The RADIO AMATEUR NEWS

Volume 1 AUGUST, 1937 Number 5

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Correspondence

Address all correspondence pertaining to respective departments to the following:

All articles, pictures and diagrams should be mailed to W6NGQ, Ellsworth Mechlin, 617 West 80th St., Los Angeles, Calif.

Club News, Information, etc. should be mailed to W6CNJ, H. Allen Smead, 6901 Orchard Avenue, Bell, California.

DX news should be mailed to W6GHU, Ray Harmon, 4670 Gage Avenue, Bell, Calif.

Any matters pertaining to visits of amateur stations should be mailed to W6NAT, Bill Driml, 1423 East 73rd Street, Los Angeles, Calif.

Ultra High frequency information should be mailed to W6OEF, Harold Rider, 1443 West 82nd Street, Los Angeles, Calif.

Matters pertaining to Advertising and general business, contact W6CL, 1315 East 58th Place, Los Angeles, Calif., Phone JEfferson 3405.

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Volume 1 August, 1937 Number 5

CONTENTS

.We invite all Radio Amateurs and Radio Clubs to contribute articles to this magazine, although we reserve the right to censure articles unfit for publication. .

.This magazine is printed entirely for the benefit of Radio Amateurs and "the more dope, the better," however this magazine is not responsible for statements made by contributors and do not guarantee any statements or circuits published to be correct; we will endeavor to check the authenticy of same.

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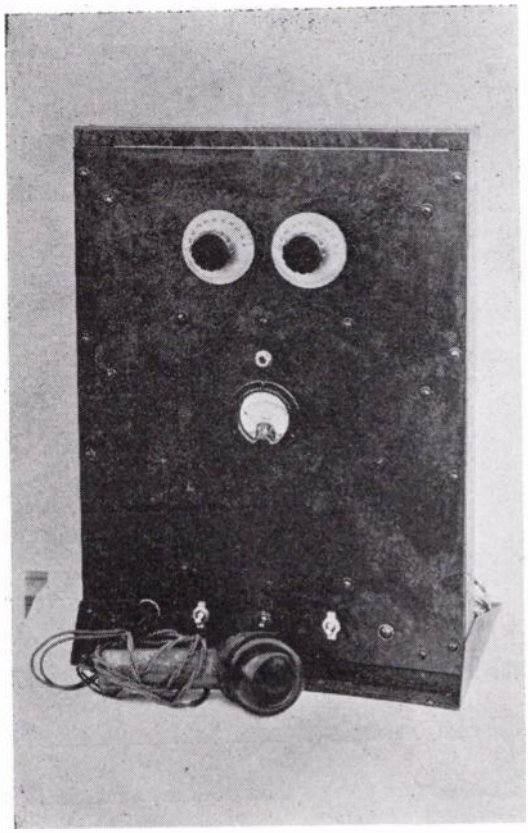
Emergency or Portable Transmitter Plus Modulation

By Ellsworth C. Mechlin, W6NGQ



Every one has their own idea of what goes into a rig as named in the title, and what the author would use is not likely what the reader would think of using. This rig might please some amateurs but others would not want the lineup as a gift, because of their own ideas of construction.

The R. F. section of the transmitter consists of push-pull 6V6G's for three reasons: First, everything today is beam power tubes; second, the builder is interested in push-pull oscillators; and third because of the lower current drain of the 6V6 over the 6L6, as the rig must be able to work from a battery vibrator or a motor generator supply as well as from an alternating current power supply source.

The socket arrangement of the 6V6G is identical to that of 6L6G. The tube is slightly smaller than the 6L6 as shown in the picture. The current drain of the filament is .45 of an amp.

Leads were made as short as possible in wiring so that the rig could be used for C. W. on most of the amateur bands. 160, 80 and 40 meter crystals worked very well (20 meters was not tried because, as a general rule this type of circuit is not the easiest on crystals,) although when tested with crystal lamps, would not more than redden the filament at any time.

A high frequency parasitic choke made of hook up wire is shown in the photo.

The 6V6G tubes used were not tested to see how much of their life blood could be squeezed from them at one time, but were left with 350 volts on the plates and a current reading of 75 to 90 mills with different amounts of coupling between the tank circuit and the load.

A split-stator condenser is used to help balance the circuit, while the push-pull arrangement of the tubes make possible lower values of mica by-pass condensers. .001 and .002 can be used, replacing .01 condensers that are necessary in conventional single tube oscillators.

Very Low C coils increased the R. F. output, but medium low C adds to the stability when modulating.

Modulation

The second large order of a desirable low frequency portable is that it must be adaptable to voice modulation for emergency portable work; and in "time tests" in national emergencies of the last few years, twice as much traffic can be handled by phone, than is possible on code, when time is at a premium.

As the author could think only of phone operation, the speech and modulation system was planned along with the selection of the R. F. tubes. A single 6L6G was chosen to do the task of modulating as the plate current of one tube was as much as desired to be used in the modulation current consumption. Inquiries on the subject would lead one to believe that a 6L6 would have neither the gain nor power output to modulate the R. F. input, but reports on the signal, given by amateurs over the air, proved otherwise.

The modulation of a crystal oscillator may not sound just right. The F. C. C. requires the signal be free from frequency shift; therefore an over-modulation indicator and carrier shift indicator is also required by law. With the use of these instruments the amteur can keep within his bounds. The frequency shift (if any) was not noticeable on the LOW FREQUENCIES; also the modulation was less than 100 percent. Reports were that the modulated signal was sharp and clean.

Microphone Transformer

A 6L6 tube is rated as capable of about 12 watts of audio with 400 volts on the plate; this was well and good but where was the gain from

the single button microphone coming from to produce that output? A few words spoken in a previous conversation many months ago with Karl Pierson, W6BGH, brought to mind how he solved a similar problem. Ordinary single button mike transformers are not capable of the task.

An old style audio transformer with a secondary resistance of 9500 ohms (about 14,000 turns of No. 41 or 42 wire) was taken apart and the old 2500 ohm primary taken out, leaving just enough of a window for the new primary of 300 turns of No. 28 wire, which had, when re-assembled a D. C. resistance of 6 ohms.

The transformer used was an old Jefferson "Concertone" an over sized, high priced audio transformer of its day with plenty of iron. As the transformer was needed in a hurry it was taken to the Skaggs Transformer Co., and they did a workman like job of rewinding for the price of a new low gain transformer with better response on voice frequencies than from a stock midget transformer of equal price.

The modulation choke was a stock choke made by Hadley about 12 Henrys, 125 mills.

Some Construction Details

In the transmitter built there is no microphone battery switch, but an open circuit jack is used and the mike pulled out when not in use.

A .01 paper condenser is shunted across the single button microphone to help cut carbon hiss.

A snap switch in the cathode of the 6L6 is shown to cut the modulator drain when the rig is keyed as the R. F. output with most power sources will be decidedly increased with the lowered amount of current used.

Reports on keying were T9 with no chirp at all on the lower frequencies.

The coil consists of 65 turns, center tapped.

The antenna is link coupled as it is the most balanced coupling system to a push-pull circuit also the law reads that a modulated stage must be loosely coupled to the antenna.

In the pictures shown the terminal strips with shorting bars of copper wire between them give ease of making solid connections to a portable power source.

The power supply is just a little over sized but so much the better even if few watts are drawn through a third kilowatt swinging choke. (you know the old gag about using what you have).

Condenser input could well be used as it will help to improve the voltage regulation even though the 83 is a Mercury vapor tube. (83's are cheap).

Two power switches are shown, the one on the extreme right of the panel is in the 110 volt line and a dark bronze snap switch in the negative ground lead is shown in the lower center of the front panel. This off color switch makes it easy for a strange operator to remember which is the stand by switch, also breaking the negative gives longer life to the tubes, not allowing the plate voltage to be applied until the filaments are fully warmed.

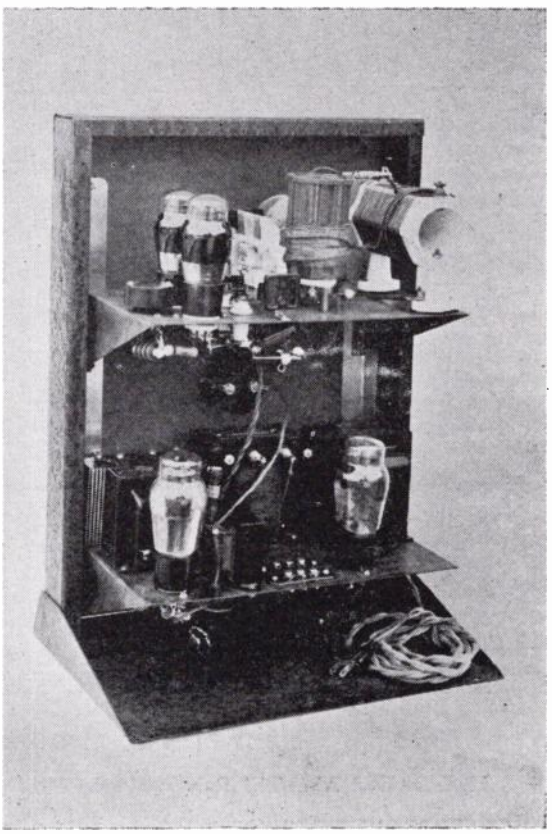
An alligator spring clip is used to adjust the amount of antenna coupling.

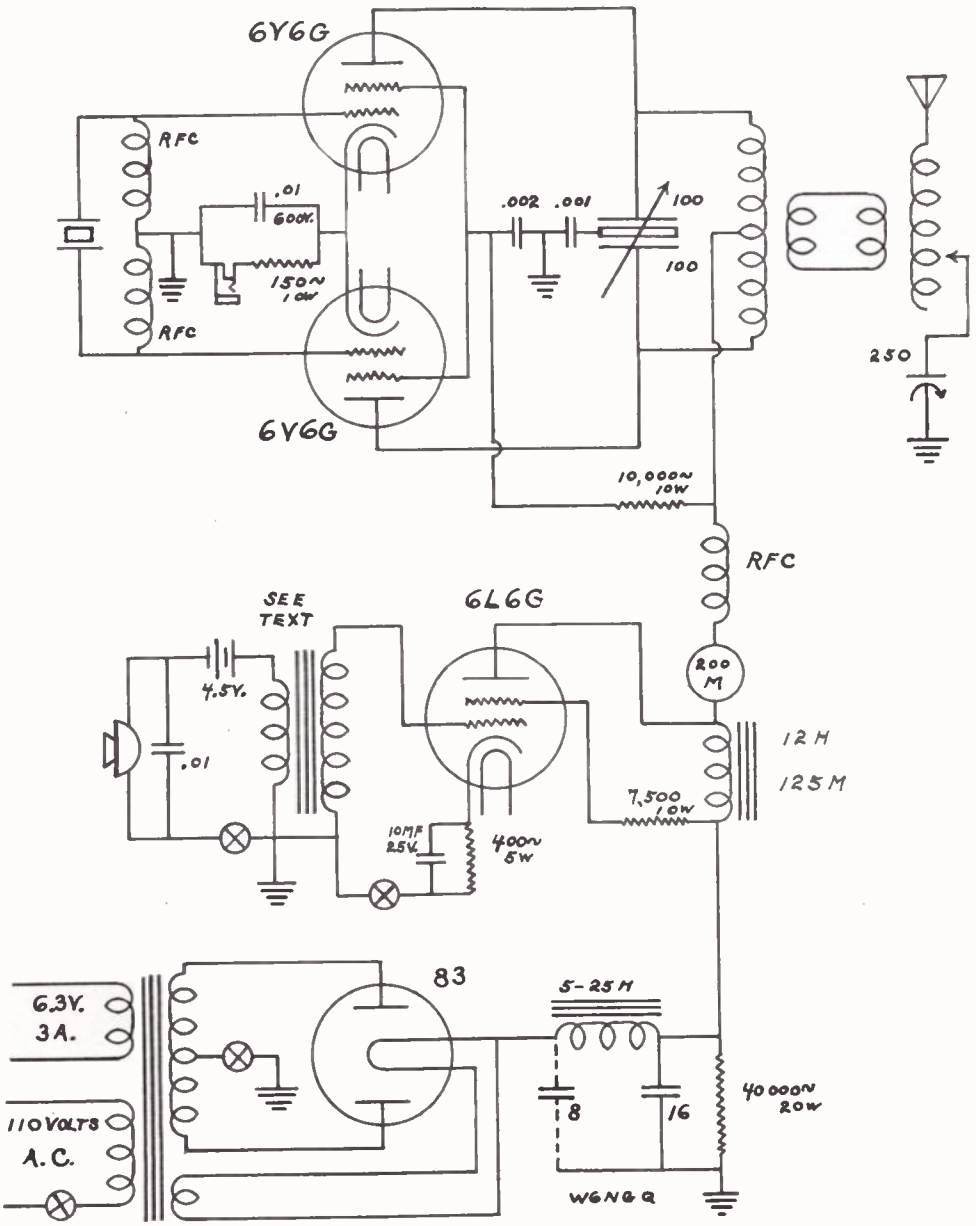
There is nothing like an over modulation meter for checking a phone rig. The one used here is a diode rectifier to rectify some of the R. F. output to a pair of headphones and a 0-1 milliameter to show overmodulation and field strength readings.

The author has found that in any phone transmitter he ever built, the best emitted signal does not always fall on reasonance dip of the final meter and as usual this rig ran true to form; the best signal was a compromise between the greatest field strength reading and the best sounding signal in the monitor.

By adding an 8 mf. condenser on the input of the power supply the potential on the R. F. tubes became 425 volts at 110 mills. Only one difficulty was found with this condenser input, to wit:—there was so much R. F. when used on C. W. that the split-stator tank condenser would arc over once in a while.

The rig pulls out of the rack and can either be put into a metal or wooden carrying case for ease of transportation.





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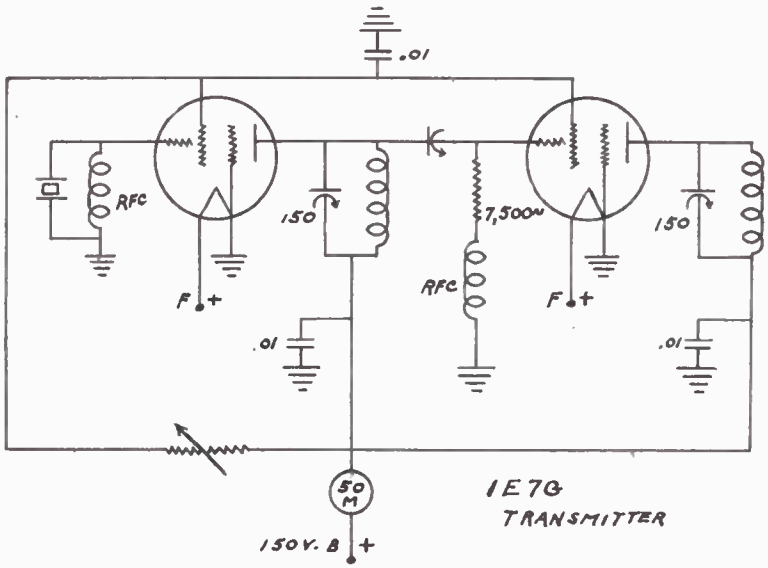
Printed for Amateurs by Amateurs

THE RADIO AMATEUR NEWS—OWNED and PUBLISHED by W6CL, B. F. AYERS

New Tube Makes Vest Pocket Transmitter

Designed by W6LCL, Don Reed
Written by W6NGQ



A person can find many interesting things if they just read with a little concentration. W6LCL did this and found something that amateurs and dealers alike said did not exist, but was right under their noses all the time. Don looked just a little more carefully than others at his 1937 RCA tube manual and there it was, a twin pentode with a 2 volt filament.

After hours of hard work Don obtained this tube from a dealer who didn't believe he had this tube in stock. The tube is nothing more than two 1F4 power output pentodes under one glass cover. The price of the tube is around $1.70 net, an dwhat little money to pay for so much R. F. output.

To satisfy a natural curiosity, W6LCL took two sockets for coils and a socket for the tube, and these along with small variable condensers were mounted on a piece of masonite about three by six inches. As the tube manual said 135 volts on the plates, why only 150 volts was used.

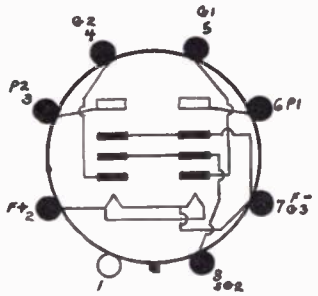
The tube was first used as a push pull crystal oscillator and with a good 7.5 watts input a five watt lamp was well lit on both 160 and 80 meters.

After this experiment the tube was tried as a crystal oscillator and an amplifier or doubler. In the diagram is the circuit used showing the single tube as two tubes to simplify the drawing.

The crystal tank coil had 60 turns of No. 28 wire on a coil form a little taller than a tube base. The amplifier and doubler tank coil had 32 turns of No. 28 wire wound on a tube base. With the 150 mmf. final condenser and a 160 meter crystal, 80 meters was found with the condenser almost open, working as a frequency doubler, and hit 160 meters with the condenser almost closed, working as a buffer final.

The output as a straight throught amplifier was 3 watts with but very little less as a doubler.

The filament current drain is only 0.240 amperes and two dry cells will last a good length of time in portable work. One main thing to remember when experimenting with battery tubes



is to add a switch in both the filament leads and also the plate leads, for when making tests it is so easy to cross wires and burn out filaments.

A very good suggestion is given by Don, when putting a pentode to work in a circuit he uses a variable resistor to drop the screen voltage. With the tube in its actual operating condition, the screen voltage is adjusted to the greatest output, then the resistance is measured and a fixed resistor is permanently placed in the circuit. For example, the screen voltage is different for greatest output at 10 and 20 meters than at 80 or 160 meters.

A mica trimmer is used as the coupling condenser between stages. In a permanent vest pocket transmitter, W6LCL will build in the future using this circuit and tube, the coils will be built on small tubing and tuned to resonance with mica trimmers so that the whole transmitter will fit in the palm of ones hand.

The R. F. chokes are of the BCL type and the by-pass condensers are of the postage stamp size. A fifty mill meter does the trick.

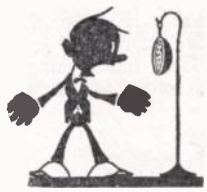
For portable work on 80 meters the antenna should be cut to exact frequency and tapped directly to the tank coil.

▼

We often wondered what inspired our ardent writer of "Mutterings of an XYL." There has been times when we thought she was kinda rubbin-it-in. But we think she really means what she wrote this month.

We have just found out this moving story is on the up and up. The new QRA of W6NOF is Lookout Mountain, Hollywood, Calif., and the reason for moving was to get away from the crowded city with all its automobiles and electric signs etc, so he could really work some DX. We wish NOF all the luck in the world on this new location, umpteen million miles up in the air and hope the XYL is not too hard on the poor old fellow.

▼



A REPRINT!

Through an oversight, references to the figures in last month's article, "Old, Yet New Fundamentals of Ultra High Frequencies" were omitted. Rather than confuse the readers with a list of corrections, we are reprinting the entire article in this issue, placing the corrections in their proper places.

DON'T MISS FUTURE ISSUES
OF
THE RADIO AMATEUR NEWS

"The Magazine with all the News for all the Amateurs"

We want to thank all the Amateurs for their co-operation during the past four months and articles on Ham Stations are now coming thru in great style, and from all indications we will have something of interest for you at all times.

SECOND DX ROUND-UP

LATE IN SEPTEMBER

THE "WHEN AND WHERE" WILL BE ANNOUNCED IN THE SEPTEMBER ISSUE

ALL THE DX MEN WILL BE THERE

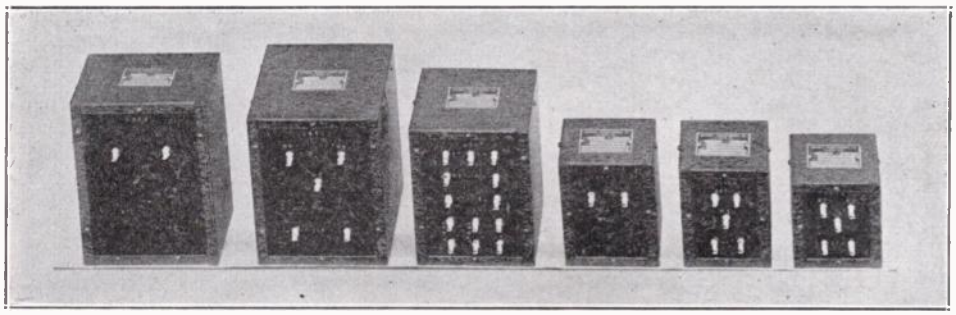
— Some of the Committee Include —

W6QD, W6CUH, W6CXW, W6DOB, W6GHU
W6GRX, W6LYM, W6JBO, W6VB
W6GRL, W6LLQ

DX FROM ALL ANGLES . . . CW AND PHONE

SKAGGS SYMMETRICAL AMATEUR TRANSFORMERS

This Complete Line Cased And Compound Filled As Illustrated Below



Transmitting Plate Transformers

Cased and Compound Filled As Illustrated Above

A. C. Volts C. T.	M. A.	D. C. Volts	Price
750—1000—1400	250	300— 400— 500	$4.50
1400—1550—1950	250	500— 600— 750	7.00
1550—1700—2350	300	600— 750—1000	8.00
1700—2350—2950	350	750—1000—1250	14.00
1700—2350—2950	500	750—1000—1250	17.00
2350—2950—3500	300	1000—1250—1500	11.00
2350—3500—4700	350	1000—1500—2000	20.00
2350—3500—4700	500	1000—1500—2000	25.00
2350—3500—4700	750	1000—1500—2000	30.00
2350—4700—7000	500	1000—2000—3000	30.00
2350—4700—7000	750	1000—2000—3000	40.00

Transmitting Chokes

Cased and Compound Filled As Illustrated Above

M. A.	Swinging Chokes 60/12 Henries	Smoothing Chokes 20 Henries	Smoothing Chokes 30 Henries	Modulation Chokes 50 Henries	Volts Insulation
100	$4.00	$5.00	$6.00	$8.00	2500
150	4.50	6.00	7.50	9.00	2500
200	5.00	7.00	9.00	10.00	2500
250	6.00	9.00	12.00	14.00	5000
300	6.75	10.00	13.50	16.00	5000
350	7.00	11.00	15.00	18.00	5000
500	9.00	13.00	19.00	24.00	10,000
750	12.00	16.00	23.00	35.00	10,000

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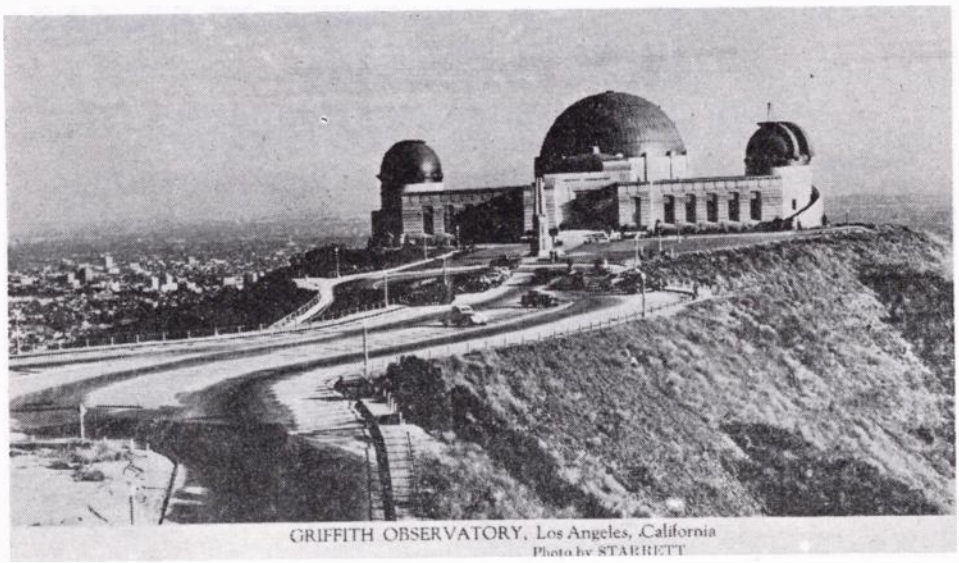
Radio and the Sun

By C. H. Cleminshaw, Assistant Director of the Griffith Observatory



GRIFFITH OBSERVATORY, Los Angeles, California
Photo by STARRETT

GRIFFITH OBSERVATORY

The dome on the left houses a 12-inch telescope which is open free every clear night until 11 P. M. In the dome on the right is a solar telescope by means of which the spots, prominences, and spectrum of the sun may be examined during the day after 11 A. M. in the Hall of Science. On the inside of the large central dome the planetarium projector reproduces the sun, moon, and all the stars and planets visible to the naked eye. Demonstrations of this are given at 3 and 8:30 P. M. on week days and at 2:30, 3:30, and 8:30 P. M. on Sundays and holidays.

The transmission of radio waves over long distances is made possible by their reflection from a conducting layer in the earth's upper atmosphere. This is referred to as the Kennelly-Heaviside layer in honor of its discoverers, and is also called the **ionosphere,** because it contains electrified particles known as ions. This extends from about 50 miles to more than 300 miles above the earth's surface.

The sun appears to be the principal source of the electrified state of the upper atmosphere. The most obvious effect of solar activity is the difference in radio reception between day and night. Programs which are broadcast from distant stations usually come in better at night than during the daytime. On the daylight side of the earth, the radiation from the sun increases the ionization and the ions penetrate nearer to the earth's surface. This lowers the effective altitude of the ionosphere and the radio waves are not reflected to as great a distance as when the electrified layer is higher. With the setting of the sun the chief source of ionization is removed, and ionized molecules pick up free electrons, particularly in the lower levels where the density is greater. The result is an effective rise in the ionosphere during the darkness, and this permits favorable reflection of the broadcast waves.

Measurements of the intensity of broadcast reception indicate a relation with sun-spots. The cause of the spots is not known, but we know something of their nature. They resemble tornadoes, in which the gases are whirling rapidly and expanding so that they are cooled and appear darker than their surroundings. A typical spot may last about a week, and the number of spots varies in a cycle of about eleven years.

The average listener to a radio program would not notice any change during the sun-spot cycle, but careful measurements show that the intensity of reception decreases with an increase in the number of spots. It is possible that the increased activity of the sun around the time of sun-spot maximum causes a greater ionization of the earth's atmosphere. This lowers the effective height of the ionosphere, so that radio reception is not as good as at the time of sun-spot minimum.

In addition to dark spots on the sun, there are occasionally bright eruptions in the sun's atmosphere. There appears to be a relation between these eruptions and fade-outs of high frequency radio transmission. Dr. J. H. Dellinger of the National Bureau of Standards has found that during the two-year period ending in June, 1936, thirty-nine fade-outs coincided so closely with observations of bright solar eruptions that the probability of a relation between the two phenomena is very strong. Fifteen of these eruptions were photographed at the Mount Wilson Observatory. In five cases, the time when the eruption was first seen agrees to a minute or less with the time when the fade-out began. Six of the eruptions have apparently preceded the fade-out by from two to twelve minutes. In the four other cases, the Mount Wilson observations were made from ten to thirty minutes after the fade-out began, when eruptions were found to be already in progress. According to Dr. R. S. Richardson of the Mount Wilson Observatory, no fade-out is definitely known to have preceded

an eruption with which it was obviously connected.

A good example of the close coincidence of eruptions on the sun with radio fade-outs is that of April 8, 1936. At 8:22 A. M. a spectroheliogram showed a normal distribution of hydrogen on the sun. On the next plate, taken at 8:47 A. M., there was an unusually brilliant eruption which had meantime occured over a large spot-group near the central meridian of the sun. This solar disturbance was also witnessed at the Huancayo Magnetic Observatory in Peru, where the first signs of activity were noted at 8:45 A. M. A major fade-out of high-frequency radio transmission was experienced at 8:46 A. M., which lasted from 15 to 30 minutes for various frequencies, ranging from 4000 to 15,000 kc.

An interesting feature of many of these fade-outs is their occurrence at intervals of about 54 days. This interval is twice the time of solar rotation in latitude 16°. It is not yet known whether there is any significance in this agreement. It should also be pointed out that on several occasions brilliant eruptions on the sun have occurred without producing any radio fade-outs. These are examples of the many questions which remain to be solved in explaining the effect of the sun on radio.

The guy that writes "Looking 'Em Over," went on a month's vacation and won't resume work until he gets back—anyway that's our story and we stick with it.

▼

The Ultra High Frequency Club of S. C. has postponed their meetings until October. Announcements of meetings will be made later by their new Corresponding Secretary, W6MLA.

▼

Wait a minute, I thought I heard something break.

"Never mind, that was just my promise to mother.

▼

This is my three-piece orchestra giving a modulation test.

Yeah. Piano, player and stool.

▼

A telephone cable laid between Germany and Sweden is the largest of its kind ever manufactured. It can carry 84 telephone conversations at the same time.

By Ray Harmon, W6GHU

In looking at the calendar one would be led to believe that this is the time of the year for a layoff from DX, but for some reason or another it seems to have brought on another splurge of DX stns as well as a decided increase of locals. Those that are sticking to their guns are finding DX much to their liking these days, whatwith the Europeans and the Asians putting in beautiful sigs most of the time. By comparison for consistency, the other Continents are fairly spotty but they too have become more in evidence.

Dig out the shovels again fellers, W6QD, Herb, of the Becker family, King of DXers, (not to mention, chief W9 QSOer of the sixth district) has lined up another BIG DX MEETING to be held probably in Hermosa or Manhattan Beach sometime in September. Herb has lined up one of the best programs we have ever seen and whether ye be CW or fone ham your tastes will be satisfied. Those of you who were at the last meeting held at the Santa Ana Club two months ago will remember a darn good time and those who weren't there—that was your tuff luck. Aniway you will have plenty of notice this time and if you aren't there—your brother hams will say, "Him! huh! what does he know about DX! but me; I went to the DX meeting and what I didn't find out about DX isn't worth knowing."

Honest fellers if your hankering caters to DX, you better be there. The only thing holding up the works is, Herb can't find a hall big enough to accomodate the crowd!

W6NYA down Anaheim way has been having a great time with the DX stns. This guy has two antennas, one a 3¾ wave rhombic peaked on Europe and the other is a 4 wave "V" beam peaked approx. on "PK" land. Although he uses only 175-200 watts to a T55 final he has to his credit—an R9 WAC within 24 hours —worked 16 different DX stns in a single morning, of these, 14 of them were raised by calling CQ DX and ten of them were Europeans. All in all this should prove that low power is still able to work DX and it further emphasizes the value of Beam antennas. Some of Ed's newer DX is CR9AC, 14360-66-t6-7, U9ML, 14420-t9, YV5AN, 14120 t9x, VS7RF, 14270 t6 and 14380 t9, XZ2DY, 14385 t9, HS1BJ, 14120 t8, FY8A t8, chirpy. To top all this off Ed uses a two toob Blooper to hear his DX! These new ones make 53 countries for NYA.

Next door to NYA is another ham, W6NIK —who, when it comes down to low power DX, is not going to be outdone by any one. He too uses a two toob blooper for a rcvr. NIK uses a 132' N-S zepp which gets its power from a single 6L6 final with 8 watts input—this has accounted for WAC on 14 and 28mc as well as WAS. (Try it sometime). NIK recently put in a high power stage consisting of a T20 final and 70 watts input so there is no telling what he will do now. Add to NIK's accomplishments a qso with a ZS while using exactly half of a single watt input!

Down in the same direction is W6BAM and his brother, W6BVX who alternate each day in getting on the air as they both have separate rigs. This doesn't hinder them because they both work plenty of DX. These guys never heard of such a thing as a beam antenna because they both stick to their old standbye a 66 ft. zepp which seems to be doing alright by them. BAM has 82 countries and 33 zones while BVX had 61 countries and 29 zones. BAM would appreciate some dope on the whereabouts and the legality? of XF3B and SU1AC—says his card for SU1AC came back marked "No such station."

Some of the boys nearly had heart failure when they heard K6TE of Wake Island working guys until they found he was working bt-W6 from Los Angeles. Some of the older gang will remember Bill as "The Big Noise of the West" in the old days. Bill works as a commercial operator on Wake, but takes a vacation so he can build a rig and do some brass pounding on the ham bands. (No cracks about the postman and his walking pse).

W6HEW finally got the portable to hang together for a while and on a recent journey to the mountains Mort managed to work a bunch of new stns, and four new countries who were: K6MV 14000 kc t9. This guy is on Midway Island, YV5AN 14120 kc t9, I1IV and I1TKM—who are on 13998 kc t8 and 14070 t9, HB9J 14050 kc t9. This bunch brings Morts' total up to 68 countries and 31 zones. Mort says there is nothing like getting somewhere where the power lines don't soak up all your RF and act as reflectors against the antennas.

W6NMH snagged a couple of nice ones by working VP2LA, St. Lucia Island t9, 14018 kc. and HS1BJ who is 14100 kc t8. Bob uses a 35T final with 175 watts input—he recently made his WAC by working ZS5Q. Add to the low power WAC gang—W6LVF who uses a single TEN in the final with 70 watts input, W6MVL using a 35T final with 150 watts and W6GSL who made his WAC with an 801 and 120 watts. GSL snagged a nice one by working GI5SJ who is on 14250 kc t9.

W6CUH is getting all set to break out with a new hot qra and his super speed qso system again so that he can start tearing into the DX once more. He is said to have a new super-super qra and will be on again PDQ. Charlie says a nice one to keep your ears open for is OY1B in the Faeroes Isles, 14420 kc with a sig that sounded like old FK8AA. (It just can't be described).

W6EXQ is going to have plenty QRM fm now on because there is a baby daughter in the household now. Congrats Ralph. Just call him "Pop."

W6KUT up in Fresno says DX fb for everything there now. He has hooked a bunch of nice ones. HR1AA 14350 t7, XZ2DY 14385 t9, CR9AC in Macao. (Portugese, China). 14360-6 kc t6, and VO8ARE who is t5 and apt to be any where in the band (14mc.).

W6KBD hasn't gone on that long promised venture yet, so he has to be content to work the rig until the time to go arrives. Art tried to quit Radio in favor of Barnyard Golf, but he only kept it up for two weeks before he found that he missed his DX vy much. Upon getting back to DX the first one he snags is CT2BE 14430 kc—chirpy dc. This one was Art's 88th country!

W6KRI is back on the east coast trying to find out how the eastern KWs stack up against the So. Calif. variety—haven't hrd anvthing from him yet, so gess So. Calif. still has the best. Before Dale left he managed to hook up with VQ3FAR 14140 kc t9, CT2B2 14430 chirpy dc, and FT4AG 14410 kc t9 to give him his 118th country!

Whether it was the So. Calif. KWs and key klix or the famous? WX we have, we don't know, but it was one of the two that W7BYW —6OVC couldn't stand because he went back to Idaho. He lived in Santa Ana so it couldn't have been the WX. (Attention Chamber of Commerce).

Fred (Jeez wat a pwr leak I got) Warner, W6MHH got a couple of new ones by working FB8AB—14350 kc t9—and TF3AZ 14385 t6 on CW, then he borrowed a modulator and managed to work HI5X on fone to make him 51 countries how. Fred also says that FB8AB is very consistent as he comes through every morning.

You may send cards for HS1BJ, HS1PJ and HS1RJ to the Royal Siamese Post and Telegraph Dept., Bangkok, Siam. We don't know the reason for the three calls but their cards are all the same and sent by the same operator.

Some nice new ones to look for are VP2PF near the hi-freq. edge of 14mc t7, YS1FM 14255 t5 and VS3AE 14360 kc t9.

FLASH! ! ! W6QD wrks a w8. We knew Herb had been planning on putting up a new beam for some time so gess he finally did it. . . He might even work a W2 now, who knows?

To the fellows that sent us DX dope, our thanks and to those of you who didn't send ani in we would like to hear from you next month.

The DJDC DX contest starts shortly and we know that all of you will work lots of new ones so pse send in your logs to the DASD and the dope on what you worked; the freqs. and QRIs to us.

Following are all the rules for the DJDC contest as copied from the DASD journal "CQ".

2nd GERMAN ANNUAL DX-CONTEST

Following the wish of all participants in 1936, the DJDC is to become an annual event.

RULES

The DJDC consists of two parts as it did in 1936, the DX-QSO between European and Overseas stations, and the QTC-traffic between German and non-German amateurs. During the DX-QSO, serial numbers are again exchanged for verification.

Time and frequencies. The contest takes place on all weekends of August, 1937, starting on the 7th at 12.00 GMT and lasting each weekend up to 24.00 GMT Sundays. All amateur bands may be used. German amateurs are prohibited to work on 1750 and 56 000 kc bands, and the 3600-3400 kc part of the 3500 kc band. Stations frequently being observed to work outside of the bands, may be disqualified.

DX-QSO. The base of the contest is formed by the maximum possible number of contacts between European and overseas stations. For verifications, six-character serial numbers have to be exchanged, if points are claimed for the DX-QSO. The serials consist of two three-character numbers, the first meaning WRT or RST, the latter the running number of the DX-QSO, thus starting with 001.

The general call for DX-QSO is CQ DJDC. There are no DX-QSOs possible between European and German stations.

DX-QSO is possible only once between the the stations each week-end, and frequency band.

QTC-Traffic. DX-QSO having taken place between non-German and overseas amateurs may be reported once each to Germany by each of the participants during QTC-QSOs. Each DX-QSO which did not touch Germany creates a QTC-report therefore, which is to consist of the

call of the worked station,
local time of the DX-qso in four-cipher number,
the serial number received.

Example: ON 4 AU reports to D . . . W6CUH 0515/589 012. This means ON 4 AU to have worked W6CUH at any day of the contest at 05.15 his local time, where he received the serial 589 012. The serial means with its first three characters that W6CUH heard ON 4 AU rst 589, the latter three characters mean the 12 DX-QSO of W6CUH. At his side, W6CUH would be able to report this QSO in the following manner: ON 4 AU 2115/579 005, that means, the QSO took place at 21.15 W6—local time. ON-4 AU heard W6CUH with rst 579, and it was the 5th DX-QSO of ON 4 AU.

You may send to each German station as many QTC reports as you like, but not more

of course, as there actually are. You may work QTC-QSO, these contacts for sending QTC-reports to Germany, as often as you like during each week-end, also with the same D-station. Schedules for sending your QTC always to the same D-station are permitted. The German receiver has to acknowledge the correct reception of the QTC (i. e. 5 QTC ok), before points may be claimed. DX-QSO between overseas stations and Germany may be followed by QTC-transmissions to the D-station. It may be marked once more, that following the above, QTC-reports cannot include D . . .-calls, and that QTC-QSOs are possible only with Germany.

Scoring. The scoring is done by points. DX-QSO claim between D and overseas: 2 points each 1000 km or part of it; between Europe and overseas: 1 point each 1000 km or part of it. For each QTC-report correctly acknowledged by a German station you may claim:

QTC reported by a European station, 6 points each QTC.

QTC reported by an overseas station, 3 points each 1000 km or part of it.

For ascertaining distances, a distance chart is enclosed with these rules. It shows the distance between Berlin as the centre of Europe, as far as the DJDC is concerned, and the capital of each country or distric. Each prefix in this chart means a separate country. All points are summed up and multiplied with the number of German districts worked. The German districts are expressed by the last letter of the D . . . call. There are 19 German districts with the final letters: A, B, C, D, F, G, H, I, J, K, L, M, N, O, P, R, T, U, V. Danzig YM 4 is reckoned to Germany and forms the 20th German district. Differences between ciphers D 3 or D 4 are not regarded.

Prizes

There is no world winner, the participants of each prefix zone named in the distance chart striving amongst themselves. Regardless of their score, all participants will get a verification of their participation in the "DJDC 1937" and a list in which the results of the contest are published, from the DASD. The top scorers of each prefix zone get an artistic prize, if there are more than 5 participants, two prizes are awarded. In Germany, USA, Canada and Australia, each district is to be considered a "country." If more than one amateur is working at the same transmitter, each has to have a log of his own.

Logs. There are no entrance formalities, just send the DASD your completed log. The columns of this log may be arranged as in the enclosed example. The log has to contain (for the DX-QSO) date, time, band, station worked, serial received and sent, and the points claimed. For the QTC of the non-German stations we must be able to ascertain to what German station the QTC has been sent, and when the QTC-QSO started. The German amateurs write down the QTCs in the columns reserved for them. The head of the log must show name, address and call sign, input and the type of receiver used. Finally, the score must be calculated. All logs have to reach the DASD not later than November 30 1937. Play safe, OM, and mail the log just after the end of the contest! In addition, we expect every participant to send his log this time. In the DJDC, 1936 we have heard about three hundred participating calls that did not send any log, so that checking was very difficult! Send a log, OM, and you know you will get a nice remembrance token in the shape of a verification card for the DJDC, 1937!

Please send all your Logs!

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Mutterings of an XYL

By V. MORGAN (XYL of W6NOF)

Ask any XYL what the O.M.'s chief complaint has been from the moment he put his first rig on the air. Doesn't this refrain sound familiar—"Oh, for a decent location—somewhere way upon a hill. Boy, could I get out!"

Well, I stood that whining for two years and then fate played me a dirty trick. The O. M. found a house up in the hills. Now don't misunderstand me. I like the mountains but the insect life is just a bit nerve racking, especially around meal times.

The first problem was to move. Amid hearty BCL's and neighbors, we packed our twenty-four boxes and thirty-one suit cases, and with the aid of twelve friends, each one confident he alone was the only worthy supervisor we moved. Things were mercilessly packed other than the holy of the holy's—the brain child—yeah, the rig. It alone rode first, carefully swathed in the softest downy duck down that money could buy.

We steamed up to the hills surrounded by big trees, barking dogs and man-eating crickets.

The house was on top of a hill allright—yes, indeed! I got out of the car, looked up and hoped to heaven I'd make it in one piece.

We girls tugged, pulled and puffed, wading in dirt up to our ankles, (you see, the O. M. neglected to note the absence of steps or a path way) to get everything up to the house.

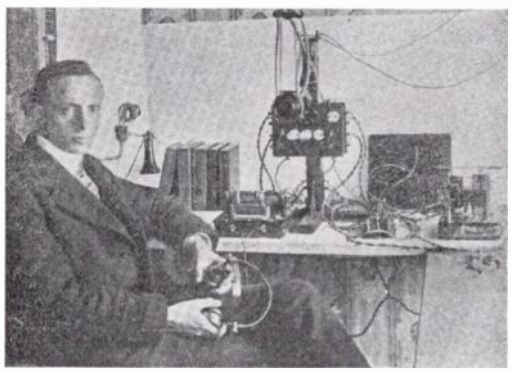
Finally exhausted, we looked around for a trace of the men. Can you possibly guess where they were? Stepping over end-tables, bits of china, bathmats and rare old lace were our helpmates, furiously putting parts together and stringing wire over chandeliers, between table legs and under sinks in an effort, regardless of all else to work DX.

I sank into a chair, glanced at my torn dress and skinned knees. Then turning to the girls in a calm and slightly bored manner waved a hand and weakly murmured, "Well girls, grab your hats, here we go again!"

By G. Y.

It is with a feeling of deep regret that we read in this mornings paper (July 20th, 1937) the account of the passing of Senator Guglielmo Marconi and we also feel that it is only fitting and proper that we sidetrack the story that we had prepared for this month and endeavor, in our humble way, to pay tribute to an honest to goodness Old Timer who was, not only the Daddy of our hobby, but was decorated for his achievements by the ruler of practically every nation on earth, honored by a score of leading colleges, received the Noble Prize in 1909 and whose name was synonymous with radio all over the world and in every language.

Guglielmo Marconi was born in Bologna, April 25th, 1874 and at an early age showed a great fondness for things scientific and mathematical. In his youth he was a student at Leghorn Technical School and later became a disciple of the famous Professor Righi at the University of Bologna who had been for several years, active in experiments with inductive telegraphy. It was from Professor Righi that Marconi learned of those strange and fascinating things called "Hertzian Waves" and it was at Bologna that he



Guglielmo Marconi in 1911

learned about all the experiments that had been made by Faraday, Maxwell,, Hertz and many others, including the famous old Spanish physicist, Salva, who, in 1795 thought that if the earth at the Island of Majorca in the Mediterranean Sea was charged with a positive electricity, while that at Alicanti, Spain was negatively electrified, the attraction of the opposite charges would establish communication thru the water between the two places—this is the first record of the possibility of radio.

While Marconi did not invent any new devices, to him goes the credit for taking the inventions and knowledge of his contemporaries and predecessors, eliminating some of their laboratory defects, and then combining them into a workable system of communication. He took Righi's Hertzian Oscillator for his transmitter, he took Hughes' metal fiilngs Coherer and used it for his receiver, later patenting it; but most important of all, he redesigned Loomis' aerial so that it really worked as a radiator as well as a receiving antenna. In 1896 he took the whole system to England and there, on Salisbury Plane, sent and received a wireless message over a distance of two miles. On June 2nd, 1896, he filed patents in England and then set to work to increase his power until he was able to send transmissions over a distance of 120 miles.

At this point Marconi offered his developments to the Italian Government but his native country was not interested so he returned to England, sent a message across the English Channel to France and thereby gained the support and co-operation of the English postoffice department and Sir William Preece—the latter alliance causing a great deal of jealousy among the rest of the scientists—and together they laid plans to send a message across the Atlantic Ocean. A sending station was built at Poldu, England and on December 6th, 1901, Marconi and two assistants arrived from Europe and set up a receiving station at St. John's, Newfoundland. After several days of experimenting with different types of kites to carry their antenna wires far up into the sky, Marconi cabled the transmitting station to begin transmitting and then with one assistant, G. H. Kemp, present, he started listening for the signal—the pre-arranged code signal "S". The transmissions were started at 11:30 A.M. and continued for six days. Finally on December 12th, 1901, Marconi heard three faint dots in the receiver and the Atlantic ocean had been spanned by wireless with a 20 KW spark set.

Two days later Marconi released the results of the test to the press. The Press went wild—Pages filled with a mixture of disbelief and triumph—Wireless was on every tongue—Amateur Radio was born—The old long bearded scientists who had been working on this problem for so many years were "green-eyed" with resentment and jealousy, all except Thomas Edison who gloried in the 33 year old wizard's success and answered all doubters with—"If Marconi says it is true, it is true."

(Continued on Page 34)

Question: What are some of the advantages of push pull over parallel R. F. amplifiers?

Answer: Besides having somewhat higher output than the same tubes in parallel circuits, push pull amplifiers have several other points in their favor. Even harmonics are eliminated in these stages. Since the tube capacities are in series, much higher frequency operation may be had with the tubes in push pull. Neutralization is simplified, ordinarilly not requiring re-adjustment on changing coils. Since the circuits are balanced there is less required in the way of R. F. chokes and by-pass condensers.

Question: What are the essential differences between class A, B, and C amplifiers.

Answer: A class A amplifier operates with the tubes functioning in the straight portion of Plate current-Grid voltage characteristic curve. That is the plate current is constant and the grid is not driven positive and does not draw current. The output wave shape is a linear reproduction of the input wave shape, giving high fidelity. It's one disadvantage is low power efficiency—never exceeding 50%. The class B amplifier operates at the lower portion of the characteristic curve, and is biased to, or nearly to, plate current cut-off. Thus plate current flows only on the positive grid swings. From this it is seen that the output wave is not a faithful reproduction of the input wave. However in an R.F. amplifier the cycle is completed by the flywheel effect of the tank circuit, while in an audio amplifier it is done by using two tubes in a push-push circuit. The power output is proportional to the square of the grid-excitation voltage and for that reason these amplifiers are linear in characteristic. This type amplifier has medium efficiency and output, but low power amplification. The class C amplifier is similar to the class B except that grid bias is adjusted to between one and one-half and two times cutoff, requiring greater grid excitation to produce plate current peaks. The output of a class C amplifier is proportional to the square of the plate voltage. While the power amplification is low, the efficiency and output are high. Class C amplifiers are used only for RF. circuits.

Question: What is plate dissipation?

Answer: Plate dissipation is the heat emitted from the plate of the tube and expressed in watts it is the difference between the plate input wattage and the R. F. wattage output. Essentially it is the heat generated from the passage of current through the resistance between filament and plate, and naturally is the least when the current flows the smallest possible part of the cycle and the tube resistance is the lowest. Class C amplifiers are most efficient because they most nearly fulfill these conditions.

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VACATION TIME

By His Knibbs — W6IVG

The winter is gone and summer's here,
The weather'll be nice, tho warm, I fear,
So let's pack the trailer, we won't take much
Some bedding, some eats, a portable and such.

Then we'll hit the trail toward the rising sun
And drive and drive 'til the day is done,
Then pull to one side, by a mountain stream
Arrange our camp and lay down to dream.

To dream of what's doing the coming day
With none of life's worries, nothing but play
And the lazy contentment soon puts you to sleeping
Until in the morn you wake with birds cheeping.

Then you get up and stretch, and think, Boy how good,
No work today, as you gather the wood
For the camp fire which you soon have a-roaring
Then making some flap jacks, you think nothing's boring.

A trip up the trout stream with fly and a rod
Nature sure makes one appreciate their God
Then back to the camp and hook up the rig,
The pleasure from a rag chew sure turns ou to be big.

For you tell the guy at the other end
That you're on vacation and don't have t spend
Any of your time on a darned old boss,
It'll be spent right, without any loss.

But Tempus do Fugit, time sure does fly
And in a short while, your vacation's gone b
Then back to your home in a sorrowful tether
Why can't a vacation go on forever.

▼

Sound waves of high pitch, 700 vibrations second, about as high as a piano will play, hav been used to prevent chimney smoke and ma aid in the problem of air pollution. Smoke fillin a tube, when the sound was turned on, clustere to evenly spaced levels down the length of th tube, like to floor levels in a skyscraper, the wandered off to the walls and fell to the botton

▼

Radio balloons are the latest aids to gettin weather facts. Several scientists are developin and improving a small apparatus which will b carried up many miles by a balloon. Tempera ture and moisture content of the air are autc matically broadcast by a small radio and th signals received on the ground.

Old, Yet New Fundamentals of Ultra High Frequencies

By PAUL D. LANGRICK, W6PT
President of the Ultra High Frequency Club of Southern California

The measurement of Ultra Short Wave lengths has changed but little in the past twelve years, as is shown by the following article, orginally published by "Radio Journal" in August, 1925. Mr. Langrick was one of the earliest experimenters with ultra high frequencies, and achieved great success with them as early as 1922 and 1923, at which time he applied these frequencies to military communication. This was the first practical use of vacuum tubes at such high frequencies.

The information which follows gives a better understanding of the higher frequencies by the problems encountered by a pioneer in this field; also giving the details of how an amateur can, with the use of the Lecher Wire system, measure and calibrate his two and one half and five meter absorption wave meter. This information, even though from the past, is still the fundamendal bases of modern work.

At a joint meeting of an engineering society and the former Los Angeles Radio Club in the early Fall of 1925, the author demonstrated the production and measurement of very short wave lengths. A type VT 2 (Signal Corps 5 watt) tube was used in the demonstration, the filament power being supplied by a storage battery, with about 500 volts of AC on the plate. When asked how short a wave could be produced by the outfit, the author tuned it to two and three-tenths meters, measuring it on the Lecher wires, much to the surprise of the engineers and amateurs present.

Owing to the fact that the author has devoted so much of his time to experimental work on the ultra high frequencies, he has not been ABOVE 22 meters during the past 14 years.

The following is a clipping from the Los Angeles Evening Herald October 22, 1924, for world wide publication.

"WORLD'S RADIO RECORD"

"Los Angeles gained another honor on October 19, when Paul D. Langrick, Archie Wade, Jr. and J. Clair Langrick succeeded in the actual transmission and reception of radio signals on the extremely short wave length of four meters. This result is a world's record, because no one has previously communicated on such a short wave length, although such short waves as 5 or 10 meters have been reached experimentally with transmitters.

Although the distance covered in this transmission was short, the signal strength, considering the low power used, was such as to promise great results in the near future on longer distance communication with these short waves.

Veteran Experimenter

Paul D. Langrick has been a radio experimenter Since 1912, and in 1919, it is claimed, had the first radio phone set in the western part of the United States. In 1921 he was among the first amateurs to transmit on the shorter wave lengths now in common use among amateurs. He now holds amateur call 6ATB, experimental call 6XAA, and also operates on the U. S. Army call C9F."

Archie Wade was the operator of 6GI immediately after the war and still holds those call letters; also experimental call 6XAH. In 1921 he established a world's record which he still holds, having been heard in all states in the union in the period of 10 minutes, while using a low powered short wave set. He also holds the record for having the most efficient set in the U. S., getting the most miles from a low powered set.

One of the features of their recent wonderful work on the extremely short waves is the fact that the length of the waves are actually measured with a yard stick instead of the usual wavemeter."

The above copied from the said newspaper gives the reader some idea of what was tops for amateur work at the given date.

—Editors Note

The author has always been interested in trying to make Radio sets more simple and with the use of short waves, this mania for simplicity has been realized.

When one has used these extremely short waves, and can see the utter simplicity of the apparatus used, he will never go back to the band of waves from 80 to 200 meters.

The author has tried to use the Loose Coupled Hartley Circuit on these short waves, but has had very poor success with this circuit below 4 meters and only slightly better results at 5 meters. The best way to look at this is to analyze the Hartley Circuit, (it is best to use the series-feed Hartley at these short waves).

Here we have the capacity of the tube, plus the inductance in the grid and plate circuit and also we have the by-pass condenser across the high voltage supply. As we all know, on the higher waves when we change a by-pass condenser it alters the wave length, and all these things are magnified at these short waves. So one can readily see that it is very difficult to use this circuit. Editor's Note—The author refers to self excited oscillator circuits.

Looking at the diagram in figure 1 we see that the capacity of the tube elements are across the grid and plate inductance. To get down to 5 meters with the Hartley Circuit, after putting in considerable time in the laboratory trying to get good results and good output from this circuit, the author became disgusted with it, and cast around for a more suitable circuit.

In casting around for a new circuit it is necessary to do some analytical work.

First we will take a three-element tube, which has capacity and inductance, which must be taken into consideration. Let us see just what this looks like and will do, as in Fig. 2.

As the tube elements are not connected together or to anything the tube naturally will not work in this condition.

By placing a wire from grid to plate as in figure 3, the plate supply would be shorted if the grid leak were in place.

So we will put in a plate blocking condenser, as in figure 4. Now this looks as if it would sure work. It looks all right, nothing shorted this time. Now to keep the wave as low as possible we will supply some radio frequency chokes in the grid and plate leads as in figure 5.

All that remains to be done now is to put in a grid leak to supply a negative voltage for the grid, to make the tube oscillate, as in figure 6.

Looks fine and is simple, isn't it? Let us analyze this circuit. First we have everything in series here, as in figure 7, instead of in parallel

as in the Hartley. Looks as if we had something doesn't it? Gee! We might get a patent on this and sell it to the Radio Corporation, but let's go a little farther.

Hum—This looks kind of funny, wonder if you know there is such a thing as plate to filament capacity and grid to filament capacity? (As in figure 8 and 9).

Shucks! It's nothing but a Colpitts circuit, only simplified.

Well, we won't get rich quick, but we have something at that.

Constructional Details

We will start with the radio frequency chokes first as they are very important. First take a piece of board and lay out a circle three quarters of an inch in diameter, and divide the circumference into seven equal parts. Drill out these seven places just large enough to push through seven fair size nails, not wire. Wind on fifty or sixty turns of wire number 22 to 26. Before removing the coil, be sure to sew or tie the coil together where the wires cross. Do this in 3 or 4 places. (Do not dope coil). Make two of these choke coils, one for the grid and one for the plate.

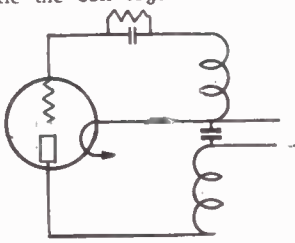


FIG.1

(Editor's Note: These constructional details refer to the basket weave type of coil, which was the accepted form in 1925. At present any of the current types of R.F.chokes will serve just as well).

When using a storage battery on the filaments it is not necessary to use choke coils (with a five-watt tube). But when using A. C. on the filament it is best to use choke coils in the filament leads.

Take a broom handle and saw off about four inches to use as a mandrel. Wind on sixteen to twenty turns of number sixteen wire. This wire is stiff enough to back up a little and all you have to do is pull out the mandrel. Tie with string or heavy thread in two or three places. Be sure to leave enough wire on both ends of the choke to use as leads, so it will not be necessary to solder on more wire for leads

Now the hardest work is out of the way. The rest is simply an assembly job.

Description of a 50 watt Set for 5 meters

The set to be described is built primarily for laboratory use, but lends itself to energy coupling very nicely.

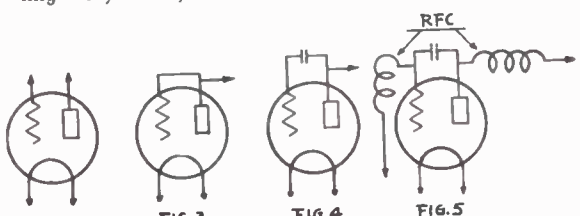


FIG.2 FIG.3 FIG.4 FIG.5

SCHEMATIC DIAGRAMS SHOWING EVOLUTION OF COLPITTS CIRCUIT FOR 5 METERS

The grid leak used is a Ward Leonard 10,000 ohm resistance unit. With a 5000 ohm R. C. A. grid leak, the tube ran slightly hotter, but had quite a bit more output. So after we have the base board, terminal strip, and grid leak ready, we can begin to assemble our five meter transmitter.

The socket is first fastened down with the center approximately 2½ inches in from the front.

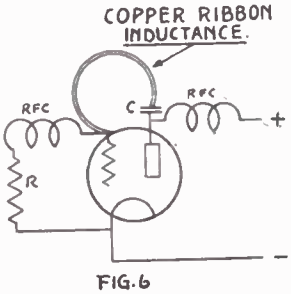


FIG.6

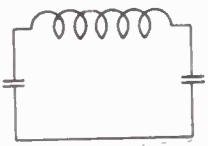


FIG.7

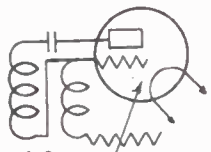


FIG.8

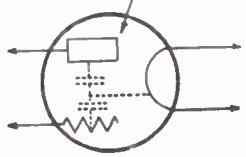


FIG.9

Next the terminal strip is fastened across the back of the board, and then the grid leak is put in place and fastened down. To wire up the set, it is only necessary to hook the radio frequency chokes to the socket and to the corresponding binding posts.


The author, with outfit described herein, when using in 1925, for Military communication purposes.

There is a clip going from one of the Micadon condensers to the end of the inductance. The inductance on the set is made of ¼ inch edgewise wound copper ribbon and is a complete circle 5½ inches in diameter, with about 3 inches left over and bent straight back and slightly downward, to make a connection to the grid. With this size inductance, the wave length is 6 2 meters. For 5 meters, the inductance should be about four inches in diameter.

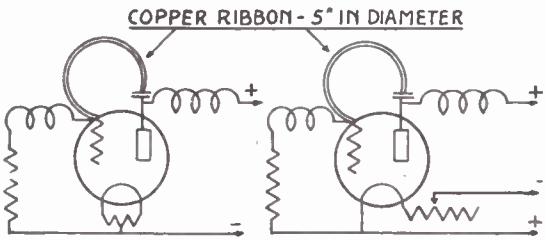
After the measurements have been made it would be best to make the inductance have a ¾ turn with one end bent for the grid as before and the other end cut off where the plate stopping condenser could be soldered on. These inductances are for U. V. 203 A and C 303 A tubes, and not for UV 203 and C 303 tubes as there is considerable difference in the internal capacity of these tubes.

One precaution that should be taken is to keep the radio frequency choke at least an inch from the surface of the baseboard. The same baseboard layout could be used with a five watt tube instead of a 50. The only difference being to put the socket on the right side of the baseboard instead of the left. This is so that the radio frequency choke in the grid circuit can connect the grid of the tube to the grid leak.

The inductance described above would not be of the right size for a five watt tube.

The author believes that everyone will agree with him that this is a lot simpler than a set for any of the other wave bands. It is much smaller and does lend itself to Portability.

It is necessary to keep the radio frequency chokes as close to the connections on the socket as it is possible to do so, as this isolates the elements of the tube and allows one to use a larger inductance for a given wave length.



FOR AC FIL. - FIGS.12-13 - FOR DC FIL.

No meters are shown in the the diagram. The only essential one is a filament voltmeter. When anything goes wrong with this circuit, it shorts the plate supply and naturally burns out any meters placed in the plate and grid leads.

Editor's Note—With the present day type of mica condenser. with a voltage rating somewhat in excess of the voltage used it is now possible to use meters in the circuit with safety. It is to be remembered that the old type mica condensers (Micadons) did not have a very high voltage rating.

The Wave Meter

As this is a most handy piece of apparatus and also good insurance, if you do not want the radio inspector to jump all over you, for showing up where you are not wanted. Remember the band you want to work on is not very wide (when speaking of it in meters) but is very wide

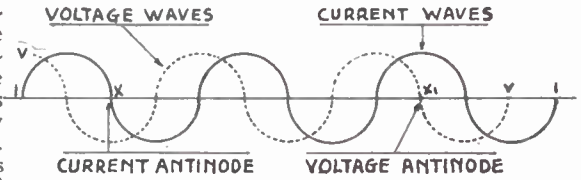


FIG.14

when speaking of it as a frequency band. So you had better put a little thought behind this piece of apparatus and not make some flimsy, delicate thing.

The condenser should be a good one of 125 micro mikes (.000125 mfd.) and take out ½ the plates and double space the rest to get a small capacity variable condenser in this case a capacity of .0000312 mfd. If you cannot get this condenser then take a 250 mmf and go through the same process. This will give you a capacity of .0000625 mfd. (The condenser should have a straight line wave or better a straight line frequency curve). A small glow lamp will do for an indicator. Besides keeping the matter of simplicity in mind, it will not cost very much. A good thermo-galvenometer would cost $18.50. While it is a better indicator, it is too easy to burn out, as reasonance at these short waves is very sharp. The author has seen a meter reading

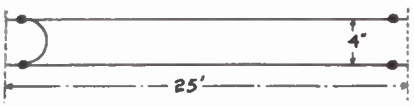


FIG.15

at 80 degrees on the scale, and just moved the condenser handle a merest fraction of an inch, and has had the meter burn out, before he could pull the wavemeter away from the oscillator. (These meters are guaranteed to stand a ½ amp.) so it is best to use a small three volt flash light globe as an indicator. The glow lamp can be fastened on the coil by soldering. The pickup coil can be from two to four inches in diameter, depending on the maximum capacity of the condenser and the wave length range to be covered.

If the condenser is put in a wooden box, it should have a small metal shield placed around the condenser and grounded to the rotary plates. This is to shield the plates of the condenser when placed in the magnetic field of the oscillator.

The author sees no reason why a common dial as used in receiving sets of 100 or 180 degrees could not be used. The Calibration curve could be plotted on a piece of science paper and pasted in the cover of the box.

Well we have an oscillator and a wavemeter now, but we won't know what wave we are on so what good are they to us? Well have a little patience and we will see what we can do about it.

We are now ready for what has proven to be a most interesting experience. It one keeps his eyes open he can learn a lot about the peculiarities of the propogation of the wave form from the antenna and counterpoise system.

You have guessed it. We are going to use that system which any one can use to directly

measure the wave length of an oscillator on short waves. The Lecher system of producing Standing waves on parallel wires. An explanation is in order, as to just what the Lecher Wire system is? It is a well known fact that when a rope is fastened at one end and shaken at just the right rate the waves are reflected back from the end and the rope looks as if it were standing still in certain places (at the places marked X in the figure 14).

This is what takes place on the Lecher wires when an oscillation induces current into the "pick up" loop on the wires. Only there are two different types of waves reflected back from the end of the wire, one the voltage wave reflected from the end, and the current wave reflected from near the end as in figure 14.

The lines marked 1 are the current waves and the ones marked V are the voltage waves. The points marked X and XI are the current and voltage antinodes respectively, or the places where the current or voltage operated devices are placed in making measurements. To measure waves in the vicinity of 5 meters, the wires should be about twenty-five feet long, spaced 3 to 4 inches apart. The pickup loop should be the same size or larger than the oscillator inductance, as in figure 15.

FIG. 16

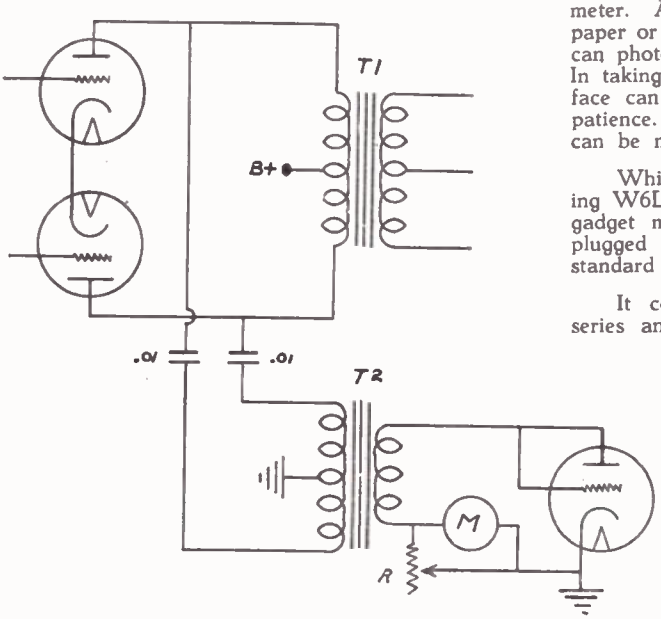
One more thing should be made before we make any measurements and that is a meter stick. A piece of good straight hard wood about 42x 1x1/4 inches should be procured, planed and sanded to have a good smooth surface, one end is squared and then cut to exactly 39.9 inches which is 1 meter. It is a very good idea to lay off the meter stick in tenths, or better twentieths. This is to facilitate the measurements of those waves envolving "split" meters. Sounds funny, doesn't it, but most waves come out something like this, 4.69 or 5.33.

The way to measure these waves is to start the oscillator and put the thermo-galvanometer on the wires near the oscillator and take a stick about one foot long and slowly push the meter along the wires. When you have found the first place that the meter reads maximum, tie a piece of string around one of the wires at this place. And then slowly proceed towards the ends of the wires until you have found another place where the meter gives a maximum deflection, it is usually about one half that of the first reading. Tie a string here as before. Now measure the distance between these two strings and multiply by two and you have your true wave. The distance between the two strings is one-half wavelength. It is best to shunt the terminals of the galvanometer with a piece of number 14 bare copper wire. The results obtained with the shunt on are very much better than when it is left off. In fact you can go from a minimum to maximum and back to a minimum in less than 1/4 inch.

This is the best way to measure the short waves.

HINTS And KINKS

Volume Level Indicator



From W6LCL comes the explanation as to how to connect a volume indicator in a speech amplifier which has no monitoring windings.

Many hams have wished they had a volume level indicator meter so they could tell other people who speak in the mike what level of voice they should maintain.

In the circuit diagram is shown an ordinary Class A driver stage of a common speech amp.

To pick up operating energy for the meter, the audio potential is taken from the plates of the Class A drivers (6C5, 76, 56, 45, 2A3,etc.) through .01 mmf. paper condensers. This is then connected to the secondary of an old push-pull interstage transformer or push pull transformer to magnetic speaker. This transformer is marked T2 in the circuit and the center tap of the primary winding is grounded..

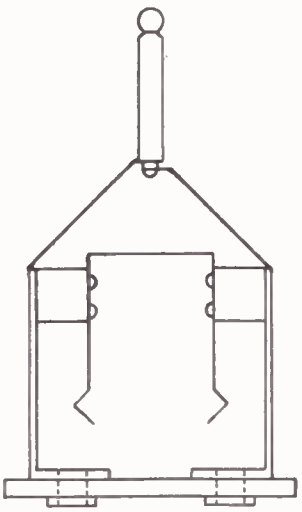
The audio voltage from the transformer secondary is then rectified by a diode before being placed on the meter. Any cathode tube (27, 56, 76, 6C5) depending on the filament voltage of the speech amplifier, will do.

Few amateurs realize that any moving coil type milliameter can be used as a V. I., as long as they have a fairly low mill· fundamental movement.

To adjust the reading level of the meter an old battery rheostat (R) is shunted across the meter. A new face can be made on good white paper or one who likes to experiment with meters can photograph a blank scale to the desired size. In taking the picture the original numbers on the face can be taken out or changed with a little patience. Then as many prints of the negative can be made as suits the operator.

While on the subject of meters—when visiting W6LCL the editor was shown a very handy gadget made from junk box parts that can be plugged into any meter circuit along with the standard meter and a new meter calibrated.

It consists of two old jacks connected in series and terminating in a single plug. With



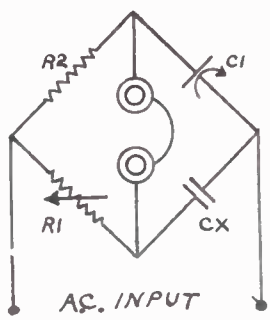
this concocted doohickey two meters can be connected in series and the meter shunt can then be adjusted until the new meter reads the desired scale.

Measuring Condensers

With a simple A. C. Capacity Bridge of simple construction, condensers of unknown capacity can be given a very close rating. The principle of operation is the same as that which is used by large laboratories. This instrument not only tells the value of a single condenser, but the capacity of parallel or series combinations as well.

When building the bridge be sure it is balanced. R1 is a variable high resistance, such as an old Bradleyohm rheostat. R2 is a 25 watt lamp. C1 should be a straight line capacity variable condenser so that when built a calibration curve can be plotted. To balance the bridge when first built and to find capacity rating points on a curve, fixed condensers of .01, .001 and .006, and so on, are in turn placed in the position CX. Starting with the .001 mmf condenser as CX, resistor R1 and condenser C1 are varied until there is no hum in the head phones. When this setting (R1) is found it is not necessary to change.

The A. C. source can be used direct from the 110 volt line, but better results will be obtained from the AC output of an audio oscillator.



After a curve is marked in mmf. on the dial of the variable condenser it is an easy matter to find the capacity of the unknown condenser (CX) placed in the circuit, for by varying the condenser C1 until no hum is heard, the unknown condenser is the same value as a fixed condenser in the circuit as CX at equal dial reading.

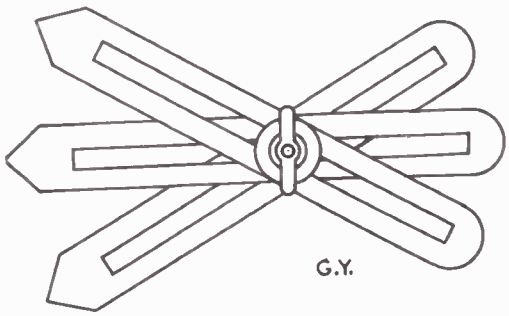
A ham who was loved by relatives,
Had worked only four or five stations.
He was lighting his pipe
Near some sticks of dynamite
And was picked up in fifty-two nations!

▼

DH—"Whats the matter with your hand sonny boy?"

Small boy from next door—"I picked up a bug in your garden and one end of it wasn't insulated."

After several good pieces of panel were spoiled in getting the condenser mounting holes in the right place, the adjustable template shown was made up of pieces of scrap aluminum and other things found in the junk box. To use template, space the points of the arms so that they conform to the centers of the screw holes in the unit to be mounted, then lock the arms with the wing-nut and transfer the template to the panel and mark the centers with a sharp nail or scriber.



Universal Microphone Co., Inglewood, Calif., late in July started to manufacture and distribute a line of crystal microphones, the first of which is the crystal handi-mike but will be followed with other standard types by September.

The new crystal handi-mike, small and compact, is a smart looking instrument with switch and ten feet of shielded rubber cord.

The Universal factory will incorporate the crystals of the Brush Development Co., in its new crystal line.

5 METER Activities

By Harold Rider, W6OEF

Wonder how many of you fellows have been hearing the DX that's been rolling in on the 5 Meter Band for the past month, and for the ones that would like to work some DX here's an idea for you.

The members of the Stockton Amateur Radio Club have experienced difficulty in establishing 5 meter communication in and around Stockton since 5 meters became popular. On August 15th the club is going to try to discover how large an area this apparent dead spot covers and why it exists. In order to have plenty of 5 meter signals on the air they desire the cooperation of all amateurs who are operating on this band. A number of their members are going to establish camp in the Sierra foothills and the rest of them are going to cruise around Stockton and vicinity. They would like all of the fellows with 5 meter portable mobile equipment to climb the highest possible peaks to see if contact can be made with this group.

Here's your chance fellows—you have the dope and they will be listening for 5 meter sigs all day—so let's make this a regular Field Day. Perhaps this will make possible an entire State Wide 5 meter QSO. At least we should work along the various mountain tops and run up a fine 5 meter record. Don't forget the date, Aug. 15th—all day—and don't forget the Stockton Convention, September 4th, 5th and 6th.

Thanks Les Drury, W6IJZ for sending us this information and we would like to have more dope like this from the fellows.

A crystal controled rig is being built by W6OWF and I think the line up will be 6A6-xtal, 42 buffer—RK 20 final which should be a very good line up.

The other evening W6NPG decided to go Portable Mobile and while on a hill in the Los Angeles area worked a station at Palm Springs. W6RR of Santa Monica worked San Diego, and W6FMH of Los Angeles had a very nice qso with W6MKS of San Diego and while we're on this subject the San Diego boys have been going up on Mt. Soladad and have been working Los Angeles fb.

I don't know why it is, but you can't keep those Eastern fellows down. W9FP heard by W1VAQ, and believe it or not W1JQJ and W9FP had a very fb qso.

The following stations are a few heard by W9YSV: W1IXA, W1JQJ, W1GEY, W1IVQ, W1JLK and W2FGY.

In Chicago, Ill., W9VAQ using close to 1 KW Crystal Controlled has qso'ed W1GUY and W1JQJ, and W9WLX has been working East Coast stations.

A 5 meter C. W. station, G5XP in Lancastershire, England was heard here at 1 A. M., May 22, 1937 by W1JQJ who gave him a call and believes he came back to him but due to the rapid fading is not sure.

Using only a pair of 45's, W8QDD was heard by W1JIS, Boy oh boy, guess us fellows out here on the West Coast just don't live right.

Here in Los Angeles, W6HIG worked W6-OJB of Oakland and got a qs a 5 R 8-9 report out of him.

Several of the local boys who are active on this band have requested that I bring up a subject which seems to exist on the band and just why I have never been able to figure out. The 5 meter band seems to be the only band that folds up around 10 P. M. each evening and while qso-ing several of the boys that have been staying up until the wee hours of the morning the reports are surprising and it would be a good idea for more of you DX hounds to try it, especially those who are running considerable power. On several occasions, signals have been heard around 1 to 2 A. M. Coming in a very rapid fade and were not local signals. Suppose some of you fellows try this and let us know if you experience the same thing.

WITH The CLUBS

VALLEY RADIO SOCIETY

Pres. Rudy Jepson, W6KEI
Vice. Pres. Jack Gardiner, W6CKR
Sec'y. R. D. Nagel, W6CAH

Now that the summer weather is really here and vacations are starting in earnest, we think our source of Club dope is scarce.

KEI now more or less inactive on 10, but going strong on portable 5 meter equipment.

DDA sitting down mostly on 20 meter fone but also fairly active on 5 meters. Ken is also getting new NC-101-X.

EIU just got back from his vacation at Yosemite and immediately starting construction of a 5 meter mobile rig.

CKR still getting his money's worth out of the ten meter band and also active on 5.

HDC still operating at Boulder Dam and seldom gets to our meetings. Pete is also getting married in near future. Good luck Pete and more power to you.

JDB pounding on 40 since we can remember. One of these days he will be on fone or at least have another rig for same once we get our hooks into him. It isn't that the pottery business can't stand the tax, we know.

JJH now has his shack whipped into the kind of neatness we all read about but very seldom see. He has various rigs and receivers to cover all bands.

LS our latest fone convert seems to like it as I haven't heard his cw since. Shep is grid modulating the 251-A final.

LNM inactive at present but can never tell what Stockey has up his sleeve.

GWS now has 5 meter mobile rig and has recently put up a nice stick in the front yard. Stan's other mainstay is 40 and 80 cw.

IBS more or less inactive at present but never for keeps.

MYJ getting ready for quite a vacation but never ceases building new equipment for the station. Doc will soon have a medium high power rig on 5 and 10 meter fone.

CAH has 5 meter mobile rig just about completed and is inactive on 75 fone at present due to selling the PR-10. Back on soon.

73 and do join us in our cups some time.
Address Communications to:
R. D. Nagel, W6CAH
Van Nuys, Calif.
13201 Addison St.

OUT OF THE AIR FROM ABOVE THE HARBOR

THE UNITED RADIO AMATEUR CLUB

By His Knibbs

Pres., A. D. Sayer - W6IVG
Vice Prec., A. Goldschmidt - W6MED
Sec.-Treas., F. Eaton - W6KCX
Act. Mgr., W. Bradford - W6HCF

Meetings held every other Friday night, temporarily at the home of the president, 1061 W. 26th St., San Pedro, Calif.

Next meeting, Friday, August 6th, 1937.

Our regular meeting place, the Banning Home in Wilmington is certainly being given a going over. We understand that Termites undermined the entire building. We've never heard hams called that before.

The Mud Duck, W6MDX has sure been going to town on twenty meters since the ten meter band went dead. I'll bet if he slept nights like the rest of us do, that he couldn't sandwich a good QSO into that QRM in the daytime either. Kenny Noll finally got the freaky oscillations out of his receiver and is able to hear things again. Maybe now he'll get a transmitter working and get on the air again.

Fred Eaton, W6KCX, our genial secretary has put over several five meter QSO's lately along with his work on the other bands. Everyone feeling almost natural again after the field day, although we're all trying to find out how Al Godschmidt manages to get his wife to go away at such an opportune time so as to enable him to spend the night at the field day.

Our five meter band fails to show the extensive operations this year that was in evidence last year about this time. We'd like to see this band more thickly populated so that our Sunday drives could include a few QSO's.

The Hamateurs, 6IVG, 6MDX and 6ERT and their family spent Saturday evening at a selected spot on the beach, and what with a roaring camp fire, lots of good eats and java, a swell time was had by all. Five meter communication between cars together with tail-light blinking signals was indulged in all the way home.

His Knibbs, 6IVG after having been off the air for about a month and working night and

day rebuilding his shack, is almost ready to hook up the old rig again. He says he's rebuilt everything now but the antenna towers and all he has to do is to take the examination again to make him feel like he's just starting hamming. Arch Eckdale, 6NDC, just rebuilt his buffer and final stage for the umph time and what with his new PR-15 is ready to travel the air lanes again.

We have the honor of being the only club who didn't have a member who reported hearing Amelia Earheart—Hi. Altho the summer slump is evidenced in meeting attendance, Bill Bradford, 6HCF manages to keep the good raffle prizes coming.

6IVG, 6MDX and 6ERT are planning their vacations together in the high Sierras next month. They expect to work all bands portable including five meters and will use both fone and CW. They're not looking for fan mail while they're gone, but would appreciate a good rag chew, so if you hear them some time after the 21st of August, give them a call.

▼

THE TEMPE AMATEUR RADIO ASSOCIATION

By W6BUQ

Another month of hot weather has gone under the bridge and what a month it was. Not a single day was the temperature under 100 degrees in the shade. If this kind of weather isn't the test of a real ham, I'll eat my hat.

W6NEL acquired himself a Harvey 10 meter xmtr and can't get the thing to work right, after having every ham in the country take a look at it. W6OGP and W6OGI are having a great time trying to work out with a 25 cycle power line about 10 feet from their shack.

W6NKG is still inactive due to that certain YL.

Our foreign correspondent, W6QC reports that W6MYK has gone to Salt Lake City to work for the telephone company and that W6 ORX has just traded a 6 inch telescope to W6 FKX for some swell transmitter parts.

W6CDU just completing a new portable rig

W6KFC brings more honors to Arizona b getting the first Maxim memorial award. Cor gratulations, Vic.

W6OAS the projectionist at the Phoeni Theatre now has two rigs, one for five meter and one for 40 meters.

W6MME moved out to the country an has a ranch space of about 300 acres to pu up some beam antennas in.

The two wandering boy scout traffic kings W6LKE and W6NGG have returned from th boy scout camp after handling hundreds of mes sages and doing some real ham radio work.

FLASH! News just came from Washingtor D. C. that Roger Wilson, W6EGI and his XY have acquired a junior op. The boy weighe a little over 7 lbs.

W6OJY has the fone bug and we are wait ing anxiously for developments.

W6OMD received a promotion with th telephone company.

W6MWQ arrived from Illinois with his nev XYL and is busy working for W6BUQ gettin the State Theatre all fixed up for the comin convention.

W6KOL and W6KFC are nominees for th Arizona SCM. May the best man win.

W6NGD reports lots of DX being worke from his portable location in Dixon, Ill. Th Europeans tell him he is the only six they ar hearing. Some gag, eh wot?

W6DKU is doing plenty good on 20 fone

Well, this is all the news for this time, s until the next issue, 73.

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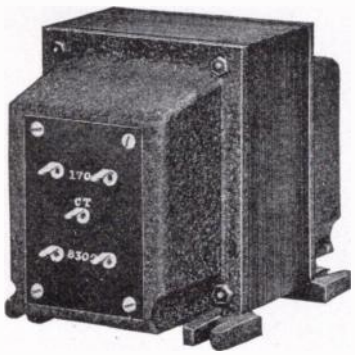

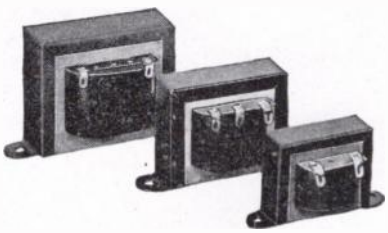

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ROBERT M. HADLEY COMPANY
711 EAST 61st STREET **LOS ANGELES, CALIF.**

Stockton Amateur Radio Club

Out of the din and glare and far into the last club meeting, the SARC finally decided to hold Luncheon Meetings every Tuesday at Hotel Wolf to lay plans to entertain 1000 Amateurs. W6BBC, President, argued that it would be against our constitution to hold such a meeting, but W6EXH convinced the chair that was not trying to "Pack" the "Supreme Convention Committee" but wanted action. W6IKG cramped their style but W6EXH wanted action and got it.

SARC, sponsors of 5 meter field day, August 15th, will be represented by W6NGT, W6EXH, W6MVK, W6IJZ and W6JKR. They will be ready, willing and able to work all the clubs from San Jose through San Joaquin Valley to Los Angeles.

Stockton will also be represented in ARRL's low power field day, August 21st. Most of the gang will stay at home and use high-power to put on the Convention. However, our good old stand by, W6EXH will drum up plenty portable activtity.

Amateur Rag Chew between W6BEW and W6-IKG on August 26th, between 2:30 and 3 P. M. W6EDW and W6DTJ of KWG will handle broadcast.

W6DXL of the USNR is plenty busy with the local unit. Picked up 1 KW Spark Xmitter and Direction Finder Receiver from Navy to be used for display at County Fair Booth. The Unit attended Rifle Shoot in Richmond Sunday, July 25th and came out with flying colors. W6-DXL is dragging the Captains Gig out of Dry Dock and taking the boys down the river for a work out. N6OXB is the local unit call.

Building of new rigs are in evidence. W6-JKR building 800 Watts on 10-20 and 175 Watts on 75 and 160. Also building 50 watt job on 5 meters. W6NGT is getting gas motor to drive 60 to 100 watts portable on 5 meters.

Out of 5 taking the X from Stockton, Harry Austin has the good fortune of being labeled W6OYF. Is he happy! Put a little 6L6 Oscillator on the air and worked Victoria, B. C. A new rig is now under construction. He also is the

Members of the Stockton Radio Amateur Club

W6BBC, W6IKG, W6DXL, W6INP and W6EZT maintain that Stockton is the Lousiest location in the world for 5 meters. W6NGT claims we only scratched the surface on 5 meters and is laying a bet with W6BBC and W6SF that he will put a 5 R (9) signal into Stockton from Modesto (30 miles away). While the pessimists are confident of winning this bet, it has been rumored that W6NGT will have the use of an aeroplane to drop this sig into Stockton.

The SARC will have an xmitter on 75 at the San Joaquin County Fair, August 20 to 29th. W6BEW will have his rig on at the fair grounds. Radio Station KWG (1200kc) will broadcast

winner of 7 foot rack, presented by W6BBC for the first beginner to get ticket this year.

W6EZT is now lined up with Dunlop Auto Supply doing repair work. Lots of luck to you Bert in the new set up. Between YL trouble and the new job, we don't hear Bert on the air much. How about taking time out from these two jobs a week before the Convention and get on the air?

W6MVK and W6OFD worked 160-80-75-40-20 ARRL field day. 102 CW and 63 phone. Used 3 HP Motor to wind up the power.

Dick Sales will auction off EX-W6AKR's junk at next regular meeting. He will probably need plenty coherts to run up the bidding.

We hope to see W6AOZ take the dust off his rig so it can be seen during the open house at the Convention.

W6NDJ was transferred to Lodi in charge of Western Union Office. Sorry to see you go but glad to hear of this nice promotion. Only 10 miles air line from Stockton Don, maybe we can hear you—if you get on the air.

About 10 members of the SARC met with the Old Timers Club of Modesto as guests of W6NGT at Modesto, Friday, July 23rd, for a social get together. W6NGT's Dad, Mother and Sister sat some 20 of us down to a feed that would make the Chef at the Waldorf blush with shame. There seemed to be no end to food, beer and coco cola's. Imagine upstanding Amateurs packing away three and four pieces of pie after filling up with two or three helpings of food. And me on the "Wagon" and on a diet (trying to get my boyish figure back by Convention time) nibbling on Stuffed Tomato Salad and drinking Coke's. I had a good time because they gave me a chance to make a speech about the Stockton Convention. The gang are grateful to you, Mr. and Mrs. Weber, in helping to spread good feeling and understanding between the Modesto gang and the Stockton gang.

Who has the Club Portable?

W6IKG turns over this Column to W6NDJ, with many thanks to The Radio Amateur News for their fine cooperation and support.

▼

Helix Amateur Radio Club

Kenneth Hallett, W6GNP—President
Cliff Kimball, W6MMV—Vice. Pres.
Henry Haenke, W6NWY—Sec'y.-Treas.
Carl Boltz, W6FTT—House Boy

The above named officers were elected at the regular meeting held July 1. Meetings are held first and third Thursdays of each month. First meeting is business meeting, second meeting is a social meeting to which all amateurs are welcome.

Mrs. Fritts, NY2AE, recently from Coca Sola, visited the club and gave a brief description of the rig there. She reports that over a period of six months. NY2AE on 10 and 20 meters, made approximately 10,000 contacts. There were five operators and the rig was on the air practically 24 hours a day.

W6OAN recently worked WAC on 20 cw in less than a week using a single 210 in final. Congratulations Johnny!

W6EPW is building a rig for 40 and 20 cw, hoping to have it on fone soon. Hurry up, Vern, long time no hear you.

W6FTT will soon be throwing a sig over the horizon with a new T-155. This should raise that R8 report from China, we hope!

The club received a card from 6ANU, some place east of El Paso, enroute to Florida. Yes, the tired business man is still on a vacation.

W6LYY, Barney, we're all very glad to hear you back on the air after a 3 weeks visit to the Ft. Miley hospital. Barney says his transmitter and his good looking XYL are better for his health than any hospital.

Practically all of the SCLC gang have their 1839 kc xtals which makes less wear on the old receiver dial.

Attention:—All SWL's and you fone men who are interested in learning the code, W6BXQ and W6OVE are transmitting code pratice. W6BXQ will operate on 1983 kc Mondays and Wednesdays, 3 P.M. W6OVE will also transmitt for code practice on 1825 kc, Tuesdays and Thursdays, 3 P.M. True ham spirit, we calls it!

Les Green is heard now on 160 fone with an RK 28. Nice going Les. Lots of DX to you!

W6JRM is not heard on 10 for the sake of a T55 which has gone too far west. Eva, hows to kick thru with the OM's monthly allowance?

W6LSN, Al of Long Beach, favored the San Diego gang with a visit. Glad to see you any time, Al.

W6GYV has retired from the Navy. Now, Les. you'll have more time to get all those rigs on the air.

Dopey Dobler, W6BHF, volunteered for the eats committee, made the Helix gang's mouths water with a promise of a swell feed, and didn't even show up at the meeting. Dear Editor: What would you do with a guy like him?

(Make him do dishes alone for a year, Ed!)

W6MMV and XYL on a two weeks vacation went to Frisco to visit with 6LYY at the hospital. While there he met 6BIY. He also visited 6ERU, Roy, in Ventura, 6MNC in Downey, 6LYM with his swell new ham shack and KW in Orange. They also visited a day with 6MMW in El Centro.

W6BWI has purchased a new home. Where is the ham entrance, Harry?

Johnny, W6KW can be heard with a fb sig on 20 and 75 fone with about 400 watts input, more when the power company will supply him with more volts. Johnny dims all the lights in the block when he modulates.

While listening on 160 fone, we hear 6NBJ's yl translating 6IWK's cw sigs for him. We think this yl is going after a class A, so Dave can get on the engineer's band.

W6NWY is still pounding the mill for the club, and also doing a good job of pounding the brass on 20 cw. Where is that WAC Hank?

Bill Summerland (Public Address man for the San Diego Symphony) noted hunting frantically for motor boat in amplifier while Kettle-Drums are being tuned!

W6BZE, Dick has moved back into San Diego. We wonder if he'll have space to put up that European signal squisher.

Leather Lungs, the National City Milk Man, otherwise known as Jerry West, has a blank look these days. Cheer up, Jerry, maybe you can get that PR-15 next month. (Signed V.M.)

W6NWY wants to know why is it W6GNP can't keep skeds? 6MMV is also on the carpet.

W6NSY is meeting the boys over the counter of a local wholesale house now. Give us two-bits more, Art, and we'll give the name of the company. (Plug).

The above bucket of bilge donated by The Keyhole Committee of the Helix Amateur Radio Club.

▼

OLD TIMERS' CLUB

A Radio Oldtimers' Club is in process of formation with the avowed intention of having two events a year in Los Angeles. One will be the annual beer binge and barbeque. The other will be a gala program of pioneer entertainers and will be on the air.

Those who have been in radio for ten to fifteen years will belong. There will be no dues. There will even be enough offices so everybody can have a title.

Prime movers and instigators are Walter Biddick, present radio station representative, and E. K. Barnes, recording engineer. Both were with KHJ in its early days of 1923-'25.

Permanent secretary, nobody else wanting the job, will be Dr. Ralph I. Power, radio counseller, with offices in the Van Nuys Bldg., Los Angeles. He resigned from a USC professorship in 1922 to become studio manager and announcer for The Examiner's radio station and finished up by being radio editor for most all the local sheets over a period of ten years before opening his own office.

Helix Radio Club Field Day

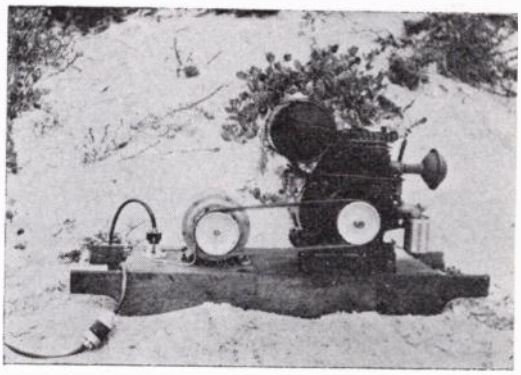
On Saturday morning, June 19, W6MGJ-6 was hauled out of hiding, transported to Field Day location, and set up. The location was selected after much pro and con argumentation

Photo of about half the gang. Standing—the handsome lad on the left is Howard Breedlove, W6JRM, then that bored looking fellow next to him is Cliff Kimball, W6-MMV. That mean cuss who isn't really mad at anybody at all is Johnny West, W6OAN. Kenny Hallett, who got real home cooking because his XYL was there to do it, (6GNP) and the Candid Cameraman, Vern Milton, W6EPW on the right. Way down in front are, Yours Truly, 6NWY with Patsy, a Sniggle Hound, and Gene Harris.

at previous club meetings, and the final decision, after all biting and hair pulling had ceased, was that the beach was as ideal a spot as we could choose, reception being somewhat better.

The chosen location was certainly made to order. Three miles south of Coronado on the Silver Strand, (about 6 miles north of Mexico Border) the well known C. C. C. had built up a State camp and picnic ground, which, being just completed, was little known and so—no curious visitors to hamper operations. There was a shelter of palm leaves, several heavy stone and concrete tables, running water, and a fireplace to make us feel at home. When the sleeping tents were put up, the cook stove put up, rig installed, and antenna raised (with much grunting and many suggestions from 6JRM) the camp took on the appearance of an eclipse expedition.

At 2:00 p. m. the first test contact was made with W6MXC at San Gabriel, followed by



Here's the Honey! Our Super Power Supply

W6MVB of Phoenix at 2:20. Time out until 4:00 p. m. at the dead line. Those present at the christening were Gene (Retired Business Man) Harris, 6ANU, Kenny Hallett, 6GNP, Howard Breedlove, 6JRM, Cliff Kimball, 6MMV (who showed up with a new Packard), Vern (Much Married) Milton, 6EPW, and Johnny West, 6OAN.

The rig here was a 6L6 xtal with 10 final running 60 watts input and with regular 110v power supply. Receiver used was a nice shiny new Patterson PR-15, with an old battered ACR-136 belonging to 6MMV in reserve in case the PR-15 blew up. Power source for the xmitter, receiver, and lights for the camp was a 600 watt, 110v 60 cycle a. c. generator, driven by a ¾ H. P. Briggs-Stratton gasoline engine. The antenna was the old standby, a 40 meter zepp.

W6MGJ-6 got under way at 4:01 p. m. with 6ANU operating and made first contact with W6FYK in Stockton at 4:10. From there on the rig was going full blast and worked fb except for some momentary lapses from grace when the keying relay got tempermental. That evening Jerry (William Harrison) West and Nick Balli dropped in to make more trouble, and later Carl Boltz, (6FTT) and Family (the recently acquired Mrs. Carl). At about 11 p. m., Dave Hannah (NBJ) and John Amos (6IWK) arrived looking like they had just arrived for formal

A nice view of the operation position and the broad back of Ray Dobler, W6BHF. Gene Harris, W6NAU is at the receiver, and the studious gent in the background is Dave Hannah, 6NBJ.

dinner. They had just dropped in after getting the YL's home before 9 o'clock curfew. 6NBJ proceeded to get some shut eye, rolling up behind a sand dune, swell duds and all.

On Sunday every member of the club managed to get in on the fun at one time or another. W6HVT and XYL, closely followed by 6LYY, our past-president and his XYL, plus Howard Alderman the LYY antenna putter-upper, arrived for the afternoon and a picnic supper was absorbed by a large gathering. Yours truly dragged himself out of bed at an unheard of hour on Sunday morning, and with the YL in tow, managed to make the location by 7 A.M., just in time to miss breakfast. Later'n the afternoon 6CRB visited.

W6MMV wouldn't let the contest keep him from his fishing. He actually caught some and then wanted to fry them on the final tank coil.

Being discouraged in this by the operators, he burnt them over a camp fire and ate them, a real outdoor man!

The xmitter was wrked continually with two operators on a shift, one pounding brass and the other operating the receiver and keeping log. There were plenty of dead spots in the wee sma' hours Sunday morning and during the last two or three hours of the contest it was plenty hard to find a station that hadn't been worked. The power supply acted very nicely, running cool and holding up fine under such a long continuous run. However, we finally closed down about 6:30 p. m, when one of the brushes went west and the generator went doggo. It was getting along toward dark, so we folded our tents, packed up our gear, and scrammed. A fb time was had by all with 72 contacts for a total of 540 points (subject to check by headquarters.)

W6EPW made some movie shots of the outing and they turned out pretty well and were shown at the next club meeting.
Operators of W6MGJ-6:—

Howard Breedlove, W6JRM; B. F. Boyd, W6LYY; Carl Boltz, W6FTT; John D. Amos, W6IWK; Ray Dobler, W6BHF; Oscar Erickson, W6NDD; Henry E. Haenke, W6NWY; Kenny Hallett, W6GNP; Gene Harris, W6ANU; Cliff Kimball, W6MMV; Vern Milton, W6EPW; Dave Hannah, W6NBJ; Dick Shanks, W6BZE; Earl Tooker, W6HVT; Johnny West, W6OAN.

Orange County Amateur Radio Club

By W6LQX

Our meeting of June 21st was consumed by reports of the Field Day activities. It seems as tho a few of the boys, NIK, NYA, KBD, and JQX to be exact, pulled a dark horse on the rest of the boys and sneaked out and set up on the QT and rolled up a bigger score during the Field Day than the rest of the club with all their fancy equipment and brains thrown together. But they just missed spending the entire period in the local jug due to failure to notice the tresspass sign at their pet location. The generator which was built, with the aid of information appearing in an early issue of The Radio Amateur News, was purchased as property of the club. They are now prowling around in search of a gas engine to drive it.

The meeting of July fifth found the boys planning a local field day to be held for the purpose of giving the two competing factors another chance to prove their scoring abilities. This meeting proved to be rather brief due to the holiday. LYM received a very interesting letter from ex NGO, K. Yamachika, an old club member who is now in Tokio, Japan. The letter was read at the meeting. He told about some of the trials and tribulations of Amateur Radio in Japan, including low power limitations meters in every circuit, personal inspection by the RI, and many other points of interest.

Our meeting of July 19th was graced by the presence of a bright new shiny red and white raffle box which was furnished by MQF. JMA sent the club a card from his temporary location up in the mountains telling of breaking his only crystal on the portable rig. C. W. Jones of the Radio Interference Bureau, visited the meeting. Other visitors were: ALK, NVX, and KLU. Christensen, KLU gave a very excellent talk on noise silencers which was enjoyed by all. DX conditions in the various bands was discussed by the club as a whole, which, by the way is a regular feature at each and every meeting.

Meetings in August occur on the second, sixteenth and thirtieth, at the YMCA, Santa Ana, eight P. M. in the evening.

Club Gossip, Highlights, and Personalities

One of our most active members left to make his new home in Idaho, C. N. Lane, W6OVC. For a last look at him see page 51 in the October QST for 1935.

LXS who is technician at KECA and lives in Buena Park has just purchased the entire station layout at GRE. He is located just a half block from LXM who is now having receiver trouble.

LDJ sold his old receiver to LHN and is now in the throws of building up a new one.

BVX has one of these new steel guitars of the electric variety plus amplifier and all the gadgets. BFE is also the proud owner of one of these articles.

One of the boys felt playful the other day and let MQF's antenna down when he wasn't around. He swears up and down that he did not try to operate it in this position before finding it, but we wonder what that long dead streak is in the lawn.

NSA turned around from bending over his transmitter upon hearing a hissing sound near his receiver to find smoke pouring out from around it. He made a mad jump and started pulling switches in wild abandon when he discovered DHP furnishing the smoke through a knot hole in the wall of the shack back of the receiver.

IBN furnished the car that had its hind wheel jacked up opposite the generator during the field day. Two days later he was joy riding up in the hills when the rear axle fell out.

C. W. Jones advises that the Santa Ana council has adopted a new law with teeth in it to combat radio interference. Maybe we can have a vacation from all these diathermy machines in the near future.

NGO in Tokio says he doesn't know how much power NSA is using but that LHN sure comes in with a fine sock.

MQF has a super ultra high efficient final tank coil. The proverbial pencil test shows RF in the supporting insulation.

LYM is getting Nichrome minded these days as he plans on his new Diamond.

LXM has a six foot rack that would make a good coffin according to LWH.

BIH has a couple of oil well casings polished up for his five meter long line control.

MTC is going to the Radio Institute of Calif.

JQX is still rebuilding.

LHN is planning on going high power by putting rated voltage on his 50T and giving it a square meal for a change.

NIK and NYA are suffering from a severe attack of under driven final grids.

THE BELL CLUB

By E. A. Wallace, W6LAK

Well here we are again and it sure has been a busy month, it would take a whole book to tell of ALL the news from the Bell Club.

We have been having some very interesting speakers and entertainment every meeting and have something highly interesting for every meeting for a month or so to come, so be sure and attend and get all the latest dope.

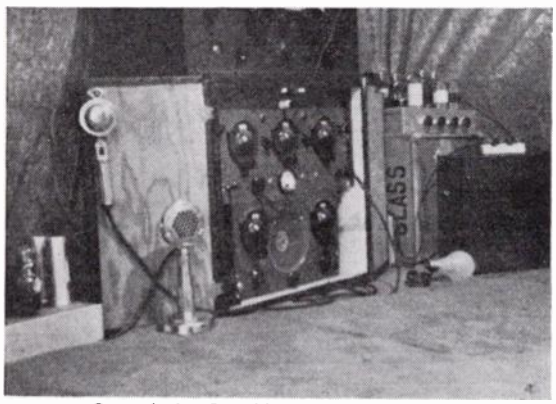
W6PT, Paul Langrick gave a very fine talk on his new portable transmitter and it sure is a deluxe job.

W6JWQ, Larry Sorensen gave a nice talk and showed some very fine motion pictures of his trip to the Hawaiian Islands. He says the Hula dancers were so nice that he hopes to be able to take another trip there, better watch out Larry, there comes a time in every young man's life!

W6BVZ was a recent visitor to the club, we're sure glad to see him out again.

It seems as tho the gang from the Bell Club that were out on the Field Day were invited out for breakfast and an appetizer was served before the chicken, sausage and ham and eggs, and W6GHU, Ray Harmon was coaxed into taking his first drink of something other than water or milk and the results were miraculous. He very soon thought he was Tarzan or something, he seems to have lived through it but will never be the same sweet boy again.

Well everybody sure had a fine time at the Bell Club Outing at Crystal Lake. There was something to do all the time, although the results from portable operation were very disappointing.



One of the Portable Rigs at Picnic

W6MQS and his small son, four years old, went fishing and the son came in with quite a few fish, but where was Andy when the fish were biting? W6LFC and W6FMK brought a P. A. system with them and it sure was a big help. Who was the little Fairy that flew out of a tent at about 6 A. M. and told all the birds and bees and trees and in fact everything within about a half mile radius, of the glories and merits of radio in general and P. A. systems in particular? How about it Aldo and Forrest?

Sunday evening at the entertainment several members gave good numbers, Virginia, XYL of W6NOF, sang a song of her own composition extolling the joys of camping, that was sure a wow. W6FMO did his stuff in a big way also, altogether the evening was a big success.

W6FMO had his grind organ with him and when it started to rain he rescued his organ first, then went out to look after his family. W6FDO, the Scotchman, didn't even get up, he just said Hoot Mon, I get a free bath; but there certainly was plenty of excitement all of a sudden among the campers who were using the stars for a tent when the rain started about 3:30 a. m., but it only lasted about five minutes.

Altogether we had 22 camps and about 60 persons and had a grand time. Bill Bradford won the Signal Electric Drill, for the largest number of points collected from all the contests.

A large group of club members and friends gather at the Lynwood Bowling Alleys on Saturday nights and enjoy bowling. Come and join in the fun. W6LFC was doing very nicely until a handkerchief in a blue slack suit began to take his mind and eye off his bowling, but then W6FMK was having the same trouble. There was quite a struggle between Shorty Spratt and the bowling ball to see which was going down the alley, Shorty or the ball.

We were all pleased to see W6NPQ, the pride and joy and past grand master of the Swedish Colony of Lynwood, show up at the Bowling Alley, but although he is the Champion bowler of the Lynwood Swedish Society, he would not bowl against the competition furnished by the other members of Bell, though he was challenged by everyone there. Some time we will get him out there and see how good he really is.

A very good turnout was had at the skating rink on Monday eve, July 19, and several ideas for new patents are under study, principally inner spring padding for certain vital spots of the human anatomy, W6EJZ is in the market for such a gadget already and also some good liniment to reduce swelling. Charlie sure made a mark for himself and it is still there on the skating rink floor.

We were all glad to see Jimmie Chapple, W6LA, former inspector in charge F. C. C. at Los Angeles, back with us again after two years at Honolulu. He gave us a very interesting talk of his stay in the Hawaiian Islands. Mr. Chapple is here to stay now and we hope he attends the club quite regularly.

W6HEW, Mort Miller is on a trip north to Oregon, Washington and Way Points and has a portable set with him, working on 80 CW., so watch for him. W6NAT, Bill Driml is on a vacation trip to the middle west and expects to be gone for quite some time. It must be swell to be rich enough to take trips like some of these fellows are able to enjoy.

A fine business crowd turned out for the swimming party at Redondo Beach Plunge, about 25 in all and a very good time was had by all, being ducked, etc.

And last, but not least, the Ladies are still having a nice turnout and lots of fun playing "500" and best of all, Nellie, XYL of W6EJZ, won first prize last week.

Ham Advertising Department

This department is maintained for the amateur, however commercial ads of same nature printed at double rate. Material not pertaining to radio accepted but placed separately. Rates, 20 words for 25c, additional words 3c each. Closing date 15th of month. This magazine does not guarantee quality of merchandise and used material should be so described. Send money and copy to W6CL, 1315 East 58th. Place, Los Angeles. We reserve the right to reject part or all of any ad. Money refunded if ad not accepted.

Have Condenser Mike and Pre Amp. Dayrad All Wave Oscillator. Good 860 tube and new 203A. Want good Communications Receiver. Joe — W6NQD— 5843 Miramonte Blvd.

FOR SALE—203A Socket—Fil. Trans. (Inco 10V 4A) 6" Dynamic Speaker and 0-300 Weston Milliammeter. First $8.50 takes the works. W6CNJ.

WANT TO TRADE for a 22 Cal. Target Rifle or a 30.06 Springfield. W6III.

FOR SALE—Late type Hammarlund Comet Pro. with 10 meter coils. $40.00. W6JWQ, 440 W. Artesia St., Hynes, or at Radio Television Supply Co.

FOR SALE—$40.00—9 Tube Super Het with Crystal, Noise Silencer. 10, 20 and 40 meter. W6DOB.

The Old Timers' Diary

(Continued from Page 15)

In 1904, Marconi started the first news report service to ships at sea and the installation of transmitters on some of the larger passenger liners. The Titanic was one of those ships and the survivors gave him a gold medal when wireless brought such speedy help resulting in so many lives being saved. In 1907, the first Marconi Wireless service between the United States and Europe was put into operation. During the World War Marconi was commissioned an officer in both the Army and Navy and was responsible for many noteworthy improvements in miltary communication. Another milestone in his life was when he succeeded in transmitting the human voice from Europe to Australia on May 30, 1924.

Marconi spent his declining years about his "Floating Electrical Laboratory" the Yacht "Elektra," experimenting with micro-waves as a means of curing the human ills without the surgeon's knife. The world has truly lost a great man and benefactor. His place will be hard to fill and it is with a lot of saddness that we sign SK.

3 Big Days and 3 Large Nights

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CONVENTION

SEPT. 4-5-6

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PR-15 (Patterson)	109.50
SUPER SKYRIDER (Hallicrafters, 1938)	111.50
ULTRA SKYRIDER (Hallicrafters)	114.50
NC-101X (National)	129.00
NC-100X (National)	142.50
RME-69 (Radio Mfg. Engr.)	151.20
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