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Radio's Public Enemy No. 1—Interference

By The Editor

During the past few years with the rapid development of radio equipment and the ever-increasing interest in DX reception, we have been ever more conscious of radio interference—man-made static! Some steps have been taken to curb radio interference in Southern California and the Radio Interference Engineering Bureau, supported by the various public utilities, is to be commended for the excellent work it has done, particularly in view of the fact that it has not been adequately equipped, either with instruments or personnel.

Radio is no longer a luxury—it is an everyday necessity and utility. We must face this fact and realize that man-made static must eventually be eliminated. The longer we delay this process the longer we allow improper installations of any type of electrical apparatus—the longer we allow or permitting concerns to increase their dividends by neglecting the radio interference created by their installations, the more difficult our job will be.

We must act quickly, intelligently and thoroughly. We must put forth all our efforts to bring pressure to bear upon the legislative bodies of our cities and states to make the offense of causing radio interference as serious and as easily prosecuted as any other willful and malicious disturbance of the peace, or damage to the property of others. Much of our radio interference could be easily prevented and a large majority of the remainder could have been rather easily and usually inexpensively prevented at the time of the design and installation of the disturbing equipment. Of course, many installations have been in use since considerably before we became radio-interference conscious and the only remedy is redesign and reinstallation of these units. This is being done slowly by the more progressive and conscientious companies and public utilities but we must secure legislation with "teeth" in it to prevent present and future installations and production of equipment, which, due to low price or any other cause, is improperly designed or installed, thereby being a serious source of radio disturbance.

Frank Andrews, on his "Around the World" radio program over KFI, November 16, spoke at some length and very much to the point on many aspects of the interference problem, which may not be readily apparent to the average citizen and radio listener. Mr. Andrews said, "Radio interference is not malicious until the agency causing it refuses to remedy the nuisance. In many cases it is the result of an oversight but in most cases, it is down right negligence."

This is only too true. Mr. Andrews further states, "The American public bought a half-million long and short wave combination sets in 1933. In 1935 about $350,000,000 poured into radio. This investment must be protected.

Mr. Andrews compares the deliberate generation of radio interference to the throwing of stones deliberately at your home all night, keeping your family awake. A great many owners of disturbing equipment are naturally reluctant to spend whatever money may be necessary to supress the disturbance caused by their equipment, but you may be certain that if you stopped at a neighborhood establishment who had a neon sign (Continued on Page 15)
EXCERPTS FROM MODERN RADIO SERVICING
Published by Alfred A. Ghirardi, Radio & Technical Publishing Company

23-21. "Fading" in Radio Receivers. Of all the complaints encountered in receiver servicing, one of the most difficult to solve is that of fading in signals. By fading it is meant the gradual falling off of volume to a low level, with equally slow recovery following. This phenomenon repeats itself periodically over short or long intervals. While fading is really a form of intermittent reception, it will be considered separately from that type of intermittent reception which cuts on and off rather abruptly. It should also be understood that we are not concerned here with fading due to the falling off of strength of the signal from the broadcasting station. That is not the fault of the receiver—except in the case where the automatic volume control is not operating properly.

Usually, the repair of a receiver that has developed a condition of intermittent reception of any form is very difficult, for the trouble may be caused by an obscure defect or failure in practically any part of the entire receiver and the antenna system. Such repairs often tax the ingenuity of the service man, and call forth from him every trick and resource that he has learned from experience. In addition there are the many troubleshooting tests that he is called upon to make. However, experience with the failure of the same parts in certain models of receivers often helps to point the way to the correct repair.

In some cases, fading may be due to a faulty condenser that opens intermittently, to a break in a wire-wound resistor (the break usually not being visible to the naked eye), or to a poorly soldered connection in some circuit. Almost every case of fading requires its own plan of attack and solution, and that which may be of use to one receiver may not be true about another.

The best course of procedure is to place the receiver in operating condition. A broadcast station whose signal is known to be steady should then be tuned in. After this is done only one thing remains—wait for the fading to occur.

Before any testing or trouble-shooting is done, every bit of available information that may assist matters should be "ex-tracted" from the owner of the receiver. It may be found that the fading occurs when the receiver is turned on or off, when someone walks across the room or closes a door, when a trolley car or a heavy automobile truck goes by, or when the receiver is turned off and on, etc.

Reception that has faded out and that can be brought back by snapping the receiver switch off and on again is caused by a leaky or intermittently open-circuited by-pass condenser which breaks down under load, vibration, or after the receiver has been operating for a long time. A faulty resistance element in a volume control may produce the same symptoms. The difficulty with locating trouble of this nature is that it may disappear as soon as the chassis is disturbed for the purpose of making a voltage or resistance check.

One particular case is brought to mind in which a certain receiver would fade continually only when in its normal position, but as soon as any attempt was made to insert an analyzer plug into one of the sockets, the fading would cease. By checking across any two terminals, the signal would come in with normal volume, and no fading would occur again until the analyzer plug or resistor was removed and the chassis turned up right. In some instances, fading can be accentuated by pulling at the connecting wires of by-pass condensers or resistors. In other cases, locating the cause of the trouble is comparatively simple. When fading does not occur until after the receiver has been in operation for some time, the chassis may have been heated, the only logical procedure is to test each and every component in the receiver while it is warm.

The New York "Times" newspaper, which circulates the building, is the most expensive to operate on Broadway. It cost $120,000 and has 14,800 lights. It is heated by electricity.

Do you know that according to "Believe It or Not Ripley," there is a town in the United States without a chimney? Yes, sir! Mason City, Washington, with a population of more than 3,000, has no chimneys. It is heated by electricity.

The "Times" news sign, which circles the building, is the most effective to operate on Broadway. It cost $120,000 and has 14,800 lights. It is heated by electricity.

Electricus," or electric eel. This swimmer is "hot," or "not so hot," they may really mean it. Applying the scientific principle that body temperature depends largely on heat radiation to the walls and ceiling as well as to metal objects in a room, rather than on the temperature of the air in the room, an English manufacturer is producing a "heating wallpaper." In reality, a resistance metal of very fine copper-nickel wire, it is put into the walls of a room and is connected to the house current. Thermodynamically controlled, it can be heated to any desired temperature up to 85 deg. F.

In the Aquarium in New York there is a six-foot length of "Electrophorus Electricus," or electric eel. This swimming central station regularly supplies a general get-together. However, reasons presented by the Banquet Committee for canceling the arrangements for the banquet, are most sound and cannot be undone. The banquet is very optimistically regarded the success of this banquet and seemed to be very much in favor of such.

SPECIAL NOTICE — BANQUET POSTPONED

Electrical Oddities

(Eaten from Coyne Industrial Bulletin, October, 1935.)

It happened at some future time.

When the British say that a wallpaper is "hot," or "not so hot," they may really mean it. Applying the scientific principle that body temperature depends largely on heat radiation to the walls and ceiling as well as to metal objects in a room, rather than on the temperature of the air in the room, an English manufacturer is producing a "heating wallpaper." In reality, a resistance metal of very fine copper-nickel wire, it is put into the walls of a room and is connected to the house current. Thermodynamically controlled, it can be heated to any desired temperature up to 85 deg. F.

In the Aquarium in New York there is a six-foot length of "Electrophorus Electricus," or electric eel. This swimming central station regularly supplies the necessary energy for lighting a couple of neon glow lamps three times.

Two two-watt neon lamps are attach in parallel to antenna loops atop aluminum wires submerged at the ends of the eel's 10 ft. tank. The eel uses keep the neon lamps aglow most of the time, but he recently became temporarily reduced and his generating unit. Now he works only when tickled with a 120 volt probe. The probe is conducted at 11:30, 2:00 and 4:00 o'clock in the presence of spectators. Only one side of the neon bulb is illuminated, showing the discharge to be direct current.

Experiments have indicated that voltage to be from 125 to 200 volts. **
A. PAUL, JR., NOW ON KFI

Editor’s Note—The CRTA is very proud of the fact that its president, Mr. A. Paul, Jr., was chosen by KFI, one of the most popular stations on the Pacific coast, to deliver monthly talks on technical radio subjects. The following is an address on technical radio subjects given on “Geophysics” at 9:45 Saturday evening, Nov. 21, on Frank Andrews “Around the Radio World Program.” The next subject Mr. Paul will talk on will be “Home Recording of Short Wave Broadcasts,” on December 1. Be sure and listen for him.

Geophysical Prospecting or Exploration is the name of methods used for studying the earth by use of physical apparatus and principles. These methods are now in extensive use by large mining and oil companies for the discovery of new ore bodies and oil pools.

The explanation of the principles used, is a rather involved subject for discussion without the use of a blackboard. Perhaps when television arrives, I can give a much more detailed explanation, but tonight I will touch briefly on the various methods used and hope that those who are interested will be able to take full advantage of the subject, as there is a wealth of material available in the libraries of our cities.

The first method of locating mineral by geophysical methods I shall discuss, is the radio method. A transmitter with a loop aerial attached, and operate it in free space, the field pattern set-up will be absolutely uniform, insulated from each other, and no waves caused by dropping a pebble in a large body of water will be uniform, as they go out in ever-widening concentric circles. Now, if in this body of water we have, let us say, a large rock protruding above the surface, the ripples in the surface of the water, caused by dropping the pebble, will be distorted in the vicinity of this obstacle.

So, too, with radio waves, and thus it can be seen how, by carefully surveying the territory being prospected, we can map a transmitter with a portable receiver equipped with a direction-finding loop antenna taking readings at designated points, it becomes possible to plot the wave from direction caused by an ore body. From this we can approximate its size, nature, and location.

This might be a good time to warn the listeners about so-called Treasure Finders. Almost every month some pseudo-scientific magazine features an article on “How to Make a Treasure Finder” for locating buried pirate treasures. Probably 90 per cent of these are fakes, they usually consist of a wooden pole with a box on each end containing some radio tubes, batteries, various other gadgets and a pair of headphones. All one has to do is don the headphones and then walk up hill and down dale until a whistle is heard in the phones and there you are.

In some cases a modification of the previously described geophysical method is employed, and these the mass is large enough, and if we can get near enough to it, we can detect its presence. Roughly speaking, we can by this method detect a mass of non-magnetic material at a distance up to perhaps ten times the diameter of the mass. This is a very rough guess, probably much too pessimistic, but of the right order of magnitude.

Suppose we had a mass of gold three feet in diameter. Any mathematician listening in, might compute the value of such a sphere of gold at the current value of $35 an ounce, and also the probable number of such masses available to look for. Now let us assume this is buried 20 feet beneath the ground. If we set up a receiver within 20 feet of a point directly above the treasure in order to get an indication on our treasure finder. Now if the treasure was an iron mass, the miniature waves caused by dropping a pebble in a large body of water would be much decreased, and we would have a clue in order to get an indication on our finder.

These devices are much more sensitive on long, thin objects such as pipes, but the trouble here is that Captain Kidd and his ilk did not forge their ill-gotten gains into long, tubular form for the benefit of future treasure hunters. Methods of this kind are much more sensitive on magnetic metals such as iron but these are seldom worth looking for although they have been used to locate long-buried pipe lines whose exact location had been forgotten.

There are other methods of geophysical prospecting besides the radio method. Some of them are: the electrical method, where the direction of earth currents caused by the oxidation of ore bodies, are carefully mapped; another method is to introduce either alternating or direct currents into the earth and map irregularities in the electrical field caused by the high resistance path offered to the flow of current by the ore body.

The gravity method employing a torsion balance or pendulum is also used; (Continued on Page 12)
L. A. RAILWAY STILL, AGAIN
AND YET IN THE DOG HOUSE

The Los Angeles Railway apparently regards the people of Los Angeles as martyrs, believing in the old admonition to "turn the other cheek" and after that to "take it on the chin." Either that, or they believe the citizens of Los Angeles to be complete nitwits who will take, take, take and take some more without fighting back.

They are going much too far in trying the patience of this community, which has been most indulgent with this public utility (?) who still operates its antidiluvian instrumentalities of death up and down our streets on poorly maintained tracks.

This company, furthermore, would not pay the slightest attention to its employees for a living wage, discharging those who had courage and intestinal fortitude enough to call the company's bluff. Many of these men have been replaced by incompetents at starvation wages. In many cases two men have been replaced by one making the danger of the operation of their vehicles, almost of the horse-car vintage, even more dangerous to the life and property of not only passengers on that equipment, but passengers of other vehicles and pedestrians. The Illustrated Daily News, Tuesday, November 26, said a great deal in a very few words and most appropriately named the cars of the Los Angeles Railway, "antiquated Juggernaut." This editorial went further in reminding us of the insistence with which this company demanded 7c fares with the promise of this and the promise of that, years ago. Since then, no apparent or consequent attempt has been made to improve the service of this necessary public utility.

A few days ago when a one-man yellow death trap brazenly sailed through a stop signal at Sixth and Main streets, several people were seriously injured when it crashed into a P. E. car. The P. E. car, fortunately, was not overturned as was the yellow car, undoubtedly due to the fact that it was of a later design and operates on standard gauge tracks, rather than the back yard gauge of the Los Angeles Railway.

The personal experience of your editor has undoubtedly been the experience of all our readers in time and time again watching these cars "barge" serenely through a stop signal many seconds after the last bell had rung or start up from a dead stop after the second bell had sounded.

Why is this brazen disrespect for law and life allowed to continue? Unfortunately, we cannot answer that question and no one else seems to be able to answer. Moreover, this company is responsible for a large amount of the radio interference which is ruining radio reception for countless thousands of persons. Again negligence in properly maintaining equipment is the cause while maintenance money pours into the coffers of those in the house of have.

NEW MIKE STAND

The manufacturers' floor stand model of the Universal Microphone Co., Inglewood, Calif., will now carry the option of a new adjustable, self-balancing tripod base. The new device will enable the stand to fit into a large or small space, and will not be so heavy as the regular stock model, which, however, will continue as a catalogue item.

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ELIMINATING TRAFFIC SIGNAL INTERFERENCE

By J. R. STREN, Radio Service Engineer

Radio interference from traffic signals is a common cause of disturbance on both home and automobile radio receivers. Generally, however, nothing is done about it largely because people who are bothered with this type of interference either do not know where it comes from, or, if they do, they assume that it cannot be eliminated. Even servicemen have hesitated to approach the problem for lack of a definite plan for going after this business.

On the other hand, my own personal experience as a serviceman has convinced me that there is a profitable field here for the fellows who will go after it. Just as they did in my town, many city officials will be glad to cooperate if you go to the trouble of explaining the matter carefully and even demonstrating how much radio interference an innocent-looking traffic light can actually cause. With the number of lights now used in the average town or city, I hardly have to point out what a juicy slice of business can be had if you obtain the job of eliminating interference from them. Certainly it is a field well worth the time and effort required to win it.

Complaints regarding traffic light interference should be made to the local police commissioner, public works commissioner, city electrician or contractor—whoever is in charge according to your local set-up. This information can easily be obtained at city headquarters.

The yellow caution light or blinker (flasher) is usually the worst offender. This is good for the serviceman, for such lights are generally installed at minor traffic intersections in residential districts where many radio receivers are in use. The red and green lights operating at regular 10 or 30-second intervals do not often cause really serious interference. The red and green lights operating at regular 10 or 30-second intervals do not often cause really serious interference.

Fig. 1 shows one type of contactor. D is a saw-toothed disc operated by a small motor. A represents the contacts in series with the flasher lights. Choke L consists of approximately a ½-pound roll of No. 18 bell wire (up to a 5-amp. circuit), wound on a core of about 1 ½ in. diameter. Condensers C are from 1 to 1.5 mfd. 220-volt AC ratings.

More obstinate cases of traffic light interference will require the filter shown in circuit 2. If interference still persists after using such a filter, add circuit of Fig. 3. The combination of either circuits 1-3 or 2-3 will eliminate radio noises from this source in just about every case. The values of condensers and chokes in Figs. 2 and 3 are the same as those for Fig. 1.

As is well known, much of this interference elimination work is experimental up to a certain point. It means working by the method of “cut and try.” However, if the serviceman has the filter parts shown in each of the three diagrams he will be well equipped to go out and show real results.

(Continued on Page 18)
AN OUTSTANDING I. R. E. MEETING

The Los Angeles Section of the Institute of Radio Engineers held its regular monthly meeting November 19, 1935, in a science lecture hall of the L. A. Junior College on North Vermont Avenue.

The subject of the meeting was "Measurement of Radio Set and Loud Speaker Characteristics." The speakers were Dr. C. R. Daily and Dr. D. P. Loye, both of Electrical Research Products, Inc. Before the meeting, several members of the section gathered together for an informal dinner at the Bella Napoli Hotel.

Chairman Dr. John F. Blackburn called the meeting to order at 8:00 p.m. and conducted the business of the evening, which included a report of the nominating committee by Norman B. Neely, chairman of the committee. Nominations for officers to serve during the year 1936 were as follows: For chairman, Dr. C. R. Daily; for vice-president, Mr. Linden; for secretary-treasurer, L. W. Howard. The activities of a special committee were reported by T. E. N. Daily. The meeting was then turned over to Dr. C. R. Daily, chairman of the Meetings and Papers Committee, who was also the first speaker of the evening. This speaker in his preface set up an extensive display of technical equipment for demonstrating the methods of making many tests on receivers and loud speakers. It is a preliminary description of the equipment and its uses, Dr. Daily introduced Dr. Loye, who made some very interesting measurements for the benefit of the members and guests present.

After the papers had been delivered, several questions were asked by those present and ably discussed by the speakers. It was unanimously agreed by those present that this was one of the most interesting and instructive meetings given by the section in some time. Approximately 150 members and guests were present.

AMERICA HAS MORE RADIOS

An item of importance, which should prove interesting to all radio enthusiasts, draws attention to the fact that over 23,000,000 radio sets or approximately one-half the total number of sets in the world, are owned by residents of the United States. America ranks second in set ownership, with 6,549,049 sets, with Germany, Russia, Japan and France following in the order mentioned.

A. PAUL, Jr. NOW ON KFI

(Continued from Page 6)

Radio is used here in order to get absolutely accurate time signals. The seismic method is often used for this purpose. This method consists briefly, of causing a sound wave in the earth by exploding a charge of dynamite. Then by means of a number of geophones located at strategic points, the various echoes from deep-lying strata are picked up, amplified, and recorded on film. The highly trained geophysicist can read these marks and from them, he can get a pretty good idea of the rock structure deep in the earth's interior.

All these various methods can be divided into two main classes, those adapted for short distance work, in geologically complex regions, and those adapted for large-scale work, in comparatively simple regions. The former class, which includes chiefly, the electrical and magnetic methods, and also the radio method, so-called, is usually of greatest service for ore exploration work. The sound is best for large-scale, deep explorations such as that with which the petroleum geologist is concerned.

This latter class includes the gravitational and the seismic methods. The seismic, however, is in no sense absolute, since the choice of a method depends in every case upon the nature of the terrain and the geologist. So-called simple regions, which the seismic method is best for, are those primarily concerned with petroleum geologists.

It is difficult to make hard and fast statements about so new a subject as applied geophysics, but one which can be made without fear of contradiction is that it is now a most valuable and important science and will become much more so in the future.

NG BREAKFAST CLUB

The Los Angeles Breakfast Club, which recently acted as host to A. E. Bennett, the president of the Australian Federation of Broadcast Stations, furnished the idea for the 2GB Breakfast Club. But, instead of only giving us a weekly dinner at the Royal George, we have a different speaker over the air as their applications are received via mail. The wooden horses "Ham 'n Eggs" take part in the performance, which includes a half hour of mirth and melody with theme songs and incidental music as well as the gags and initiation ceremonies.

RADIO AND TELEVISION PREDICTED IN 1883

The transmission of sound and images through the ether, producing sound from light, X-ray, and other present-day scientific wonders are not so new or modern if we accept the amount of time the Atlanteans enjoyed civilization of 12,000 years ago as described in a startling manuscript recently published under the title, "A Dweller on the Two Planets," by the Poseid Publishing Company of Los Angeles.

This remarkable prophetic narrative was said to be "dictated to 17-year-old Frederick Oliver in 1883 by an incarnate mentor who signs himself "Phyls—"the Tibetan, otherwise named in fullness, Yol Gorro, author of this Book," and who claims to have been an inhabitant of the lost Atlantis some 12,000 years ago.

Whatever the reader's view point on the supposed existence of Atlantis may be, he cannot escape the fact that the 17-year-old boy who had had no technical training whatever, could not then have known about the scientific wonders which the vacuum tube has made possible. Yet he describes them in detail. For instance:

"At the appointed hour we went to the place designated and were ushered into a small apartment. By a table almost hidden by books sat the Rai, listening to a well-modulated voice which was relating the latest news, but the owner of which was not visible. The Rai turned ... to a case shaped something like a modern music box and turned a key with a soft snap. On the instant the voice of the unseen speaker ceased in the middle of a word and I knew that ... I had heard one of the news recitals of which I had so frequently read."

And yet we consider the news broadcast a modern invention!

It is declared that the Atlanteans developed properties of light unknown to modern science, one of the discoveries being that light could be made to yield sound. A great organ, in the Royal City, is described as producing music of transparent beauty. In vacuum tubes of this instrument the rays of many-hued lights played from point to point, the colors changing as the notes changed.

Both sound and images were transmitted by wireless, according to this account. An instrument, called a naim, was used as an instrument of communication in which appeared the life-size image of the person addressed, who, in turn saw... (Continued on Page 15)
MILLER IRON CORE I.F. TRANSFORMER

Designed to have twice the selectivity and gain of an air-core type, a new iron core intermediate frequency transformer with duo-lateral wound coils has been developed by the J. W. Miller Company, Los Angeles, for distribution through regular trade channels. The rustless and corrosionless core of uniform quality is known as "Croliete," a finely divided magnesium alloy imbedded in a ceramic body. The mica compression type tuning condensers assembled on a special ceramic base are adjustable from the top of the shield. Aluminum, rather than the less expensive zinc alloy, is used for the shield, which measures only 1½ x 1½ x 3½ in. overall.

Miller engineers point out that a single-stage intermediate amplifier with Miller iron-core transformers can be designed to have the selectivity and gain of a two-stage air-core type with approximately half the inherent noise level, resulting in a better signal-to-noise ratio. The iron-core i.f. transformers are available in all standard frequencies.

AUTO RADIO AN IMPORTANT FIELD

The extent to which auto radio servicing has grown to be a distinct and specialized field by itself may be seen by reading Ghirardi's masterful handling of this subject in his newly-published "Modern Radio Servicing" book. Ghirardi has found it necessary to devote some 116 pages out of 1300 to auto radio alone in order to adequately cover the subject. In complete detail he tells what equipment and qualifications are necessary for efficient auto radio installation and service work, the special constructional features of present-day radio receivers, and how to install them. He also describes the various auto radio antenna systems in use and the methods for installing them. Particular attention is paid to the elimination of ignition system interference in the various types of cars by a rigid scientific analysis "sure-shot" system he outlines in detail.

RADIO DENTISTS

Experimenters in the field of dental science report that the use of ultra high frequency radio waves to kill germs of decaying teeth have been highly successful. The teeth were exposed for periods of five minutes to an hour.

RADIO'S PUBLIC ENEMY NO. 1-INTERFERENCE

(Continued from Page 13) working all night and switched it off at every opportunity, the owner of that set would lose no time in either forceably ejecting you from the premises, having you arrested for trespassing, or both. Yet, this often would be no worse than his refusal to service his equipment which is ruining educational and entertaining radio programs for dozens and possibly hundreds of families.

You who read this are urged to put your shoulders to the wheel, along with all the rest of us who are rebelling at the flagrant and malicious trespassing upon our "radio property" and do all in your power to impress your customers acquaintances and associates with the necessity for immediate action against these public bandits who are responsible.

Uncle Sam wants you to own a home
Uncle Sam asks you to own a home.
Uncle Sam has done everything possible to enable you to own a home.

NOW EXCLUSIVE TUNG-SOL RADIO TUBE DISTRIBUTOR

WHOLESALE

RADIO SPECIALTIES CO.
1816 WEST EIGHTH STREET
LOS ANGELES
Phone FEDERAL 6633
On Wednesday, November 13, we met at a new location, Bob Sperry's residence on Santa Monica Boulevard, Santa Monica, California.

The meeting opened on time, at 8 o'clock sharp, with the association business. After the business meeting, the meeting was turned over to Mr. Scott Hall. Mr. Hall demonstrated National Union's new cathode-ray oscilloscope in a very interesting and instructive manner, showing various set-ups and results which could be obtained. During the intermission questions were asked and answered while those present enjoyed beer.

Later, we had some more work and explanation, after which we adjourned.

This meeting was one of the finest which we have had. Everyone turned out, including a dozen guests and friends. The next meeting will be November 26, at which time we will have Mr. Hall with us again to lecture on visual alignment of radio receivers. We know that this lecture will be up to his past performance. Anyone who wishes to come is cordially invited to do so.

Manufactured under U. S. Patent, 1710073.

RADIO FELLOWSHIP IN NEW HEADQUARTERS

Mel Ryder, chairman of the Radio Fellowship, announces the acquisition of a new luxurious club house and listening post for the Fellowship. It is located on the beach front at Santa Monica and consists of a fine ten-room house, tastefully and comfortably furnished, large enclosed surrounding grounds, a swimming pool, dressing rooms and showers for bathers and a multi-car garage with additional quarters above. There will be several DX listening-post rooms, construction, test and research laboratories, transmitter room and executive meeting facilities. In addition to this, the club house is adequately and conveniently equipped for social and recreational activities by members. Serious-minded persons, conscientiously interested in joining this outstanding group, may address the secretary, Mr. Frank Andrews, in care of the Technician.

BLIND FLYING

The Dept. of Commerce has recently indicated its intention of surveying sites for twelve new air ports, which will be equipped with radio compass systems for blind approaches.
TRAVELING THE TERRITORY
WITH MILTON

Well, well, well, little kiddy from radio-technical land! Here we are once again, only this time with a nice long stocking hanging from the mantle piece waiting for Santa Claus to come down the chimney.

The old Traveler takes this opportunity of wishing all his many friends a very Merry Xmas; but a very special one to all the Mr. and Mrs. of our radio colony. Among whom are:

Mr. and Mrs. Andy Lovinger of Lovinger's Radio Service.
Mr. and Mrs. Emil Minder of Pico Radio Shop.
Mr. and Mrs. Ray Ogborn of Ray Ogborn Radio Service.
Mr. and Mrs. Edward Bower of Bower and Button.
Mr. and Mrs. Raymond Routhoi of Manhattan Radio Service.
Mr. and Mrs. Harvey Cooper of Camino Radio Shop.
Mr. and Mrs. Albert Ezor of Pioneer Radio Service.
Mr. and Mrs. William Denells of The Music Shop.
Mr. and Mrs. Henry LePla of the Radio Electric Shop.
Mr. and Mrs. Bob Brown of Bob Brown Radio Service.
Mr. and Mrs. Ben Jacobson of Ben Jacobson Radio Service.
Mr. and Mrs. Oscar Waldenschmidt of Waldy's Radio Service.
Mr. and Mrs. Clarence Shippy of Shippy's Radio Service.
Mr. and Mrs. Roy Tate of Roy Tate Radio Service.
Mr. and Mrs. Ray Southstone of Ray's Radio Service.
Mr. and Mrs. Larry Cole of Radio "Doc" in Pasadena.
Mr. and Mrs. Paul LeFebvre of the Radio Service Shop.
Mr. and Mrs. Roy Wallick of Wallick's Radio Service.
Mr. and Mrs. Don Goodwine of Harry W. Weber of South Pasadena.
Mr. and Mrs. "I. I." Motley of The Radio Shop.
Mr. and Mrs. Bill Hansen of Hansen Music Co.
Mr. and Mrs. H. O. Whisman of Hansen Music Co.
Mr. and Mrs. Bill Wilhelms of Hansen Music Co.
Mr. and Mrs. Leonard Lossieff of Star Bicycle and Radio Store.
Mr. and Mrs. Harry Gilbert of Harry V. Gilbert's Radio Shop.
Mr. and Mrs. Beryl Steele of Harry V. Gilbert's Radio Shop.
Mr. and Mrs. Leon Johnson of Johnson Radio Service.
Mr. and Mrs. Bill Manning of Manning Radio Service.
Mr. and Mrs. William Bowell of Bay Radio Service.
Mr. and Mrs. Bill Starr of Coast Electric Co.

And to all the mothers, fathers, families and friends of our radio fraternity—a hearty Merry Xmas!

ELIMINATING TRAFFIC SIGNAL INTERFERENCE
(Continued from Page 10)

... Simply by cutting this Analyzer into the circuit and then applying various filter banks by turning the dial you are enabled to find in short order the exact filter combination to produce best results. After working "cut and try" for several years with many loose filter units, I find that the Sprague Interference Analyzer reduces my working time on a job by more than half.

After the correct filter combination has been determined these units can be installed directly in the signal box if there is room or in a metal container fastened outside of the box. The traffic light maintenance crew will often dig up a container and attach it to the signal box for you. Westinghouse makes a good weather-proof marine box which is ideal for the purpose.

A car radio, close to the control box, is a great help while working on the job, or have a helper stand near a window of an adjacent house so he can signal to you while he is listening to the radio. By listening to the radio you can tell at once when you have hit upon the proper filter combination to eliminate the interference.

This sort of work represents a broad field warranting real consideration from every serviceman who is looking for ways and means of expanding his business along practical, profitable lines—and it is one which will become increasingly important as more auto radios are used and as short wave reception becomes even more popular with the consequent necessity for still more sensitive home receivers.

W. C. HITT
1341 So. Hope St.
Los Angeles, Calif.

J. C. HITT
580 Market St.
San Francisco, Calif.

R. R. BEAN
2124 Smith Tower Bldg.
Seattle, Wash.

SAN FRANCISCO, CALIF.

AEROVOX CORPORATION
33 Washington Street, Brooklyn, N. Y.

Sales Offices in All Principal Cities

November, 1935
EXCERPTS FROM MODERN RADIO SERVICING

(Continued from Page 4)

cular model, different components were found to cause fading on many different occasions. The 0.1 mf. audio coupling condenser was found to be the most frequent cause, as it was opened-circuited. The variable condenser stator plate was mounted on porcelain brackets. A sudden jolt would snap the porcelain, permitting the stator to shift with the least vibration, causing fading. The r-f coil secondaries were wound very tightly, and exact changes in temperature or excessive vibration of the dynamic speaker would cause the coil terminals to snap at the lug. This would make and break contact, causing fading. Numerous condensers in the r-f portion of the receiver would open-circuit or become leaky, producing the same symptom. It is evident that troubles of this kind can only be found by keen observation and attention to the smallest details which might pass unnoticed by the novice. Often, the observation of any unusual effects accompanying the fading gives a clue to the source or type of trouble.

Perhaps the most frequent cause of fading is defective screen-grid tubes. When these tubes are tested with the ordinary set analyzer, the difficulty is seldom disclosed; but if they are checked with a new improved process acetate discs just released by PRESTO.

Leading manufacturers of Discs, Portable and Studio Recording Equipment, Replacement and Modernization Parts and Accessories

Write for Complete Descriptive Literature

PRESTO RECORDING CORPORATION
139 West 19th Street — New York City

GIAN RECTIFIER TUBE

A giant rectifier tube capable of rectifying enough electrical energy to light every home in a city of 65,000 people was recently demonstrated at Milwaukee. This tube has an output of one million watts at 25,000 volts d.c.

FREE! Send For Your Copy Today!

Sylvania

The Set-Tested Radio Tube

HYGRADE SYLVANIA CORPORATION

‘YOUR NEW BOOK HAS PUT MORE IN MY POCKET’

Servicemen write us that Sylvania’s new volume of Service Hints can’t be beat. Send for your FREE copy today.

Sylvania’s new volume of Service Hints contains almost 300 practical servicing tips that have been gathered from the experiences of the most successful servicemen over the country.

You get the benefit of their years of experience when you tackle tough problems. It gives you the easiest solution to everyday problems. These a few of the hundreds of other up-to-the-minute service tips contained in Sylvania’s new book, Service Hints. Send for this valuable book today, and put yourself in line for more and bigger profits.

Get the inside dope on recent troubles. Iron out your past errors. Right now... fill out this coupon and send it to HYGRADE SYLVANIA CORPORATION. The New Volume of Service Hints will be sent you within a few days.
PERSONALS

Gerry Miller, formerly with Radio Supply Company and Radio-Television Supply Company, is now employed by the C. C. Lagevin Company with offices in the Rich-Field Building. This company handles sales for Western Electric sound equipment and General Electric radio instruments and precision parts. We know that Gerry's great number of friends will welcome him.

C. R. T. A. member, formerly service manager for Hubart Radio & Electric Company, has recently been added to the staff of the rapidly-growing Radio Specialties Company on West Eighth Street. Mr. Munson spends his daylight hours in the company's sales room and invites his host of friends to see him there.

Frank Munson, well-known C. R. T. A. member, is now employed in the service department of the G. A. Ekleberry Service Shop on La Brea.

John K. Hilliard, engineer with M. G. M. Studios, formerly with Fox Films, Inc., and past chairman of the Los Angeles Section of the Institute of Radio Engineers, recently returned from New York. Mr. Hilliard was sent to New York by his company to personally supervise the installation of a high-fidelity sound projection system in one of the leading theatres in New York City. He reports satisfactory completion of the installation and is now back on home territory.

Frank Munson, well-known C. R. T. A. member, formerly service manager for Hubart Radio & Electric Company, has recently been added to the staff of the rapidly-growing Radio Specialties Company on West Eighth Street. Mr. Munson spends his daylight hours in the company's sales room and invites his host of friends to see him there.

John A. Orena, vice-president of the C. R. T. A., is now employed in the service department of the G. A. Ekleberry Service Shop on La Brea.

V. K. Hatfield is now the proud papa of a brand new baby, Joan Susan. Mos-ter department of the G. A. Ekleberry C. R. T. A., is now employed in the ser-

E. K. Barnes, now on the technical staff of Freeman Lang, and one time di-rector of KFI, has gone to the desert to recuperate for two or three months.

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FRANKLIN PHENOMENA

Some forty years ago Tesla showed possible the use of radio power transmis-sion although it is still commercially inexpedi-cable. However, the spectacular pheno-menon of the locality of WLW, Croyso, Radio Company, 5000 W., is one of the most im-portant developments of the telephone. The transmitter are very interesting. In station, designed to put 500,000 watts in its antenna, a tall steel structure of "Vertical Radiator" type, at times, is fed from the transmitter enough to light lamps or various kinds of light fixtures. The round current setting in the circuit powerful enough to light lamps or even runs of household appliances. Also, any insulated piece of metal picks up power from the outbound waves. Peo-ple near WLW programs from rain spouts on metal roofs, home fixtures, etc. In case the station engineer had put up a lighting rod, but a "radio rod" on a farm house nearby. They grounded a metal roof of the barn to the earth by a low with copper wires to prevent danger of its being set on fire when it picked up high voltage charged by the earth and spark to its wooden sides.

A. Paul, Jr., now quite active in the electrical transcription field, has been very active in air check work for some outstanding programs on the chain broadcasts, as well as many other air-checkings. Mr. Paul also appears at regular intervals as a guest speaker on the Frank Andrews "Round the World" short-wave program every Saturday evening at 9:30.

Richard G. Leitner, well-known radio engineer and consultant, is still in New York City on business, but is expected to return shortly.
EQUIPMENT ELIGIBILITY BOOKLET ISSUED BY F.H.A.

The Federal Housing Administration at Washington, D. C., outlined the policy it will follow in regard to the eligibility of equipment and machinery obtained under the Modernization Credit Plan in a booklet just released, according to F. W. Marlow, District Director for Southern California, Federal Housing Administration.

"The booklet lists types of equipment and machinery that have been ruled eligible for loans up to $50,000 for apartment houses, multiple-family houses (two or more separate dwelling units under the same roof), hotels, office, business or other commercial buildings, hospitals, colleges, orphanages, schools, and manufacturing or industrial plants. It also gives the policy, in detail, in regard to loans up to $2,000 on other types of property. Copies are available at the Federal Housing Administration, 756 South Spring Street, Los Angeles, California.

"General principles which govern the Housing Administration's determination of eligibility for equipment and machinery are explained in detail. Salient points on eligibility are:

"The article should have a unit value sufficient to justify the application of time payments to its purchase. (It is suggested that loans should not be for periods that make any monthly payment less than $5.)

"The article should be of a durable nature with a reasonable expectancy of useful life longer than the term of credit extended for its payment. It must be purchased and installed as a part of the equipment of the structure, or of the business conducted therein, within the United States or its territories or possessions.

"Hand tools, small portable appliances, fragile articles, furniture (unless built in), furnishings, removable decorations, installations meant to be or by their character necessarily temporary, are ineligible.

"Loans for the purchase and installation of replacement parts for eligible equipment and machinery are insurable, but a loan merely for the repair of a machine is not insurable. For instance, the cost of welding a fly-wheel may not be made the basis of an insured loan, but the purchase price and installation cost of a new fly-wheel would be insurable.

"Appurtenances that are physically separate from a major eligible unit, but are usable only as a part of such unit, are themselves eligible.

"Any item, ineligible because of some disqualifying characteristic, does not become eligible merely because it can be used with an eligible item or is bought therewith."

ELECTRICAL AND RADIO STATISTICS

(From October Coyne School Bulletin)
The last month showed the greatest increase in business since the Federal Recovery program was made effective. The following one-line editorials present a brief and graphic survey of the industrial situation:

General Business—
General Business up 17%
Steel Production up 50%
Electric Power Output up 12%
Industrial Production up 20-30%
Stock Exchange Sales up 300%

Radio Outlook—
60-100% set production increase
Sales up 450,000 sets over 1934
Third quarter indicates increase of 20%
Industry products continuing sales pace

Broadcasting—
September broadcasting tops 1934 by 20%
Desirable hours sold out on net works
Chains show $525,000 over 1934

Miscellaneous—
Sales of battery receivers doubled
Metal tube shortage still continues
Factory production vigorously pushed
12% of new receivers metal tubes
Refrigeration in biggest year in history
Many changes in next year's models.

RADIO CONTROLLED PLANE

The British Air Ministry recently disclosed developments in the radio control of airplanes. These "robot" planes are capable of practically any maneuver that a humanly guided craft is capable of. The plane may be controlled from any point up to ten miles distant and tests have shown perfect control with speeds of one hundred miles per hour with a climb of ten thousand feet. The tests have been made over water as well as land and the radio controlled plane need not necessarily be visible to the operator.