RTTY

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NEWS OF AMATEUR RTTY

December, 1960
25 Cents
Vol. 8, No. 12

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: Small compact page printer. No keyboard. Must be in A-1 condition. Will buy, or trade Kleinschmidt W/Kybd, as part or full payment W1LWV

WANTED: Keyboard Perforator W/end of line indicator. Must be in good condition. Cash W7GYO

FOR SALE: Home built TU in good operation, $40 .... K6JDN

FOR SALE: Model 26, and FRA Converter in good condition W2KXT

FOR SALE: Perforator tape, 11/16 in. $2.50 per pkg of ten rolls plus shipping charges WA6AVJ

WANTED: CQs all 1945 except Jan. and Nov. Need also, Feb. and May 1952. RTTYs all issues after January 1957 .... K6DPQ

WANTED: Boehme CW ink recorder driving unit .... WØBTV

FOR SALE: Teletype 11/16 in. chadless tape splicer. New, 3.50 P.P.
255 Polar relays, good condx—3.50 P.P.
Polar relay sockets, good condx, 0.75 P.P.
10 for 6.50 .... K9CNG

FOR SALE: Sprocket feed Teletype paper, Form #801, Standard Register Company, local offices

FOR SALE: AN/FGC-1-X complete with DC loop supply — $100.00 .... W6AEE

FOR SALE: Bound volumn number 8 of RTTY, $6, RTTY, Inc.

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Arcadia, California
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THE CASE FOR HIGHER VOLTAGE IN THE PRINTER LOOP

JAMES S. AAGAARD, K9OJV, and JOHN L. DUBOIS, K9YHQ
Department of Electrical Engineering, Northwestern University, Evanston, Illinois

The problem of operating a teleprinter is considerably complicated by the fact that the inductance of the coils in the printer's magnet can not be neglected. It is our purpose here to apply some basic electrical circuit theory to illustrate the problems encountered and some possible solutions.

A resistance and an inductance in series represent a fairly good approximation to the printer magnet. Actually, the inductance is not the same when the armature is pulled in as when it is not, and there are some additional effects when the armature is actually moving, but these will be neglected. For a typical model 15 Teletype printer, the inductance is about 4 henries and the resistance about 220 ohms. Also, there is normally about 1700 ohms of additional resistance added external to the printer, so that with about 115 volts applied to the printer circuit, the usual 60 milliamperes of current will result. One of the questions which we will attempt to answer is why this high voltage is used, only to be mostly thrown away in an external resistance.

Circuit theory tells us that if a battery of V volts is suddenly connected to a resistance and inductance in series, the current in the circuit will not reach its final value instantly, but rather will approach it exponentially, and will reach 63% of the final value in a time which is equal to L/R seconds (called the time constant), somewhat as shown in figure 1. The rate at which the current starts to rise, in amperes per second, is equal to the applied voltage divided by the inductance. For the typical teleprinter values given above, the time constant works out to be about 2 milliseconds, which is quite short compared to the 22 millisecond length of a Teletype mark pulse.

When an attempt is made to stop the current by disconnecting the battery, there is a voltage produced across the inductance which is equal to the product of the inductance and the rate of decrease of current. With the simple series circuit, this voltage would be high enough to cause an arc at the switch contacts, which is undesirable. To reduce this effect a resistance of about 5000 ohms is frequently connected across the printer coil, so that the current can decay more slowly. This gives a time constant for the current decay of 4 henries divided by 5000 ohms, or 0.8 milliseconds, which is appreciably shorter than the increasing time constant. The voltage produced across the coil starts at 300 volts and decays to zero. This voltage, plus the supply voltage of 115 volts, appears across the switch contacts. If the switch stays closed for exactly 22 milliseconds, the current in the printer coil will be about as shown in figure 2, for the values given.

Now suppose we attempt to use only 18 volts instead of 115, and reduce the external resistance to 80 ohms to keep the current at 60 ma. This decrease in resistance changes the time constant of the current buildup, but has no effect on the current decay, giving a current pulse through the coil as shown in figure 3. It is apparent that if the armature will close when the current reaches, for example, 40 ma, the effective length of this pulse is much shorter than the 22 milliseconds which is desired. The voltage across the switch contacts when they are opened is now 318 volts.

This matter becomes of considerable importance when an attempt is made to use a transistor for the switch instead of a tube or a mechanical device. At the present time transistors which are available at reasonable prices are severely limited as to the maximum voltage which they can withstand. Furthermore, since the rest of associated transistor circuits will operate very well on low voltages, it would be desirable to make the printer magnet do so as well.

Unfortunately there seems to be no really practical way of doing this, since the rate of rise of current is restricted by the applied voltage, as indicated previously. One moderately successful approach, however, is to artificially cause the current decay to also take longer, using a circuit such as shown in figure 4b. The magnet drop-out current will be less than the pull-in current, and if the decay time constant is properly chosen, the effective current pulse will be 22 milliseconds long, as shown in figure 4a. In practice, this is usually accomplished by using a diode, as shown in figure 4c, to replace the extra switch contacts. This circuit also has the feature of limiting the voltage across the switch contacts.

This is not really a very satisfactory solution, for several reasons. One of these is

the possible variations of printer magnet inductance mentioned earlier. These variations will change the time constants, causing the effective pulse length to change. Also, there may be variations in pull-in and drop-out currents, and it might be expected that for best results an individual adjustment for each different printer might be necessary. Furthermore, since the current never reaches its final value of 60 ma in 22 milliseconds, there are variations when two or more mark pulses come together, as shown in figure 5. The decay time constant has been chosen to give an effective pulse length of 22 milliseconds for a single pulse, and the effective length of a 44 millisecond pulse will be about 46 milliseconds.

The best solution at the present time appears to be to use as high a supply voltage as is possible with present transistors, while retaining the diode to slow the decay slightly and reduce the voltage which appears across the open switch.

Relatively inexpensive transistors (such as the 2N398) are available which will withstand over 100 volts, making possible an external resistance of about 1500 ohms and giving a time constant of about 2.4 milliseconds. When used in the circuit of figure 4c, the pulses will look approximately as shown in figure 6, a very respectable approximation to the desired rectangular shape.

A complete keying circuit which can be operated from a keyboard or from the terminal unit described in an earlier paper, is shown in figure 7. This circuit is suitable for use in a d-c hubbing system such as described by K5KIB in July 1959 and October 1960 RTTY.

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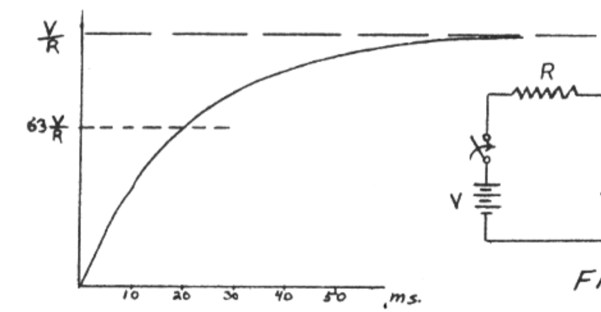


FIG. 1

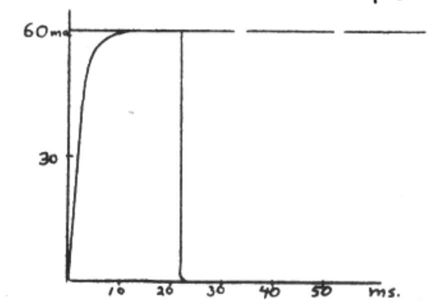


FIG. 2

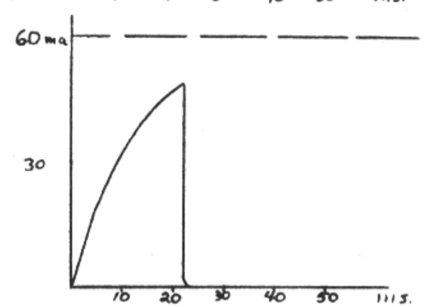
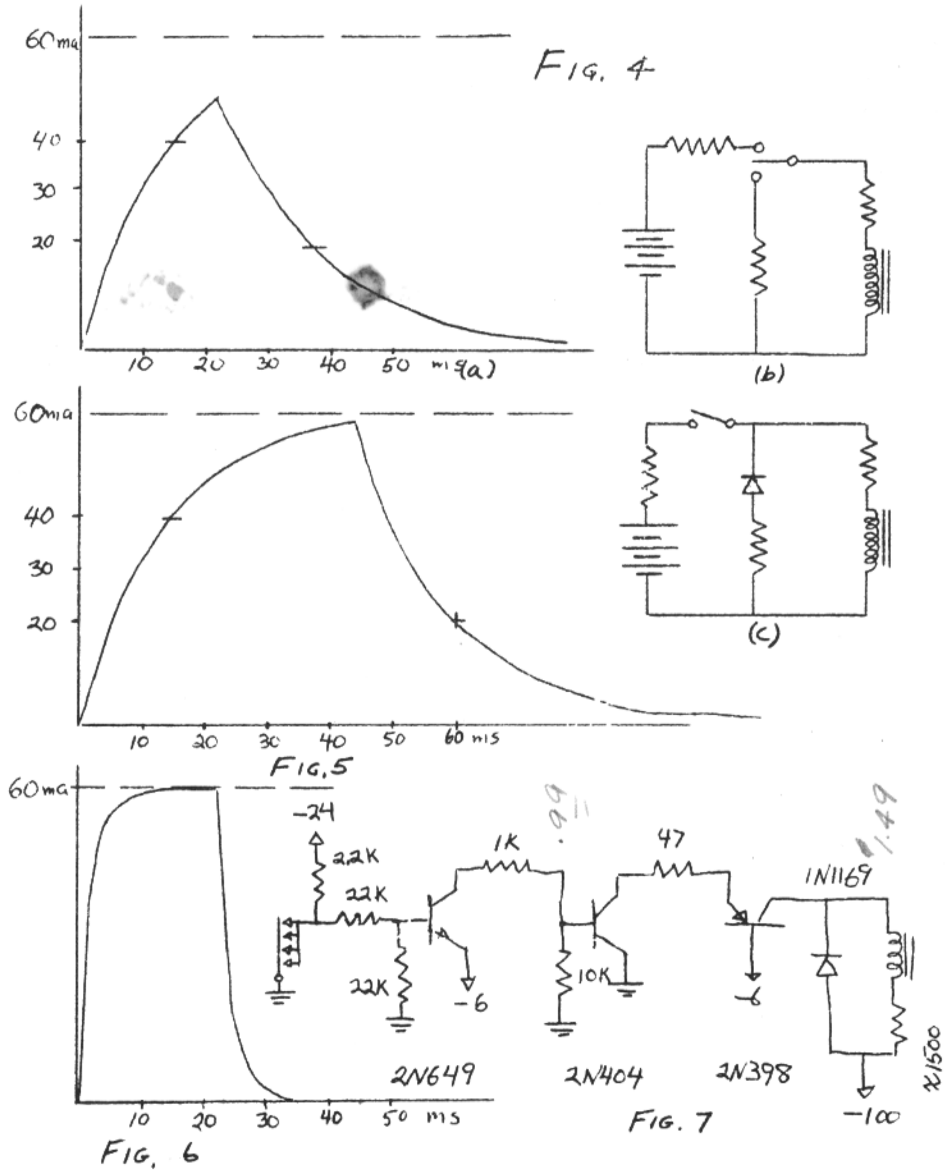


FIG. 3



AN AUTOMATIC DIGITAL DATA TYPEWRITER WEATHER SYSTEM

N. K. THOMPSON, W1LWV

Data Reduction Systems:

It has only been within the past ten or twelve years that data reduction, or gathering systems have started to become common in the industrial field.

In the field of Meteorological Instrumentation, data reduction systems have been used very little, and the ones that are in use, or have been used have come about only within the past five or six years.

The ones that have been used have, for the most part been very costly, and also complicated. Most of these of course have been designed to monitor many stations, and at fairly high print out speeds.

One Station System:

The data reduction system designed and built by the writer, was designed primarily as a system to monitor and print out the readings from one set of standard weather instruments. (However, there is no reason why more stations cannot be added, by making circuit changes.)

Purpose of System:

There were two reasons for the construction of this system:

1. Standard weather instruments were operated at the writer's home, and chart costs, clock winding, and chart changing were a nuisance.
2. Due to the writer's experience and interest in instrumentation, it was felt that the construction of this system using parts and components at hand, would be a very interesting and worthwhile project.

Requirements:

The requirements of the system were: printout out in digital groups the actual values of temperatures, pressure, dew point, wind direction, wind speed, total wind, total precipitation at end of each hour, time, calibration and station designator.

This is to be done automatically at any preset time, or at a continuous rate. When on rates other than continuous, system to shut down at end of each read-out period.

System to print out on standard teleprinter.

Input information to come from standard (but modified) weather instruments.

Limitations:

It was realized that since a great deal of money was not to be spent, that some limitations would be imposed.

The actual limitations to this particular system are not severe. They are:

1. Print out speed: About 2.5 minutes required to complete one set of readings.
2. Pressure: Presently this can printout to only two digits: Therefore, the printed value must be referred to a curve for actual pressure reading. (This will ultimately be changed).
3. No minus sign available for temperature or dew point: This is taken care of by shifting the zeroes of these two measurements as the seasons change.
4. Time: Time can be read out to two digits, but since the system was designed to read out each hour, on the exact hour, this presents no problem, since time readout is 00, 01, 02, etc.

Accuracy:

This is dependent on the input instrument in this case a modified Foxboro FMF Dynalog. The Dynalog range is 0 to 30 Mv., with an accuracy of plus or minus 1% of full scale. This could be improved by more careful calibration adjustment of the linkages between the Dynalog and the ADC unit.

System Construction and Operation:

The input measuring instrument is a standard Foxboro EMF Dynalog that has been modified. This modification consisted of removing the pen mechanism, chart drive and chart plate, and installing a Wallace and Tiernan Analog to Digital converter unit, which was actually surplus equipment from Navy Automatic Weather Stations.

The construction of this unit is actually the limiting factor which prevents printing out to more than two digits.

This unit has ten "ten" segments, and one hundred "unit" pins, arranged on the face of it, in an arc. A pointer, connected to the Dynalog output shaft swings over this arc. A clamping bar pulls the pointer into contact with the segment, and a pin, on the read out cycle.

Since the pointer can only contact one segment and one pin at a time, the result will be a "ten" contact and a "unit" contact.

However, since the translating matrix can only accept one digit input at a time, a means must be provided to allow only one output at a time from the analog to digital converter. This is done by means of a 10 pole, double throw crossbar switch.

When the pointer clamps for a readout, the tens segment is read into the matrix, and through the transmitter distributor to the printer. After this cycle, the crossbar switch flops, and allows the unit pin to read into the matrix, through the transmitter distributor, and to the printer. The result is of course two digits: 01, 04, 25, etc.

After this cycle has occurred, the next input is switched into the Dynalog, and the procedure repeated. Between groups of digits, a space pulse, and figures shift is programmed into the printer.

Matrix:

This is the heart of the whole system:

Since the teletypewriter can accept only a 5 unit pulse code, plus a start and stop pulse, some means is required to convert the 0 to 9 output from the analog to digital converter into teletype code, which is binary in nature.

This is done with a simple neon matrix, and five Kurman sensitive relays. The neon lamps are NE-2.

The matrix is arranged with 10 input lines for the digits from the ADC, plus additional input lines for the space, line feed, carriage return, figures shift. The matrix of course has five output lines, terminating at one side of the coils on the Kurman relays. The other side of the relays are tied to common. (-90 volts DC)

The action of the matrix-relay unit is of course to provide the proper teletypewriter code for proper action of the printer. For any given matrix input line, there will be a definite group of relay closures.

For example: when the No. 7 input line is activated, relays No. 1, 2, and 3 will be closed. Since the printer is in "upper case" the number 7 will be printed.

Transmitter Distributor:

This is a standard piece of communications equipment—either land line, or radio. It consists of a synchronous motor, set of contacts, and an electro-magnetic clutch.

The purpose of this unit is to accept the relay closures from the matrix-relay unit, convert them to pulses, and distribute the pulses, along with start stop pulses to the printer magnets, and to this at a speed which is synchronous with the speed of the printer motor (in this case—60 WPM).

The action is as follows: After a digit from the ADC has been read into the matrix-relay unit, the proper group of relays will be closed. This relay closure allows about 100 volts DC to be applied to one side of the proper TD contacts (1 through 5). At this time, the printer programmer releases the clutch on the TD motor shaft, and allows this shaft to make exactly 1 RPM. In so doing, the cams on this shift have closed all of the 5 contacts, in proper sequence, plus provided a start and stop pulse for the printer. Any of the contacts that were energized during this operation will supply pulses of the proper length and spacing to the printer, causing it to print the correct character.

Printer Programmer:

This is a 50 point stepper, with self-homing feature. It is so wired to produce all of the required functions concerned with programming the information to the printer.

It in turn is stepped by a cam contact on a synchronous motor, so that the stepping rate of the switch is constant.

This stepper operates the following:

1. Provides the impulses to operate the similar switch to present the information from the individual weather instruments, in proper sequence, into the Dynalog.

2. Provides the pulse for operating the Dynalog clamping bar.

3. Provides the pulse for operating the cross bar relay.

4. Provides a homing bank, to home the entire system, and shut it off.

5. Triggers the time delay relay for counting miles of wind.

6. Switches the temperature-dew point Dynalog from one to the other.

Information Programmer:

This is a 25 point stepper, and it serves only to program the outputs from the various weather instruments into the EMF Dynalog. It is operated by pulses from the printer programmer.

Teleprinter:

This is a Kleinschmidt TT4A-TG: It is currently set to operate (on regular printer service) at 60 WPM. (It is at times used for radio teletype work.)

Weather Instruments and Modifications:

Temperature; Dewpoint: A Gianinni Microtorque potentiometer is linked to the output shaft of a Foxboro Resistance Dynalog. The inputs to this Dynalog are a standard resistance bulb, and a Foxboro Dew Cell.

The potentiometer has a 6 volt DC applied to it. As the Dynalog changes, of course the output voltage from the potentiometer to the EMF Dynalog changes. This voltage is calibrated to read temperature and dew point. After the temperature reading has been read into the data reduction system, the Resistance Dynalog is switched to the Dew Cell, and the process of read out is repeated.

Wind: Wind speed is read into the system in two ways: first, the actual output from an Aerovane, through a dropping network is read directly in MPH. (0 to 99) second, the 1/60th mile contacts from a cup anemometer are read into a stepping switch, having a bank of resistors connected to its output points. The number of resistors switched in a time of 30 seconds is calibrated to represent knots. After each observation, the switch resets to zero.

Pressure: A standard Friez Micro-barograph is fitted with a Microtorque potentiometer. This is calibrated versus a chart, in order that the two digit groups read out may be converted to pressure. Work is under way to present this in a three digit form. This then will operate between 29.00 inches, and 31.00 inches. When the pressure is in the "29" range, it will read out as "901," and when in the "30" range, would read out as "001." It is felt that it is not feasable to extend the range beyond this, due to complications in circuitry, at this time.

Precipitation: Presently this comes from a tipping bucket gage: The tilts of the bucket operate a 100 tooth stepping unit, whose shaft is geared to a potentiometer. This is calibrated in terms of rainfall, and can be read to 0.02 inch. (bucket tips for each 0.02 inch) The potentiometer can as easily be connected to a weighing type gage, which was not at hand here.

Wind Direction: Presently this is read into the system from a vane having a 360 degree potentiometer in it. This reads out 0 to 36. It is planned, eventually to change this to a somewhat different type of system.

Station Designator: For lack of something better, this has been designated as "O1." It occurs as the first group of a sequence, and is read in by applying a voltage directly to the matrix from the printer programmer.

Calibration: Presently this reads out as 85. This is a fixed voltage read into the ADC unit, and is to serve as an indication of any drifting of voltage, or changing of calibration due to any other means.

Time: This is programmed in through a 24 point rotary selector switch, which rotates one contact each hour. The output of this goes to the matrix, and is read out as 00, 01, 02, etc.

Date: it is realized that this might be useful, but would add complications to the system. Since each 24 hour run can be torn off the printer, and stamped, it is not felt that this is of great importance to this particular system.

Power Supplies:

A variety of power supplies are in use in this system. The reason for this is the fact that a number of the components that were at hand were designed for different voltages.

The stepping switches use 12 volts DC: The agastate time delay relay for wind count uses 24 volts DC: The voltage for the potentiometers is a regulated 6 volts DC: The printer and matrix require between 90 and 100 volts DC. The timing motor, Dynalog, and stepper drive motor require 110 volts AC.

Conclusion:

No attempt has been made to include with this report a complete circuit diagram of the system. All the circuits used are standard switching circuits, and there are probably many other ways to obtain the same, or better results. It was felt that a complete diagram of the circuit would serve no very useful purpose.

Attached are photo-prints of the system proper, a sketch of the matrix, and a block diagram of the system.

Since the present operating time of the system has been short, it is not possible at this time to supply information on maintenance required, breakdowns, or other similar information.

It has been found that the settings of the "range" and "armature" dials on the printer are very critical for this work. If these are not set correctly, one may expect extremely poor printing, with line feeds, carriage returns, commas, and many other characters, mixed in with the digit groups. However, once the correct settings have been obtained, correct copy will be obtained day after day.

The system has worked out much better than expected, and operates exactly as designed.

From time to time, modifications will be made as they present themselves.

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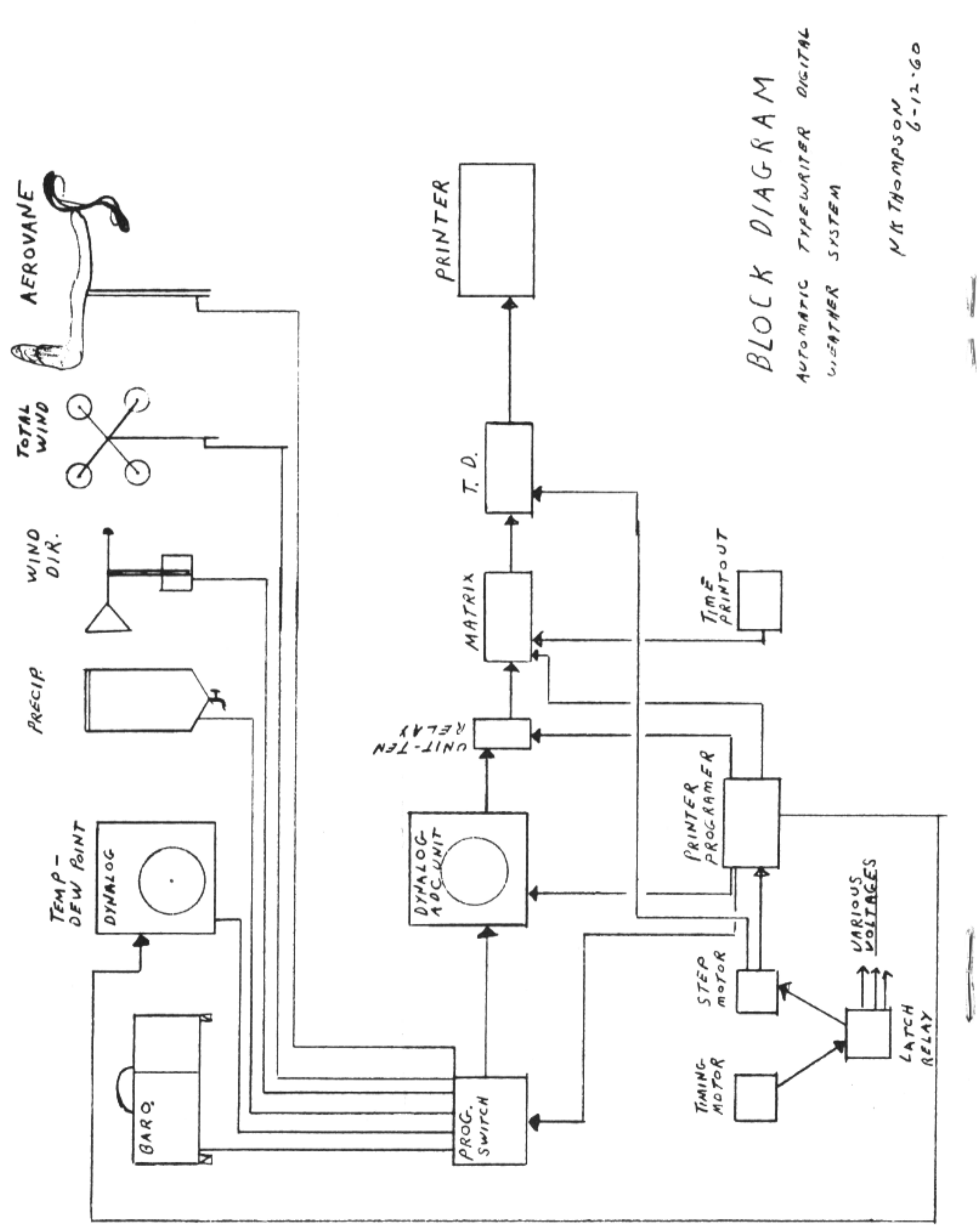
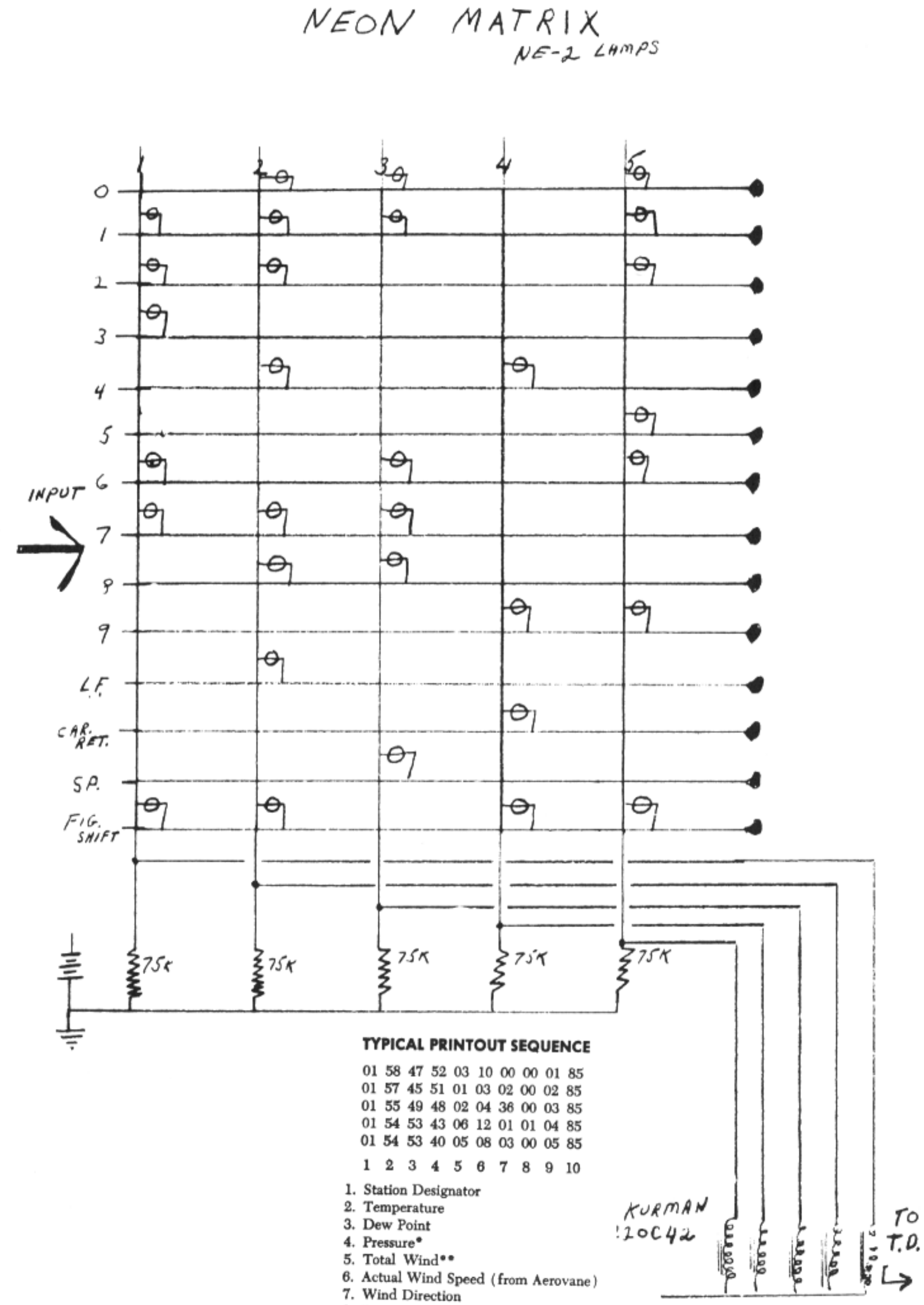




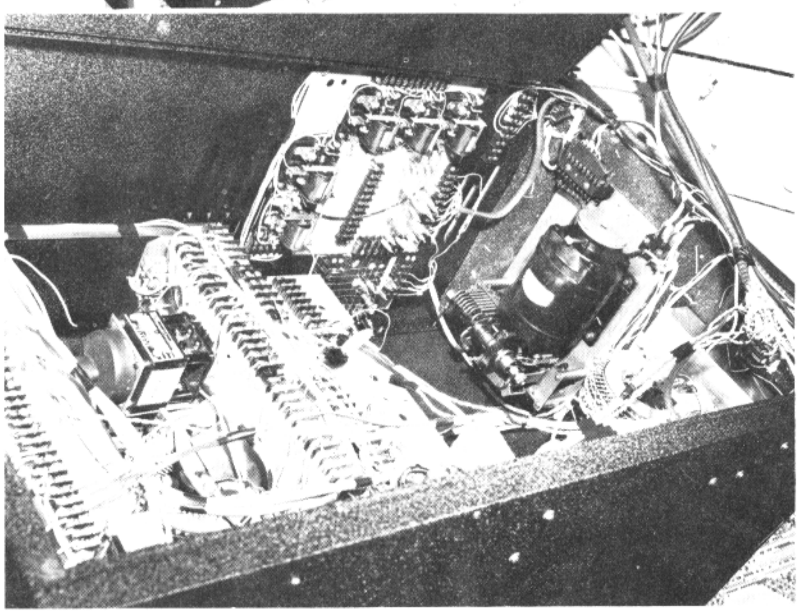
TYPICAL PRINTOUT SEQUENCE

01	58	47	52	03	10	00	00	01	85
01	57	45	51	01	03	02	00	02	85
01	55	49	48	02	04	36	00	03	85
01	54	53	43	06	12	01	01	04	85
01	54	53	40	05	08	03	00	05	85
1	2	3	4	5	6	7	8	9	10

1. Station Designator
2. Temperature
3. Dew Point
4. Pressure*
5. Total Wind**
6. Actual Wind Speed (from Aerovane)
7. Wind Direction
8. Precipitation
9. Time
10. Calibration

*Refer to calibration curve.

**From Navy type 3-cup anemometer—1/60th knot contacts.



DX--RTTY

BUD SCHULTZ, W6CG
5226 N. Willmonte Ave.,
Temple City, Calif.

It's going to be a real difficult task to follow last month's DX summary by my European collaborator, Bill Brennan, G3CQE. Thanks for an outstanding job, Bill. Your efforts were really appreciated by all of us over here and I know your readers will be clamoring for more of the same in the near future. I am just afraid my boss will cast a jaundiced eye at these feeble lines after your report in the November issue. Nevertheless, here's what is in the hopper this month.

As per usual DX conditions during the SS contest were below par and proved a big disappointment to many of the gang who were hoping to knock off a flock of new countries for their RTTY-DX and WAC standings. Europe was practically nil on the West Coast although some of the East Coast lads managed a few good contacts with the ever increasing UK group. The South and Central American stations and the boys in the Pacific had it a little better but it was still not as good as it might have been. Before we get too far out in left field let's summarize the situation—Continent by Continent.

The situation in Europe continues to improve with amazing speed and this month finds a record number of good FSK stations active. The old regulars showing up nearly every day on 21,085 around 1700 GMT like G3CQE and PAØFB have been joined by G3BXI, G3LET, G3GNR, G3BDH to name just a few who have either been heard or worked here on the West Coast. In addition to these, others known to be on are G3FHL, G3NPF, G3LEQ, G3NES. Another new one heard here was GM3ITN on CW calling "QRZ RTTY." The Netherlands group is expanding also and at present PAØFB, PAØCDV, and PAØYG are all known to be operating regularly on RTTY. Unfortunately, the present regulations restrict the Dutch stations to a maximum of 400 cycles shift so this presents a problem to TU's using fixed filter arrangements. Jan and his friends hope to get this restriction changed to allow 850 cycle shift in the near future. Those of you who can copy 400 cycles should give 'em a listen—the competition for a QSO is reduced by a good percentage due to the fact that most of the W gang evidently have fixed 850 cycle filters. PAØFB is getting out a monthly newsletter on RTTY activity patterned after the one being taped by G3CQE and the word is spreading rapidly through this part of the continent. Bill, G3CQE, reports that the BARTG is holding a dinner this month and at this time twenty reservations have been made including several from the PAØ Group. Our mail bag also shows inquiries from EI, GI, OZ, and SM hams. Still nothing shows up from behind the curtain but it will be interesting to see how long it will be before those chaps start to mess around with bauds.

Henry, ZS1FD, is doing an excellent job of giving African contacts to all comers. His beautiful FSK signals can be heard nearly every day on 21 mc. making solid print to all parts of North America. If you still need Africa for RTTY-WAC Henry is your man! Ossie, ZS6CR writes that Henry made a visit to his place in Pretoria and they had a fine visit chinning about RTTY problems. Ossie also reports that through Henry's help he now has a Creed 7B and by the time this is in print he should have a log full of Stateside FSK contacts. By the way Henry, ZS1FD, also spends some of his operating time on 14,090 when the band conditions warrant. No reports from the other "possibles" in Africa reported in last month's column. Lack of suitable gear seems to be the stumbling block.

South and Central America are well represented by Bob, TG9AD, and the YV gang. Bob was very much in evidence during the SS contest on all bands with his outstanding signals. Joe Sanchez, YV5AFA was putting in a good FSK signal on 14,090 Kcs. during the tests and gave several of the W lads their first So. American contact. Rumor has it that YV5ATA is also active on RTTY but so far no confirmation of this one.

The four horsemen of the Pacific, VK3KF, ZL1WB, ZK1BS, ZL3HJ were joined this month by a trio from the "50th" state in the form of KH6IJ, KH6ANR and KH6AED. Nosey, KH6IJ, showed up on all bands during the SS contest after a two year absence from the "baud battle." Eric, VK3KF, continues to operate both 21 and 14 Mcs with good success. Alec, ZL3HJ, finds his ranching is cutting into his operating hours but is looking forward to doing better when his model 19 arrives. "Old Faithful" ZL1WB turned his xmitter up-side-down to do some work on the underside and broke the 813 and now has installed a set of "roll bars" on the rig so this tragedy can't occur again. Bill, ZK1BS, is still limping along on one filter but expects the replacement to arrive momentarily.

Sorry, Gang, but nothing new from Asia and this continues to thwart many prospective WAC seekers. We did get word via W7LPM and W7FEN that KA2YA has TTY gear and is planning to get on any day now. Another definite promise of activity comes in an airmail letter from VU2NR in Hyderabad, India. He promises to be on RTTY by March '61. VU2NR says that he is being shipped TTY gear by WØNFA and ends his letter with the following quote "I should thank once again, for the help that you and other W boys are giving in putting RTTY within my reach, which hitherto I thought was the privilege of the West Coast Boys-Hi." Now where in heck do you suppose he ever got an idea like that? Anyway, us West Coast Boys will sure welcome him to RTTY with open arms. Hi Hi.

Just too many DX'ers here in North America to mention but I must tip the ole Sombrero to Nick and Geri, KL7MZ-ALZ. The Mr. and Mrs. team of Rabbit Creek for keeping Alaska available to all who need it.

Good news!! The WAC-RTTY Award certificates are in the process of being printed and should be available by the time you read this. If you are eligible for this award send your confirmations to this editor for confirmation. Requirements are a bona fide confirmation of a two-way RTTY QSO with a station in each of the six continents. Award numbers will be issued on the basis of the latest date in each set of cards submitted. In other words the date of the last QSO in your set of six confirmations will determine your position on the honor role. All cards will be returned after they are checked by the committee.

Happy hunting and BCNU next month. 73.

BUD—W6CG

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EAGER HAMS ALREADY PLANNING FOR 1961

Washington, D. C., October 19, 1960—U. S. Military communications organizations and amateur radio operators the world over are preparing to participate again in the annual Armed Forces Day Military-Amateur hamfest scheduled for May 20, 1961.

The Navy announced today that U. S. military specialists in amateur radio operations have met to plan for the next celebration and initiate policies to permit greater participation than ever.

Present at the conference were Mr. E. S. Liscombe and Major S. S. Rexford, USA of MARS, Commander A. B. Krunz, USNR and Lieutenant Commander C. R. Winnette, USNR, officer in charge and assistant officer in charge, respectively, of the Navy's Amateur Radio Station, K4NAA, at historic Radio Arlington, Va., and Captain W. E. Bettis, USAF and Master Sergeant Herman Philbeck, USAF of MARS.

Purpose of the military-amateur collaboration is to promote and support amateur radio activity which is of vital importance during National and some peacetime local emergencies.

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W6DEO W6CG W6AEE

W5APM - - AF5APM

TOM SERUR, OPR
San Marcos, Texas

Extreme left—partial view of machines which consist of Model 15, Model TG-26A Typing Reperf with TD, and not visible is a Narrow Tape printer without keyboard.

Extreme left side of console-upper shelf, my hand is on W2JAV TU, with Monitoring Scope to its right, followed by 2-30 Mc. Temperature compensated Master Oscillator with Oven; speaker and Super-Pro Receiver.

Lower shelf—extreme left Patch and Control Panel for RTTY, Model 10B C.E. Exciter; BC-458 VFO; HQ-170 Receiver and Viking Valiant Transmitter.

Narrow panel below lower deck: Rotator Indicators and controls; switches for performing other functions such as remote control of transmitter; antenna change over to either receiver as well as change of speakers to either receiver.

Barely visible on extreme right is 6 meter transmitter, followed by receivers and converters. This is separate operating position.

Brief history of myself:

Age: 54. Occupation: Radio and Television Dealer. Call letters: W5APM, assigned to me 1924 and held continuously since then. Active on ham bands all this period of time except during shut-down World War No. 2. Operate SSB, CW, AM and FSK. Member of Mars Central Tech Net.

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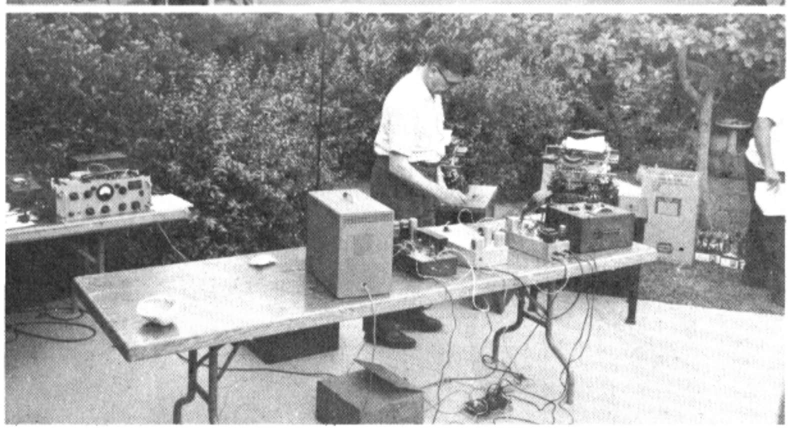
SUMMER MEETING OF SOUTHERN CALIFORNIA RTTY SOCIETY

AT W6AEE HOME



VE3OE

Scarboro, Ontario

Receiver: 75A4 HQ129X.

Transmitters: C. E. 20A into a GONSET 500W Linear Amp on SSB
Heath DX-100 on RTTY, AM and CW.

RTTY Equipment: Model 26 Printer on a 15 Table, Dumont Scope and Wells, W4TJU Terminal Unit.

Antennas: 80M 130 Foot Center Fed with Open Wire Feeders
40M Two half waves in Phase
20M Doublet Fed with Open Wire Feeders
2M Stacked 10 element yagis

Joe Blanchett, VE3BAD equipment consists of:

Transmitters: Hombrew Half Gallon with pair of 811A's in the final.
Separate Rig on 6 Meters.

Receivers: Marconi L.F. Rcvr. R. 107
R-1132 VHF Rcvr.

RTTY Equipment: W2PAT, very much modified. Also modified GATES Model 26 Printer on a 15 Table.

Well, that's about it. I might add that Joe Blanchett was extremely helpful to me in getting on a few months ago.

Joe and I and BRAD, VE3TV are the only active RTTYers in Ontario and are three of the thirteen active in CANADA. That seems like a very poor showing for a country of almost 9,000 HAMS. In fact it is.

The main reason for the almost total lack of activity is scarcity of machines and information. Joe and I are in the process of trying to organize the S. O. R. T. S. Southern Ontario Teletype Society, and we will be keeping you informed of our progress in trying to get a source of machines.

LEITH JENNINGS
VE3OE

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