RTTY

NEWS OF AMATEUR RTTY

APRIL 1955
25 Cents
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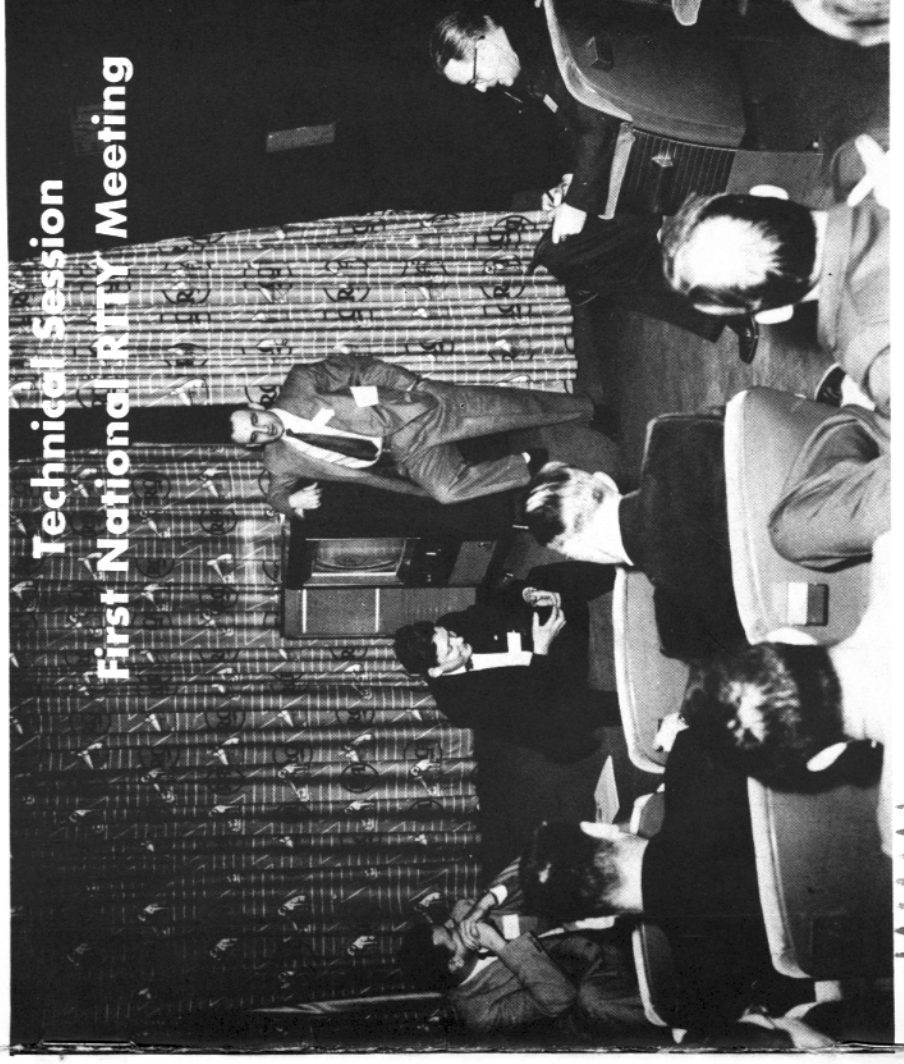


First National RTTY Meeting
Technical Session

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.

FOR SALE—Comco fixed frequency receivers.....**W1TWP**

FOR SALE—Heat Kit VFO w/Fsk, Model 12 & 21A.....**W4ZPZ**

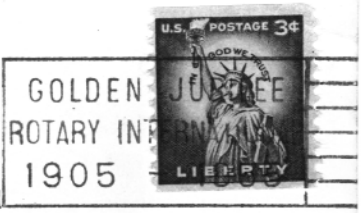
WANTED—Model 15 printer any condition for parts.....**WØHBD**

WANTED—Cover for Non-Typing Model 14.....**W6MTJ**

FOR SALE—New (unpotted) HIGH "Q" WE, Co. toroids 1" diameter, 2.2. Hys and 62 Milhys.....**W8DLT**

FOR SALE—Frequency meter Terminal Unit per May 1954 RTTY.....**W6ZBV**

RTTY Inc.
3769 East Green Street
Pasadena 10, Calif.
Return Postage Guaranteed



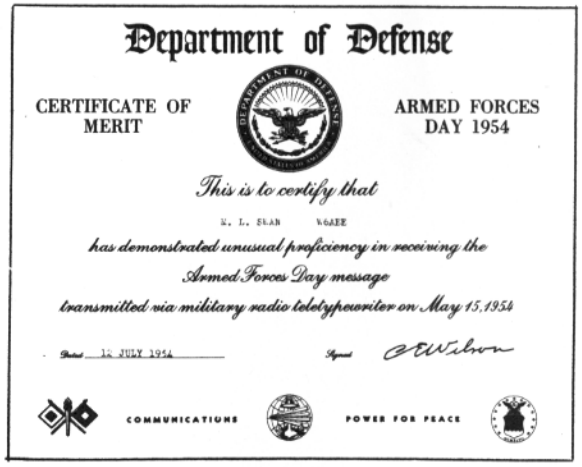
Armed Forces Day Program May 21

The Army, Navy and Air Force invite all U.S. amateur radio operators to participate in the Armed Forces Day Program for 1955. The amateur activities are jointly sponsored by the Army Signal Corps, Air Force Directorate of Communication, and the Naval Communications Division.

The Radioteletypewriter receiving competition will feature a special joint message from the Chief Signal Officer, USA; the Director, Naval Communications, USN; and Air Force Director of Communications. A letter of acknowledgment will be sent to each amateur participant who submits a copy made from the radioteletype transmission of this message. Transmission will be at 60 w.p.m. on the following schedules:

May 21st	Station	Frequency (Kc.)
1300 (EST)	NDC (Norfolk Va.)	7375
1300 (CST)	AIR (Washington, D.C.)	7915
1300 (MST)	A4USA (Atlanta, Ga.)	5760
1300 (PST)	NDS (Great Lakes, Ill.)	7375
	A5USA (Fort Sam Houston, Texas)	14405
	NDW or NDW2 (Salt Lake, Utah)	7375
	NDW (Treasure Island, Calif.)	7375
	AF6AIR (Hamilton AFB, Calif.)	14405

Each transmission will commence with a period of ten minutes of test and station identification to permit amateurs to adjust their equipment. At the end of the test period, the message will be transmitted. Copy should be submitted "as received" to the Armed Forces Day Contest, Room BE-1000, The Pentagon, Washington 25, D.C. Time and call of station copied and name and call of amateur receiving the transmission should be included.



W7LPM—1780-20—Washington
W9TCJ—1760-20—Wisconsin
W3MHD—1722-21—Penna.
W6MTJ—1566-18—S. F.
W2PAU—1139-17—
W8GRL—1134-14—Michigan
W6IZJ—1080-15—L. A.
W6LDF—1062-18—L. A.
W2TKO—1020-15—New York
W7PQJ—800-16—Oregon
W6ZNU—728-14—Sac. Valley
W1FGL—720-12—Mass.
W3KYR—715-13—Penna
W3LMC—636-12—Md., D.C.
W1BGW—546-13—Mass.
W1BDI—533-13—Conn.
W7NVY—531-9—Utah
W5HZF—520-13—Texas
W9ZBK—515-12—Indiana
W6OWP—456—Santa Clara
W7CO—405-15—Washington
W8IJV—396-11—Ohio
W1RBF—370-10—Conn.
W3UWM—360-12—Penna
W1AW—341-11—Conn.
KL7CK—270-9—Alaska
W6JUE—200-8—S. F.
W6ZBV—145—L. A.
W5MYI—144—N. Mexico
W9LDM—64—Wisconsin
W6OGG—40-4—L. A.
VE3GL—32-4—Ont.
W4ZPZ—18—N. Carolina
W7CGA—16-2—Washnigton
W6OLC—16-2—L. A.
W9QM—8-2—Illinois
W9QBH—6-2—Illinois
W5ENH—2-1—Arkansas
W2SKK—2-1—New York

Besides those stations whose scores are reported above, the following were known to have taken part. W2's JAV, PAT, PAU, PTW; W3CRO; W5BFX; W6's, BNB, CQM, DOU, EGZ, EV, FLW, KMT, MZO, NCO, NFB, NWM, PNW, SCQ, VIH; K6's BTH, BWJ; W7's, LU, PVF; W8's, BYB, DVL, HP, KFA, LLL; W9's, AKM, BGC, DRW, DW, GRW, GVN, JBH, LLX, NRC, SPT, UAU, VOK; WE-2ATC.

This makes a total of ninety-four stations taking part as compared to seventy-seven last year at this time.

Number of sections worked taking part also increased from twenty-seven to thiry-two. Section activity was as follows; Los Angeles 20 stations; Illinois 9 stations; Michigan 7; Washington 4; Connecticutt, Southern New Jersey, Maryland-Delaware-D6, Western Pennsylvania, and East Bay with three stations each; New York City, Long Island, Western New York, Santa Clara, San Francisco, Oregon, Ohio, Wisconsin, with two stations each; and with one station each, Northern New Jersey, Eastern Pennsylvania, North Carolina, Louisana, Arkansas, North Texas, New Mexico, San Diego, Sacramento Valley, Indiana, Quebec, Ontario, and Alaska.

Results of this contest would seem to make the dark portions of the Cover Map on January 1955 RTTY, more a reality than many thought. Nearly all operators expressed their pleasure enjoyed during this contest. See you on the bands soon?

Continued on Page 14

First Annual National RTTY Meeting

Monday March 21, was the day and four PM was the time. Thanks to the efforts of the arangements committee, W2BDI, W2JAV, and W2PBG, an excellent meeting place was provided. The Johnnie Victor Studios in Rockefeller Center were set aside for the technical portion of the meeting. Among those present were, W1AFN, W1BGW, W1FGL, W1RBF, W1TWP, W1WEW, W2BDI, W2EBZ, W2JAV, W2NSD, W2OOG, W2PAU, W2PBG, W2SPV, W2TBD, W2TKO; W3CRO, W3MHD, W3UWM, W4ZC/2; W6AEE; W8KYL; W9BP/WØBP, W9CNN, W9TCJ.

From the calls listed above, it would appear that a fairly representative group was in attendance. As a result the first few minutes were spent in meeting those who had worked each other. Had you ever thought, what does W— look like? After introduction by W2BDI, of the gang, formal portion of the technical session started.

Among matters discussed were the night for the traffic net, frequencies and then to terminal units . . . Phil Catona W2JAV lead off with a talk on the over all picture as far as TUs were concerned, this includes antennas, receivers, as well as that unit which we normally think of as being the terminal unit only. The audio pass band of the receiver for an example limits the amounts of audio which reach the filters. If the receiver lacks highs, then the limiter will not do a good job. Next the matter of polar relays vs DC amplifiers was discussed with the general opinion that it was equivalent to a low pass filter. A few of the current TUs use low pass filters after the detectors to provide an equivalent action. Next was the problem of the simple type of distributor used on the model 12 as compared to the mechanical one used on the 14, 15 and 26 series of printers. This was followed by a discussion of the tests made on several different types of terminal units. Portions of the test included the use of a magnetically recorded RTTY signal plus wide band noise, feed into the TU under test. Various levels of signal vs noise were recorded and used. One of the test tapes used a repeated letters key, and other portions used a repeated blank key. This test showed up troubles which exist in the so called DC restorer portion of the TU. Another tape consisted of NSS (which has no distortion) and 14 KCS of noise recorded from portions of the eighty meter band. Another subject of discussion was the limiter. Some units tested had little or none, and fading signals (as much as 50 DB) would miss-print. It was suggested that separate limiters be used for each of the filter channels. Another proposal was to use AVC in place of the limiters in order to avoid the square waves from the limiters and make the filters more effective. Other problems which were mentioned were the use of narrowband width filters and what was the best. Mention was made that best results were had when equal DC resulted from both Mark and Space. Some of the TUs have an adjustment for this requirement. Brownie W2PAU followed Phil, mentioning such things as proper place for selectivity, cross modulation, etc. Roy, W2TKO followed this, with an oppening comment, that he was a "high selectivity man". Uses a HRO behind a Q15er and audio in receiver cuts off the high frequencies. Frank, W3PYW followed with description of his receiver which uses Collins Mechanical filters and a Q multiplier. Merrill, W6AEE spoke of his IF and audio TUs with AVC in the audio unit.

Following this, a general discussion of use of CW signing after RTTY contacts, differences in treatment of RTTY in the two amateur magazines. Wayne Green, Editor of CQ who asks that RTTY material be sent in for consideration. The need for a RTTY handbook was mentioned to which Merrill W6AEE reported that time was lacking presently for work on it, but that three chapters have been completed and proofed.

At this point, Ed W2BDI, broke in to announce that dinner was ready. Dinner was served in the Hollander Tavern. Excellent food and beverages were served between continuing RTTY discussions. Photos were taken by Ed W2SPV. After dinner, which lasted until the Hollander was closing, we adjourned to the club along side of the Rockefeller Center skating rink, for some additional refreshments and more RTTY talk. Meeting finally broke up about one AM.

Congratulations go to the fine work performed by the committee, W2BDI, W2JAV and W2PBG. RTTY wishes to thank you on behalf of all those attending this fine meeting. See you next year?

Front Row: Stuart W4ZC/2, Ed W2SPV, Wayne W2NSD, Merrill W6AEE.
Second Row: Tom W1AFN, Al W1FGL, Frank W3MHD, Frank W3PYW, Dick W3CRO, Ed W2BDI, Phil W2JAV, Ken W1RBF, Bob W2PRG, Beep W9BP/WØBP.
Back Row: Tom W2TBD, Clay W2EBZ, Cecil W2OOG, Ken W3UWM, Roy W2TKO, Cecil W9CNN, Brownie W2PAU. (Pix taken by W1BGW with W2SPV camera.)

Early Day Radio Teletype

by

Wallace G. Ludgate, W7LU

Perhaps your readers would be interested in some early-day radio teletype work carried on by the Federal Telegraph Company. This company operated a commercial radio-telegraph service between Pacific Coast cities as early as 1912. After World War I, a new transmitting station was built at Hillsboro, near Portland, and radio-teletype experiments were made between this station and KFS, San Francisco. The Poulsen arc system of transmission was used in the frequency range of from 35 to 70 KC—approximately 8000 to 4000 meters.

Transmission of commercial traffic was by the continental code, but here in an intreresting fact: the Poulsen arcs were generally keyed by shorting out a portion of the transmitter tank inductance, thus producing frequency-shift transmission. No particular advantage was realized, however, and at times the operators were bothered by the back-wave (as they are today in certain RTTY circles)!

Little was known in 1921 about practical audio filters, limiters or D.C. amplifiers, or else these matters were subject to patent restrictions. So, to convert audio tones from the receiver to D.C. pulses to operate the printer, the Federal Company used an ingenious device called a jet relay. This consisted of the winding of a sensitive relay in series with a battery and a coil of fine alloy resistance wire. The coil was kept at a dull red heat and offered high resistance to the circuit. It was mounted close to a nozzle, the nozle connecting to a reservoir of air under pressure, and so arranged that an air jet would blow through the coil. A telephone receiver was positioned near the nozzle and an audio tone from the receiver would "spread" the jet of air, cool the wire, lower its resistance and operate the relay. The device was very rapid in operation, easily following teletype pulses. (It would also respond to "whistles"; several annoying garbles were finally traced to one of the boys "whistling" at his work across the room.) The relay was designed for maximum response at a frequency of about 500 C.P.S. so was somewhat selective in this regard.

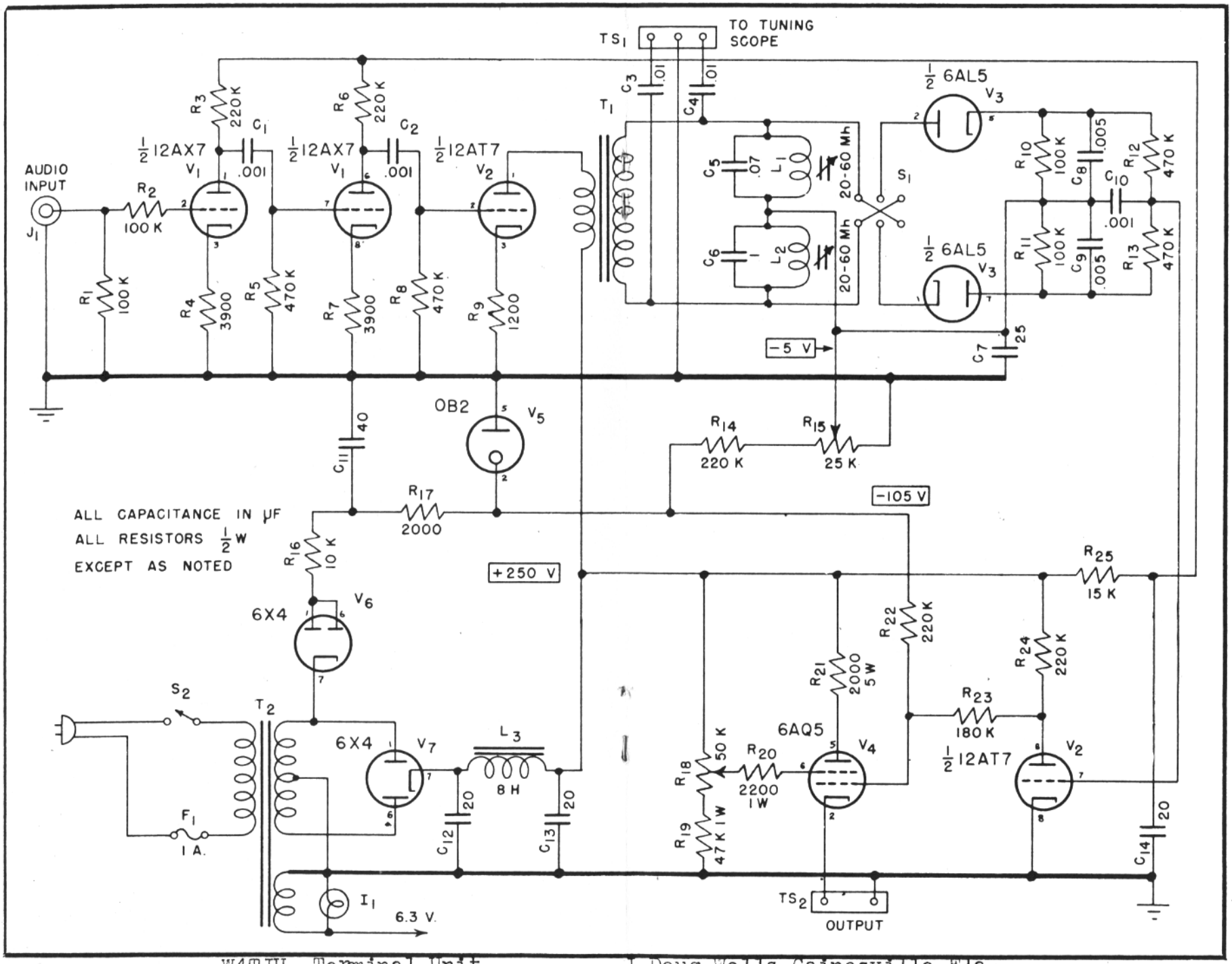
After the wrinkles were ironed out, the system worked fairly well. These wrinkles were (other than QRN), fading and printer-motor speed. At first the receiving equipment at Portland was located in a downtown office building with the antenna running between two buildings but about 75 feet above the trolley wires. Clicks from street-car motors were very strong and frequent, and annoyning even to CW reception.

After several weeks of field tests, a receiving site was chosen in the West side hills, loop antennas were installed, and most man-made noise was eliminated. An exception was a loud whine recurring about every forty minutes all day long. It was finally traced to a particular street-car on the Council Crest line a block from the station, and the traction company later found a defective armature winding in one motor.

As is characteristic of the long waves, fading was very slow and at times very deep so that even CW operations had to be suspended—particularly in the evening twilight hours.

Printer-motor speed was a headache. The motors were of the governed type. The commercial power was from the same source that fed the building elevators, and the regulation was poor. Considerable time would be spent adjusting the motor speed with a tuning fork, only to have to repeat the operation when the supply voltage changed again.

(Continued on Page 10)



W4TJU Terminal Unit J.Doug.Wells Gainesville,Fla.

Early Day Radio Teletype (Continued)

After experimenting for several months, the Company determined that there were too many bad letters to make the system commercially acceptable and it was abandoned. But without a doubt, if one of our amateur RTTY terminal units could have been slipped in to replace the jet relay, the system would have performed almost perfectly.

An idea of the progress that has been made since those days may be illustrated by the fact that the Federal Company used a 60 KW arc, feeding an umbrella antenna 625 feet high to span the distance between Portland and San Francisco. Today an almost perfect QSO is possible over the same path; and with 60 watts—about 1/1000th the power.

We should not fail to appreciate the ingenuity displayed by those pioneers in the radio-teletype field.

One closing though—we were never bother- with QRM on the arc circuits!

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
Permission to copy is granted provided credit is given.

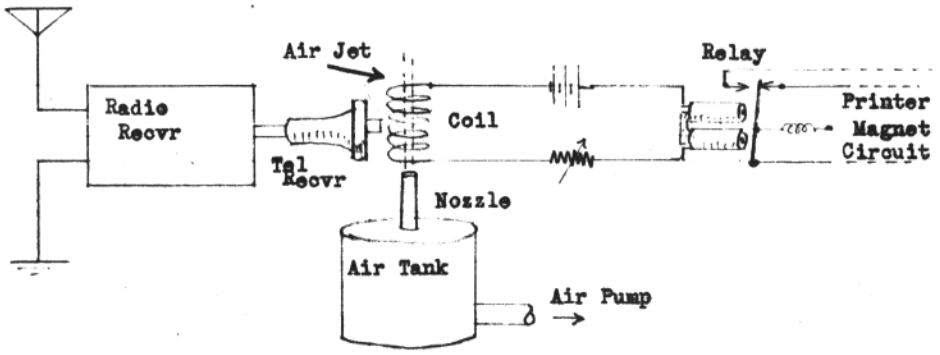
For Information Regarding the Society Contact the Following:

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

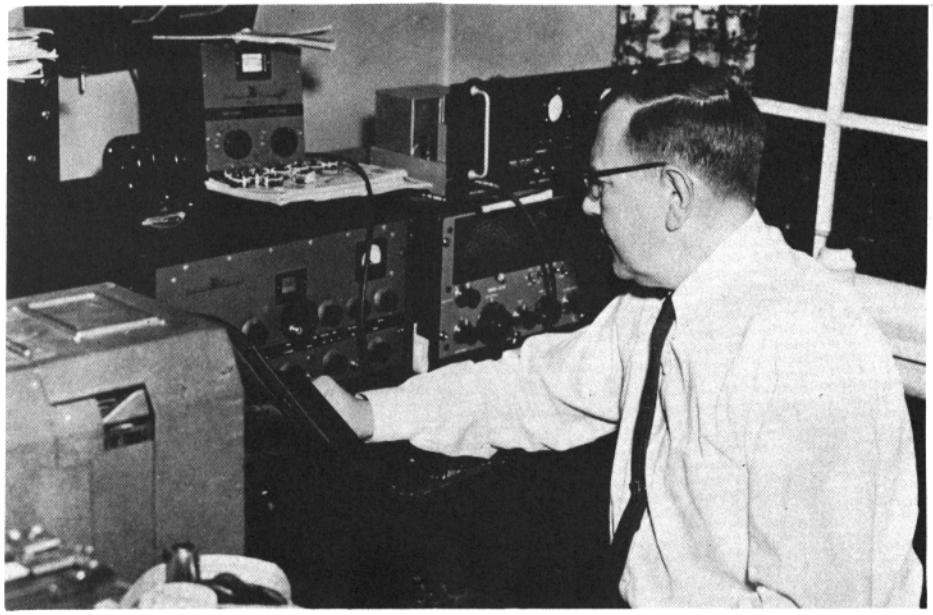
For Traffic Net Information:
W6FLW W6IZJ

For "RTTY" Information:
W6CL W6DEO W6AEE

Schematic Layout of Jet Relay



W2BDI
Ed Clammer, Merchantville, N. J.



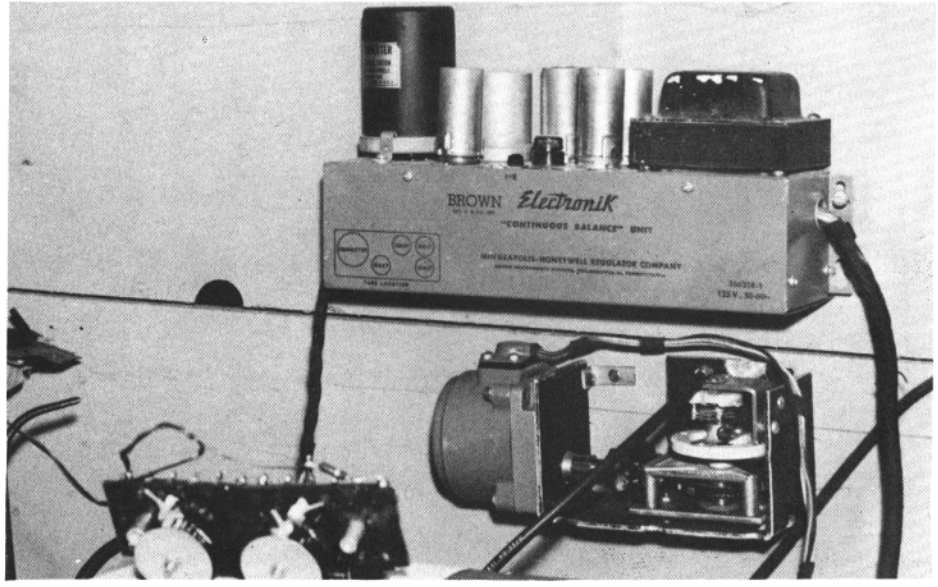
W2SPV
Ed Kepliant, Merchantville, N. J.

W9TCJ - W5RJG - W5HZF

Taken in W5HZF's Radio Room

W5HZF's Automatic Frequency Control

Output is obtained from across Mark Filter discriminator meter and is feed into the Brown Servo-amplifier via a filter to remove the AC components, yet pass the DC. A certain time constant is introduced by this filter. The Brown servo-motor operates a small variable capacitor via reduction gears. This small capacitor is in the BFO circuit of the receiver. This AFC system follows only the Mark Frequency and certainly performs. Marvin is to be congratulated. Shown is Mark and Space toroid system in foreground, Brown parts in background . . . 73 de W9TCJ, Bob.



Palo Alto Amateur Radio Association

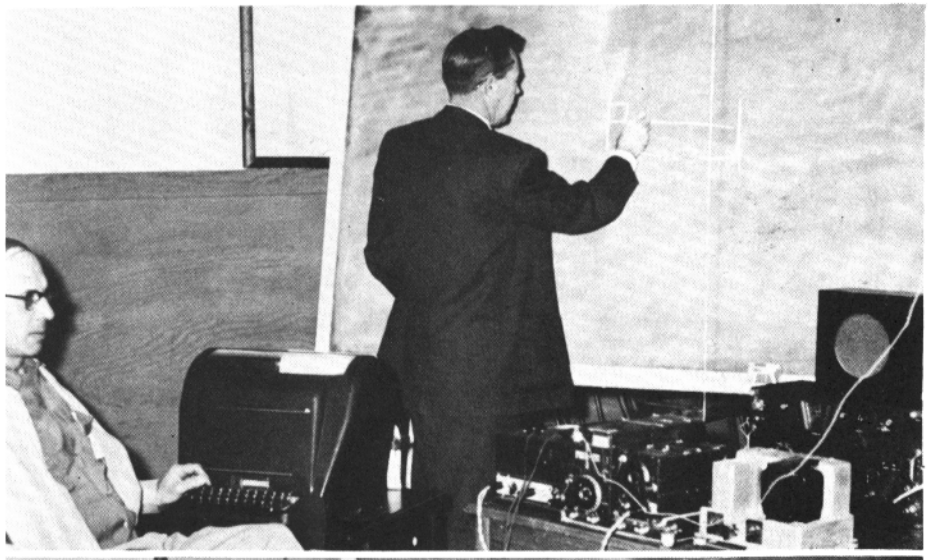
RTTY Demonstration

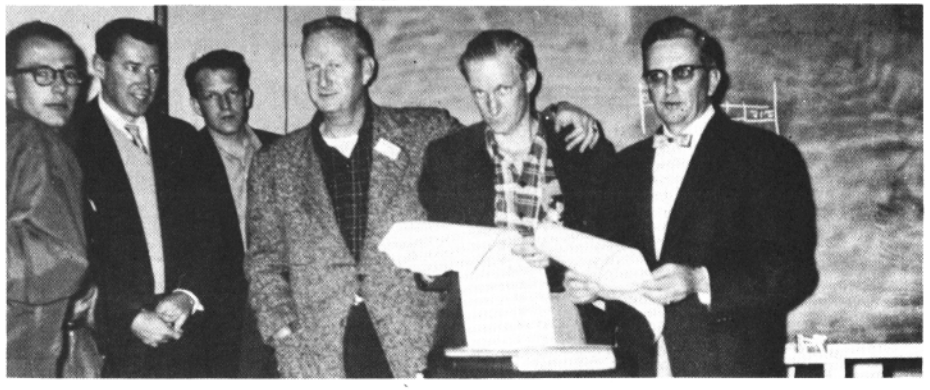
Teletype fundementals are discussed by W6OWP as part of an amateur RTTY demonstration before the March 4th meeting of the Palo Alto Amateur Radio Association.

The PAARA is noted for its agressive educational program. In keeping with this policy, the Teletype demonstration was arranged by member Lee Marks—seated before the model 26—whose RTTY station W6MZO is active in Redwood City.

A complete Teletype station was set up and operated to illustrate practical aspects of amateur RTTY. Approximately seventy PAARA members and guests attended the meeting.

—Photo by W6VJK—





Dick W6OPX, Bart W6OWP, Bob W6HOC, Dick W6NMV, Carl W6QYO, Stan K6DCO

RESULTS OF THE ANNIVERSARY RTTY SWEEPSTAKES CONTEST

Our second anniversary RTTY sweepstakes contest is now history. Activity was higher than at any time in the past. The Old Timers were there as well as the newcomers. New transmitters, new antennas, new terminal units, in fact all types of RTTY equipment were passing their "Smoke Tests." A few stations were heard that had received their printers only three or four days before.

Band conditions were such that eighty meters was excellent right after the contest period opened. Many cross country solid contacts were made by many stations. Old friends were contacted for the first time in many a month. Others found out for the first time that their equipment would cover greater distances than they had thought. Then after daylight arrived, twenty was found to be an excellent band for contacts. Of course it goes without further mention that the old standby, forty meters was an active band at all times.

Top honors again go to Southern New Jersey Section in the person of Ed Clammer, W2BDI. Ed has worked as hard as any of the RTTY gang this past year. New final, antenna, receiver, modifications to his terminal unit, plus a lot of on the air tests of his equipment to familiarize himself as to how to obtain best results from the complete station. His score was an even 2800 points, obtained by completing fifty eight two way contacts and one, one - way contact, with twenty-four sections. Ed also shared top honors as far as the number of sections worked, with Frank White, W3PYW.

Second place goes to Bob Osborne, W8ZM with a score of 2600 points in twenty sections. Bob is one of the more active RTTY'ers, operating on all bands. He and his brother Earl, have been two of our most active fifteen meter operators. He is also active in setting up the two meter net in his area.

In third spot is another of the well known RTTY men, Frank White, W3-PYW, who needs no introduction to the readers of RTTY. His score was 2520 points, with twenty four sections worked. Frank's comment was to the effect that he could not spend as much time as he would have liked to, due to the contest falling on Sunday this year.

Other stations reporting scores of over 2000 points were; W8BL of the Osborne Brothers with 2318 points and 19 sections; W6CG Bud Schultz of Temple City, California with 2080 points and 20 sections; W6AEE with an even 2000 points, also 20 sections. Complete results as determined by the contest committee are listed below.

W2BDI—2800-24—New Jersey
W8ZM—2600-20—Michigen
W3PYW—2520-24—Md., D.C.
W8BL—2318-19—Michigan
W6CG—2080-20—L. A.
W6AEE—2000-20—L. A.
W9BP—1840-23—Illinois

Traffic Net News

By EMILE DUVAL, W6FLW

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 MARCH, 1955

March 1—W6FLW, N. C.—26 Checkins

W6AEE	W6FNW
W6AFX	W6IAL
K6BTK	W6IIV
K6BXX	W6IZJ
W6CAP	W6JAU
W6CG	W6NAT
W6CKS	W6NV
W6CL	W6PSW
W6CMQ	W6RCM
W6DNJ	W6RL
W6EGZ	W6SCQ
W6EV	W6TZA
W6FLW	W6WYH

March 8—W6IZJ, N. C.—24 Checkins

K6BTK	W6KMT
K6BXX	W6LGO
W6CAP	W6NWM
W6CG	W6OZO
W6CKS	W6RL
W6CMQ	W6SCK
W6CND	W6SCQ
W6DNJ	W6TRX
W6EGZ	W6TRX
W6HQR	W6TZA
W6IAL	W6ZBV
W6IZJ	W6EV
W6JAU	W6FLW

March 15—W6JAU, N. C.—30 Checkins

W6AEE	W6KMT
W6AFX	W6NCP
K6BTK	W6NWM
W6BWQ	W6OZO
W6CAP	W6SCQ
W6CG	W6ZBV
W6CMQ	W6TZA
W6CND	K6BXX
W6DNJ	W6EGZ
W6EV	W6LGO
W6FLW	W6CKS
W6IAL	W6EFE
W6IIV	W6IEU
W6IZJ	W6FXF
W6JAU	W6VAD

March 22—W6FLW, N. C.—28 Checkins

W6AEE	W6LGO
W6BWQ	W6NWM
W6CAP	W6SCK
W6CG	W6SCQ
W6CKS	W6TRX
W6CMQ	W6TRX
W6CND	W6VAD
W6DNJ	W6TZA
W6EGZ	W6ZBV
W6IAL	W6ZCC
W6IZJ	W6EV
W6JAU	W6AFX
W6JFZ	W6FLW
W6KMT	W6PSW

March 29—W6IZJ, N. C.—37 Checkins

K6BTK	W6LGO
K6BXX	W6NAT
W6BWQ	W6NUY
W6CAP	W6NWM
W6CG	W6OZO
W6CKS	W6RL
W6CL	W6SCK
W6CMQ	W6SCQ
W6CND	W6TRX
W6CYR	W6VAD
W6DNJ	W6TZA
W6EGZ	W6ZBV
W6FNW	W6ZCC
W6HQR	W6EV
W6IAL	W6AEE
W6IZJ	W6AFX
W6JAU	W6FLW
W6JFZ	W6PSW
W6KMT	

East Coast Traffic Net

The East Coast RTNET meets regularly on Wednesdays at 8:00 p. m. on 3620 kcs. At present approximately twelve to fifteen have been checking in and taking part in the handling of traffic.

The Mid Western RTNET also meets on Wednesday at 7:00 p. m. on 3630 kcs. from information received by RTTY. 10 to 15 stations have reported in during the last few weeks.

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.

Suggestions and ideas will be greatly appreciated and adopted if found worthwhile towards improvement of RTNET work.