BULLETIN of the AMATEUR RADIOTELETYPE SOCIETY

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EDITOR: Clay Cool W2EBZ

START-STOP TELETYPewriter CODE

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NOTE: UPPER CASE H (COMM) MAY BE STOP OR #; SPACING MARKING.
Imagine K6LFK's surprise, upon returning to his North Hollywood home after a short vacation at Lake Tahoe, California, to find an official envelope bearing the monogram of the Amateur Radioteletype Society. Mort Swingler had submitted his photographic entry, among dozens of others, in the nationwide contest among RTTYers celebrating the tenth anniversary of the establishment of the national Amateur Radioteletype organization and the very first FSK and AFSK amateur radio teleprinter communication. Like all contest-minded radio amateurs Mort had participated for the fun of the competition and really did not believe he stood a chance to win an award, or even "honorable mention". You may well fancy his state of mind when he read the letter containing the announcement that he had been awarded First Prize by the contest committee. Several useful pieces of teltypewriter gear were won by LFK, including a perforated-tape synchronous-motorized distributor. A spanning-brand-new Model 26-A has been shipped to him from the Society's headquarters at 38-06 61st Street, Woodside, N.Y. He also received a 14-type perforated-tape transmitter.

A retired Bell-System telephone man, K6LFK has been married eleven years and tells us that the XYL is not a ham. Despite his long association with electrical and electronic equipment Mort is not an old-timer in amateur radio, although he kept abreast of "ham" activities. Mort was bitten by the teltypewriter "bug" less than two years ago but in the intervening time he has managed to accumulate a very respectable collection of gear. Among this collection can be found a Barker & Williamson 5100-B transmitter, 800-watt output power amplifier, 6-meter Conssett and a National 183-D receiver. For mobile work Mort has a Multi-Elmac transmitter and receiver.

His 10' X 20' knotty pine finished shack, built behind the garage, has one sliding 8' X 2' window plus two regular windows, all tastefully "dressed up" with venetian blinds and drapes. For those contests that find the OM hitting the "sack" in the wee hours of the morning Radioteletyper Swingler has furnished the shack with a comfortable double bed. Both 110V and 220V lines are brought into the radio room and there are plenty of outlets and pull-down lamps wired up for locating stubborn troubles which only "act up" when the equipment is operating at standard speeds and cannot be seen when turning the mainshaft by hand. These 27, the first such instruments your Society has "liberated", will be delivered within a week or ten days after the last one has been "spoken-for" by our test-equipment-minded members.

K6LFK uses a telephone company "TWX" teletypewriter with a "home-brewed" terminal unit to convert the received machine-keyed audio signals into the DC pulses required by the teleprinter. Contest-winner Mort is a voracious reader of literature on printing telegraphy, all the way back to the first article on the subject which appeared in QST in February of 1946. He has mulled over the many possible additions to his radioteletype station, such as automatic perforation in tape of message traffic and all the extra gizmos the radioteletype gang have been dreaming up, Mort Swingler is a well-rounded amateur. He finds time, besides his RTTY, to chew the "fat" on 'Phone gear, including the RTTY gang have been dreaming up, Mort Swingler is a well-rounded amateur. He finds time, besides his RTTY, to chew the "fat" on 'Phone gear, including the "combination deal" somewhat similar to the last one, bulletinized to the RTTY gang several months ago. These 37 typewheel page printers will be supplied through your national Amateur Radioteletype organization, complete with Keyboard, Typing Unit, Cover, Table and Table 1.4 Perforated-Tape Transmitter, for $93. They can be furnished only to radio amateurs or prospective radio amateurs who have on file at RTTY headquarters at 38-06 61st Street, Woodside 77, N.Y. a properly-executed copy of the "Waiver of Commercial Intent" (blank form supplied upon request).

27 Stroboscope Test units are now available, identified as Item 286, for $21. They are similar in appearance to the General Radio "STROBOTAC" units and have a similar application. The units consist of a cubical metal box, wrinkle-enameded, having a highly-polished parabolic reflector with a strobotron high-intensity flashing lamp at its focal point. A cord and telephone-type plug permits the stroboscope to be patched into teleprinter circuits. Through internal circuitry this allows the flash to be synchronized with the teletype signals and seemingly stops the high-speed mechanical parts of the printers and tape equipment or allows them to move at a snail's pace. The wire companies utilize them for locating stubborn troubles which only "act up" when the equipment is operating at standard speeds and cannot be seen when turning the mainshaft by hand. These 27, the first such instruments your Society has "liberated", will be delivered within a week or ten days after the last one has been "spoken-for" by our test-equipment-minded members.

350 Carrier Telephone and Carrier Telegraph Filter Inductors at $1.00 each (furnished in minimum quantities of six). The Item 287 Filter Inductors are .75 Henries each and the Item 288 Filter Inductors are .95 Henries. An Item 289 Inductor contains a .005 built-in capacitor and is self-resonant with a sharp peak at 2550 Cycles, the mid-frequency between our standard MARK and SPACE tones. Until now the constructor of RTTY converters operating in the audio frequency range had a choice of using several stages of low-Q coils or one or two stages of 88 Millihenry Toroids. Coils of the midget type unpotted from telephone loading coils. Few of us have had access to the other varieties of high-Q filter inductors; those employing laminations of Mu-Metal and special grades of iron and "Dust Cores" of iron and Permalloy powders. Also, although the physically-larger inductors demonstrate a higher Q, they have not hitherto been available to the Radiotypist. This has tended to stifle the filter-building enthusiasm of the RTTY gang. A large number of Carrier Filter Inductors of other values is scheduled for release in the near future. Your Society will publicize their availability when the happy day rolls around.

23 Damaged Bulletin Page Printers useful for parts at $12 each. Almost complete and contain motors, covers (glass windows broken on some), etc. The selector mechanism is similar to that used in Model 26 and several other Tele-type machines. The polished black-painted base casting is broken on some. May be possible to build one perfect printer from two of these machines with enough spare parts left over to keep the regular station printer in repair.
NEWS FROM "DOWN UNDER"

You must surely be thinking I have passed out of circulation, but not yet! I am glad to be able to tell you that I have now some FSK privileges, tho' not for 14 or 21 MC/S. These last 12 months have been vy trying, I have not had much success with our NZART - they appear vy adverse to FSK somehow! Ah me! For FSK we now have 3700-3800 KC, 7100-7200 KC, 26960-27230 KC & 29000-29700 KC. AFSK is available above 29700 KC "without restriction"! I trust you received my letters OK and that everything is going well with you people. At some later date I will write the Society at greater length on my RTTY activity - I shall not forget you.

Have worked Jack, W1BGW RTTY, MAB out - FSK in, on 14130 KC/S several times. Have enjoyed some 48 contacts with W9BP, W9DPY, W6AEE, W6CG, W6OWQ, W6WIS, W6FDJ, W6NYF, W9TGC, W1BGW, W2JAV, VE7KKX, W9WRO and W5HZF - all on 20 mtrs MAB1 (space only, which I found best) Rig 813 - 100 watts - 1/2 wave dipole - modified convertor, using 3 discriminator stages, or more rightly, selective amps, 6SN7s (vy similar revised W2BFD). Receiver R107, printers new 400-series, used 26. I have not succeeded in "procuring" any more of ur currency yet, but I hope - one day to arrange a sub to ur fine ARTS bulletin. RTTY dope is very scarce down here (like most things!) & I value every item about it which I can rake up.Surely RTTY is a truly wonderful branch of Amateur Radio; indeed all good hams are RTTYers!

I'm hoping to acquire a governed motor to suit the 400 so that I can run it from a petrol plant away on vacation! I doubt if I will tackle RTTY as a mobile just yet though! Mayhap I could stabilize the petrol engine but.... its not a very smooth-running affair (750 w from an old NE gene). Have FSK VFO now on 1800 KC with doublers - was intended be VFO/XTAL beat type but FSK freqs different to my expectations! Operate 7100 & 27200 KC/S FSK & MAB on 20 mtrs as desired. Works OK, less QRM - but 20 is full of QRM! Vy 73 for present.

Bruce Rowlings, ZL1WB

(EDITOR'S NOTE:- Amateur Radioteletype Society is, naturally, immensely gratified that the long months of preparation to get this first printer to Oceania were so productive of results. We hope to be able to furnish many more DX RTTY contacts for our members. Correspondence with the Radio Amateur societies of practically every major country have been carried out by your RTTY headquarters for a number of years. In each case the moves are the same: a "go-getter" in the particular country is stimulated into action by the literature we furnish him and he goes to work on his national amateur group, government regulating body, etc. When privileges are obtained then the struggle usually centers around his ability, or rather inability, to obtain U.S. currency. The problem is an especially difficult one for countries in the "Sterling Area".)
The following table lists pertinent data regarding the correct levels and impedance matches required in operating the unit.

1. INPUT REQUIRED FOR LIMITING: .5 volt RMS.
2. OUTPUT OF INPUT FILTER FOR 2.0 VOLTS INPUT: 1.7 to 1.8.
3. FIRST LIMITER PLATE VOLTAGE: 45 (pin 8).
4. FIRST LIMITER SCREEN VOLTAGE: 35 (pin 6).
5. SECOND LIMITER PLATE VOLTAGE: 50 (pin 5).
6. THIRD LIMITER PLATE VOLTAGE: 100 (pin 6).
7. OUTPUT LIMITER TRANSFORMER ACROSS 500 OHM WINDING: no filter load - 4.0 RMS.
8. WAVE SHAPE ACROSS SECONDARY LIMITER OUTPUT TRANSFORMER: should not change with and without filter load and should

- RESTRICTED
- EDITOR: CLAY COOK

ACROSS DIODE LOAD: 12 volts DC with mark and space pots maximum.
11. OUTPUT OF VOLTAGE AMPLIFIER MEASURED AT MARK AND SPACE JACKS WITH POTS AT MAXIMUM: 35 to 40 volts RMS (check with scope - should be sinusoidal when mark and space pots are reduced so that limiting does not occur).
12. PLATE VOLTAGE OF VOLT AMPLIFIER: 125 volts.
13. ACROSS DIODE LOAD: ± 12 volts DC with mark and space signals (pins 2 and 5).
14. PLATES OF FIRST DC AMPLIFIER: Swings 0 to ±60 volts with respect to ground for mark and space signals (pins 2 and 5).
Weight, about 150 lb.
Cabinet RW10420, 28" h x 21" w x 15" deep.

Mixer Unit RW50212 contains 2 identical de modulators to separate mark and space tones and combine the receiver outputs at dc.

Power and Keyer Unit RW20345 (ER20340) contains regulated power supply and dc amplifier for operating output relay, and a Tone Keyer.

Filter Panel RW53215 contains input, mark, and space filters for each demodulator channel.

Manual: NAVSHIPS 900.078

Model FRS (FSO) Frequency Shift Converters demodulate FS K RTTY signals. It operates at audio frequencies, and may be used with any stable communications receiver with BFO. FSK, employing current limiting and AVC and with frequency and space diversity provide an improvement of 40dB over a make-and-break telegraph channel.

THREE. Block diagram shows arrangement of receiving system. Receivers are fed by direction antennas, such as fishbones or rhombics, spaced 5 or more wavelengths apart.

Mixer Unit has 2 identical demodulator channels up to the point of combining the detector output. Tones are fed into the input filter, which has bandpass of 1600 to 3600 c. The two tones are then fed to limiters. The constant output of limiters is fed thru isolating attenuators to mark and space filters. A stage of voltage amplification after filters drives the rectifiers. The mark and space rectifiers give d-c across the load of opposite polarity. The polar d-c output of the mixer unit feeds the d-c amplifier in the Power and Keyer Unit. (See ARTS 47 for schematic and theory of RW20345 Power Unit.)

Kleinschmidt Labs., Inc has been acquired by Smith-Corona, Inc.

K2RTF...am using a 522 and model 12. I work as a technical writer... Arthur Marko

MENTION YOUR CALL SIGN when writing.

The SOCIETY reserves the right to refuse or cancel membership. For (1) conduct unbecoming an amateur, (2) conduct detrimental to the society or amateur RTTY, or (3) other reasons deemed sufficient by officials of the SOCIETY.

Some Multiplex Auto Controls Type 1A have become available. Now what are the things good for?!

K2CSI is getting out on 2M with a 26. Joe is active in Yonkers, N Y CD.

THIRD ANNUAL IRE-TT NYC DINNER

The TT dinner will be held on Monday evening, March 18, 1957. Please indicate if you plan to attend so the committee can complete plans, and so that you will be notified of the final details.

SSE IRE DINNER 1957

The SSE dinner will be held Tuesday, 19 March 1957 at the Hotel Shelbourne, 37th St and Lexington Ave, New York City. Contact W2AMB, Fred Huff for details and reservations.

1600 RPM Sync Motor Speed Data

For nominal 365 operations per minute, signaling frequency is 22.7 dot cycles per second.

MODEL 14 and 15 printers and reperforators:
Gear ratio: 30:1
Free speed, revg shaft: 420.0

MODEL 14 transmitter-distributor:
Gear ratio: 44:9
Free speed, revg shaft: 368.2

GOVERNED MOTOR SPEED DATA

For Target 10, 10 spots, 3650rpm
MODEL 14 and 15 printers and reperforators:
Motor speed: 2102.4
Gear ratio: 35:7
Free speed: 420.5 rpm

MODEL 14 transmitter-distributor:
Gear ratio: 40:7
Free speed, revg shaft: 368.101

TELETYPExE CORPORATION Bldgs.

Teletype Corp plans to build a multimillion dollar center on a 105-acre site near Mile, Ill., Chicago suburb. Ground has been broken for a 500,000 sq ft plant. Also to be built are a 120,000 sq ft and a 170,000 sq ft administration are a 120,000 sq ft research center, and a 170,000 sq ft administration building. The project will consolidate Teletype's operations in the Chicago area, now consisting of 7 plants and the main office at 1400 Wrightwood Avenue.

WRITE for list of equipment.