

RTTY



NEWS OF

AMATEUR

RTTY

SEPTEMBER, 1954

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16

RTTY



HORSE TRADES

This page of the Bulletin is for use of amateurs who have RTTY EQUIPMENT FOR SALE OR TRADE and those looking for equipment to buy or trade. It is a free service and may be the means of getting someone on the air.

- WANTED—Model 14 and 14TD W1TWP
- TRADE—Two covers only for model 14. Need tape head. W6CND
- WANTED—Cover only for model 14. Non-Typing Reperf. Model with reel in top. W8AV
- WANTED—Keyboard only for Model 100 Tele-printer (Kleinschmidt) W7CGA
- WANTED—Wanted model 14 send/receive. Reperf cover only W1BGW
- FOR SALE—Toroid Filters, three section, std freqs, either, mark, space or band pass M. W. Gates c/o ... W6CG
- FOR SALE—Complete model 12 in good condition. W6DOU
- WANTED—Keyboard for model 15 W9HJV
- NEEDED—Photos for RTTY Bulletin RTTY
- FOR SALE—Model 10-A Bulletin printer W2ANB
- FOR SALE—Model 15 and Model 19 W9GRW

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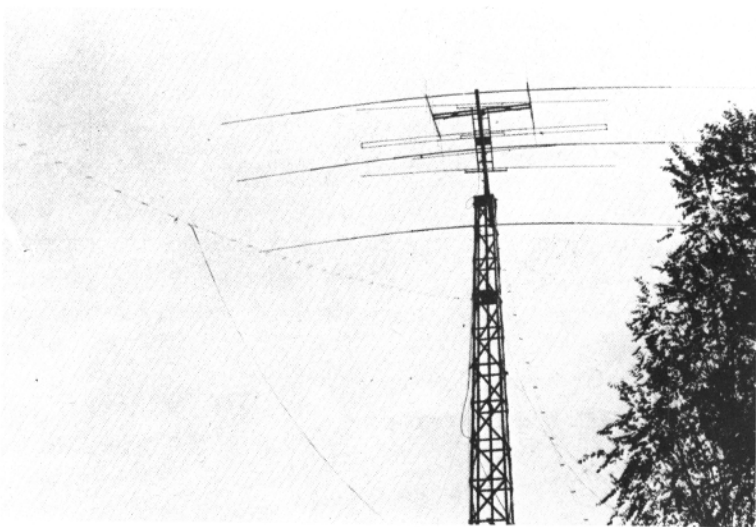


W6CG, Carl "Bud" Schultz

TEMPLE CITY, CALIFORNIA



One of the better known RTTY stations is W6CG, formerly W9CSB of Chicago. Bud uses a Viking II for an exciter on the low frequencies, and has a 450 T final to help his signals along. He is active on CD RTNET as well as the SC 2 meter RTNET.



Frequency Meter Mixer for the W9TCJ T.U.

By Robert H. Weitbrecht, W9TCJ, Yerkes Observatory, Williams Bay, Wis.

For those who have constructed the Terminal Unit described in the April, 1953 issue of RTTY, page four, this addition is given in order to provide the frequency meter operations.

I have always admired the circuit by W2JAV, this circuit being the same in purpose to the shift meter circuit in the AN/FGC-1, and I was on the point of building it up. However for various reasons I sort of waited—and along came Cecil's circuit. Presto! A light hit me, and so I wanted to have it in my audio frequency meter which I built up over four years ago. I have only two additional tubes and three "little-gem" coils added to give the shift indication in the audio frequency meter, and the whole deal sure works like a dream. The two tubes added consist of 6SC7 two-terminal 2550 cps oscillator using one No. 7737 coil, and the other consists of a 12AU7 mixer receiving both the above oscillator frequency and the signal frequency from the audio meter input terminals. The low pass filter consists of two No. 7737 coils and a 0.1 mfd capacitor, terminated on both sides by 6.8 k resistors. The filter parts are mounted on a bakelite board like the filters in the April 1953 RTTY terminal unit, except that the spacing between the E laminations is about an inch. There is a sharp and clean cut off beyond about 700 or 800 cycles and the whole filter is flat out to that point. The filter is connected from the 12AU7 cathode follower mixer and feeds directly into the regular audio frequency meter via a point on the selector switch controlling signal inputs.

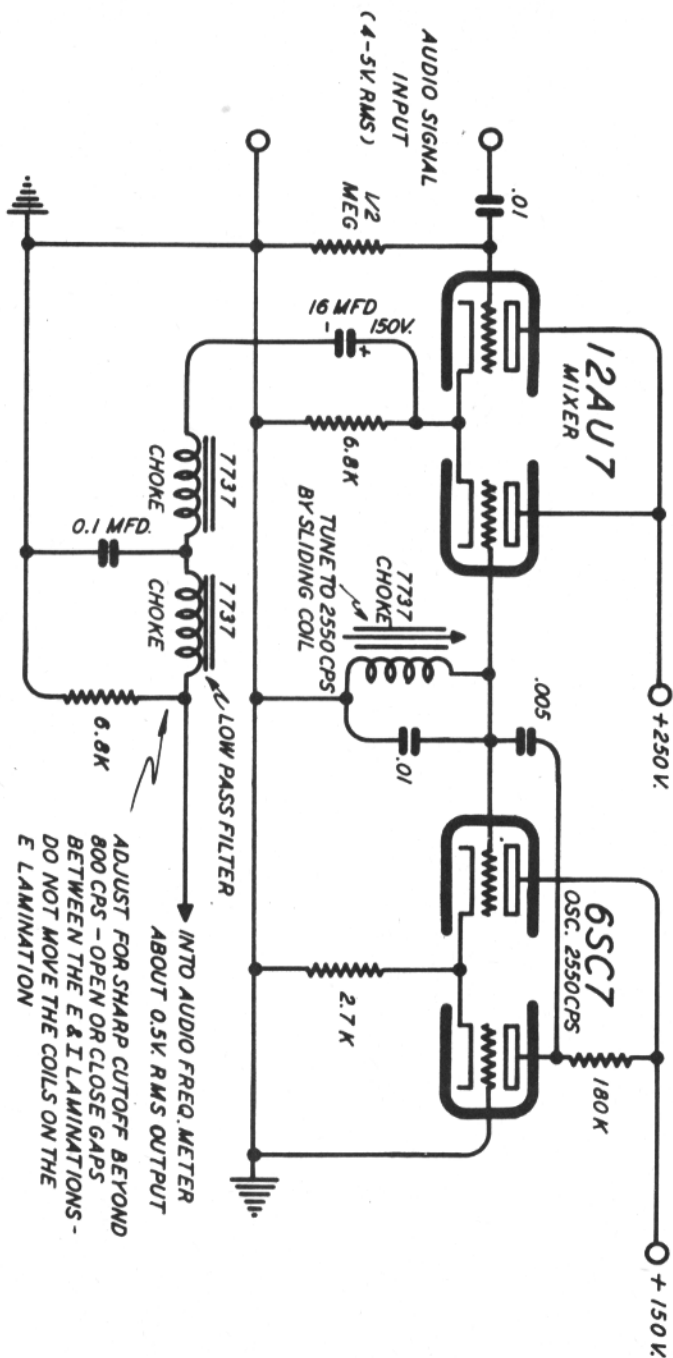
On page four is a sketch of the two-tube addition I have in my audio freq

meter. Sure find it darned useful, I can set the shift much more closely than I could using open scale of 0-6000 cycles, and one can't read too closely the mark and space frequencies on such a long scale. But with the shift meter, 425 cycles is easy to locate, and moreover I can check the calibration by tuning the receiver to WWV and getting its 440-600 cycle tones. So I am much surer about the shift here!

Meter has 0-600 cps scale as well as 0-15, 150, 600, 1500, 6000.

The frequency meter portion is the same as that given by W6ZBV in the May 1954 issue of RTTY page eight and nine. The ranges of the meter as described above can be adjusted by means of the 1k ohm potentiometers. Attention is also called to the article by W2JAV, Philip Catona, in the February 1954 issue of RTTY, pages six, seven, eight and nine.

Too many of the RTTY group of operators have received Green Tickets from the FCC, and with these various versions of the frequency meters there is no excuse for any future off frequency shift operations. A recent check using this frequency meter provided an opportunity to check one of the stations in the middle west who has one of the new Berkeley Frequency meters. I check the shift as exactly 800 cycles, the operator at the other stations gave me the following measurements, Mark, 3617, 829 cps and Space as 3617, 025 cps. Difference 804 cps. Boy four cycles difference in the measurements, and the cost for the equipment is far more than the small difference in readings. Good luck.



RTTY Operating Comments

By a Friend of "The Old Man"

*With apologies to QST's Series by The Old Man. Comments regarding this material should be addressed to RTTY, who will forward them to the author who wishes to be unknown at this time. Ed.

Sam Droopel was amazed and delighted when he saw his first ham RTTY station in operation. This was really something!!! Sam left a smoking trail getting over to put his name on the waiting list for a teletype. After an impatient wait Sam's number came up and he picked up his machine, took it home, cleaned and polished it and set it in the corner of the radio shack. That was nine months ago and Sam's teletype is still sitting in the corner; conspicuous by its silence. Oh! Sam intends to get on RTTY one of these days but the trouble seems to be that he needs a converter first and he just can't seem to find time to get started on such a big project.

Actually Sam's excuse for not getting in on the pleasure of RTTY is invalid because in just a few hours he could build an adequate terminal unit at a very modest expense. The sad part of this situation is that the waiting lists for teletype machines are loaded with the calls of hams who are "busting their buttons" to get on the teletype frequencies.

A quick survey shows our ranks contain a lot of "Sams" who have obtained their machines and intend to get on the air in the indefinite future but who will never quite get around to it. A philosopher once commented that "the road to perdition is paved with good intentions". Everyone has heard the fable of the dog in the manger; because of his similar attitude, Sam might be characterized as the "lazy dog".

The active RTTY gang could effect a simple solution to this problem by "smoking out" these "lazy dogs" and getting

their unused TTY gear in operation. If, in some cases, interest is gone try to get "Sam" to dispose of his equipment into channels where someone could obtain it who is anxious to put it to good use.

Any effort put forth in this direction could only bring results of mutual benefit to all concerned.

AWARD OF THE MONTH WINNER

"I haven't any way of checking my shift but a couple of fellows have mentioned it's about 1100 cycles. However, I haven't heard a word from the FCC monitor station so they could be mistaken".

JUSTIFIABLE HOMICIDE DEPT.

The character who chases his "quick brown fox" through the middle of your first good dx RTTY contact.

BELIEVE IT OR NOT

Overheard a couple of East Coast stations complaining about the lack of KW's among the West Coast RTTY gang.

CORRECTION

During the getting together of the August bulletin, the credit line for the fine drawing of the 26 carriage return was omitted. This fine bit of information was furnished by Wallace Ludgate, W7LU.

RTTY is the Official Publication of the RTTY Society of Southern California

and is published for the benefit of all RTTY Amateurs and Experimenters.

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For Information regarding the Society contact the following:

W6CLW—Ed Simmons
W6AEE—Merrill Swan
W6SCQ—Lewis Rogerson

For Traffic Net Information:
W6FLW W6IZJ

For "RTTY" Information:
W6CL W6AEE
W6DEO

Getting on the Air with RTTY

By Merrill Swan, W6AEE

So, you now have a model 26 Teletype*. Where do you connect it to your receiver and transmitter? Should be a jack for those two plugs somewhere on the gear. No, don't seem to find the right jack anyplace. Guess it must take something else. Wonder just what?

Well to start out, the printer and associated keyboard were designed to operate on a wire line connecting two or more stations. The keyboard and printer are connected in series in the same manner as a normal telegraph circuit, and then a source of DC to operate the magnets. If a second station is to be operated, a wire line connecting the two together must be added with a polar relay in series with the line instead of the printer magnets. Then an additional DC supply was added to operate the printer magnets from the polar relay contacts. To operate these teleprinters on radio, a means of developing DC from the Radio signals must be provided. The most obvious method is that of supplying a carrier which can be demodulated and used to control a local source of DC to operate the printer magnets. This method is widely used to provide DC amplification for telemetering and other similar services. Prior to the FCC authorizing FSK for amateur operations, use was made of transmitting one frequency and demodulating it by use of the BFO in the receiver to provide an audio output. RTTY signals could be transmitted by using the equivalent CW key down condition to represent the condition when the keyboard was not operated. This is the same as the key closed

*Registered Trade Mark of the TELETYPE CORPORATION.

condition for telegraph. At the receiver, the BFO was set to provide 1000 cycles and when the key was opened or the keyboard operated, then pulses of 1000 cycles would be received. This audio tone was then rectified and the resulting DC used to control a polar relay which in turn would control the printer magnets. Of course the reverse of this, ie; no tone when the key or keyboard was open, would then provide a tone when the key was up or keyboard open. The main disadvantages of either type of operation is the presence of noise when the keyboard or key is not operated. This would cause DC to be generated when there was no signal being transmitted. The use of two frequencies which are separately rectified and used to control the polar relay overcome much of the noise problems.

Like normal radio reception, there are many ways in which to recover the intelligence which is transmitted. Normal half wave detectors, full wave detectors, discriminators, and various forms of phase detectors are all used in recovering the DC component from the RF carrier. This difference in methods of recovery of the DC from the radio frequency is the subject of many discussions on Terminal Units and Converters. Other variations are those which use different types of frequency selection, R-C, L-C, filters, of high or low impedance; limiters or use of Automatic Gain Control; DC restorers and so on.

The use of a carrier to recover the DC requires that both the receiving and

transmitting equipment should be very stable, frequency wise. As a shift or drift in frequency is the same as a small change in DC. To overcome this, use is made of Automatic Frequency Control in some equipment. Other commercial services use diversity reception, either frequency or space diversity.

At this stage of the problem many of the amateurs are ready to give up the idea of RTTY operations. But it is not quite as difficult as it seems. First, the receiver should be stable for good CW operations, and like-wise the transmitter should be stable frequency wise, to avoid troubles from QRM. So lets see what is so difficult.

We know that the printer requires approximately 60 mils to operate with the magnet coils in parallel, or 20 mils with the coils in series. The 215-A polar relays requires the same current, except that for polar operation the coils have to be in series. Then when the keyboard is not operated, the relay should make contact so that the external DC supply will give either 60 or 20 mils thru the printer magnets. Then when current flows thru the other coil of the polar relay, this contact opens and the DC current thru the printer magnets will be zero. Many of the amateurs are now using the printer magnet coil in either the cathode or plate circuit of a DC amplifier. Use of the printer magnets in the DC amplifier circuit avoids the RF noise which can be removed by filtering across the polar relay contacts. One thing to be remembered when providing a DC supply for either the polar of the printer magnets, is this, it should be a constant current source. Which means it should be a higher voltage than would be computed by multiply-

ing the 20 or 60 mils by the printer or relay coil resistance. In land line operations usually several hundred to a thousand ohms is used in series with the DC supply to minimize the difficulties from the back EMF. For this same reason the DC detector which drives the DC amplifier, must not have transients which would cause the same errors in operation of the relay or magnets.

You say, why worry about the back EMF kicks? Well, each character of the Teletype code is made up of the presence or absence of five pulses in addition to the Start Pulse and the Print Pulse. Each pulse is 22 mil-seconds long except the Print Pulse which is 31 mil-seconds. In other words, every letter, figure, punctuation, or stunt (line feed, carriage return, bell etc.) is the same length in time. In contrast to the normal CW code used by amateurs, in which the "E" is the shortest and the figure 0 is the longest. Again these times vary with speed. The RTTY code for a given WPM requires every character to be of the same length. One hundred sixty-eight mil-seconds. Next, every character starts with an open keyboard condition, as the first pulse sent. Then if the next 22 mil-second pulse is a closed keyboard condition, and the following four 22 mil-second pulses are open keyboard condition, the letter "E" will be received. One essential part of the operation is that both the sending and receiving equipment operate at the same speed to sample the pulse at the same times as they were sent. For an example, if the transmitter is running much slower than the printer, the pulse which would normally cause an E to be selected, the pulse could extend into the next 22 mil-second period and cause an A to be selected. That is the same as a one and two

pulse transmitted. The other case would be when the transmitting unit was faster than the receiving printer, the closed pulse would occur the time which the start pulse was being used. Either no letter would be printed or a non operation would occur for this one letter.

By use of synchronous operation of all of the printer selectors on a given circuit, a simple code can be used. Only five 22 mil-second pulse are required to give 32 separate characters. That is 2^5 (two to the fifth power). Then if three or four of these are used for the stunts of Figures and letter keys, carriage return, line feed and bell, then fifty-eight different characters or operations can be had for the five pulses either on or off. And last but not least every operation takes the same length of time which is necessary for sync operation.

Much effort was spent in determining the best amount of shift in the two frequencies, which represent the open and closed keyboard condition. At first it would seem that any two frequencies would do, but then what about the second harmonic of the tones. This eliminates any frequencies which are related by a two to one ratio. Next there should be no frequencies generated by the presence of the two frequencies as either products or differences between them. And so on. The two frequencies which were selected for a shift of 850 cycles which is the FCC requirements for amateur operations, are 2125 for the marking (closed) and 2975 for the spacing condition (Open keyboard). Many other frequencies are used for different shift amounts in other services. Shifts as low as twenty cycles are used very successfully.

So, to set down what is required, a

stable receiver with a BFO which can off-set tuned to provide 2125 and 2975 cycles from the output. Next the audio in the receiver should not discriminate against either of the frequencies unequally. Then an AVC or Limiter to provide a constant audio input to the frequency separation portion of the TU before detection. The filters or discriminator should be selective enough to give reliable operation of the DC amplifier which follows the detectors. Between the detectors and the DC amplifiers should be a low pass filter to smooth out the ripple or noise components which are not a part of the signal itself. Normal frequency for cut off is about three hundred or five hundred cycles. Then for means of minimizing the effects of drifting signals either at the transmitter or receiver, a DC restorer can be used which gives a constant DC off condition to the DC amplifier when a spacing signal is received. Then a DC clamp circuit can be used to hold the current to a fixed value. Too much current thru the magnets causes a hold over of the magnets pull and causes false operations.

For the transmitter, a means of shifting the frequency of either the crystal or the VFO, by a fixed amount is needed. The keyboard keys the FSK means in and out of the circuit to cause the five selecting pulses to be transmitted properly. The start and print (or stop) pulse are always sent regardless of what selection is being sent for a letter. Frequency can be shifted by coupling an equivalent inductance or capacity across the frequency determining device. This is common practice in TV receivers to hold both the vertical and horizontal in sync. Relay switching can be used but offers other distortion possibilities in the transmission of the pulses if incorrect adjustment or sticky operation is had.

Mention was made above to sync, and the whole proper operation of a teleprinter depends on it. Even with correctly adjusted shift, and correctly designed

TU's poor copy will be had if sync is not held. Many of the earlier printers had a governor motor to enable one to adjust for sync operation. However most of the later machines have sync motors and hence poor copy is not usually obtained from this source. Another source of trouble in copying when everything else is adjusted correctly is that which comes from bad adjustment of the sending contacts on the keyboard. Closing too soon or too late. Best advise is to leave them alone unless one is prepared to do a somewhat lengthy job. Then normally special equipment is required. To correct for slight mechanical incorrect adjustments a range adjustment is provided on the later printers which can correct for some errors in the sending speed etc.

Well, this will give you some idea of what you are going to have to do in order to operate your new Teleprinter. RTTY will carry more information on the selector mechanism and the range adjustments at a later date. The reference given below should help with design and construction of the terminal equipment as well as the FSK exciter.

An excellent article on design and construction of a terminal unit will be found in the October issue of RTTY, by Bill Gates of the Don-Lee TV Engineering Department.

REFERENCES — RTTY

- Freq. Shift the Easy Way. Feb. '53
- Method of FSK etc. April '53
- Little Gems, etc. April '53
- Adapting ART-13, etc. May '53
- Make and Break, etc. June '53
- Semi-Diversity, etc. August '53
- Getting Started on RTTY. Oct. '53
- Radio Teletype Adapter. Oct. '53
- W6UPY Converter. Nov. '53
- Freq. Shift Keying, etc. Jan. '54
- W6OWP RTTY Receiving. Feb. '54
- Gated Beam RTTY Conv. Mar. '54
- FSK for 32-V XMTR. May '54
- Freq. Meter TU. May '54
- Taming the FSK on Viking. June '54
- Mod. VFO, Viking VFO. July '54
- Simplified FSK. July '54



... W1BGW es W2BDI de W2PBG, Bayside, N.Y. OK es 100 per copy Jack. Well let's see what Ed has to say for himself. Doggone let him wait as I asked him a question before and he never answered me so this should make him think the next time that he stalls a guy off. Hi. OK es FB on the rig there Jack and is really a dandy sig that you have with that rig. Wish I could get ahold of a long winded guy that would keep it for awhile so that I could get the fingers loosened up under hot water. Hi. OK on the other stations that are active there in the area. I hope that I get the chance to meet up with them all. Well Jack, the other nite yes, no we did not have a QSO as the ribbon came off the machine here and I couldn't get in. So this is the first time that I've talked to you. I just put on a new ribbon that night and the thing did not have the little jiggers on to reverse the ribbon and the thing just kept running off. Don't know whether or not you got the dope on the layout here the other nite so will give it to just to keep W2BDI burning the table there. Hi. The mux is a 15 and the xmitter is a Collins 32V1 but not using the ECO in it. Well you can have your job as a TV service man. That for my money is just about the last resort the way that they build those things. Well, let Ed take it for awhile, W2BDI dee W2PBG. K

... W7FKL de W7GQM, Seattle, Washington. Sure good to hear Don W7CO on will be looking forward to working him on RTTY VHF. Dick it's been so long since I have poked one of these TTY mills that I am having a heck of a time making it go where I want it to most of all it don't spell right. Hi Hi. Next Saturday I leave for Spokane and will be there a week. Then will be back home for two weeks. Then will be in Boston for a week. Anyway, how are you getting me now? W7FKL de W7GQM. AR

... W6NCP La Habra Heights, Southern Calif. OK Rod on practically all of that xmission. Except for a little QSB which takes out a few words now and then. OK on your receiver. Mine needs some attention. Also it is a KP81 and is now over five years old without any attention so it is beginning to drift a little and makes RTTY signals a little hard to copy. I heard W8BL working W6CLW on or near this freq. quite a bit eariler and told W6CLW that he was shifting to fifteen meters at 21135 so I tuned up there and made many long calls. Freq OK but no answer. I heard W6CLW say that his xmtr would not work on fifteen so thought I would see if I could give W8BL here a report. I did not hear any RTTY station on fifteen altho were some signals on phone. Mostly fives. Well maybe U are not copying me if my shift is off so back to you Rod. W8BYB, Detroit, Mich. This is W6NCP, La Habra Heights, Southern California. GA Rod.

... W9CNN de W9TCJ. Good afternoon, Cecil, I hope you are now copying me okay there. Teletype sure is full of cockpit troubles! Hi Hi Hi. Been working on the keyboard of this model 26. Had a little trouble with bouncing contacts. Now they seem to be fastened down firmly and hence no more spurious signals I hope. How you reading Cecil? W9CNN de W9TCJ. K

... Well Jack I am going to bow out now if it is OK with you as I understand that lunch is on the way up and making due allowances for the usual time that it takes to close down an RTTY QSO why I think the time has arrived so the best of 73 to you and I will surely be seeing you again on the freq. sometime soon. Good RTTY and good health. W1BGW in Boston de VE3GL in Toronto signing off and clear and standing by for your final. SK.

... W2BDI es W3UWM es W8SPV, W1BGV es W8IJV, Columbus, Ohio de W8HHU in Minerva, Ohio back to the gang. Good evening and thanks for the chance to say hello to the gang. Would like reports from all. Name here agn is Herb and will turn it to Columbus, Ohio for his transmission. Incidentally was printing Jack very well from Boston. W8JV es the gang de W8HHU in Minerva, Ohio. K

... W2BDI de W1BGW. Say Ed is K2USA that was calling in so if you don't mind lets have him make a transmission. K2USA de W1BGW. GA

Can anyone help him out- Ed.

... Well I won't hold you any longer as it is getting close to supper time here too. If you have a chance to reply what you think of the idea on the shift meter. Have you a better idea than to build one with a front end like Phils and a meter circuit like yours? That is the follower circuit and the meter tube? Well I'll turn it back to you for a quickie and sign if you wish. It has been a real pleasure today as I have hardly had to touch the receiver. It has been almost in the same spot since we started, think I turned it a few cycles twice just to keep you in the middle of the pass band. Wasn't necessary as there was sufficient shift and no misprints. Well Bob wat say? W9TCJ de W9UAU. K

... Up in Evanston, Wyoming I found a wrecked 1932 Ford like my work car so bought up some needed items. Hi. I got up early today so I could get them installed. So for once I've been up had bkfst etc by sked time. Am in the middle of the job in the garage, so guess maybe I better get back to it so I can get over to the Ford agency before noon in case I find some crtical nut or bolt missing. So shall we QRX it next Wallace. W7LU de W6OWP. KN

... W1GBW es W4RKD de W2PBG Bayside, L.I. N.Y. Well good evening Jack es sure appreciate your coming into the QSO as I haven't met you on this thing as yet. Say Jack when George comes on see if you find that his sig jumps every once in awhile. Boy, you sure are putting in a walloping of a sig here Jack. Gee George, what do you do with all the gear there. I've got plenty of trouble with just one piece. Hi. Well 30 feet of paper Jack and the ole fingers are getting sore so could you PSE oblige and take it for awhile. Hi. W1BGW such a call on teletype. Hi. W1BGW es W4RKD de W2PBG, Bayside, L.I., N.Y. AR. K

... W8BYB de W1BGW. Roger, Rod. My error! Made a long transmission to you with key open. Hi. Bet U didn't get a thing! Will repeat it.

... W1BDI and W3UWM de W2TKO. Sorry fellows. Too many joy boys on you that time. A couple of local CW stations that time. Glad to hear from you W1BDI. Are you FE Handy. Well I like Ed. Feel it is getting close to sack time. It has been nice talking to you all and Ed I tried ranging you that time and it worked a little better. So I'll turn it back to net control W2BDI and he can turn it back to whoever is next. W2DPH, W3UWM, W1BDI de W2TKO, Buffalo, N.Y.

... W6MTJ, W6FDJ, W6FDK, W6DOU de W6CG, Temple City. Guess DNO is still working on the rig. Hello Paul and nice to hear from you again. Fine on all here. Well Roger, to answer you. Bart was on this AM with Wallace and he was really clacking this old printer as usual. He had swell trip and I got all the poop on it by eavesdropping on his QSO with Wallace. Talked to Wallace few mins after Bart left. Yes, Roger. There is some tape gear for sale or trade down here depending on what you want. Lots of WU sensing heads here for tape and I don't know about distributors or re perms but I am going to buy a sensing head and work this keyboard over for a distributor. Herb Hoover W6ZH worked a 26 over for a distributor and it works great for tape according to Merril and it doesn't affect its normal operation. So thought I would try it here. Then all I need is a perforator of some type. The reperms are a little to rich for my blood. Hi. If you are interested in the sensing heads. They are about twelve to fifteen bucks. In good shape. Fine Bob on your improvements on the FSK unit there. It looks good here in the scope and that for sure. Mary wanted to tell you and give a million thanks for the present. She sure is happy with it. Will put her on later. Well Paul, how has things been with you up in Hayward and what's new with your converter? I haven't been able to work out of town with this although have been copying east coast and midwest very good past few days. So Paul what you got to offer? W6DOU TO Transmit and W6FDJ and W6MTJ this is W6CG, Temple City. K

... W4RKD de W2PBG, Bayside, N.Y. Well George W1BGW was in there when you came back to me and I called and told him that you were already going and that I couldn't break you. So will give a listen for him now. Are you there Jack. Breakin if you are. AR

. . . . W1BGW es the gang. This is W2JAV at Hammonton, N.J., returning. Roger and fine for letting me in. Have been copying you boys for a time. Good evening to W2DFU. Make that W4DFU. Hi Hi. Won't hold it here. Shoot it over to Ed and over to W4FDU. Got the handle here. Know that you are hungry and want to leave. Hi Hi. You take and shoot it over to the W4 gang. This is W2JAV by for you Ed. K

. . . W4EHU and W4TXI de W8HHU in Minerva, Ohio. Well it's this way. A W2 was calling CQ with phone right on top of you and I missed the copy. It was W2BNA in Goshen, New York and he sure is out of his stable. Hi Hi. Am awfully sorry had so much QRM that time on you Doug. Fellows I am going to have a problem with this Collins as I have soldered the lid down and have to get inside to change any capacity in the FSK circuit. Wonder if you fellas put a switch in to change from 75 to 40 with the FSK it will be a big headache here. My signal is better on 40 meters than up here and this ant is cut for phone and does not work well here on this frequency. So think I had it long enough so here she comes to HHE. Sunny south to W4EHU with W4TXI and W2BDI de W8HHU in Minerva, Ohio. AR

. . . . W3PYW de W1RBF, Plainville, Conn. Roger, Frank. I'm printing you almost solid here. And I print AL land line. No traffic on this end. So, HW? W3PYW de W1RBF, Plainville.

. . . . W6MJT, W6DOU, W6CG, W6FDJ and possibly W6DHO de W6EV. OK all around and fine. The handle here is Ham. And if you want some pallets and key-tops they cost \$6.15 and will order a set of them out.

. . . . The auto start is just where it was a few months ago. Still in the experimental stages. I could get it going easily enuff however, I want to work on eliminating some of the more common bugs in the conventional designs. I've tried several. And they all work. But not good enough to suit yours truly. As I told Walt. Getting it designed is the most of the fun for me. After that I don't care if I ever get it actually hooked up and working. Of course I will finish this when I finalize on the design. Usually tho I am more interested in the whys and wherefores than I am in the finished product. So much for that. Tonite is another fight nite on TV and I'll be headed for thhe TV set shortly before 10 p.m. Beyond this there isn't too much that is new to talk about. So how goes everything with Allen Parks, most prominent.. citizen.. W8UKK.. de W8GLS. GA

. . . CQ RTNET (east coast) de W3PYW stations that have not previously been active in the net will be given an opportunity to call in after the roll call of stations that have been active previously. Going to suggest they make net start at 7 p.m. hereafter. We could get thru much earlier if they did. Also if sigs from a particular station are weak to skip that station so the net could go on without delay. Think I discussed that with you last QSO Ken. Also think it would be a darn good idea if in every message we handle by RTTY hereafter we should have via RTTY right up there in the heading. What you think of that? We might as well get a little credit. The CW boys don't think much of us as yet. W1RBF de W7FKL, Boston Mass. K

. . . . There is also a QRMMER on the the freg. so I will say 73 for now and hope to see you soon . Thanks again for the trouble on that spkr. Say hello to Bob for me. W8IJV de W8BYB Detroit. SK

NET ACTIVITIES

TO MEMBERS OF MIDWEST RTNET

This is our first meeting of the midwest Radioteletype Net on 3615KC. As planned, all subsequent meetings will be held on Wednesdays at 6 p.m. CST (7 p.m. CDT, 7 p.m. EST, 8 p.m. EDT) and all Radioteletype equipped amateur stations in the midwest area are invited to participate in net work.

This midwest RTNET is started to solve a problem of satisfactory communications in this area. The east coast RTNET has been having trouble copying some of the westward outlying stations due to conditions. Also the number of stations presently reporting into the latter RTNET operating time. By splitting the number of stations into two or more groups and assigning RTNET control on different frequencies it will be possible to achieve better efficiency of operations with economy of time.

Arrangements have been made between W3PYW and W9TCJ to take care of any traffic originating in either RTNET with destination in the other RTNET. In half an hour after start of RTNET work, contact will be made between W3PYW and W9TCJ in respect to traffic on hand and then will relay on any traffic afterwards into their respective RTNETS.

It is planned to rotate RTNET control to various stations in the RTNET which have good coverage of the area involved. Also while RTNET control station is busy reporting into other RTNETS to handle traffic from and to RTNETS, an alternate RTNET (operating) will be asked to take care of RTNET.

Are there any suggestions at to procedures, organization, meeting times, and the like? All suggestions and ideas from other interested RTTY amateurs will be considered and adopted if found worthwhile towards improvement of RTNET work.

—Bob Weitbrecht W9TCJ

RTTY SOCIETY OF S. C. NET NEWS

The RTTY Society of Southern California Net operates every Tuesday evening at 8:00 p.m. on 147.85 mc.

Activity for the Month of July, 1954

July 6 — W6FLW, N. C. — 16 Checkins
W6's AEE, CLW, DNJ, EV, EGZ, IAL, IIV, IZJ, NAT, NWM, RCM, SCQ, WYH, ZBV, NCP, FLW.

July 13 — W6AEE, N. C. — 16 Checkins
W6's AEE, BWQ, CG, CLW, DNJ, EV, FLW, IAL, IZJ, MQP, NAT, NWM, SCK, SCQ, ZBV (excused by SCK) W9TCJ checked in via W6CLW on 7140 kcs. Three messages, three bulletins.

July 20 — W6CG, N. C. — 20 Checkins
W6's CG, AEE, CAP, CLW, CKS, CYR, DNJ, EGZ, EV, FLW, IAL, IZJ, MQP, NAT, NCP, NWM, RCM, SCQ, ZBV, SCK.

July 27 — W6FLW, N. C. — 16 Checkins
W6's AEE, BWQ, CG, FLW, IAL, ICS, IIV, IZJ, JAV, NWM, RCM, SCQ, ZBV, FXF, ILW, DNJ.

Activity for the month of August, 1954

August 3—W6NAT, N. C.—18 Checkins
W6's IAL, AEE, CAP, CG, CGN, CL, EV, FLW, IIV, IZJ, IRF, NWM, RCM, SCK, SCQ, WYH, ZBV, NAT.

August 10—W6NAT, N. C. —18 Checkins
W6's NAT, AEE, BNQ, CG, CLW, FLW, IAL, IEU, IIV, IRF, IZT, MQP, NAT, NWM, RCM, SCK, SCQ, ZBV, EGZ.

August 17—W6FLW, N. C.—18 Checkins
W6's NAT, AEE, BNQ, CG, CLW, FLW, IAL, IEU, IIV, IRF, IZT, MQP, NAT, NWM, RCM, SCK, SCQ, ZBV, EGZ.

August 24—W6DNJ, N. C.—14 Checkins
W6's DNJ, CG, CKS, DEO, EGZ, EV, FLW, IIV, IRF, IZJ, NAT, RCM, TRX, ZBV.

August 31—W6EGZ, N. C.—18 Checkins
W6's EGZ, AEE, BWQ, CG, CKS, DNJ, EV, FLW, IAL, IEU, IIV, IRF, IZJ, NAT, RCM, SCK, SCQ, ZBV.



"Yes, I know Mr. Harris. It was through him that I first saw a copy of your bulletin. He too is very interested in RTT and is hoping to build a receiving station."

—Tom F. Wyatt
69 Talgrath Mansions,
London, W14 England

RYRYRYRYRY

"I have been copying for about six or eight months, but only recently got set-up for sending. It's a lot of fun, even though I haven't worked anyone farther away than about 30 miles. (Fort Knox, on MARS freq of 3497.5 KC and also on 3620)."

—Bill W4NZY

RYRYRYRYRY

"I am planning on building a TTY converter, and in the TTY bulletin No. 15 the converter you described seems to be all that is needed to get the job done. Some of the circuits described in the different bulletins are a bit complicated and involved. I am not familiar with the short comings of this type of equipment and would like to get your comments on the converter shown and any information on receiving conditions that will not take care of—if there are any. Hi."

—73 Charles W5FEM

RYRYRYRYRY

"I took the liberty of picking your name from the picture in CQ magazine in hopes that you would be kind enough to let me know if there are any publications or literature available on amateur Teletype. I have a model 12 printer and some other equipment, but as yet, have not had it operating."

—R. MacDonald, W7VJN

"Am using the converter from CQ Dec. issue and am copying ok; even the hams. Hi. Also have copied your signals here in Seattle. But need a keyboard to get on the air so guess I will have to buy another machine unless you might know where a keyboard for a model 100 can be procured. This is a Radio typewriter, also WX so no way to punctuate right Hi."

—73 Frank, W7CGA

Can anyone help him out? Ed.

RYRYRYRYRY

"Do you suppose someone could manage to make a tape recording of a RTTY signal? I don't have anything in the way of a perforated tape set-up, but do have access to tape recorders. A tape recording of some RY and "Fox" in two-tone signals would enable me to test both the printer and the converter. Would prefer 15 or 7½ speed, but could get by with 3¾. How about doing some agitation on this for me?"

—Jim Haynes, 518 S. Pine, Hope Ark.

RYRYRYRYRY

"I am building the W6AEE terminal unit as described in the RTTY magazine and I wonder if you have any of the filters left."

—Don, W6NAS

W6SCQ has a few of the filters for sale. Ed.

RYRYRYRYRY

"We have been talking up a RTTY dinner for the fellows in the first, second, third, fourth and eighth districts—and of course any others interested. Bob, W2PBG, has volunteered to arrange for it in New York City."

—73 Ed, W2BDI

How did it come out, fellows?—Ed.

"Just a note to tell you that I am very interested in putting some of this Navy equipment around here on the ham bands and especially on RTTY. We do have the FSK, the converter, the printer and tape punchers etc., so it is a well equipped place. The xmtr usually runs abt 999.9 watts. Hi Hi Hi."

—de Bill W0HOX-6
A. W. Anderson, RM3,
c/o Director of Training, Bldg. 7,
Treasure Island, Calif.

RYRYRYRYRY

"At our meeting before the last one, for the program for the evening my OM, Bill Nye, W7IYV brought our teletypewriter and your converter for demonstration. Many of them have never seen one in operation and needless to say they were fascinated by it. It took us a little time getting them away from it so we could get home, and I know many of them are looking forward to gettnign one in the near future."

—Mrs. Toddy Nye, W7LCS, Sec., Treas.
West Seattle Amateur Radio Club, Inc.

RYRYRYRYRY

"The boys are overlooking the basic principle of Frequency Shift operation if they do not end up with a "Push-Pull" signal and a polar relay. This winter, time permitting, I should like to send in a few articles to the buttetin on basic Teletype Transmission, ie, bias, distortion, signal shaping etc. Also could give some of the circuits used and the theory behind same."

—73 J. D. Sellers,
(Mich. Bell Tel. Co.) Detroit

RYRYRYRYRY

"I am planning on coming to California (if possible) this fall and I would like to see a complete "RTTY" station that is operating so that I might get a clearer idea what it is all about. Do you think it could be arranged? Would it be possible to pick-up a "RTTY" machine and a converter at the same time?"

—73 John P. Sappington, Jr. W5WKP

"Have a repref set up here, but the RF noise is too high and can't copy off the air. Any of the boys have any dope on how to quiet down RF in the ole A P Distributor? All my trouble seem to be located there, polar relays and repref itself no problem but that distributor."

—Ken, W3UWM

RYRYRYRYRY

"Many thanks for the back issues of RTTY. Have forwarded them on to England. Hope a membership will come out of it. It may, as chap is connected with British United Press."

—73, W6ITH

RYRYRYRYRY

"Went thru Denver on Saturday and talked to Floyd, W0FKK via telephone. No known RTTY stations on the air back here but fellows are becoming RTTY conscious. Wish I could have brought demonstration rig along."

—Bart, W6OWP

RYRYRYRYRY

"I wonder if you could help me locate a technical manual for the model 21-A RTTY machine. I have the machine and thought if I could get hold of a tech manual it would help me figure out how the thing works and also to help if anything goes wrong with it."

—73 Walter Porter, W0UJC

RYRYRYRYRYRY

"Regarding the four articles in the June, 1954 issue of Electronic Engineering (British) please give me the address."

—O. D. Glenn, W2SDE

RTTY will be glad to loan any of the articles mentioned in it, when they are available. Ed.

RYRYRYRYRYRY

"I have a model 26 which I am at present setting up for receiving purposes. I probably will not be on the air with RATT for quite a while as a new transmitter must be constructed."

—73 Dick W9DRW