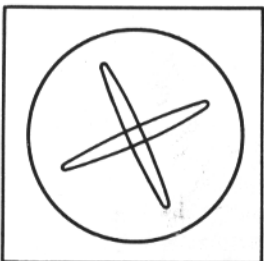
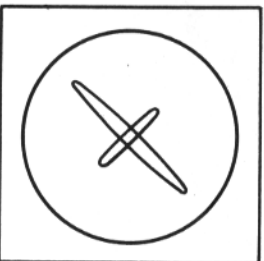


RTTY



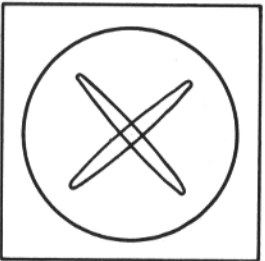
(c) TUNED HIGH
SHIFT 850 CPS



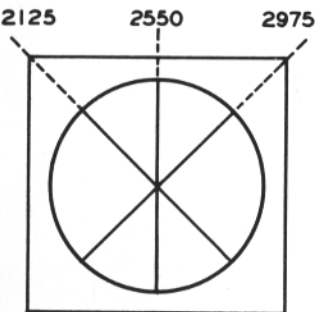
(f) TUNING & SHIFT O.K.
SELECTIVE FADING



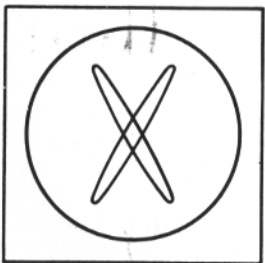
(b) TUNING CORRECT
SHIFT 850 CPS



(e) TUNING O.K.
SHIFT 900 CPS



(a) CALIBRATION LINES



(d) TUNING O.K.
SHIFT 700 CPS



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—Model 14 typing reperf, Model 15 complete, Model 19 complete W9GRW
- FOR SALE OR TRADE—Complete 26 printer with desk, excellent cond. W4LCR
- FOR USE—Space in RTTY Bulletin for Photos or Articles RTTY
- WANTED—Table, with keyboard for Model 12 WØDKE
- WANTED—Wanted model 14 send/receive. Reperf cover only W1BGW
- WANTED—Model 14 and 14TD WITWP
- 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
- WANTED—Cover only for model 14. Non-Typing Reperf. Model with reel in top W8AV

RTTY, Inc.

3769 East Green Street
Pasadena 10, Calif.

Return Postage Guaranteed



NEWS OF

AMATEUR

RTTY

NOVEMBER, 1954

25 Cents

Vol. 2, No. 11

HIGH SPEED TUNING INDICATOR FOR TELEPRINTER CONVERTERS

BY BRUCE L. MEYER, WØHZR

There have been several excellent articles in RTTY relating to the design and construction of frequency-shift meters and signal-strength indicators. Those who already built up these items are not likely to be interested in the system to be described here. For the benefit of those who are still just guessing at frequency adjustments, this system combines a frequency-shift indicator, tuning indicator, and signal strength indicator all in one compact 'scope presentation.

The heart of this system is the discriminator circuit (Fig. 1) which was originally developed to precede a phase-detector in a teleprinter converter unit. The 'scope indicator was built as an afterthought. As it turned out, the phase-detector was a mediocre detector of AFSK and the tuning indicator proved to be a very reliable and useful device.

Referring again to Fig. 1, it may be seen that the audio source feeds a series-resonant circuit through a resistor. At 2550 cps, the series-resonant frequency of L and C, the LC combination acts like the well-known wave-trap and swamps out the signal voltage at the RC junction. This voltage, E_h , is the X-axis sweep for the 'scope tube. At 2125 cps and at 2975 cps the LC circuit does not resonate and

appreciable voltage exists at the E_h terminal. (Fig 2).

The E_v signal at the LC junction would be expected to rise abruptly to a high value at the resonant frequency, 2550 cps, but this action is prevented by the presence of the series resistor R which is carefully adjusted so that E_v is essentially constant over the frequency range of 2125 to 2975 cps. All this adjustment is done so that the 'scope trace at 2125 cps will have about the same length as the 'scope traces at 2550 cps and 2975 cps. Because the horizontal sweep voltage is zero at 2550 cps, the 'scope trace will always be a vertical line.

At 2125 cps the vertical deflection voltage will lead the horizontal voltage by a phase angle approaching 180 degrees, with the result that the scope trace will "lean" to the left. Above 2550 cps the phase angle approaches 0 degrees and the trace will lean to the right. By carefully adjusting the gain of the horizontal amplifier relative to that of the vertical amplifier, the traces at 2125 and 2975 cps may be made to have a 90 degree angle on the 'scope screen, (Fig. 4b). There is nothing critical about this angle and any convenient angle may be selected. Once set, the angle may be

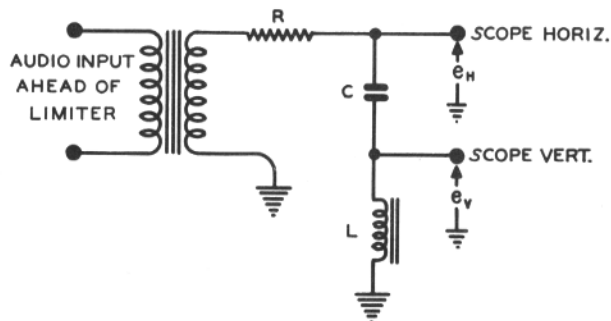


FIGURE 1

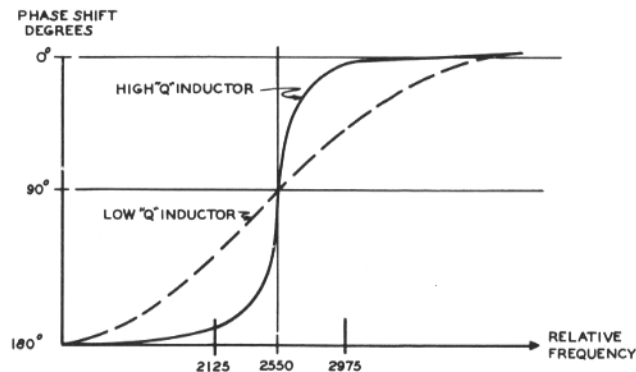
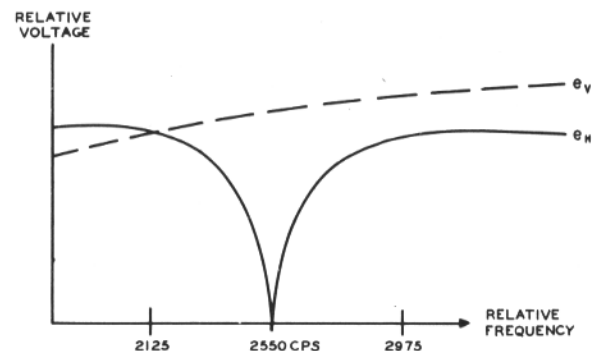
used for shift calibration. The frequency shift of the teleprinter signal is always indicated as the angle between the marking signal trace and the spacing signal trace and it is independent of the amplitude of either signal. (Fig. 4f). If the builder will draw calibration lines on the 'scope face upon initial calibration with an accurate audio signal generator, he may always use these as the frequency-shift limit reference. (Fig. 4a).

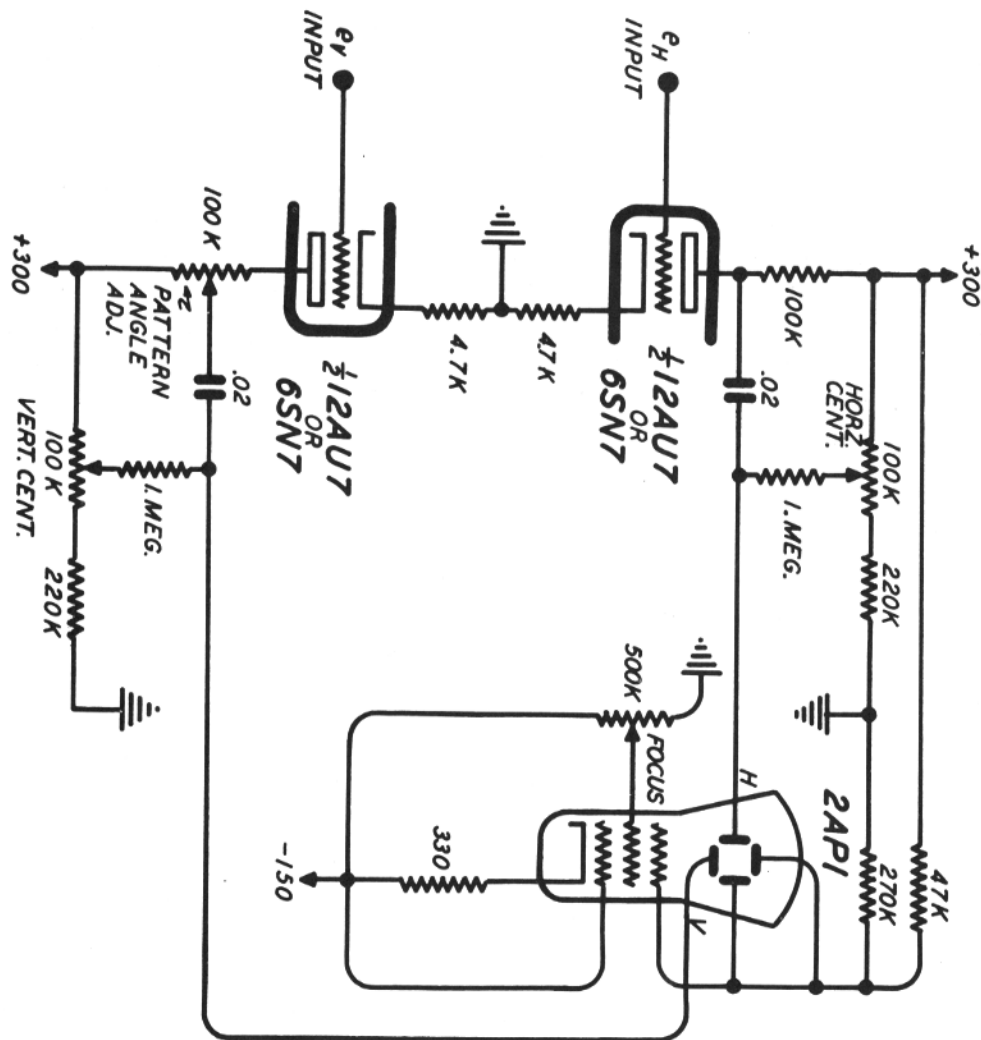
The reader may ask why a high-Q inductor is specified when series resistance limits the series-resonant "Q" anyway. The reason is shown in Fig. 3 where the phase response of a low-Q inductor is compared with that of a high-Q inductor. If a low-Q coil is used, the 'scope pattern will be a wide ellipse instead of a narrow one which looks like a single line. The line-like pattern is much easier to interpret than the elliptical trace of the low-Q coil. Above and below reson-

ance the horizontal deflection voltage should be either in-phase or 180 out with respect to the vertical deflection voltage. These conditions give the straight-line patterns.

For the sake of appearance it is suggested that the new little Millen one-inch oilloscope foundation unit be used. If you have a two-inch tube available, try the circuit of Fig. 5. This indicator circuit has been in use at WØHZR for about a year now with good results. Drift is no problem, and relative frequency may easily be held to within 10 cps.

One word of caution is in order. The 'scope tube must not be placed in any strong magnetic field such as may exist near a filter choke, transformer, or tuned inductor. Most 'scope tubes are quite sensitive to stray magnetic fields. The use of a magnetic shield may cure any difficulties which crop up in cramped chassis layouts.





BULLETIN

Seattle, Washington
20, October, 1954

PUGET SOUND RTTY SOCIETY

W7's

ACJ—Ralph
AEA—Max
AVC—Gene
AZI—Roy
AZR—Alex
BA—Lloyd
BFU—James
CBE—Elwyn
CCB—Archie
CM—William
CO—Don
DET—William
EHQ—Lloyd
EJD—Fred
EVW—Art
FKL—Dick
FNA—Bob
FXD—Oran
GDW—Richard
GHW—Leroy
GQM—Garry
HCS—George
HJC—Ted
HLU—Lyle
HRC—Harold
HZA—George
IAB—Chester
IYV—William
JJK—Bob
JNC—Robert
JXY—Leonard

KBM—Stan

KKN—John

KV—Mike

LPM—Dick

MFG—Cliff

MLV—Gerald

MZT—Ralph

NEW—Edward

NJ—Rex

NVB—Darrel

NXN—Harold

NZM—Jim

OHI—Robert

OMQ—Charles

OS—Clifton

OYO—William

PCV—William

PHG—Louis

PVF—Neil

PWQ—Ed

PZX—Lee

QFX—Daniel

OLG—Merle

QLJ—William

RGD—Dick

TSD—Bruce

ULL—George

UGV—Arthur

VVB—Jay

WOG—Milton

KL7AVC—Everet KL7CK—Jerry

Total 63 Stations

BULLETIN

Pasadena, California
24 October 1954
(ARTNS-W6CLW)

ACTIVE 2-METER STATIONS Southern California Area

W6's

AEE—PA—Merrill JJP—GD—George
AFA—DO—Harold KJO—EM—Herb
AFX—AR—Dick KNB—SL
AOE—MA—Johnny KNI—AL—Cliff
BGE—TC—Bob KT—LV—Virgil
BGM—TO—Chuck LGO—LV—Ward
BPZ—LA LSG—PI—Larry
BWQ—MR—Bud MQP—SG—Jack
CAP—GD—Bob NAT—MB—Bill
CG—TC—Bud NCP—LH—Beck
CGN—DO—Don NSS—WL—Al
CK—ID—Pappy NUY—SG—Connie
CKS—WH—Joe NV—MV—Rusty
CL—GD—Bert NWM—YC—Johnny
CLW—PA—Ed NYF—WL—Roy
CMQ—MR—Ted OQB—AR—Ralph
CYR—SA—Jim ORV—WH—Don
DEO—ER—Fletch OZO—NP—Rehse
DMK—SG—Jack PNW—BF—Ray
DNJ—ER—Hal QZQ—SA—Horace
EGZ—WH—Sam RCM—MR—George
EV—LA—Ham RL—ES—Shorty
EZP—SP—Don SCK—BP—Bud
FGV—LB SCQ—Louie
FLW—WH—Emile TD—CV—Jean
FXF—LA—Karl TRX—PA—Doc
IAL—WL—Frank UON—AL—Walt
ICS—LC—John VHR—BT—George
IEU—GD—Ken UPY—RH—Stan
IIV—PA—George WYH—LA—Ted
ILW—LA—Steve ZBV—PA—Cec
IRE—PA—Dan ZCC—NH—Ernie
IZJ—SM—Ed ZGC—CM—Mickey
JAU—AR—Bob ZH—MR—Herb

SPECIAL FREQUENCY SHIFT TELETYPE CONVERTER

BY FRITZ FRANKE—THE HALLICRAFTERS CO.

The Frequency Shift Teletype Converter Schematic diagramed is an engineering model primarily designed for use with the Hallicrafters Model SX-88 Receiver.

The 50 kc i. f. output of this receiver is available at an output jack on the rear lip of the receiver which is fed to the converter unit via a shielded cable. In the converter tubes V1 and V2 operate as limiters at 50 kc. Tubes V3 and V4 are balanced discriminators feeding keying tubes V5 and V6. Any teletypewriter capable of operating on a 60 ma. neutral or polar 30 ma. may be connected to the printer terminals.

All component parts are available in most jobbers' stocks, and Hallicrafters Part No. 50B489 is available from Service Department, Hallicrafters Co., 4401 W. Fifth Avenue, Chicago 24, Illinois at \$3.30 each less postage. L3 must be modified by winding approximately 125 turns of No. 34 double formvar wire at cold end of coil. The exact number of turns and coupling must be adjusted so the peaks of the discriminator are about 1 kc apart.

Resistor R2 is to provide balance between the keying tubes, and resistor R1 is to adjust the loop current to 60 ma. maximum.

DIAGRAM ON PAGES 8 AND 9

NOTES ON THE SPECIAL FSK CONVERTER

BY MERRILL SWAN, W6AEE

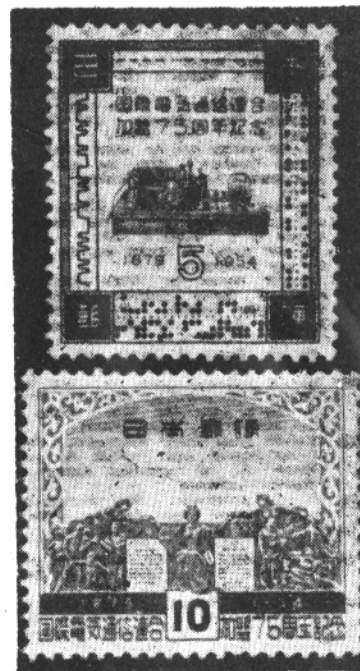
The I.F. Converter described by Mr. Fritz Franke in this issue was built after adjustments were made, copied very well. Next a single ended version was tried, by using only one of the 35C5 tubes in the output section. Some minor adjustments in the bias for the output stage were made. The selector magnets of the printer were connected in the plate circuit of the output stage. Operation of single-ended vs polar operation has been the subject of much discussion by many serious experimenters, and still the best method seems uncertain.

For those whose receivers do not happen to use a 50KC I.F., a simple converter can be built making use of the 6BE6 tube. Such a circuit was described by Bob Weitbrecht, W9TCJ in CQ for July 1953. Many operators report copy made under conditions, where the FSK signal could not be heard audibly.

For those interested in experimenting with various types of TU's or converters, this should be an interesting circuit to try.

Japanese Series On Sale Oct. 13

Japan celebrated the 75th anniversary of its membership in the International Telecommunications Union by issue Oct. 13 of a 5 yen commemorative printed in dark brown purple and a 10 yen stamp printed in dark blue. The stamps, printed from recess engraved plates, were issued in sheets of 20.



The design of the 5 yen stamp reproduces an early type of telegraph instrument, a phrase in Morse code, sections of the perforated tapes used on modern telegraphic sending equipment and the profile tracing from a cable transmission recorder. The 10 yen stamp pictures the Telecommunications monument.

The illustration of these commemoratives is by courtesy of Tad Fujita, Berkeley, Calif., secretary of the Japanese American Philatelic Society.

INTERESTING CLIPPING FROM W6ITH

"Now we have RTTY tape on a stamp. See enclosed clipping in which Japan has used for illustration of a piece of TT tape. Note is standard 6-unit Jap code (also used this country for Teletypesetter circuits wherein 6 units necessary for upper and lower case etc). Japs have also shown straight morse tape, recorder tape (morse and/or cable) and also some Klein perf tape. Kindest regards."

—Reg, W6ITH

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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

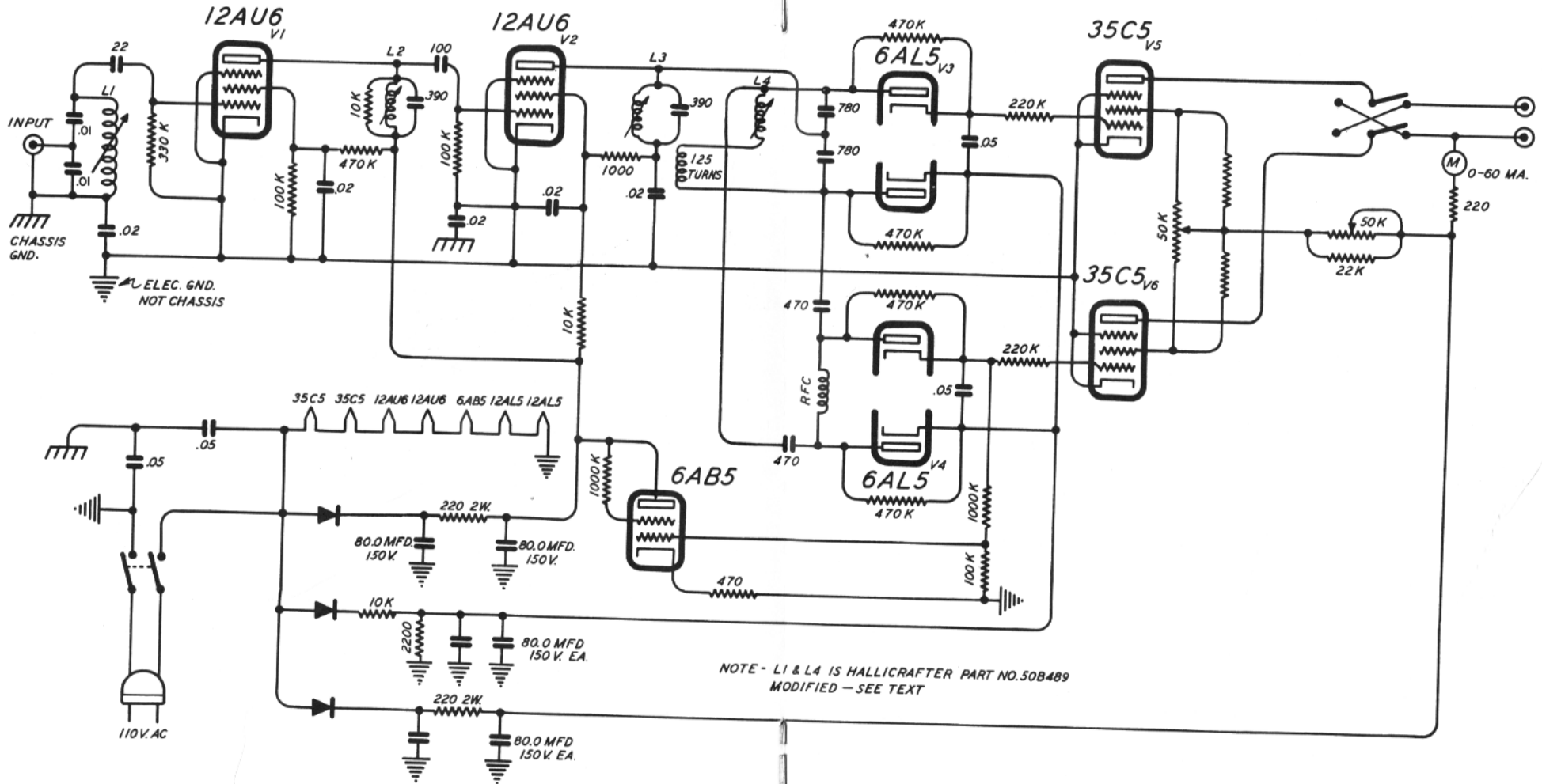
W6IZJ

For 'RTTY' Information:

W6CL

W6DEO

W6AEE



NOTE - L1 & L4 IS HALLICRAFTER PART NO. 50B489
MODIFIED - SEE TEXT

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 OCTOBER

October 5—W6NAT, N. C.—24 Checkins

W6AFX	W6IEU
W6BWQ	W6IIV
W6CGN	W6IRF
W6CK	W6IZJ
W6CKS	W6NAT
W6CLW	W6NCP
W6CYR	W6NWM
W6DNJ	W6RCM
W6EGZ	W6SCK
W6EV	W6SCQ
W6FLW	W6ZBV
W6IAL	W6ZBW

October 12—W6FLW, N. C.—20 Checkins

W6AEE	W6IAL
W6CG	W6IEU
W6CK	W6IIV
W6CKS	W6IRF
W6CLW	W6LGO
W6CYR	W6NAT
W6DNJ	W6SCQ
W6EGZ	W6WYH
W6EV	W6ZBV
W6FLW	W6IZJ

October 19—W6IZJ, N. C.—23 Checkins

W6AEE	W6IAL
W6AFX	W6IRF
W6CAP	W6IZJ
W6CG	W6JAU
W6CKS	W6LGO
W6CLW	W6MQP
W6CYR	W6NAT
W6CK	W6NWM
W6DNJ	W6SCK
W6EGZ	W6SCQ
W6EV	W6ZBV
W6FLW	

October 26—W6RCM, N. C.—24 Checkins

W6AEE	W6IZJ
W6AFX	W6ILW
W6CAP	W6JAU
W6CK	W6KJO
W6CLW	W6NAT
W6CYR	W6OQB
W6DNJ	W6RCM
W6EGZ	W6PNW
W6EV	W6SCK
W6FLW	W6SCQ
W6IEU	W6WYH
W6IIV	W6ZBV

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.



"I am on twenty meters now and have worked a few West Coast stations however, these contacts are few and far between, and I wonder if it would be possible to arrange some sort of a weekly or nightly listening schedule? The two meter net is quite active here in Detroit at 147.3Mcs. I have not been able to get on the net as yet but am looking forward to it as soon as time allows. Eighty meter activity here seems to be almost nil due to the usual poor summer conditions."

—73 Rod, W8BYB

RYRYRYRYRY

"Was up to visit Lou Buck, VE2ATC in Montreal last month and got a kick out of working W1RBF from there. He sure has a fine layout. Looks commercial. Lou is a fine fellow and promises to return the visit in a month or so."

—73 Jack W1BGW

How about a pix, Lou? Ed.

"One piece of sad news, Howard Christy whom you were corresponding with, I believe, has died of a heart attack. He has left behind some equipment which his widow desires to get rid of. I have not been able to tag and evaluated the equipment and when I do you will receive a list."

—73 Howard W3LMC

"My model 26 is now running and I expect to have my converter panel finished in about two weeks. I will be on 147.7 mcs wide band FM here in Chicago and a Johnson Viking II on all bands."

—George W9FJO

RYRYRYRYRY

"I was sure glad that Bill was permitted to take the machine that was intended for me. I had mine on the air for the first time Sunday and had quite a round table with W6MTJ, who was my first contact, W6DOU, W6CTH, W6MSG, and W6EV. We are having another RTTY meeting in Oakland, Thursday and it looks like we will have an active gang up here."

—Homer K6EJM

RYRYRYRYRY

"Things are looking up, however, and there even may come a time when I can, or will attempt to contribute to your most excellent magazine. We are interested in formally naming our local group and wonder if you have heard of any objection to the use of the word Teletype in a name."

—Ralph Leland W8DLT

Teletype is a Trade Mark of the Teletype Corporation, and can not be used as a name for any club. Ed.

"I find RTTY very informative but wish that more interest could be stirred up in the Kansas City area. Probably the biggest trouble is the fact that no one has been able to obtain any equipment thru the Southwestern Bell Tel. Co. Such as is done in other areas. I am radio officer for the Johnson County Civil Defense, and would like to set up a two meter RTT net."

—Wilbur E. Goll, WØDEL

Not all of the Bell Systems have equipment such as the 26's which the Pacific Tel. & Tel. Co. did have. Machines can be had from RTTY Inc., when your place on its waiting list comes up. Ed.

RYRYRYRYRY

"Good issue RTTY. I thing subhead should read Saturday and Sunday for Friday and Sunday."

—73 Ed

RTTY regrets the errors in dates of the RTTY SS. Try to do better next time. Ed.

RYRYRYRYRYRY

"The August issue of RTTY just arrived and as usual, all work stopped until I had read it. I particularly liked the first item in the "Tape off the Floor" department. I agree with W6BNB that there is too much time spent in big round tables, too little time in individual contacts. Of course, all of us who grew up with ham radioteletype known how this came to be and some of the reasons why many of the individual contacts might be difficult. Not the least of these would be the opinions of our brother CW and

Fone hams. But what I really like about the item is that it gives you something to think about."

—73 Ted (CMDR F. T. Swift, USNR)

RYRYRYRYRY

"Unfortunately I've not been able to devote the time to get on the air. I've recently re-located in Baltimore and expect to have a new rig in operation shortly. First though is the problem of an antenna suitable for 80 meter operations. In an apartment this can be a problem."

—73 Bob W3MKZ

Can any one suggest a good solution to this problem of Bob's? Moving is not a good suggestion, H.. Ed.

RYRYRYRYRY

"Am building the AEE Terminal Unit but revising the front end to try some of W9TCJ's suggestions. Hope it works out OK, and I think it Will."

—George, W6JJP

IN MEMORIAM

It is with deep regret that RTTY reports the death of

HARRY GREEN, W2VDM

of

White Plains, New York

Harry was well known by many of the RTTY group in that area. He had built equipment including filters and other gear for many of the group.



... W1BGW Es gang, de W1RBF Plainville, Conn. Roger, and I printed everyone well enough to make out all that was said. Roy was a little rough, but I still got him. OK on the trouble Ed is having there. Well, I know the 26 is a quiet machine. I don't mind the noise of my model 12—I just put on the earphones and don't listen to it. Hi Hi. Yes, Phil, I too would like to have that motor boat with the 500 horse power engines! That's the largest one I have ever seen of its type. Say, as an interesting note on our trip to A. C. Quavakotqezl to the steel pier to do a lil dancing, and Tex Beneke's band was there. I remembered that he was a ham, so I went back stage between sets and met him. He's quite a boy—his XYL is also a ham. His call is W2CKD and her call is W2EHR. He carries a complete station around in the trunk of his car. He used to be mobile, but by the time he got the radio gear installed, the car was worn out, and he had to pull it all out again! Hi Hi! So, this is going to have to be my last transmission. I will listen around for one more time, and then I have to do a little baby sitting! Here she comes Phil. W2JAV de W1RBF and the gang. AR SK

... W6AEE de W6BNB. Fine. Excellent copy on Merrill and good guessable copy on Earl Back there in Detroit. Thanks for the report Earl. Am anxious to see if this type of antenna works any better than the old one. We had a lot of fun putting it up this afternoon. A neighbor and his wife and my wife all helped. It was nip and tuck as to whether it would go up in one piece or not. Sure glad the top sections are steel as they almost bent double on the way up. Hi. It sill is not finished. I want to add some stubs to connect in for other bands. Want to make it a couple of half waves in phase on 20 meters a quarter wave on 40, and also a quarter wave on 80. Sounds good anyway. Did you listen on 80 today, Merrill. Wonder if any of the boys locally are using that band. Well Earl, how are we doing now. Am trying to hold the speed down a little here. W8BL de W6BNB. K

... VE2ATC de W3PYW. Roger, fine. Solid that time. Lou. Many thanks. Got solid reception. is good 5 and 9 but the local who was on was taking you out even with Collins mechanical filter cause he was in between your mark and space tones. Say Lou, I will be in Montreal in three or four months for Fifth Comm. session of ICAO. Sure want to get in touch with you! Well Lou, the reason I didn't want to hold you up is that I know there are several W8S and Phil W2JAV will want to work you. They were all on here a few minutes ago.

... W6AEE de W6TRX. Fine Merrill and think that I will be available and was just practicing my CW on a poor Texan. See you soon and 73 for now. Thanks for the call. W6AEE from W6TRX.