CQ

RADIO AMATEURS' JOURNAL

OCTOBER
1952

This Month:

How to Earn Money by Writing for CQ
The Terriffic CW DX Contest Results
A New System of "Gating" Modulation

35c

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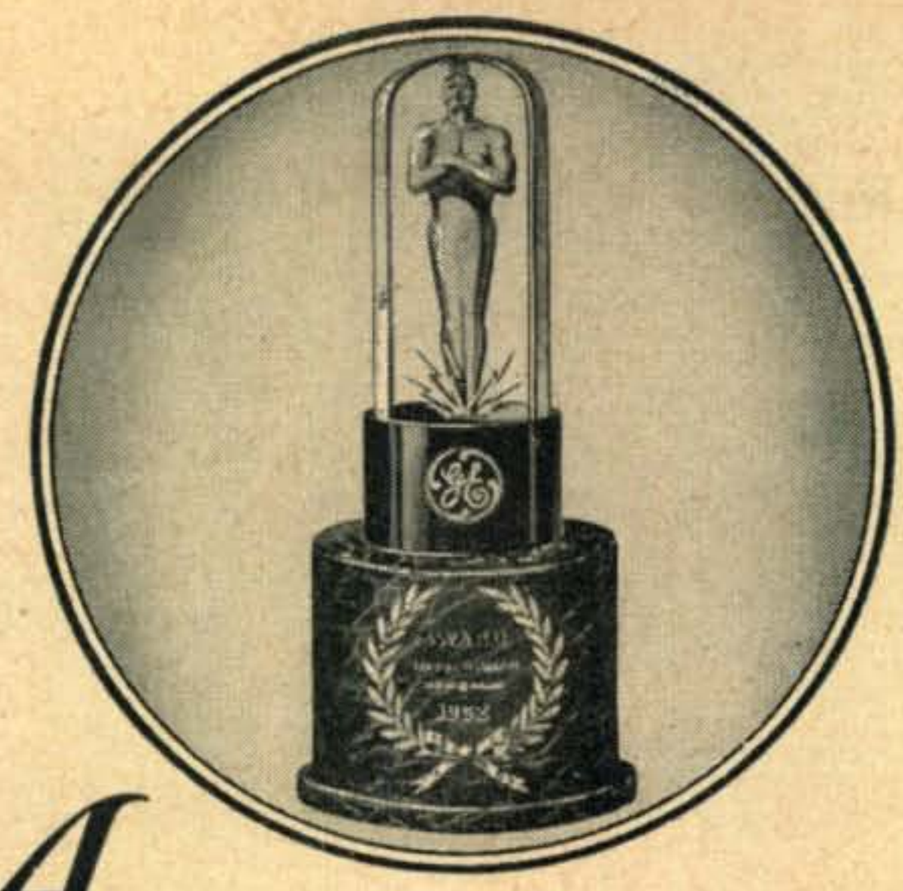

Announcing

THE EDISON RADIO AMATEUR AWARD

To gain greater recognition for the many vital and humane public services performed by radio amateurs, G. E. offers the Edison Radio Amateur Award for 1952

Who is eligible for the Edison Radio Amateur Award: Radio amateurs eligible for nomination will be those men and women who, during 1952, have performed a meritorious public service on behalf of an individual or a group, in a disaster area, in civil defense, or in similar situations.

Nominations may be made by any amateur, club, association, or individual familiar with the service performed.

Winner of the award will receive the Edison Radio Amateur trophy in a public ceremony in a centrally located metropolitan city. National recognition will be accorded the winner of the award, and as a token of appreciation for his service, General Electric will present him with a 24-hour watch to clock DX accurately.

How to nominate a candidate: To nominate a candidate for the award, you need only submit his name, address, call letters, and a description of the service performed.

Entries will be reviewed by a distinguished group of impartial judges, and the decisions of the judges will be based on (1) the greatest benefit to the individual or group (2) the greatest amount of ingenuity and sacrifice displayed in performance of the service.

Your candidate must hold a radio amateur's license issued by the F. C. C., Washington, D. C., and the service must have been performed while he was pursuing his hobby as an amateur within the continental limits of the United States.

Your letter must be postmarked not later than December 31, 1952.

Judges who will decide which candidate's achievement is most worthy of the award, are:

Mr. E. R. Harriman, President, The American Red Cross.

Mr. G. E. Sterling, Commissioner, Federal Communications Commission.

Mr. G. L. Dosland, President, American Radio Relay League.

Winner will be announced on or before March 1, 1953, and the award will be publicly bestowed soon thereafter.

Employees of the General Electric Company may nominate candidates for the Edison Radio Amateur Award, but are not permitted to receive the award.

Choose your candidate . . . prepare your letter of nomination . . . and mail to Edison Award Committee, Tube Dept., General Electric Co., Schenectady 5, N. Y.

GENERAL ELECTRIC

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CQ RADIO AMATEURS' JOURNAL

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SCRATCHI

Feenix, Ariz.

Deer Hon. Ed:

Are you knowing if Scratchi can bringing soot against radio magazine for publeeshing article which is strictly no good? No, no, Hon. Ed., gracious saki, don't getting blood pressure meter offscale—I not talking about your Hon. Magazine. Article which giving me nitemayor appeared in magazine that are going out of business cupple years ago. If I could sooing and getting sum money for mental turmoil and to help paying for wasted sodder, letting me know post hasty.

So you can telling if I have any legal grounding, here are detales. While spending a few moments in Joe's Triple-Dip Hunky-Dory Ice Cream and Used Magazine Parlor last week I looking through old magazines. Finding one which describing how to build cheap intercom units. Hon. Brother Itchi are being after me to make sum intercom units to work between barn and house, so deciding this are just what doctor are prescribing. I shelling out two sents for mag. and later making up parts list and showing list to Itchi.

He deciding to financing the hole deel, but he telling me that intercoms better working like sixty, as he not like to throwing the bux away. I grabbing the folding money and scramming before Itchi changing mind. Going to local radio heaven and dew to odd circumstance finding all needed parts in stock.

That evening clearing off work bench and making happy discovery that soddering iron are still plugged in, all ready to go (that explains why it been so hot in shack past cupple weeks). Mounting parts on each chassis, reaching for hookup wire, and finding are fresh out. Why not parts list including hookup wire. Sacremento! I about to giving up for the nite when remembering that are seeing roll of wire in barn. Dashing out, and sure enough, there are big roll of what look like solid hookup wire. Evidently sumthing Itchi are getting for work on his chicken brooder.

With wire available, Scratchi doing reel fancy wiring job in no time, and finishing the units. Plug them in, don't see any smoke, so deciding they working. Are still needing line between barn and house, so getting sum of Itchi's electric fence wire and insulators, and running nice parallel lines from house to barn. Making mental note that spacing are about rite for 470 ohm line if ever needing it in future.

(Continued on page 6)

SCRATCHI

(from page 4)

Next are putting one intercom unit in barn, another in kitchen, and calling Hon. Brother Itchi to come help me in test. He standing in kitchen and I going to barn, pushing button, and calfing hello test several times. Itchi comes out—can't heer me. I try with gain control higher—still can't heer me. Finally turn gain wide open, and this time Itchi say he heer sumthing that sound like keynote speeker at mouse convention. I listening to him talk, and you not believing it, Hon. Ed., but it sound exactly like a mouse squeaking.

I hastily retiring to workbench with the units, and check them over. Nope, everything perfect. Toobs are good, and wiring perfect—circuit must be wrong. Some nerve that magazine has. Are I having good soot, Hon. Ed? How much monies you think I getting if. . . . .excoose please, Brother Itchi just come in.

Hokendoke Hackensaki!! You know what happening? Itchi looking at wire, asking me what I doing with it, and I say wiring the intercoms with it, at which point he breaking out laughing. When getting Hon. Brother Itchi up off floor (he laughing so hard he practikally knocked out) he are telling me that the wire is some speshul resistance wire he getting for chicken brooder, and having about ten-thousand ohms per foots resistance. My great aunt Fuja! if that isn't the end.

Of course, if having all sorts of odd resistance, no wonder intercoms not working. Filaments probably not working, plate resistances all wrong. There is still one more thing worrying me, Hon. Ed. On the circuit diagram the pins for the 24-A toobs are marked from 1 through 5. Is this meaning that as looking at toob base you supposed to going around clockwise or counterclockwise?

Respectively yours,
Hashafisti Scratchi

Broad Band . . .

Men of Radio

Editor, CQ:

Just wanted to tell you that I'm enjoying the Men of Radio series very much. This current one, part IV, in particular, has stirred nostalgic currents in my memory.

Thinking of the early days of radio, when we called it "wireless", conjures up memories of the huge loading coils we used to copy POZ and MFT and FL as well as our own good old NSS and NAA. How many recall NBA and NAJ and the rest of the old stand-by gang. Makes me wish I had saved copies of the catalogs of those days, when they first started coming out. Remember William B. Duck Company, the Electro Importing Company, and Manhattan Electric Supply? Amrad made quenched gaps to replace the old noisy rotaries, and basketball couplers and variometers were the latest style.

We finally got hold of cash and tried the new device called the Audiotron, a double filament tube with flexible leads coming from both ends. It sounded like fish frying all the time, but it was hot stuff!

We cluttered up the air where the standard broadcast stations are now, and any receiver which would take the whole dial space to separate three hams was considered

(Continued on page 8)

to the **E. E.** *or* **PHYSICS GRADUATE**

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BROAD BAND

(from page 6)

quite selective. In fact, selectivity was more a matter of strength in those days. (Sometimes I think it still is. Hi!)

Whenever news leaked out that so-and-so had some good galena, everyone rushed over to buy a chunk. I used to work five hundred miles with half a kilowatt and thought it was the berries. The days of loose-couplers, helix antenna coils, and leyden jars. Hot diggety dog!

These new folks missed a lot of fun, but I guess in the years to come, they can look back as we do, and laugh at the crude gear we are using! Hi!

R. Curtiss Cole, W9LCG

Chicago, Illinois

The "Dipper's Ancestry"

Editor, CQ:

On page 52 of the September issue of QST under the heading "Strays," several paragraphs appeared, as a quote from ZL2IQ in NZART's "Break-In," regarding the originality of the grid dip oscillator. Here it was inferred that this instrument has been publicized as a new and original idea recently developed.

Through the publication of several articles the writer feels he was largely responsible, not only for rediscovering this device, but also for the practical demonstration of its very valuable assets in a ham shack. Most of these applications had not heretofore appeared in print.

Lest the readers be misled, and to set the record straight, I wish to point out that no claims as to the originality of the grid dip oscillator were ever made by the writer. This is clearly indicated in my first article on the subject entitled "The Dipper" which was published in May 1947, CQ, and from which the following quotation has been taken, "The Dipper is, actually, the grid dip oscillator which for many years, has lain neglected on the shelf of most radio shacks."

This statement, besides disclaiming any originality, hits the nail on the head in regards to the neglect of the instrument as indicated ZL21Q's first paragraph. This is further verified by the photograph of the unit which has been "on file" at ARRL Headquarters for over a quarter of a century and which required five years from the time of my first article to be cleared of the cobwebs. Is it not strange that the ARRL "missed the boat" and did not realize the potentialities of the grid dip oscillator, lo, these many years?

W. M. Scherer, W2AEF

Englewood, N. J.

Underground Antennas

Editor, CQ:

During the preparation of the material for my article entitled "How's Your Geology?" I became interested in underground antenna systems. I am now in the process of doing some practical and theoretical work on this subject.

In order to get a picture of what success or failures others have had I would like to request those amateurs who have used underground antenna systems to contact me either through the CQ office or at Box 661, State College, Pennsylvania.

I hope to be able to publish an article on this interesting subject in the near future.

P. H. Licastro, W3PKE

Pennsylvania State College
State College, Pennsylvania

THE "MOBILEER" VFO

The staff wish to apologize for failing to identify the owner of the mobile installation in the photograph on page 11 of the September issue.

This installation was that of Earl N. Johnson, WØICV. The mobile rig includes, besides the "Mobileer" VFO, a TBS-50 transmitter on the ham bands and a complete police radio receiver/transmitter.

. . . . with the Eimac 4E27A pentode

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ZERO BIAS

A Few Words About ARRL Directors

Between October 1st and November 20th ARRL members in the Central, Hudson, New England, Northwestern, Roanoke, Southwestern and West Gulf Divisions will elect Directors to represent them in League affairs for the years 1953-54. We cannot help but wonder how many league members view these elections with the concern they deserve.

To represent the majority of amateurs—the majority must be ARRL members and must take part in these elections. The League belongs to the ARRL individual members who pay $4.00 per year for that privilege. Contrary to rumors and the splinter opinions of many who wish it otherwise, the ARRL is still essentially an organization of sound structure. It was built on experience, rough in spots perhaps, but at least it never failed to be the champion of the radio amateur.

Now is the time to recognize the dangers that lie ahead. Fortunately, an international conference on radio frequency allocations appears fairly distant. But, on the other hand, certain matters at home need corrective action and the brunt of a well-versed authoritative voice. A voice that speaks for progress in amateur radio. A voice founded upon the directives issued by the ARRL Board of Directors.

Attempting to analyze what a Director must be in order to merit election is not a difficult task—at least not as difficult as it may first appear. In several Divisions we have noted with no small degree of alarm that the Director was an individual not elected because he was the best man, but because everyone agreed that he was a "swell fellow." No doubt this subtle asset is an important parameter in the proper place, but can it replace a broad knowledge of all phases of amateur radio, both current and past? Does it replace an awareness of the amateur in the national scene and the very basic fact that the views held by a Director influence not only his own Division, but indirectly those of all American amateurs?

If you are a League member—and you should be—be sure to take an interest through your local club in the League elections. They are important—they are your representatives. While you may not agree with every single step and action the Director takes during his term, at least be sure he does know your opinion—a good man will respect it.

Obviously, the paragraphs above are aimed at a definite objective. Upon returning from a quick trip through the midwest I was surprised to see the degree of apathy among the League members that existed in certain quarters. Frankly, I was not impressed by what I saw—particularly an officer of the League who blames the present Washington Administration for all the evils in amateur radio. This may be a very convenient and a very fashionable sentiment in his circles, but it does nothing to further or enhance amateur radio.

Since the activation of the amateur bands in 1945-46 only five amateurs have established themselves in a progressive light. Each of them contrasted so sharply with their phlegmatic associates that it is with relative ease we recall Len Collett, WØDEA; Jack Doyle, W9GPI; John Griggs, W6KW; Dave Middelton, W5CA and C. C. Richelieu, W9ARE (now W1JR and recently resigned as President and member of the NARC Board).

Three of the above individuals (at this writing) are either candidates or are being spoken of as probable candidates. They are Jack Doyle, W9GPI in the Central Division; John Griggs, W6KW in the Southwestern Division and Dave Middelton, W5CA in the West Gulf Division.

At the moment, it has not been established that W9GPI will run in this election. If he does, he will contest the seat now held by Wes Marriner, W9AND. The "Marriner Story" is difficult to resolve although it has been fairly well established that Doyle was originally defeated by a cliquc fostered by ARRL ex-president Bailey. This clique operated on the premise that Doyle was anti-CW, thus Bailey was able to unseat Doyle by a margin of 200 votes. Doyle will be recalled as the "father of the novice class license" a project which may favorably decide the future of amateur radio. Marriner has recently not shown the traits of a very strong pro-CW man. Members in the Division will do well to carefully consider the platforms of both parties, if they become candidates.

Continuing his westward tour in 1950, Bailey stopped off at the Santa Barbara convention and there attempted to organize resistance to Griggs. To say that this was unsuccessful is an understatement, as Griggs defeated his opposition with a margin of several hundred percent. This year there does not seem to be any opposition to the very progressive leadership shown by Griggs. It is doubtful that a better man be found to lead this Division.

The West Gulf Division shows that incumbent Middelton will be opposed by one-time Director Calk and an outsider, Mead. This particular election should not be difficult for Middelton to win with a comfortable margin since he need only stand on his record of constructive action. His opposition hopes to split the vote three ways, but it appears doubtful that the West Gulf ARRL members will be taken in by such a maneuver. One bulletin from a club in this Division (CQ-NM) reports that Mead wants to be Director because he has some accrued leave and money to spend visiting the clubs. Calk, this bulletin reports, wants to be Director because he was Director when there was no Board of Directors meeting and he missed the West Hartford trip.

Another club bulletin (AREC News Letter) recently asked the three candidates for their opinions on eight important issues. While Mead made a fair showing, the answers by Middelton were as resoundingly forthright and constructive as those of Calk's were innocuous.

Regardless of the outcome of these elections, the important thing is for the ARRL member in these divisions to vote.

o. p. f.

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All divisions are same width. On the 160, .80, 40, 20 and 15 meter bands, each division equals 1 kc. The dial is accurate within 1 kc to 21.8 mc, and 2 kc between 26 and 30 mc after calibration. This all adds up to exceptional band spread and accurate dial setting.

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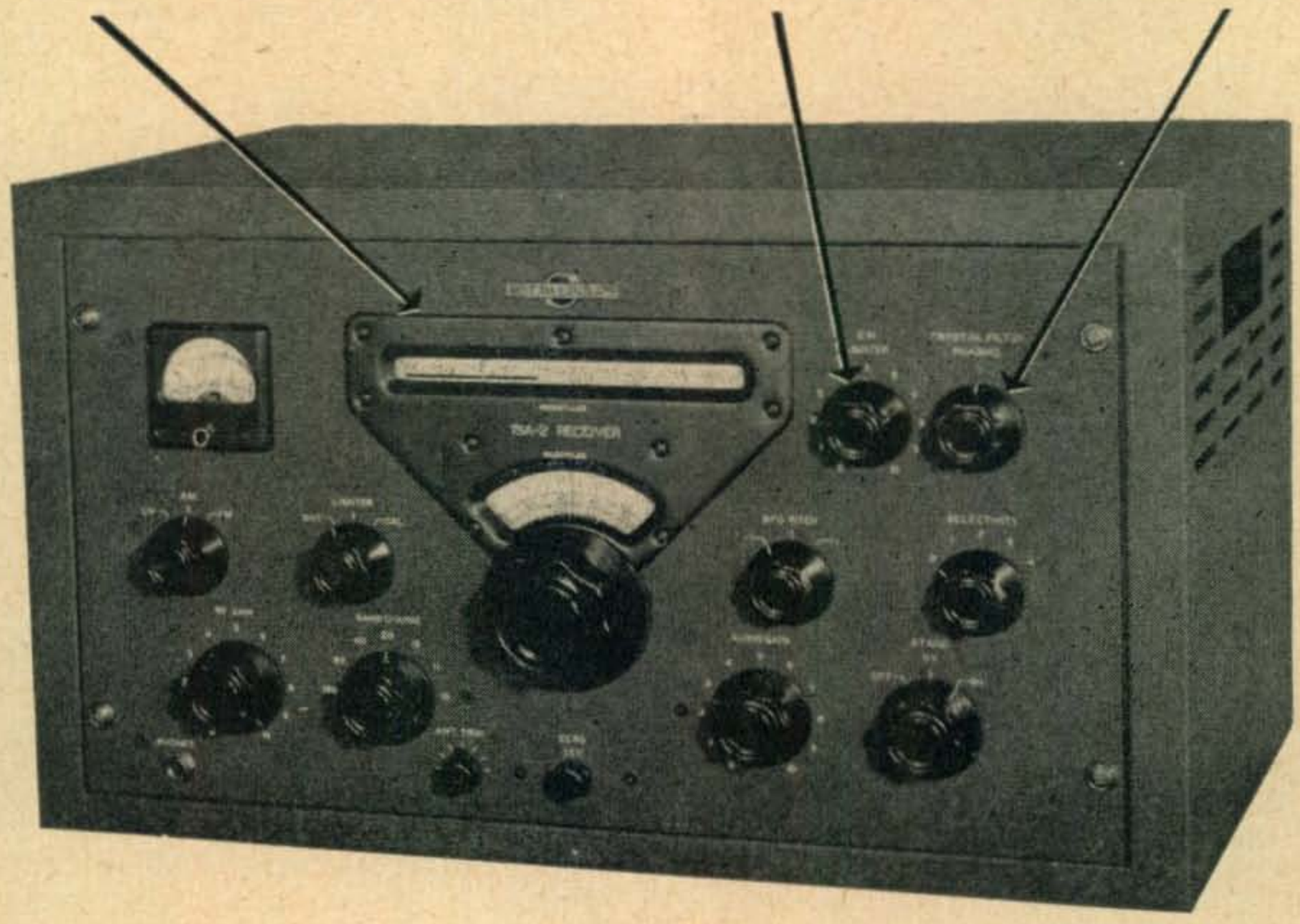

WITH the Collins 75A-2 you'll pick out signals you've never been able to hear before. Two noise limiters, one for cw and one for phone, hold interference to below signal level. Nerve-wearing noise is reduced, and by clipping interference the limiters help you identify and copy otherwise unreadable signals.

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AUTHOR! AUTHOR!

GEORGE H. FLOYD, W2RYT

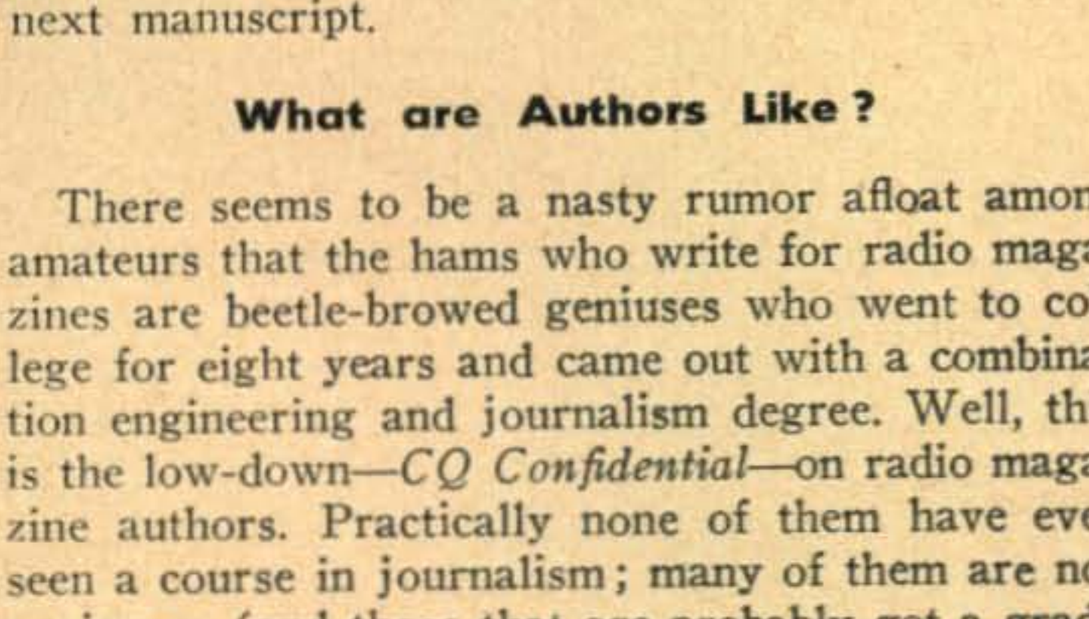
RD #1, Chittenango, N. Y.

For a long time we of CQ have been faced with a situation that appeared unnecessary and that should have been immediately remedied. It concerned the poor layout of most of the manuscripts received at this office. As a result, a sizeable portion of the very interesting material never appeared in print because the original manuscript was unworkable. With the gradual growth of CQ this problem has become a major headache, and in desperation we commissioned a very well known author to tell all the others how it is done.—Editor.

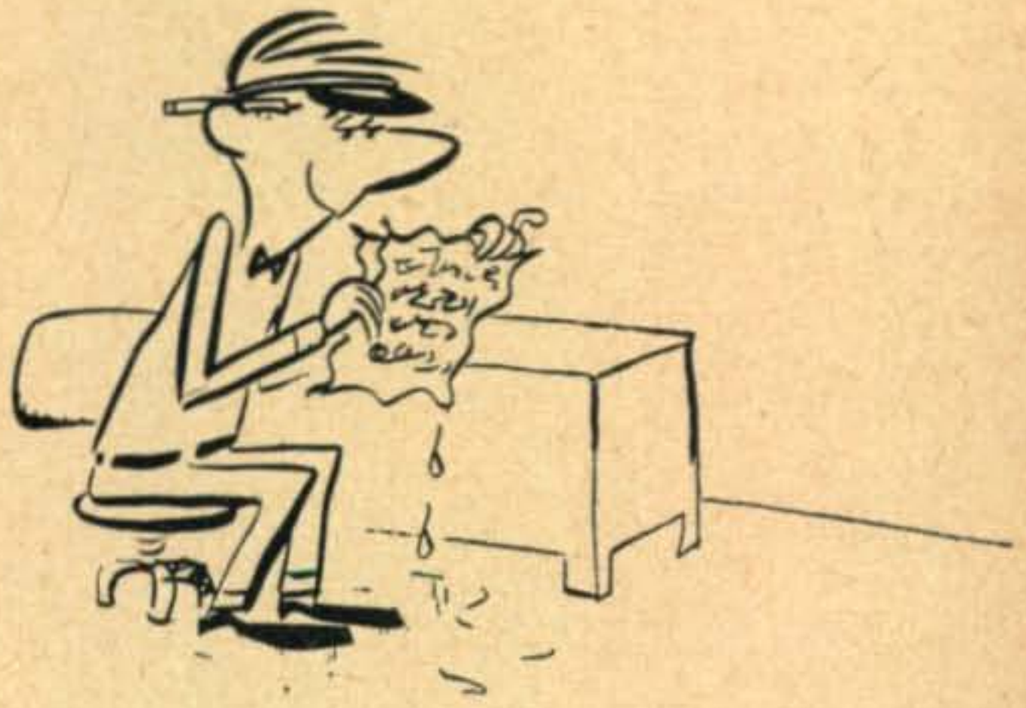
If you have a yen to write for *CQ*, or if you have written a manuscript or two and had them returned with a polite refusal, then this is the article you'll want to read. Invest a few minutes reading time and you may harvest a nice fat check from the magazine in payment for your efforts on your next manuscript.

What are Authors Like?

There seems to be a nasty rumor afloat among amateurs that the hams who write for radio magazines are beetle-browed geniuses who went to college for eight years and came out with a combination engineering and journalism degree. Well, this is the low-down—*CQ Confidential*—on radio magazine authors. Practically none of them have ever seen a course in journalism; many of them are not engineers (and those that are probably got a grade of C in college English); they are short, tall and medium height; they are single, married and indifferent; and, they probably range in age from sixteen to however old you are.



". . . hams who write for radio magazines are beetle-browed geniuses. . . ."



". . . it will be accepted even if it's written in Sanskrit on wet blotting paper. . . ."

You can examine this group carefully, and you will find that authors have just one thing in common—*they want to write!* If you qualify on the basis of the last four words, read on, because writing is your meat. If you don't want to write, then turn the page, because there's an excellent article overleaf which may solve your current ham problem. But, remember that it too was probably written by a ham just like you who at first thought that he could not write for a radio magazine.

What Shall I Write About?

Just "wanting to write," although it's an absolute requirement for a *real* author, is not enough. You must have a manuscript which the editor will accept; and, the biggest single factor influencing his judgment is the *subject*. If you write telling how to get a kilowatt output from a 6L6, and your manuscript is the real McCoy, it will be accepted even if it's written in Sanskrit on wet blotting paper. Conversely, if you write on the theory behind half-wave rectification, the editor will probably say No! (Unless he hasn't printed an article on that subject in several years.) A good subject will

make a poorly-written manuscript acceptable, while a poor subject will cause even a perfectly-written manuscript to be rejected.

Of course, it's a tough job to read the editor's mind in order to know what he may consider a good, or a poor, subject; although, if you read *CQ* thoroughly, you will find the pattern of subjects that have been accepted, and from this alone you will gain a great deal of information.

For example, imagine that *CQ* has been carrying a number of antenna articles over the past four-month period. From this it is evident that the editor has been confronted with many *good* antenna articles. From your standpoint, it is a good time to write on almost any subject *except* antennas. Editors like to keep a balanced technical program, with articles on as many subjects as possible appearing in as few months as possible. If you haven't seen a subject discussed in a few months, then the editor may be ripe for an article on that particular phase of amateur radio.

If you are a tyro at the writing game, then your best bet is to write on your "pet" ideas—your new

". . . it may come as a shock . . . but, the editor reads every manuscript sent in. . . ."

rig, your odd-ball antenna, or whatever it is that you have been burning the midnight oil on in the past few months. A person always writes a better article if he writes on a subject with which he is thoroughly familiar.

Your pet idea may not be new, unfortunately. In that case, it has little chance of being seen in *CQ*. What the editor wants to see is a manuscript that is "different"—and if anyone can explain exactly what is meant by this word he will win the gold-plated electron for the year. A subject can be different in a number of ways. A manuscript on a grid-dip meter—of which there have been dozens—might be acceptable if: a) the electrical design were new; b) the mechanical features were novel; c) the equipment could easily be made by converting a piece of war-surplus gear; or d) the performance was extraordinary (top frequency range of 1000 megacycles, or sensitivity ten times that normally achieved, etc.).

Don't be discouraged if you are unable to think of a different type of subject. When you have such a subject, you will generally know it! However, if you are in doubt, you can always ask the editor's opinion, as will be explained in a moment.

Technical Requirements

An article on the theory behind rhombic antennas would normally be written by some amateur that knew what he was talking about. If the editor were to receive a manuscript of this sort, he could not accept it until he knew that the manuscript was technically sound in every sense. If the editor knew the reputation of the author, it is possible that he would accept on that fact alone, but normally the editor will ask one or more of the CQ staff to examine the manuscript to check on the technical authenticity. This will generally show up any serious shortcomings.

Don't try to fool the editor. The more elaborate the claims that you make for your equipment, the more likely the editor is to politely reject the manuscript—unless, of course, you really *do* have something, and you have included sufficient information in the article to prove your point. In case of doubt the editor may ask you to send him the equipment for test, just to see if it's all you say it is. This is rare, but it does happen.[1]

You may have designed a piece of equipment which has a novel circuit, or, you may have put together some wires, tubes, resistors and condensers and find that you have something new. If you do not know why your equipment works like it does, because your technical knowledge is limited, get the advice of your hometown expert. He may tell you it is old stuff; or, he may tell you it is new; or, he may not know. In a case of this sort the editor might be interested enough to look at a circuit diagram of your outfit, if you make it complete with all the circuit values and describe exactly what components are used. This does not necessarily imply that the editor has loads of spare time for this sort of thing, but it does mean that he is genuinely interested in anything which other amateurs might like to hear about. Don't be afraid to write the editor, but keep your letter brief and to the point.

The Editor and His Staff

All this time we have been talking blithely about the editor, so perhaps it's time to give the low-down on editors in general. The widespread conception of an editor is that he has a pretty soft spot in the organization. Don't ever tell that to the editor, if you want a manuscript accepted! Neither, by the way, is an editor a person who comes to work at 10 in the morning, glances through the manuscripts on his desk, selects two at random, rejects the rest, and strolls out at 11 to read the two "lucky" manuscripts.

It may come as a shock to some contributors, but the editor reads, and reads carefully, every manuscript sent in for his consideration. A big part of the editor's job is the culling through of the

1. Nor is this as unreasonable as it may appear. The CQ staff feel that publication, at a minimum, indicates tacit approval of the idea or circuit. In a case where some doubt arises we have run very thorough tests under actual operating conditions. Of course, if we ask to borrow your four-element 40-meter beam during a DX Contest, you may have sufficient grounds to say we are being unreasonable.—Ed.

many manuscripts received every day.[2] When you realize that only five or six are selected for publication in any one issue, you will see that a small percentage of submitted manuscripts past the test.

In order to judge manuscripts quickly and accurately, the editor must be patient, well-versed technically, and a good judge of human nature.[3] Of course, the editor is human, so he may sigh with relief when he comes across a well-typed, clean-looking manuscript, especially if he has just plowed through several hand-written ink-smudged articles. As fate will have it, the well-typed article will probably not be accepted, but at least the editor's eyes have had a little respite.

Writing articles is another facet of the editor's job. Here he is faced with a big problem, because any article that he signs his name to (or helps to rewrite) must be a real gem. Due to his position, he must produce material which is far above the standards applying to the regular contributors.

Another phase of the editor's job is the search for material. It is true that unsolicited manuscripts find their way to his desk, and many of these merit consideration, but the editor must keep his eyes and ears open for above-average material, and then ferret out the details and persuade the designer to write an article on the equipment for *CQ*. In a few cases the editor may write to a regular contributor and ask that person to design a certain type of equipment, and write an article on it. If that ever happens to you, brother, you have arrived!

The editor will give you a fair break on any material you send to him. All he asks in return is that you be fair with him, by sending in readable, technically-accurate material, with complete circuits and sketches, and photos, if they are pertinent.

Using An Abstract

One way to avoid spending a lot of time writing an article which might be rejected is to send the editor an abstract of the manuscript before you write it. In two or three-hundred well-chosen words, explain exactly what your article will be about. Don't make this a literary masterpiece, but just tell the story of the article you want to write. If it will concern a piece of equipment, send along a schematic of the unit with a parts list, and if you have a photo or two, be sure to include them.

The editor can easily read your abstract, look at your schematic and photos, and decide if he is interested in seeing a full-fledged article on that subject. If he decides to ask you to write the article, he is not guaranteeing to accept it at a future date, but you may be sure that he is interested. By the time you do write the article and have submitted it, the editorial requirements may have altered and your article rejected—again, that's part of the game.[4]

At the present time *CQ* has a good backlog of material, and some manuscripts are being scheduled for publication as far ahead as five months. For this reason, it is extremely important that you submit an abstract to the editor before you write your article.

Make your abstract complete. Don't say "I can write you an article on my new 813 rig—it's a honey." It may be, but you have to convince the editor. It would be far better to say something like this: "I have a new final using a pair of 813's. The neutralization is rather unusual, as the enclosed schematic shows. Also, my metering stunt, while copied from an old idea, hasn't been used much in the past few years and might appeal to your readers. The rig uses easily available parts throughout—see attached photo—and is currently in use at my station . . . etc." Notice that statement "might appeal to your readers?" That's a bit of salesmanship directed toward the editor!

". . . look Ma! I'm an author!"

As an example of a contributor who didn't bother to use an abstract, the editor tells me that he recently received a manuscript 80 pages long, with 45 . . . count 'em . . . 45 illustrations. The editor didn't tell me whether he is going to use the article but if he does, there won't be any other article in *that* issue.[5]

Payment

I'll bet you wondered when I was going to get to that. This magazine pays for all editorial material accepted. Payment is made within two weeks after publication, which means that your check will ar-

2.The actual number varies from week to week, but we safely expect at least six each week with maybe eight or nine a week during certain months.—Ed.

3.Have the bookkeeper give Mr. Floyd our top editorial payment rate.—Ed.

4.This often happens and I urge those employing this technique to be prepared to follow up the abstract with a full manuscript in about thirty days. If you send the manuscript in six months later, the chances are that something like it will have been accepted from another author—hence, the adage, "A manuscript at hand is worth two on the workbench."—Ed.

5.Said manuscript is combined theory and practice and would probably interest many readers, but it is so complex that it has taken one of our staff over two months to check it for fundamentals. As of this writing, no decision has been rendered on how we will handle it—Ed.

rive around the tenth of the month of the date of that particular issue.

The rates for an article average approximately $15 per *printed page*. If you article contains only 100 words, but is accompanied by ten photographs and four schematics, and ends up covering four pages in *CQ*, then you get about $60 for four pages of material. The editor will use whatever photos and sketches he deems advisable, so don't try to pad the article by sending in too many, but send in as many as logically will go with the article, because your payment is based on the number of pages taken up by the article.

". . . and, for heaven's sake, don't paste two of the sheets together lightly, just to see if the editor really reads the stuff. . . ."

The figure of $15 per page is an average figure only. If a manuscript is received which is worthy of publication because the subject is good, but written so poorly that it must be rewritten by the *CQ* Staff, then you cannot expect top payment. Articles of this sort may pay as low as $10 per printed page. At the other end of the scale is the article which is written by a regular contributor, which can go to the printer without a pencil mark being made on it by the editor. This author deserves, and gets, as high as $20 per printed page.

The foregoing figures apply to all articles, even short half-page ones, but they do not apply to *Shack and Workshop*, where payment is made on a different basis.

Getting Started

Now that we have gone over the basic ways to write and sell an article, let's make a list of what to do and when to do it.

1. Decide that you *want* to write an article
2. Decide on the subject
3. Take some pictures of the unit
4. Make a clear and legible schematic diagram, listing on it all components and their values
5. Write a parts list, listing commercial type and make of the more important components
6. Write the editor an abstract of your article, and include the schematic, the parts list, the photos, and any rough drawings necessary. Enclose stamps for return postage if you wish—this is not mandatory. However, be sure to tell the editor if you want the material returned
7. If you receive an encouraging answer, and the editor wants to see a complete article, get to work on it immediately. If you take more than a month to write it, he may be forced to change his mind about accepting it.

Those are the initial steps. If you get this far, and are about to write the article, more pointers are in order.

Actually At Work

1. Procure some white typing paper and beg, borrow or otherwise acquire a typewriter. If you aren't much good on a mill, write the manuscript longhand and get someone to type it for you.
2. Leave adequate margins at the top, bottom and both sides of each typed page. The minimum margin is 1½ inches all the way around the page. The reason for this is that the editor needs room to make corrections and typesetting notes on headlines and sub-heads.
3. *Number each page, place your name on each page, and put the title of the article on each page.* This is probably the most abused rule in the game, but it is extremely important. The editor may want to get some advice on your article, and he may send just one or two of the pages to one of the Staff for checking. If each page is not identified properly, your article may never be properly reassembled—nor published.
4. Send in every page. This may seem like foolish advice, but it happens to editors now and then. Editors have been known to explode because of this, especially when it happens to them after a long and trying day.
5. Use a typewriter which has a ribbon that still has some ink on it. A new ribbon is not necessary, but the ribbon should be good enough that some ink gets transferred to the paper!
6. *Make a carbon copy of everything you send in.* If the editor lost your manuscript, or if Uncle Sam's mail mislaid it, you wouldn't want to do all that over again, would you? Besides, when the article finally appears in print, it's nice to be able to compare the printed article with the carbon copy, to see what changes the editor made.[6]
7. Don't place little notes in the manuscript, either in the margins or on small pieces of paper. Write everything down on consecutively numbered pages. (And, for heaven's sake, don't paste two of the sheets together lightly, just to see if the editor really reads the stuff.)
8. Try not to use stilted language. Forget all you learned about writing themes in high school or college. Read some of the articles in this magazine and note how naturally the sentences roll along. Write in the same way that you might talk if you were explaining your rig to

6. Nor can CQ be responsible for unsolicited material. Naturally we appreciate receiving manuscripts, but don't try, as has already been done, to "hold us up" for material that we never received.—Ed.

a friend. Above all, don't worry about your writing style. Split infinitives may be a horrible sight to the editor of *Fortune* Magazine, but the editor of this magazine is not that strict. All he wants is a sentence that reads well and one that makes sense.

9. Try to use the same abbreviations that *CQ* employs. For example, use $\mu\mu$f., and not mmf, and use r.f. but not *RF*. All such abbreviations must be uniform in the magazine, and if you have them the wrong way, the editor must go through your article and change every one to conform to the style in current use. If you are interested, drop a note to the editor and ask for a copy of the *CQ Standards Sheet*, which lists the proper use of abbreviations and compound words, etc. (When you use this, don't try it on an article for any magazine except *CQ*, because magazines may have different standards.)
10. When the manuscript is completed, prepare the circuit diagram. It is not necessary to do a professional job, inasmuch as every single drawing submitted is redone in the style of the magazine. The same is true for drawings and sketches. On each circuit diagram, put a parts number (like R1) and parts value (like 47K) for each component. (While the drawings need not be works of art, don't make a few lines on a piece of paper and then say to the editor: "you know what I mean.")

". . . time will tell. . . ."

11. Prepare the parts list, listing the items which are not completely identified by the schematic, such as transformers, and also listing items not shown in the schematic, such as dials or cabinets.
12. Take photographs of the unit (see the end of the article for details on this).
13. Procure an envelope which is large enough to hold all the material without having to fold the manuscript or the photos.
14. Check the manuscript to make sure all the pages are there. Count the photos and the sketches to be certain they are all there. Be sure to place your full name, address and call (if you have one) on the first page of the manuscript, and make certain that all sketches are identified by a figure number.
15. Tell the editor if you want the material returned.
16. Address the envelope to the address shown on page 3 of any issue of CQ.
17. Weigh the envelope and contents and put the proper amount of postage on it. (It must go first-class mail.)
18. Seal and mail.
19. Pray!

Time Will Tell

Your manuscript is now in the hands of fate. The editor will, in due time, read it carefully and make his decision. Remember that the editor might be on a trip, or he might be putting the next issue to bed, or he might be doing any number of things which will prevent him from devoting his full time to reading his mail, so don't expect an answer on your manuscript in the next mail. It is reasonable to assume that you will hear something in a couple of weeks. If you had sent an abstract, you will probably hear from the editor sooner—in perhaps ten days.

The answer that you get from the editor will undoubtedly fall in one of these three categories, and should sound something like:

1. "It does not fit in with our current editorial requirements."
2. "It is a good subject, but definitely needs more elaboration on several points."
3. "Your article is being scheduled for publication in an early issue."

It is difficult to make a general statement which will be true all the time, but as a rule, if the article is rejected you will get the bad news right away. The longer you have to wait for an answer, the more chance there is that the article will be accepted (unless the editor just happens to be on vacation). Many times the manuscript will contain a number of technical inaccuracies, or, technical statements which the editor questions. As a result the material is gone over very thoroughly by the Technical Editor or one of the staff.

". . . weigh the envelope and contents and put on the proper amount of postage. . . ."

After this round-robin reading the article may be returned to the author with a request for further information. If this happens to you, it's time for a small celebration, because it means that the editor may accept your article if you are able to supply the missing information. Be guided by what the editor says, make further tests on the equipment

(or do whatever is needed to satisfy the editor), and you may have a winner.[7]

That's all there is to it. Think up an idea and get to work. Don't try to write an article about how to write an article. That was my idea.

Look Ma, I'm an Author!

When your article finally appears in *CQ* you will act exactly like a proud papa. If you run true to form, you will read your own article two or three times the day you receive your advance author's copy—believe it or not! Another favorite stunt of the author-with-a-new-article is to buy several copies of the magazine, open them to *the* article, and leave them around on tables, or desks, or wherever they stand a good chance of being seen. If you act this way, don't be ashamed—as I recall, I've done the same thing myself.

If the article is popular, you may expect to get letters from readers of *CQ*, asking questions on how you did this or that, or telling you how l——sy an article it is. This is all part of the game, and it is up to you to answer these letters, helping the other amateurs as much as possible—after all, you are now an author. If the people who write in do not send return postage, they aren't being polite, but if I were you I wouldn't refuse to answer them just because it will cost you three cents.

APPENDIX

Taking Pictures for Publication

One picture is not only worth a thousand words, but it also takes up space on the page for which you get paid. A good picture can show detail which would be hard to explain in words: however, a poor picture is a detriment to an article. Some people think that any picture is better than none, but this is a debatable point.

The Camera

A $500 camera does not take pictures ten times better than a $50 camera. In fact, properly handled, either camera will do an excellent job. It is difficult to take good apparatus photos with an inexpensive box camera, but almost any other type of camera is satisfactory.

The Photographer

The camera expert in portraiture and the expert candid-camera snapshooter do not tend to take good apparatus photos. The portrait expert usually takes a "soft" picture, which he achieves with large lens openings (like **f3.5 or f4.5**), short exposures and "soft" papers. The candid-camera picture-taker tends to move right in on the subject, to use a camera with tiny negatives, and to get fuzzy enlargements made from these negatives.

If you do everything that a portrait photographer does, but do it backwards, you will get a good picture of your rig. Use small lens openings, long exposures, even lighting, and hard papers.

The Equipment

The ideal camera for amateur picture taking of equipment is a roll-film camera using as large a negative as possible. (A film-pack camera with a 4 by 5 inch negative is ideal). The camera should have an adjustable focus and an adjustable lens opening. Use a film which is fine-grained, especially if you anticapate that enlargements will be required.

An artificial background is an absolute necessity. For some reason, an apparatus photo never looks quite right with the XYL's sewing machine in the background, or the cat's tail showing at lower right. A suitable background should be large enough that nothing else shows in the picture except the background and the object being photographed. The background can be a cheap blanket (without a pattern) in a light color, or a large piece of paper. A perfectly white background, though, is not desirable, but anything in a light, uniform shade will do. Make certain that the background has no seams, which detract from the appearance of the photo. Keep wrinkles out of the background.

Lighting is also important. Shots can be taken outdoors, but better shots can be made inside if you use an ordinary amount of care. Get several photoflood (**flood**, not flash) lamps and arrange suitable reflectors for them—either purchased commercial jobs or some of the XYL's aluminum cake pans.

Getting Set

Arrange the background and the equipment, then turn on the photofloods and arrange them until the shadows are minimized. Check for glare. Bakelite and metal panels will cause you a few bad moments, as they reflect back tiny spots of light, which are reflections of the lamps themselves. Place your eye (either right or left—makes no difference) right at the camera lens, and you will be able to see what the film will see. Double-check the angle of the picture, to make sure that one of the important tubes isn't hiding behind a transformer.

If you take the picture outdoors, watch for glare due to the sun.

Taking the Picture

There is one nice thing about appartus photos—there is no hurry. The apparatus has no place to go, and can't get impatient. Take all the time you think you will need.

If outdoors, take the picture not earlier than 10 a.m. and not later than 4 p.m. An exposure meter is very useful. Use one, even if you have to borrow it. **Remember to use the smallest stop possible.** Many cameras will stop down to **f128**, which is ideal—some go down to **f64**, which is excellent—practically all cameras go to **f16**, which is usable. Don't be surprised if your exposure meter tells you that several seconds will be required for the exposure.

Measure the exact distance from the lens to the front part of the equipment, then set the focus for that distance plus one-third of the depth of the equipment. That is, if the unit is twelve inches from front to back, and the lens is six feet from the front panel, set the focus for 6 feet 4 inches. If the camera employs ground-glass focusing, focus on the point four inches back from the front panel.

Take two pictures of each view. On the first picture, use the time the exposure meter gave you. On the second picture, use twice as much time. One of these shots will give you a good picture. (After you have had experience, one shot will be plenty, especially if you keep a log of the pictures you take, recording type of film, type of lighting, distance from lights to subject, stop number and exposure time).

Development

Be sure to tell the photo shop to print all your negatives. With two looking alike, they might print just the best one—which wouldn't be the best one from our standpoint. You are looking for a "hard" picture with high contrast, because when the halftone is made for the magazine the photo always becomes softer. If you start with a soft photo, you end up with a washed-out one.

Prints

A very clear picture 2¼ by 3¼ inches is usable, but the editor would rather get a 4 by 5, 5 by 7 or 8 by 10 inch photo. Get as big an enlargement made as possible without getting a grainy picture or a fuzzy picture.

Special Pictures

It is practically impossible to take a good shot of an antenna wire. Go right ahead and take the picture, but when you are ready to send it in, paste a sheet of transparent paper to the back of the photo, fold it over the print so it covers the face of the picture, and draw in the actual wires on this transparent paper. This information will permit the magazine photo-retoucher to "paint" the wires exactly where they should be.

Pictures of a typical ham shack are sometimes hard to get because the average shack is so small and crowded. Clean it up so that it looks neat, but don't try any artificial background stuff. If you can't get the whole shack in the picture, try borrowing a good plate-glass mirror and place it in the doorway to act as a reflector, so you can keep the camera outside the shack and still get a good picture.

Final Possibility

If the foregoing procedure sounds complicated, you can always drop the whole idea and get your pictures made commercially, as long as you are willing to pay the $5 to $25 charge, per picture, that the photographer will bill you. With a little experience you will find that, if you take your own you'll be able to submit a finished photograph which any technical magazine will be happy to print.

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7. The current policy is to present effective technical reasoning for the rejection of any material based upon an analysis made by the staff. If there is hope of salvage, we may ask for rewrite, elaboration, or, as indicated before, a test of the gear itself.—Ed.

PAGE FROM A DESIGNER'S NOTEBOOK

A System of Gating Modulation

C. O. BISHOP W7HEA

814 Jefferson Ave., Toppenish, Wash.

Within the next few months, CQ has scheduled a number of interesting feature articles on the various methods of screen modulation. To lead off this series we have selected the very useful "gating" system as described by W7HEA. Technically speaking, this is a form of controlled carrier modulation. It has been tested repeatedly and should prove of considerable value in many applications where economy and space are important factors.—Editor.

The many advantages of beam tubes over triodes has led to their widespread use in the final amplifiers of ham rigs. In the past two years a large assortment of modulating methods have been advocated for use with them. Screen modulation is one of these and it undoubtedly has many advantages over class "B" where economy and not efficiency is the prime factor. One popular system is the "clamp tube" modulator.

Success with the clamp tube has varied from good in some cases down through the scale to poor and doggone poor in others. A look at the operation of the clamp tube may explain the wide variety of results obtained with its use and at the same time show why the circuit shown here was devised.

How It Works—Clamp Method

If we look at the conventional screen circuit of a final we find a dropping resistor from the plate supply voltage to the screens. It is of such a value that the flow of screen current through it will cause sufficient voltage drop to allow only the required screen voltage to be present at the screens of the tubes. The value of this resistor is, of course, dependent upon the source voltage and the current drawn by the screens themselves. Where the source voltage is high and the screen current low, the resistance is high, and conversely, with lower source voltages or higher screen currents its value is lower.

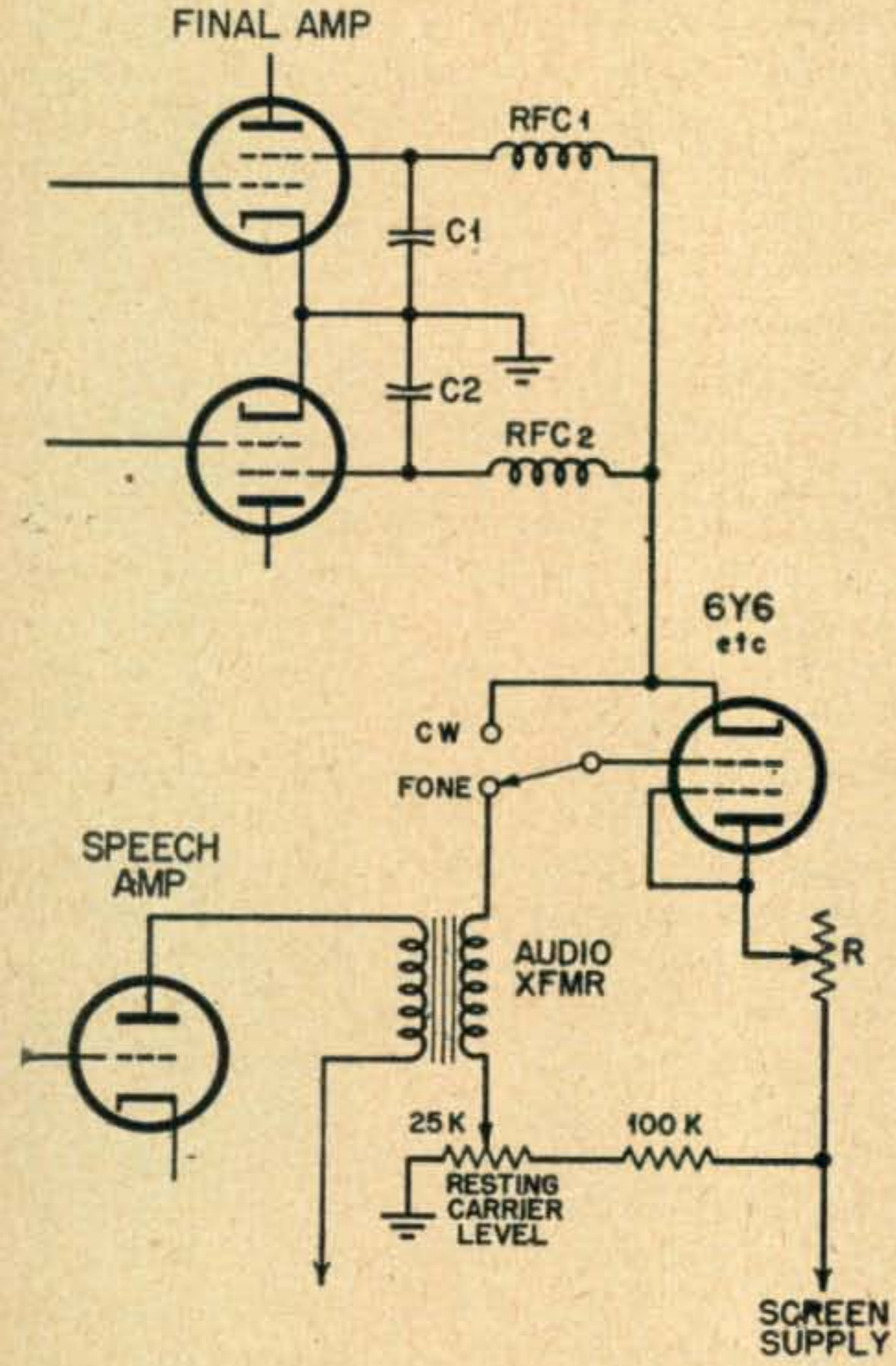
As far as Joe Electron is concerned, the path from the screen to ground, or the negative terminal of the power supply, is just another resistance. Its value depends upon the screen voltage and current and varies from a low value with tubes of high current to a high value in tubes with low screen current.

That clamp tube—looks like a resistance to Joe Electron, only this time it happens to be one that varies at an audio rate with modulation. It is low with no audio applied and increases to some higher value as audio is applied to its grid. This varying resistance is placed in parallel with the resistance formed by the screen to ground path in the tube or tubes of the r-f amplifier. Now since Ohm decided some time ago that when two resistors are placed in parallel the total resistance of the combination will be something less than the value of the smaller one we have the following conditions. With tubes of high internal screen resistance and a large value of series dropping resistance, the variable resistance of the clamp tube, which during the condition of no audio is reasonably low, has a very decided control on the voltage drop across the series resistance, and consequently, the voltage applied to the screen of the tube. BUT, and here is the point of all this discussion, with tubes of low internal screen resistance, the current is higher, the value of the series dropping resistance is lower and the control of the voltage by the clamp tube is less effective. To continue along this line, when the supply voltage is the same as the screen voltage and no dropping resistance is necessary, the clamp tube is not usable. Clamp tube modulation, to be

effective, must have poor voltage regulation, as it actually places a partial short across the screen voltage.

We will grant that the voltage can be lowered anytime by a short circuit, but in the better circles other less drastic methods are considered more practical. Since a tube can be either a very low resistance with zero bias, or an infinite resistance, or an open circuit with high bias, why not turn that clamp tube around and see what happens. That is what we have done in the circuit shown. The tube now becomes an electronic gate, or variable resistance having very high internal resistance when no signal is applied to its grid and becoming lower as a signal voltage is applied. Under these conditions we are varying the screen voltage at an audio rate, not by shorting it to ground but by varying the resistance in series with the source voltage.

In the circuit shown, *RFC1* and *RFC2* have nothing to do with the modulator since they are parts that are normally in the r.f. amplifier. Likewise *C1* and *C2*, the screen bypass condensers, are standard items, but in this case they should be as small as possible to prevent excessive bypassing of the higher audio frequencies. Values of 500 to 1000 $\mu\mu$f. will normally be suitable. Any small receiving type beam tube is suitable for the modulator if it can pass the necessary screen current. The screen supply voltage should be from a source slightly higher than the normal screen voltage to allow for adjustment to its proper value by the resistor *R*. Do not use the high voltage plate supply as this source. During periods of no modulation nearly its full voltage would be applied to the modulator tube, due to the lower current drain and voltage drop across *R*. This does not apply of course to the lower powered rigs where the plate and screen voltages are more nearly equal.



As one has been brought to expect—the necessary components are remarkably few—even to modulate up to several hundred watts. A phone/CW disabling switch has been included. The bleeder network to set the "resting" carrier level may be left out of the circuit by taking the transformer secondary return directly to ground. In this case the 6Y6 has a zero grid-to-ground voltage when no audio signal is applied to the grid.

The audio transformer can be any single-plate to single-grid transformer* Those having a three-to-one turns ratio or even higher will do very nicely. The higher this turns ratio the less the required voltage from the speech amplifier. The audio voltage developed at the grid of the modulator tube should be at least equal to the d.c. screen voltage necessary for the tubes in the final amplifier.

How It Works—Gating Method

The operation of the circuit is very simple. We mentioned earlier that the screen to ground path within the tube looked like a resistance to Little Joe Electron, its value depending upon the characteristics of the tube in use. Looking at the circuit we see that this resistance is now the cathode resistor for the modulator tube. Since its value is fairly high, current flowing through the modulator tube and the screen path to ground will develop bias voltage for the modulator which will nearly cut it off. This means that its internal resistance will be high and the applied voltage at the screen of the r-f amplifier is low. When audio voltage is applied to the grid of the modulator, the positive peaks overcome some of this bias, the resistance of the tube is lowered and the screen voltage is raised. On negative peaks of audio the reverse takes place and the screen voltage becomes lower in value. We are now varying the screen voltage up and down at an audio rate and the carrier packs both negative and positive peaks of audio. This makes for a smoother sounding signal and one that gets into less trouble with the noise limiters on the receiving end.

Since the full screen voltage is applied to the cathode of the modulator, its filament supply should be from an ungrounded source except in cases where the voltage is fairly low, as in portable or mobile equipment. This is to prevent a breakdown of the filament to cathode insulation within the tube. No trouble has been experienced with test voltages in the order of 250 to 300 volts.

[*Continued on page 76*]

*An interesting point may be raised as to why an audio coupling transformer rather than simple resistance coupling is employed. The answer is in the fact that the tube is running class A and the grid swing required is equal to the peak screen voltage desired. This may represent the order of two or three hundred volts even for small tubes. It is not easy to get this kind of swing from a reasonably small driver tube and driver plate supply—hence the step-up transformer.—Tech. Ed.

A Simple Overload Circuit

R. W. JOHNSON, W6MUR

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Everyone of us knows that you don't take out insurance because you want it—you take it because you need it. The same philosophy should apply when you think of safety in your rig. With a simple overload circuit like this one you save not only your property, but maybe your life.—Editor.

With the rising prices of transformers, rectifier tubes, fuses, etc., it pays to have adequate overload protection in the amateur transmitter. A simple flashover in the antenna can cause a more serious flashover in the final tank circuit that may do a lot of damage before the house fuses blow! A neutralizing capacitor flashing over can ruin the grid of an expensive triode in a hurry. Even in low power transmitters, it pays to have good circuit protection. This article describes a simple overload circuit that can be employed to give good circuit protection, with the added feature of push-button control of the transmitter.

The circuit is shown in *Fig. 1.* It can be built from junk box parts, most of which are readily available around almost any ham shack. Two relays are required; *RY1* is an ordinary power relay with a 110-volt, a-c coil, and contacts rated for the load current used. D-c plate relay, *RY2,* is preferably one whose operating current is something less than 20 ma. or so. As is evident from *Fig. 1,* the relay *RY1* closes when the "ON" button is pushed, and remains closed after the button is released, through its own contact, through the "OFF" button (normally closed), and through the back contact of the overload relay *RY2.* Relay *RY2* is de-energized when normal load current is flowing through adjustment of resistor *R1.* When the current rises due to an overload, however, *RY2* operates (depending on the setting of *R1*) and so opens the circuit to *RY1,* shutting off the power until the "ON" button is again closed. Rectifier, *S1,* can be an ordinary selenium rectifier, and *C1* may be any convenient electrolytic rated for the voltage and connected in the right polarity. The value of *R1* depends on the voltage available from the current transformer *T1* and the current required by *RY2.* Resistor *R1,* can be easily calculated once the latter two quantities are known, using Ohm's Law.

Transformer *T1,* a current transformer, can be acquired by modifying an old filament transformer. A transformer rated at 2.5 volts and a current approximately that of the normal load current can be used directly, with the 2.5-volt winding at "P" in *Fig. 1.* A transformer rated for something like 6.3 or 7.5 volts at a lower current will usually require slight revamping before it can be used. While there are ways to calculate the design of current transformers, it is easier and faster in this case to take off the low voltage winding and slip a few turns of No. 10 or No. 12 antenna wire *(or ⅛" copper tubing for heavier loads of 15-20 amperes such as those encountered in California. Ed.)* around the primary winding. The new winding can be easily insulated with a layer or two of "Scotch" black electrical tape slipped over it. The transformer can be tested by connecting it in series with a dummy load, such as light bulbs, a hot plate or electric heater, and measuring the secondary d-c voltage (secondary circuit connected as in *Fig. 1*) and the a-c voltage drop across the primary. It will generally be found that a drop of only a volt or less appears across the primary "P", and that the secondary "S" voltage is more than sufficient to operate a small d-c relay such as *RY2.*

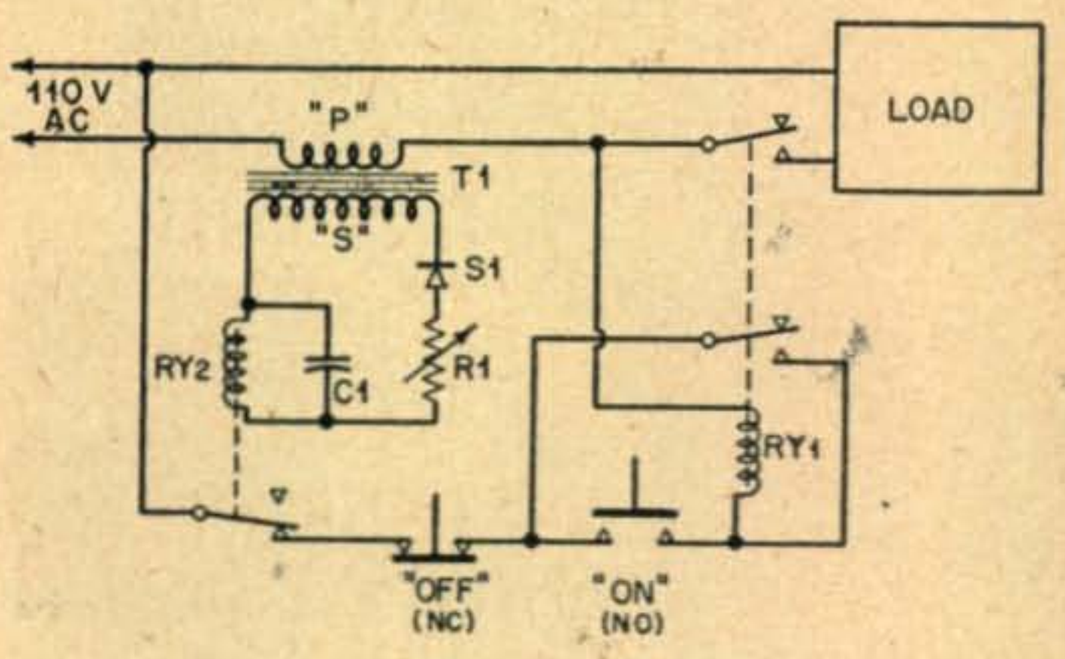


Fig. 1. The overload circuit is relatively simple and requires only a few parts. The values are explained in the text. The circuit operates through a "current" transformer with the settings of the relays adjusted for normal operation. Any overload opens relay RY2 and then relay RY1. The latter remains open until the circuit is "reset".

It is evident from *Fig. 1* that the circuit will chatter if the "ON" button is held down and the overload continues to exist, such as with a dead short in the power supply. This situation is usually not objectionable if one is careful not to hold the "ON" button down for more than an instant. If desired, a lock-out relay can be added to operate

[*Continued on page 77*]

CW Section Results

CQ's 1951 DX Contest

HERB BECKER, W6QD and ANDY ELSNER, W6ENV

After some delay, the final scores for the 1951 World Wide DX Contest have been completely tabulated and after you take a look at them, I am sure you will agree that it all the points were placed end to end, they would make a good size piece of mileage.

We are showing a few photos of stations with leading scores. There are many others, it seems to us, whose pictures should also be in here, but due to limited time, it was impossible to include all of them. For example, W4KFC, with 198,195, was the highest in the U.S.A. No picture being available, we could refer you to the one we ran last year, and with the addition of a few gray hairs, Vic would look about the same. Others in this category are W8JIN, 191,102, and ON4QF with 116,844.

4X4BX with 444,216 points was world's highest. Rig uses 813 with 125 watts input and the receivers were an SX-28 and SX-71. Sam and XYL are shown above just a few minutes before contest started. His comment, "It is THE contest of the year."

Here is a quick rundown on some of the largest scores. Again, I would like to add that where the high scores all attract attention from a competitive viewpoint, let's not overlook the contestants with the smaller scores.

First, take a look at a few of the multiple-operator stations: W7DL 100,240; ZC4XP 250,677; DL1AT 116,365.

Now for the single-operator stations: W6MVQ 128,502; W9LM 116,688; W2WZ 145,888; W1BFT 63,342; OK1HI 122,108; G2AF 123,422; DL1FI 120,801; PAØUN 138,710; CN8EG 176,278; ZS6OW 182,952; 4X4DF 119,194; KH6IJ 272,271; KH6MG 165,132; and KV4AA 111,628 who is eligible for the 1951 certificate. Staff members, as you know, are not eligible for awards, but at that time, Dick had not joined CQ's family. (Too bad, Dick, no certificate for you in the 1952 contest. Hi!!)

Countries in which there has been only one participant will show the score under the All-Band Section only. Certificates will be awarded in accordance with the Contest rules, and those stacions receiving them are shown in bold-face type.

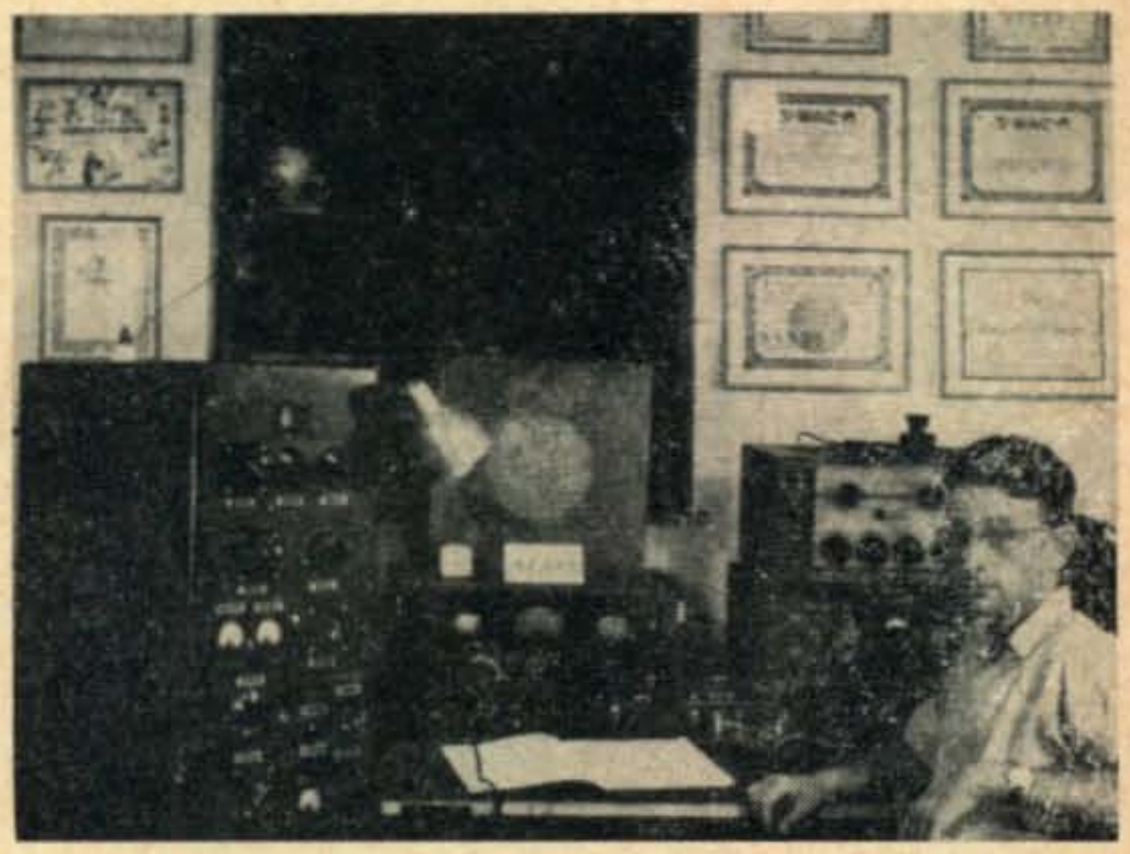
Multiple Operator Stations

	STATION	ZONES	COUNTRIES	SCORE
United States				
All Bands	K2FAL (W2EHQ, W3QOT, W1ZXW)	31	35	8,976
All Bands	K4WAR (W2LDW, W3QXU, W4SIO, W4RWZ, W4RVE, W4OCG, W6MDC, WØBVI, WØBVJ, WØBHT)	59	85	57,304
All Bands	W6AM (W6ADP & W9SRB)	68	96	104,012
	W6VDG (W6EAE)	61	76	50,142
	W6YX (W6TOT, W6OOU, W6JHT, W5OLH)	33	47	27,280
3.5 mc.	W6AM	7	7	504
	W6VDG	6	5	132
7 mc.	W6AM	15	16	4,526
	W6YX	10	9	1,539
	W6VDG	11	11	1,166
14 mc.	W6CYI (W6TZD)	34	72	81,514
	W6FOZ (W6BPD)	31	62	59,985
	W6IBZ (W6HJT)	30	60	43,290
	W6AM	27	52	29,783
	W6YX	23	38	15,860
	W6VDG	24	37	13,603
28 mc.	W6VDG	20	23	3,354
	W6AM	19	21	2,960
All Bands	W7DL (W7RT)	52	88	100,240
All Bands	W9TQL (W9PGW)	24	55	25,517
All Bands	WØAIW (W6ZSF, WØFNO, WØUQV)	57	85	68,586

	STATION	ZONES	COUNTRIES	SCORE
Canada				
All Bands	VE4RO (VE4XO)	71	109	142,200
Cyprus				
All Bands	ZC4XP	42	119	250,677
Denmark				
All Bands	OZ2PA (OZ4KX & OZ3QA)	38	119	92,316
England				
All Bands	G3HSN (G3HEJ)	24	60	21,168
Eritrea				
All Bands	MI3US (MI3ZX, MI3JV, MI3NJ, MI3NA, MI3RR, MI3RH, MI3DW, MI3SL)	35	74	86,437
Finland				
All Bands	OH3OX (OH3QB, OH3QL, OH3QP, OH3RJ, OH3RK)	6	29	2,345
All Bands	DL1AT (DL1AU)	57	128	116,365
	DL3LU (DL3LM)	45	119	83,968
	DL1PK (DL1CS, DL3BK, DL6YX)	44	100	42,912
3.5 mc.	DL1AT	4	22	1,482
	DL3LU	4	24	1,456
	DL1PK	5	17	748
7 mc.	DL1AT	13	36	7,105
	DL3LU	10	32	5,586
	DL1FK	6	22	1,540
14 mc.	DL1AT	28	52	28,800
	DL3LU	25	55	23,760
	DL1FK	21	43	9,536
28 mc.	DL1AT	12	18	2,010
	DL1FK	12	18	1,800
	DL3LU	6	8	420
Hawaii				
All Bands	KH6WO/KH6 (KH6's—ABI, ABO, AGB, AGX, AN, AS, DQ, ZZ, GN, OS, PA, RU, TD, WJ, ADY)	47	53	119,300
Japan				
14 mc.	JA2KW (W3KYF, W6QOY, W5MSH, W2DES, WØAEK, W6EDG, W6ZDF)	24	43	58,290
	JA2DS	20	36	27,048
Marianas Islands				
14 mc.	KG6AAY	25	54	58,776

NORTH AMERICA— Single Operator Stations

	STATION	ZONES	COUNTRIES	SCORE
United States				
All Bands	W1BFT	58	95	63,342
	W1DIT	38	55	20,739
	W1RY	43	56	19,206
	W1ODW	39	48	15,135
	W1QMM	24	33	5,358
	W1JIY	13	19	1,728
	W1ONV	12	14	806
	W1PLJ	5	6	270
3.5 mc.	W1BFT	6	7	156
	W1ODW	5	5	110
7 mc.	W1DIT	20	26	5,750
	W1RY	20	28	5,280
	W1RWP	15	20	3,640
	W1BFT	13	21	2,720
	W1ODW	4	5	108
	W1QMM	5	6	88
	W1ONV	2	2	16
14 mc.	W1DEP	20	44	22,848
	W1BFT	20	44	14,400
	W1HA	20	34	6,372
	W1DIT	18	29	4,606
	W1ODW	17	23	4,360
	W1QMM	18	28	3,956
	W1RY	14	17	1,612
	W1APA	6	14	1,220
	W1ONV	10	12	594
	W1JIY	7	11	504
	W1PLJ	3	4	21
28 mc.	W1BFT	19	23	4,074
	W1ODW	13	15	1,484
	W1RY	9	11	640
	W1JIY	6	8	364
	W1PLJ	2	2	24
All Bands	W2WZ	68	120	145,888
	W2GNQ	44	61	30,975
	W2ATE	39	53	18,308
	W2EQS	38	51	15,130
	W2CJM	32	43	10,275
	W2BXZ	33	39	7,992
	W2DJT	32	32	7,552
	W2BJH	23	35	7,540
	W2WC	25	29	6,372
	W2BO	18	28	5,336
	W2CWK	20	26	3,588
	W2ZQW	13	16	2,340
	W2NHH	3	3	72



4X4RE scorod 441,196 points this year. Receivers: SX-28 and HQ-129X. Power input about 250 watts. Egon says, "Most interesting contest of them all."

	STATION	ZONES	COUNTRIES	SCORE
3.5 mc.	W2WZ	8	12	580
	W2WC	8	8	240
	W2EQS	6	6	168
	W2CWK	5	6	55
7 mc.	W2WZ	17	28	5,760
	W2WC	17	21	3,914
	W2OTC	17	22	3,627
	W2EQS	12	14	1,898
	W2GNQ	14	15	1,740
	W2ATE	12	15	1,269
	W2BXZ	12	14	1,118
	W2BO	9	12	1,029
	W2WWP	7	7	546
	W2DJT	8	6	196
	W2CWK	3	3	54
	W2BJH	2	3	50
	W2CJM	4	4	40
	W2NHH	2	2	36
14 mc.	W2WZ	26	59	46,155
	W2TXB	19	41	15,189
	W2GNQ	16	31	8,554
	W2AZS	20	28	7,676
	W2MHE	17	30	5,358
	W2ATE	16	25	4,141
	W2BJH	15	25	4,000
	W2CJM	14	24	3,420
	W2QKJ	8	23	2,449
	W2ZQW	13	16	2,320
	W2HMJ	12	19	2,108
	W2CWK	12	17	1,856
	W2EQS	11	20	1,798
	W2BO	9	16	1,675
	W2JB	12	16	1,372
	W2CDP	11	18	892
	W2DJT	8	7	330
	W2BXZ	6	7	221
	W2GT	4	5	162
28 mc.	W2WZ	17	21	2,888
	W2DJT	16	19	2,870
	W2BXZ	15	18	1,683
	W2GNQ	13	15	1,512
	W2ATE	11	13	1,224

	STATION	ZONES	COUNTRIES	SCORE
	W2CJM	14	15	1,218
	W2EQS	9	11	500
	W2BJH	6	7	260
	W2NHH	1	1	6
	W2KZE	1	1	6
All Bands	**W3MSK**	**70**	**110**	**96,292**
	W3PDX	**57**	**86**	**50,479**
	W3ALB	**39**	**69**	**36,180**
	W3AOO	38	66	28,184
	W3ZQ	33	38	12,709
	W3GHD	27	40	10,854
	W3JO	26	31	5,301
	W3FQB	23	30	4,611
	W3EPR	15	17	2,112
3.5 mc.	**W3MSK**	**9**	**14**	**598**
	W3PDX	**8**	**7**	**285**
	W3ALB	**2**	**4**	**48**
	W3EPR	1	1	2
7 mc.	**W3MSK**	**20**	**27**	**6,580**
	W3AOO	**13**	**14**	**1,782**
	W3JO	**12**	**14**	**1,274**
	W3ALB	8	12	940
	W3PDX	9	9	450
	W3EPR	5	4	144
	W3OLI	4	3	84
	W3GHD	2	2	16

W8WZ scored 147,084 points. Doc runs a kw. into a pair of 250THs. Receiver is a 75A2. Antenna for 10-20 are 3 element beams, on 40 he uses 3 Bobtails, and on 80 a ground plane.

14 mc.	**W3JTC**	**28**	**67**	**62,700**
	W3GHD	2	2	16
	W3PDX	**24**	**49**	**17,301**
	W3AOO	25	52	15,785
	W3MSK	23	47	13,550
	W3MFW	22	31	11,124
	W3ALB	23	56	10,619
	W3LXE	18	29	9,823
	W3ADZ	18	30	6,384
	W3NCF	22	30	6,032
	W3GHD	15	23	2,888
	W3FQB	15	21	2,448
	W3ZQ	12	16	1,652
	W3JO	14	17	1,364
	W3LVJ	11	14	1,100
	W3EPR	4	5	117
28 mc.	**W3ZQ**	**21**	**22**	**5,160**
	W3MSK	**18**	**22**	**3,800**
	W3PDX	**16**	**21**	**2,664**
	W3GHD	10	15	2,050
	W3EPR	5	7	432
	W3FQB	8	9	323
	W3ALB	6	7	247
All Bands	**W4KFC**	**76**	**143**	**198,195**
	W4ESK	**70**	**121**	**175,338**
	W4KE	**46**	**70**	**37,468**
	W4TO	33	65	37,338
	W4DCE	31	47	9,750
	W4IMI	31	31	6,076
	W4SAT	25	29	4,536
3.5 mc.	**W4KFC**	**14**	**21**	**2,135**
	W4ESK	**8**	**9**	**255**
	W4KE	**5**	**6**	**99**

	STATION	ZONES	COUNTRIES	SCORE
7 mc.	**W4KFC**	**19**	**34**	**11,395**
	W4ESK	**18**	**25**	**4,214**
	W4IMI	**13**	**10**	**828**
	W4KE	9	11	800
	W4TO	8	10	540
	W4SAT	8	9	476
	W4DCE	7	7	280
14 mc.	**W4ESK**	**24**	**59**	**55,029**
	W4KFC	**24**	**63**	**43,265**
	W4TO	**25**	**55**	**28,080**
	W4AZK	26	52	17,706
	W4OM	23	47	17,150
	W4KE	20	40	13,680
	W4PHJ	20	36	10,640
	W4LVV	22	35	7,695
	W4DCE	24	40	6,720
	W4IZR	19	24	4,257
	W4IMI	18	21	2,418
	W4SAT	17	20	2,072
	W4EEO	12	15	1,242
	W4NEP	10	11	693
28 mc.	**W4ESK**	**20**	**28**	**6,816**
	W4KFC	**19**	**25**	**5,280**
	W4KE	**12**	**13**	**1,150**
All Bands	**W5ZD**	**58**	**82**	**56,712**
	W5KC	**48**	**75**	**39,360**
	W5AWT	**24**	**29**	**3,657**
3.5 mc.	**W5ZD**	**2**	**6**	**16**
7 mc.	**W5ZD**	**16**	**15**	**2,418**
	W5KC	**12**	**16**	**2,128**
	W5FWA	**11**	**11**	**704**
	W5AWT	4	4	64
14 mc.	**W5ZD**	**25**	**43**	**18,156**
	W5DQV	**23**	**42**	**15,145**
	W5KC	**25**	**48**	**14,454**
	W5AWT	20	25	2,745
	W5JPC	10	10	403
23 mc.	**W5ZD**	**15**	**18**	**2,013**
	W5KC	**11**	**11**	**1,012**
All Bands	**W6MVQ**	**78**	**120**	**128,502**
	W6DFY	**69**	**102**	**104,652**
	W6FSJ	**38**	**70**	**54,216**
	W6IBD	**48**	**57**	**36,015**
	W6ATO	51	55	34,450
	W6BJU	39	48	23,296
	W6QDE	32	40	18,000
	W6HCH	35	37	17,856
	W6BYH	31	30	8,662
	W6GEB	29	28	6,384
	W6EJA	13	17	2,670
	W6GWQ	21	21	2,646
	W6OKK	10	9	1,073
3.5 mc.	**W6MHB**	**10**	**11**	**1,071**
	W6MVQ	**10**	**10**	**820**
	W6IBD	**8**	**8**	**624**
	W6DFY	6	5	308
	W6ATO	4	5	117
	W6BYH	5	4	45
	W6HOH	3	3	42
	W6QDE	2	2	40
7 mc.	**W6IBD**	**23**	**29**	**11,336**
	W6DFY	**16**	**20**	**5,004**
	W6MVQ	**17**	**20**	**4,699**
	W6HOH	13	16	3,219
	W6ATO	11	11	1,914
	W6FSJ	11	16	1,080
	W6BJU	8	8	672
	W6EJA	5	7	300
	W6BYH	5	5	200
	W6QDE	3	3	144
	W6OKK	5	5	90
	W6GEB	4	4	88
	W6GTC	4	4	72
14 mc.	**W6BAX**	**32**	**71**	**76,117**
	W6ENV	**32**	**63**	**42,845**
	W6MVQ	**31**	**68**	**39,105**
	W6FSJ	27	54	34,880
	W6SRF	30	59	34,087
	W6DFY	29	58	31,929
	W6PYH	24	32	20,048
	W6ATO	24	27	8,721
	W6BJU	19	29	8,688
	W6QDF	19	26	6,785
	W6HOH	19	18	4,810
	W6ALQ	17	18	3,815
	W6BYH	14	15	2,881
	W6MUF	10	19	2,697
	W6GEB	14	14	2,128
	W6RLQ	14	16	1,260
	W6TXL	14	15	986

	STATION	ZONES	COUNTRIES	SCORE
	W6EJA	7	9	976
	W6DBP	12	12	888
	W6GWQ	10	9	532
	W6OKK	10	9	532
28 mc.	**W6WJX**	**20**	**24**	**4,400**
	W6MVQ	**20**	**22**	**3,612**
	W6IBD	**17**	**20**	**3,172**
	W6DFY	18	19	2,886
	W6ATO	12	12	1,296
	W6BJU	12	11	1,035
	W6GWQ	11	12	805
	W6GEB	11	10	525
	W6RYH	7	6	234
	W6QDE	8	9	43
	W6EJA	1	1	6
All Bands	**W7AJS**	**34**	**47**	**26,001**
	W7PQE	**45**	**46**	**22,204**
	W7NLI	**32**	**35**	**13,534**
	W7FYN	28	40	13,532
	W7AHX	22	22	6,468
	W7HXG	21	22	5,805
	W7LNG	16	16	2,016
3.5 mc.	**W7PQE**	**5**	**4**	**153**
	W7NLI	**4**	**4**	**112**
7 mc.	**W7FYN**	**11**	**14**	**2,184**
	W7PQE	**10**	**8**	**990**
	W7AJS	**9**	**7**	**832**
	W7NLI	6	7	442
	W7LNG	6	6	300
	W7HXG	7	6	273
14 mc.	**W7PGX**	**29**	**56**	**33,405**
	W7AJS	**25**	**40**	**17,485**
	W7PQE	**18**	**23**	**5,125**
	W7NLI	14	16	3,750
	W7FYN	14	22	3,600
	W7AHX	16	15	3,224
	W7HXG	9	11	2,120
	W7HAD	7	5	372
	W7LNG	5	5	250
23 mc.	**W7PQE**	**12**	**11**	**1,081**
	W7AHX	**6**	**7**	**559**
	W7NLI	**8**	**8**	**464**
	W7HXG	5	5	80
	W7FYN	4	4	64
	W7LNG	5	5	60
All Bands	**W8JIN**	**76**	**138**	**191,102**
	W8WZ	**72**	**132**	**147,084**
	W8DAW	**57**	**81**	**61,548**
	W8HFE	24	57	20,655
	W8ZCK	27	35	10,106
	W8FJR	24	97	5,141
	W8DAE	24	25	3,479
	W8PM	14	16	990
	W8FRD	6	5	44
3.5 mc.	**W8WZ**	**10**	**12**	**704**
	W8JIN	**9**	**9**	**486**
	W8DAW	**5**	**4**	**45**
	W8DAE	3	2	25
	W8FRD	3	2	5
7 mc.	**W8WZ**	**21**	**34**	**8,635**
	W8JIN	**18**	**29**	**8,037**
	W8ZCK	**16**	**18**	**4,114**
	W8DAW	10	9	1,197
	W8DAE	6	5	154
	W8PM	4	5	99
	W8FRD	3	3	27
14 mc.	**W8JIN**	**30**	**75**	**62,265**
	W8WZ	**24**	**61**	**34,170**
	W8HFE	**23**	**56**	**20,145**
	W8DAW	23	43	17,952
	W8PUD	25	37	9,610
	W8AL	12	15	1,420
	W8ZCK	10	18	1,014
	W8DAE	8	10	666
	W8FJR	8	10	378
	W8KC	7	8	330
	W8PM	5	5	70
23 mc.	**W8CCJ**	**19**	**28**	**6,157**
	W8WZ	**17**	**25**	**5,460**
	W8DAW	**19**	**25**	**4,664**
	W8JIN	19	25	4,620
	W8FJR	14	17	2,356
	W8DAE	7	8	225
	W8ZCK	1	1	6
All Bands	**W9LM**	**75**	**112**	**116,688**
	W9RQM	**67**	**100**	**86,673**
	W9HUZ	**59**	**72**	**36,156**
	W9TB	40	60	35,000
	W9NII	55	62	29,835
	W9EXY	38	57	28,505
	W9KXK	22	27	5,047
	W9FKC	18	25	3,225
	W9UC	15	14	1,769
	W9GWK	14	16	1,650
3.5 mc.	**W9LM**	**9**	**9**	**414**
	W9RQM	**7**	**6**	**299**
	W9HUZ	**6**	**5**	**99**
	W9NII	5	4	45
7 mc.	**W9LM**	**19**	**24**	**6,450**
	W9RQM	**15**	**20**	**4,550**
	W9HUZ	**12**	**14**	**2,314**
	W9NII	12	13	1,775
	W9GWK	3	3	72
	W9FKC	3	3	42
14 mc.	**W9LM**	**26**	**51**	**24,024**
	W9FID	**28**	**51**	**23,700**
	W9RQM	**25**	**45**	**15,890**
	W9TB	22	40	14,656
	W9EXY	24	35	12,803
	W9GIL	20	29	7,350
	W9HUZ	24	35	6,490
	W9NII	18	23	3,690
	W9FKC	15	22	2,516
	W9GWK	11	13	1,032
	W9KXK	5	6	132

VE4RO ran up 142,200 points. George has a final amp. for each band: 10 m. pp 250THs, 11 m. 250TLs, 20 m. pp 450THs, 40 m. pp 270As, 80 m. 833A. Antennas: 10-11 m; two sterbas, three Vs, 20 m; two lazy Hs, three Vs, 40 m; two zepps, full wave; two half-waves for 80 m. Receiver: HRO-7.

28 mc.	**W9RQM**	**20**	**29**	**6,811***
	W9LM	**21**	**28**	**6,811***
	W9QM	**18**	**24**	**4,494**
	W9TB	**18**	**20**	**4,480**
	W9NII	20	22	3,738
	W9KXK	17	21	3,458
	W9EXY	14	21	2,952
	W9HUZ	17	18	2,380
	W9UC	13	13	1,586
	W9LWD	6	7	221

* Tie for first place.

All Bands	**WØTKX**	**47**	**68**	**37,375**
	WØDAE	**43**	**47**	**14,490**
	WØARH	**19**	**20**	**2,379**
	WØGUV *	16	19	1,575
	WØJZX	13	12	500
	WØDBN	11	11	462
3.5 mc.	**WØNWX**	**10**	**10**	**1,220**
	WØDAE	**6**	**6**	**132**
	WØTKX	**5**	**4**	**45**
	WØDBN	2	2	4
7 mc.	**WØDAE**	**17**	**20**	**3,404**
	WØTKX	**14**	**17**	**2,480**
	WØJZX	**7**	**7**	**168**
	WØDBN	2	2	4
14 mc.	**WØTKX**	**28**	**47**	**18,000**
	WØERI	**23**	**33**	**7,616**
	WØDAE	**11**	**13**	**888**

	STATION	ZONES	COUNTRIES	SCORE
	WØGUV	6	6	713
	WØDBN	7	7	304
	WØJZX	6	5	88
	WØARH	2	3	9
28 mc.	WØARH	17	17	1,972
	WØDAE	9	8	357
	WØIUB	7	7	282
	WØGUV	6	6	168
Canada				
All Bands	VE1IM	17	23	3,440
	VE1EK	15	25	3,080
	VE1CU	14	22	2,870
3.5 mc.	VE1IM	2	4	30
7 mc.	VE1IM	3	3	90
	VE1EK	3	3	24
	VE1CU	3	3	18
14 mc.	VE1EK	12	22	2,484
	VE1CU	12	15	1,512
	VE1IM	8	13	1,113
	VE1DB	7	8	615
28 mc.	VE1IM	4	3	91
	VE1CU	4	4	88
All Bands	VE2BV	22	29	5,661

OQ5RA ran up 124,752 points. This was Andy's first contest since becoming a ham May 2, 1948. Rig uses a pair of 807s, 75 watts. Receiver is a BC-342.

14 mc.	VE2BV	13	19	2,528
	VE2WA	15	16	1,891
	VE2CK	14	19	1,518
28 mc.	VE2BV	9	10	608
All Bands	VE3CCK	37	66	39,655
	VE3ZW	26	44	14,280
	VE3DT	29	37	8,448
	VE3BBR	27	32	8,076
	VE3AGX	28	31	7,139
	VE3HB	19	24	4,343
	VE3LJ	17	17	2,414
3.5 mc.	VE3AGX	7	7	490
	VE3BBR	3	2	55
7 mc.	VE3CCK	13	15	1,820
	VE3BBR	10	12	1,298
	VE3AGX	6	6	264
	VE3DT	6	6	204
	VE3LJ	5	3	56
	VE3ZW	1	1	2
14 mc.	VE3CCK	24	51	24,000
	VE3ZW	25	43	13,804
	VE3ADM	16	18	5,202
	VE3AGX	15	18	2,112
	VE3LJ	12	14	1,664
	VE3DT	9	16	1,325
	VE3BBR	8	13	1,176
	VE3HB	4	4	64
28 mc.	VE3HB	15	20	3,255
	VE3DT	14	15	1,682
	VE3BBR	6	5	121
All Band	VE4TJ	28	34	8,246

	STATION	ZONES	COUNTRIES	SCORE
All Bands	VE5QZ	28	33	9,760
	VE5EH	18	8	1,800
7 mc.	VE5QZ	4	4	192
14 mc.	VE5QZ	16	21	3,885
	VE5EH	5	4	612
28 mc.	VE5QZ	8	8	496
	VE5EH	5	4	288
14 mc.	VE6MN	11	13	1,872
All Bands	VE7VC	32	48	24,800
	VE7EH	28	27	14,630
	VE7KC	23	33	7,168
3.5 mc.	VE7EH	5	4	225
7 mc.	VE7EH	9	8	1 734
	VE7VC	9	7	528
	VE7KC	3	3	72
14 mc.	VE7VO	23	36	19,588
	VE7VC	23	41	17,728
	VE7KC	10	19	2,378
	VE7EH	9	11	2,140
28 mc.	VE7YR	11	11	1,078
	VE7KC	10	11	714
	VE7EH	5	4	288
All Bands	VE8RY	9	10	1,615
14 mc.	VO6A	8	21	3,190
Alaska				
All Bands	KL7UM	29	42	26,554
	KL7NXI	17	14	4,898
	KL7MF	16	17	3,861
3.5 mc.	KL7MF	1	1	2
7 mc.	KL7UM	10	12	2,882
	KL7RZ	6	6	852
	KL7NXI	5	4	270
	KL7MF	5	6	187
14 mc.	KL7UM	12	23	7,525
	KL7KQ	11	14	4,600
	KL7NXI	10	8	2,622
	KL7MF	6	7	1,053
	KL7PI	5	5	530
28 mc.	KL7UM	7	7	392
	KL7MF	4	3	126
	KL7NXI	2	2	36
Bermuda				
14 mc.	VP9OO	18	25	12,126
Canal Zone				
All Bands	KZ5RG	14	15	4,321
	KZ5CS	19	16	2,485
3.5 mc.	KZ5CS	4	3	217
7 mc.	KZ5RG	6	7	858
	KZ5CS	7	5	252
14 mc.	KZ5CW	8	10	2,286
	KZ5RG	8	8	1,360
	KZ5CS	8	8	304
Cuba				
14 mc.	CO6NF	17	22	11,388
	CO2PY	8	7	1,920
28 mc.	CO2BC	7	7	924
Greenland				
14 mc.	OX3GD	15	27	17,220
	OX3GG	9	12	3,066
Honduras				
All Bands	HR1DF	15	18	6,006
Mexico				
All Bands	XE1SA	29	25	14,958
Puerto Rico				
All Bands	KP4KD	53	81	43,550
14 mc.	KP4JE	15	30	11,746
	KP4KD	20	38	7,656
Swan Island				
All Bands	KS4AQ	23	23	8,694
Turks & Caicos Islands				
All Bands	VP5BF	17	12	6,989
Virgin Islands				
All Bands	KV4AA	50	68	111,628

SOUTH AMERICA—

	STATION	ZONES	COUNTRIES	SCORE
Argentina				
All Bands	LU9EV	39	51	80,010
	LU6AX	38	46	68,544
	LU1EP	32	32	56,384
3.5 mc.	LU1EP	4	2	198
7 mc.	LU1EP	8	8	1,568
	LU6AX	6	5	1,133
	LU9EV	5	4	171
14 mc.	LU6AX	28	38	42,306
	LU9EV	24	30	25,434
	LU1EP	13	15	14,364
28 mc.	LU9EV	10	17	10,773
	LU1EP	7	7	3,318
	LU6AX	4	3	504
Bolivia				
All Bands	CP1AQ	18	18	4,608
Brazil				
All Bands	PY1ADA	43	76	89,250
	PY2CK	31	51	33,292
	PY6DU	22	34	20,440
	PY2AFS	21	22	17,372
	PY1AXP	17	14	5,239
7 mc.	PY2AFS	2	2	12
	PY1ADA	2	2	4
14 mc.	PY1ADA	29	57	59,168
	PY6DU	17	29	12,098
	PY1ARZ	16	25	10,004
	PY2AFS	13	15	8,512
	PY1AXP	12	9	3,339
	PY2CK	15	18	3,102
28 mc.	PY2CK	16	33	15,288
	PY1ADA	12	17	1,769
	PY2AFS	6	5	1,067
	PY6DU	5	5	1,020
	PY1AXP	5	10	100
Chile				
All Bands	CE6AB	31	36	38,994
14 mc.	CE6AB	23	29	16,640
	CE3CK	15	19	12,274
28 mc.	CE6AB	8	7	3,930
Columbia				
All Bands	HK5DH	11	11	4,554
Ecuador				
All Bands	HC2KB	22	24	28,382
Falkland Islands				
All Bands	VP8AI	26	29	28,490
Peru				
14 mc.	OA5A	16	17	14,388
South Shetland Is.				
All Bands	VP8AO	12	8	8,040
Uruguay				
All Bands	CX1FB	38	48	60,458
7 mc.	CX1FB	4	3	175
14 mc.	CX6AD	17	21	19,266
	CX1FB	17	21	13,110
28 mc.	CX1FB	17	24	13,653
Venezuela				
All Bands	YV5BZ	30	43	54,093
14 mc.	YV5AE	23	40	47,250
	YV5BZ	23	37	36,600
28 mc.	YV5BZ	7	6	1,703

EUROPE—

Single Operator Stations

	STATION	ZONES	COUNTRIES	SCORE
Austria				
All Bands	OE1LF	8	19	2,847
14 mc.	OE1ZZ	27	57	24,108
	OE3CC	10	28	3,534
	OE1KF	8	20	1,596
	OE1YS	5	16	1,449
	OE1YZ	4	16	1,300
	OE1LF	11	14	1,225
28 mc.	OE1LF	6	8	336
Azores Islands				
All Bands	CT2BO	8	14	968
Belgium				
All Bands	ON4QF	51	131	116,844
	ON4GU	30	86	38,048
	ON4WZ	21	60	15,147
3.5 mc.	ON4GU	4	25	2,552
	ON4QF	6	25	2,170
7 mc.	ON4GU	9	27	4,320
	ON4QF	9	29	4,028
	ON4WZ	5	21	1,404
14 mc.	ON4QF	27	58	33,660
	ON4GU	17	34	11,220
	ON4WZ	10	28	3,648
28 mc.	ON4QF	9	19	1,960
	ON4WZ	6	11	629
Channel Islands				
All Bands	GC4LI	23	62	28,645
Czechoslovakia				
All Bands	OK1HI	55	141	122,108
	OK1XQ	31	90	38,841

OZ7BG made 114,896 points this year. Erik uses a pair of 813s in the final. Receiver is a German made HRO-type, with selectoject. Erik wants two contests per year.

	OK2BDV	32	83	31,050
	OK1AW	38	80	25,134
	OK3SP	22	61	15,770
	OK1CX	25	64	13,884
	OK1KO	18	59	11,242
	OK1VB	17	58	10,200
	OK1UY	17	57	9,176
	OK1AEH	11	37	6,860
	OK1SV	24	45	6,693
	OK1AKA	16	40	5,712
	OK2MA	12	30	2,604
	OK1ZM	11	30	2,542
	OK1AHA	8	25	2,112
3.5 mc.	OK1NC	4	29	4,620
	OK1HI	5	30	3,290
	OK1AKA	4	22	1,222
	OK1XQ	3	17	1,000
	OK2BDV	4	17	903
	OK1AW	5	18	736
	OK1CX	4	16	620
	OK1UY	3	14	425
	OK1KO	3	12	360
	OK1VB	3	8	132
	OK2SG	2	3	10
7 mc.	OK1HI	17	46	11,970
	OK1AEH	7	28	4,025
	OK2BDV	8	27	3,185
	OK1XQ	6	24	1,500
	OK1AW	8	21	1,470
	OK1VB	4	24	1,344
	OK1KO	6	22	1,316
	OK3OTR	6	24	1,260
	OK1CX	5	19	888
	OK1UY	4	18	616

	STATION	ZONES	COUNTRIES	SCORE
	OK1ZM	2	14	368
	OK1AHA	3	13	354
	OK2MA	2	6	64
	OK1ZW	3	6	27
	OK1OPZ	3	3	12
14 mc.	**OK1HI**	**25**	**55**	**25,280**
	OK1XQ	**22**	**49**	**15,336**
	OK1SK	**16**	**39**	**6,160**
	OK1AW	15	29	4,180
	OK2BDV	12	28	4,120
	OK1CX	12	25	2,923
	OK1KO	9	25	2,550
	OK1UY	10	25	2,485
	OK1VB	7	23	2,010
	OK2MA	7	21	1,344
	OK1ZM	9	16	975
	OK1AKA	10	16	784
	OK1AHA	5	12	714
	OK1AEH	4	9	390
28 mc.	**OK1AW**	**10**	**12**	**770**
	OK2BDV	**8**	**11**	**627**
	OK1HI	**8**	**10**	**594**
	OK1CX	4	4	72
	OK1VB	3	3	54
	OK2MA	3	3	36
	OK1AKA	2	2	24

ZE3JP made 103,545 points. Rigs use an 813 and 257B as finals. Receiver is a prewar HRO. Dipoles are used for each band plus a 3-element beam on 10 meters.

Denmark

	STATION	ZONES	COUNTRIES	SCORE
All Bands	**OZ7BG**	**45**	**127**	**114,896**
	OZ1W	**40**	**119**	**53,424**
	OZ7G	**20**	**69**	**16,910**
	OZ3PO	14	35	5,145
	OZ2N	9	26	2,800
	OZ5TZ	12	17	986
	OZ8A	6	13	608
	OZ5MJ	2	5	77
3.5 mc.	**OZ1W**	**5**	**26**	**2,480**
	OZ7BG	**3**	**23**	**2,210**
	OZ7G	**3**	**18**	**861**
	OZ2N	3	14	442
7 mc.	**OZ7BG**	**10**	**32**	**6,300**
	OZ1W	**5**	**26**	**1,922**
	OZ3PO	**5**	**20**	**1,125**
	OZ7G	4	18	616
	OZ8A	2	7	63
	OZ5TZ	2	6	56
	OZ5MJ	1	3	27
14 mc.	**OZ7BG**	**25**	**63**	**35,728**
	OZ1W	**24**	**59**	**14,608**
	OZ3LF	**20**	**29**	**7,546**
	OZ7G	13	33	5,566
	OZ2N	9	15	1,296
	OZ3PO	5	20	1,125
	OZ5TZ	10	11	567
	OZ8A	6	9	375
	OZ7ML	6	7	351
	OZ5MJ	1	2	6
28 mc.	**OZ7BG**	**7**	**9**	**432**
	OZ1W	**6**	**8**	**252**

	STATION	ZONES	COUNTRIES	SCORE
Eire				
All Bands	**EI9J**	**17**	**58**	**15,975**
	EI5F	**17**	**21**	**2,242**
3.5 mc.	**EI9J**	**4**	**25**	**2,059**
7 mc.	**EI9J**	**5**	**23**	**1,428**
	EI5F	**7**	**5**	**168**
14 mc.	**EI9J**	**8**	**10**	**1,458**
	EI5F	**4**	**7**	**187**
28 mc.	**EI5F**	**6**	**9**	**450**
Eire, Northern				
All Bands	**GI3FJX**	**21**	**74**	**16,150**
3.5 mc.	**GI3FJX**	**2**	**18**	**740**
7 mc.	**GI3FJX**	**6**	**26**	**2,784**
14 mc.	**GI4NU**	**12**	**32**	**7,348**
	GI3FJX	**13**	**30**	**3,913**
England				
All Bands	**G2AJ**	**61**	**141**	**123,422**
	G8KP	**28**	**111**	**53,793**
	G2VD	**35**	**101**	**47,736**
	G3FXB	34	95	42,699
	G5JU	34	71	33,810
	G2MI	22	59	15,390
	G3DOG	25	52	15,246
	G2AJB	17	57	12,284
	G8QZ	22	49	8,662
	G2BW	14	30	3,080
	G3AIM	14	23	2,553
3.5 mc.	**G5MP.**	**6**	**30**	**5,256**
	G2VD	**4**	**24**	**1,708**
	G8KP	**4**	**28**	**2,496**
	G3FXB	4	25	1,653
	G2AJ	8	23	1,457
	G5JU	4	21	1,325
	G2MI	3	19	880
	G2AJB	3	14	442
7 mc.	**G4CP**	**13**	**40**	**12,826**
	G2AJ	**11**	**32**	**4,171**
	G2VD	**7**	**29**	**4,032**
	G5JU	11	23	3,303
	G3FXB	6	24	2,740
	G3GEN	4	26	2,070
	G8KP	5	23	1,596
	G2AJB	4	17	1,302
	G2MI	7	20	1,080
	G2BW	4	16	620
	G4XC	3	10	450
	G3DOG	3	4	72
14 mc.	**G2LB**	**29**	**62**	**47,229**
	G2BOZ	**25**	**64**	**41,830**
	G2AJ	**29**	**64**	**35,619**
	G8KP	19	60	19,908
	G3DOG	22	48	13,440
	G3FXB	15	33	6,624
	G2VD	15	33	5,904
	G5JU	12	20	4,832
	G2MI	12	20	3,520
	G2AJB	8	24	2,304
	G3EEM	8	8	384
28 mc.	**G2AJ**	**13**	**22**	**2,940**
	G2VD	**9**	**15**	**1,320**
	G3FXB	**9**	**13**	**1,056**
	G2BW	10	14	936
	G5JU	7	7	294
	G3WP	3	3	30
	G2AJB	2	2	24
Faeroes Island				
14 mc.	**OY3IGO**	**3**	**11**	**308**
Finland				
All Bands	**OH3QU**	**19**	**58**	**17,479**
	OH3NY	**20**	**58**	**17,394**
	OH1NK	**15**	**59**	**13,702**
	OH5OE	13	49	9,548
	OH5NF	18	48	7,854
	OH2MC	14	50	6,912
	OH6NR	11	17	3,528
3.5 mc.	**OH3NY**	**4**	**18**	**1,738**
	OH5NF	**3**	**13**	**480**
	OH5OE	**3**	**9**	**324**
	OH2MC	3	10	234
	OH1NK	2	5	56
7 mc.	**OH1NK**	**5**	**27**	**2,944**
	OH3QU	**6**	**22**	**2,212**

	STATION	ZONES	COUNTRIES	SCORE
	OH5OE	**3**	**20**	**1,219**
	OH3NY	5	14	950
	OH2MC	3	16	437
	OH5NF	5	8	180
	OH5OV	2	10	156
	OH6NR	1	2	6
14 mc.	**OH3QU**	**13**	**36**	**7,252**
	OH3NY	**11**	**26**	**3,478**
	OH6NR	**10**	**15**	**3,100**
	OH1NK	8	27	3,080
	OH5NF	10	27	2,812
	OH2MC	8	24	2,144
	OH5OE	7	20	1,998
	OH3RA	8	22	1,920
	OH2WI	5	21	1,378
France				
All Bands	**F7AR**	**61**	**161**	**194,028**
	F9BB	**25**	**62**	**14,007**
	F8LD	**22**	**52**	**11,744**
	F9ND	17	53	7,560
	F8OP	8	32	3,920
	F3TT	4	8	132
3.5 mc.	**F7AR**	**5**	**28**	**3,201**
	F9ND	**3**	**10**	**247**
7 mc.	**F7AR**	**13**	**43**	**9,464**
	F9BB	**5**	**26**	**2,232**
	F8LD	**6**	**18**	**960**
	F8OP	3	17	820
	F3IA	4	17	693
	F9ND	4	16	500
	F3TT	1	1	2
14 mc.	**F7AR**	**33**	**76**	**61,694**
	F8LD	**16**	**34**	**5,800**
	F9OQ	**6**	**22**	**5,796**
	F9BB	11	24	2,067
	F9ND	10	27	1,728
	F8OP	5	15	1,140
	F9RS	9	18	1,124
	F3IA	6	11	408
	F3TT	3	7	132
28 mc.	**F7AR**	**10**	**14**	**1,008**
	F9BB	**9**	**12**	**756**
Germany				
All Bands	**DL1FI**	**60**	**141**	**120,801**
	DL7AA	**49**	**132**	**98,645**
	DL1AV	**36**	**99**	**53,190**
	DL1IB	33	87	51,984
	DL3HW	31	83	43,092
	DL7DF	36	101	39,319
	DL7AD	32	88	39,120
	DL1FE	24	80	27,352
	DL1BR	29	75	25,064
	DL1YA	23	62	10,795
	DL1LD	15	40	5,885
	DL3HN	17	40	5,415
	DL1JY	13	29	4,158
	DL6DF	13	23	2,088
	DL3VW	11	27	2,052
	DL6GB	11	13	975
3.5 mc.	**DL1BI**	**7**	**30**	**2,960**
	DL1BR	**4**	**23**	**1,404**
	DL7AA	**5**	**24**	**1,160**
	DL7DF	4	22	962
	DL1AV	3	18	819
	DL7AD	4	18	550
	DL3HN	4	13	408
	DL1YA	4	16	400
	DL1JY	3	12	315
7 mc.	**DL1FI**	**14**	**35**	**7,301**
	DL1AV	**9**	**28**	**5,328**
	DL7AA	**10**	**37**	**4,794**
	DL4EA	8	31	4,251
	DL8HW	5	29	3,832
	DL7DF	7	29	2,340
	DL1IB	4	22	2,168
	DL1BR	8	23	1,891

	STATION	ZONES	COUNTRIES	SCORE
	DL6DE	3	11	957
	DL1YA	6	18	792
	DL1LD	4	18	616
	DL7AD	4	14	480
	DL3VW	4	12	320
	DL6GB	4	5	117
	DL6DF	1	2	6
	DL3HN	1	1	2
14 mc.	**DL1FI**	**29**	**61**	**29,250**
	DL1IB	**23**	**53**	**26,048**
	DL7AA	**24**	**50**	**24,050**
	DL3HW	26	54	22,400
	DL7AD	24	56	21,680
	DL1YQ	22	40	12,090
	DL7DF	21	45	11,022
	DL1AV	16	40	9,240
	DL3NL	11	29	6,600
	DL1BR	13	25	4,522
	DL3HN	12	26	2,660

PY1ADA scored 89,250 points. Rig uses a pair of 812As with 500 watts input. Receiver is a modified HQ-120X. Antenna is a 45 foot dipole with 75 foot tuned feeders.

	DL1LD	11	22	2,607
	DL1JY	10	17	2,106
	DL6DF	12	21	1,848
	DL1YA	8	23	1,829
	DL4SL	10	17	1,377
	DL3VW	7	15	748
	DL6GB	7	8	390
28 mc.	**DL7AA**	**10**	**21**	**2,418**
	DL1FI	**10**	**15**	**1,175**
	DL1AV	**8**	**13**	**966**
	DL1IB	6	12	414
	DL7DF	4	5	162
	DL1YA	5	5	150
	DL1BR	4	4	72
Hungary				
All Bands	**HA4SA**	**44**	**115**	**71,709**
Iceland				
All Bands	**TF3SF**	**28**	**57**	**34,935**
	TF3AB	**12**	**29**	**9,881**
	TF3NA	**14**	**29**	**7,783**
7 mc.	**TF3SF**	**4**	**11**	**210**
	TF3NA	**2**	**2**	**4**
14 mc.	**TF3SF**	**23**	**43**	**24,768**
	TF3SQ	**10**	**33**	**11,266**
	TF3AB	**10**	**27**	**9,399**
	TF3NA	11	26	6,660
28 mc.	**TF3SF**	**3**	**3**	**60**
Italy				
All Bands	**I1IZ**	**39**	**96**	**53,190**
	I1AIV	**33**	**95**	**52,608**
	I1KN	**36**	**86**	**41,114**
	I1NT	34	86	35,520

	STATION	ZONES	COUNTRIES	SCORE
	I1CJW	27	57	23,605
	I1BUQ	10	43	7,526
	I1ER	5	10	305
3.5 mc.	**I1AIV**	**4**	**25**	**2,987**
	I1IZ	**3**	**10**	**169**
7 mc.	**I1IZ**	**9**	**33**	**6,594**
	I1KN	**10**	**32**	**5,166**
	I1AIV	**7**	**27**	**3,366**
	I1NT	9	27	3,312
	I1BUQ	5	27	3,232
	I1BLN	3	23	2,834
	I1CJW	4	14	666
	I1ER	2	7	182
14 mc.	**I1KE**	**19**	**50**	**16,422**
	I1CJW	**23**	**43**	**16,104**
	I1AIV	**22**	**43**	**14,585**
	I1KN	22	49	14,129
	I1NT	18	48	10,494

LU9EV scored 80,010 points. Two rigs are used, 70 watts into a pair of 800As and 120 watts to an 813. Receivers are SX-42, RCA-77, RME HF-10. Colin has been on the air for 26 years.

	I1IZ	18	41	10,384
	IT1AQS	11	31	4,872
	I1BUQ	5	16	861
	I1ABB	4	10	294
28 mc.	**I1IZ**	**9**	**12**	**1,008**
	I1NT	**7**	**11**	**810**
	I1KN	**4**	**5**	**135**
	I1ER	3	3	54

Luxembourg

All Bands	**LX1JW**	**22**	**51**	**9,782**

Netherlands

All Bands	**PAØUN**	**51**	**143**	**138,710**
	PAØVB	**26**	**74**	**37,100**
	PAØNW	**12**	**15**	**1,242**
3.5 mc.	**PAØUN**	**4**	**24**	**2,100**
	PAØVB	**4**	**20**	**1,368**
7 mc.	**PAØUN**	**9**	**34**	**6,364**
	PAØVB	**6**	**18**	**1,560**
	PAØVDV	**5**	**11**	**304**
	PAØNW	3	8	187
14 mc.	**PAØUN**	**28**	**67**	**40,565**
	PAØVB	**15**	**35**	**12,300**
	PAØWAC	**12**	**33**	**5,040**
	PAØPZW	7	13	720
	PAØNW	9	7	464
	PAØLY	4	5	126
23 mc.	**PAØUN**	**10**	**18**	**1,820**
	PAØVB	**1**	**1**	**6**

Norway

All Bands	**LA6U**	**45**	**120**	**72,105**
	LA1RD	**16**	**47**	**11,107**
	LA9QB	**12**	**37**	**6,027**
	LA5S	9	33	5,384
	LA2B	18	35	5,194
	LA3ZD	12	33	3,780
	LA9XB	7	23	1,350
	LA4DD	6	18	1,324
	LA9TC	7	19	1,066
3.5 mc.	**LA6U**	**4**	**25**	**2,146**
	LA9QB	**4**	**19**	**1,725**
	LA2B	**2**	**6**	**80**
	LA5S	2	5	49
7 mc.	**LA6U**	**13**	**33**	**4,140**
	LA1RD	**4**	**21**	**2,100**
	LA4DD	**3**	**11**	**462**
	LA2B	4	10	322
	LA9TC	2	11	247
	LA5S	2	6	240
	LA9XB	2	10	216
	LA9QB	2	5	119
	LA3ZD	2	5	40
14 mc.	**LA6U**	**24**	**56**	**20,640**
	LA3Y	**11**	**25**	**8,568**
	LA1RD	**12**	**26**	**3,990**
	LA3ZD	10	28	3,040
	LA2B	12	19	2,015
	LA5S	5	22	1,674
	LA3HA	8	13	1,197
	LA9QB	6	13	589
	LA9XB	5	13	486
	LA9TC	5	8	286
	LA4DD	3	7	200
	LA9T	3	8	110
28 mc.	**LA6U**	**4**	**6**	**150**

Poland

All Bands	**SP3PF**	**33**	**107**	**100,240**
	SP1SJ	**18**	**41**	**5,782**
3.5 mc.	**SP3PF**	**4**	**28**	**4,704**
	SP1SJ	**2**	**4**	**30**
7 mc.	**SP3PF**	**8**	**32**	**6,320**
	SP1SJ	**3**	**9**	**156**
14 mc.	**SP3PF**	**21**	**47**	**27,948**
	SP1SJ	**9**	**23**	**2,080**
28 mc.	**SP1SJ**	**4**	**5**	**135**

Portugal

All Bands	**CT1SQ**	**23**	**48**	**12,780**

Roumania

All Bands	**YO3RI**	**39**	**116**	**76,880**
	YO3RF	**43**	**109**	**68,096**
	YO6VG	**10**	**27**	**2,388**
	YO8RL	6	16	506
3.5 mc.	**YO3RI**	**4**	**23**	**2,592**
	YO6CA	**3**	**6**	**189**
	YO3RF	**3**	**8**	**121**
7 mc.	**YO3RF**	**8**	**28**	**3,672**
	YO3RI	**5**	**27**	**2,848**
	YO6VG	**6**	**19**	**1,150**
	YO8RL	3	10	169
14 mc.	**YO3RF**	**27**	**64**	**28,665**
	YO3RI	**20**	**50**	**18,340**
	YO6VG	**4**	**8**	**216**
	YO8RL	3	6	90
28 mc.	**YO3RI**	**10**	**16**	**1,274**
	YO3RF	**5**	**9**	**280**

Saarland

All Bands	**9S4AX**	**20**	**68**	**19,712**
3.5 mc.	**9S4AX**	**4**	**21**	**1,425**
	9S4BF	**3**	**7**	**60**
7 mc.	**9S4AX**	**3**	**18**	**1,239**
14 mc.	**9S4AX**	**13**	**29**	**4,536**

Sardinia

All Bands	**IS1AHK**	**15**	**33**	**4,560**

Scotland

All Bands	**GM3EST**	**11**	**40**	**8,160**
	GM3CSM	**21**	**37**	**7,134**

(Continued on page 70)

Ionospheric Propagation Conditions

Forecasts by GEORGE JACOBS, W2PAJ

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DX Contest Analysis—Part II:

Last month *Part I* of the *DX Contest Analysis* was devoted to a propagation study of special interest to *CQ's* overseas readers. This study was included in the September issue of *CQ* so that the information would reach the overseas readers in time for them to make use of it for the *CO DX Contest.*

Part II of this special *DX Contest Analysis* will be devoted to a study of propagation conditions affecting amateur circuits from the United States to all areas of the world during October and specifically during the contest period of October 25-27 and November 1-3 (CW).

The *CQ DX Contest* is truly a world wide contest. Scores are based upon number of countries worked, the number of zones worked and also the continents worked. For complete information on scoring refer to pages 22-23 of August *CQ.*

This month there are included additional analysis of many new circuits and areas. In fact, the October propagation tables represent the maximum efforts to date. For the information of those readers who draw their own MUF and LUF Curves, this month's tables represent the results of 92 separate MUF and LUF Curves, or a total of 184 curves.

Ionospheric Disturbance Forecasting

At the present stage of the art, long range forecasting of ionospheric disturbances is possible with only a limited degree of accuracy. Since ionospheric disturbances have a tendency to repeat themselves every 27 days, especially during the low part of the sunspot cycle, it is possible by carefully observing daily conditions during August and September—then project ahead a cycle or two—to obtain some idea of what the daily ionospheric conditions might be like in October and November. Also, John Nelson's theory[1], of "Planetary Configurations" might be used for indicating long range ionospheric conditions. I have used both methods for analyzing conditions for the contest period. By both methods the CW period of November 1-3 appears to occur during a period of relatively good radio propagation conditions. The phone period, October 25-27 appears to occur during an erratic period. A disturbance is likely—possibly not a severe one. So all in all, it looks as if propagation conditions this year during the Contest period may be better than they were the past two years when moderate to severe disturbances occurred during the Contest periods.

In any case it is strongly recommended to monitor the propagation transmissions of WWV (refer to August *CQ*, page 40, for latest propagation information.

1. "Effects of Planetary Positions on Radio Signals" J. H. Nelson, CQ, March, 1952, page 16.

In the event conditions are disturbed during the Contest period, remember that paths passing through or near the auroral zones are most effected by ionospheric disturbances, and that North-South paths (USA-Latin America, etc.) are not usually effected and during certain types of disturbances, conditions on these circuits may actually improve. So, during a disturbance concentrate on working daytime North-South circuits on 10, 15 and 20 meters. Some East-West paths will be possible, too, on 20. Night-time circuits can be worked on 40 and 80 meters; if 40 is dead, check 80.

General Propagation Conditions

October, 1952

During October the sun continues its apparent travel towards southern skies. (Actually, of course, it is the earth that follows the ecliptic path or path around the sun.) During the Autumn Equinox, which occurred on September 23, the sun crossed the Equator on its southward travels.

Last Minute Forecast

Most probable periods for ionospheric disturbances during October are 11-13, 21 and 24-27.

As the sun moves in a southerly direction, the earth is moving nearer to the sun. Both of these solar phenomena have their related effects on radio propagation. Since the sun is nearer to the earth, daytime ionizaton is stronger and daytime frequencies are getting higher than they were during the summer months. In October there are less hours of daylight in the Northern Hemisphere than during the summer months and daytime propagation conditions exist for shorter periods of time. This permits considerably more time for nighttime deionzation to take place and therefore nighttime usable frequencies are lower in October than during the summer months. Solar absorption and atmospheric noise levels also decrease considerably in the Northern Hemisphere during October. All this means, as a reference to the propagation tables would indicate, that DX conditions are considerably improved over what they were during the late Spring and Summer months. Ten meters is expected to open to all Continents some percentage of the days during October, 15 meters should start getting real hot, plenty of DX on 20 and 40, and 80 should also carry their share of the "dark hours" DX.

All in all, because of the balancing effect between usable frequencies and absorption that occurs during the latter half of October and early November, these periods are probably the best periods of the year from an all round DX standpoint. It is of course very appropriate, and probably no coincidence that the **CQ DX Contest** is held during this period.

With the inclusion of the 15-meter band in the propagation tables, the 80 meter table has been omitted. Eighty meters will generally open during the same hours as 40, that is the all "dark hours" at the paths' propagation control points. Because of heavier absorption and higher noise levels, 80-meter signals will be weaker than 40

(Continued on page 34)

EAST COAST TO: (Centered on Washington, D. C.)	10 Meters	15 Meters	20 Meters	40 Meters
	ALL TIMES IN G M T			
Scandanavia	1300-1600 (0-1)	1300-1600 (2-3)	1100-1700 (2) 1700-2000 (3)	2200-0800 (2-3)
Great Britain & Western Europe	1400-1700 (1)	1200-1700 (3) 1700-1830 (3-4)	1030-1200 (2-3) 1200-1800 (2) 1800-2130 (3-4)	2230-0900 (3)
Balkans	1400-1700 (1)	1200-1700 (1-2) 1700-1800 (2-3)	1030-1800 (1-2) 1800-2000 (3)	2200-0600 (2-3)
Central Europe	1400-1800 (1-2)	1200-1700 (2-3) 1700-1900 (3)	1000-1800 (2-3) 1800-2100 (3-4)	2200-0800 (3)
Southern Europe & North Africa	1400-1900 (2)	1100-1800 (3) 1800-2030 (3-4)	1000-1800 (2-3) 1800-2230 (3-4)	2300-0600 (3-4)
Central & South Africa	1600-2000 (1-2)	1200-1600 (1-2) 1600-2300 (3)	1100-1700 (1) 1700-1900 (2-3) 1900-0100 (3)	2330-0400 (2)
West Africa	1600-1900 (2)	1200-1730 (2-3) 1730-2000 (3-4)	1100-1800 (1-2) 1800 2000 (2-3) 2000-0100 (3-4)	2200-0600 (3)
Near & Middle East	1400-1630 (1-2)	1200-1630 (1-2) 1630-1730 (2)	1000-1700 (1) 1700-2100 (2-3)	2300-0400 (1-2)
Central America & Northern South America	1400-1900 (2-3) 1900-2230 (4)	1200-2100 (3-4) 2100-0000 (4-5)	1130-2000 (2-3) 2000-0100 (4-5) 0500-0800 (1-2)	2330-1200 (4-5)
South America East Coast	1200-1900 (2-3) 1900-2100 (3-4)	1100-2000 (2) 2000-2230 (3-4)	1100-2100 (1-2) 2100-0000 (3-4) 0000-0800 (1-2)	2230-0800 (3-4)
South America West Coast	1300-2000 (2) 2000-2200 (3-4)	1200-2100 (2) 2100-2330 (3-4)	1100-2100 (2) 2100-0100 (3) 0100-0800 (2)	2300-0930 (2-3)
Hawaii	1800-2300 (2)	1600-2300 (1-2) 2300-0130 (2-3)	1500-1800 (3-3) 1800-0000 (1) 0000-0330 (3)	0300-1330 (3)
Australasia	2130-2330 (1)	2000-0100 (1-2) 1400-1530 (1-2)	1100-1500 (2) 1900-0000 (0-1) 0000-0200 (2)	0700-1400 (2-3)
Guam	2100-2300 (0-1)	2000-0030 (1-2)	1300-1530 (2) 1930-0000 (0-1) 0000-0230 (2-3)	0600-1400 (1-2)
Japan	2130-2300 (0-1)	2130-2330 (1-2)	1200-1400 (1-2) 2030-0200 (2)	0700-1300 (1)
India	Nil	1300-1500 (1-2)	1130-1530 (1) AE 1530-1730 (1-2) E 0130-0230 (0-1) A	2300-0100 (0-1)
Philippine Islands & East Indies	Nil	Nil	1300-1600 (1-2) 2100-2330 (1) 2330-0030 (1-2)	Nil
Southeast Asia	Nil	1600-1800 (0-1)	1300-2000 (1-2) 2300-0100 (1)	Nil
West Coast USA	Nil	1900-2230 (2)	1500-1800 (2-3) 1800-2300 (1-2) 2300-0100 (3-4)	0200-0700 (3-4) 0700-1230 (2-3)

CENTRAL USA TO: (Centered on St. Louis, Mo.)	10 Meters	15 Meters	20 Meters	40 Meters
	ALL TIMES IN G M T			
Great Britain & Western Europe	1500-1700 (1)	1300-1730 (2) 1730-1900 (3)	1130-1900 (2) 1900-2130 (3)	2330-0900 (3)
Central Europe	1500-1700 (1)	1330-1900 (1-2)	1200-1830 (1-2) 1830-2030 (3)	2300-0830 (2-3)

CENTRAL USA TO: (Centered on St. Louis, Mo.)

ALL TIMES IN G M T

	10 Meters	15 Meters	20 Meters	40 Meters
Southern Europe & North Africa	1600-1900 (1-2)	1230-1830 (2) 1830-2030 (3)	1100-1800 (2-3) 1800-2300 (3-4)	0030-0700 (3-4)
Central & South Africa	1500-2100 (2)	1200-1700 (1-2) 1700-2300 (3)	1000-1800 (1) 1800-2100 (2-3) 2100-0100 (3)	2330-0430 (2)
West Africa	1500-1930 (2)	1130-1800 (2) 1800-2030 (3-4)	1100-1900 (1) 1900-2100 (2-3) 2100-0100 (3)	2300-0500 (3)
Near & Middle East	Nil	1400-1800 (2)	1100-1730 (1) 1730-2030 (2-3)	2330-0430 (1)
Central America & Northern South America	1400-2000 (3) 2000-2200 (4-5)	1300-2100 (3-4) 2100-0030 (4-5)	1200-2100 (3-4) 2100-0100 (4-5) 0500-0900 (1-2)	0000-1200 (4-5)
South America East Coast	1300-1930 (2-3) 1930-2100 (3-4)	1130-2030 (2) 2030-2230 (3-4)	1100-2130 (1) 2130-0000 (3) 0000-0800 (1-2)	2330-0800 (2-3)
South America West Coast	1400-2300 (3-4)	1200-2100 (3) 2100-0000 (4)	1130-2200 (2) 2200-0200 (4) 0200-0830 (2-3)	0000-1000 (3-4)
Hawaii	1900-0000 (2)	1700-2300 (2-3) 2300-0130 (3)	1500-1900 (2-3) 1900-0000 (1-2) 0000-0400 (3-4)	0330-1400 (3-4)
Australasia	2100-0100 (1-2)	2000-0200 (2) 1500-1700 (1)	1330-1500 (2) 1500-1700 (1-2) 1700-0000 (0-1) 0000-0330 (2-3)	0800-1400 (2-3)
Japan	2200-0000 (0-1)	2130-0030 (1-2) 0030-0130 (2)	1330-1500 (1-2) 2100-0200 (1-2) 0200-0400 (2-3)	0700-1300 (1-2)
Philippine Islands & East Indies	2130-2330 (0-1)	2130-2330 (1-2)	1400-1600 (1-2) 2100-0000 (1) 0000-0230 (1-2)	0800-1200 (0-1)
India	Nil	0130-0300 (1) A 1330-1500 (1) E	1300-1700 (1-2) EA 0130-0300 (1-2) A	2300-0100 (0-1) E 0900-1300 (1) A
South East Asia	Nil	1500-1900 (1) 2200-0100 (1)	1400-2000 (1-2) 2000-0400 (1)	Nil

WEST COAST TO: (Centered on Sacramento, Calif.)

ALL TIMES IN G M T

	10 Meters	15 Meters	20 Meters	40 Meters
Europe	Nil	1500-1900 (1)	1300-2100 (1-2)	0200-0800 (2)
North Africa	Nil	1600-2000 (1-2)	1300-2000 (1) 2000-2200 (1-2)	0200-0700 (1)
South Africa	1900-2200 (1)	1500-2000 (0-1) 2000-2300 (1-2) 2300-0100 (2-3)	1400-2100 (0-1) 2100-2300 (1-2) 2300-0300 (2-3)	0100-0600 (2)
Near & Middle East	Nil	1700-1900 (0-1)	1500-2000 (0-1)	Nil
Central America & Northern South America	1600-0000 (3)	1430-2200 (3-4) 2200-0130 (4)	1330-2200 (3-4) 2200-0300 (4-5) 0900-1030 (1-2)	0130-1330 (4-5)
South America	1600-2000 (2-3) 2000-0000 (3-4)	1400-2200 (2-3) 2200-0100 (3-4)	1400-0000 (1-2) 0000-0400 (4) 0700-1100 (2)	0230-1000 (3)
Hawaii	2300-0130 (1-2)	1900-2300 (3-4) 2300-0100 (4-5) 0100-0300 (2-3)	1600-0000 (3-4) 0000-0330 (4-5)	0300-1100 (4-5) 1100-1430 (2-3)

WEST COAST TO: (Centered on Sacramento, Calif.)	10 Meters	15 Meters	20 Meters	40 Meters
	ALL TIMES IN G M T			
Australia	2030-0100 (2) 0100-0300 (3)	2000-0200 (1-2) 0200-0400 (2-3)	1900-0400 (1) 0400-0600 (3) 0600-0900 (2)	0800-1500 (3)
New Zealand	1930-0000 (1-2) 0000-0300 (3)	1800-2100 (2-3) 2100-0130 (1-2) 0130-0400 (2-3)	1700-0300 (1) 0300-0830 (3)	0600-1300 (3)
Japan	2200-0100 (1)	2130-0100 (1-2) 0100-0330 (3)	2000-0200 (1-2) 0200-0600 (3-4)	0700-1400 (2-3)
Philippine Islands, East Indies & Southeast Asia	2200-0200 (2)	2200-0400 (1-2)	1500-1900 (2-3) 2100-0430 (1) 0430-0700 (2-3)	0930-1330 (1)
Marshall Islands	2000-0230 (3)	1900-0100 (1-2) 0100-0400 (2-3)	1800-0200 (1-2) 0200-0700 (3-4)	0700-1400 (2-3)
Guam & Pacific Islands	2100-0200 (2-3)	2000-0200 (2) 0200-0400 (3)	1400-1700 (2) 2000-0300 (1) 0300-0700 (3)	0800-1400 (2-3)
India	Nil	0130-0300 (1-2)	0030-0430 (2) 1600-1800 (2)	1000-1400 (1-2)
Hong Kong, Macua & East China	2300-0100 (2)	2200-0200 (2) 0200-0400 (3)	2130-0300 (1) 0300-0600 (2-3) 1530-1800 (1-2)	1000-1500 (2-3)
Siberia	2300-0200 (1)	2100-0100 (2) 0100-0400 (3)	2000-0100 (2-3) 0100-0600 (3-4)	0600-1400 (3)

Symbols for Expected Percentage of Days of Month Path Open:

(0) None (1) 10% (2) 25% (3) 50% (4) 70% (5) 85% or more

Special Note: The letter "A" appearing after the expected percentage figures is used to denote that the azimuth of signal arrival will probably be best over the "Asiatic Path." The letter "E" denotes an azimuth favoring arrival over the "European" path.

PROPAGATION CONDITIONS

(from page 31)

and the band may be usable on fewer nights than will 40. Therefore, to determine 80-meter openings from the propagation tables, use the 40-meter column, but subtract 1 from the reliability rating.

Propagation data for the month of October is based upon a predicted smoothed 12-month running average Zurich sunspot number of 43. Forecasts are based on an assumed effective radiated CW power of 150 watts.

EUROPE

Improved conditions on all amateur bands with openings expected to most areas of the United States on all bands, 10 through 80 meters.

SOUTH AMERICA

Almost daily openings expected on all amateur bands from all areas of Latin and South America to all areas of the USA.

AFRICA

Some activity expected on all bands from most areas of Africa to many areas of the United States..

AUSTRALASIA

Openings possible on all amateur bands to all areas of the United States.

ASIA

Only fair conditions to the Middle East from Eastern USA. Conditions on 80, 40 and 10 poor to Central and Pacific Coast areas. Far East circuits fair on 20 meters to the East Coast with the possibility of some 15-meter openings, conditions improving on all bands to Central and Pacific Coast areas.

WORK PLAN

Letters received from readers indicated that the "work plan" devised for the 1951 contest was a big help to many operators in compiling scores. The following "work plan" has been devised for a West Coast QTH. It is assumed that operation conditions are such that all bands can be worked, and that operation is around the clock. Similar "work plans" can be drawn up for your QTH and your particular operating conditions simply by referring to the Propagation Tables.

The above "work plan" indicates, at any particular time, the band that has the best possibilites of providing contacts with the maximum number of continents and zones. Similar operating plans can be readily devised for other QTH's and operating conditions.

73 es gud DX. George.

Period GMT	Best Band	Continents	Possible Zones
0200-0600	20	S. Africa, C & S America, Oceania, Asia	1, 2, 6-13, 19, 22-32, 35-38
0600-1400	40 or 80	Europe, Africa, Asia, C & S America, Oceania	1, 2, 5-15, 19, 20, 22-33, 35-38
1400-1700	20	Europe, C & S America, Asia, Oceania	5-15, 22, 24, 26-28, 31
1700-2300	15	Europe, Africa, Asia C & S America, Oceania	2, 5-15, 19, 20, 24-33, 35, 40
2300-0200	10 or 15	Africa, C & S America, Oceania, Asia	1, 6-13, 19, 24-32, 36, 38

This is a sample plan for working the DX contest from a west coast QTH. Plans may be prepared from the above material for any QTH in the world.

Monitored by LOUISA B. SANDO, W5RZJ

959C-24th Street, Los Alamos, N. Mexico

The Down East Hamfest, now an annual affair, seems to draw as many YLs as many of the larger conventions. Attending this year (July 26th) at the Eastland Hotel in Portland, Me., were WI's MJE, SCS, MDV, MCW, MPP, QON, UZR, HIH, FOF, MUW, FTJ, RYJ, and WN1VEP; W2OWL, W3OQF; WN4UDI, WN4UDQ, and KH6TI.

All the girls were delighted to meet Dell in person after many QSOs via 10 meters from Hawaii. And how easily they spotted her—with her deep tan, and wearing a beautiful pink carnation lei, and also baby orchids in her blond hair. She gave these same baby orchids to all the YLs she met at the hamfest. Maine is Dell's home State. She had flown all the way from Hawaii to vacation with her family and was happy to get in on the hamfest.

Ruth, W2OWL, was on a trip through Maine. Barbie, W3OQF, and her OM were vacationing at Old Orchard Beach. Both of the WN4 gals were from Memphis, Tenn. The hamfest included a turkey banquet with all the fixings, and a YLRL meeting was held. W3OQF spoke of the hope that a YLRL National Convention would be held at some time in the future; W2OWL reported on the activities of the N.Y.C. Club; W1QON displayed the YLRL album; and the YLs carried on a round-table discussion.

A number of YLs are getting on the air from Western Germany, among them DJ1AD, Hilde Dunkelmann; DJ1AC, Kaethe Behrens; and DK1BU, Christa. W1FTJ has worked both Hilde and Kaethe and Hilde reports that Dot's QSL was the very first W card she received.

From DJ-LAND

Hilde's OM has been a ham since 1923, but before 1945 it was very hard to get a license in Germany and after the war, when they lived in the Russian Zone, there was no opportunity to get one.

"Suddenly in 1950 we had to leave the inhospitable zone," writes Hilde, "and we settled in Lubeck in Western Germany. There my OM took his exam at once and when our finances became better our daughter Margaret, 16 years old, and I followed him. I got the call DJ1AD, but Margaret must wait until she becomes 18, because one gets a license here in Germany from that age on."

Hilde's rig was made by her OM, DL6OS—six stages, input 100 watts, and a 7-tube superhet receiver. She is using a Zepp antenna. DJ1AD usually operates on 20 CW, for they still need the speech amplifier for phone. On 80 they operate CW and VFM.

Since getting her license in June, DJ1AD has worked (at this writing in mid-August) 57 countries and 20 Zones and is trying to make DXCC in one year. Writes Hilde: "I hope that the QSLs will come in numerously." (!) She made WAC in the first month she was on the air.

Hilde's OM is a printer, and Hilde, too, works in a publishing house to help get them started again for they were able to bring nothing with them when they came from the Russian Zone.

From DJ1AC we hope to hear more later. At the time Hilde wrote, Kaethe was on a trip to Frankfort with her OM, DL3VT.

Grandmother Ham

Many times in these pages we have reported on the really young YLs just getting into ham radio. Now we hear from a grandmother YL. Of course, there are many "grandmother hams," but most of them have been in the game for some years. WØBFW, Mary Ethel Kleinendorst, only recently got into the game, since becoming a grandmother. But she says that ham radio has been a life saver to her—it's tops for chasing old man blues away.

No, not Hawaii, but Big Springs, Idaho, on the occasion of the WIMU Hamfest. The YL is W7OOK and watching in the background is her OM, but taking it in at the vantage point on the cot is W7LCM, Mayor of Huntley, Montana. We're glad to see Earl doing a little something besides passing out dog-catcher certificates and handling magazine subscriptions.

After the sudden death of Mary Ethel's OM she seemed to have little interest in life. A few months later she went to the West Coast where she was a guest in the home of a ham. His ham shack held great fascination for her and day after day found her in the shack listening in and asking questions. Perched on a high stool in the background, she couldn't be coaxed to the microphone —it was a monster!

Finally ham friends, in the usual fashion, began asking, "Why don't you become a ham, too?" At first the idea was preposterous to Mary Ethel, but the idea stuck. With a great deal of encouragement and advice from W6GKC, RQW, AYE and CON, she returned to WØ land with lots of determination, handbooks, How to Become, an Instructograph and tapes.

"Then," says Mary Ethel, "I lived di-dahs. I ate with them, I went to sleep with them. Headlines were read in di-dahs, as were magazines, sign boards, etc. It seemed to me my friends were quietly shaking their heads and thinking, at last poor thing she really has gone off the deep end!"

The setup at DJ1AD is very neat with a home constructed transmitter running about 100 watts.

But in 1950 Mary Ethel received her Class B license and went on the air—as soon as she could overcome her mike fright. In 1951 she received her Class A license and now has dug the Instructograph out of storage with hopes for the Advance Class.

As to her set-up, WØBFW uses a 32V2 transmitter, and a National 183 receiver. On 10 meters she has a three-element wide-spaced beam mounted on an 80-foot tower. On 80 meters she uses a long wire, one end attached to the top of the tower and the other to the top of a lightning rod on the roof of the house. WØBFW frankly admits the doesn't care for CW but enjoys working 10 and 75 phone, especially keeping schedules with her son, W6CGN, on 28.762 and 3.9.

Mary Ethel's home is near Newton, Iowa, where she owns and manages a farm about three miles from the city. Besides these duties and her hamming, she finds time for free-hand textile painting, leather carving and making hooked rugs. And her latest endeavor is trying to interest other XYLs in becoming hams for she says she'd like some company—the nearest YL operator is some fifty miles away.

FB, Mary Ethel—maybe your story will convince other grandmas that it's never too late to learn.

YL of the month

Remember the write-up in these pages in the April ('52) issue about IS1EHM, Maria Marras, of Sardinia? Seems Maria has been getting some really international publicity. First an AP release appeared in the newspapers, and now she has made **Time** magazine. After a year of QSOs on the air HZ1TA, Prince Talal, son of Saudi Arabia's King Ibn Saud, flew to Cagliari to meet Maria in person. At parting he presented her with a new antenna set-up so she'll have no trouble in copying him in the future. AP reported it valued at $3,000; Time more conservatively at $1,500—must be some antenna farm at any rate! FB, Maria, and don't forget to beam it in this direction, once in a while, too!

Here and There

Some of the Los Angeles YLs have been putting their stations to good use getting the young fry really interested in ham radio. Sixth and seventh graders studying radio and television during classes at summer school at Manhattan Beach were invited to the home of **W6LBO**. From Mary's station they talked with Ann at W6KYZ via 2 meters, and later with WN6IIM, who told them how he got his Novice license. Maybe more YLs could offer their services in this way.

Thanks to those YLs who sent QSLs to would-be-ham Ken Merring, as requested in these pages a couple of months ago. Ken is grateful for the response and says he has received cards from even outside the U. S.

News from a YL we haven't heard from for a long time—Terry McLaughlin Korn, **W3VYU**. Terry and her OM are now living in North Hollywood, Calif., but as yet have not put a rig on the air or gotten W6 calls. They have been too busy writing books. The first one was out in 1950—"Trailblazer to Television," published by Chas. Scribner's Sons. For younger readers, it is the story of Terry's OM's father with illustration by his mother—a family project. The second, out this last May, is "Electronic Analog Computers" published by McGraw Hill. If this sounds high and mighty writing for a YL, don't forget that Terry has her E.E. degree and formerly worked for Boeing Aircraft designing aircraft automatic control systems. She now is doing graduate work in electrical engineering at UCLA in Los Angeles. Well, if they ever get around to getting that rig on the air, it should be a honey!

W3CDQ recently had a visitor from Italy—I1ACD, who was the first ham in Italy to contact the USA on 100 meters back in 1925. . . . The "QP twins"—**W3QPJ** and **W3QPQ**—were happy to have the opportunity to meet KZ5AC, Angie, and daughter Carol, KZ5CG, and the rest of the Coombs family while they were on their tour of the States . . . W3QPQ, who works 10 phone and 40 and 80 CW, has had her honorary maritime mobile certificate for some time and has met personally several of the M/M operators.

This is Hilde Dunkleman, holder of one of the new DJ calls—DJ1AD. Hilde, licensed in June, is a fine op and has 57 countries at this writing.

A lot of the YLs are working on their Extra Class licenses. Here is one who has received hers—**W2YCX**, Carolyn Hull. "Carlie" has been on the air since 1948 when she was a senior in college. Favorite activities are rag-chewing, DX, Field Day operating, learning more about radio theory and training would-be hams. Her set-up is a 32V1 running 150 watts input to a single 4D32, and a 75A-1 receiver. She operates 10 phone, on which she uses a three-element beam, and 20 and 40 CW, for which she has Amphenol folded dipoles. Carlie's vocation is teaching science in high school—a nice tie-in with her ham hobby.

See you next month. 33, W5RZJ.

Amateur Teletype

As Reported by WAYNE GREEN, W2NSD

1379 East 15th Street, Brooklyn 30, N. Y.

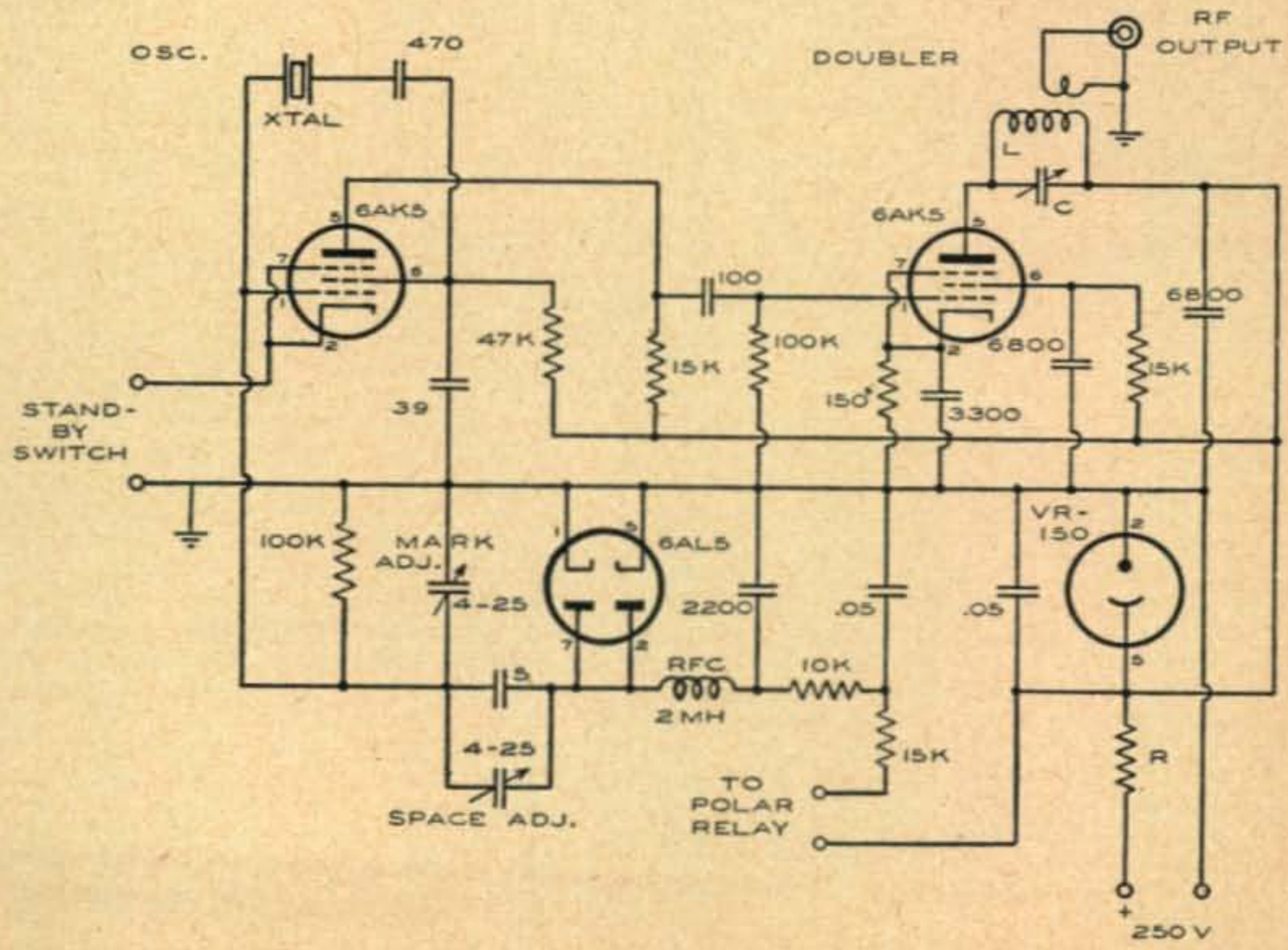
Fall is upon us and conventions are rearing up hither, thither, and yawn. Interesting to note is that a demonstration of amateur teletype has become a staple attraction at these affairs. Since teletype is for the moment the most visual aspect of ham radio this is natural. The convention in Springfield, Mass., had a highly successful demonstration put on by W1EVZ and resulted in a great deal of interest being aroused in the New England area. WØHZR and WØBP planned to have something ready for the Mid-American Amateur Convention in Minneapolis. W2PCQ and I hope to put on a good show at the Hudson Convention in Albany on October 3, 4, and 5. Hope to meet as many of you there as possible.

Precanceled

The mail has been brisker than Lipton's Tea and there seems to be a real danger that the pile may one day topple over and crush me to a conceited mass. One interchange took place between W6JQP and myself, brought on by my remarks in this column asking how other people felt about teletype. Lee opined that RTTY offered little of the dramatic element of DX'ing and offered only dull lifeless QSO's. Well, I sat down to the typewriter and gave him a few reasons why I like teletype. I told him about the terrific people who are on the air on RTTY and the interesting, intelligent QSO's that ensue. It takes quite a bit of personal drive to go to the trouble of building the receiving converter and associate equipment, a trait that separates the men from the boys, a sort of filter that insures fine contacts from those who make the grade. Teletype takes the ability and the desire to learn. All together, teletype is similar to SSB in that once you get on with it you find a splendid gang there with you.

The next point I made in my sales talk was that plenty hams are almost illiterate and the practice of sitting down to a typewriter to talk would be quite helpful. If you doubt this, write to any radio editor. He can probably tell you.

Then there are the topics of discussion. Ouch! Listen in on any phone band for a few minutes and tell me what you hear—ham Radio. Did you ever try to make one single new QSO without telling the other fellow what equipment you were using? I'll bet you would be tongue-tied in less than 30 seconds. You doubt it? All right, hero, try it and see for yourself. If you have a recorder around the shack try recording different QSO's you hear on the band and play them back a few times. This miserable state of affairs has probably come about as a result of our spending years learning how to talk with people, and then suddenly being confronted with a one-way method of communication. The result is that we learn a certain spiel and stick to it, thus sounding nice and glib. Until we figure some way to work duplex again I think that this problem will remain largely unsolved for voice communication. In writing we have a completely different story. We are all used to writing our communications one way. Teletype is like writing a



This is the basic schematic of the modified Collins 709D-1 frequency shift oscillator. All of the condenser values are in micromicrofarads. This is reproduced with the permission of the Collins Radio Co.

letter to someone, only he gets it as you type it. What you say is permanently recorded and you have all the time you want to phrase your words in the way you want them. Thoughts are fun when they are expressed well. Writing is fun when you have something to write about. On teletype we spend a lot of time and thought on what we say. The results are wonderful.

The experience of teletype operating leaves a lasting mark on the operator. I can usually tell just by reading the first paragraph of a letter whether the sender is an active RTTY'er or not. The fellows that are ordering machines send me postcards and five line letters. The active operators send me two page interesting letters.

Another factor that I pointed out to Lee is that since teletype is such a new field in amateur radio there is a lot of experimenting to be done. This has attracted many of the most active minds in amateur radio. As the months go by I find more and more of the same call letters that I have been seeing on top in other ham activities appearing in the RTTY ranks. W4HHK of six-meter beacon and DX fame is getting on RTTY. W8UKS has his receiving converter ready to go. W8WJC is making new DX records on two meter RTTY. W6OWP has put in a full set of gear. W6KYV ditto. W1BFT took a good look at the RTTY setup at the Springfield Convention this summer and started building up the gear. W3NL, Mobile Editor for *CQ*, has been in TT for several years. W1CTW, W1OOP, W6AM, are interested. WØCXX, Art Collins (Collins Radio), has been active for several years. W6ITH, who has done almost all there is to do in ham radio, has taken most of the RTTY records too. Then there is W2NSD —(Who he? Ed.).

Lee wrote right back and said that this letter had done more to broaden his viewpoint of RTTY than all of the articles in *CQ*, and why didn't I put some of that in the magazine. Further than that he wanted to know how to get more info on teletype. So, by now he should be snowed under with bulletins and back issues of *CQ*, hoisted by his own petard, you might say. I do very much appreciate his writing in though, for as I pointed out a few months ago it is not the people who agree with me that can bring improvements, only those that disagree.

Setting Standards

Even when we are colonizing Mars it will probably still take about six weeks for the words to go from my typewriter, through all of the publishing steps, and reach your hands. This is not a news magazine. What I'm getting at is that there may be some sort of release from the FCC on the RTTY situation before these words reach you. According to my frequently faulty calculations the regulations discussed in Docket 10073 should be put into effect sometime late in September, or maybe early October. Either way that should happen a long time before my next column in the December issue, therefore this is probably the last column that will appear before we get on the lower frequencies.

Why I bring this up is that, difficult as it is to try to guess what is going to be authorized in the way of frequencies, we should set up certain standards of operation and certain channels right now. One channel ought to hold us until December and if the activity at that time warrants more channels they can be established. Single channel operation is important since most of the gang will be using crystal controlled FSK units, and many will have crystal controlled receivers. It greatly simplifies the problem of getting contacts, reducing the variables to time and skip distance. I hereby go out on a limb and set the channel as 7140 kc. This means that you set your mark signal on 7140.000 kc. and the space signal 850 cycles lower.

Another problem of standards might just as well be taken care of right now. This is a problem that has bothered all of the teletypers in the past and has been more or less avoided. A letter from W3PYW suggests what seems to me to be a good solution. The problem is how to call CQ on teletype. Do you sit there and punch the letters C and Q? Do you type out "Calling any RTTY station?" I have done both in the past and can highly unrecommend either approach. Frank proposes that we use the letters R and Y since they are easily recognized by ear when sent in groups. To call CQ then, all the RTTY station would have to do would be send a few groups of RY's and sign his call: RYRYRY RYRYRY RYRYRY DE W2NSD, etc., but not too much etc. This I think is an excellent idea and urge that all of you use this system. The interruption after every sixth letter will distinguish this CQ call from any testing that might be done using the RY letters.

Testing. That can give us trouble. For some reason there is a sort of hynotic influence exerted by a full set of tape equipment in a teletype station and occasionally there is a tendency to turn on the station transmitter and sit back while a tape runs merrily round and round through the tape transmitter and the printer endlessly repeats some trivia about a quick brown fox or something. If you must do this build some 10,000 megacycle equipment and put the junk up there, we don't need it or want it on the low frequencies. Beacons are fine on six meters, but please no beacons on 40. If anybody within a hundred miles of me puts on an endless tape for the afternoon I am going to make a personal visit to his station and bring a pair of long-nose pliers and bend every contact on his tape equipment so it will take a month to get it adjusted again.

The wire-line users of teletype have a "bell code" which, though it does not apply to amateur radio teletype, does point up the utility of this means of signaling. The bell code that has been in amateur use should therefore be formally made a standard so that there will be as little confusion as possible when the various groups are able to QSO on the lower frequencies.

2 Bells — "Roger" (yes)
3 Bells — "SK"
4 Bells — "This is the start of a tape."
5 Bells — "This is the end of a tape."

Some special "Q Code" signals are needed for RTTY too, but fortunately these are already standard and can be found in the regular listigs of the "Q Code."

The applicable:

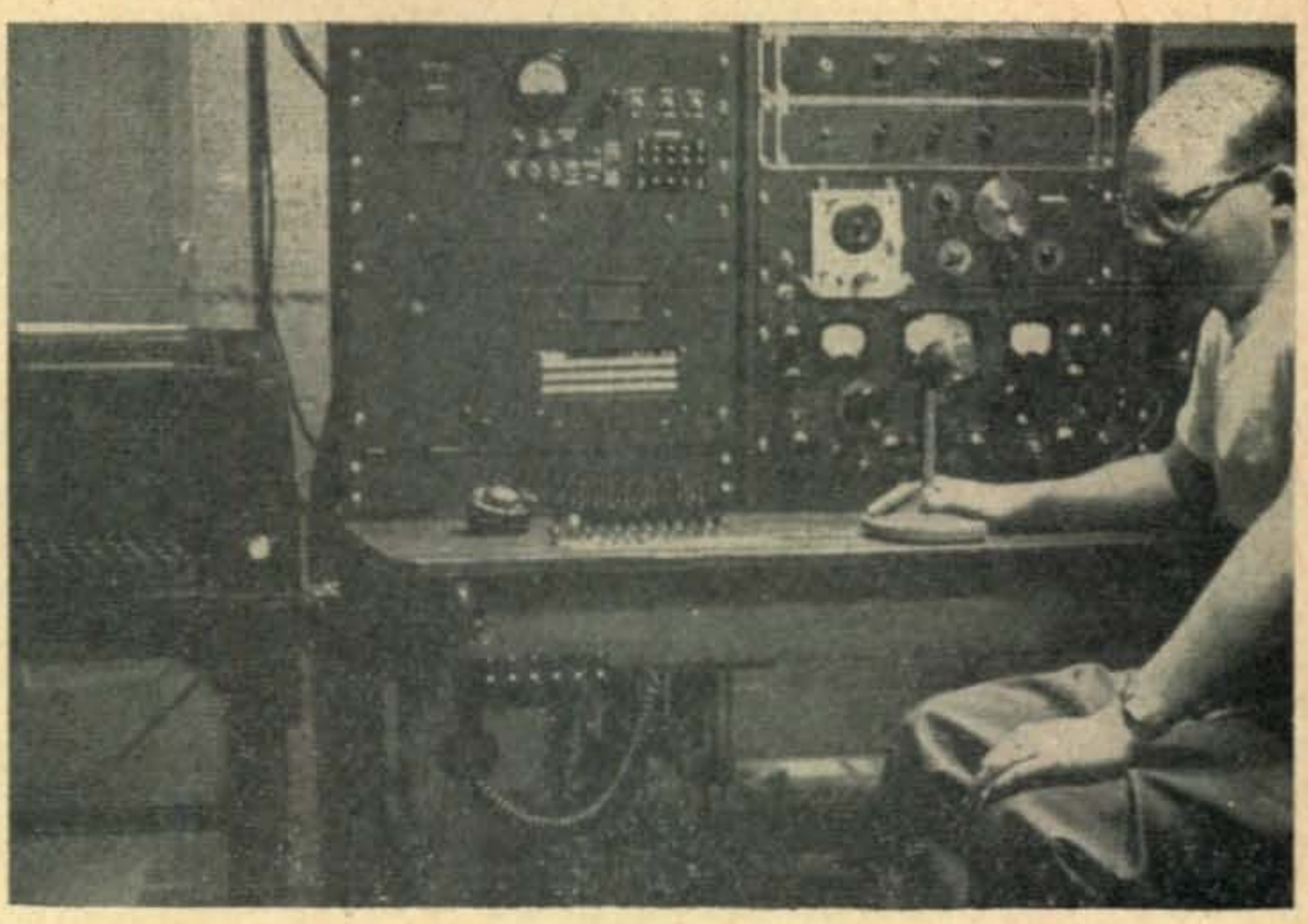
QXA—Please connect the reperforator to this circuit.
QXD—Will you please relay.
QXK—Please repeat.
QXM—Does garbled transmission appear due to local trouble at my station?
QXMA—You are garbling occasionally.
QXMB—Garbling frequently.
QXMC—Garbling badly.
QXMD—You are running open.
QYB—Send RY's.

VHF Teletype Society

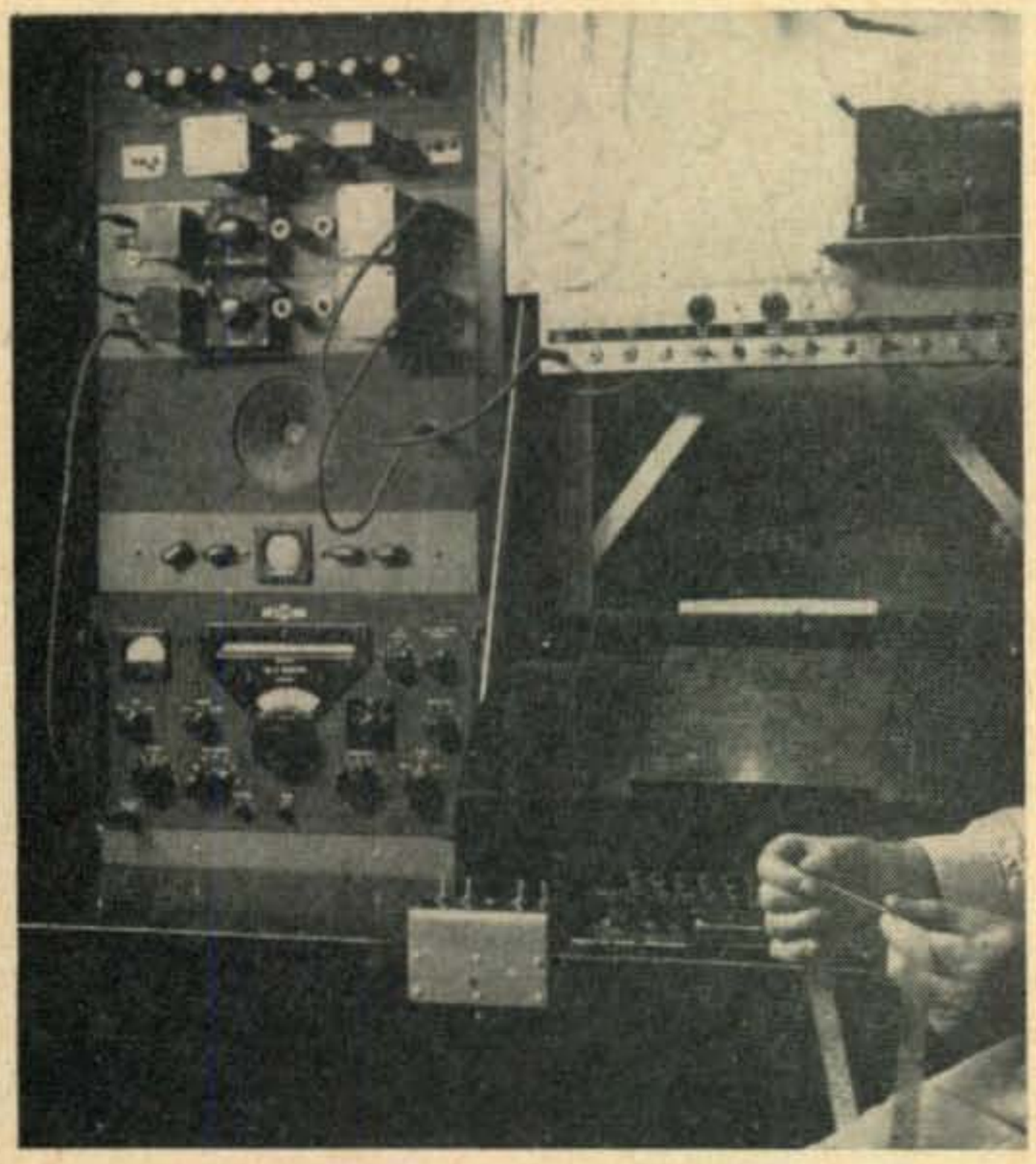
There seems to be some confusion afoot about where teletype equipment can be purchased. Letters, and even $, are sent to me asking for printers, tape equipment, etc. My department is information and communication. I have no equipment to sell. All of the equipment is handled by the **VHF Teletype Society**, 38-06 61st Street, Woodside, L. I., N. Y. John Williams, W2BFD, set up the VHF Teletype Society as an organization to deal with the commercial wire-line companies, five of which he now has contracts with, in order to provide the amateurs with old model printers at a low cost.

The procedure for getting a printer is this: first, send a check for $55, your name and address, and a waiver stating that the machine will be used for amateur purposes only and will never be sold for other than amateur purposes (it is this waiver that swung the deal and got the wire companies to sell us the machines) to the VHF Teletype Society. The order will then be placed with one o fthe wire companies which has available machines somewhere near you. The company ships a new machine to replace the old one. The old one is then sent to you. When you receive the machine examine it carefully and send a letter to John telling him what arrived and in what condition it was. Sometimes they send a printer with a receiving distributor instead of a keyboard. So far I have not heard of any machine arriving in non-working condition, and over 800 printers have been distributed in this way.

Have you got that straight now? For equipment write to the VHF Teletype Society, for information and news write to the Amateur Radio Teletype Society, me, W2NSD. If you have no letter paper handy write on the edges of large denomination bills.



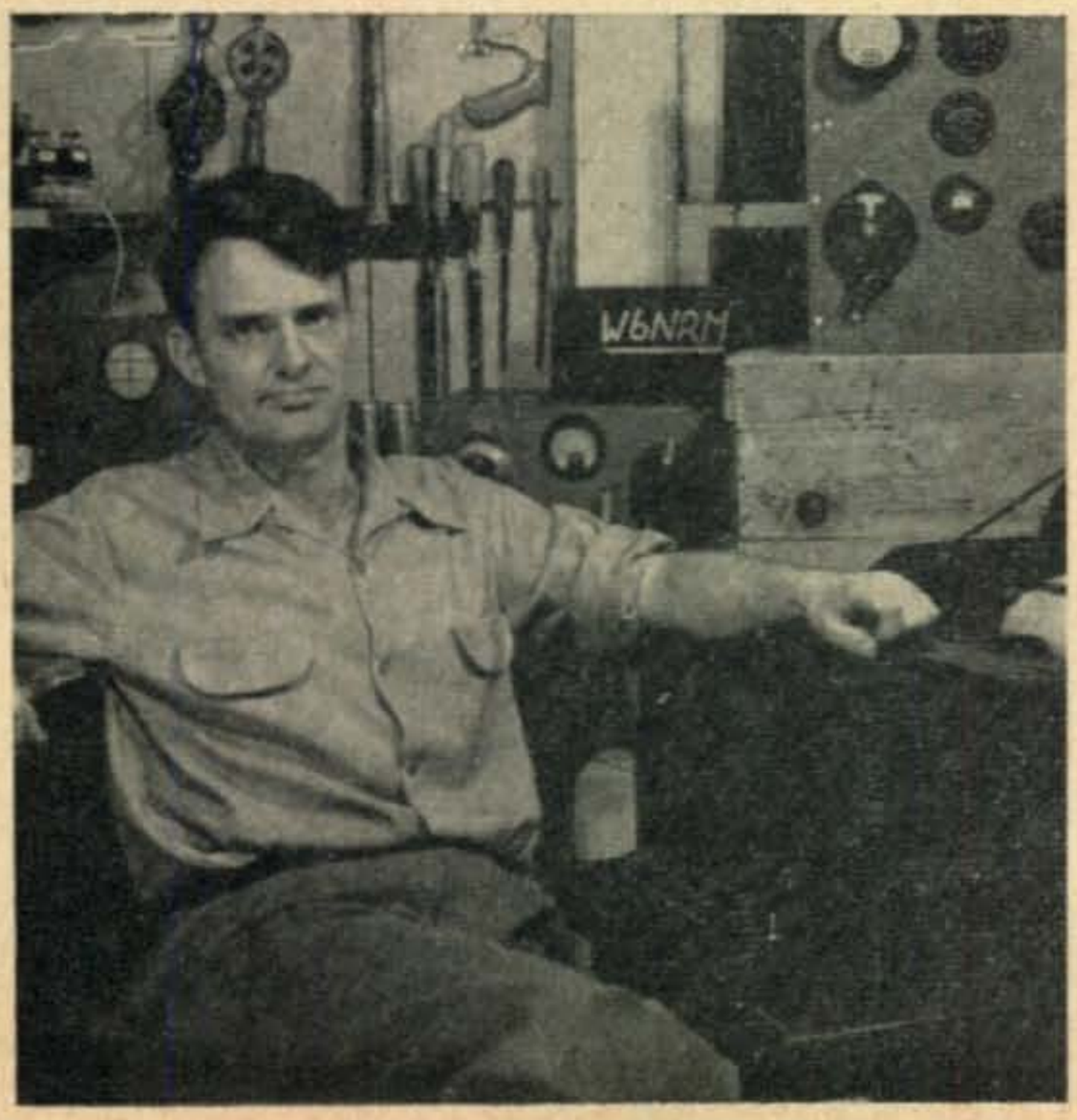
W7IHI (right) Ken Caplan, showing his Model 12, converter, SX-28, and two F-3 crystal controlled receivers.



W7VS (left) (Temple Ehmsen, showing his Model 12, receiver, mark and space tone monitor scope, receiving converter, vacuum tube keyer for the printer, and his tape transmitter, complete with pegs to hang spare tapes on.

W6NRM (bottom left) Bob Weitbrecht, with his Model 12 printer.

W6DOU (bottom right) Paul Lemon, showing the Model 12 and converter rack consisting of the teletype converter, station receiver, command transmitters, 522 receiver, and black box.



FSK

Since operation on the lower frequencies is imminent this is probably a good time to devote a bit more space to the problem of frequency shifting the transmitter. Reading matter on the subject is the article by Bob Weitbrecht, W6NRM, in the April 1952, **CQ** called "The Useful Diode Modulator." In this article Bob explains how to frequency shift a VFO by means of a diode. Marvin Bernstein, W2PAT, has an article on frequency shifting a crystal oscillator in the June 1952, **QST.** Back in 1948 I installed a midget relay and a small variable condenser in the Millen Vari-Arm and was able to get excellent FSK signals out of it. I added a VR tube for stability. Now, with 1N34's and midget diodes, there is little need for using a relay with the resultant clicks for shifting the oscillator.

Most of the teletype amateurs have been building up a separate FSK oscillator for their rigs, and the circuit used by **Collins** in their 709D-1 Frequency Shift Keyer is usually the choice. This circuit is simple to build and align, and does a good job. It is a diode keyed crystal oscillator. For 40-meter output it is best to use 80-meter crystals so as to be sure that a full 850 cycles of shift can be obtained on the output frequency. The value of resistor **R** depends upon the voltage supplied to the unit. Use a value of **R** that will allow 15 to 20 ma. to flow through the VR-150. The plate tank coil L can be any of the small plug-in units or a home wound job. The tank condenser C can be any small tuning condenser around 100 uuf. Many thanks to the Collins Radio Company for permission to reprint their circuit.

In the Boston Area we find:

W1EVZ: "I am operating the teletype on 145.3 mc. and W1KJB is on 144.1 mc. about two evenings a week. . . . Carl Evans, W1BFT, and his pal W1APK are quite hot on teletype. Guess you know that BFT is Evans Radio in Concord and his employees are all hams, and even his XYL Dot! W1APK is the Chief of the New Hampshire State Police radio system."

W1WB has a Model 12, a W2BFD converter, and operates on 6, 2, and 1¼ meters. He has good QSO's with W2PAU and W2JAV during 2-meter openings . . . **W1BGW** has a receiving-only Model 12 printer, a Model 14 keyboard, and a W2BFD converter. He operates on 2 meters and is also active on 80 CW. He will be on FSK when the l.f.'s, open up . . . **W1OSX** is trying to get a busted Model 15 to work. (Some dope piled a 500 lb. motor on it in the warehouse.) He has a good converter (W2BFD) with autostart, etc. He operates on 144 mc., but is thinking of shifting to six meters . . . **W1KNW** has a model 12 and converter working but needs better antennas. He has worked W1WB on 6 and 1¼ meters, but not well. He has recently had a spell in the hospital but is better now . . . **David Hill** of Newton has a receiving-only Model 12 and a W2BFD converter which is working fine. W1WB has been trying to get him to [illegible] his Novice license, no action yet.

Down New York Way

W2VDM has gotten his Model 21A working nicely. **Harry** is trying hard to dig up something more modern than the old Model 12. . . . **W2CFT** has returned from his trip to Europe and is back on two meters. He took a typical busman's holiday and visited teletype stations in almost every country. He gazed upon the original Baudot's printing telegraph, made in 1884, in a museum in Paris. Look for him on 147.96 mc. Al will be on six meters soon. . . . **W2BFD** has been spending about four days a week out on Long Island at his summer camp where he apparently is on the air most of the time. He has worked quite a few Connecticut stations into a fever pitch over teletype by talking about it for hours on end. He tops the voice discussions with a blast of RTTY. . . . **W2AKE** has a printer on order and will be on soon. . . . **W2RTW** is putting in tape gear and claims he is having more fun with teletype than he has had in ham radio for 20 years. . . . . **W2ANB** has all of the equipment built ready to go, but has been working out of town for the last few months and hasn't gotten all of it tied together. He will probably be on the air in the next few weeks. . . . **W2MYL** has put in a reperforator, thus completing his tape setup. Graham is also getting started on six meters in addition to his present operation on 144. . . . **W2QGH** has been spending most of his time on CD work and has teletype well established in that services. . . . **W2AUS** got himself drafted and is out of business for a few years.

Moving South A Bit for More Reports

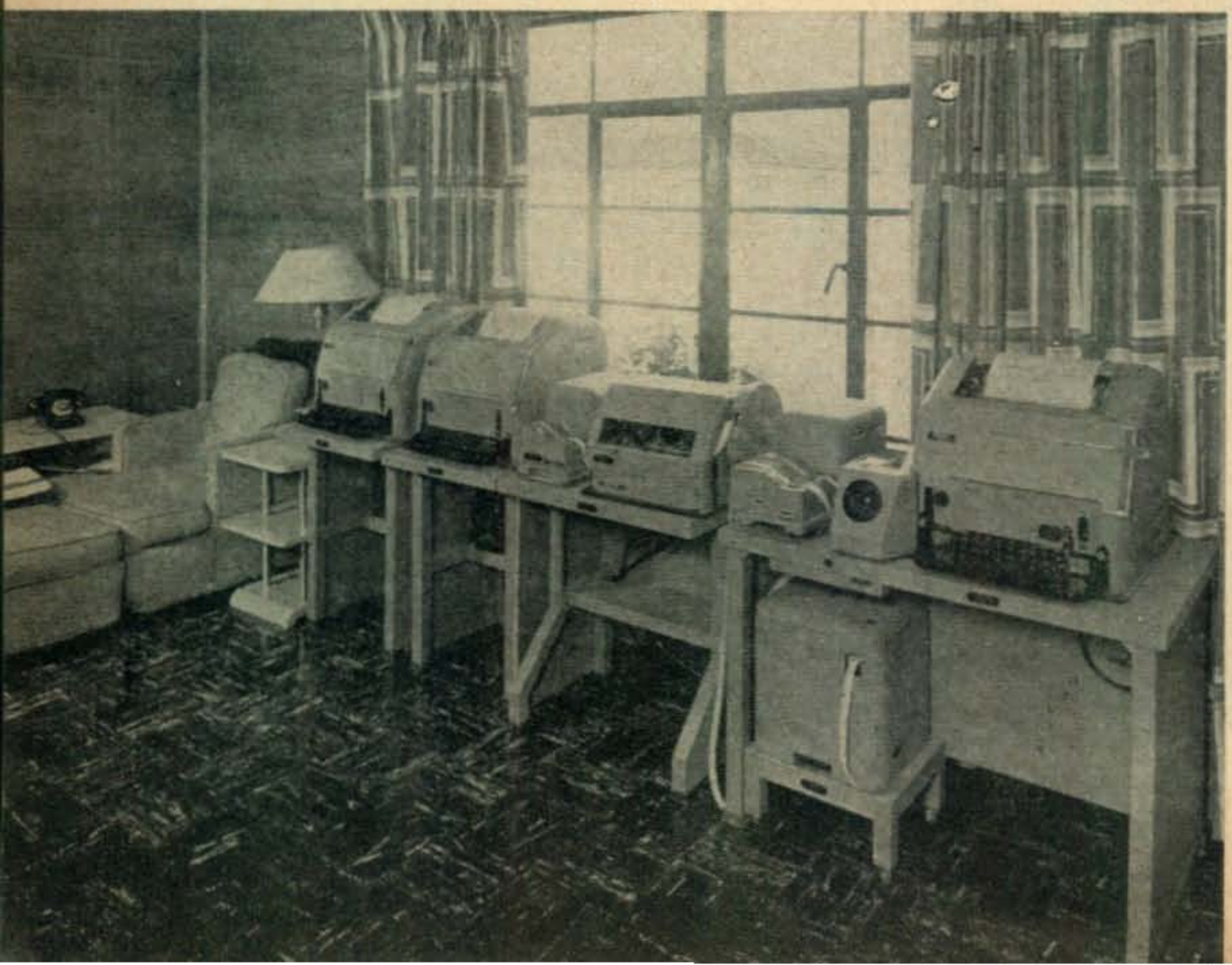
W2PAU is having fits over a CAA station up here in NYC that leaves a blank carrier on the air every day all day. The frequency of it is 148.0347 mc. and it lays his "S" meter against the pin practically every night. When the CAA rig is modulated it just about wipes out the RTTY channel. This is a serious problem and is someone's big mistake. The radiated sidebands fall within our amateur band. I understand that this same difficulty is happening on the low end of the 2-meter band and that there is much consternation over it.

W4HHK made a trip up East this summer and got all inspired after a demonstration by **W2JAV.** When he gets on RTTY there should be a lot more records broken. Many of the RTTY gang have high power, good locations, big beams and darned good results. . . . **W3PYW** worked W8WJC the other night on 144 mc. a 300 mile hop. . . . **W5RJG** has moved to Dallas and expects to be on the air again there. . . . **W5RLS** is building up for RTTY too.

And on the West Coast

E. C. Sherrill: "Being an ex-amateur and now commercial, and learning teletype this way, the articles in **CQ** interest me to the extent of getting my license again."

[Continued on page 66]



This is another view of the equipment at W6ITH. Seen here are the two model 15 units, a model 14 reperforator and a model 19.

THE COVER

W6ITH—Reg Tibbets. showing the Model 19 and four racks containing telegraph repeaters, amplifier speakers, SSB terminal gear, Collins 706A-2 FSK Diversity Converter, Super-Pro, F-3 fixed frequency receivers, and teletype terminal equipment.

the VHF news

Edited by
W. E. (BILL) McNATT, W9NFK/5
6614 Plaza Drive, Houston 21, Texas

California Commentary

Tom Wing, **W6MVK**, reports that Contributing Editor W6AJF turned in a total mileage of 12,713 to put the first leg on the new Marathon Trophy. The original trophy was retired by W6BYE, three-time winner. Frank lives in an almost impossible VHF location, in a small valley at Sonoma. Almost 95% of his contacts are not line-of-sight. He is using a quadruple conversion, and 500 watts to p.p. 4-125As, now high-level modulated. W6MHF was winner of the new all-California Activity contest with 470 contacts; W6AJF, 462, was second. Expedition award was won by W6IHK/6.

W6MVK was on vacation, via two meter mobile, and visited a number of VHF hams in central California. Two of the most faithful hams in central California are W6NGR and W6EFS. W6NGR is at Tulare and recently lost the "N" of his call. While WN6, he held weekly Sunday schedules with W6DSO, making two way contacts weekly for several months without a hitch over a 200-mile haul, considered impossible last year. Jack is using an Eldico transmitter and a VHF-152A with two Astatic TV boosters for pre-amps, a 24 element beam 50 ft. up. All the local hams bet him he wouldn't last 6 months, as all contacts are over 50 miles and few and far between. Jack uses the same Eldico transmitter mobile with a Con-Set converter. When W6EFS, Armona, heard a ham was visiting at W6NGR's, he drove 40 miles to meet W6MVK!! He and W6NGR keep up their end of the Los Angeles to central California path open. He is running p.p. 24Gs with 280 watts input and 24 element beam.

W6ZYH, Palo Alto, is trying for Los Angeles and other DX contacts. Reg is running p-p 4-65s at 400 watts and has a beautiful rig ending up with a 24-element antenna. His receiver uses a pair of Eimac triodes at $33.00 each! One pair is used as neutralized pre amps; another pair as cascode. Tom, W6MVK, first thought it was a final, as he saw two blower fans!

W6GD, Palo Alto, built up a series of collapsible beams from a 4- to a 16-element job for mobile mountain-top usage. Many of the gang up north have copied his set-up W6MVK took some 35MM slides to add to his antenna collection. W6GD's favorite is an extended 16-element array which he has really working, now, and can reset to 1 degree. Incidentally, he takes issue with Brownie, W2PAU on the ⅝-wave J for mobile. He thinks the mismatch makes it not much better than a ¼ wave.

Miscellany on Two

Ken Carter, **W2QED**, says that July hot spell sure made a mess out of 2-meter DX conditions on the bands. Things were stinko until about the first of August, when the heat wave broke. Then things got quite good. He finally worked VE1QY, Yarmouth, Nova Scotia, with W2BV helping to get the boys hooked up on two meters. There were several good two-meter openings during the last week of July.

According to George D. Kerr, the members of the Jackson (Michigan) Amateur Radio Association have decided to be on the air on two meters every night at 9:00 PM, EST. Of course, this isn't compulsory. But, if a fellow decides he will turn on the rig and give out with a CQ, he will be more apt to contact some stations at about 9:00 PM EST than at any other time. This activity is in addition to the regular net operation, at 7:30 PM EST Wednesdays, with Net Control Station, W8BBY, Don Wangrow, operator. . . .Les Willis, **W8BAN**, is one fellow in Jackson, Michigan, who is on a lot of the time and who is interested in contacting all the far away places on 144 mc. He made 63 contacts in the vhf sweepstakes.

From **W7HEA**, Toppenish, Washington: "As yet, no new activity on two. A little later on, we plan on running some tests with areas around here that have two meter activity and see what we can do but right now, too busy with other things."

Dayton Data on Two

W8PTF has his FSK almost ready to go. Rube is going to rebuild, also: new beam and all. . . .**WN8INQ** has

The six-meter gang at the Two Meter and Down Club picnic at Buena Park, July 27th. In the front row (l. to r.) are W6IVC, W6IYA, W6GQF, W6EIB, W6ZSI and W6QXB. In the back row are W6ABN, W6MVK, W6WNN, W6-WSQ, W6VES, W6INX, W6CSS and W6BAE. (Photo by W6DZA)

his Millen final going. Amos is on Two when he isn't working nights. . . .**W8SVI** is also working on his equipment and will have a new beam and tower up. . . . **WN8HOH** has been working on his big final and some receivers for the boys in southern Ohio. The beam is on top of 60 feet of an Alprodco tower, and it is doing a fine job. Whitey has been working some of the boys in Indiana W9EGH and WN9PUD. Russ, W9SUV, hasn't been heard for quite some time. To show that there is activity on Two around Dayton, Whitey reports that WN8HOH has worked over 800 QSOs on Two in the last 10 months, and he is sure that there are many who could get on, that don't!

After the last contest, **WN8HOH** was very disgusted. "I looked in my files and found about 40 stations that I had worked before that weren't on. And, I was on the band for all but about 4 hours, when I slept!" Whitey complains.

W8PTF, W8BMO, W8BLN, W8EHW, W8WAU, W8RVH, WN8HOH and WN8INQ all planned to attend the Turkey Run. Two Meter Mobile was to be worked all the way with three cars, W8BLN, WN8INQ and WN8HOH.

W4HHK Newsletter

"Just to bring you up to date on the Wilsons: About the middle of July, we went on our two-week vacation . . . went with W4BAQ and his xyl, WN4UDI/W4UDI, to New England. Had a big time, traveled many a mile and saw quite a few fellow amateurs. Here's the rundown. . .

"In Washington, D. C., we visited W4AO and W3NL—also W3RXJ (xyl on ten) . . . then to West Hartford. Spent some time with W1HDQ at his home and toured Headquarters and W1AW. We went to a hamfest in Portland, Maine, where I had a fine chat with Cal, W1CTW. He gave an excellent demonstration on VHF/-UHF at the Down East Hamfest, Lenette (W4UDI) and "DB" won attendance prizes. DB's being a 5 tube a-c/d-c b.c. Hallicrafters; Walt and I won nothing!

"Had great fun talking VHF and UHF with W1HDQ, W1CTW and W4AO. I came home with the resolution to get on 220 and work Texas. Imagine my surprise when I esaw an advance copy of CQ at W3NL's with your mention of my being in a good spot to hold one end of a 220 record! You must be a mind-reader. (**VHF Ed. Note:** Nope. It came from W5FEK, W5FSC and others.) Anyhow, I have dusted off my 6J6 preamp (used two years ago to work W5NYH) and tuned up the 832 rig (15-20 w.) and have started on a 32-element horizontal array (16-over-16) which will be anchored on Texas, at 60 ft. up. I've written W5AJG and the gang regarding this . . . telling them that W5RCI, Marks, Mississippi (75 miles from here) and I are getting set to work Texas on 220. Rex will have an 829B to start and a crystal-controlled converter/receiver. His 16-element beam is already dragging in channel 13, Birmingham, Alabama. This fall, I expect to have a pair of 4-65A's on 220. So, watch for W5RCI, W4HHK and W4UDQ (DB). Our frequency will be 220.725 mc. and Rex will be on a slightly lower spot. We'll use phone and cw.

"For your information, the W4HHK/W4UDQ QTH is located as follows:

Lat. 35° 02′ 30″ North
Long. 89° 40′ 00″ West

(**VHF Ed. Note:** This is the kind of information we'd like to have on file from all VHF DX hunters.)

"Lately, 'DB' has been keeping us on two by using the 522 while I'm at work. The beam is down at present, so have been using a dipole, 75 ft. up! With this, regular contacts have been with W5RCI and the Memphis gang, and W9UED and W5JTI have been heard on the dipole, mind you.

"We have some new activity on two in Memphis . . . some Novices (who are building their rigs—not buying 522's!) and general class. Occasional contacts are had with Little Rock, and W9UED puts in an appearance quite often. I still run the 50-mc beacon, some, but its power supply alternates for the 522. so no continuous operation. Hope to get the beam back up in the next few days—5-over-5, so 'DB' can work some DX with the 522. As mentioned above, this fall I hope to have a 4-65A final on 220 . . . and, while building that, I will rebuild the 144 final.

"Decibel didn't quite get ready for the RI back in July because of the many things that kept us busy prior to the vacation trip . . . but she's working on the 13 wpm these nights and hopes to have a general class license, come October," Paul concludes.

In and Around Chicago

Thanks to Clare Reynolds, **W9MBI**, Coleta, Illinois, for the list of stations worked during the big four-day July opening in the mid-western states. "This does not include local stations worked on 2," says Clare. July 26: WØEMS, WØBIP, WNØGUD; July 27: WØTMJ, WØTJF, W9LJV, W9NJS, W9CT, W9ZQT, W9IRE, W8NNF, W3BGT, W3FPH, W8DX, W8OQ, W8BLN, W8RVH, WN8KJT, W8VOZ, W9KLR, WN9OVL, W3LNA. On July 28, Clare again worked WØEMS and WØBIP. He also hooked WØVEC for a new state, Nebraska, followed by WØQXR, Omaha, Nebraska, and WNØGUD. Next night, the 29th, W9KQX, W9RUW, W9ZHL, W8LPD, W9MTV, WN4VLA, WN9TKO, WN8HQK, WN9PUD, W9DWX, and **WN8KJT** were worked on 2 by W9MBI and many other stations in the Great Lakes region. Note the number of "WN" calls active!

"I am still laid up with the injury, so all I can do is operate!" concludes Clare.

W9GUA, Howard Yates, wants all of his old friends in the Chicago area to know that he and his family are now living in St. Petersburg, Florida, at 3020 Central Avenue. Howard says that the family is fine and that TVI is "unknown" down there. He also says that modification forms for the W4 call will be sent, soon. . . .**W9ZHL**, Terre Haute, Indiana, says that the fine business opening of August 18th brought W8, W9, W4 and WØ signals from Ohio, Michigan, Illinois, Indiana, Kentucky and Missouri, WØKYF, WØIHD, WØVMY and WØYRX were the strongest, up to 40 db over S9. The Chicago gang was very active, with W9EQC being the "big boy". W9ZHL is building a new antenna and will have it on the tower, soon. "So, look out, Texas! I need a new state!" W9ZHL announces.

Could Be

"Remember all the 'Flying Saucer' talk from the 25th to 30th of July? 2-meter openings occurred at the **same** time. Looks as if the cold front coming in from the north caused something, hi! Maybe if we push our sky-hooks a little higher, we could capture something!" — **W9ZHL.**

W9CAW/5 In Texas

The Chicago area gang is happy to hear from "Gus", W9CAW/5. "I'm still here at Fort Bliss, Texas. I am now in the 33rd week of my training course! I know, **now**, how you 2-meter hams sure did help me out, and I sure appreciate it!

"I've gone to several of the local west Texas club meetings, and I have done fairly well in selling 2-meters to them. But, not having my station here, I can't do too much good. If I do stay stateside after this schooling, I'll surely try to get on with a 522 and a good converter. If any of you fellows have anything hot on converters, be sure to let me know the scoop." W9CAW/5 requests. Gus' address is Pvt. Carrol Gustafson, US 55178539, 4054 TH ASU ENL STU DET. Fort Bliss, Texas, (Building 1000). (**VHF Ed. Note:** Gus, look up Ken Billings, ex W9FKI — now W5VKF, Big Spring, Texas. Maybe you two fellows can get things going!)

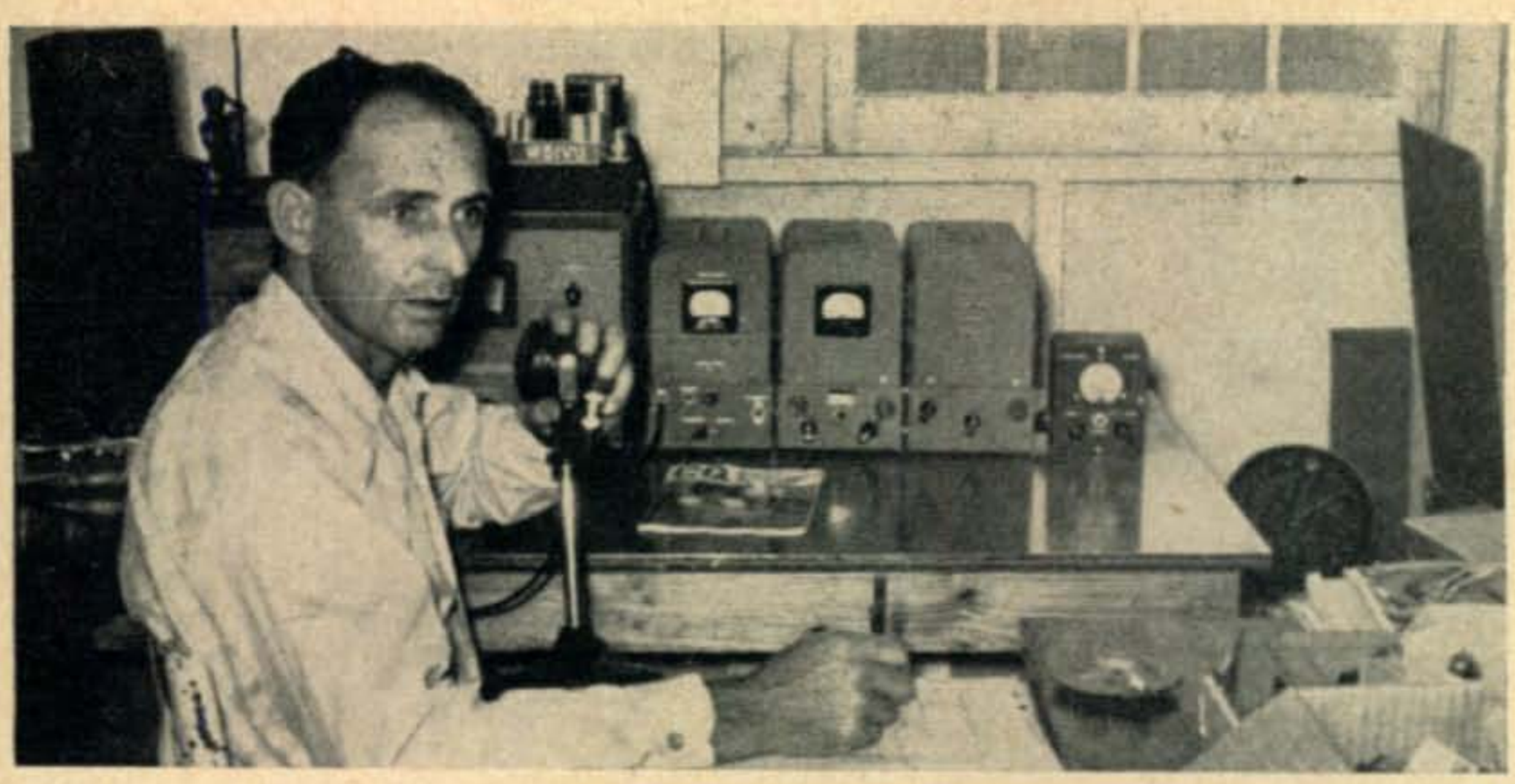
(**VHF Ed. Note:** "Wha' hoppen to my 'Faithful Few' reporters in the Chicago area?!!")

Turkey Run Meeting Big Success

W9ZHL reports that the Turkey Run VHF Picnic, on July 27th, had a very nice attendance, 5 more hams were present than last year, with 8 states represented: Texas, Missouri, Illinois, Indiana, Wisconsin, Ohio, Maryland and Kentucky. W9LJV and W9TQ came down by plane from Wisconsin. Other DX present were WØKYF, W5VKF (Ken Billings, ex-W9FKI), W3RFW, W5FSC, W5MKJ, WØIHD, W8SDJ, WN8HOH, W8BMO, W8RVH, W8WAU, W8EHW, WN8INQ, W8BLN, W8FMW, W8GAB, W8BFQ, W8WJC, W8CPA, W8WRN, W8FKC, W8SCT and WN8KQV.

Picnic notes: We have good proof that **W8WJC** likes watermelon. . . . **W8BFQ** looked nice in her "Buck Rogers" hat. . . .Wonder what kind of an antenna will take root from the 100 ft. of Gon-Set open-wire line won by **W8WRN**. . . .**W4MKJ** said the heat was as hot as Louisville (the 27th was the hottest day of the year!). . . .There were several WN hams present, and we all were glad to see them. It was nice to meet the triplet brothers from Kentland, Indiana, WN9PKS, WN9NJS and WN9PKU. They keep 144 mc. alive in that area.

There were lots of ideas swapped at the meeting. Schedules were made. The old gang made new friends. Everyone had a fine time! Remember—Turkey Run, 1953!



One of the Texas boys—
W5IVU, Edna

Getting ready to call CQ—
W5UB, San Antonio

Pretty soft for W5ONS,
Victoria

Father and Son—W5CVF
and WN5UUA, Houston
(all of the above photos
were taken by W5FEK)

Texas Two Meter Topics

The old saying that "no news is good news" does not apply to two meters, John Naff, **W5TFW**, comments. On the whole, conditions on two were "local" during July and August. Signals from Austin and Houston came through, readable, but weak during the morning hours. W5BDT, W5AXY, W5FSC, W5TAK, W5AYU and W5ONS, Victoria, have been fairly regular. They have been doing quite a bit of work on 220 mc. and 432 mc. and have had some good contacts. So far there is no one on higher than 144 mc. around here. There has been some talk, but no signals as yet. W5QIO has a converter that will tune 220 mc. and it seems to work very well.

On the morning of July 22, W5ML, Oil City, Louisiana, and W5MWW, New Boston, Texas, were coming through very good here. Then on the morning of July 26, the band opened up to San Antonio and W5VY and W5UB came in very nicely. W5PMM, W5TAF, and W5FEK were worked. Conditions fair. From 8 to 9 at night the band was open to the East, but W5TFW was not present! New Orleans stations came through, and Houston stations also came in fine. 8-10 AM, July 27, W5TFW worked W5DSB and W5QIO, but did not hear any outside stations. That night, the band opened up to Houston in good shape. John worked W5AOA, Sulphur, La. W5FSC, W5FEK and W5NHB of Houston. The Gulf gang still had not, however, had a slam bang opening for a long time. Local activity remains about the same: W5QIO, W5QME and W5TFW keep the home fires burning. . . .W5JBW is on regularly; W5AOA, occasionally. . . .WN5UJP is active once in a while. When conditions are fair he does not have any trouble getting out. . . .W5EVQ, Alexandria, Louisana, is on now and then. . . .W5GIX comes through when conditions pick up. . . .W5MKP has been very busy and has not had time for two meters, but is expected back on anytime.

The Gulf Coast had a bang up opening, at last, on the night of August 13th, from San Antonio to New Orleans. W5UNU had a good signal here. Houston stations were very good. W5VDA was pounding in like a kilowatt. W5TDY was also heard. No extended DX was reported, however.

W5OBS, Don, is an engineer at KORA, Bryan, Texas, and will start his senior year in E.E. at Texas A & M in September.

"My former QTH was De Kalb, Texas, about 10 miles from W5MWW, Cliff, in New Boston. He—W5MWW—has been talking two meters so loud and long that I decided to give it a try," says Don. "So far, I've finished a 6AK5-6J6 fixed-oscillator-tuned converter and a 5-over-5 beam. My transmitter is an 832 from the ARC-4 driven (I hope) by a 12AT7 using a Bliley rack on 24034.5 kc. The modulator is also out of the ARC-4. I hope to have this 'collection of bolts' on in time for the VHF contest in September. Also, an 829B is available for a two-meter final, if I ever get time to build it!"

Don's location is at the transmitter site of KORA, about 3 or 4 miles out in the country from Bryan, so he has plenty of space, and no TVI on a slight hill. Bryan is about 75 miles northwest of Houston, and W5OBS/5 hopes to work in there, fairly regularly.

W5FXN, Austin, recently finished a 144-mc cascode converter and a twin-five, a'la Brownie, so will be on two before too many more weeks. He won't have high power for some time, as Jim wants to see how much good he can do with a 522!

220 Mc.

W2QED says the work on the 220-mc transmitter is at a standstill while he waits for some parts he ordered. . . .**W4HHK** is working on the 220 antenna. W5RCI has about finished his 220 transmitter and has only the converter to whip together. His 16 element array is already up and looks mighty sharp.

(**VHF Ed. Note:** Surely someone else is on 220! How about some reports? Thanks!)

Six Meters

W2QED finally got his six-meter beam, and has it assembled although not up in the air yet, but he will be in business before long. . . ."Bish," W7HEA, reports that six is beginning to go out. Lack of **activity** is very evident during some of the openings, as many more stations should **have been** coming through.

July 13: Six opened at 1934 with W6GQF the first to break through followed by W6ABN, W6DSO and W6INX. Closed at 2046. On the 14th, at 0725, WØFKY was worked, and **W7HEA heard** W6OB, worked W7QAP. Bish left for the "sweat shop" with the band still open. At 1837, W5PZU and W5KCP were worked. "Six" closed at 1852. Nearly two weeks later, July 27th, at 1030, W7HEA worked WØFKY and at 1100, WØGPG. Dead band after 1115.

On August 2, at 1825, **W5SFW** was worked and Bish heard W7LFX ragchewing with W7LVR for over an hour. Couldn't break them! They need a "Snooper," Hi!

August 5, brought W5SFW at 1858 and at 1930, W5MJD. On the 6th, ol' W7FGG showed up at 1858, but the band went dead at 1908.

In Austin, Texas, **W5FXN** reports that Wilmer, W5VV should be on before long with p.p. 4-65As, controlled carrier. It follows the rig that W5FXN wrote up in December, 1951, **CQ**. . . .On July 18th. Six was open at 1645 when Jim turned the receiver on, and worked VE1QZ, W1HDQ, (1700), W3PCB (1930), W9IAJ, and W9VZP before it went out around 2200. Heard many W8s, W9s, etc., but Jim was looking for new states. There seemed to be plenty of other W5s for the boys to work. On July 20th, W5FXN worked W7QAP and W6GQF, the W7 QSO being around 1130 and the W6 contact at 1915. Few other signals were heard.

On August 4th, a good opening occurred to WØ with the faithful WØCJS and WØMVG in there most of the time. On the 13th, Jim turned the 6-meter receiver on just in time to hear "in **Delaware** calling CQ 6 and tuning the band."

"Boy, I lit matches under the 4E27's, trying to get the filaments hot, but I missed him! That was at about 1745, and the band stayed open until almost 2000. worked W3PCB and heard W4MKT and W4CVQ. Lots of QSB was noticed, but W5FXN heard no signals other than those mentioned. W3PCBs signal was loudest and most consistent. There was no indication that W3PCB or the Delaware station were coming through on double hop," says W5FXN.

Jim continues, "During the last 13 months, I have made notes of every opening observed, here, in an effort to predict future openings. Results have been pretty fair. During July, 1951, we had openings (that I caught) 1. days out of 31. (All call areas plus VE3 logged. During August, 1951, only six openingse were observed, but I was on vacation, then. During September, no openings were observed as 6 was very inactive. During October, only one opening was logged with the band open to W4, W3, W8, and W9. November produced one opening to W4 on the 20th. December was more generous with two openings, one to W6 and the other to W4, W8, W9 and WØ. January, only one opening and that to XE1. Nothing at all in February, March or April. May: three openings with contacts to WØ, predominately, and a few W4 and W9 **QSOs. June** found band open 14 days, 13 of them in a row from the 8th through the 20th. Double hops, four days, 8th, 18th, 19th and 20th; I was on vacation during first three weeks of July, but got five openings out of 13 days—one of them double hop. So far, August has produced openings to W1, W2, W3, W4, W5, W6, W7, W8, W9, WØ, and VE1.

Looking it over, our best bet is to get new blood interested in six in May, so they can really get their feet wet in June, Hi! Boy, we sure need more activity. Lots of fellows have gear but don't get on. I scan the band regularly from 1730 to 2000, daily and practically all day Sunday. With so many TV sets tuned to KPRC-TV it is kinda' rough. But, since we've gone to controlled carrier, we haven't had any trouble. Those one-eyed monsters (TV receivers) do help in tipping you off on band openings, though.

I'm about the **only** one left on six, here. Pen, W5BDT, gets on now **and then**—and Wilmer will be back on soon—so, maybe **I can** get a local QSO occasionally. With Steve, HC2OT, returning to Chile, we may get a shot at him this winter. We sure need some activity in the Carribean. Have been trying to talk ol' Dick, KV4AA, into getting on. TI2AFC seems to be QRT, and Jeff, XE1GE, is off for rebuilding, I hear. XE1PY says his 6 meter rig is QRT. Why can't we get the gang in Louisana and Mississippi active around 0700 so we can pick up those states? They're too busy working DX, when the band is open, for us to get them. I had a heck of a time hooking Arkansas this year!

"W5FXN's present score on Six is 37 states worked and confirmed, plus XE, VP7, HC2 and VE1 and VE3; 5 countries, all confirmed. When I went to New Jersey on vacation, this summer, I drove on up to Lakehurst

(Continued on page 68)

Gathered by DICK SPENCELEY, KV4AA
Box 403, St. Thomas, Virgin Islands

Our congratulations to the following on achieving WAZ:

No. 281 DL1IB Gerhard Bussler 40-183
We also welcome to the Honor Roll W5MPG 39-191

CQ CONTEST

Just a reminder to polish up your antennas for CQ's World Wide DX Contest which promises to be the 'biggest ever'.

Phone section: 0200 GMT (8 PM CST) Oct. 25th to 0200 GMT Oct. 27th.

CW Section: 0200 GMT Nov. 1st to 0200 GMT Nov. 3rd.

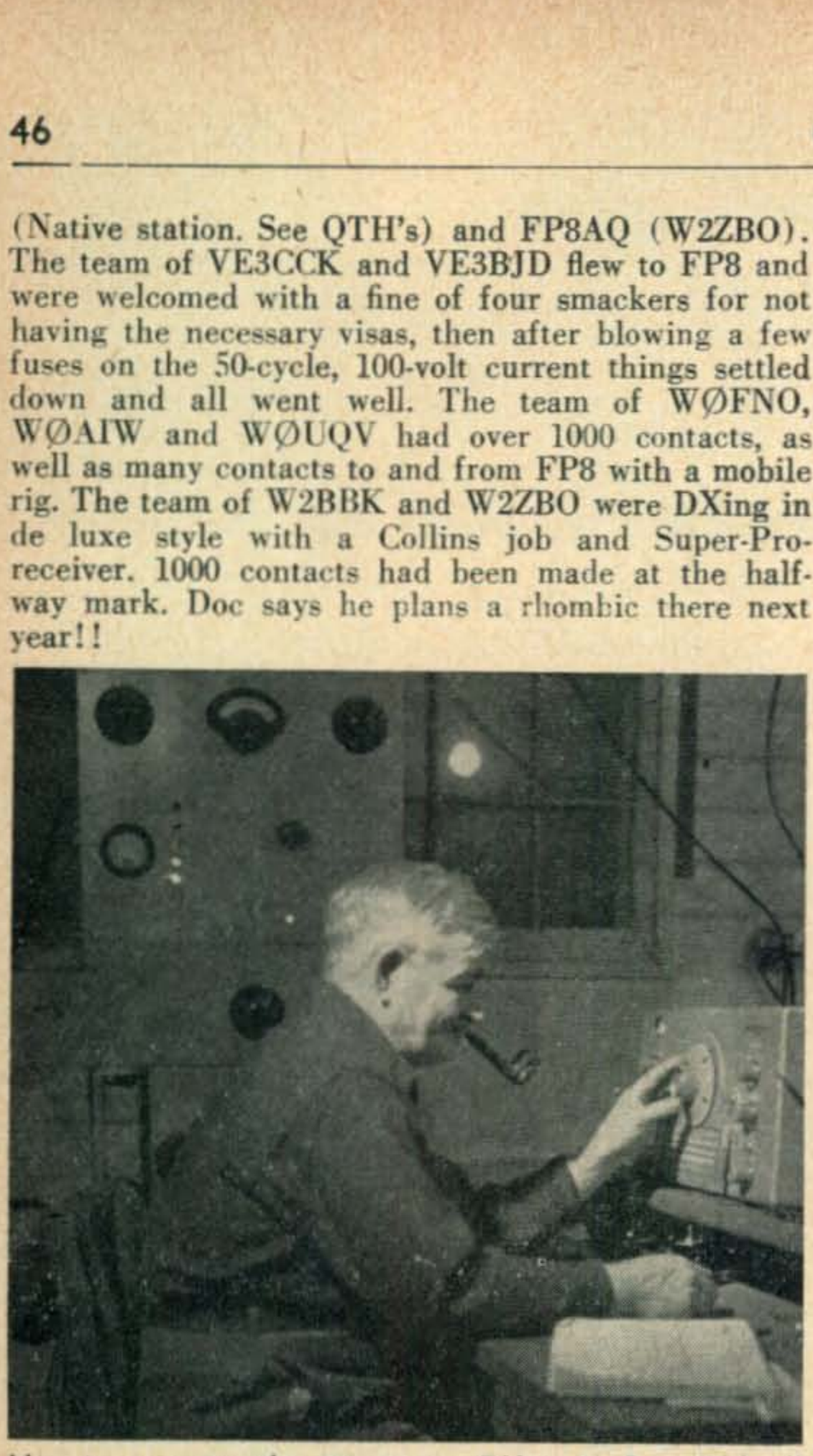
For further details see August CQ.

Our latest candidate for the ham "Hall of Fame" is Clyde Norton, VS5ELA (WØELA) whose operation from the jungle town of Kuala-Belait, Brunei, from July 26th to July 31st, gave many of us a 'new one'. Nearly 450 contacts were made during the five nights of operation and, Clyde states, conditions were surprisingly good. First QSO was made with VK4QL closely followed by W6FSJ. (Other contacts reported here were: G6ZO, W6EPZ, W6IBD, W2AGW, ZL2FA, W6AMA, W6VE, W2WZ, W1FH, KG6AF, W5ASG, W5EGK, PY2CK, W6MX, W8NBK, W6GDJ, W3BES, W8BHW, W6SN, WØYXO, T12TG, OQ5RA, W5BZT, SM5DZ, W7GUI, W6AM, W7BD, W9LNM, W9HUZ, W3EVW, W3JTC and WØTKX). On peaks, 45 contacts per hour were maintained and once, for a test three QSO's were made in one minute. It was very interesting to note the lack of QRM during a fifteen minute contact with WØELA (Stateside) with WØCTW at key. WAC was made and several stations in each W-district were worked. The case containing all transmitting gear was lost en route from Japan and has not been found to date. Thus, a transmitter built during his trip to Japan last year was pressed into service along with a Japanese 'bug'. This limited operations to 14-wc CW only. While VS5ELA was situated only two miles from the Sarawak border any operation from there was out of the question. The stay in Brunei was cut short due to mechanical trouble in the small plane which flew them in from Labuan. This necessitated a foodless fourteen-hour boat trip back to Labuan in the terrific heat where everyone arrived in a state of almost complete exhaustion. Between the unusual diet, heat and operating Clyde sweated off fourteen pounds. To VS5ELA and second op ex-W9EFK (ex-2nd op JA2BQ) goes our thanks and WELL DONE!!

Ham radio has been having a Roman holiday in FP8 land this summer with plenty of activitv from the following: FP8AI (VE3CCK), FP8AJ (VE3BJD), FP8AK (W2BBK), FP8AL (WØFNO), FP8AM (WØAIW), FP8AN WØUQV), FP8AP

In this photo we see Bill Storer, probably somewhat better known as VK1BS. His activity on Macquarrie Island resulted in over 1100 contacts. Bill is now VK2EG.

(Native station. See QTH's) and FP8AQ (W2ZBO). The team of VE3CCK and VE3BJD flew to FP8 and were welcomed with a fine of four smackers for not having the necessary visas, then after blowing a few fuses on the 50-cycle, 100-volt current things settled down and all went well. The team of WØFNO, WØAIW and WØUQV had over 1000 contacts, as well as many contacts to and from FP8 with a mobile rig. The team of W2BBK and W2ZBO were DXing in de luxe style with a Collins job and Super-Pro-receiver. 1000 contacts had been made at the half-way mark. Doc says he plans a rhombic there next year!!



No stranger to the 20 meter DXers is Roy Colwell, W6LW. Roy runs a kilowatt to 860's in the transmitter seen in the background. A three-element beam does the rest of the work.

HZ1MY's second trip to FL8 July 25/26th was highly successful and a few of the contacts were noted as follows: WØTKX, W2LSX, 4X4RE, W6IBD, W4TM, W8PQQ, W3GHD, W2MCI, W6TT, W1JLT, W5AVF, W2CTO, W7BD, W3DYL and W2HMJ. Dick plans operations from VQ6MY on Aug 28/29th but this may have been delayed until Sept. 11/12th . . . VP5BH (Caymans) has been very active recently 2200 to 2300 z 14007 kc. . . . C3AR and C3MC have been active 1200 to 1300z 14100 and 14030 respectively. C3AR is an American running a 32V2 xmtr. Both QSL, W5NMA having received one from C3AR five days after QSO and W5MIS having received one from C3MC. See QTH's.

EDZI (Rio de Oro) has been worked by G6ZO who reports that this station is on 14050 xtl and sked ECW1 (Spain) daily at 0600 and 1700z 7ECWI answers on slightly different frequency with very unstable VFO . . . ZD3H has been reported on 14107 T6 2000z while F9AH QSO'd one HV1Z who claimed to be legitimate in Vatican City. Further word from I1AIV cast doubt on his legality as nothing is known of him at ARI Hdqtrs who state VS9AW has been active on 14090 1500 to 2000z. that no ham activity is yet allowed in HV . . . This station is not in Aden, but gives his QTH as Salala, Oman. QSL via RSGB. Info. from DL7BA and GC3CSM.

New or Unusal

ZP9AW has been very active 14010 giving many a needed ZP contact. See QTH's. . . . **3A2AU** is a new one in Monaco. See QTH's. . . . **OQ5CZ** (Ruanda Urundi) is active but handicapped with poor receiver. . . . **VQ4DO** may show up at ZD6DO in December. . . . **W5MUP/KS6** is active on A3 14210 and will be on for quite some time. . . . **VP1AA** recently heard FG7XA O35 T6 1900z . . . . Ford, **F7AW**, advises that the Pres. of the REF told him that no more permission will be granted for ham visits to Andorra. This has probably covered PX1BB's expected trip. . . . W7BD was advised by VK2AM that a legit Nauru station, **VR7AA**, has been contacting VK's. Our fingers are crossed. . . . The recent **VR7AB** flurry seems to have died a natural death. . . . OK1MB advises a new LZ is on 14 mc., **LZ2KAC**. Micka has worked all the (phoney?) ZA stations but nary a card has appeared . . . . Ed, W2GT, noted QSO's between the most recent of these, **ZA3KAA**, and **W8BRA, TI2TG, W9NDA, KV4AA**, W8HGW, DL1BO, W2ARE and W3SPI. (Info from TI2TG OQ5RA W5MPG.

From ZS6BW via West Gulf Bulletin we hear that ZS6GV will be at St. Helena from October 8th. All-band CW and phone operation is planned and power will be 50 watts. A3 will be from 100 to 150 kc. and CW on 50 kc. each band. 75-meter phone on 3700 kc. Phone stations should call 10 kc. up/down and CW stations 5 kc. up/down from frequency. Low end of W-phone band will be tuned. The receiver will be a S-17.

DX notes from **F9RS**: 21-mc opened for F-stations July 15th. . . . . **3A2AH** (the real one) is on phone only and runs 60 watts to a doublet on 14 and 28 mc. 1100/1300z and 1900/2200z. . . . New ones in Senegal are FF8AS and FF8AN (See **QTH's**). . . . **FF8JC** is again in Dakar. . . . FQ8AT is a new one in Tchad. (See **QTH's**). . . . FF8MM, in Bamako, is on again with new xtmr. . . . FF8AC, now in France, sent out 1200 QSL's and hopes to receive a like amount. . . . In Madagascar five new ones will soon be active. . . . **FD8AB** will be in France until next May.

SIXTH ALL-EUROPEAN DX CONTEST 1952

(Handled by E. D. R. Denmark)

TIME:	CW-0001 GMT Dec. 6th to 2400 GMT Dec. 7th. Phone—0001 GMT Dec. 13th to 2400 GMT Dec. 14th.
FREQUENCIES:	(European Plan) CW 3.5/3.6, 7/7050, 14/14.15, 21/21.2, 28/28.2. Phone—3.6/3.630, 3.690/3.8, 7.050/7.3, 14.15/14.35, 21.15/21.445, 28.2/30.
EXCHANGES:	Stations will swap a six numeral figure the first three numbers being the RST and the second three being self assigned, i.e., 333, 000, 807.
SCORING:	(Outside Europe) Two points for number sent and one point for number received. Final score: Points multiplied by the sum of all European countries worked on each band.
REPORTING:	Logs must be postmarked on or before Dec. 31st 1952 and sent to: EDR Contest Committee, Post Box 335, Aalborg, Denmark.
AWARDS:	Certificates will be sent to top three scorers in each country and each W/VE call area. Phone and CW. Certification that contestant has complied with contest rules and regulations established for amateur radio in his particular country must accompany logs.

FD8AA is rarely on the air. . . . **FU8AA.** on Pentecote Island, New Hebrides, is building new shack. . . . **FU8AC** should be active soon. (See **QTH's**). . . . Active in FK land are FK8's AB AI AE AJ and AN (xtl 040). FK8AH and AL returned to France in August. . . . Chandernagor, French India, noted for the activities of **FN8AD**, is definitely out of the French Union and the call FN8 is to be scratched. . . . **3A2AK** (F8BS/F9LQ) made a short trip to Monaco July 18/20. Conditions were very bad both for them and 3A2AL (G2KU/G2DIV). . . . **FF8AQ** will be active in September with 25 watts xtl 14050 2000/2300 z. . . . Logs for QSO's with **FB8ZZ** after Feb. 7th '52 will arrive in France in Feb. '53 so QRX for cards on this one.

It is interesting to know the depth of subterfuge sometimes employed in this desperate search of ours for DX. A case in mind was that of a staid and sturdy G-station who had a prearranged date with a very rare DX spot. Five minutes before schedule time he was heard giving a non-existant "SV7AQ" a long slow call ten kc. below sked frequency. This red herring had immediate effect and the pack went yelping off in this direction while the G softly sneaked up ten kc. and knocked off the rare one without too much trouble. Boy, you sure have to know the angles!!

Exploits

W1DSF rec'd WAC and has WBE on the way. . . . **VP5BH** was nailed by G5BZ G6ZO and G6YQ. . . .**TI2TG** reached 204 with ZK1BC and VS5ELA. . . .**W2AIS/KH6** is now KH6ARA. Pat QSO'd two QRP J's, J2AN and J3RR, also VP8AJ and LU1YA on 7 mc. . . .**W1ME** nabbed FL8MY and 4W1MY. . . .**W1HX** checked in his 200th card and reports W1FH has rec'd his No. 220 for phone only. . . . Heard QSO'ing **C3AR** were W2LV, W8KOP, W5EGK and W9JVC. . . .W9LMN went to 209 with VS5, FL8 FB8 and 4W1. . . .**VK4HR** added cards from 9B3AA, FR7ZA, VP2MD and KC6DX. . . .**W6WO** adds 13 to reach 166. Len was happy to snag ZC2MAC and EA9DC. . . .A1, **W6GDJ,** ups to 219 with FL8, 4W1 and VS5. . . .**W5ASG** goes to 234 with FL8 and VS5 and continues to head the 39 zoners. . . .**W3EVW** rises to 236. Rog says DX-ing is like fishing, the best time for both being at dawn and dusk. (**A KW** makes a nice worm too!). . . . **W2GVZ** sneaked up on Y12AM for No. 169. . . .**W2BXA** is back with a vengeance upping to 239 CW and 196 phone with such as 4W1, FL8 and VS5. . . . **W9HUZ** adds seven to reach 187.

K2BU makes it 130 with SVØWB, MI3US and KM6AH/KB6. . . .**W6MX** went to 232 with FL8 and 4W1 and was one of the first to nab VS5ELA. . . .**4X4RE** reaches 210 with KC6DX, EA9DC, JY1AJ, VP2AD, VP5BF and list with Robbie eddding VP5BP, 9S4AD, ZD9AA and 4W1MY. . . .**VQ4ERR** creeps closer to XE1AC on the A3 4W1MY. 216 phone only. . . .**W1NWO** ups to 194 A3 with 4WIMY. . . .**W3DKT** reaches 207 with FL8MY. Chas. visited YV5AO, VP5AK, VP5DX and CO2WY on summer S.A. boat trip. . . .**GM3CSM** hits 186 with DU1MB and ZP9AW. . . .G3AAM recently ran into a DX'ers 'believe it or not' in the form of a phone roundtable between KLAFR, ZK2AA, K6AW, J1AA, VRIB and KC6QL 0800z 8/17. Jack then snagged FI8AC. . . .Larry, **W3JTC,** comes up to date with 14 new ones making him an impressive 238. . . .**W6RBQ** hit 209 with such as FB8BB and **EA9DC** . . . .**W4EPA** goes to 134 with FP8AM while **W2ZVS** hits 129 A3 and seeks present whereabouts of KR6AS.

Dottie, **W3JSH,** a recent victim of DX-itis, is up to 91 with such as VP5BH, FP8AM, HH3L, VP1AA and ZB1KQ. . . .**W6IBD** adds 25 to reach 202. . . .**W4HA** up to 172 CW and 164 phone with EA9DC, MP4KAF and 4W1MY. . . .**W3KT** soars to 237 with FL8 EA9 and 4W1. Jesse also made it 157 A3 with YT3BZL and ZD2HAH . . . .**W6VE** adds 4W1 and ZC2 to reach 213. . . .**W1GKK** ups to 39-211 and will forward WAZ cards shortly. . . . **VK4SJ** goes to 193 with ZP5CL. EAØAC, ZD6RD and GD3GBG. . . .**F9AH** added FB8BB, KM6AU, JY1AJ and 4W1MY. . . .**F9BO** adds 11 **CW** and 8 phone putting him on 204/158. . ..A1, **W2WZ,** hits 225 with 4WIMY and VS5ELA. . . .Second report from **W6VE** adds FL8 and VS5 for 215.

W9NN re'd **DXCC** and **WACE** certifs. Bob plans west coast trip in Sept. with mobile rig. . . .**W1FH** total is now 250 with VS5ELA. . . .**W3RXM** nabbed FP8's AK, AP and AQ on 7 mc. . . .**W6AM** goes to 237 with VS5ELA . . . .New additions deadlock PY2CK, W2AGW, W6MX and W6AMA at 232. . . .**W7BD** reaches 222 while W7GUI rests at 227. . . .**PJ2AA** has a total of 57 after three weeks with new call. . . .**W5FFW** adds 8 to reach 188. . . . **W7ENW** ups to 176 with VP8AJ, VS5ELA, EA9DC, YU3AT and FB8BB. . . .Lou, **W1MCW,** reaches 193 A3 with 3A2AQ. . . .**W8BHW** ups to 235 with FL8 and VS5 . . . .**K2BU** nabbed FB8AA 010 2142z. . . .**TI2TG** worked a new VPI A3 only. Its VP1AB (See QTH's). . . .**KG4AF** goes to 169 with VS5ELA KG61G and HH3L.

From **W9ESQ** we get this little tale. It seems that W1JR got so mad at a certain top DX-ers' monopolizng of ZD9AA on one of his week-end appearances that he grabbed a brush, ran out, and painted half his house in a few hours. Some extent of his feelings may be realized when it is known that it took Rich, his XYL and daughter all the rest of the week to paint the other half!!

Below is a table of Q80's compiled by W7PQE/WØFGW covering 2024 contacts made from Iowa and Washington (state) which may give an idea of the

the DX GRAB BAG

A resume of DX stations recently worked or heard from North America. Times are GMT and abbreviated frequencies 14 mc:

C. W.

CR4AG	067	2140
C3MC	023	1300
CR7CR	044	2225
CT3AA	040	2300
C3AR	095	1300
CR7CK	115	1340
CR6BZ	044	2225
CR9AF	077	1530
EAØAD	080	2205
EA6AM	046	2110
EA9AP	002	2230
EA8BC	065	1940
EA8BM	001	1905
EA9BD	090	2325
DU1FM	028	1345
DU1DO	025	1330
FK8AE	015	0400
FK8AI	034	0605
FF8AG	040	2210
FQ8AG	030	2145
FM7WH	037	1300
FB8BB	048	1415
FF8JC	020	1930
FM7WF	018	1325
FI8YB	037	1235
FQ8AP	046	2200
FB8BE	040	1525
FO8AC	080	0520
FR7ZA	220	1700
GC2FZC	065	2145
HH3L	015	2015
HS1WR	082	1255
HE9LAA	028	2230
HC1JW	040	1920
HP1AW	003	0030
IS1CXF	067	2200
JY1AJ	005	2240
KM6AH/KB6	008	1310
KC6DX	004	1505
KH6CB/KJ6	072	0315
KA2FC	067	0500
KC6QY	7008	0930
KA8AB	064	1205
KM6AX	080	0530
KC6QL	110	0615
KX6AI	028	0725
KH6ARA	001	0140
KA2AC	056	1115
LZ1KAB	072	1830
LU4ZI	052	1215
MF2AG	057	1740
MP4KAI	073	2000
OY2Z	000	2110
OE13USA	045	0340
OE5CB	030	1920
OQ5RA	020	1900
PJ2CC	033	0400
PJ2AD	058	1225
PJ2AA	048	1205
SP9KKA	052	2110
SU5BM	100	1735
SP3PF	047	1925
SU1GG	032	1800
SU1XZ	003	2115
TA3AA	022	2000
TF3AB	068	2340
UA9CC	075	0440
VK9RM	045	0530
VK9DB	040	1230
VR1B	047	0520
VS2CR	059	1510
VP2MD	015	1505
VS7NX	003	0210
VS6CG	044	1300
VK1PN	086	0530
VP1AA	001	2200
VK1EM	060	0530
VS7YL	052	1550
VP5BF	039	2300
VR2CO	058	0530
VQ4BU	097	1920
VU7FK	099	1220
VQ4DO	000	2105
VS9RT	7010	0220
VP5BH	007	2230
VQ8CB	100	1230
VQ8CA	018	2020
VS9AW	090	1900
VS6AE	057	1205
YU4BN	090	1525
YU1DA	068	1530
YV5AB	062	1920
YI2AM	072	2100
ZD9AA	032	1800
ZB1KQ	015	2145
ZE5JJ	027	1342
ZK2AB	110	0455
ZB2A	081	1700
ZD4AB	035	1735
ZK3KAA	072	2100
ZS3Q	063	2145
ZS7C	010	1250
ZP9AH	022	2110
ZP9AW	010	2100
ZS2MI	080	1220
ZS7D	7023	1600
4X4RE	004	2220
4X4BX	024	2025
5A3TA	050	2105
5A2TB	046	1930
9S4AX	007	2200
9S4AD	080	0000

PHONE

EL9A	305	2340
EA8AW	288	2315
FY7YB	240	2330
FQ8AS	205	0635
HZ1TA	140	0355
HZ1SD	235	1710
IT1BXX	192	2240
JAØIJ	237	1440
JY1OG	180	2115
W5MUP/KS6	210	0800
KB6AX	205	0645
KX6AS	225	1250
KJ6AW	287	1315
KB6AO	242	0720
KW6BD	238	0720
MI3RC	210	1600
MP4BBI	270	1600
MI3UG	200	1655
OD5AS	280	0515
OD5AK	175	0500
PJ2CA	240	2310
ST2NW	140	1805
SU5EB	185	1615
SVØWT	140	1640
TA2EFA	310	2230
TA3AA	250	1600
VQ3CH	090	1555
VQ5BQ	210	1555
VR3C	140	0645
VP2AF	100	2255
VR1B	128	0535
VR2AP	140	0620
VS1AA	160	1515
VS1DQ	182	1455
VS7WE	186	1500
VK9TT	325	1305
VK1PN	120	1055
YI3BZL	200	1615
YU1AG	240	2225
ZK1BC	313	0610
ZC6UNJ	197	2300
ZD9AA	150	1250
ZP5CB	112	0020
ZM6AA	140	0600
ZB2A	180	0120
ZC4RX	150	0445
ZD6EJ	200	1345
ZD4BF	130	0745
ZK2AA	175	0430
5A2TZ	310	2225
3V8AS	320	0510
5A2TW	160	0030

ease, or difficulty, of contacting the various continents from each QTH:

Continent	Countries Worked WØFGW	W7PQE	Total DX contacts WØFGW	W7PQE
Europe	32	26	425	278
Africa	17	6	43	10
Asia	5	12	23	85
Oceania	13	21	239	395
North America	27	21	231	158
South America	9	10	51	86
			1012	1012

Power and antennae at each QTH were approximately comparable.

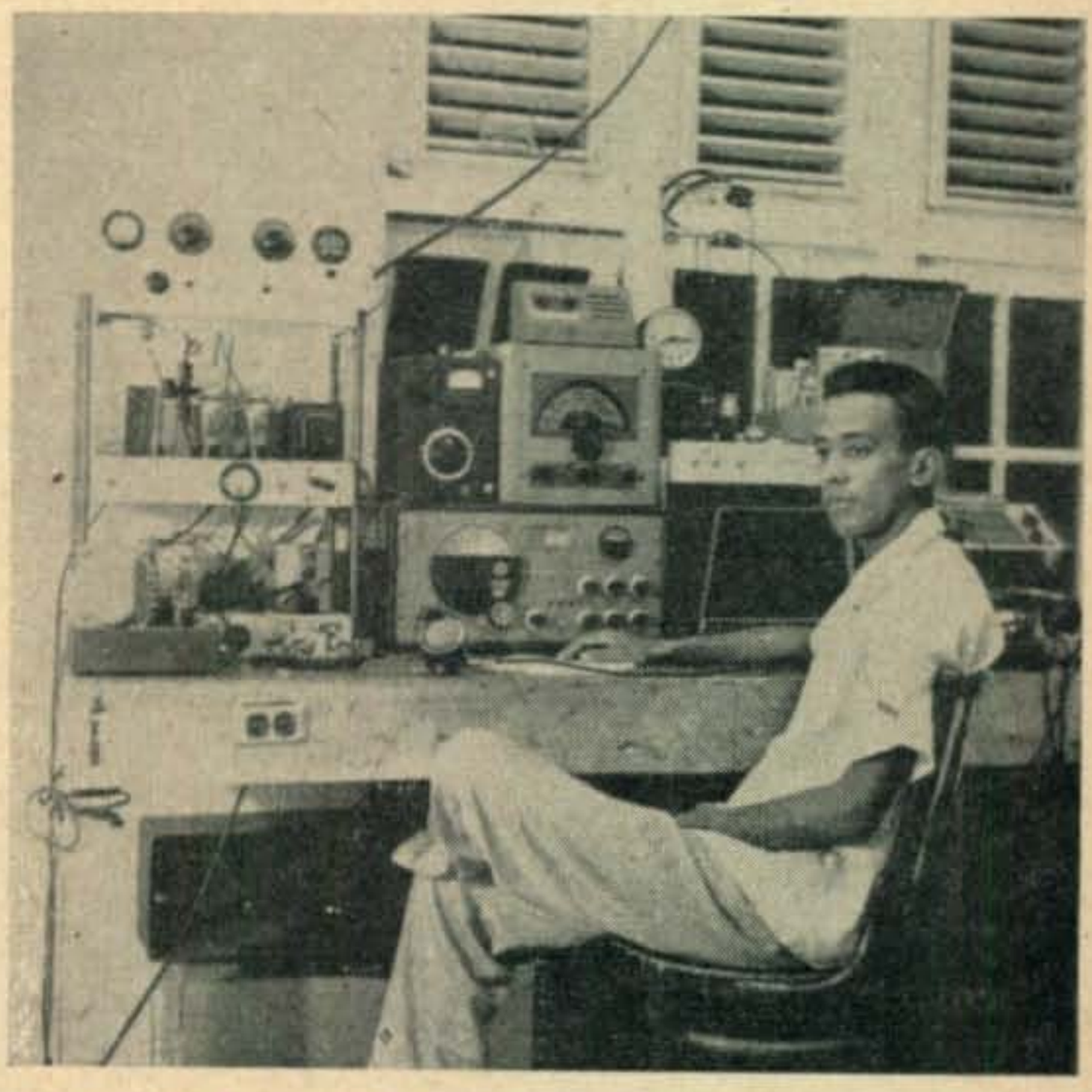
Here and There

KL7PI works off excess energy when DX is low by scaling 18,500 ft. mountain peaks. . . .**W5AGB/FM** (North Pole) promises QSL's to all in September. . . .**T12PZ** rec'd visit from W9TKV. . . . **KP4KD** and XYL are enjoying extended visit stateside. NYC and ARRL were visited and Ev put in some operating time at W3NCJ. . . .As should be known by now the JA prefix has been changed to KA. . . .**KG6IG** has been heard operating from Chichi Jima (Bonins). . . .**W5UMI** is now W4VWV in N. C. . . . **GC3CSM** visited OZ7BG on recent vacation. OZ7BG was later heard from YU1AD. . . .**W4EV** is now W8EV in Cincy. . . .From **KC6QL** via KH6ADY/2 we hear that KM6AW/KC6 is active in the Carolines and that one Father Fahey expects to be on the air shortly. . . .We are told that **W2BUV** now handles QSL's for VP2MD . . . .**W2CTO** shipped some 14 mc xtls to ZD6HN these were a gift of W5AVF. . . .**ZC1CL** is now G3HCL. . . . **VK3YP**, after a long and impressive showing in VK3 land will shortly appear as a VK4.

Don Wallace, W6AM and Hans Eliaeson, SM5WL having a DX chat over the same mike during Don's recent European jaunt. (Photo by SM5KP via W6AM)

W8FGX is now all set in new QTH. . . .**W3LOE** is back on again after a year layoff. New QTH, Baltimore . . . .Old **VS9GT/MP4BAB** now operates from G8FC. . . . **SU1FX** is ex-G3GUP. . . .**ZK1BC** was slated to close up shop about Oct. 1st and will move to Wellington, N. Z. Bob made a major effort to contact all W's needing him during September. He will investigate the possibility of Macauley and Kermodec Islands, 1000 miles N.E. of ZL, being counted as separate ones and will push for activity there. . . .**VK1BS**, now, VK2EG, advises that all QSL's have been sent. To those sending IRC's, cards went direct, otherwise, via bureaus. Bill has rec'd 600 QSL's with 60 of the 75 countries worked coming through. 500 cards are still due. . . .Ed, **W2GT**, via 5A2CF, advises that there are eight licensed 5A2C-'s, all in Benghazi, as follows: 2CA, 2CC, 2CD, 2CG (Club Station) may be found on A3 while 2CB, 2CE and 2CF are on CW. 5A2CF (ex-MC1GC) watches 21 mc. for W's. See QTH's . . . 3A2AQ (F7BB) QSL'ed 100% for several hundred contacts in April and received 40 in return. The Litchenstein government has refused Jim permission to operate there stating there is no reciprocal agreement with the U. S. . . .**VQ4RF**, vacationing with G2WW and G2DPZ, planned a very short stop at ZD8RF in late August. . . . **RA1BC** seeks a New Mex. QSO for WAS.

OQ5LL, visiting stateside, turned up at W4KIX and called on W5FXN in Austin. 8/24. . . .**W3BVN** put an S7 sig into KV4 land and advised he would be on soon with a cool KW, pp VT127A's. He is now using a 6AG7 . . . .**KJ6AR** expects to leave in a few weeks. . . .From **PJ2AA** we learn that PAØFD will spend three months in Aruba for medical treatment. Expenses will be borne by Verona members. . . .**FM8AD** visited KV4AA after a year's stay in France. Ned will arrive in Martinque on Aug. 22nd and will use the call of FM8AD or FM7WD . . . .**Z14FO** dropped in on W2AGW while passing through N. Y. . . .**F7AW** advises formation of new SHAPE International club. Ops will be of NATO countries and club call will be F7AA. . . .**W3SPI** (ex-W8OSL, W4LIU, TA3FAS) has been expecting an assignment at another DX spot. Now it looks like Jules will put in a three year stay at VP9. . . .**W1VMW**, ex-W9BRD, QST's talented DX columnist, now is set up in the kitchen of a temporary QTH. Rod has been hitting 7 mc. hard with just enough DX to make it interesting. . . .For those hearing 'FOC'



Very popular is PJ2AD, J. H. Kelkboom, ex-PJ6FN of Oranjestad, Aruba, N.W.I. Joaquim may be found on 14 mc CW most days.

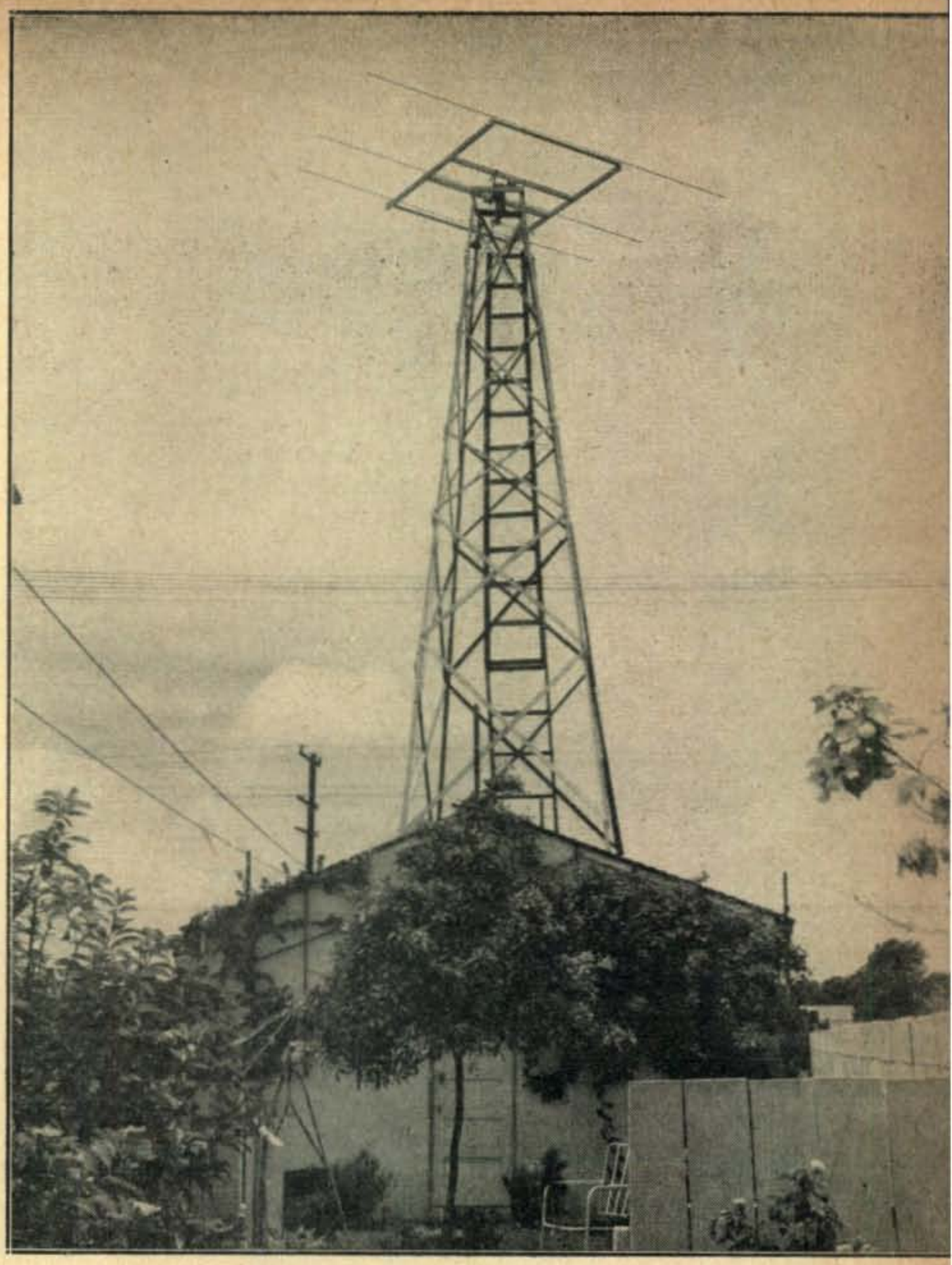
from Oct. 5th to 11th, or other times, are advised that this stands for 'First Class Operators Club'. Further details may be had by writing either G3JZ or G2DPY. . . . **WN8KLW** offers to handle QSL's for any DX station requiring such help. We have had lots of W offers, Jim, but no DX takers, to date.

Major Bill Dawson, active at JA2CV, JA3AK and AI1AU is now at Maxwell AFB, Ala. he will be heard under the call of **W5FTU**. . . .**W6AM** advises that FR7ZA will soon complete his modulator enabling two-way A3 contacts. . . .When W6AM returned from Europe where he, and Mrs. W6MA, visited 11 countries and DX'ers in seven of them, he found only two antennas down!! Not bad for 120 acres of antennas. . . .Steve Brookner, Ed. USWLW, states that AC3PT is heir to the throne of Sikkim and runs 60 watts to an 807. (Wish he would sell off a couple of elephants and put a KW on). Steve has also been informed that activity in AC4 is zero minus . . . . **KG6ACZ** lets us know that the Guam QSL bureau is now Box 145 instead of Box 100. . . .**G6YQ** returned from GW vacation and seeks TG9 and ZS9. George's WAZ lacks a C8YR card. . . . **VE3BWY**, and family, spent seven weeks in G-land. . . .**G8IP** is now ZC4IP. . . . **W9NDA** seeks present whereabouts of PK6AW, ZD2RGY, PK6TO and 4UN/Rhodes. . . . Robbie, **VQERR**, hopes to talk east coast Africans, vacationing in England, to go via South Africa. The idea being to beg, borrow or steal a 20-watt portable rig to use at some of the stops which include VQ1, ZD7 and ZD8. . . .From the West Gulf bulletin and W5RS we hear that **VR6AC**, Floyd McCoy, will be back on Pitcairn Island in November looking for the gang. . . . Lt. Col. McAninch, ex KP4KZ,

(Continued on page 64)

A. J. F. CLEMENT, W6KPC

Apt. 1, Bldg. 418, Palos Verdes Parkway, Redondo Beach, Calif.



Got a spare rooftop? Got a few spare hours and some lumber? Well then, add five or six men for a few minutes and you can throw up a tower just like this.

A 42-Foot Rooftop Tower

W6KPC describes a tower that should meet the requirements of many amateurs. Frank is an aircraft engineer, and his experience in solving wind-stress problems is evident in the tower's design—Editor.

The average suburbanite just cannot wheedle sufficient space away from the XYL for a decent antenna tower. Fortunately, the "wasted" space of a garage roof can support one. Furthermore, it will provide an average of twelve feet of height for nothing. *Figure 1* and the photograph depict a tower designed to meet these conditions. It has been widely duplicated in Southern California.

The tower itself is thirty feet high and is built of clear, knot-free Douglas Fir or Spruce. It is approximately eight feet square at the bottom and two feet square at the top. Each leg is anchored to the roof by means of a ⅜-inch, alloy-steel bolt through the roof joist. The spacing of the joists determines the exact dimensions of the base. Full-truss construction results in a tower that will withstand strong winds without guying. Finally, a ladder, plus the tower taper, makes it safe to climb, while being mounted on the roof discourages the neighborhood children from doing the climbing.

Construction

Figure 1 shows the overall construction of the tower and the materials required. *Figures 3* to *7* show detail.

Starting at the bottom, the angles for fastening the tower to the roof are detailed in *Fig. 3*. They are fastened to the legs with ¼-inch bolts fitted with washers under the bolt head and nut for increased surface area. The bolts through the leg at right angles to those fastening the angles reduce the possibility of the wood splitting.

Fasten the angle to the leg with only the center bolt at first. Later, when the tower is bolted in

place on the roof, the remaining holes may be line drilled, and the other bolts inserted. This procedure allows a little leeway in truing up the tower.

Figure 4 shows the method of joining 2 X 4s and the 2 X 2s, to form the tower legs. Cut a slot, nine inches long, in one end of the 2 X 4's, wide enough to accommodate the ends of the 2 X 2s. Nail the 2 X 2s in place from each side. Next, bolt the steel reinforcing straps on the other sides, using four, ¼-inch bolts.

Figure 5 shows the construction of the structural angles, formed of 1 X 2s and used for the two lower X's in the tower. Two of them, back to back, form each X. The upper X's are simply 1 X 2s cut to length.

In *Fig. 6* we see the top construction, and have a birds-eye view of the method of anchoring the lower end of the beam drive shaft. (See *Fig. 7.*) The top of the tower is framed with 2 X 4s and covered with lengths of flat board nailed across them. In addition to pieces *J* and *K*, two lengths of 1 X 4 are nailed across the top beside the *K* pieces.

Figure 7 shows the rotating bearing system used here. Its main expedient is that it requires a minimum of machined parts. The outer housing is a piece of 1½ inch, galvanized, water pipe, about a foot long (exact length not important), with standard pipe flanges screwed on each end. Four holes, to accommodate ¼-inch bolts, are drilled equi-distant around the flanges. They are used to bolt the flanges to the top of the tower and to the metal straps that center the lower end of the bearing. These straps are lengths of 1 X ⅛-inch steel that gives a ninety-degree twist, drilled, and bolted into position.

The drive shaft is a length of 1½-inch shafting, threaded on each end and fitted with standard semi-

These are the detail drawings for the construction of the rooftop tower. Figure 1 shows the side view and the bill of materials. Figure 3 shows the footing angles bent of 1 X ¼-inch steel. The bolts are ¼-inch in diameter. Figure 4 shows the method of joining 2 X 4's to 2 X 2's for the tower legs. Figure 5 shows the L pieces that are constructed for additional lower X bracing. Figure 6 and Figure 7 shows the details of the top of the tower and the top bearing. The bracket in Figure 7 shown by the dashed line is to support the selsyn motor, a part of the direction indicator.

thrust ball bearings. The threads may be cut on a lathe or with an adjustable die.

A ⅛-inch, stranded steel cable, running over a spring-loaded idler wheel and around a 3½-inch pulley on the drive shaft, turns the beam. Tension on the idler wheel is proportioned so that the beam slips under heavy wind gusts, in order to reduce the strain on the motor gears.

Erecting The Tower

My first plan was to construct the tower on the ground and hoist it into place on the garage roof. This plan was quickly abandoned upon ascertaining the cost of renting the services of a crane and an operator. Considerable further thought developed the following plan.

Two sides of the tower were fabricated on the ground. They were then rested on the eaves of the garage, as sketched in *Fig. 2.* Next, the tops were joined loosely together, exactly two feet apart, by means of two pieces of 1 X 4 and 10-32 bolts. Four men stationed on the roof, one at each tower leg, then lifted the tower sides, hand-over-hand to the roof and walked them to the pre-drilled holes in the roof.

Each man dropped a ⅜-inch, alloy-steel bolt through the holes in the mounting angles and the

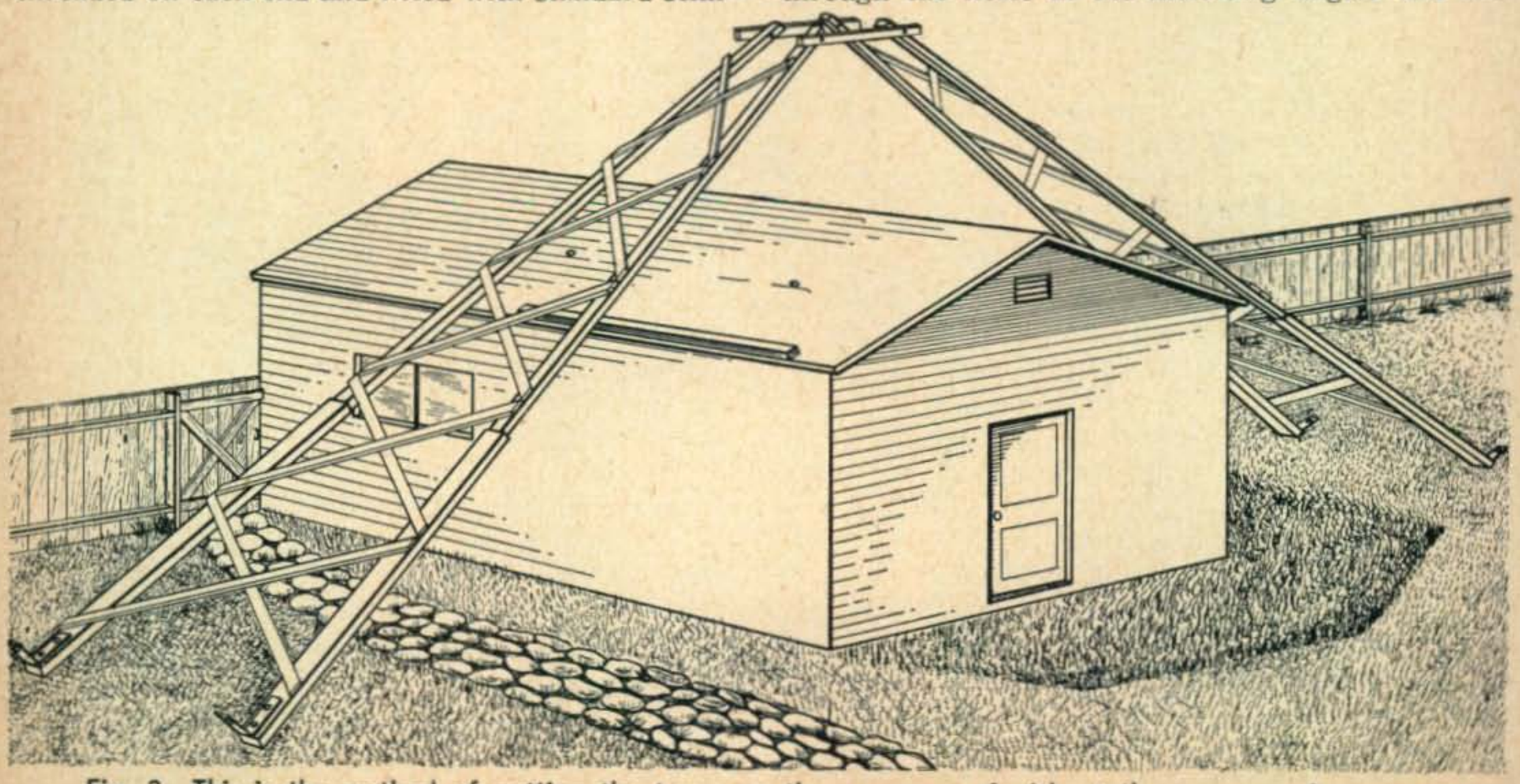


Fig. 2. This is the method of getting the tower on the garage roof without the expense of a crane operator. Have men stationed on the roof at each of the legs. They then hand-over-hand raise the tower and "walk" it into position where the bolts may be dropped into pre-drilled holes.

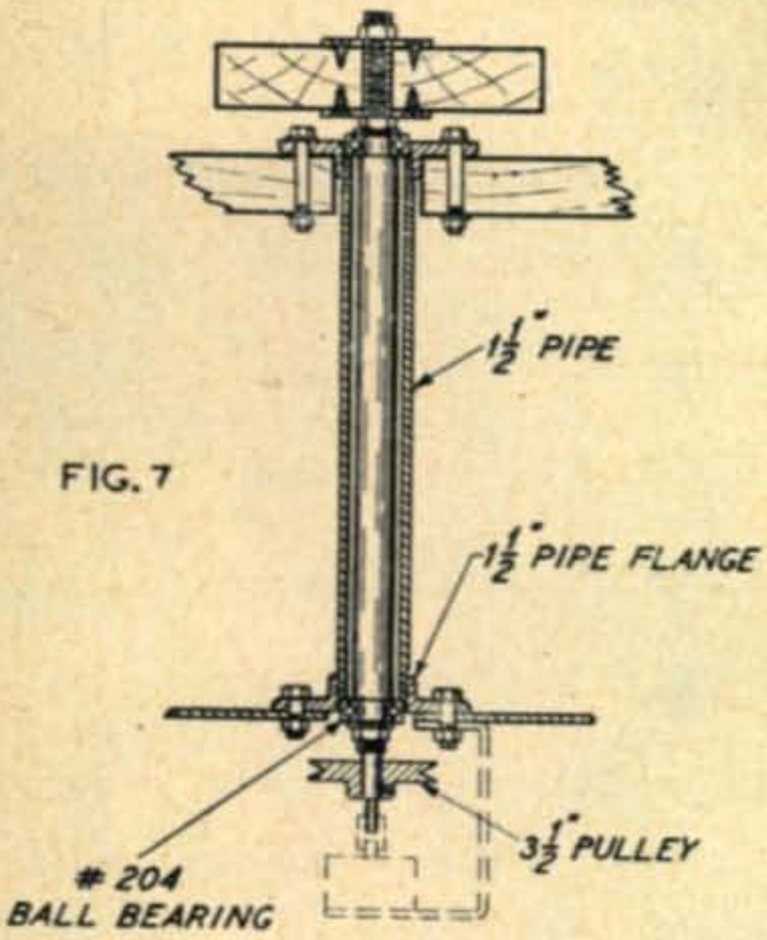


FIG. 7

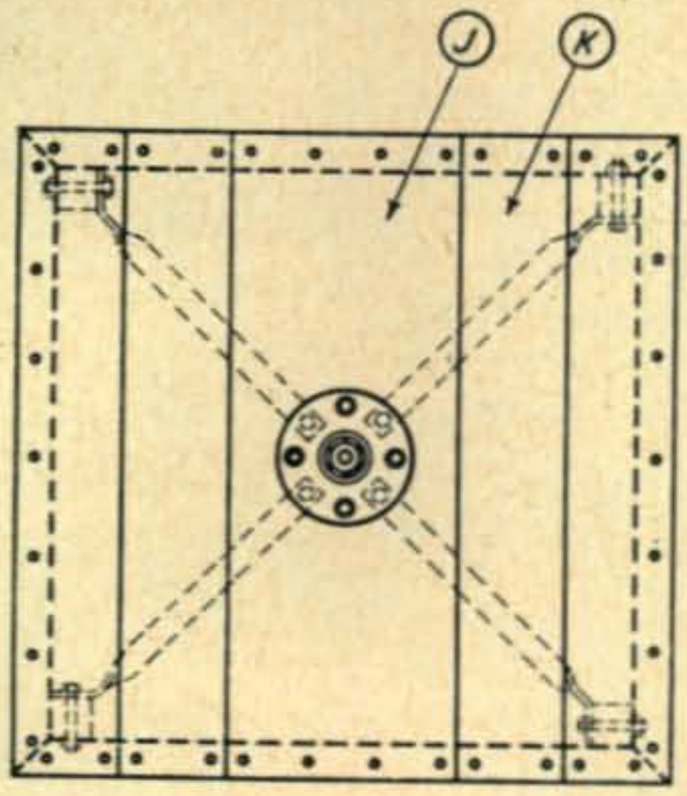


FIG. 6

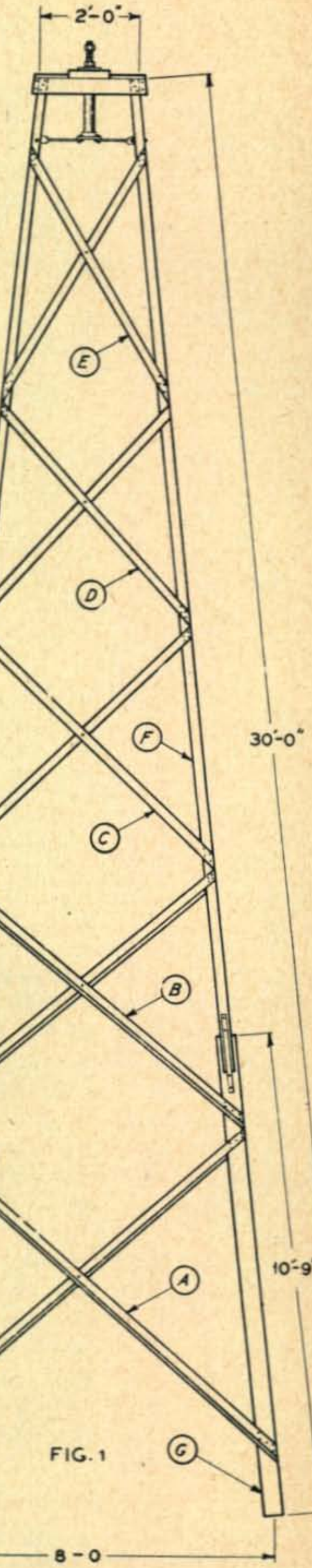


FIG. 1

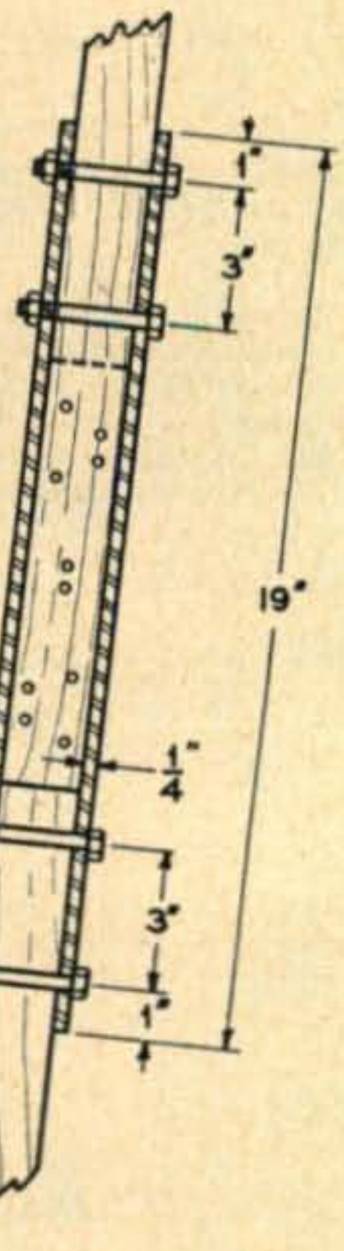


FIG. 4

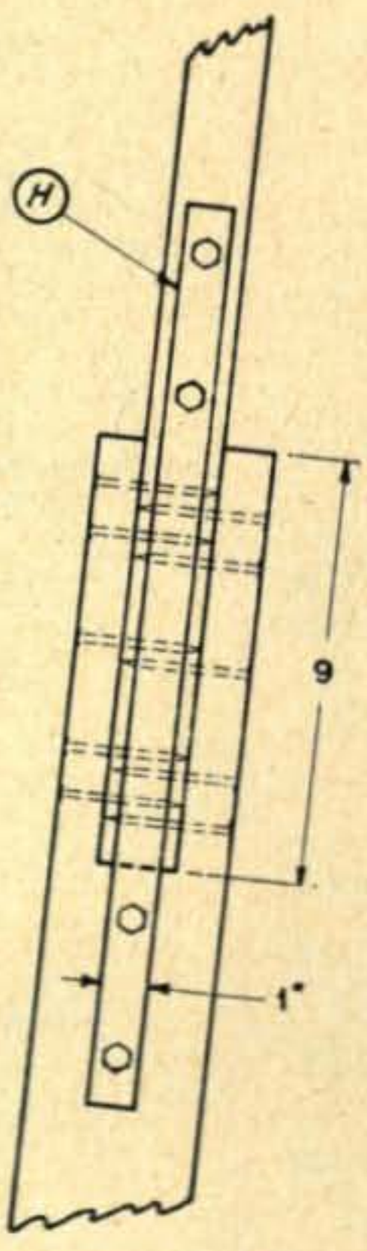


FIG. 3

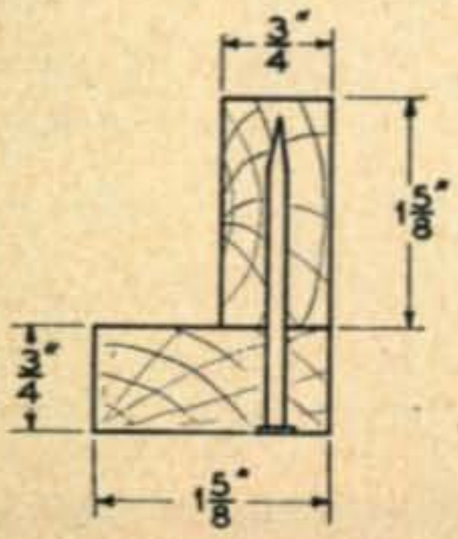


FIG. 5

BILL OF MATERIALS-SEE TEXT	
A	WOOD STRUCTURAL ANGLE 10'-0" LONG
B	WOOD STRUCTURAL ANGLE 8'-0" LONG
C	TIE BRACE 1" × 2", 7'-0" LONG
D	TIE BRACE 1" × 2", 6'-0" LONG
E	TIE BRACE 1" × 2" 6'-0" LONG
F	LEG 2" × 2", 20'-0" LONG
G	LEG 2" × 4", 10'-9" LONG
H	TENSION STRAP ¼" × 1", 19" LONG - STEEL
I	LEG SUPPORT ¼" × 1½", 14" LONG - STEEL
J	FLOOR BOARD 2" × 10", 2'-3½" LONG
K	FLOOR BOARD 1" × 6", 2'-3½" LONG

roof, and another man inside the garage slipped the washers and nuts on them. Elastic stop nuts are recommended. The entire procedure was supervised by the man handling a rope tied to the up-wind side of the tower, to help hold it upright.

The sides of the tower are quite limber; therefore care must be exercised in handling them. Also, no time should be wasted in lacing up the open sides, after they are in place on the roof. You can start breathing easily as soon as the lower Xs are in place. They can be installed while standing on the garage roof.

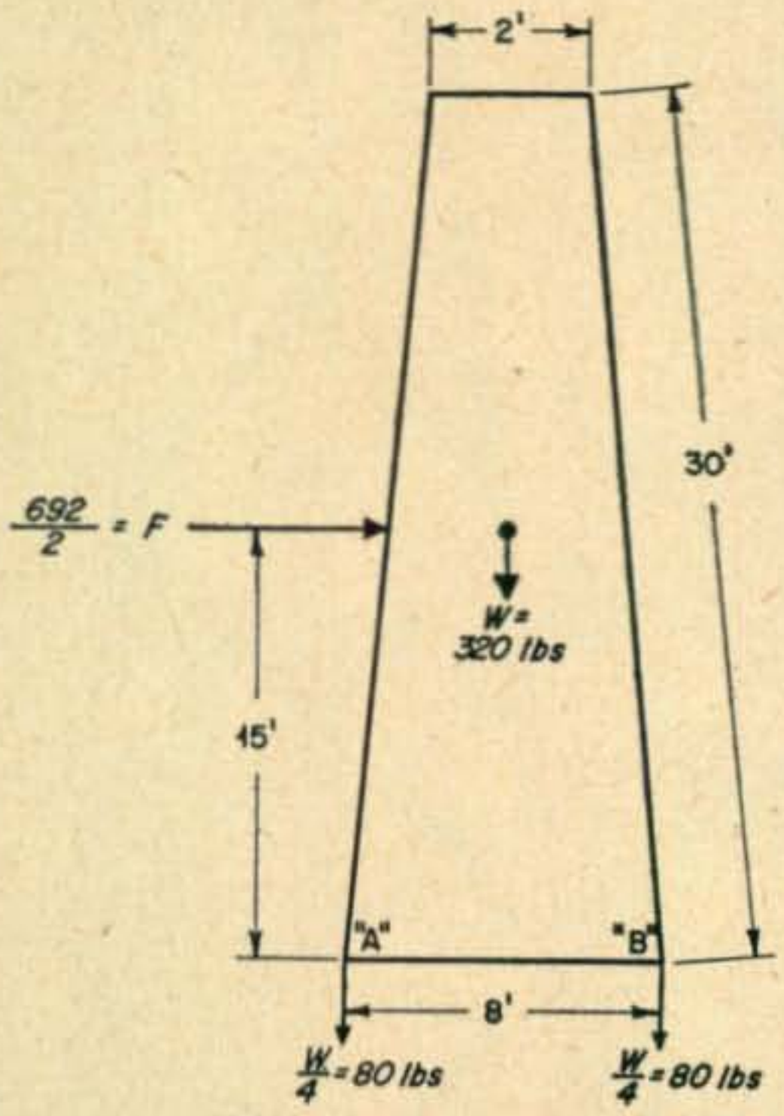


Fig. 8. This is the basic engineering design on the rooftop tower. The Appendix text explains the notations on the drawing.

The ten-foot ladder is used in installing the second-level Xs, and the twenty-foot one for the next few. Both in tandem are used to complete the top. I found it satisfactory to tie the ladders temporarily to the sides of the tower with bits of rope, thereby facilitating moving them.

Lengths of 2 X 4s were temporarily nailed along the roof eaves before resting the sides of the tower against them. This prevented damaging the roof while pulling the tower on the roof.

Although the tower is partially assembled on the roof, have all the pieces ready beforehand; so that only a minimum of work is necessary there. Do not forget to give the lumber a couple of coats of good paint.

Appendix

The drag in pounds on a flat plate area, whose surface is normal to the direction of the air flow is:

$$D = Cd \times 1/2 \times P \times V^2 \times S$$

where:

D = drag in pounds
Cd = 1.5 the scalar drag coefficient
P = air density in slugs per cubic foot
V = wind velocity in feet per second
S = flat plate area in square feet. (To compute it, find the total frontal area of all the members on one side of the tower and multiply it by two, giving the total area of the two opposite sides) or:

$\frac{2 \times 3.625 \times 10.75}{12}$ = 6.5 sq. ft.

$\frac{2 \times 1.625 \times 20}{12}$ = 5.42 sq. ft.

Corner post total = 11.92

$\frac{2 \times 2.375 \times 7.25}{12}$ = 2.82 sq. ft.

$\frac{2 \times 2.375 \times 9}{12}$ = 3.56 sq. ft.

$\frac{2 \times 1.625 \times 6.5}{12}$ = 1.76 sq. ft.

$\frac{2 \times 1.625 \times 5.25}{12}$ = 1.43 sq. ft.

$\frac{2 \times 1.625 \times 5}{12}$ = 1.38 sq. ft.

X member total = 10.95

Misc. (beam, etc.) = 2.00

GRAND TOTAL 24.87 sq. ft.

therefore: S = 2 x 24.87 = approx. 50 sq. ft.

During a wind of 60 miles per hour (88 feet per second) the total drag becomes:

$$1.5 \times \frac{0.002378}{2} \times 88^2 \times 50 = 692 \text{ pounds}$$

To calculate the stress on the footing bolts we assume the tower to weigh about 245 pounds by allowing 2.56 pounds per board foot for Douglas Fir. To this we add 75 pounds for the beam and beam rotating mechanism.

Figure 8 shows how the various forces and stresses react through the tower. The wind pressure is assumed to be centered fifteen feet from the base of the tower. This is a conservative assumption because the tower has more area below its midpoint than it does above. Since the sketch shows only two legs, we will calculate the stresses on the same basis.

$$\text{Tension at A} = \frac{(F \times 15) - (w/4 \times 8)}{8}$$

$$\text{Compression at B} = \frac{(F \times 15) \quad (w/4 \times 8)}{8}$$

where:

w/4 is 80 pounds the weight on each leg

F the wind pressure divided by 2, or 346 pounds at sixty miles per hour

substituting:

$$\text{Tension at A} = \frac{(346 \times 15) - (80 \times 8)}{8} = 569 \text{ pounds}$$

$$\text{Compression at B} = \frac{(346 \times 15) + (80 \times 8)}{8} = 729 \text{ pounds}$$

The strength of the footing bolts may be computed on the following basis. The root area of a 3/8-inch bolt is:

$$\frac{\pi \times 0.3263}{4} = \text{sq. in., or } 0.0836 \text{ sq. in.}$$

At a permissible stress of 16,000 pounds per square inch (mild steel), the maximum permissible stress on the bolts will be:

$16,000 \times 0.0836 = 1.335$ pounds

Thus, as the stress analysis indicates, in a sixty mile-per-hour wind, the recommended bolting method offers over a 100 percent safety factor, even if mild-steel bolts are used instead of the preferred alloy-steel ones. This seems satisfactory. (*The average, three element, 14-mc array*

(Continued on page 55)

Outboard VFO

EVERETT G. TAYLOR, W8NAF

1125 Highridge Ave., Dayton 10, Ohio

As W8NAF points out, there is more to changing a transmitter from crystal to VFO control than merely substituting a coil and a variable condenser for the crystal. Here, though, he describes a unit, that, when attached to a modified Pierce oscillator, successfully does almost exactly that.—Editor.

The little unit described in this article will convert the oscillator of most crystal-controlled transmitters into a remotely-controlled, variable-frequency oscillator. A length of coaxial cable, which may be up to thirty feet long, is the only connection between it and the rest of the transmitter. An obvious application of this feature is in a mobile installation. Frequency may be controlled from the dash, with the transmitter itself mounted in the trunk.

As the outboard VFO utilizes no tubes of its own, the usual excess heat and power consumption troubles are nonexistent. Add to this the favorable aspect of the unit's moderate cost and its ease of construction, and you have a VFO which should fit into the plans of many amateur stations, both mobile and fixed.

A Few General Considerations

Before going into constructional details, a few words about the transmitter with which the remote VFO is to be employed are desirable. Although no ham transmitter constructor should tolerate parasitic oscillations, r-f feedback, or amplifier instability; they are sometimes present in crystal-controlled transmitters with no apparent effect on the emitted signal. These will ruin the signal from a VFO. In addition, load and voltage variations that are inconsequential with a crystal become quite important with a VFO.

VR-tube regulation of the oscillator plate and screen voltage will take care of voltage instability. This regulation is a necessity in a CW transmitter. Several other expedients will limit the effects of load variations. Using a well-screened oscillator tube is one of them.

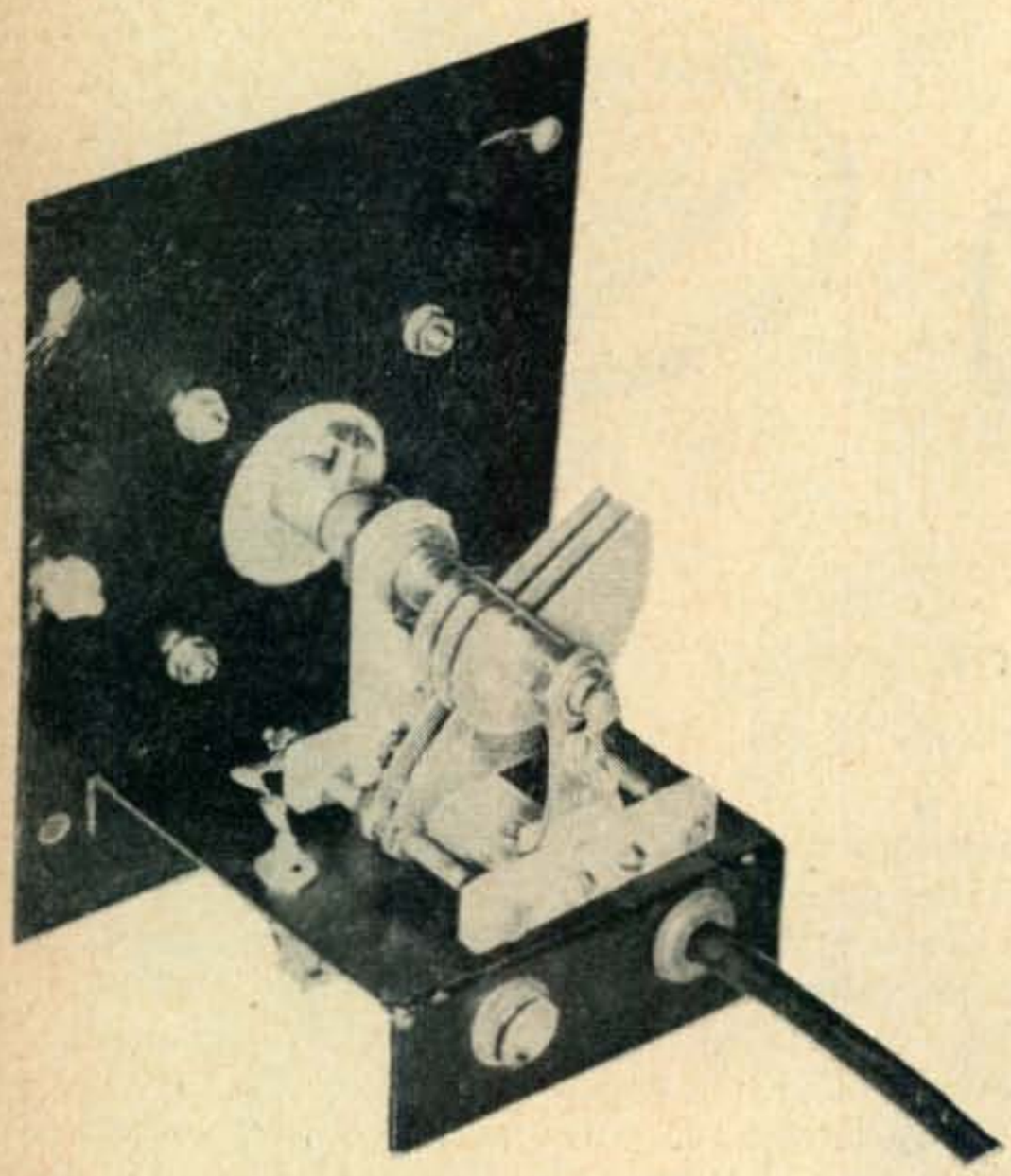
The unit described here has been tested with 6L6, 6V6, 7C5, 6AR6, 6AQ5, 6AG7, and a 6AC7. All of these work, but the last two are most stable, because of their superior grid-to-plate isolation.

The installation of an r-f choke in place of a resonant tank in the plate circuit of the oscillator or tuning this plate circuit to a harmonic of the grid-circuit resonant frequency will also help eliminate the effects of load variations. In fact, the greater the difference between the VFO frequency and the transmitter output frequency, the better. Reducing the oscillator-tube filament voltage to around five volts may also help, if it does not reduce output below a usable value.

Inspection of *Fig. 1* reveals that a modified-Pierce crystal oscillator is required for this remote VFO to be usable. Not all crystal oscillators use this circuit; however, there is little reason why they cannot be converted to it. The circuit works with any of the screen-grid tubes commonly used in crystal oscillators, but is at its best with a 6AG7. This combination is probably the best of all crystal-oscillator circuits on the basis of stability and low crystal current. As stated earlier, the 6AG7 is one of the better tubes for a variable-frequency oscillator; therefore, it appears to be a good all-around choice.

Construction

Figure 1 shows the basic Clapp circuit of the VFO, and the photographs illustrate the straightforward construction. It is built in a *Bud* 3 x 4 x 5-inch cabinet, in which the chassis is an integral part of the panel. The VFO control, *C1*, is a 15-$\mu\mu$f *National SEU* variable condenser, mounted on the chassis so as to center its shaft on the panel.



Certainly nothing to hide behind the panel.

This condenser is in parallel with *C2*, which is a 50-$\mu\mu$f ceramic, feed-through condenser. It is grounded by being mounted in a hole through the chassis near the stator terminal of *C1* to which it is connected. A *National* type *AM* vernier dial is used for tuning.

Below the chassis, *L1* is mounted on the rear lip to place one of its terminals near *C2*, to which it is connected. I used a slug-tuned form from a surplus SCR-522 for *L1*, but any equivalent form, such as the *National XR-50* or *Millen 69046*, may be used.

Also on the rear lip of the chassis is the hole which accommodates the RG-58/U or RG-59/U coaxial cable. The cable's center conductor is connected to the remaining terminal of *L1*, and its shield is grounded to the chassis. The cable should be firmly anchored to prevent movement. Although not used here, installing coaxial fittings might be more practical than fastening the cable permanently to the unit.

The termination at the far end of the cable will depend upon the crystal socket in the transmitter. If crystals in FT-241A holders are used, an octal socket will serve for both crystals and VFO. Otherwise, a socket with at least three contacts will have to be added to accommodate the VFO.

Condensers *C3*, *C4* and *C5* are all mounted on an Amphenol male plug at the end of the coaxial cable As a result they are shielded and protected by the metal shell of the plug. This is then plugged into the octal socket used at W8NAF. With this method of construction, it is only necessary to remove the plug and insert the crystal to restore crystal-controlled operation.

Parts of equal quality may be substituted for those specified without difficulty. Tuning condenser *C1* is probably the most critical one. It should be ruggedly built, with bearings at the front and back. It should, preferably, be double spaced. One advantage of the specified condenser is that its 270-degree shaft rotation spreads a given band of frequencies over fifty per cent more of the dial than possible with a condenser with 180 degrees of rotation.

Fifteen micromicrofarads at *C1* is sufficient to cover the 7-mc and higher-frequency bands. Twenty-five micromicrofarads will be required, however, to cover the entire 3.5 to 4-mc band or both the 27 and 28-mc bands without readjusting the slug in *L1*.

The length of the coaxial cable will influence the inductance required in *L1*, because its capacity of approximately 30 $\mu\mu$f. per foot is effectively in

Fig. 1. Wiring schematic of the outboard unit.

parallel with the series capacity of *C4* and *C5*. Do not attempt to reduce this effect by using "low-capacity" cable for the standard RG-58/U or RG-59/U cable. It is less ruggedly built than conventional cable, and as a result, moving it or stepping on it could result in a shift of frequency. This effect is completely negligible with the cable specified.

In addition to adding capacity to the circuit, lengthening the connecting cable lowers the Q of the tuned circuit. This is because the cable is part of the tuned circuit. Despite this fact, lengths up to thirty feet have been used with no observable ill effects.

Using The VFO

Putting the outboard VFO into operation is simple. Adjust the slug in *L1* (and the number of turns, if necessary) to place the lowest frequency to be tuned near the low-capacity end of *C1*. Any of the conventional methods of calibration may be used. The regular transmitter crystals may be pressed into service to establish calibration points. Spot their frequencies on the receiver dial. Then plug in the remote VFO, and zero beat it to each crystal frequency.

It is difficult to predict just how far the frequency of a transmitter can be shifted by tuning the VFO without necessitating the retuning of the rest of the transmitter. In a 75-meter mobile installation with a very-high-Q antenna, less than ten kilocycles either side of the center frequency might be possible. On ten meters, on the other hand, a variation of several hundred kilocycles is frequently possible.

ROOF TOP TOWER

(from page 52)

has an area up to eight square feet and will increase the above calculated stresses about twenty per cent. Icing—not a factor in Southern California —will also increase both the weight and the surface presented to the wind. An extra bolt in the roof at each corner might be a wise precaution in sections of the country where icing is a problem. Also, check the garage to be sure that its roof joists are firmly joined to the vertical framing. —Editor)

Hale Don McCaskell, W9OCA

The VHF gang were shocked to hear of the untimely accidental death of Don, W9OCA (ex-W9NJT) in early September. Don was killed at the Edgerton American Legion Speedway when a racing car went out of control and crashed into the pits where Don was standing.

Don is well remembered as an outstanding enthusiast of the 6-meter band and was one of the few to make WAS on 50mc. Don was also a RASO/USAF Certificate recipient for his 6-meter work.

Two Meter Openings Terrific In Late August, Early September

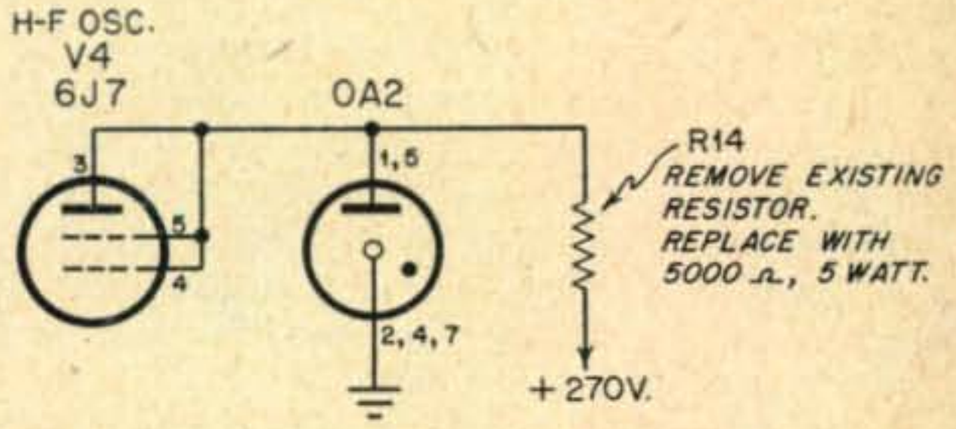
The two-meter band went wild in late August and early September and produced many astounding first contacts. Preliminary reports from W9WOK, W2NLY, W9ZHL, W5JTI, WØTKX, WØMNQ and VE3BPB indicate these "firsts"—WØEMS, Iowa, to W1RFU, Massachusetts; VE3BPB, Ontario, to WØEMS, Iowa; W1PBB, Connecticut, to WØEMS, Iowa; W9FAN, Wisconsin, to W2NLY, New Jersey; WØKYF, Missouri, to W2NLY, New Jersey; WØEMS, Iowa, to W2NLY, New Jersey; W4HHK, Tennessee, to WØOAC, Minnesota; W4AO, Virginia, to WØMNQ, Missouri, (?). These QSOs occurred on the nights of September 7, 8, and 9. Jim Switzer, WØMNQ, states that the opening was produced by the high-pressure air mass centered over Boston and provided an inversion layer at about 5,000 ft., or less, above mean sea level.

In late August, a less extensive opening produced the first Minnesota to Mississippi 2-meter contact between WØIFS and W5RCI on the 23rd. WØIFS was using a 20 element beam and 75 watts input. WØJHS caught WØMNQ for Missouri to Minnesota as did WØIFS, and then they worked a Kansas station believed to be WØELL/9, Prairie Village.

Please send your reports, gang, so we can make a comprehensive write-up, and also correct any errors which may have occurred in the rush to get this into the column. —73, Bill McNatt, W9NFK/5, VHF Editor.

Inside the

Shack and Workshop



Improving Stability of H-F Oscillator In The BC-779 Receiver

(The following idea for greatly improving the oscillator stability of war surplus BC-779 receivers is reprinted from the "Philco TechRep Division Bulletin" of April, 1952.)

Although the following modification is a simple and obvious method for improving oscillator stability, it provided such a great improvement that the writer believes it worthy of being brought to the attention of others who also use this equipment. The parts listed below are required for this modification.

Quantity	Description
1	Resistor, carbon, 5000 ohms, 5 watts
1	Tube, miniature, type OA-2
1	Socket, miniature, 710

The socket, with the tube inserted, was suspended, under the chasses, adjacent to the high frequency oscillator tube, V4 by means of the connecting leads. Solid insulated wire was used to provide greater mechanical resilience. Resistor R14 was removed, and the 5000 ohm resistor substituted. Pin 1 or pin 5 of the miniature socket is then connected to pin 3 of the oscillator tube socket V4. Pin 2 of the miniature socket is connected directly to ground.

L. W. Stockton—Philco Engineer

Conducted by HERB BRIER, W9EGQ

385 Johnson Street, Gary, Ind.

This month we will review another Novice transmitter kit. It is the *WRL CW7*, manufactured and distributed by *World Radio Laboratories,* Council Bluffs, Iowa. When assembled, it produces a seven-watt, a-c/d-c operated, CW transmitter. Although furnished with a 3.7-mc Novice-band crystal, it will operate anywhere with the 3.5-mc amateur band. Cost of the kit is $19.95.

One section of a 70L7 serves as the rectifier, and the other section serves as the untuned, Pierce crystal oscillator. A 50L6, feeding a pi-section output tank, serves as the r-f power amplifier. Except for the fact that the filaments are connected in series across the 120 volt power line, the circuit is conventional.

Two screwdriver-adjusted variable condensers tune the pi network. They have shaft locks, which, when once adjusted, prevent accidental detuning. A sixty-milliampere pilot bulb in the amplifier high-voltage lead serves as a tuning indicator.

A noteworthy feature of the kit is its completeness. Every component (with one minor exception) required to put the transmitter on the air, from key to crystal to antenna, is furnished. The missing component is a *PL68* plug to fit the key jack.[1]

All necessary holes are drilled, and a prewound coil for the output tank circuit is furnished. Screwdriver, soldering iron, pliers, and a short length of rosin-core solder are required to assemble and wire the kit. A thirty-five-step instruction sheet, in conjunction with schematic and pictorial wiring diagrams, makes it easy to do.[2]

Testing The Transmitter

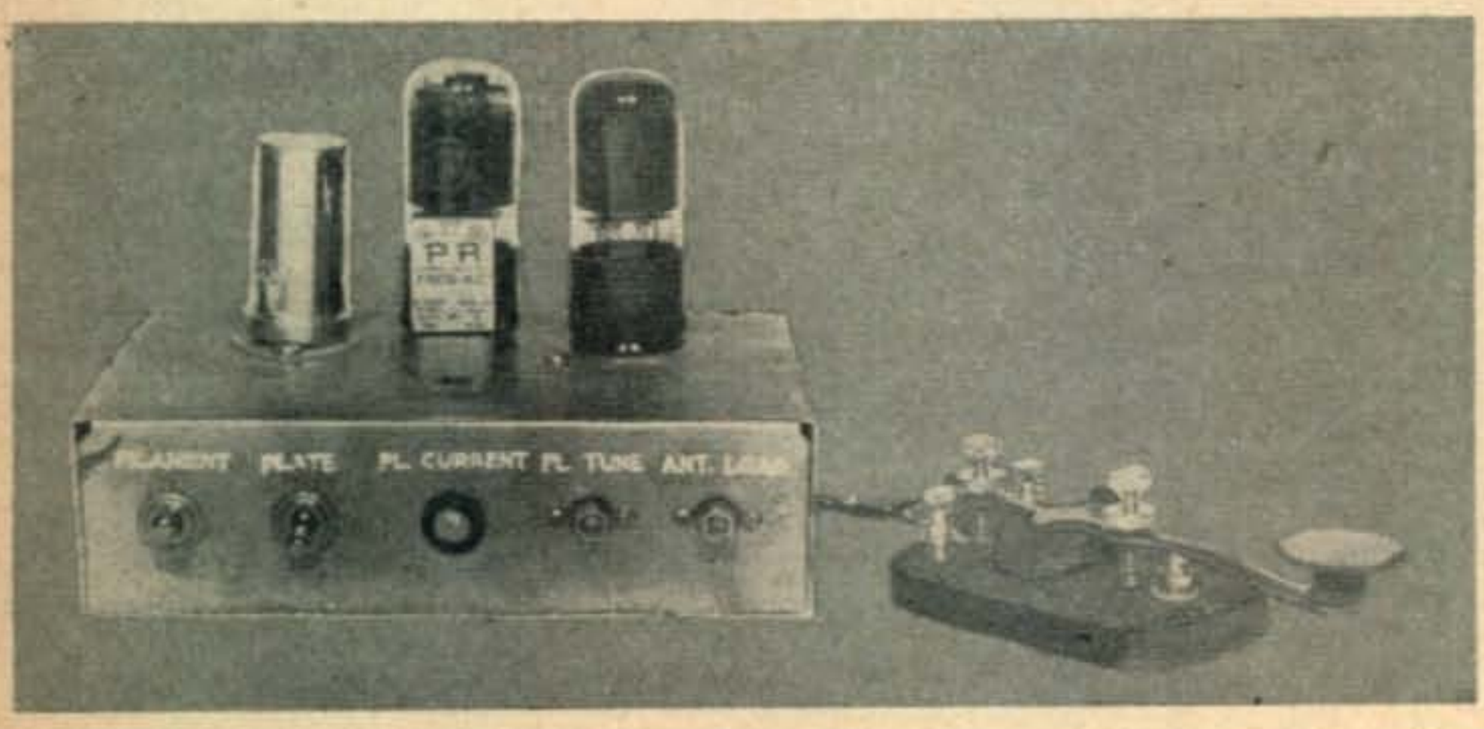
The *CW7* was wired and placed on the air without difficulty. A low 7-mc doublet, with its feeders tied together, was loaded up to an input of not quite seven watts on 3740 kc. From previous experience, I knew this antenna was a poor radiator on the 3.7-mc band. I could have constructed a much better one from the antenna kit furnished with the *CW7*. Nevertheless, several contacts were made between 7:00 and 9:00 PM on a Saturday evening. All reports were T9X.

Getting contacts through the extremely heavy evening interference in the 3.7-mc Novice band with such low power and a poor antenna sometimes becomes something of an endurance test. More consistant results are usually obtained at times when

1 Our conductor must really work them over. We have been assured by the manufacturers that this was an accident and a PL68 was sent to Herb a few days later.—Ed.

2 There were two minor discrepancies in the instructions. The schematic diagram shows the main switch (marked "Filament" switch) in the "hot" side of the power line, while the other sheets place it in the "ground" side. Also, step number 26 instructs that C2, the oscillator plate bypass condenser, be connected between the center terminal of the tie strip and ground. The diagrams place it between the right-hand end terminal and ground. The latter are correct.

Fortunately, the transmitter operates equally well with either set of connections. Therefore, except for the confusion they may cause, they are of minor importance. Undoubtedly, the discrepancy will have been eliminated by the time you read this. As will be shown later, putting the "Filament" switch in the "hot" side of the line does offer an operating advantage.



The Completed seven-watt transmitter, ready to go on the air. Note the screwdriver - adjusted, tuning controls on the right. After being adjusted, they may be locked to prevent accidental detuning. This little transmitter will transmit over hundreds of miles under favorable conditions. See text for suggestions on grounding chassis for safety.

interference is not so severe. I chose Saturday evening merely to prove that it was possible to make contacts with low power when interference is heavy. It takes patience, but it can be done.

Precaution In Using A-C/D-C Equipment

An a-c/d-c power supply reduces costs appreciably by eliminating a comparatively expensive power transformer. However, the circuit is potentially dangerous. As you know, one side of the power line that comes into your home is always grounded; consequently, the full voltage appears between the "hot" side and ground. This is extremely important when one side of the power line is connected to an exposed component of any equipment. Depending upon the way the power plug is inserted in the wall socket, there is an even chance that the exposed component will have the full line voltage on it.

In the *CW7* and other a-c/d-c transmitter circuits I have seen, one side of the key and the chassis is connected to one side of the power line. If the plug is inserted in the wall socket the wrong way, it would be easily possible to get a nasty shock by touching the key and the grounded case of your communications receiver. Also, if the transmitter were placed on a grounded object, it would immediately blow the line fuse.

Serious as the problem is, its solution is easy. The simplest is to place a one-to-one ratio isolation transformer between the power line and transmitter. The chassis can then be grounded or touched with impunity. Unfortunately, an isolation transformer usually costs more than the transformer eliminated by the a-c/d-c circuit. Another disadvantage, occasionly important, is that it naturally cannot be used on a direct-current line.

Another solution is a revision of the circuit to isolate the chassis from the line and to use a relay to isolate the key. The cost of the relay and a power source for it makes this solution unattractive. The most-practical solution of the problem is to ascertain which is the grounded side of the power line and always see that it is connected to the exposed chassis. The chassis may then be grounded permanently, eliminating all possibility of the line voltage appearing where it is not wanted.

To do so, set the transmitter on an insulated board. Turn the "Filament" switch on and the "Plate" switch off. Do not connect key or antenna. Insert power plug in wall socket outlet and measure alternating-current voltage between chassis and ground. If it is not zero, reverse the plug. Carefully mark plug; so that it may always be inserted in the socket to put ground side to the chassis. Ground the chassis permanently.

Some wall socket outlets are polarized; that is, one prong opening is slightly larger than the other. When this is true, a mating polarized plug (*Amphenol 61MP11* or equivalent), may be substituted for the regular plug on the power cord, making it impossible to reverse it. Incidentally, a-c/d-c equipment will not function on d-c circuits unless the line polarity is correct.

For absolute safety, install one-ampere fuse in each side of the power cord right at the transmitter. Reversing the plug then will result in one of them being blown if the chassis is grounded, rather than a line fuse. If an a-c voltmeter is not available for the above test, a small, 120-volt light bulb may be used.

One thing more, if the switch is in the ground side of the power line, a permanent chassis ground will effectively bypass the switch. See the under-the-chassis photograph for information on the switch position.

By observing the above precautions, a-c/d-c transmitters are perfectly safe to operate.

General Comments on Assembling Kits

Referring again to the under-the-chassis photograph, it is evident there are quite a number of components grouped around the 50L6 socket and near the variable condensers. The largest of them is the coil, and it is the last to be mounted. Unless care is taken in placing the earlier components, they may easily fill up the space that should have been reserved for the coil.

To avoid such a possibility, experienced builders temporarily mount major components in place before starting permanent wiring. The practice helps resolve the conflicting requirements in r-f circuits that connections should be short, but components should not be all crowded together. It is even more desirable when building equipment from instructions in an article, especially when it is necessary to substitute components of similar electrical characteristics, but different mechanical dimensions for a specified component.

Normally, it is a good idea to solder connections as soon as they are made, to avoid forgetting to do so. In following step-by-step instructions, however, it frequently happens that long after making one connection to a terminal, you discover there are more to be made to it. It is difficult to do a neat job with the additional ones if the hole in the terminal has already been filled up with solder. You will save time and effort if, after making a connection, you run down the instructions to see if other ones will have to be made to the terminal later. Ir not solder immediately; otherwise, wait until the last one has been made to it. Then, when you have finished wiring (you hope), double check every connection to make sure you did not forget to solder one.

Information on Other Kits

From time to time, I have been asked about the suitability of the **Viking 1** for Novices. For those who are not familiar with it, the **Viking 1** is manufactured in kit form by **The E. F. Johnson Company**, of Waseca, Min-

The WRL CW7 before assembly. This may look like a jumble, but all the parts are here, including the prepunched and drilled chassis and the very explicit instruction sheet.

Abbott, W4OPE, and wife Sarah, WN4UMM. He operates 75-meter phone. She operates 3.7- and 27-mc. c.w., using a 55-watt rig she built herself.

nesota. Rated at approximately 150 watts input to a 4D32 tube final amplifier, it is a crystal-controlled, phone and CW transmitter for all amateur frequencies between 1.8 and 29.7 megacycles. It utilizes a pi-section output tank. Band of operation is selected by a band switch.

The basic kit sells for about $210.00. Tubes and accessories add $70.00 to $100.00 to the cost. Some distributors furnish assembled kits for a comparatively small additional charge. Also available is a de-TVI'ing kit and a companion VFO kit.

The most-asked questions about the **Viking** are: whether its input can be reduced to the 75-watt Novice limit, and whether it can be obtained less the audio components, with the option of obtaining them later. The answers below are based upon information furnished by Mr. A. A. Brown, WØWMC, of the advertising department of **The E. F. Johnson Company.**

Reducing the input is simply a matter of decreasing the amplifier loading to the desired amount by means of the "Loading" control. Should the antenna used have such a low impedance that it is impossible to decrease input sufficiently by this means, retarding the "Drive" control permits additional adjustment. Although the efficiency may be slightly lower at 75 watts input than it is at rated input, **E. F. Johnson Company** considers it entirely satisfactory.

Knowing how rapidly the screen current of most tetrodes increases as plate current is decreased, I specifically asked whether operating the **Viking** at reduced plate current might not cause the 4D32 screen current to rise to dangerously high values. WØWMC assured me that there is no danger of that occurring.

WØWMC also reports that when the **Viking** was originally placed on the market, some thought was given towards supplying kits without the audio components (which are all grouped together at one end of the chassis.) The idea was abandoned upon determining that the difference in price of the kit would not warrant the additional trouble it would involve.

Strictly as a Novice transmitter, the **Viking** obviously has many features that are of no immediate use to the Novice operator. However, for those Novices who are willing to make a rather sizable first investment for a transmitter that will take care of most of their future needs for an all-around, medium-power, phone-CW transmitter, it merits consideration.

While assembling a transmitter as elaborate as the **Viking** is obviously much more of an undertaking than assembling one like the **CW7**, all holes are drilled, and the very complete instructions make it quite simple. Also, as stated earlier, some distributors furnish ready-to-operate **Vikings.**

The **Philmore** Novice Kit, which was reviewed in the August **Novice Shack,** is now furnished with predrilled coil forms, eliminating an operation some constructors have found difficult to perform.

Letters and General News

As this is written, the F.C.C. has not yet announced its decision regarding additional frequencies for Novice use. The ARRL, in recommending that 7,150 to 7,200 kc. be opened for Novice use, made two interesting comments. They oppose giving the Novice operators too many frequencies, because having them might kill incentive to obtaining a higher-class license. Also, they feel that keeping interference at a high level in the Novice bands is desirable, in order to sharpen up the Novice's ability to copy code through heavy interference.

With the life of a Novice license limited to a maximum of one year by regulation, the first comment seems to have little validity. And if lots of interference in the Novice bands is desirable, the 3.7-mc Novice band should gladden anyone's heart. Personally, I seldom have difficulty in finding enough interference to satisfy me in any of the regular low-frequency amateur bands during their usable hours.

Hal, W8DAQ, believes that Novice operation should be permitted throughout all the c-w bands, and present regulations regarding power and licensing retained. . . . Sid, **WN6QZR,** writes, "Hi, Herb. I received my Novice and Technician licenses last month. I expect to try for the General-Class one next month. I am sixteen years old and am a Junior in the Fairfax High School (Los Angeles). I am a charter member of the Fairfax Communications League, which is the Ham radio club of our school. Other licensed members of the club include W6PFZ, who will be our next president, WN6IVO, W6MNJ, and W6KFX. My transmitter uses a 6AG7 and a 6L6. Input is thirty watts. My receiver is an S-38B. My best DX is only seventy miles, but I am a member of the Crescent Bay, A.R.E.C. Net, and I participate in

W4OPE and WN4WKP at Georgia Cracker Net Hamfest. WN4WKP is known to his parents as Johnny Fearson. Although blind, Johnny has the distinction of being one of the youngest amateurs ever licensed. He received his license before his very recent eighth birthday.

the drills every Monday night."

Jim, **WN4VIV**, writes to remind me that a parallel-resonant antenna tuner will tune random-length antennas as well as a pi-network will. "I used one with a portable rig and tuned up a 100-foot wire and a window screen with it." Jim is right, of course. Sometimes, however, it takes considerable experimenting with one for best results.

Joe, **W5TEL**, writes, "Got my General-Class license now, but I am still following the **Novice Shack** every month. The Corpus Christi Radio Club is sponsoring a code and theory class every Monday night in the club rooms." . . . Jim **WN6MYP**, wrote me two letters this month. He said, "I especially like to read about other Novices my age. I am thirteen years old and the youngest ham in town. Since receiving my license, March 8, I have worked forty-two states, thirty-nine confirmed. I have also worked VE7, VE8, KH6, KL7. All work has been on 3.7 mc, with seventy-five watts. I am in favor of opening 7,150 to 7,200 kc. for Novices. It will reduce the interference on 3.7 mc., and maybe I can work the six states I need for WAS (Worked All States). I have received a twenty w.p.m. code certificate. Oh, yes, I have made 451 QSO's (radio contacts). My dad is W6KIG. He has a ½-kw. rig for me on 14-mc CW when I get my General-Class license(!!!).

Ken, W9KRJ, built the 146-mc beam I described in the July column. Let him tell it. "Yeah, Herb, I built the beam, using the delta match. With twelve watts input to my '522'. I have worked Indiana, Illinois, Michigan, Wisconsin, and Ohio. You'd get a laugh out of how I built it. I tapped the elements to the boom,' and spliced together two of the XYL's clothes-poles to make a mast. The mast rests on the ground and is held upright by a wooden bearing on the top of a post supporting the clothes-line. I rotate mast and all by wrapping several turns of rope around it and bringing the ends of the rope in the shack window. At first, the thing squeaked so badly, I was afraid the neighbors would think I was beating my wife when I turned it, but I greased the bearing with Crisco and quieted it down. I plan to make a more permanent installation of the beam, now that I have seen how well it works. Anyone who wants a simple 146-mc. beam that really works should look into it."

Ken has promised me a picture of the present beam. I believe its unique constructional features merit publication. His wife, by the way, was on a vacation when he built it. This may explain the easy access to the special constructional material Ken used.

Sarah, **WN4UMM**, writes, "Herb, there is another XYL ham in Atlanta now. She is Dot Mitchell, WN4WFN. She claims I talked her into getting her ticket. I think she enjoys Ham radio as much as I do. There are quite a number of Novice operators in Atlanta. One of them is Johnny Fearson, WN4WKP. Johnny received his license before his eighth birthday which he just celebrated. Johnny's achievement is doubly outstanding because he is blind! I am enclosing a snapshot of the OM, W4OPE, and me, and one of the OM and Johnny. The OM operates 75-meter phone; so you see there is a lot of Hamming at this location."

Jack, **WN4UFX**, writes, "I've had my ticket about four months and have worked twenty-six states, all confirmed. I am really proud of one of my contacts. It was with WN6LSK, Del Paso Heights, Calif. It was about 2:00 AM, and almost anything you wanted was coming through. 'I said to myself, "I'm going to call one of these WN6's." ' I did, and when he came back, he truly fainted, hi. Transmitter is 6AG7-6L6, about twenty-five watts input. Receiver is am S-20R."

If **WN6POY** and **WN6JET** read this, will they please confirm contacts made with WN6NNP on July 21? You are his best DX to date. WN6NNP's address is R. F. Hammett, 521 East 8th St., National City, Calif. Russ says his initials and last name make him a real Ham.

Be seeing you next month. As always, I want to hear from you and use your pistures in the solumn. Also you might keep me advised as to whether or not you like and appreciate the "product" reviews that we have been runuing. We feel that they keep you advised of the current market since there are a number of novice kits and transmitters available. Soon we will go afield into simple test equipment and other gear. 73—Herb.

(S & W items are worth $2.50 or a one year subscription—extension or renewal—to CQ. Be sure to indicate which you prefer as a method payment when you submit an item.)

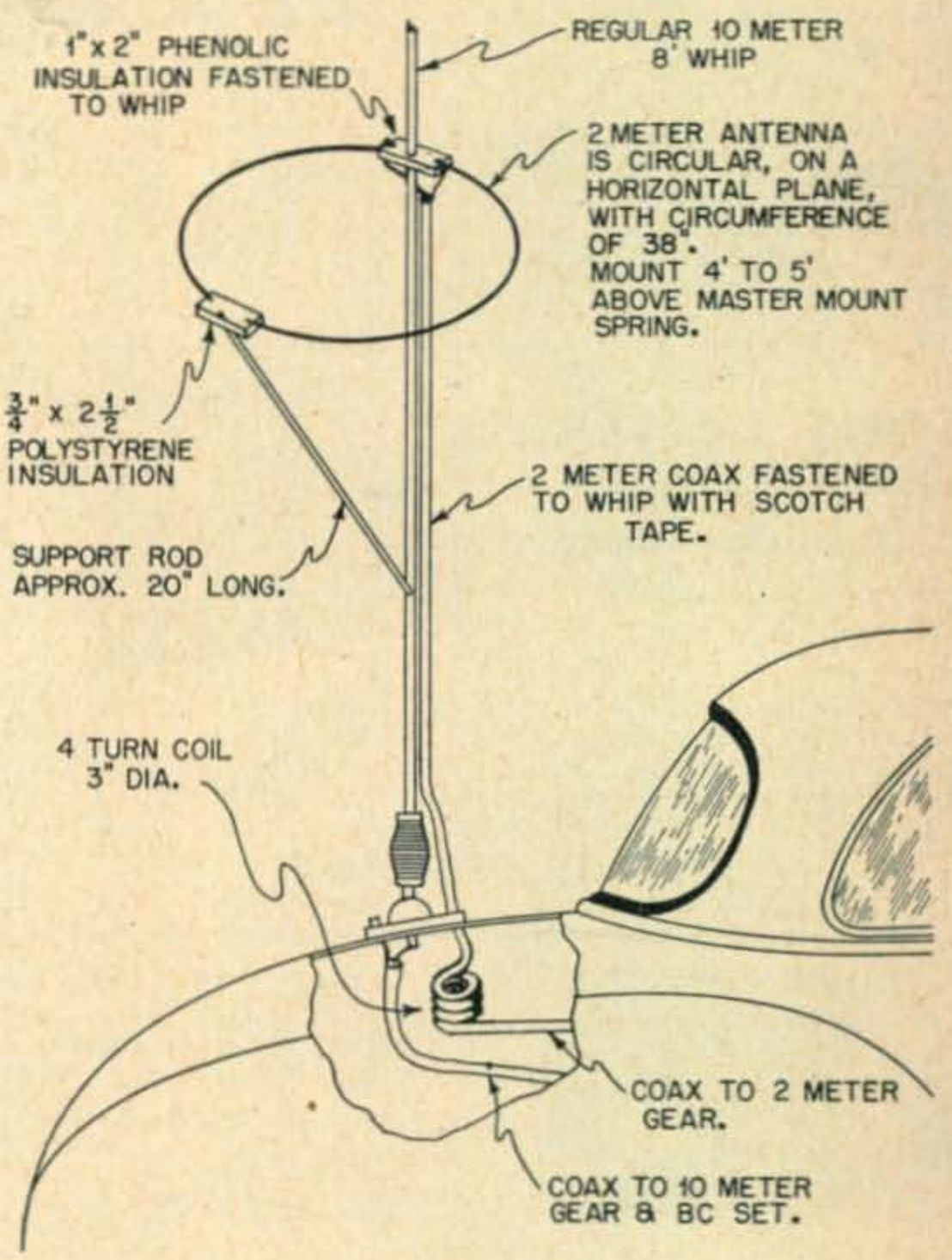
Inside the

Shack and Workshop

A Combination Mobile Antenna

This antenna was designed as a product of necessity. My XYL wanted to call me on 2-meter phone while I wanted to use my regular 10-meter mobile. As shown in the accompanying sketch we were able to design a suitable mobile antenna.

The two-meter antenna, is similar to the 6-meter



"halo" described in the text a number of years ago. It is a half-wave in circumference, or about 38 inches. It is made of #12 copperweld wire, although other materials should be O.K. The 2-meter co-ax cable is not electrically connected to the 10-meter whip. The co-ax is brought down the whip, across the spring and mount, and through a small hole into the trunk. Inside the trunk the 2-meter co-ax is wound into a 10-meter choke coil of approximately 4 turns about 3 inches in diameter. This coil is adjusted so that the 10-meter transmitter will tune up just as it did before the 2-meter antenna was attached.

The performance of either antenna seems to be up to par. The 2-meter antenna and feed probably radiate on 10 meters, but the overall effect is that of a "capacity-hat".

James W. Jones, W8RHM

DX NEWS

(from page 48)

is now A3'ing from ZC6UNJ. . . . **KP4PM** and xyl visited KV4 land.

21 Mc.

Conditions from this QTH extremely dull. Openings seem to be between LU and Europe or Africa and Europe. No European sigs heard here yet, but not too much listening. LU6AX made it No. 14 with KV4AA while LU's in general were heard knocking off Europeans like mad. VQ4HJP puts in very consistant signal here. W6AM also has 14 ctys on 21. This band should begin to perk up at time of reading.

Last minute item. Karl HB9JJ/HE1JJ, advises that over 1000 QSL's have recently left his Qth. These cover his 1951 activities in HE1. Another trip was planned for Aug. 6th.

QTH COLUMN

FP8AP	Gustave Robelot, Box 192, St. Pierre-Miquelon.
ZP9AW	Padre Miguel de Bleeker, Capitan Miranda, Cerca Encarnacion, Paraguay.
3A2AU	Pierre Albertinoli, Nr. 3 Impasse des Carrifres, Monaco.
FF8AN	Marcel Veber, Box 971, Dakar, Senegal, FWA.
FQ8AT	Box 69, Fort Lamy, Tchad, AEF.
FU8AC	Vincent Fonsagrive, Port Vila, New Hebrides.
VP1AB	Stann Creek, Br. Honduras.
C3MC	Box 419, Tapeh, Taiwan, Formosa.
C3AR	C. L. Terrel, MSA Mission to China. APO 63 c/o PM. San Francisco.
All J's	JARL, P. O. Box 377, Tokyo, Japan.
FF8AQ	Emile Henry, Aerodrome de Tessalit. via Gao, Sudan, Fr. Africa.
VP2MD	Via W2BUV.
VS9AW	Via RSGB.
KH6CB/KJ6	Bill Chamberlain, 5106 Kalanianaole Hwy, Honolulu, TH.
VR2CO	Nadi Airport, Fiji Is.
PJ2C-'s	M. J. Hueth, W. I. Compagnie Straat 3, Willemstad, Curacao, NWI.
Guam Hams	Box 145, Guam, M. I.
KM6AH/KB6	c/o CAA, Canton Is. (Fred)
VS5ELA	Via WØELA.
CR4AG	Caixa Postal 19, Praia, Cape Verde Is.
PJ2AA	QSL Mgr. for Aruba. S. J. Heeringa, Dakota Airport, Aruba, NWI.

Thanks to F9RS, **West Gulf Bulletin**, W8NBK, K2BU, RS9673, W6NMA, W9NDA, W5MPG, T12TG and 6ACZ.

VI TALK

M, well-known authority

RADIO TELETYPE

(from page 40)

W7IHI, W7VS, and **W7LU** in the Portland-Vancouver area are operating on 27.2 mc. AFSK and have a smoothly running network. W7LU is also skedding W6OWP for make-break RTTY tests such as W6NRM conducted with W7LUK and W6DOU a couple of years ago. . . . W6OZE "I see that a Japanese has perfected a machine that will print directly from the spoken word. That should end our troubles with converters forever. . . . I have a machine perfected, also, which, if adapted, will end depressions forever: it does one man's work and takes three men to run it. . . ."

W6NRM reports that W6SCQ has a super fb layout; rack and panel setups built into one wall of a nicely furnished room. There are five or six relay racks installed there. Collins receiver and transmitter on the desk with a 20-inch TV set above. Model 12 to the right of the desk and a Model 21A on a shelf. W6LS has a new QTH in La Canada, complete with barbecue pit and telephone pole (for antennas). Shep has a Model 19 and a Model 14. His converter is the AN/FGC-1 which practically fills the space from floor to ceiling in one rack. At W6AEE all you see is a Model 26 on the bench with some test equipment. Looking closer you see a row of phone jacks under the bench. All of a sudden the printer starts up and W6LS prints just fine. Merrill now has auto-start installed which operates on a 30-second mark signal. Removal of the TT signal shuts down the printer after ten seconds. His transmitter and receiver are up under the roof out of the way.

W7FGG in Tucson reports that his converter is about completed and that he expects to be on the air soon. Jerry is quite active on two and six meters. Say, I've worked him on six!

DX-Wise

A letter from **KX6AS** says that he will be looking for any of the gang on 11-meter AFSK or FSK. Would like to make schedules. When the lower frequencies open up he will be there too.

That is the bulk of the news. About a hundred letters were received during the last month asking about how to get equipment and circuit data. Interest is certainly looking up. If a hundred letters of this type come in during August, what is going to happen in the fall when the FCC unveils the RTTY regulations? Maybe I had better take up the violin or something.

References

Looking at the overall picture for a moment of the circuits involved in radio teletype you now should have available at least one diagram of each of the separate parts of the system. Referring to the block diagrams in the August, **CQ**, page 30, Figure 1, the first two blocks are regular station equipment and do not yet rate much discussion in this column. The next block, the receiving converter (detailed in Figure 2) was adequately covered in the November 1946, **CQ**, pages 18-23, and in the September 1952, **CQ**, pages 25-30. The next block, the receiving distributor, is a normal part of all except the Model 21A printer so that the diagram of the Model 12 receiving distributor in the February 1952, **CQ**, page 29, should suffice for the time being. As more of the RTTY gang build their own receiving distributors for the Model 21A we will have more data on this phase. The last block of Figure 1, the typing unit, was also diagrammed on page 29 of the February 1952, **CQ**.

In Figure 3 we have the transmitting chain. Both the teletype keyboard (block 1) and the transmitting distributor (block 2) were diagrammed in the February column. Block 3, the frequency shift audio oscillator has only been described in the November 1946 article by W2BFD, page 21. Blocks 4-5-6 are the same as above. The keyer is described in the W6NRM article, April 1952, **CQ**, pages 18-20, and is included in the Collins 709D-1 described in this column. The frequency shift oscillator is discussed in the June 1952, **QST**, pages 48-49, and is covered by the 709D-1 circuit as well as the W6NRM article. That should be a handy reference list.

NEXT MONTH - - -

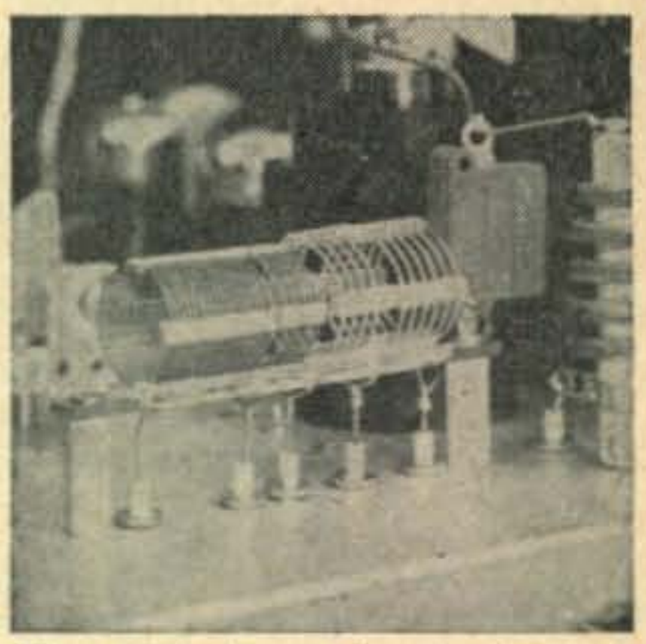
ANOTHER SPECIAL ISSUE!!

on Novice and Technician Construction

In answer to many requests the staff of CQ is pleased to announce that they have assembled in the November issue some of the most outstanding articles obtained within the past year.

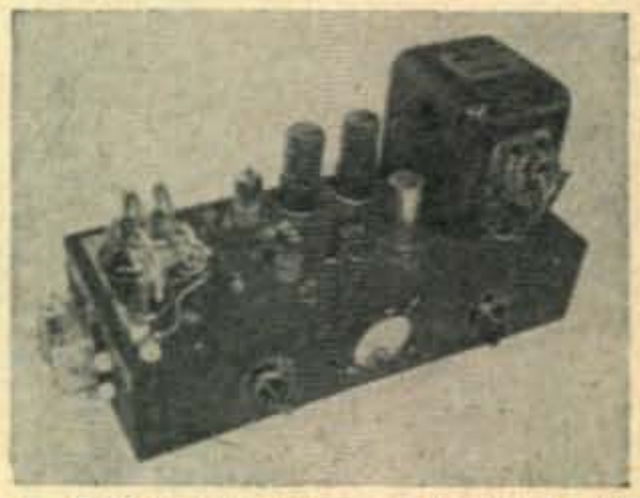
Don't be misled by the title, even if you operate only for the fun of it. You'll want to see the new KH6MS rig ending in either a 2E26 or 6146. It has complete band-switching all the way down to its pi-network. If you are strictly VHF, Brownie, W2PAU has a brand new 6BQ7 converter that is simple, straightforward and has a surprisingly low DX man's noise figure. Or maybe you'll want something useful to build during the winter months. No matter what it is—the November Special Issue of CQ will have it!

ADVANCED, GENERAL, NOVICE or TECHNICIAN—reserve your copy now—all subscriptions received before October 20th will automatically obtain this "Special Issue" (and those just around the corner!).



The novel homemade pi-network in the KH6MS Transmitter.

One of the useful test instruments to be described—a frequency meter and monitor.



A 220-mc transmitter complete with modulator.

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VHF NEWS

(from page 44)

and **made** W2BYM fill out my New Jersey **QSL!** Boy, he sure was surprised to see me walk in, demanding a QSL; but I couldn't see any other way to get it, hi!" (Congratulations! — **VHF Ed.**)

Herb Spoontz, **W5LIU**, reports that Six was good during June, July and August. "On July 18th, worked W4CVQ, W9ALU, W9EET, W9VZP, W1LLL, W1HDQ, W8UDR, W8NQD, W9JIY, W2UFI, W3KJM, W3PMG, W9GYX; heard VE3AET, W3PCB, W3OJU, W4FBH, W8RSP. Heard a station in Massachusetts calling, but too weak to read.

"July 19: Worked VE3AZV, W3PF, W3RUE, W8CIT, W9JXH, WØEOY; heard W3PCB, W8CMS, W4CVQ, W8NQD, W8QLB, W8SUO, W8SQU and W2UFI.

"July 20: Worked W4FBH, W3FPH, W6DSO, W6ABN, W6WSQ, W6BWG, W7QNC; heard W7FGG, WØFKY and W6GQF.

"July 21: Nothing heard!

"July 22: Worked W8SQU, W8NQD and W9MFH.

"July 23rd through August 3rd: very inactive—nothing heard.

This is the station of the very well known DX and VHF enthusiast VK4HR, H. (Tibby) Scholz, Brisbane, Queensland, Australia. Tibby has a WAS (Australia) on 50 mc. (Photo by VK4XN)

"August 4: Worked W6VES, W7JRG; heard WØCJS, WØTJF and W7FGG.

"August 5: Worked W9MHP, W9JMS, W8TCO; heard W8BFQ.

"August 13: Worked W3CGV (Delaware, new state!), W3PCB and W4CVQ.

"August 16: Worked W4MKT, W4FBH; heard W4FBL beacon. And that's that!" Herb concludes. (**VHF Ed. Note:** It sure is nice the way the "Stalwarts of Six" support reporting of the band!)

420 Mc Notes

July produced some good openings on 420 mc. **W2QED**, Seabrook Farms, New Jersey, worked W4NRK, Hampton, Virginia, for a new contact on 420, July 25th. The same night, he also worked W4ODG, whom Ken had worked once two years before. The only 420-mc contact with Virginia, last year, was several cross-band contacts with W4OLY. Ken also worked W3KFM, Baltimore, for his first Baltimore contact this year. Last year, W2QED worked four different stations in Baltimore. On the morning of July 31, Ken worked W1HDQ for the second time this year, still his best DX at 210 miles. W2QED hopes to work one of the Massachusetts stations this year.

W3BSV also worked W4NRK and W4ODG on July 26th. On the following night he worked W4ODG again, but neither station has heard the W4s since, although they are on from 10 to 11 PM eastern standard time

every night. W3GGR, Elkton, Maryland, has been hearing W3BSV quite regularly when he works W2QED, but hasn't made it two-way, yet. W2BLV and W3GGR have had a few contacts during the month, however.

W2QED's 420 mc score for July was 9 different stations in 5 states. One new station was worked, and two contacts were made for the first time this year with stations worked before. Total, 43 contacts for the month. Stations worked were, W3GGR, W2BLV, W3BSV, W2EH, W3RKQ, W4ODG, W3KFM and W1HDQ.

In the south, on the evening of August 12, shortly after 2000 CST, a crossband contact was enjoyed by W5RCI, Marks, Mississippi, operating on 144 mc. and W4BYN, Memphis, Tennessee, transmitting on 433 mc, A3 modulation. The airline distance covered 60 miles. W4BYN's 420-mc signal was steady and of fair strength, taking out the noise completely, according to Paul Wilson, W4HHK. (Could this be a "first"? — **VHF Ed.**)

At **W5RCI**, the receiving antenna for 420 was a 16-element horizontal array, all aluminum welded affair, about 35 ft. high. The receiving set-up was W4HHK's 420 converter (12AT7 r.f. - 1N21 mixer-etc.) into an HRO. The antenna was fed with 300-ohm twin-lead.

W4BYN was using a crystal-controlled rig with an 832A straight amplifier giving about five to ten watts output. His antenna is a 16-element horizontal array about 35 ft. high.

Signals on two appeared average or slightly better and channel 4 TV was the same, according to W4HHK, who adds, "I realize this is no record or an unusual contact, but—for the Memphis area—it is the best 'DX' on 420 we know of!"

W5OBS/5, Bryan, Texas, is also interested in the higher bands. He has one of the "Golden-Plated" oscillators which he hopes to get on 432 mc. before long. Anyone else interested?

W9CUP is a new Technician licensee at Princeton, Illinois, and will be on 432 mc., soon, according to W9MBI, Coleta, Illinois.

"On July 29, at 2130 CST, I heard W9LF, Creve Couer, Illinois. This third harmonic of his two meter signal was 54 db on 432 mc. Of course, I watched the 432 mc band very closely, but heard nothing even after making several calls," reports **W9MBI.**

NAME CHANGE FOR MARS

The name of the Military Amateur Radio System has been changed to the Military Affiliate Radio System, it was announced today by the Department of Defense. The program will continue to be known by the short title: MARS.

MARS is a joint Army—Air Force program. The two services have organized the efforts of skilled technicians in order to direct them toward one Overall communications plan founded on a national, rather than a local, need.

The name was changed because the term "military affiliate" more clearly defines the relationship between the Armed Forces and individual members of the system. The word "amateur" was employed originally in order to emphasize the technical qualification for membership—possession of a valid amateur radio operator license issued by the Federal Communications Commission.

The Chief Signal Officer, U. S. Army, and the Director of Communications, U. S. Air Force, direct the operations of MARS within the two services. An advisory committee, composed of both military and civilian members, advises the Chief Signal Officer and the Director of Communications on MARS policy. Governmental agencies and civilian organizations represented on this committee include the Federal Communications Commission, the Federal Civil Defense Administration and the American Radio Relay League.

DX CONTEST

(from page 30)

	STATION	ZONES	COUNTRIES	SCORE
3.5 mc.	GM3EST	2	6	88
7 mc.	GM3EST	7	33	5,820
14 mc.	GM3CSM	18	32	5,000
	GM3EST	2	1	18
28 mc.	GM3CSM	8	9	391
Sweden				
All Bands	SM3AKM	31	92	71,094
	SM5AQV	34	104	65,274
	SM5WI	26	81	51,360
	SM6ID	23	99	34,526
	SM7ACO	27	75	29,070
	SM5AQW	24	65	26,344
	SM3LX	26	52	22,854
	SM5CO	24	54	22,620
	SM3ARE	16	52	20,400
	SM7QY	25	76	19,796
	SM5DZ	10	66	17,860
	SM5ANY	21	59	17,440
	SM7AML	18	65	17,264
	SM5AUP	23	45	15,162
	SM5AOI	15	51	13,794
	SM5ARL	7	27	2,074
	SM5EC	9	26	1,500
	SM5AFU	6	24	1,170
	SM6AFK	4	10	238
3.5 mc.	SM5DZ	4	26	2,370
	SM5AQV	4	24	2,212
	SM7ACO	3	24	2,160
	SM6ID	3	28	1,953
	SM3AKM	3	20	1,127
	SM7AML	3	15	648
	SM7QY	3	9	616
	SM5EC	2	13	435
	SM5ARL	2	11	208
	SM3LX	1	1	2
7 mc.	SM5AQV	8	28	4,176
	SM5AOI	6	29	3,850
	SM5DZ	4	25	3,625
	SM5ANY	7	29	3,420
	SM5AQW	5	23	1,820
	SM7QY	6	22	1,624
	SM3EP	4	19	1,541
	SM6ID	4	22	1,534
	SM5MX	5	18	1,035
	SM5CO	3	16	1,026
	SM7AML	3	19	946
	SM3AKM	4	14	684
	SM3LX	4	12	400
	SM7ACO	4	8	264
	SM5WI	3	10	234
	SM5AFU	3	9	204
	SM6AFK	3	9	180
	SM3ARE	2	8	80
	SM7BEO	1	4	30
	SM5AUP	2	2	16
14 mc.	SM5WI	23	71	43,428
	SM3AKM	24	58	40,262
	SM5AQV	22	52	20,572
	SM3ARE	14	44	16,936
	SM3LX	19	37	14,616
	SM5AQW	19	42	14,091
	SM5AUP	21	43	14,080
	SM5CO	21	38	13,924
	SM7ACO	20	43	11,529
	SM5ACB	16	36	9,256
	SM6ID	18	39	7,125
	SM3ACP	15	39	6,804
	SM3EP	14	28	6,132
	SM7QY	16	35	5,610
	SM7AML	12	31	5,547
	SM5ANY	14	30	5,412
	SM7TQ	14	26	4,600
	SM6DA	13	33	4,600
	SM5AOI	9	22	3,069
	SM3FT	5	18	1,288
	SM5AUN	7	11	1,080

The Contest Committee wishes to apologize for the following error in Phone Section Results tabulation:

Under NORTH AMERICA—Single Operator Stations—

The listing	**"14 mc.**	**W2KZE**	**15**	**22**	**2405"**
should have read	**"28 mc.**	**W2KZE**	**15**	**22**	**2405"**

	STATION	ZONES	COUNTRIES	SCORE
	SM5ARL	5	16	945
	SM5EC	7	13	620
	SM5DZ	2	15	527
	SM5AFU	3	15	396
	SM6AFK	1	1	4
28 mc.	SM6ID	8	10	648
	SM3LX	2	2	24
Switzerland				
All Bands	HB9EU	32	48	15,840
	HB9JK	20	53	11,315
	HB9CI	15	37	4,108
3.5 mc.	HB9EU	4	12	704
	HB9JK	4	13	408
	HB9CI	1	4	20
7 mc.	HB9KX	4	24	2,436
	HB9JK	5	14	855
	HB9CI	4	11	330
	HB9EU	2	2	16
14 mc.	HB9EU	16	22	4,446
	HB9MU	7	23	2,370
	HB9JK	7	22	2,204
	HB9CI	6	17	844
28 mc.	HB9EU	10	12	814
	HB9CI	4	5	135
	HB9JK	4	4	80
Spain				
All Bands	EA3FL	55	136	167,316
	EAIAB	27	66	49,941
	EA4CR	31	80	22,755
	EA5DF	15	37	6,062
	EA3FK	9	24	1,782
	EA1BZ	6	14	540
3.5 mc.	EA4CN	6	29	4,795
	EA3FL	4	20	1,344
	EA4CR	3	16	570
7 mc.	EA3FL	12	34	8,740
	EA1AB	8	22	4,500
	EA5DF	8	22	4,170
	EA4CR	8	21	1,682
	EA3FK	2	13	390
	EA1BZ	3	1	20
14 mc.	EA3FL	28	64	48,300
	EA1AB	15	39	19,140
	EA3GF	17	29	10,626
	EA5BD	16	30	4,876
	EA3CK	14	26	2,800
	EA4CR	8	28	2,196
	EA5DF	7	15	1,892
	EA3FK	7	11	504
	EA1BZ	5	11	330
28 mc.	EA3FL	11	18	3,045
	EA4CR	12	15	1,512
	EA1AB	4	4	312
Trieste				
All Bands	I1NU	22	72	28,482
	I1BCB	20	50	10,920
3.5 mc.	I1NU	4	22	2,002
7 mc.	I1NU	6	22	2,072
	I1BCB	8	23	1,736
14 mc.	I1NU	12	28	6,080
	I1BCB	12	27	3,900
Wales				
All Bands	GW3JI	18	70	21,032
	GW3GXL	13	44	6,270
	GW3HJR	9	41	5,450
3.5 mc.	GW3JI	3	21	1,416
	GW3HJR	2	11	234
	GW3GXL	2	7	81
7 mc.	GW3JI	6	25	2,821
	GW3GXL	4	17	903
	GW3HJR	2	14	480
14 mc.	GW3ZV	29	71	65,200
	GW3HGB	13	24	3,219
	GW3JI	9	24	2,937
	GW3GXL	7	20	1,566
	GW3HJR	5	16	1,281

Did You Ever?

Seriously consider firing up on 220 megacycles? What stopped you? Equipment too complex? But is it? We don't think so, at least not the rig described in the November "Special Issue" of CQ.

Be sure to get your copy—a subscription is the easiest way.

	STATION	ZONES	COUNTRIES	SCORE
Yugoslavia				
All Bands	YU1AD	24	91	40,135

AFRICA—

Single Operator Stations

Algeria				
All Bands	FA8DA	32	82	83,334
	FA9RZ	29	88	70,902
	FA3VV	20	53	28,178
3.5 mc.	FA9RZ	5	20	2,775
	FA8DA	4	14	2,484
7 mc.	FA8DA	5	20	5,512
	FA9RZ	6	19	4,450
	FA3VV	4	18	3,586
14 mc.	FA8DA	14	39	16,483
	FA9RZ	12	40	12,480
	FA3VV	16	35	11,373
28 mc.	FA8DA	8	9	1,190
	FA9RZ	6	9	1,155
Belgian Congo				
All Bands	OQ5RA	36	77	124,752
Canary Islands				
All Bands	EA8BF	26	54	58,400
Egypt				
All Bands	SU1GO	15	37	9,464
French Equatorial Africa				
14 mc.	FQ8AE	17	40	26,505
French West Africa				
All Bands	FF8AG	23	43	43,362
	FF8JC	31	61	34,776
7 mc.	FF8JC	6	11	1,513
14 mc.	FF8AC	19	41	36,240
	FF8AG	13	27	14,600
	FF8JC	12	26	7,068
28 mc.	FF8AG	10	16	7,592
Guinea, Portuguese				
14 mc.	CR5AD	14	23	16,539
Kenya Colony				
All Bands	VQ4RF	15	24	8,346
Madagascar				
14 mc.	FB8BB	16	25	9,635
Madeira Islands				
14 mc.	CT3AA	13	29	9,870
Morocco, French				
All Bands	CN8EG	30	76	176,278
14 mc.	CN8EG	20	53	92,783
	CN8AG	10	35	12,510
28 mc.	CN8EG	10	23	12,936
Morocco, Spanish				
All Bands	EA9AP	22	59	75,006
Mozambique				
All Bands	CR7AF	16	26	12,642
Nyasaland				
14 mc.	ZD6DU	7	14	1,960
All Bands	VQ2GW	50	85	85,590
Rhodesia, Northern				
All Bands	VQ2GW	50	85	85,590
Rhodesia, Southern				
All Bands	ZE3JP	46	71	103,545
	ZE3JO	17	32	7,203
3.5 mc.	ZE3JP	2	1	36
7 mc.	ZE3JP	10	8	1,764
14 mc.	ZE3JP	26	43	42,159
	ZE4JC	23	38	15,006
	ZE2JH	10	19	2,929
	ZE3JO	12	20	2,688
28 mc.	ZE3JP	8	19	4,428
	ZE3JO	5	12	1,071

	STATION	ZONES	COUNTRIES	SCORE
Southwest Africa				
14 mc.	ZS3Q	17	20	10,804
Swaziland				
All Bands	ZS7C	24	33	10,830
Tangier Zone				
All Bands	EK1CW	23	45	13,804
14 mc.	KT1OC	9	22	4,371
	EK1CW	7	14	1,071
Union of South Africa				
All Bands	ZS6OW	48	84	182,952
	ZS5U	51	77	122,112
3.5 mc.	ZS5U	4	3	126
7 mc.	ZS5U	11	17	6,692
	ZS6OW	9	10	4,731
14 mc.	ZS6OW	27	48	62,325
	ZS5U	20	32	22,724
	ZS5AM	28	36	18,752
	ZS6ACD	21	27	10,128
	ZS4AK	14	20	4,488
28 mc.	ZS6OW	12	26	11,628
	ZS5U	16	25	10,660

ASIA—

Single Operator Stations

	STATION	ZONES	COUNTRIES	SCORE
Ceylon				
14 mc.	VS7NG	24	43	28,073
Hongkong				
14 mc.	VS6BA	21	43	29,952
	VS6CG	16	29	12,735
	VS6BJ	16	21	6,105
India				
All Bands	VU2JP	27	56	42,081
	VU2LJ	10	10	460
7 mc.	VU2JP	7	11	684
14 mc.	VU2JP	20	45	30,485
	VU2LJ	9	9	396
28 mc.	VU2LJ	1	1	2
Iraq				
All Bands	YI3ECU	11	35	21,514
Israel				
All Bands	4X4BX	57	166	444,126
	4X4RE	51	145	441,196
	4X4DF	27	95	119,194
	4X4BM	24	64	47,608
3.5 mc.	4X4RE	4	24	6,916
	4X4BX	4	19	3,243
	4X4DF	4	17	2,436
	4X4BM	1	2	9
7 mc.	4X4BX	17	45	42,284
	4X4RE	12	39	34,170
	4X4DF	4	27	9,176
	4X4BM	3	12	855
14 mc.	4X4RE	25	59	102,396
	4X4BX	27	71	97,804
	4X4DF	14	41	28,270
	4X4BM	13	37	22,236
	4X4BR	6	24	*12,060
28 mc.	4X4BX	9	31	6,840
	4X4RE	10	23	3,795
	4X4BM	7	13	900
	4X4DF	5	10	765
Japan				
14 mc.	JA4AI	21	30	20,451
Malaya				
14 mc.	VS2DD	16	25	5,371
Saudi-Arabia				
14 mc.	HZ1HZ	11	36	12,408
Singapore				
14 mc.	VS1DU	16	13	2,697

OCEANIA—

Single Operator Stations

	STATION	ZONES	COUNTRIES	SCORE
Australia				
All Bands	VK2GW	31	43	49,284
	VK2AND	18	21	4,758
3.5 mc.	VK2GW	4	4	96
7 mc.	VK2DI	14	15	7,105
	VK2GW	7	6	3,588
14 mc.	VK2PV	25	47	25,056
	VK2GW	18	30	17,952
	VK2AND	16	19	4,235
28 mc.	VK2GW	2	3	20
	VK2AND	2	2	4
All Bands	VK3HT	18	20	4,826
	VK3XB	19	16	3,535
	VK3PG	6	6	192
7 mc.	VK3HT	4	4	96
	VK3PG	3	3	42
	VK3XB	3	2	5
14 mc.	VK3AZW	20	32	30,680
	VK3HT	14	16	3,450
	VK3XB	16	14	3,000
	VK3KS	4	5	117
	VK3PG	3	3	54
28 mc.	VK3ABA	2	2	72
14 mc.	VK5RX	8	8	2,896
All Bands	VK6RU	27	40	22,579
All Bands	VK7LZ	24	23	7,708
Hawaii				
All Bands	KH6IJ	60	81	272,271
	KH6MG	61	78	165,132
	KH6AEX	50	72	107,482
3.5 mc.	KH6MG	9	9	2,124
	KH6IJ	8	7	1,585
	KH6AEX	4	4	152
7 mc.	KH6IJ	9	8	9,977
	KH6MG	10	9	4,826
	KH6AEX	10	8	523
14 mc.	KH6IJ	29	50	68,730
	KH6AEX	29	54	64,159
	KH6LG	28	42	42,070
	KH6MG	28	47	37,200
	KH6PM	25	39	36,352
	KH6AAQ	22	31	29,468
28 mc.	KH6IJ	14	16	9,977
	KH6MG	14	13	8,586
	KH6AEX	7	6	780
Marianas Islands				
All Bands	WØDEA/KG6	28	33	14,457
14 mc.	KG6AAE	24	54	51,324
	WØDEA/KG6	22	27	8,526
28 mc.	WØDEA/KG6	6	6	756
New Zealand				
All Bands	ZL1MQ	44	43	80,823
	ZL1QW	17	18	2,800
	ZL1HY	8	7	1,785
3.5 mc.	ZL1HY	4	3	343
	ZL1MQ	7	5	312
7 mc.	ZL3LL	15	21	16,128
	ZL3OX	11	13	10,992
	ZL1MQ	7	6	3,666
	ZL1QW	1	1	2
	ZL1HY	1	1	2
14 mc.	ZL1MQ	21	24	11,925
	ZL1QW	14	15	2,175
	ZL3CP	8	8	1,680
	ZL1HY	1	1	6
28 mc.	ZL1MQ	9	8	6,052
	ZL1HY	2	2	264
	ZL1QW	2	2	16
Papua				
All Bands	VK9XK	48	52	93,700

Thanks to the following for sending in logs for checking purposes: W5KWY, W5FFW, W7CNM, W8UEY, W8HA, KL7AII, PY2ACT, ZS2Y, VK2AMV, VK2OW, ZL1ADA, ZL2AI, G6BB, SM5IZ, SM6AMR, SM5RC, SM6RS, SM4BTF, SM5BAD, SM7AAZ, SM7VX, SM5APG. and SM5YS.

NEW PARTS and PRODUCTS

The Editors of CQ take pleasure in re-establishing our "Parts and Products" section. This is the only department in a radio amateur magazine pointing out the new products as they come on the market. We are sure that you will find it interesting and valuable.

NEW HYPASS CAPACITORS FOR MOBILE USE

Two new capacitors, one specifically designed to eliminate automotive radio noise and the other to filter power-line, filament and control circuits, have been added to the line of Sprague Hypass feed-through capacitors.

Type 48P18 is rated at 0.5 μf, 50 volts d-c working, and 40 amperes through current. It provides effective filtering of troublesome voltage regulator noise in mobile radio installations when installed in series with the battery and generator armature leads to the voltage regulator.

Another Sprague Hypass capacitor, Type 80P3, is designed to filter and by-pass harmonics and spurious R-F currents in transmitters, radio, and TV receivers. A bulkhead mounting bracket permits through-chassis mounting for complete circuit shielding and isolation. Type 80P3 is rated 0.1μf, 600 volts d-c working 20 amperes through current, and may be used at potentials up to 250 volts, 60 cycles a.c.

Complete details on these and other Sprague Hypass Capacitors are available on request to Sprague Products Co., 85 Marshall Street, North Adams, Mass.

NOVICE KIT

A new, complete, 20-watt transmitter kit designed especially for the Novice has been announced by THORDARSON-MEISSNER, Mt. Carmel, Ill. Tube complement consists of a 5U4 rectifier and 6L6 crystal oscillator. Chassis is already drilled and simple instructions furnished make assembly easy and fast. The unit will not become obsolete when the Novice advances to higher grade license because

Did You Ever?

Want a really nifty rig that did just about everything?
(KH6MS has one in the November issue)
Want to try a 6146 complete transmitter on 144 mc?
(WN2IHM has one in the November issue)
Want a compact inexpensive 10-meter phone transmitter?
(W4QAG has one in the November issue)

it can be used to furnish basic excitation for a high power rig. It is also adaptable for portable and emergency use. Kit comes complete with 80 meter coil, less xtal, at amateur net price of only $24.95. Also available is a full set of coils for 10-11, 15, 20 and 40 meters at $3.00.

GATING MODULATION

(from page 20)

To place the modulator in operation after the audio has been taken care of, put the switch in the CW position and adjust the screen voltage to the proper value by means of resistor *R*. The final should, of course, be operating and fully loaded for this adjustment. Then place the switch in the *phone* position and the plate and screen currents will drop to some nominal lower value. Under modulation they now will have a decided upward swing. Due to the damping effect of the meters the upward swing will not reach the CW position values, although the power output does when sufficient audio is applied to the modulated grid. The output varies from its lower value (still lower on negative voice peaks) and will reach the CW output on the positive peaks. Checking with a scope will show that it is impossible to cut the carrier off on the negative peaks under anywhere near normal operating conditions while it has a decidedly exalted effect on the positive peaks. Actually both the wave envelope, trapezoid patterns and the picture on a panadapter will look like a very well modulated class B rig. As with all screen modulation systems the loading must be adjusted for optimum conditions, meaning the best sounding signal. This is generally with the antenna coupled just a little tighter than normal.

A little positive voltage on the ground return side of the audio transformer has been applied to provide a "resting carrier" level. Adjustment of this potentiometer should enable the operator to raise the "resting" carrier to a point where the modulation is indistinguishable from normal constant carrier 100% AM. It is not necessary to by-pass the potentiometer arm. Even with the

uplifted resting carrier, the control tube should still maintain its ability to swing from cut-off to positive peak saturation. It becomes a matter of setting the control to the point where the average carrier output voltage stays constant under modulation. Too much resting carrier produces downward modulation; too little, upward.

We have used this system with such tubes as the 813, 814, 1625, and **6V6.** The results were very good with all of them. Although it has not been tried as yet, it should work very nicely in mobile and portable equipment where power consumption is of major importance. In this use it should be possible to develop the necessary audio voltage with a carbon mike and one speech stage, or possibly with the carbon mike and its transformer directly connected in the grid of the modulator tube.

While this has nothing to do with this system of modulation it might be well to mention a few things about the use of beam tubes. Never operate them without the plate circuit being loaded. In the unloaded condition the screen current is very high and the tube can be destroyed in a very short time. For maximum output and efficiency the screen voltage and current must be at the rated values. The screen current is controlled to a very large extent by the plate circuit loading, control grid current and bias. In general, if the screen current is too low with proper plate circuit loading, decrease the value of the control grid resistance, or if too high, increase the resistance.

A SIMPLE OVERLOAD CIRCUIT

(from page 21)

from the back contacts of *RY1* (or the forward contacts of *RY2*) and remain closed through its own contact and a reset button or, more simply, the time constant of *R1*, *C1* and *RY2* can be increased so as to keep *RY2* closed for a second or so after the circuit is turned off. This will slow the chatter rate to an acceptable value. To increase the time constant, it must be remembered that the resistance of *RY2* must be considered. A 5000-ohm relay will require about 100 μf. for *C1* to obtain a time constant of 0.5 second.

While the total cost of the parts for this circuit, if purchased new, is higher than the cost of other alternatives, such as a latching type relay, the latter are not as commonly found in the junk box. Furthermore, the usual mechanically-reset latching relay is inconvenient to reset unless it is favorably located, and this usually requires extra primary wiring. Since it is a well known fact that most overloads occur just when a new country is being called, it is most convenient to just push the button and have the rig come back on the air!

Classified Ads

Advertising in this section must pertain to amateur radio activities. Rates: 25c per word per insertion for commercial advertisements. 5c per word for non-commercial advertisements by bona fide amateurs. Remittance in full must accompany copy. Phone orders not accepted. No agency or term or cash discounts allowed. No display or special typographical ad setups allowed. "CQ" does not guarantee any product or service advertised in the Classified Section. Closing date for ads is the 25th of the 2nd month preceding publication date.

FOR SALE: Collins 75A1 and speaker, new in condition and appearance, in original carton, $260.00 cash. Glenn Becker, W9ANX, 307 Market, Effingham, Illinois.

QSL's! World-map! US-map! Samples 10c. Tooker, Lakehurst, N. J.

TVI PROOFED 70 watt transmitter, separate bias supply, 10 thru 160 m, $70.00. HQ 129X,not a scratch, $130; speaker, $10.00; BC459A, $15.00. BC453B, $20.00. All perfect 5 meter receiver, $6.00. Write for list plate-filament transformers, chokes, variable condensers, carbon microphones, etc. not surplus. O'Brien, 48 Prospect, Westwood, New Jersey.

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FOR SALE: Complete 1 KW Transmitter built to commercial standards in closed rack. Remote Collins 310B-1 drivers PP 813s. Coils for 80,20 and 10. D-104 mike, self contained speech amplifier and self contained PP 805s modulator. Best cash offer as unit. W9DGM, 1636 S. Biltmore St., Indianapolis, Indiana.

TRANSMITTER. 2 stages, power supply crystal switching. All in one metal cabinet. Nothing else to buy. $20.00 (plus freight). Complete collection radio magazines since 1934: CQ, QST, others. $5.00. Entire collection radio parts $2.00. Details, write W5GTL, 3108 West Ave., Austin, Texas.

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DON'T FAIL! Check yourself with a time-tested "Surecheck Test" similar to the FCC tests. Novice, $1.50; General, $1.75. Advanced $2.00. Amateur Radio Supply, 1013 Seventh Ave., Worthington, Minn.

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FOR SALE: HRO-5TA1 receiver $100.00; RCA 1KW modulation transformer $25.00; high voltage transformers for KW $20.00; VFX 680 $35.00; several new guaranteed 4-125A $15.00 each; 832A's $4.00; 2E26's $1.50. Any reasonable offer or trade will be considered. Write Box 797, Smyrna, Ga.

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BC610 PARTS WANTED. Give price and condition first letter. LI Radio Company, Box 474, Montrose, Pa.

QSLs. Stock or made to order Lee's Business Service, 617½ 6th Avenue, Council Bluffs, Iowa.

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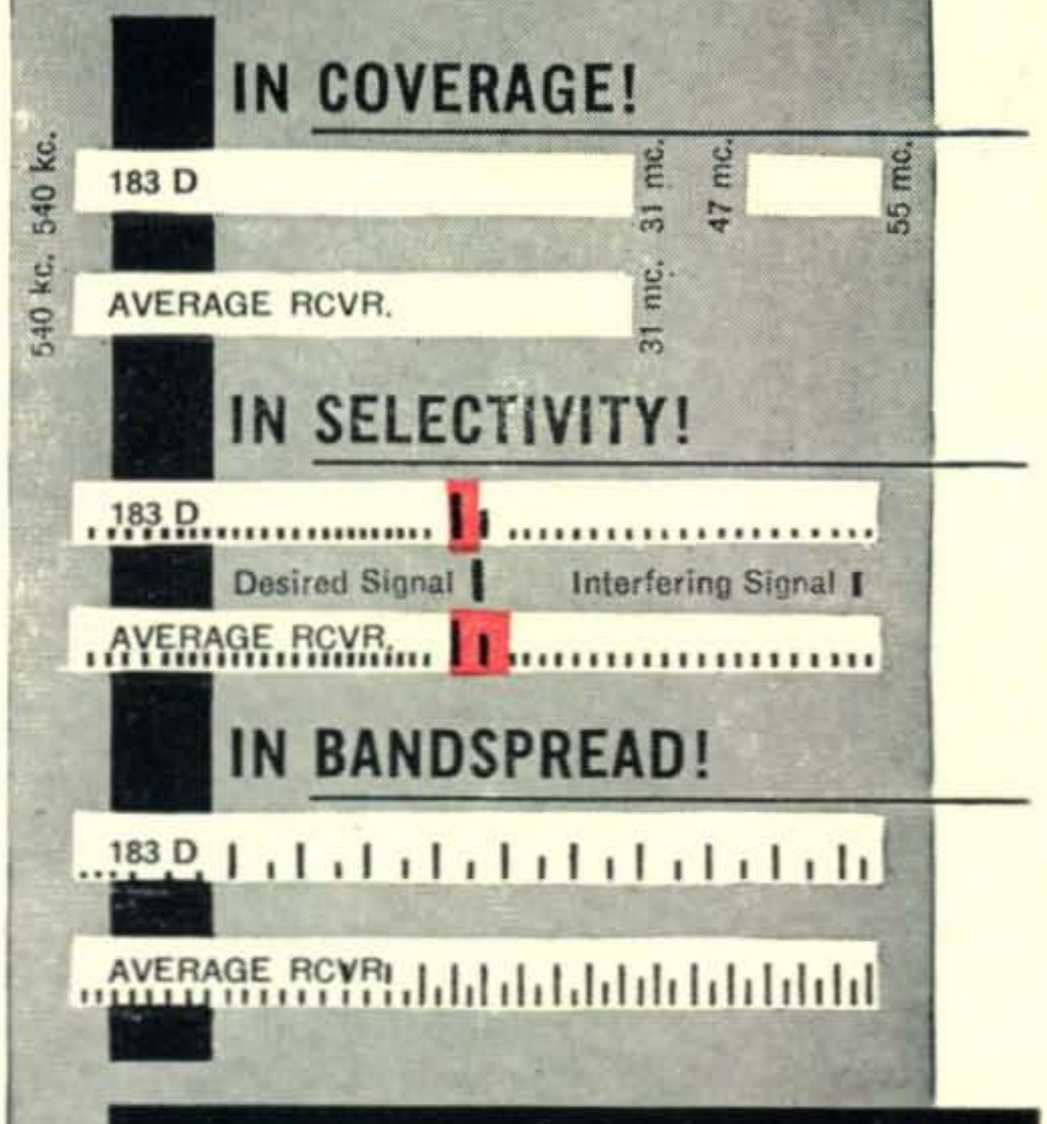

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