AMATEUR
RADIO
TELETYPE
SOCIETY

JANUARY
1953

# Teletype Bulletin No. 19

yes, we've done it yes, we've done it

The last issue of the Bulletin was already on the presses when the word came through that our long sought objective had been won and that within a few weeks we would have the priviledge of operating on the lower frequencies with frequency shift keyed teletype. The regulations were not exactly what we wanted, much gnashing of teeth being heard about the c.w. call signing sections, but then this was sugar-coated by the open invitation of the FCC for us to get busy and use the present regulations and then suggest improvements. In their own words: *"It further appearing, that clarification of the proposed requirements for the transmission of call signs as requested is desirable,"*. Full reproduction of the release and regulations should appear in CQ and QST so I won't fill four pages of the Bulletin with it.

There has been some confusion among the newer adherents of RTTY about FSK and AFSK. The new regulations permit FSK (frequency shift keying) in the bands: 3500-3800 kc, 7000-7200 kc, 14000-14200 kc, 14300-14350 kc. No new bands have been alloted to AFSK transmission (audio frequency shift keying) so the old bands of 11, 6, 2, and up are still authorized for this mode of operation. With FSK the frequency of the transmitter is shifted 850 cycles and there is no modulation used. With AFSK the transmitter frequency remains unchanged and an audio tone is used to modulate the carrier. This audio tone is shifted in frequency by 850 cycles.

I was a little disappointed to note in the FCC release that only 266 comments were filed with the FCC on the docket. That means that if no one except the teletype gang wrote a letter to them there still was less than half of the gang who bothered. This is a rather large block of complacency or indifference. Is it that you who didn't write didn't care whether we were able to use the low frequencies or did the date for all comments to be in sort of creep up and pass you? I hope it was indifference for that is the much less destructive of the two prerogatives. If you intended to write and then didn't, you have let us all down. Just suppose that any one of the several groups who are against RTTY getting into the low frequencies had put up the meagerest sort of opposition to us. We were darned lucky. The feeling that there is someone to do the job can defeat us. When there is a letter to be written no one else will ever write it for you. Your letter is all important. In a couple months we shall be wanting the FCC to amend the new regulations with respect to the call signing procedure. FULL RESPONSIBILITY for our success in this rests squarely on your own personal shoulders. If you write we can get what we want, if you don't, we get nothing except what the ARRL wants us to have.

## Standards

In view of the rather varied assortment of equipment which is in the hands of our members it is probably a good idea to rehash all of the operational differences so that we may be able to intercommunicate with with as little friction as possible.

One center of continuous misery is the "unshift of space" function which about half of the members have. I am afraid that Johnny Williams has created a Frankenstein monster unintentionally by trying to keep the different types of machines in separate areas. The unshift machines are mostly out west, while in the east there are few to be found. The upshot of this is that many fellows who have been used to using the unshift machines will suddenly find that they have to remember to send the LTRS pulse whenever lower case is desired or else the rest of the gang will have to learn to read the $%&@¢ etc. of the upper case alphabet.

RULE: SEND THE "LTRS" PULSE WHENEVER SHIFTING TO LOWER CASE.

One difference that is of less importance, fortunately, is that of the BELL key. Most machines have this function on the upper case "S" while the rest of them have it on the blank key. Unless you send both signals there is no simple way be sure that you are ringing the bell on the other end.

In order that all machines may have a chance for the carriage to return to the beginning of the line it is a present standard that the "CAR RET", "LINE FEED," and "LTRS" pulses are sent at the end of each line.

Since we are few in number and many of the gang will be wanting to build crystal controlled transmitters and receivers to combat the drift it is important to establish calling frequencies in each band. Some months ago the frequency of 7140 was selected for the 40 meter band. This still seems like a very good frequency, but of course the actual value of it as a permanent parking place will be more clearly determined in time as we have a chance to use it. On twenty meters the calling frequency is 14340 kc. This is a fairly clear part of the band and has little or no c.w. to chop up the FSK signals. The selection on 80 meters was more difficult. Desiring to have the channel on an even ten kc frequency for ease in checking with a simple 100 kc standard and 10 kc multivibrator brought us up against the rather imposing array of ARRL nets which have the same idea. After checking with the net directory in QST one channel was found to be open: 3620 kc. So, that is it.

Though most commercials and military stations use the center frequency as the channel frequency it is much simpler for our purposes to use the mark frequency as the channel frequency. This will greatly facilitate the tuning of receivers and transmitters. Also remember to adjust your rig to send the space signal 850 cycles lower than the mark frequency. The 850 cycle shift must be within plus or minus 50 cycles by the new regulations, but the standards of the VHF Teletype Society of plus or minus 10 cycles should be met for optimum communication.

One major change in operating from regular amateur radio is the use of "ryryry" for the CQ call. The rythmic sound of this combination is familiar to us all and will make a good CQ call. Sign your call letters after every two groups of five ry's. Don't forget that you must also sign your call with c.w. during calls, before and after each transmission, and every ten minutes during a transmission.

Teletype operation being what it is we need a new type of standard that has not before been specifically requested. This is with regards to listening for new stations to call in while in contact with a station. Let us make a five second pause between every transmission of a QSO a listen for any stations trying to call in.

For the time being we should be able to get along with just the calling frequency. As more and more stations get on the bands it may be that we will have to establish regular secondary channels so that after establishing contact with a station you can QSY to the operating channel, leaving the calling channel free for auto-call purposes, etc.

## RTTY: VOL. I, NO. I

This is an eight page publication of the Southern California Radio Teletype Society and is professionally printed, linotype and all. For a copy of the bulletin "RTTY" write to 3769 East Green Street, Pasadena 10, California. Of particular value in this first issue is a complete list of the various equipments in RTTY use. I appreciate the tremendous amount of work that went into getting out this first issue and welcome the gang out there to this costly, time consuming hobby of bulletin publishing. "RTTY" is a nice slick job.

Frank Ford, VE3AKO, has taken the bull by the horns and written a very nice letter to the Department of Transport putting on file an official request for the D.O.T. to allot the same privileges to the Canadian amateurs as we will have with the new regulations. His letter is here reproduced in full since it covers the subject so well:



78 Branstone Road
Toronto, Ontario
December 29, 1952

Mr. A. Reid
240 Logan Avenue
St. Lambert, P.Q.

Dear Sir:

I understand that at this time of year the rules and regulations regarding the operation of amateur experimental stations in Canada come under review.

In this connection, I would like to point out the extent of interest in amateur radioteletype existing in Canada, and would like to further indicate the benefits of certain rule changes.

Under the present rules RTTY operation is permitted to use subcarrier modulation, i.e., audio frequency shift keying (type A2 emission) on VHF. Thus, RTTY is limited to local working only.

Amateur radio communication deserves wider ranges than offered by normal VHF propagation. To this end, it would be most desirable to operate RTTY on lower frequencies where use can be made of frequency shift keying (type F2 emission) permitting operation at signal-to-noise ratios of as low as 5 db. (Voice communication requires a minimum of 20 db S/N, 30 db is desirable; CW requires of the order of 15.)

It is interesting to note just what these db mean: Imagine, e.g., an AM radiotelephone transmitter operating at 71.4 watts input (this is an average representative power). And further, imagine another station just copying this station with a noisy background. This represents the 20 db S/N case just referred to. Now, if this station wants to be clearly copied (30 db S/N) he must raise his power by 30-20, or 10 db, and must run 714 watts input, the legal limit. On CW (15 db S/N) the power could be reduced by 20-15, or 5 db, and the power input required would be 22 watts. If, on the other hand, the transmission was RTTY, the power could be lowered by 20-5, or 15 db, and only 2.2 watts input would be required.

Summarised, we have these representative conditions:

| | |
|---|---|
| A3 emission, 100% copy | 714 watts |
| A3 emission, noisy | 71.4 watts |
| A1 emission, 100% copy | 22 watts |
| F1 emission (RTTY), 100% copy | 2.2 watts |

The bandwidth required for standard speed teletype (nominal 60 wpm) transmission is only slightly in excess of a well adjusted CW transmission at 30 wpm. The required bandwidth is an exceedingly small percentage of the total spectrum space occupied by an AM signal.

An interesting sidelight is to note that the management of commercial radio circuits have long realized the superiority of RTTY, as shown by the gradual replacing of CW by RTTY signals commercially.

Interest in amateur RTTY is strong. Well established local networks are now operating in the U.S.A. where recent conservative estimates place the number of active stations in excess of five hundred. Here in greater Toronto there are at least five or six stations equipped with the necessary RTTY gear. Some of the stations now operate on VHF, while others await low frequency authorization for type F1 emission. I have talked with a few boys similarly set up in Montreal; rumor has it that a ham in London is equipped -- but we cannot have intercity QSO's -- yet.

I myself have installed the teletype gear necessary to operate my station, VE3AKO, using type F2 emission.

There is a proposal (Docket 10073) before the FCC requesting, in part, F1 RTTY privileges on portions of the "CW exclusive" parts of the 160, 80, 40, and 20 meter bands.

I should like very much to be allowed type F1 emission on low frequency bands. Specifically, I see no reason why our licenses should not grant type F1 emission for RTTY wherever an exclusive type A1 authorization exists.

I hope the Department of Transport will feel inclined to further the technical development of amateur radio in this respect.

Very truly yours,
Frank A. Ford, P. Eng.

## W2BFD VS LETTERS

Every now and then I get a letter from someone who wants me to ask John Williams about something "the next time" I "talk to him". This usually has to do with an unanswered letter or some piece of equipment that hasn't come yet. A few words of clarification are perhaps in order about John and his mail problem. First, it should be understood that John has a store and works at making a living for himself, his wife, and daughter whenever there is not too much RTTY stuff to do. In the line of teletype he has about ten major projects on the fire which require construction and testing; he is on the air several times a day talking with the local gang (two meters); he types up special bulletins and runs them off with his tape equipment; talks on the phone an hour or two a day to local TT gang or out-of-town visitors; has visitors out to the store at least once a week and spends from four to six hours on each of them; handles all of the details on the procurement and distribution of all of the commercial teletype equipment that gets directly into ham hands; spends several days every now and then on a special RTTY demonstration or project such as the election return circuit, the Xmas message service, etc.; and he answers letters. In short, John has just about devoted his whole life to RTTY. Ask his wife!

How, with all of this workload, he can get any letters answered is miraculous. He has worked out a rather fixed pattern for handling correspondence (mine as well as everybody elses). Letters with $$ in them get first attention. Equipment is usually on order within a few days after the check comes in (make checks payable to John Williams). Orders for blueprints take only a couple days. Letters that can be answered with a form letter usually go out in a week. Letters that require a personal answer take time and have a par of about four weeks. Chit-chat letters probably won't be answered at all since they are supposed to come to me, not him.

Both John and I notice that the bulk of the questions that are asked have been well covered in the CQ column during the last year. There's a lot of meat on them there bones so it might be a good idea to look back and refresh your memory. Check the Bulletin too.





## TELETYPEWRITER DIFFERENCES

Though most of the information on the differences between the several models of teletypewriters has been mentioned in CQ and in the Bulletin, it is probably a good idea to go over this subject again so as to refresh your memory. In a few weeks many of you will be working fellows with these machines. Many of the letters that have come in recently show that there is a lot of confusion about the different models of printers.

The two major components of the teletypewriter are the printer unit and the keyboard unit. Electrically there are actually four parts to the system: keyboard, transmitting distributor (TD), receiving distributor (RD), and printer. The model 12 printer uses six magnets, five to select the letter to be printed, and the sixth to print the letter. The keyboard, TD, and RD are located on the keyboard unit. Both units have a motor built in. The printer uses page type paper and operates with the type basket fixed and the platen and paper moving. The model 21A printer unit requires about the same signals to operate as the model 12 since it also has six magnets. The 21A has no motor, however, and uses the sixth magnet as a power source to print the letter and advance the paper strip upon which it prints. Use of the 21A instead of the 12 printer results in much quieter operation, though some operators do not like the tape as well as the page print. The 21A does not have any RD and therefore must either be used with the model 12 RD or else the RD that comes with the punched tape equipment. The 21A does not have any keyboard or TD either, being just a printer unit, and therefore must be used in conjunction with either a home-made keyboard or a keyboard from some other model machine.

The model 14 also prints on paper tape, but it uses a mechanical RD system, thereby requiring only one magnet instead of six. This greatly simplifies the electrical problem of reducing the noise for radio use. The model 12 clicks have been reduced in several different ways: filters in the leads sometimes do the job, a vacuum tube keyer does fine, and replacement of the wiring with shielded wires has been reported successful. The model 14 has just one motor, it being mounted on the printer unit. The keyboard unit has a small gear that meshes with the motor to furnish power for the TD.

The model 15 printer unit also uses only one magnet. It has a moving basket of type and the platen and paper stay still. The keyboard of the 15, like the 14, derives its power from the printer motor. These machines are still in wide commercial use today and are very expensive. Many of these models were sold as surplus after the war, but most of them were wheedled from the amateurs and sold for commercial purposes.

The model 26 is quite similar to the 15, the principle differences being use of a type-wheel instead of a type basket and the movement of the paper instead of the type.

The converted typewriter of John Williams, W2BFD, serves as a keyboar only and requires some sort of TD before standard teletype signals can be obtained. The TD can either be a home brew job or else a unit such as comes with the tape equipment. Thus, with the model 21A printer, a tape distributor, and a converted typewriter you would have a complete teletypewriter.

## POLAR RELAYS

Bulletin #18 mentioned the availability of some unusual polar relays from a Brooklyn ham. Since these relays are just what we all need I went out and bought all he had left. These units are nothing short of terrific. For $3.50 there is the 7 winding relay with two 110 ohm windings, two 160 ohm windings, two 20 ohm, and one 1000 ohm. The relay is extremely compact and is built like a watch. The base is plug-in and the whole unit fits into a protecting can with a folding handle. Size: 3" high, 1½" wide, 1"deep! Weight: 6 oz. The other polar relay is slightly larger and has two 80 ohm windings. This unit has a banana type plug-in base and is 3½" high, 2" wide, and 3/4" in thickness.; Weight: 7½ oz. It has callibrated screws on the contacts and is very carefully constructed. All of the units are brand new. Please include 25¢ postage per relay. If you are ever going to want a small light weight polar relay now is the time to get one.

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W9SPT, George Boyd, and W9JBT ordered machines from John in October and are awaiting their arrival. JBT has his receiving converter done and is working on the auto-call system. George had quite a bit of experience with teletype equipment in Korea where he was a tech rep for Philco. He likes my column in CQ. A fine man.

W2RWV, Leonard Rawles: "I have built a d.c. power supply inside the left hand front of the tape perforator so that it is independent of the other equipment. I used a 300 ma. selenium rectifier and a couple of capacitors along with a protective resistor. Plenty of room. I now have a detector panel built up using dual Selectojets feeding twin tuned amplifiers to a control tube output to a 215A polar relay. It can be tuned to about any audio frequency, mark or space. It seems to have a very narrow band-width and was very easy to build on account of being all electronic wiring."

W4KFK, Frank Schwartz, Nashville, has written a nice letter indicating his interest in TT and avowing a taste for my CQ column. Frank is a bit worried about plunging into the construction of the filters and no doubt will be comforted to find out that self construction of these gadgets is not necessary since they are available for $16 a set of four from John Williams.

W8QKF, Larry Naylor, suggests a rewrite of the original construction instructions for the W2BFD filters, complete with brand names and numbers. This is a good idea, must I be the one to do it?

W7TBE, Bill Brunner, up in Seattle, has made the big step and ordered his printer. There certainly is a lot of activity in the northwest, guess there will be no shortage of W7's on 40 meters.



## MORE MODEL 21A PRINTERS

Got a phone call from John the other day as the result of another emergency. It seems that another bunch of model 21A printers will be available soon and some $$$ are needed to save them from destruction. When you consider that there are only a few hundred of the machines in existance in the whole country you can appreciate the problem. We must not allow any teletype printers to be lost. John can afford to buy a few of the machines, but he is in no position to save them all. He needs about $1000 or so. Any angels in the audience? Every one of you are going to want one or more of these machines sometime, and we will be having many new members that cannot get any other types of equipment, so how about sending in to John right now for a 21A and storing it for your future use or for some member yet to come? Send a check for $25 to John Williams, 38-06 61st Street, Woodside, LINY.

## DON'T JUMP THE GUN!!!

The low frequency bands open up on February 20, 1953 at midnight. Please don't cause us all embarrassment by running tests before the deadline.

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Dunno how many of you have a TV station with the new Charles Laughton film series on it, but if it is there don't miss it. I am making tapes of the series here and will send them out to those interested as they become available.

## DE W2NSD

A rather strange conception seems to have formed in the minds of a few of the TT gang to the effect that I should set up a workshop for building and testing various teletype gadgets and circuits, and maybe even work out new ones. Such a notion, if it exists, does not agree with reality. My function has been merely to aid communication between amateurs interested in teletype and to arouse interest and sympathy for what we are doing among the amateurs in general. With this then as my function you may appreciate that all circuits and data which I put out must come from letters sent in by you. In this light you may better understand the importance of your contributions.

Take for example the circuit for the conversion of the 32V oscillator for FSK. The official Collins conversion circuit was sent in first by W6ITH, who had tried it successfully. Since the publication of this circuit quite a few of you have used it. Recently I received a letter from a member saying that he had tried the circuit and had been unable to get it to work with the values given. Another member called to point out a misplaced component (C-103 actually goes from RF to ground, not to B plus) and noted that he had the circuit working nicely. How many of you have used this circuit with success (or failure) and not written? If you did it with the listed components that would be valuable knowledge to those who are about to tackle it. If it was necessary to make some changes (or improvements) this would be of even more interest. I have gotten no such letters!

I doubt if there is one of you that has not found out something of interest to rest of us. Why not think this over and jot down any hints that you may have discovered or heard which could be of use? What problems have you met and conquered? Did any conquer you? Have any of you gotten the 21A working yet? How, exactly, did you do this? No one has yet sent me connecting data to allow use of the 21A with existing equipment, though many of you have figured this out. Must I buy a 21A, work out the conversion, and then publish the information? Is this fair?

Answering your letters, writing the Bulletin and the CQ column have usurped more than all of my hamming time. Thus I have neither the time to convert my model 12 to low frequency operation, nor the time to use it once it is converted. RTTY is as bad a time stealer as TV in my experience. So far reason has outweighed emotion and I have resisted each nip of the TT bug for low freqs. One of these days I may succumb, but then the Bulletin and column will have to go.

Bark worse than bite department: my ranting and frothing for you to write letters is calculated since I too know how difficult it is to actually sit down and get a letter out. Please don't feel guilty or appologize for not having written for I expect you not to write and then am very pleased when you surprise me.

## THE USUAL BOOK REVIEWS

Your eager-beaver book reviewer has been at it again and comes forth with the following glowing accounts of the books read recently.

"THE ILLUSTRATED MAN" by Ray Bradbury; Bantam 991; 25¢; 246p.
This is good science-fiction, although I find that I am, at last, tiring of his consistent ironic twists.

"NEW STORIES OF TIME AND SPACE" by Raymond Healy; Pocket Book 908; 25¢.
All in all, an interesting collection of short stories by the best known science-fiction authors written especially for this book. Some, of course, were dull, but some were worth the price of the book.

"U.S. Submarine Operations in World War II" by the U.S. Naval Institute; By and large this book should have been edited from its 577 pages ($10) down to about 250. There are a lot of very exciting incidents in it, and a lot of trivia. Though the book endeavors to tell the complete story of the submarines in the last war it falls short for having undertaken such an impossible task. Many of the really dramatic operations are dismissed with a short paragraph or sentence, while others are given fair treatment. Most of the data from which the stories were written came from the official reports and hence lack the human detail and warmth.

"THE NAKED EYE" by Cobean; Pocket Book 899; 25¢; 160 p.
Cartoons by Cobean and wonderful.

"PERISHABLE POEMS" by Joseph Newman; World; $2.75;
136 pages of rather dull poems. Now and then one was as amusing as the rest tried to be, but not often.

"HIGH FIDELITY SIMPLIFIED" by Harold Weiler; Rider; $2.50; 208 pages.
Simplified to where a ham can understand it anyway. This is a good book for getting an understanding of some of the fundamentals of high fidelity. It is better on the detail than the basic theories though, giving pictures of component parts and equipment.

"DR. HOWES DISCUSSES: HUMANICS" 144 pages; $2.50.
Somewhat pretentious presentation of excerpts from various talks and discussions of Dr. Ronald Howes. Excellent philosophy, with quite a few new ideas on human beings and mental therapy.

## SKETCHES

I would like to run little thumbnail sketches of the active RTTY members in CQ. Items like who you are, what you do, where you live, what you have done with RTTY, how you got interested in TT, what other interests you might have, etc. Mostly etc. With this sketch there will be a small photo. This sketch can be written by yourself, wife, or another TT'er. Let not modesty rear its ugly head. Anyone in your group deserve credit? Get busy.

While dwelling on this topic I would like to again request that you send in pictures. I still have no good pictures of the 21A, 12, 14, and reperf (etc).

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W3LMC, Howard Snyder, is trying to install the Collins FSK circuit in his Collins 310B, so far with poor results. Any suggestions? He reports that W3RJA, Guy Knickerbocker, is going great guns and is working toward high power on the two meter net. Howard has shown his recently completed 8 mm documentary film of the teletype gang to both of the Baltimore radio clubs and they enjoyed it.

W6HWW, Ernie Hammer, is in the process of trading two of his model 12's for a model 26; a good trade I think. Ernie gives the following references on TT for those of you who wish to read up on such matters:

1) ELECTRICAL COMMUNICATION, Second Edition; Albert; 1940
2) ELECTRICAL ENGINEERS HANDBOOK, Communication Electronics, Third edition; Pender-McIlwain; Volume V; 1936.

Albert gives a list of references, some of which describe teletype-writers as well as systems. He strongly recommends "FUNDAMENTALS OF TELETYPEWRITERS USED IN THE BELL SYSTEM" by E.F. Watson (Bell System Technical Journal, October 1938). On the adjustment of polar relays see bulletin of C.P. Clare & Co. "THE CARPENTER POLARIZED RELAY, TYPE 3," in Sales Engineering Bulletin #110. This publication describes various Carpenter relays and gives test circuits and methods for testing relays.



## PARANOIA

There is a well known psychological principle called "projection" which points out that we see in others mere reflections of ourselves. Thus the fellow who does not trust others surely cannot be trusted himself. What fault do you seem to find in others rather consistently? Hmmm? Naturally your suspicions will be well founded. After all, when you treat people with distrust they are not going to bend over backward to do right by you. There is a greater chance that they will try to "teach you a lesson." This lesson is well taught in that it verifies your suspicions and it is then obvious that your distrust was well founded. Do you not frequently reflect the personality of others when you are with them? We all do it, but frequently are not aware of doing it.

Anent this topic is a certain paranoia that creeps up on people from time to time. Now and then John (W2BFD) gets a check for equipment and sends on the funds to A.P., W.U., etc., and then for some reason the printer is slow in being delivered. First thing you know the check sender decides he has been cheated and starts a flow of registered letters and telegrams, etc. Such has happened to both John and myself and we both have the normal reaction to it: "teach him a lesson." Neither of us is in the slightest bit interested in cheating anybody, as you may realize from getting to know us through this Bulletin, and the best thing to do when you get an attack of uncertainty is to drop us a note asking what the score is, politely.

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Another propaganda service of W2NSD is an occasional radio or TV broadcast via commercial channels to the world at large praising highly our mighty works. Dunno if any of you happened to be tuned in on CBS-TV on Xmas day, but if you were you probably got a good look and listen to me telling about amateur radio and amateur radio teletype on the "There's One In Every Family" program. They had a quiz after my spiel in which I went all the way and won a few prizes and money, $140. On Sunday, January 11th, I made my debut on the Voice of America with a fifteen minute discussion of the new teletype regulations. I gave out our calling frequencies and asked for reports of reception of our signals. We shall see.

## Heathkit

My Heathkit Grid Dip Meter came the other day. I followed the instructions carefully and got the thing together and working in two and a half hours. My first impression is that it does a good job as a grid-dip meter, but lacks sensitivity as a wavemeter. My tuned circuit-1N34-20 microamp meter wave-meter gave way over full scale reading on circuits where the Heathkit gave no indication at all. It would not therefore seem that the wave-meter function is adequately sensitive for de-TVI'ing rigs. For normal ham-shack use and regular grid-dip functions this would seem to be worth at least twice the $20 price tag. I had a lot of fun going through all of the various receivers and concerters which I had attempted to get working in the past and then shelved and finding out what frequencies I had gotten the tuned circuits on. The two meter receiver never worked well. Come to find out the tuned worked from 165-190 mcs. No wonder. Yessir, should have had this contraption a long time ago.

Look back for a moment at the second sentence in the previous paragraph. There is clearly indicated a tendency which has flowered into almost standard practice. When it takes you 2½ hours to put together a kit how long do you claim it took you? Would you ever round it off and say it took about three hours? Why is it so important to have put it together quickly? If someone else told you that they had put the kit together in three hours would you say that that is about what it took you, or would you mention that it took you 2½, or maybe, just to really put him in his place, would you claim an hour and a half? Suppose I said that I had put it together in a half hour. What would you think of that?

In Swap & Shop W8UKS said that he estimates 80 minutes as par for this kit and that it took him only 65 minutes from the time he opened the box until he had checked a tuned circuit. I didn't make the course in par.

W2AKE, Andy Stavros, writes: "How I got started on this RTTY ... is a long story, but it all began last May when I unknowingly parked my ten meter whip equipped can in front of W2BFD's shop..... I waited four months for my printer and then it took me another four months to complete my panel, but I finally got on two meter RTTY on January 5th with very favorable results.....33 years old, single, have all my own teeth, work for Kollsman Instrument Corp. as an electronic lab assistant..... During the latter part of the war I was installing RTTY equipment for the Air Force overseas...I edited and compiled an RTTY manual for the A.F. back in 1944...I'm all for the RTTY callbook idea....I think the August 1946 CQ page 15 has something worth reprinting in your CQ articles. It is a TT code chart showing all arrangements....I also have a tape recorder and hope to find time someday to enjoy it with good music...maybe we could swap tapes...ordered a 21A printer...will use as a standby and spare to experiment with electronic keying and distributors...."

W6NYI, San Francisco, writes: "Why have not the systems described in the following articles been mentioned more often in amateur teletype circles? "A New Noise-Reducing System for C.W. Reception" by Don Hings, QST June '47, page 21; "Teletype Reception with Make-Break Keying" by D.A. Griffin, QST June '49, page 24. Both of these systems make use of the fact that amplitude modulation of a continuous wave (such as that caused by the presence of noise) can be eliminated by limiting. Detection of such a limited signal by an amplitude detector produces no audio, only a d.c. component. On the other hand limiting of noise alone does not prevent an audio signal after detection. Thus the presence of an audio signal after detection corresponds to the off period of on-off keying and on rectification could be utilized for keying a local oscillator for manual copying or for keying a local d.c. supply for the operation of a teleprinter. The difference between the two systems listed above seems to be that the first depends on naturally present noise such as receiver noise, static, etc., to produce the audio signal during the off period while the second utilizes a blocking oscillator to perform this function."

W6NRM, Bob Weitbrecht: "I believe that the FCC has given us a fair set of rules for a starter, and the fact that they have invited us to help revise the rules later on indicates that they are wholeheartedly in sympathy with our RTTY experiments. So let each of us write Mr. Slowie a letter of appreciation for all he has done."

Joe Doane, South Bend, has invested in a typewriter (hooray) and is now readable. Joe, an old hand at TT, is busy writing up dope on distributors. He has started construction on his own, mounting it on an old 274N chassis.

Lou Buck, the patron saint of most Canadian RTTY'ers, should have his ham ticket soon, being spurred on by the new TT regulations.

W1HOD, Al Webb, Holyoke, expects to be active on two meters in a couple weeks. So far W1EVZ has been holding down the Holyoke end of TT and has been working out every now and then down to N.J. Both are going to get set up on FSK soon and you will be hearing them on 40.

W5AIE, John Lewis, Jr., McComb, Miss., reports: "W5MXJ, Bill Kelly, New Orleans, has model 12 printers (no keyboards) and a receiving converter (W4OLL) under construction. I have a couple of 12 printers without KEYBOARDS and a W4OLL converter under construction. Also have a tape perforator on hand and have a tape transmitter and distributor on order with the VHF Teletype Society. When I get enough equipment together to make them go I hope to pass one outfit along to W5RCI, Marks, Miss., or W5JTI, Jackson, Miss. Both are active on 144 mc, as are W5MXJ and myself, and we hope to get something cooking before long."

W6AEE, Merrill Swan, reports that some of the west coast gang are getting together a bulletin for local consumption. Bert, W6CL, apparently will do the printing in his shop.

W7HPH, Bob Gregory, wants to put Idaho on the air with TT. Bob is superintendent of the Hydro-Electric Powerplant for the Bureau of Reclamation at Anderson Dam.



Conrad Roberts, who became interested in ham TT while in the Army in Alaska, is now home in Merchantville, N.J. and has a model 21A that he has been putting into commission. He hooked up a power supply for it and a distributor, only to be met by a "holy cast" of noise. Now he is working on a keyer.

BOOK AVAILABLE: "Teletype Instruction Manual #26, issue 1, April 1943; Model 19." is available from Fred Pearsall, 200 W. Merrick Rd, Freeport, LINY. Would like to swap for radio books or money.

VE2AKT, Benny Halickman, has his model 12 and expects to be there with us on the low frequencies as soon as the D.O.T. extends the Canadian amateurs the new priviledges.

Unofficial, but reliable word comes from Canada that the VE's will get the same new regulations for FSK-RTTY that we have and that it will be effective on the same day as our regulations: February 20, 1953.

WØHFU, George Mellon, is busy building a new panel, having sold his old one to WØBP (who is having a picnic with it and the VT keyer copying all of the commercial signals (FSK) available). George is looking for a Panadaptor with the idea of using a 2 kc sweep for viewing the mark and space signals of RTTY stations. He is another member of the multi-project gang and, in addition to his regular job, he is putting in a mobile transmitter, putting up a beam, and installing radio equipment at the St. Paul Airport tower.

W6KYV, Dave Kennedy, now has the last piece of equipment necessary to really speed up traffic handling to the far east: his reperforator. There is still the problem of running a model 12 at 4:30 in the morning to be met. I suggest that although the regular model 12 table appears to be cushioned that tremendous improvement can be had by removing it and mounting the printer on sponge rubber cushions.

I am pleased to report that this month I have had about five times as many letters from newly interested fellows as in the past. The CQ column certainly has been getting the word around. W2EHW, Murray Cohen, has plunged right into the middle of things by building the W2PAT converter out of the January QST. Say, what do you think of that converter? It is gratifying to notice that QST is also giving some information on RTTY in spite of the official ARRL attempts to restrict our operation to the Novice section of 40 meters. Must be some crossed wires there somewhere.

W3MKZ, Bob Quenstedt, has ordered a printer and is interested in helping with the solution to the electronic distributor problem.

W9FJO, George Sensibar, has acquired a model 12 and expects to be ready to go with it soon. He is a bit worried about the noise problem of the old monster and is quite interested in finding one of the newer model machines. If you have a model 26, 14, or 15 that you would like to sell or trade for, by all means let him know. QTH: 1333 Birchwood, Chicago 26. With George going hot and strong there may be more stations getting on the air out in Chicago.

W2FTH, Dave Metal, is still hoping for some interest in 220 mc RTTY.

W1EXZ, Bob Curtis, is looking around for a model 12 at a reasonable price. Bob works for the Telephone Company and does teletype work so he knows most of the answers. He further reports that interest in TT is on the upswing in New Hampshire with a couple of other fellows in Manchester thinking of going on.

W2NSD, me, needs a couple 4D21's for a two meter rig (4-125A's). I have some 5D21's and a whole slew of other tubes for swapping, any takers? Also looking around for recording tape. I have a few band pass filters, a bit higher than the RTTY tones, with three toroids in each filter for $4 each. Ideal for band-pass RTTY input filter.

W6NRM/W9TCJ has been warming up for FSK operation by copying the MARS net on 3497.5 kc that was mentioned in an earlier Bulletin. W4OLL and W4SQ7 have been copied pretty well in spite of QRM (c.w.).

TO OPERATE A PRINTER
YOU REQUIRE: ——

1. RADIO RECEIVER
2. SELECTIVE FILTER AND AMPLIFIER
3. POLAR RELAY
4. RECEIVING DISTRIBUTOR
5. 110 VOLT D.C. POWER SUPPLY

TELETYPE PRINTERS
and Accessories
IMMEDIATE DELIVERY
While They Last

| | |
|---|---|
| MODEL 12: | Page Printer complete with keyboard, polar relay, distributors, cover, table, and M/G for d.c. voltages. 110 a.c. input. |
| MODEL 12: | Page printer same as above, but less keyboard. |
| MODEL 12: | Page Printer with base, table, and lower half of printer covered. |
| MODEL 21A: | Tape Printers with covers. |
| MODEL 12: | Replacement PARTS, cartons of them. |
| ALSO: | Multiplex 1A Tape Transmitters.<br>D.P.D.T. 12,000 ohm relays for W2BFD panels.<br>FL-8 Filters. (See October 1952 Bulletin) |
| AND: | D.C. Motors for Distributors and Printers. |
| MODEL 21A: | Circuit Diagram - 25¢. |

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