



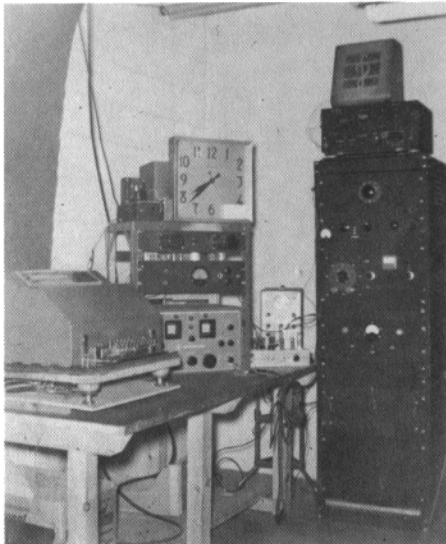
## RTTY STATION WIASZ

We here at UNH think we did a pretty good job of working the contest considering a few essential facts. First, we didn't have any tape equipment nor were we using the best of equipment. In fact we were using a model 12 and W2PAT type TU with toroids (hand wound). The converter has no means for compensating for odd shifts and makes tuning rather difficult. The model 12 is seven tube keyed (6L6s) and this by no means kills all the noise in the revr. The transmitter, as does the whole rig, belongs to K1DHJ and is a combination of a Viking adventurer and another final a la handbook and QST. pp807s in parallel and we generally run it at about 100 watts input to a balun fed windom antenna sixty feet high running north-south. All in all the antenna is the only piece of gear which belongs to the club and even it has a pretty SWR. At present we are trying to get some money for a receiver from the E.E. Dept. here at school and so far no success. One of the

local companies has offered to give us some equipment but we have no idea just what that will be yet. Or when. Next year we hope to have a model 26 and some tape equipment . . . look out for us then !! If the Society still uses the pictures of shacks for their cover please use the "before" shot if it comes out ok. I'm sorry we don't have any better negatives to send you. No professional photographers in the club though. Have to shut off the motor now and start studying Physics for the test Tuesday. See you on 20 sometime when there is no gang around ok? Say, one more question: what about these guys like W2RU1 etc. that no one hears until SS time and then they bull their way around with tapes and kws???? Not very nice procedure to zero the W5s when you finish talking with them either. hi.

73

CHARLES D. WALKER  
K1DHJ



## Radioteletype Convention at University of Arkansas

Please bring to the attention of all who are interested that W5YM will sponsor a radioteletype convention on Sunday, 16 March 1958 for the purpose of stimulating Arkansas RTTY activity and presenting discussions of RTTY principles and demonstrations of RTTY equipment. This meeting will be held in the auditorium of the Engineering Building on the University of Arkansas campus.

This meeting is being held on the day following the Engineers' Day Open House Activities; displays set up by the Electrical Engineering Department will be shown to those attending the convention.

Although registration is not required for this convention, we will appreciate a postcard from those who wish to attend so that we can plan the activities in accord with the number who will be present. The main convention will begin around 2 P. M. A dinner meeting and/or a program for the XYL and Junior Operators will be planned if sufficient desire for these activities is indicated on the cards. If interest warrants, we shall plan to establish an Arkansas RTTY Society and elect officers at this convention.

Any persons who can present talks or demonstrate RTTY and related equipment are urged to contact us so that activities can be properly scheduled. W5YM will present an operating display of RTTY station equipment and will demonstrate the equipment which has been given to the University of Arkansas by the Teletype

Corporation of Chicago-Little Rock and consisting of a Model 28, a Model 14 typing reperforator with keyboard, and a tape perforator and transmitter-distributor table.

Those who desire to stay overnight can make reservations with Hotel Mountain Inn or one of the several motels located in this RX area. Fayetteville is served by Central and Skyways Airlines offering connections to Little Rock and with all major airlines. We can provide transportation from the airfield for any who wish to fly in.

All those who send in postcards will be placed on a mailing list for the distribution of any RTTY literature which may be available through this station.

A bulletin station the final arrangements for this convention, the activities planned, and the speakers and their subjects will be distributed prior to the meeting date. As stated above, many of the activities will depend on the results of the postcard survey, so please get 'em in early.

Amateur Radio Club W5YM  
of the University of Arkansas  
Room 309 Engineering Building  
Fayetteville, Arkansas

JIM HAYNES, K5KIB  
Chairman, Activities and Eqpt.  
Committee

FRED, K5IIX, President

WALT, W5VKE, Trustee

# The Model 26 Ranger Finder Modification

PHIL CATONA, W2JAV

(Cover Photograph)

Count over from right of the hinge to a point between the ninth and tenth segment . . . scribe a line downward two and three-quarter inches . . . then scribe a line to the right for two and three-quarters inches (lower edge of door then back up to the hinge . . . (should be midway on the fifth segment from right . . .

Remove plex-glass and insert jeweler's

saw at point between the ninth and tenth segment . . . following scribe downward and to the right and then upward, a door should be free to pivot on the existing hinge and also clamp shut with no further modifications!!!! (Except to add a tab to open it) . . . Suggest you paint the cut edges and line the stationary edges with tape . . .

# Transistorized "RTTY" Channel Amplifier

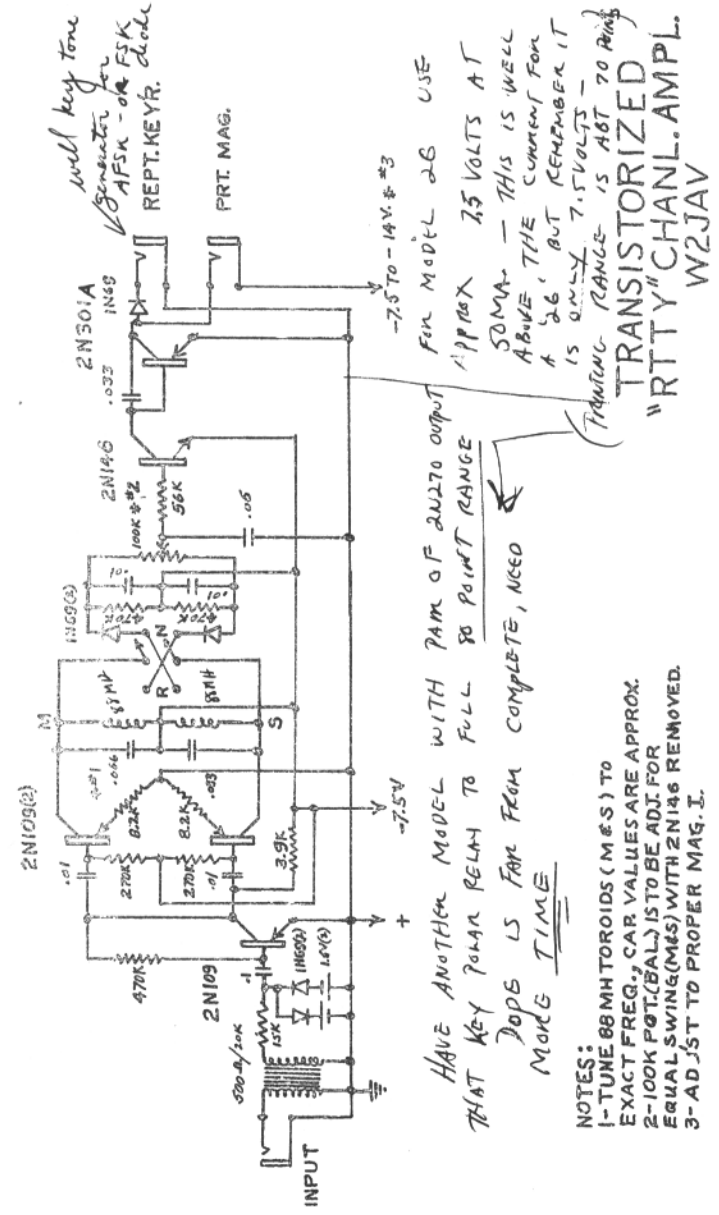
PHIL CATONA, W2JAV

For those "tinkers" who are interested in new and various types of terminal units (TU's), the following circuit should prove of interest. Five transistors and five diodes go into its makeup.

The input is coupled thru a line transformer (500 ohm to 20,000 ohm) to a limiter made up of the following elements, a 15,000 ohm series resistor and a pair of back-to-back diodes with two 1.5 volt batteries for bias to set limiting levels. The output of this limiter drives a base driven 2N109 which in turn drives a pair of 2N109's to provide the split phase operation of the selective network. The frequency determining portion consists of two 88 mhy toroids, tuned with a 0.066 mfd and a 0.033 mfd capacitor. The 88 mhy and .066 tune to the MARK signal. Connected to these two tuned circuits (in series) are two 1N69 diodes which have load circuits of 470,000 ohms and .01 mfd capacitors in parallel. Across the two DETECTORS is connected a 100,000 ohm potentiometer which allows some adjustment for differences in output of the selective circuits.

Some additional filtering takes place with the .05 to ground and thru the 56,000 ohm resistor to the base of the 2N146 (equivalent DC amplifier, which drives the 2N-301A output amplified, which in turn operates the PRINTER MAGNET. An additional output is provided to key either a TONE GENERATOR for AFSK or key an FSK DIODE. For the model 26, use approximately 7.50 at 50 ma. This is well above the current requirements for a 26, but remember this is at 7.50 volts. Printing range has been found to be about 70 points. Some of the specifications are: will print at -47 DB below 0 level, starts to limit at -45 DB. Has 300 cps band pass, total current (less magnet current) is approximately 4ma. No signs of "ringing" as soon as limiter takes hold (-45DB). NOTE -88 mhy and .066 and .033 are only approximate values. Tune for exact frequencies. Adjust the 100,000 pot for equal swings on MARK and SPACE. Also adjust the -14.0 volt tap for proper magnet current.

- DOES.
- WILL PRINT AT -47 DB BELOW "0" LEVEL (1.73 V-50 u)
- HAS 300 cps PASS BAND !!!
- TOTAL CURRENT (LESS MAGNET CURRENT) IS APPROX -4MA.
- NO SIGNS OF "RINGING" AS SOON AS LIMITER TAKES HOLD (-45 DB)
- STARTS TO LIMIT AT -45 DB



will key tone generator for AFSK - or FSK REPT. KEYR. diode

FUN MODEL 26 USE APPROX 7.5 VOLTS AT 50MA - THIS IS WELL ABOVE THE CURRENT FOR A 26, BUT REMEMBER IT IS ONLY 7.5 VOLTS - PRINTING RANGE IS ABT 70 POINTS

TRANSISTORIZED "RTTY" CHANL. AMPL. W2JAV

HAVE ANOTHER MODEL WITH PART OF 2N109 OUTPUT THAT KEY PULS RELAY TO FULL 80 POINT RANGE

DOPE IS FAR FROM COMPLETE, NEED MORE TIME

NOTES:  
 1- TUNE 88 MH TOROIDS (M & S) TO EXACT FREQ., CAP VALUES ARE APPROX.  
 2- 100K POT.(BAL) IS TO BE ADJ FOR EQUAL SWINGS (M & S) WITH 2N146 REMOVED.  
 3- ADJUST TO PROPER MAG. I.

## FSK-ing the VIKING RANGER

DON JOHNSON, W9BQC

Just thought I'd pass along a method of FSKing the Viking Ranger (and possibly the VFO's in all Johnson rigs which are of the same design as the Ranger's) which I stumbled upon during some "TINKERING."

It is so very simple—costs less than one buck—NO conversion of the Ranger *at all*. Takes only a few minutes to hook up—gives beautiful right-side-up FSK.

There is only one disadvantage, it won't work on 40 meters (at least on my VFO), which follows the old saying: "You can't get something for nothing."

My method may not work on all Rang-

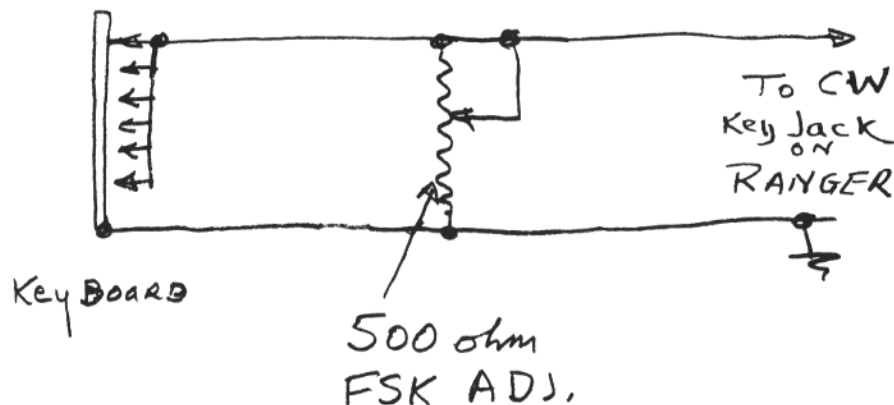
er VFOs, however it is no great loss if it doesn't.

I can get up to about 900 cps shift (if I wanted it) on 80 meters and over that on bands (20 meters and above). Can get only around 500 cps on 40 meters.

At least it would be a wonderful method for new short shift of only 170 cps.

Each VFO will probably require different component values; here is the method I found by my "tinkering."

Possibly this method might work on other makes of VFOs. Now back to my "tinkering" so I can find a way to FSK my RANGER VFO on 40 meters . . .



## IMPROVED AFSK GENERATOR

JIM HEPBURN, VE7KX

Having built up and tried several of the usual "modulated oscillator" types of AFSK generators and being plagued by drift and instability due to trying to switch a condenser with a variable resistor network it was decided to try and dope up a signal source using a MOPA hookup to get the signal source out of the keyed circuit.

The attached diagram shows the final result. It is a pair of electron coupled oscillators generating the space and mark signals continuously followed by a pair of differentially keyed Class A amplifiers.

The oscillators use two "load pot" 88 mh toroids with the coils in series and the center tap used for the cathode connection. To avoid overdriving the keyed stages it is necessary to reduce the plate voltage on the oscillator with the 270K series resistor giving about twenty volts plate voltage.

ON "space" the bias divider network

supplies 50 volts of negative bias to the grids of the keyer tube and to the grid of the "mark" amplified cutting off the mark signal while the space signal goes through the space amplifier tube. On the arrival of a 50 volt positive mark signal from the keyboard the bias voltage goes slightly positive permitting the mark amplifier to conduct. At the same time the keyer tube conducts and raises the cathode voltage of the space amplifier sufficient to cut off this tube and shut off the space signal. The 25K variable resistor is adjusted to the necessary cutoff voltage.

A 47K grid resistor is used in the grid of the space amplifier to reduce the driving audio voltage to give equal output on both frequencies.

This unit gives steady AFSK, good waveform and keying and has cured the "jittery" AFSK signal here.



Subscription Rate \$2.50 Per Year

RTTY is the Official Publication  
of the

**RTTY Society  
of Southern California**

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

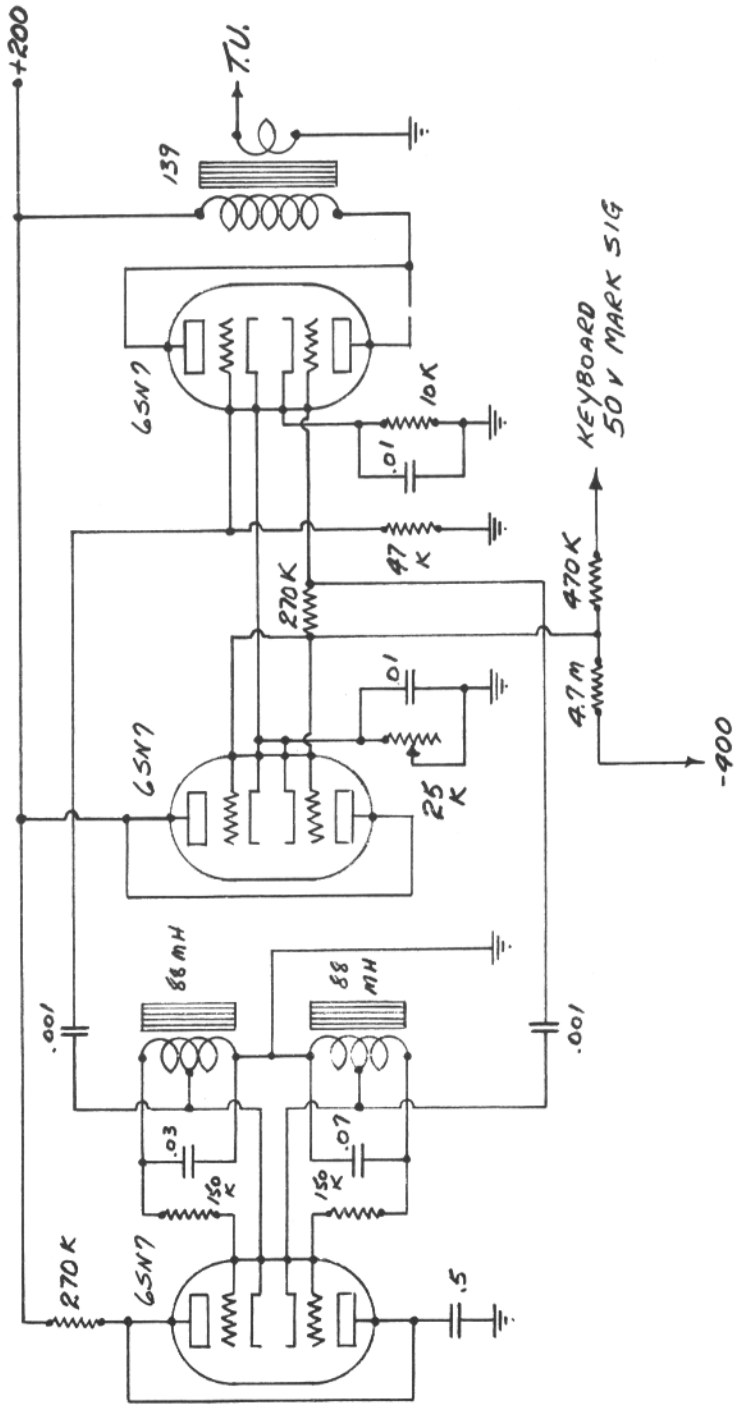
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For Information Regarding the  
Society Contact the Following:

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

For Traffic Net Information:  
W6FLW W6IZJ

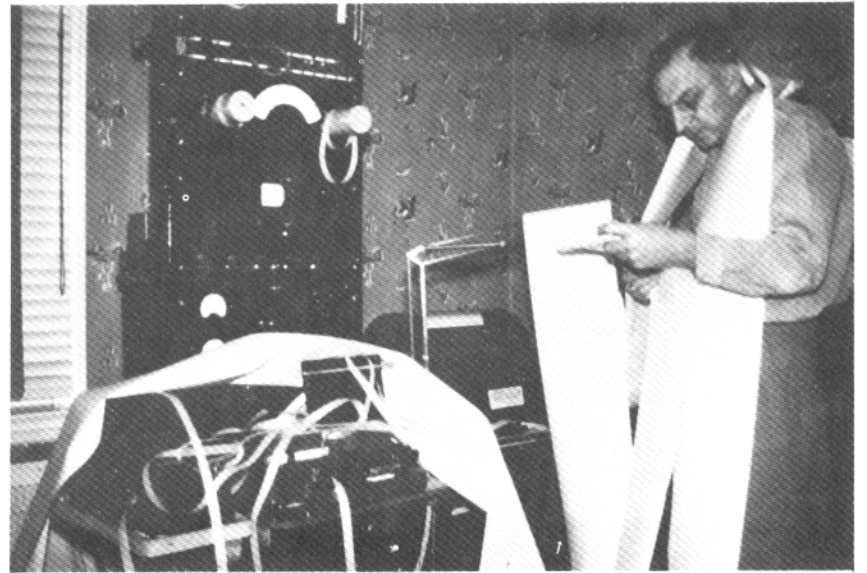
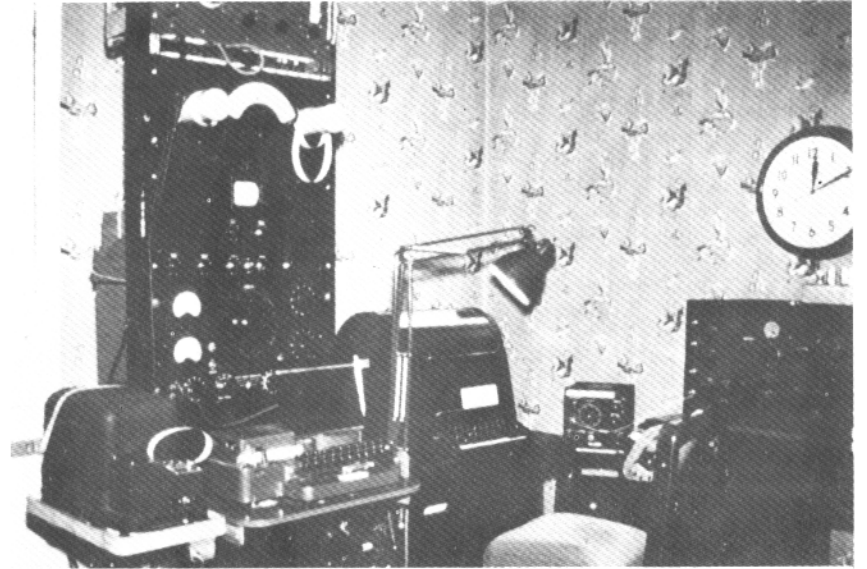
For "RTTY" Information:  
W6CL W6DEO W6AEE



VE-7KX

IMPROVED AFK GENERATOR

W3CRO BEFORE AND AFTER NOVEMBER RTTY SS





It occurred to me the other day that some of the boys might be interested in the reprints of the enclosed sheet. I shall be happy to send copies to anyone interested at 30c each postpaid. Note that the weather code is on there too . . . WIBIY (The chat is an excellent one which gives the characters in lower case and the various upper case, such as weather and commercial as well as communications, with the code signals which operate to produce them. Space did not allow reproduction.—Ed.)

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#### FOURTH ANNUAL NEW YORK CITY RTTY DINNER

The fourth annual amateur RTTY dinner will be held in New York City on Monday, 24 March 1958. Reservations are available from Calyton Cool, W2EBZ, 443 West 47th Street, New York, 36, N. Y. Clay requests the following, if you plan to attend. Present and historical background and description of your RTTY station and activities. If available, a photograph of your station. Your commercial affiliations. Reservations are seven dollars, send check made out to Clay Cool to assure reservation . . .

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General Dynamics Corporation and the Haloid Company unveiled what they described as the fastest commercially available device for high-speed printing of computer data.

Developed jointly by Haloid and the Stromberg Carlson division of General Dynamics, the machine will print the output of electronic computers at the rate of 4,680 lines (about 65 feet) per minute. According to the manufacturers, that's five to 10 times faster than the speed of present electromechanical printers.

The machine is known as the S-C 5,000. It translates electric impulses from the computer into numbers, letters, and symbols by means of a "beam tube" which operates in much the same way as a television picture tube.

Suggested uses include preparing bank statements, billings, insurance premium notices, production control reports, address labels, and missile and aircraft engine data.

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#### MAN 'HYPNOTISED BY TELTPRINTER'

London Telegraph - 11-2-57

Copenhagen, Saturday—Peter Lie, a Danish hypnotist, claims he hypnotised a man by teleprinter. Lie said he ordered a teleprinter operator to fall asleep for three minutes and to be insensible to pain.

He dictated the message on a teleprinter in another room. A doctor signed a statement saying the operator slept for three minutes and had shown no reaction to needle jabs in the arm.—Reuter.

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In conclusion, though hams and farmers are chronic complainers about the weather, actually conditions were excellent. WWV went all out and sent "N7" before, during and after the contest period. There was little or no skip on twenty for W9TCJ, W9SPT and W9GRW at 300-400 miles were loud many hours after sunset and they were working each other then. This unusually good situation for communication played havoc by bringing in interference from all directions to us here in the middle of things.

But I am sure it was the best contest I was ever in and there were so many new stations that one could not possibly work them all, which made it jolly sport and a practical road test of equipment and operation under severe interference conditions. Narrow shift should be tried next time.

Score:

69 x 2 x 30 is 4,140. (Nov. SS) 73,

BOYD "BeeP" PHELPS, WOBB

— 0 —

Our New Zealand friend Bruce ZL-WB visited this qth today. Bruce said he was impressed with much that he has seen in

our country, but Bruce was not half as impressed as were his hosts this afternoon namely Bill, Merrill and Ted. When refreshments were offered Bruce held back while the American hams let their thirst run away with their manners and asked for a beer please. Bruce then spoke up and asked for lemonade. His hosts figured that New Zealand hams must be different and boy, they were so right. Bruce got his lemonade and promptly mixed it with beer, half and half! Like I said, boy, did Bruce impress us! That's all.

Sig. Ted.

Oh yea . . . one other thing . . . it's good! Darned good! Honest it is! Merrill is rewriting the bylaws of the SCRTS to specify beer and lemonade mixed at all future SCRTS gatherings. (P.S. Just as he left Bruce spoiled everything by telling the gang that in his country, mixed beer and lemonade was a lady's drink. How do you like that?)

RTNET DE W6CMQ KKK

— 0 —

I enclose a copy of a letter which is an interesting resume of my RTTY experiences in the first ten days of operation. Possibly you can use this from the standpoint of one RTTY'er's experience in breaking into RTTY.

— 73 —

—W2ATQ

— 0 —

Dear Bill:

Many thanks for your letter which crossed mine in the mail. As yet I haven't received a reply and I am hopeful that I dispatched it to the proper address. Since I had your address in the office and I wrote to you prior to my departure to Washington, it was necessary for me to go through the call book beginning with W8A until I hit W8TLW which I now admit was not the most pleasant undertaking. Despite all my questions I decided to get started without your reply and after looking at various periodicals I determined that 7140 kc was the TTY frequency. As a consequence I had a crystal ground for this frequency only to discover that most of the stations hereabouts are operating up toward 7145 kc. In any event I am on 7140 and have worked a few stations who replied that my keying was reversed. This struck me as being rather peculiar since I am using one of our commercial frequency shift units. I changed it to turn it over by the use of a polar relay which does nothing

but increase the possibility of bias, and then called a few fellows and to my amazement received no response. After a few more days of monitoring I suddenly discovered that it is necessary to turn on the beat oscillator and use the old fashioned CW method to establish contact and then hope that the recipient has equipment which will receive any shift up to 850 cycles. Here again I found that this is not the case and that you are in trouble in most instances if you don't shift the exact amount. I suppose this is a matter of being entirely new at the ham RTTY game and it seems funny to look back at the time when you and I developed this sort of thing at the laboratories in 1941 and suddenly find that you are a greenhorn, so to speak. Now I can go back a few steps and conform to the way it is being done but I wonder whether this is the correct approach. I am using a Collins 51J-4 receiver which feeds a Westrex 50 Type converter which will take any shift from 75 to 900 cycles normally or reversed. The transmitter is a standard Westrex 350 watt output which is normally used in airline and point-to-point services. The filter in the converter is 1000 cycles wide at the 6 db point and about 2000 cycles at 50 db and with this I find an additional difficulty; that being that some of the RTTY stations drift as much as 3000 cycles during a transmission. This is difficult, particularly when in commercial services we try to hold this drift to 25 cycles during the daily cycle. Of course, as a typist I am not very proficient but that doesn't worry me as much as the time taken by the technical problems which I mentioned above. I will appreciate some word from you Bill as to your experiences for I have now concluded that I now require a group of crystals which will operate anywhere from 7140 to 7149 to effect contact.

Whenever you are ready I should like to arrange a schedule with you and we can carry this on further via RTTY. (Am using a Model 15.)

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