how to build an efficient receiver. Without going into pages of argument, the reason

for this is they are simply not permitted to tell us. This does not mean the Spirits don't know, — at least some of them in fact do know exactly how such a receiver has to be built and they have been permitted to give us certain clues over the years. (It might be speculated that such a Receiver has probably already been developed on at least hundreds of worlds here in our local Galaxy. Unless of course, we prefer to think we are God's chosen and thus more technically advanced than anybody. But then those of us who have had a good look at UFOs both visually and on Radar, harbor no such illusions. In any case if such Receivers have been developed elsewhere, their design can hardly be unknown in the Spirit World. They do get around.) Fortunately, the Spirits are permitted and willing to help us in our efforts. Unfortunately, they are not permitted to do it for us, even if they were so inclined.

If we ask the right questions in exactly the right way, the Spirits will help us toward the development of an efficient Transreceiver. But if we continue to stumble around in the dark with haphazard, random experimentation with this and that, there is unlikely to be much more progress made in the future than has been made in the past.

The important thing then is what kind of questions are they permitted to answer and under what circumstances do the questions have to be ask. The question, at least one of the questions we should be asking, and which they are permitted to answer is; "which of these two receiving systems (circuits, devices, etc.) is a step in the right direction?" (toward the ultimate design required for an efficient receiver).

Does this mean then that all we have to do is draw out two circuits, according to whatever hypothesis we happen to be working on, and then ask, during a recording session, which of the two is more advanced? No, — unfortunately, it does not. According to what appears to be the rules of the game, it is necessary to actually build and test whatever circuits we have in mind. Then, and only then, and only if the experiment was setup properly, are they permitted to indicate to us, by using one system more than the other, which of the two systems they consider to be a step in the right direction.

There are two conditions that must be met before the Spirits will accurately answer such a question. 1) Both systems must be in operation simultaneously so that they have an equal opportunity to use either or both systems and thus answer our question by using one more than the other.

2) The second required condition is that the experimenter be removed from the experiment. As in any valid scientific experimentation, the experiment **must** be setup in such a way that the experimenter's bias, preconceptions, opinions, etc., **cannot** have any effect on the results of the experiment. In other words, in order for the Spirits to answer our question accurately, the experiment must be a simultaneous reception, blind comparison of two different systems.

The Blind Comparison Method

The next question is how to put this into practice, which is what this paper is all about. Probably the simplest of such experiments would be the comparison of two different types of microphone, which will be used here as the first example. The first requirement is that the voices must be received or have an opportunity to appear simultaneously through the two devices being compared. This, of course, mandates the use of a stereo recorder with, in this case, the two microphones under test being connected to the two channels. In order to keep all conditions as equal as possible, both microphones must have equal access to the sound source. In this case the best carrier source would be an airband or broadcast radio or white noise generator, all of which have a speaker.

The microphones should be placed 2 to 4 inches apart parallel to each other. The diaphragms of the microphones should be of equal distance from the speaker, a distance of 6 to 8 inches is good, and they should be placed an equal distance on each side of the speaker center line, so that sound waves from the speaker strike each microphone diaphragm at the same angle and with the same intensity. (See Fig 1) Also the microphone stands should be adjusted to point the diaphragms toward the vertical center of the

speaker as shown in Fig 2.

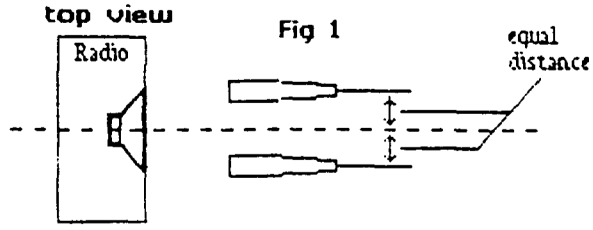


Fig 1

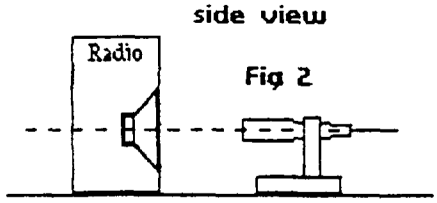


Fig 2

The next step is to record in such a way that the playback (not record) level is as near identical between channels as possible. In order to do this a setup tape is used. The record level controls are first set to maximum and the recorder is started in record mode. The radio is turned on and the volume gradually advanced until the meters read between -3 an 0 DB. If necessary, which it usually is, slightly adjust the record level of one or the other channel. Usually it is best to slightly reduce the level on the strongest channel, until both meters are reading the same. This provides a rough setting. At this point, without touching the radio, stop the recorder and rewind the tape and then re-record about 5-10 counts. Next stop the recorder, rewind, and play back this segment. In doing this it will most likely be noted that the playback level is higher on one channel than the other, typically by 1/2 to 2 or even 3 DB.

After carefully noting which channel is stronger and by how much, stop and again rewind. Lets say in this case we have found the right channel is playing back 1 1/2 DB higher than the left. The next step is to again record 5 - 10 counts, this time adjusting the controls so that the right channel is recording at 1 1/2 DB lower than the left. Again this segment is played back and the relative levels compared. If the differential is now less than 1 DB it is Ok to use. If it is more than this, then repeat the above procedure until the differential is reduced to less than 1 DB.

The reason for this value is that the least amount of volume change that can be detected by the ear, in mixed material such as speech, is 3 DB. The least change that can be detected in a constant frequency, constant amplitude tone, is 1 DB. A good audio carrier, such as radio static, would lay somewhere between these two figures. Since our object here is to not be able to tell which of the two microphones we might be listening to in analyzing our recordings, the experiment needs to be setup in such a way that there will be no clue given by one channel playing back at higher volume than the other. In order to do this the playback level differential must be less than the threshold at which such a difference is detectible, which in this case can be considered as 1 DB.

At this point the first segment of tape can be recorded in the usual manner of requesting communication and than recording 10 counts. (or 5 minutes if your reception is mediumistic.)

In analyzing the recording, either a monophonic or stereo amplifier can be used. If the amplifier is stereo it must have a mono/stereo switch as analysis must be done in the monophonic mode. Most stereo amplifiers have such a switch, but in case yours does not the problem can be solved by using a "Y" cable adapter such as Radio Shack part # 42-2436, which has two phono plugs at one end and a single phono jack at the other. (Fig 3) Use of this adapter allows a single input to be connected to both channels.

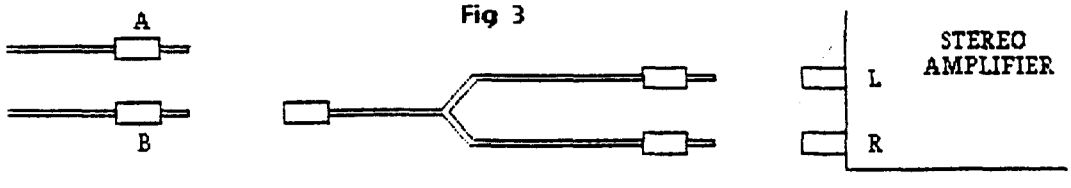


Fig 3

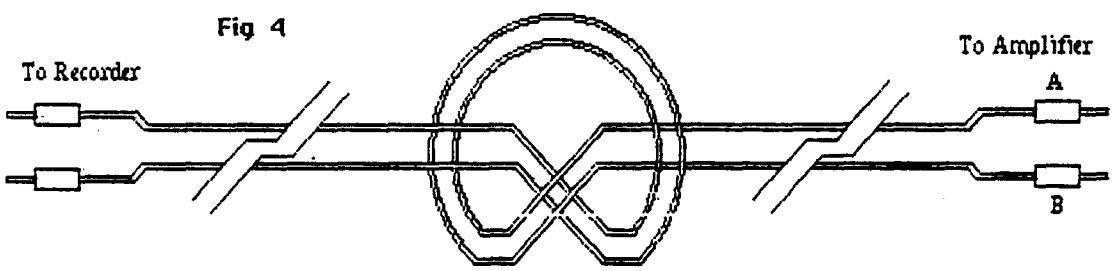
One other thing is required of the amplifier and that is that it have a balance control to allow you to balance your earphone speakers to compensate for any hearing sensitivity

differential between ears. Again most stereo amplifiers have such a control. But if your amplifier does not, it can still be used for this purpose by using a pair of earphones such as the Radio Shack Nova-16 (33-1019) which has balance provision on the headset itself.

The next thing needed is a special pair of cables to connect the recorder to the amplifier. These two cables need to be six feet long and, of course, have a phono plug on each end. The important thing is that they be absolutely identical in appearance. That is, there must be no clue from color, shading, plug design, size, etc., as to which cable is which. The only way to do this is to buy two new cables that are absolutely identical, such as Radio Shack # 42-2367. (No, — I do not own stock in Radio Shack.) Take special care in selecting these cables that they are in fact identical. Radio Shack from time to time may change the plug design or other appearance, etc., so it is important to compare the appearance before leaving the store.

The next step is to lay the cables out parallel to each other with the ends even and then tie a loose knot in the center of the cables, as in Fig 4. Do not pull this knot any tighter than about 2" in diameter or it may damage the cables. Next tie two more knots on top of the first one so that you have a large knot in the middle with two cables sticking out each side. At this point the overall cable length is about 3 feet. (about 1 meter for those of you who have a sensible system of measurement)

Fig 4



Next, take the two cable ends coming out one side of the knot and connect them to the "L" and "R" outputs of the recorder. The remaining two cable ends from the other side of the knot are then marked "A" and "B". The easiest way to do this is to wrap a short piece of 1/2" wide tape around the outer part of each plug. Masking tape is the best as it is easy to write on. After this cable is made up it is of course, saved for all such future experiments, so that you don't have to make up another set. After plugging one of these cables into either the left or right amplifier tape input, and setting the stereo/mono switch to the mono position, you are finally ready to analyze the first segment of tape you have recorded.

As you begin to analyze the tape, at this point you know only that you are hearing the microphone on, for example, the "A" channel if this is the cable you have pluged into the amplifier. But since you do not know, and because of the knot in the cables, cannot tell by looking at the connecting cables, as to whether cable "A" is connected to the "L" or "R" recorder channel, there is no possible way you can tell which microphone you are listening to. And further more, you are not going to know until all segments in this recording session have been recorded and analyzed and the results tabulated. By using this blind comparison method, your natural bias toward the new electret microphone you just spent $20 for, is not going to effect the outcome of the experiment for the simple reason that you will not know which microphone you were listening to until after the experiment has been completed.

In playback, listen the whole way through the segment two or three times, noting any irregularities that may be voices, while connected to the same channel. Next go back and closely analyze the first such spot. If it is a voice then play it back, still on the same channel, until you feel confident you understand what is being said. After writing this down in your log, then switch cables. If you started on "A" then switch to "B" and examine this same spot on the tape. In almost every case the same voice will appear at the same spot on the opposite channel, and also in almost every case there will be a greater or lesser differential in the understandability of the voice between the two channels. The object here, of course, is to determine on which channel the voice is

easiest to understand. This usually means switching back and forth (changing cables) several times until you are satisfied you know which channel is best. After you have made this determination write down in your log, behind the statement you have heard, either (A) or (B) as the case may be.

After having done this go back to the first channel, if you are not there already, and analyze the second spot on the tape in the same manner. Do not assume that because the first voice you heard happened to be better on, for example, the "B" channel, that all of the voices on this segment will be better on the "B" channel, — this is almost never true. After you have analyzed all of the spots on the "A" channel and determined on which channel they are best, then switch over and analyze the "B" channel from start to finish. This doesn't take as long because you have already heard almost everything that is on this channel. Nevertheless, it still needs to be carefully analyzed because there may be voices on the "B" channel which did not appear on the "A" channel. If you should locate any such voices, use the same procedure and switch over to see if they have appeared on the "A" channel. As sometimes happens, you may have missed the voice when you were analyzing channel "A".

In order to make an accurate blind comparison determination a minimum of 5 to 6 such 10 count segments (or probably 3-4 5 minute segments if reception is mediumistic) is required in order to give the Spirits adequate opportunity to select the device or system they prefer. In analyzing the second segment, just to keep everything equal, it is a good idea to first analyze the opposite channel than the one you started with on the first segment, and continue to alternate which channel you start with on the remaining segments.

After all of the segments of the session have been analyzed, the results are tabulated. Lets say you recorded 6 segments at an average of 10 counts each. In counting what you have received, you find you were able to understand a total of 45 words. Of this number you find that 30 words appeared only, or were more understandable, on channel "B", while the remaining 15 words appeared only, or were most understandable, on channel "A". This would mean that 67% of your reception was on channel "B", which indicates, by a 2/1 ratio, that the microphone on channel "B" is superior, or at least it is the one most preferred by your Transpartners.

At this point we know that one microphone, the one on channel "B", is clearly better and we can be confident that this conclusion has not been influenced by any bias or preconception we may have, since at this point we still do not know which microphone is actually on channel "B". Since our analysis is complete, it is now time to find out. There are two ways this can be done. If one has an ohm meter or continuity tester, then one simply removes one cable (but not both) from the recorder output, lets say the left, and checks continuity of the center conductor (not the shield) with one of the cable ends, say the "B" end at the amplifier. If there is continuity this means that channel "B" at the amplifier was the left channel of the recorder and that whichever microphone is attached to the recorder left channel is the microphone we were hearing on channel "B", and of course, vise verse.

The second method is to use the equipment itself to test continuity. Again one cable (but not both) is removed from the recorder, lets say the one connected to the right output. With one cable, lets say the "A" cable, connected to the amplifier, the recorder is put in play mode. If we can now hear what has been recorded, then the "A" channel is the left recorder channel. And of course, if we hear nothing, then the "A" channel was the right recorder channel.

Equipment Upgrade

In the above example, if 6 segments were recorded and we suppose there were an average of 4 voices on each 10 count segment, and that it took an average of 5 - 6 cable swaps to make each determination, we would be talking about well over one hundred cable swaps during the course of a single session. As can be imagined, this very shortly becomes a major pain in the neck.

In the late 1970s, I bought a Radio Shack stereo amplifier (Model SA-102) to use for

EVP research. Around 1981 this amplifier was modified specifically for blind comparison experiments and is still in use today. Like must such amplifiers, it had a selector for tuner, tape, record player, etc. This selector was a duel wafer rotary which was relatively easy to rewire into the configuration shown in Fig 5. In this arrangement, in one position the two channels/tape preamps are both connected to the left tape input. In the second position both are connected to the right input and in the third position each is connected to it's respective input in stereo mode. The switch positions on the control panel were redesignated as "A", "B" and stereo.

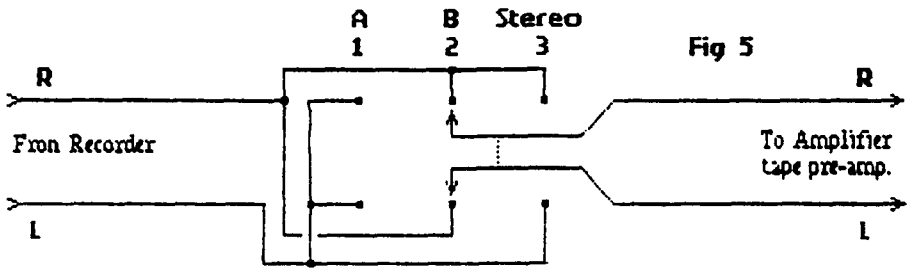


Fig 5

In this arrangement two ends of the knotted cable are connected to the recorder and the other two, which do not have to be marked, are connected to the "L" and "R" ("A" and "B") amplifier tape inputs. After recording an ohm meter is used to determine whether or not the cables were crossed. If they were not then the relationship was recorder L/R = amp A/B, if they were crossed then recorder L/R = amp B/A. If you have a stereo amplifier you do not wish to modify, wafer switchs are available from Radio Shack that can be installed in a small plastic project box with the appropriate jacks, etc., and simply cable connected to the amplifier. If you are going to become seriously involved with TC electronics however, I would recommend modifying an amplifier specifically for this purpose. The current model SA-150 (31-1955) of the amplifier I have is available for a modest $60 and makes an excellent headset driver with enough power output to drive a pair of small to medium sized speakers which you will probably want to use at times.

System Comparison

Unfortunately, the blind comparison method is limited to a certain extent in that the two sound sources or voiceband carriers must be indistinguishable on playback. We can compare, for example, two different radio receivers, such as broadcast and airband, because static is static, and sounds the same on both bands. On the other hand we cannot accurately compare the open microphone method with the radio method because it would be obvious on playback, which channel had the radio static. This same holds true of comparisons between a white noise generator with the sound of ocean waves, etc., compared to the radio or open microphone method, and so on. Such simultaneous reception comparisons can be made as a matter of curiosity, but do not have the scientific objectivity of blind comparison. The one exception to this is a comparison of static to electronic noise. These two sounds are so close that if there is no interference on the radio such as normal radio voices, it is difficult or impossible to tell which is which on playback.

Although it would be nice to be able to accurately compare two different types of audio carriers, the inability to do so is not a disadvantage where more serious research is concerned. In electronics, where experimentation has moved beyond conventional methods, it is two experimental "test instrument" Transreceivers which are being compared, both of which would normally contain identical audio carrier generators, or both simply output electronic noise, and would thus be indistinguishable on playback.

In system comparison we will take, as an example, the comparison of a broadcast band to an airband receiver. Since, like the radios, all experimental Transreceivers would contain, by definition, an audio amplifier and speaker, the setup and technique of comparing two experimental TRs is identical to comparing two radios.

In system comparison the technique of recording and playback is identical to that used in the microphone comparison. The system setup however, is a bit more complicated

because there are two additional problems that must be addressed.

The first of these is audio carrier interference or channel cross talk. This results from the fact that there are now two speakers in use, one in each radio. This means of course, that each microphone will pickup sound from both radios. In order to minimize this effect there are several things that must be done. The first is to place the two radio/microphone couplings a minimum of 8 feet apart. The second is to record at as low a radio volume as possible while still reaching a -3 to 0 DB recording level. This means of course, recording with the record level controls at or near maximum.

Another thing that needs to be done is to place the microphones relatively close (3-4 inches) to the radio speakers. The two microphones of whatever type, must of course, be identical to each other. And they must both be placed in exactly the same position relative to their respective radio. That is pointing directly at the center of the speaker and at exactly the same distance from the speaker. (Use a ruler, - don't guess)

There are several different ways the microphone/radio combinations can be positioned relative to each other. One would be to place the radios back to back (8 feet apart) with the microphones in effect facing each other. Another would be to place the microphones back to back (again 8 feet apart) with the radio speakers facing each other. An arrangement, one favored by the author, is a 90 degree angle as illustrated in Fig 6. This arrangement is convenient where there is a table or desk along one wall that can be used for one system, and a second table or card table that can be used along an adjoining wall. A card table can then be set up an equal distance between the two systems, to hold the recorder and amplifier. Whatever arrangement is used, the same arrangement should be used for all such experiments.

The second problem in system comparison is sound control. In the comparison of two microphones only one radio was in use. As each recording is made the radio volume could be turned up to recording level and then turned off while the recording was analyzed. In system comparison there are two audio carrier sources which are eight feet apart. This is further complicated by the fact that the two radios or experimental TRs, must be carefully adjusted to the same volume level before recording begins. Once the proper balance is achieved, it should not be disturbed during the session. Some means then needs to be devised to turn on the sound at the beginning of each recorded segment, and also to turn off the sound so it does not interfere with playback. (and get on one's nerves)

There are two ways this can be done. The first, a rather crude method, would require that both radios be AC powered. In this method an extension cord is run from the wall socket to a convenient position. An adapter of the type used to make 2 or 3 sockets out of one, is pluged into the end of the extension cord and the two radios then pluged into the adapter. After the volume level of both radios is adjusted, they can then be turned on and off by the simple act of unplugging the adapter from the extension cord. (Fig 7)

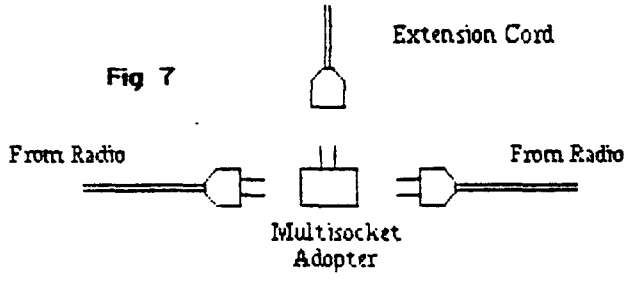


Fig 7

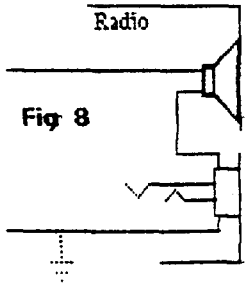


Fig 8

The second and much preferred method, is to install a 1/8" normally closed jack in the speaker circuit of each radio or experimental TR. (Fig 8) Since these jacks are quite small it is usually easy to find some suitable spot in the radio cabinet, near the speaker, where it can be installed. By using a normally closed jack, speaker operation is normal with no plug inserted. Two cables are then made with a corresponding plugs on one end.

File- D SV8 2
Bill Weisensale

Blind Comparison Method
90 Degree Equipment Arrangement

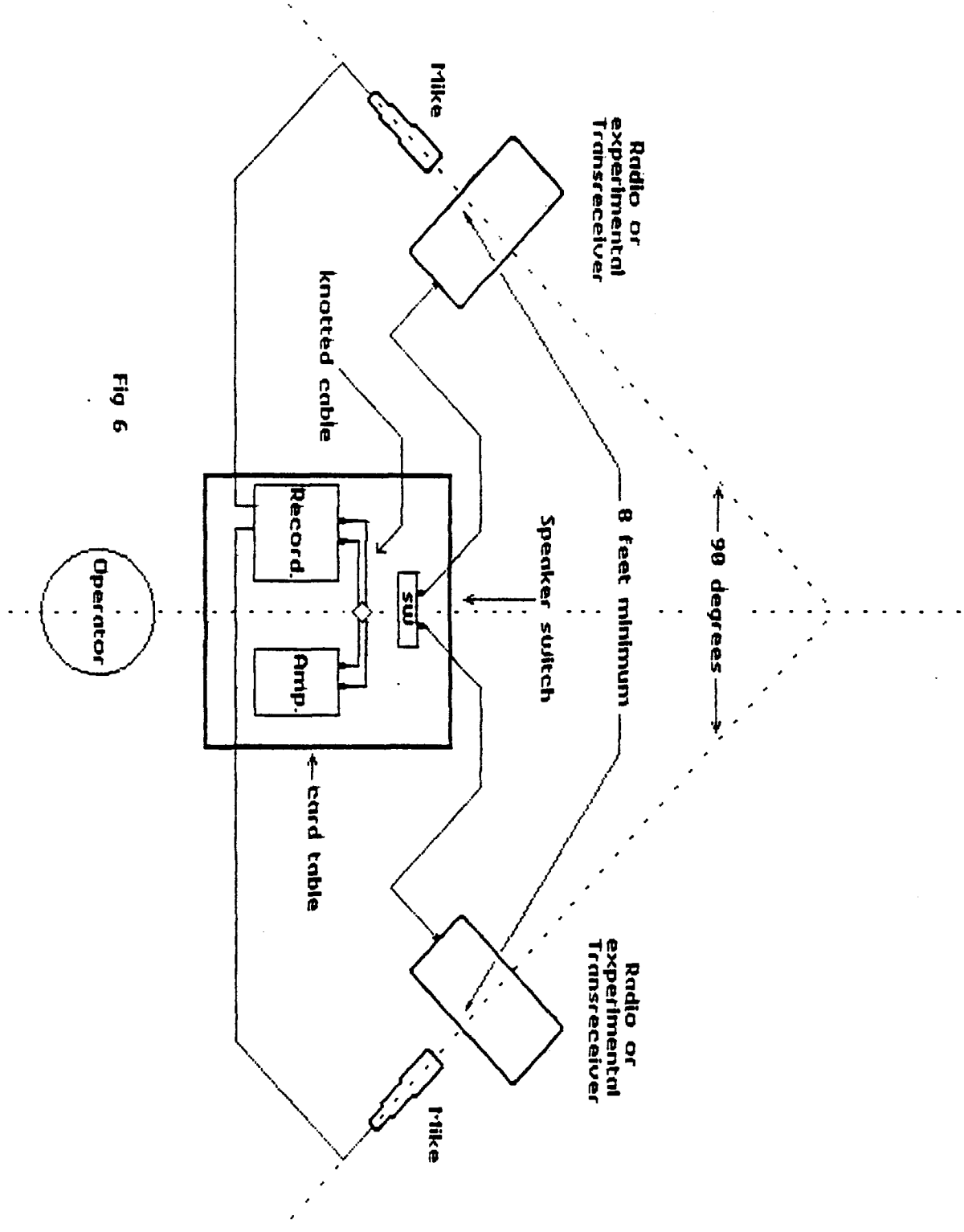
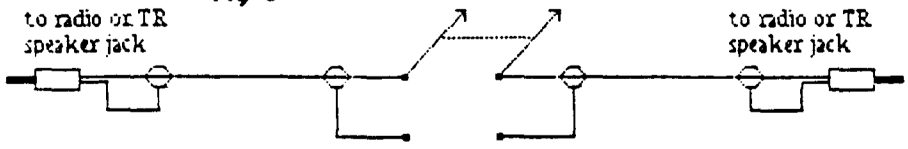


Fig 6

The other ends of the cables are then connected to a double switch. (Fig 9) When the plug is inserted in the jack, the speaker circuit is broken. However, when the switch at the end of the cable is turned on the circuit is, of course, restored and speaker operation is normal.

Fig 9



By using this arrangement, both speakers can be silenced by simply flipping a single switch. The switch can be mounted in a small plastic project box or in the amplifier itself, perhaps using an existing amplifier switch which is no longer needed for whatever purpose it was originally intended. In either case it is highly recommended to isolate the cable grounds both from each other and from the amplifier ground, if the switch is mounted in the amplifier. Failure to do so can result in assorted noises and squeals, especially where experimental TRs are concerned, due to feedback through the common ground. In radio receivers, if neither side of the speaker is grounded, then it is of course, necessary to isolate both sides of the jack. This can usually be done by simply mounting the jack in a plastic part of the case.

Transmediumistic Ability

In most transcommunication the object is communication itself. Naturally, under these circumstances, it is an advantage to be a Transmedium. And the stronger the better, since this means stronger, easier to understand reception, as well as clearer voices to demonstrate transcommunication to other people.

In TC electronics research however, for at least one and possibly two reasons, being a Psychic or Transmedium, may be a handicap. The main reason for this is that if an improvement is brought about in the quality of reception, the Transmedium has no way of knowing whether the improvement is a result of equipment design, or simply because their transmediumistic ability happens to be in exceptionally good working order during that particular period of time.

Over the years we have seen several systems devised which were operator specific. That is, they worked well for the Transmedium who devised the system, but were of little or no use to anyone else. Although such systems are valuable in their own right in demonstrating the possibility of transcommunication to the public, they do not solve the reception problem and thus, for practical purposes, remain little more then interesting curiosities.

This is not to say that a Transmedium could not develop an efficient receiving system. It is to say however, that any system developed by a Transmedium is subject to the same criteria as any such system developed by a non-medium. Namely, that any such system is of value only if it is of benefit to other researchers who have had an opportunity to test the same or identical equipment. In other words we will not have a Transreceiver until there is a **consensus of opinion** that we have a Transreceiver.

For the Transmedium this may mean working closely with other Researchers who could use the same equipment in order to verify whether or not any possible improvements are actually valid, that is, of an equipment specific, rather than operator specific, nature.

Since in non-mediumistic reception the Spirits operate the equipment directly, any improvement in quality would indicate an actual improvement in psychokinetic sensitivity of whatever experimental equipment is being used. Since all, or most, TC reception appears to be of a psychokinetic nature, any improvement in equipment sensitivity should improve reception by an equal percentage, for Transmedium and non-medium alike. Obviously, as mentioned above, no improvement in reception quality is of value until when and if it is verified by a consensus of opinion among other Researchers. However, in the

author's opinion, this is more likely to happen if the person who devises the system, is a non-medium.

A second, potential, problem which may be encountered by the Transmedium, in using the blind comparison method, is whether or not the Spirits could direct the operator's PK energy toward one system to the exclusion of the other. In non-mediumistic reception this seems to be relatively easy for them to do simply by "standing" closer to, and probably concentrating on, the system they wish to use. If PK energy obeys the law of energy propagation which states that field intensity is inversely proportional to the square of the distance, then if a Spirit places themselves say 4 feet from one system and 8 feet from the other, they would, in theory, be able to effect the closer system with 4 times the energy they do the other. This assumes, of course, that PK energy is ommidirectional, rather than "beamed". Since most, perhaps 85 - 95%, of the voices in such duel system comparisons, appear in both systems, but stronger and more understandable in one than the other, this does indeed seem to be the case.

In Transmediumistic system comparison it may be more of a problem for the Spirits to use one system more strongly than the other. Since I am not a Transmedium and do not know of any Transmediums who have yet used the duel blind comparison method, I simply do not know what may happen. All I can do at this point is explain the problem.

Since, whether one is a Transmedium or non-medium, it is good practice to sit an equal distance between the two receiving systems (Fig 6) during the recording process, this would mean, in the case of transmediumistic reception, that in order to effect one system more than the other, the Spirits would have to direct or "beam" the operator's energy toward one system, to the exclusion of the other. Whether they are able, or with practice would be able to learn, to do this, I simply do not know. There is one other possibility, which is that they may simply not try to use the Transmediumistic mode and operate the equipment directly in the non-mediumistic mode. If they do this then the experimenter, who most likely is accustomed only to the stronger transmediumistic reception, would have to retrain themselves to learn to perceive and understand the weaker non-mediumistic voices.

If you are a Transmedium and you set up and use a duel system blind comparison arrangement as described, I think our readers would be very interested to hear about your results. Especially as to whether you still have the stronger transmediumistic reception and whether this reception appears only, or stronger, on one channel versus the other.

Step By Step

In the above example, where two radios are being compared, we might consider, because it is currently the most popular method, that the airband receiver is our initial standard of comparison. And consider the broadcast receiver as being the "experimental" system which is being compared to the standard or "lead" system. In making this comparison, whichever of the two systems is approved, that is, most used by your Transpartners, then becomes your "lead" system for your next experiment.

The procedure from this point on of course, is to endeavor to develop new equipment designs, which are literally limited only by your imagination, that are approved by your Transpartners. At times your lead system may remain your lead system over several or a number of experiments because the Spirits consider it to be closer to the ultimate required design than anything you are comparing against it. Then, in one comparison, the lead may switch, sometimes when you least expect it, because they consider your experimental system an incremental advance toward that ultimate design.

Does this mean that if a design is approved, it works a little better in terms of absolute reception quality? Not necessarily, -- what we are talking about is design development, not reception quality. You may have a dozen designs approved because your Transpartners consider them incremental advances, while at the same time having no improvement whatsoever in terms of absolute reception quality.

Nor does approval of a design necessarily mean the design is even easier for your Transpartners to use. In one case during the course of a comparison, after my lead

system had remained the lead for several experiments, I ask which system was the easiest for them to use. They answered that it was the lead system. Since it was already obvious, part way through the session, that most of the voices were appearing on one channel, I assumed this was the lead channel. In analyzing the results however, I found out, much to my surprise, that the experimental system was the one that had been approved. In other words, they had deliberately used the system which was more difficult for them to use because, from a design standpoint, they considered the experimental system to be an incremental advance.

In this context the question might be ask; Just how close do we have to get to the ultimate required design before there will actually be significant improvement in the absolute quality of reception? And the answer is, -- who knows? No one has yet reached that point.

We might imagine the transcommunication reception problem to be like a great cone shaped mountain, with the solution at the very top. From the bottom of the mountain there are many trails leading upward, and each trail has many forks. Around the bottom are a number of mountain climbers wondering which trail might lead to the top. Some have tried very hard to climb this or that trail, taken a wrong branch, reached a dead-end, and thought they were on the wrong trail. But the fact is that all trails lead to the top, if the climber takes the right branch at each fork in the trail. How can they do this? The answer is, that if they know what to look for, at each fork there is a sign pointing out the correct branch, -- that sign is the blind comparison method.

Computer Analysis

First of all, it is not necessary to have a computer in order to use the blind comparison method. The only thing it is really necessary to know, is which system is most used, and this can be determined as previously described. However a computer can make this determination faster and more conveniently, and also determine other information from the results, which is of curiosity interest. The following program was written on a C-128D in Basic V7. Since it seems almost everyone I know of so far has a different make computer, the only thing we can do with such programs is keep them as simple as possible so they will be relatively easy to translate into whatever Basic dialect your computer speaks. (If I ever get finished building my AT Clone, future programs will be in GW-Basic) If you are familiar with the commands for your printer, a driver can be written and included within the program to provide a hardcopy of the analysis screen for your log of the experiment.

The program requests your recording or tape number, the date, (do not use commas when entering this data) a brief two line or less description of both the left and right system to be compared, and the number of tape segments you have recorded. For each segment it then requests the number of counts you recorded. the number of words that were most understandable on channel "A", and then the number on channel "B". After all segment data has been entered, it then asks "was left recorder channel "A" or "B" ? This is determined as previously described my checking the cables, and the data entered.

On the analysis screen the tape number, date, number of segments recorded and the total number of counts are printed followed by a notation as to whether reception was mediumistic or non-mediumistic. (If the average number of counts/segment is over 15, the program assumes reception was mediumistic.) Next is printed the total number of understandable words, followed by the number of understandable words/count. (If reception is mediumistic this is reversed and the number of counts/word is indicated.) The next readout is total percent of conversational frequency. This is based on normal conversational being about 18 words per recorder count. If the computer determines there is, for example, a one word per count average, then this is 18% of normal conversational frequency.

Next, for each individual channel, the total number of words, the number of words/count (or counts/word if reception is mediumistic), and the percent of conversational frequency is printed. This is followed by the percentage by which the best channel is better than the worst channel, and the identity of the best channel. Last, the system description, as entered at the beginning of the program, is printed.

The following experiment is an example, which can be used to check operation of the program after you have typed it in.

Data- Exp # 123, Date Feb 15 91, Comparison- Left channel- Exp. system- Configuration File- 21, Right channel- Lead system- Configuration File 18

Segment #	Counts	Words "A"	Words "B"
1	8	5	3
2	7	2	9
3	7	0	5
4	7	4	3
5	7	2	0
6	7	3	8
7	7	0	5
8	10	2	6

Left recorder channel was determined to be "B"

The screen analysis then looks like this:

```
                B L I N D    C O M P A R I S O N    A N A L Y S I S

     TAPE # 123                                                DATE  Feb 15 91

                          SEGMENTS RECORDED-   8
                     TOTAL COUNTS RECORDED-   60     NON-MEDIUMISTIC
                TOTAL UNDERSTANDABLE WORDS-   57

          TOTAL UNDERSTANDABLE WORDS/COUNT-   .95

    TOTAL PERCENT OF CONVERSATIONAL FREQUENCY-   9.5  %

          CHANNEL  "A"                              CHANNEL  "B"
        TOTAL WORDS-   18                         TOTAL WORDS-   39
       WORDS/COUNT-   .3                         WORDS/COUNT-   .65
     % OF CONV FREQ-   3  %                    % OF CONV FREQ-    6.5  %

               SUPERIOR SYSTEM-      BY  116  %      LEFT

    EXP. SYSTEM-  CONFIGURATION FILE-  21

               RESET- R                              STOP- SPACE

                          < < < < < <      > > > > > >
```

```
10 SCNCLR:CLR:COLOR5,4:COLOR6,7
20 PRINTTAB(21)"C O M P A R I S O N   A N A L Y S I S":PRINT
30 PRINTTAB(35)"DATA ENTRY":PRINT
40 INPUT"                          RECORDING OR TAPE #- ";TN$
50 INPUT"                                  DATE- ";D$:PRINT:PRINT
60 PRINT"TWO LINE OR LESS, SYSTEM DESCRIPTION"
70 INPUT"LEFT- ";L$
80 INPUT"RIGHT- ";R$:PRINT
90 INPUT"          NUMBER OF TAPE SEGMENTS RECORDED- ";SE:PRINT
100 FORN=1TOSE
110 PRINTTAB(29)"SEGMENT NUMBER- "N:PRINT
120 INPUT"                    NUMBER OF COUNTS RECORDED- ";C:PRINT
130 INPUT"               UNDERSTANDABLE WORDS CHANNEL A- ";A
140 INPUT"               UNDERSTANDABLE WORDS CHANNEL B- ";B:PRINT
150 PRINTTAB(8)"REDO FROM START- R"TAB(31)"REDO SEGMENT- S"TAB(50)"ENTER DATA- SPACE"
160 GETA$:IFA$=""THEN160
```

```
170 IFA$=CHR$(82)THEN10
180 IFA$=CHR$(83)THENPRINT:PRINT:GOTO110
190 IFA$=CHR$(32)THENC1=C1+C:A1=A1+A:B1=B1+B:SCNCLR:PRINT:PRINT:NEXT
200 SCNCLR:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
210 INPUT"                    WAS LEFT RECORDER CHANNEL A OR B ";COS:PRINT
220 SCNCLR
230 IFA1=0THENA1=.001
240 IFB1=0THENB1=.001
250 PRINTTAB(15)"B L I N D    C O M P A R I S O N    A N A L Y S I S":PRINT
260 PRINTTAB(5)"RECORDING OR TAPE #- "TN$TAB(55)"DATE- "D$:PRINT
270 PRINTTAB(30)"SEGMENTS RECORDED- "SE
280 PRINTTAB(26)"TOTAL COUNTS RECORDED- "C1;
290 IFC1/SE>15THENM=1:GOTO310
300 PRINT"     NON-MEDIUMISSTIC":GOTO320
310 PRINT"     MEDIUMISTIC"
320 PRINTTAB(21)"TOTAL UNDERSTANDABLE WORDS- "A1+B1:PRINT:IFM=1THEN340
330 PRINTTAB(13)"TOTAL UNDERSTANDABLE WORDS / COUNT- "INT(((A1+B1)/C1)*100)/100:PRINT
:GOTO350
340 PRINTTAB(10)"TOTAL UNDERSTANDABLE COUNTS / WORD- "INT((C1/(A1+B1))*100)/100:PRINT
350 PRINTTAB(6)"TOTAL PEERCENT OF CONVERSATIONAL FREQUENCY- "INT(((A1+B1)/C1)*100)/10
" %":PRINT
360 PRINTTAB(13)"CHANNEL A"TAB(53)"CHANNEL B":PRINT
370 PRINTTAB(10)"TOTAL WORDS- "A1;
380 PRINTTAB(50)"TOTAL WORDS- "B1:IFM=1THEN410
390 PRINTTAB(8)"WORDS / COUNT- "INT((A1/C1)*100)/100;
400 PRINTTAB(48)"WORDS / COUNT- "INT((B1/C1)*100)/100:GOTO430
410 PRINTTAB(8)"COUNTS / WORD- "INT((C1/A1)*100)/100;
420 PRINTTAB(48)"COUNTS / WORD- "INT((C1/B1)*100)/100
430 PRINTTAB(7)"% OF CONV FREQ- "INT((A1/C1)*100)/10" %";
440 PRINTTAB(47)"% OF CONV FREQ- "INT((B1/C1)*100)/10" %"
450 IFA1>B1THENT=1:X=INT(((A1-B1)/B1)*100)
460 IFB1>A1THENT=2:X=INT(((B1-A1)/A1)*100)
470 IFA1=B1THENT=3:X=0
480 PRINT:PRINTTAB(20)"SUPERIOR SYSTEM-      ";
490 PRINT"BY "X" %-      ";
500 IFT=3THENPRINTTAB(11)"SYSTEMS EQUAL":GOTO550
510 IFT=1ANDCO$=CHR$(65)THENPRINTTAB(10)"LEFT":PRINT:PRINTL$
```

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520 IFT=2ANDCOS=CHRS(65)THENPRINTTAB(10)"RIGHT":PRINT:PRINTRS
530 IFT=1ANDCOS=CHRS(66)THENPRINTTAB(10)"RIGHT":PRINT:PRINTRS
540 IFT=2ANDCOS=CHRS(66)THENPRINTTAB(10)"LEFT":PRINT:PRINTLS
550 PRINT:PRINTTAB(20)"RESET- R"TAB(50)"STOP- SPACE"
560 GETAS:IFAS=""THEN560
570 IFAS=CHRS(32)THENSTOP
580 IFAS=CHRS(82)THEN10
590 GOTO560
```

Note:

As with any typed in program, be sure to save a copy before running the program for the first time.

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Miscellaneous

A new Scientific level Journal, entitled TransKommunication, has been initiated in Germany by Dr Senkowski and associates. The Journal is written in German but does contain brief summaries in English. Publication will be semiannual. The fee is DM 48 (about $39) for a two year subscription.

Write to: Dr Ernst Senkowski
Eichendorffstrasse 19-D-6500
Mainz
W GERMANY

Network News - a newsheet about EVP matters - will be issued from Skyetech at regular intervals in the future, to reserve your free copy write to the address below.

EVP COURSE! Later this year Skyetech will be running a 5 day course with lots of hands-on experience of EVP including computer assisted editing. To find out more about the "Science of EVP" course contact the address below as soon as possible - there are only a few places available.

Write to: SKYETECH LTD, Grianan, Portree,
Skye, SCOTLAND IV51 9DJ

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