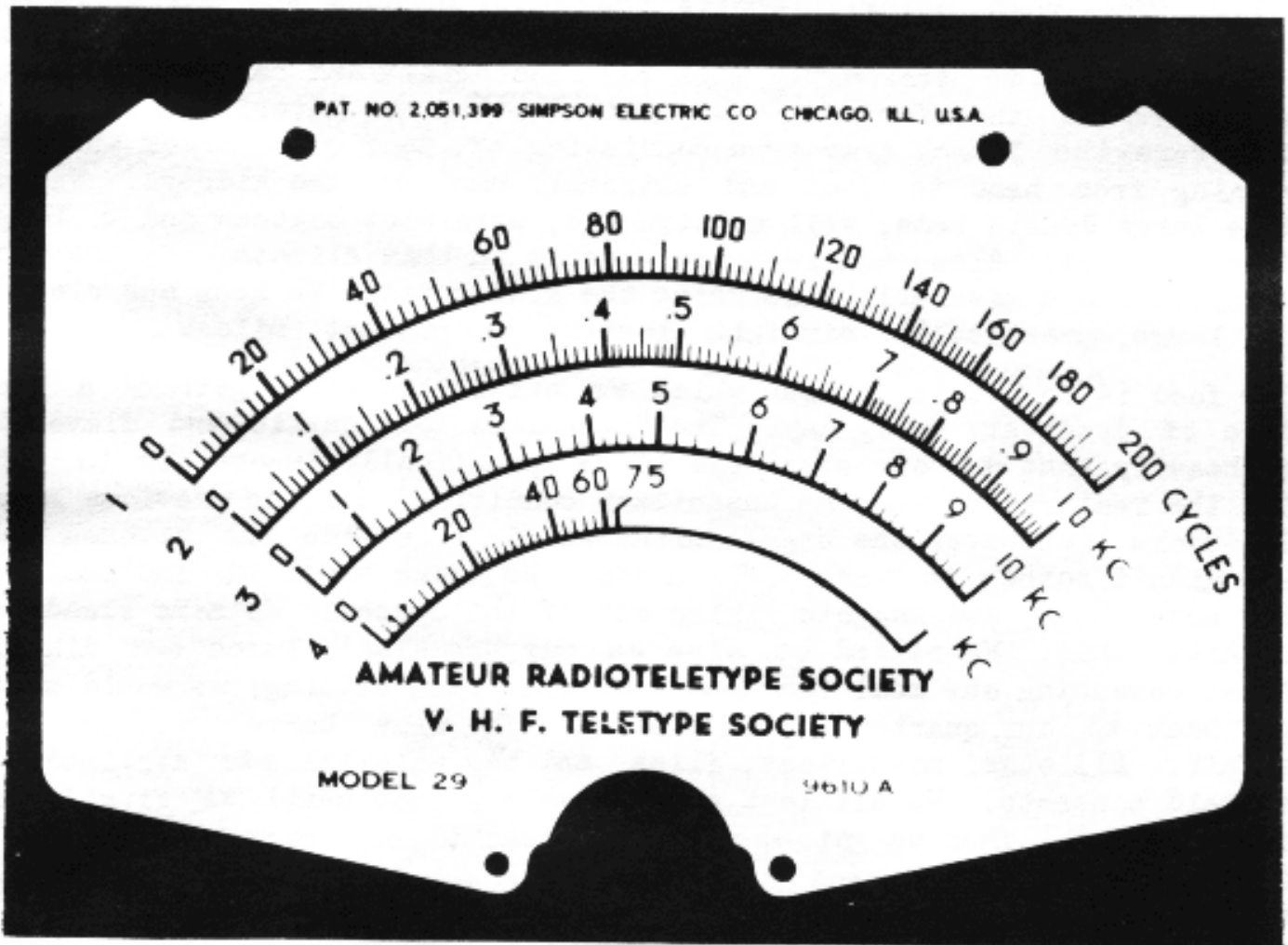


# A R T S



# 42

## AUGUST 1956

A REPORT FROM A TELETYPE SUPERVISOR IN MILITARY SERVICE

QUANG TRUNG, VIET-NAM: Since last visiting you I've been on the move so much that my head was spinning. I have been stationed in Indo-China for the last ten months. Two more months and then on the plane via Europe.

The weather is now in the dry season and in just another month or so, comes the rainy season. Now the daily temperature runs on an average of 80 to 95, but one gets used to it. Roads in this area have been unbearable on the lower part of the body: holes in the road from two inches to two feet, bad vehicle springs and shocks, rotten seats etc. Its all part of the job. Billets are army-type and not too bad, single room type. No showers that function properly, nor hot water when they do! We normally take a bucket shower, that is, by pouring cold water over our heads after lathering up. Water is delivered to our quarters via a water truck that makes the rounds to fill up our seven 55-gallon drums daily. The rust quickly spoils the water because the barrel is not painted on the inside. Drinking water must be boiled for a minimum of twenty minutes to thoroughly kill all bacteria. And believe me there are plenty of the aforementioned contaminating the water. At first our beds were the French Army type consisting of four flat truck springs, running from head to foot and extremely hard on the kidneys. We now have large double beds, well constructed, with slat bottoms and a large foam mattress. Sleep and rest are a must in this climate. In the past everyone had a miserable time using the French cots. We keep our clothes in large, practically airtight lockers to prevent mildew.

Our food is cooked in a mess which we originated after getting a good dose of dysentery every day. The Vietnamese love garlic and flavor it so heavily that to our standards it is practically impossible to eat. But the real reason was the unsanitary conditions in the previous mess. The cooks (whenever the urge) urinated right outside the kitchen door and didn't bother to wash their hands. We broke bread at one meal and saw ants, bugs, and maggots flying out of the center. No more bread for us after that. We relied on wine as our breakfast, lunch and dinner. After consuming our meal (one quart of wine each sitting) we would stagger back to our quarters quite pleased. \*The wine barrel was an open affair. All bugs, mosquitoes, flies, and bug material was strained out of said contents. We all lost considerable weight until we finally got our own mess. Then we gained until we reached our normal weights.

Our uniforms have been cut down (short sleeves and trousers) to facilitate ventilation and coolness. Prices for a steak dinner in town run from \$10 to \$15 at the legal exchange rate of 35 piastres to \$1. Illegal exchange rate is 77 piastres to \$1, but of course we do not delve in the black market. Prices are very exorbitant. It is hard to find reasonable places to frequent in our spare time. Women, bah! It will be good to be in Europe again and see something that acts, walks, and talks like a woman. Of course there are some, but mighty few. So much for that.

When I leave here, I expect to go by Air France to Rome, thence to Frankfurt for fifteen days, on to Copenhagen for three days, by ship to Le Havre for one day, to Southampton and London for two days, and then home.

Teletype? My work here is definitely out of the communications field, my being a clerk typist. It's some joke and I feel pretty bitter about it. Well, in any case there should be some justice in the army, especially about poor Teletype supervisors who are misplaced. It pleases me to know that you have your own rig. I may be in line to get myself RTTY if price is fairly reasonable. I'll wait until I get home in 3 months.

(Name withheld to prevent embarrassment of correspondent and his service)

FINAL TABULATION OF ARMED FORCES DAY CONTEST RESULTS SHOWS INCREASED PARTICIPATION THIS YEAR. IN A NEW FEATURE OF ARMED FORCES DAY, THE MILITARY-TO-AMATEUR RTTY TEST, NAVAL RADIO WASHINGTON NSS MADE 35 CONTACTS WITH AMATEUR STATIONS ON 40 AND 80 METERS AS FOLLOWS (▲INDICATES CONTACT ON BOTH BANDS)

W1AW	K2HHJ	W3KYR	W9NOE
W1BDI	W2JAV▲	W6AEE	W9TCJ▲
W1BGW▲	W2KYN	W6FDJ	W9VOK
W1CWG	W2PBG	W6WIS	W9WMR▲
WLFGL▲	W2RTW	W8DVL	W0BP▲
K1NAI	W2VLL	W8SWZ	W0FQW▲
W1RBF	W3FYZ	W9GRW	VE3BAD

THE RTTY MESSAGE BROADCAST BY THE ARMY, NAVY, AND AIR FORCE WAS COPIED BY 159 INDIVIDUALS. PERFECT COPY WAS SUBMITTED BY 105 OF THESE. IN THE LISTING BELOW, ▲ INDICATES COPY OF 2 SERVICES.

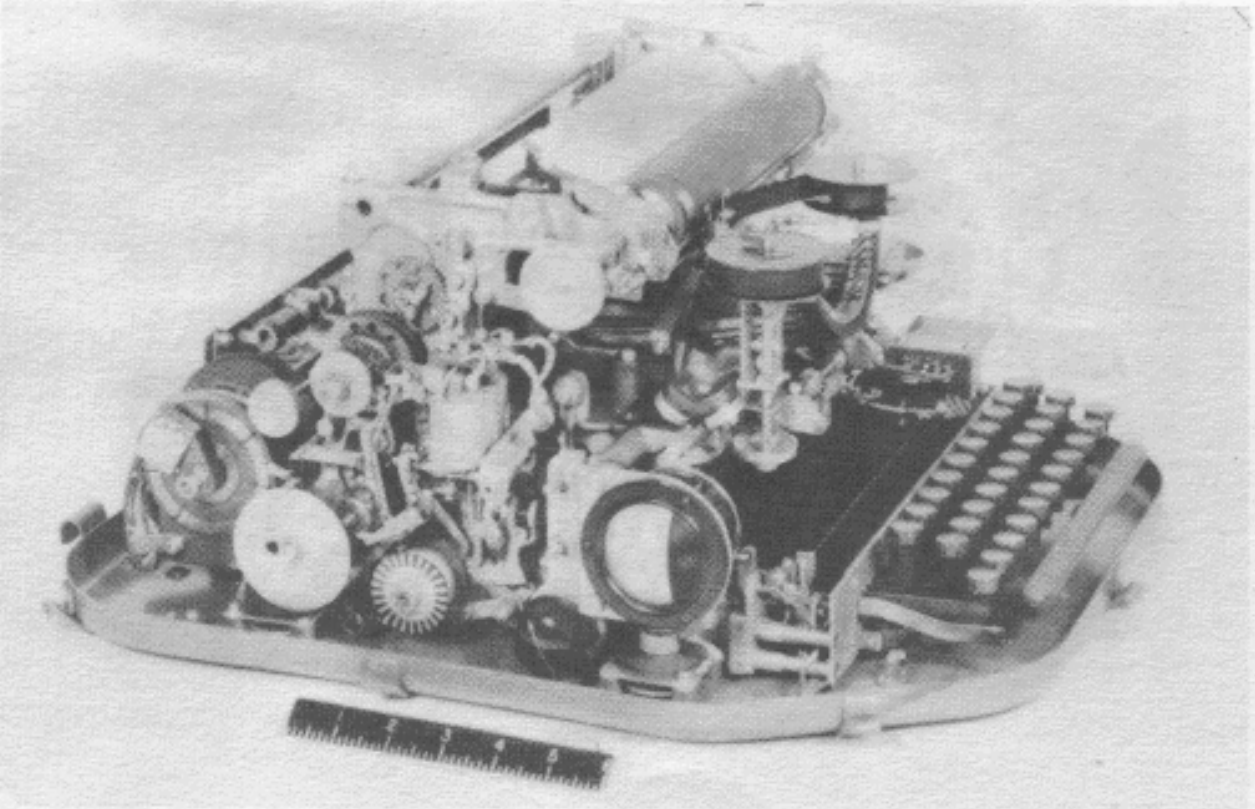
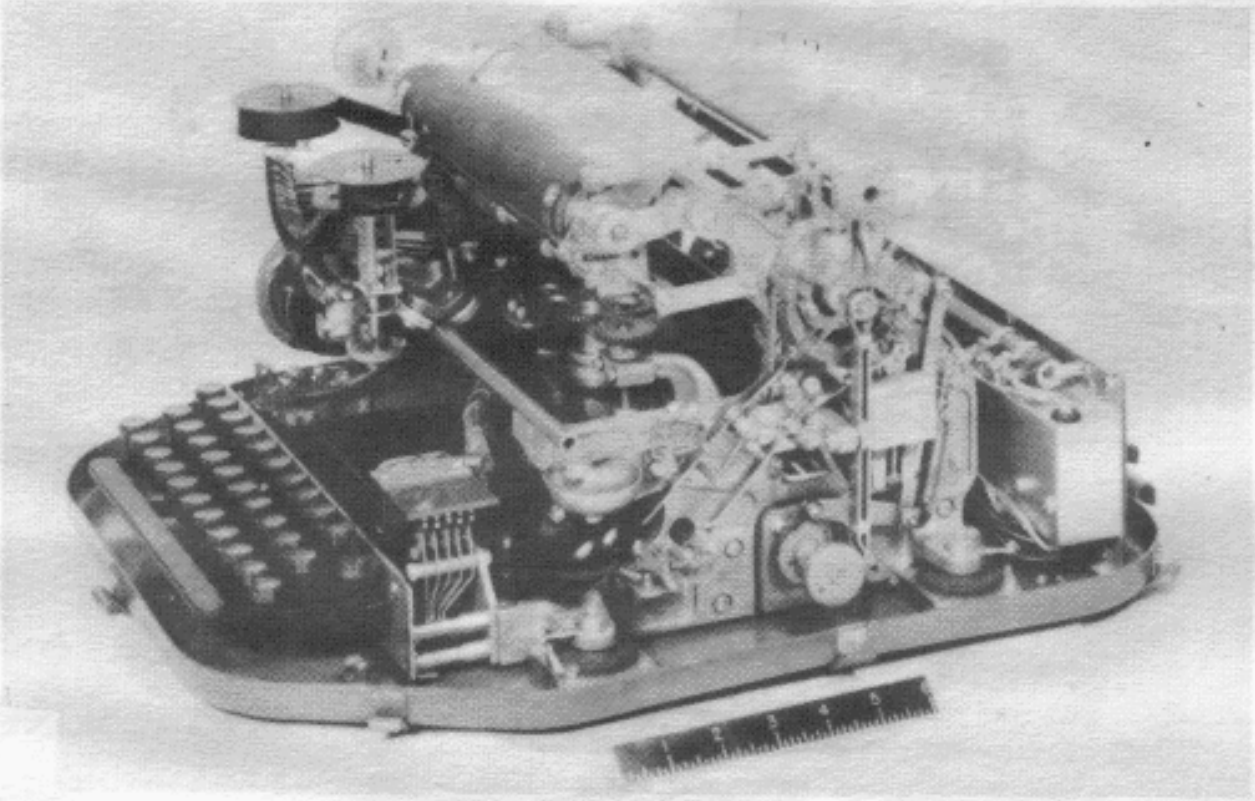
W1BDIA▲	W4PFO	W6EJM	W7IXD
W1CLF	W4PHL	W6FCX	W7JFU
W1RBF▲	W5DGZ	W6FSL	W7KQX
W1WEW	W5EVO	W6FZC	W7KWB
W1WPR	W5JBW	W6HXQ	W7NAA
W1ZQM	W5TJE	W6ILW	W8BNL
W2DOB	W5VJP	W6IZJ▲	W8GPR
W2DXD▲	W5WAH	W6JJP	W8HWP
W2GHH	W5YMT	W6LFK	W8SWZ
W2HHJ	W6AEE	W6MSG	W9GRW
W2JAV▲	W6AJH	W6NR▲	W9GVN
W2RMB	W6ASJ	W6NSS	W9IHO
W2OEM	W6BRY	W6OGG	W9OCV
W3CRO	W6BYS	W6OUR	W9TCJ
W3FYZ▲	W6CAP	W6OVZ	W9VNZ
W3LWQ	W6CBF	W6OWP	W9VVF
W3MHD	W6CBX	W6PGP	W9ZBK
W3SSL	W6CG	W6PYM▲	W0BLH
W3YKF	W6CLW	W6RSJ	W0CTH/6
W3YMA	W6CNH	W6SCK	W0CST
W3YRB	W6CQI	W6SCR	W0FQW
W4AIY	W6DNT	W6VPC	W0IPQ
W4FJ	W6DNX	W6VVF	W0JHS
W4HNF	W6DOW	W6YDK	W0LFH
W4IUQ	W6DQI	W6ZGC	W0LHP
W4NRY	W6EER	W7CSC	W0UPE
W4OXX▲	W6EGZ▲	W7FCN	VE3BAD

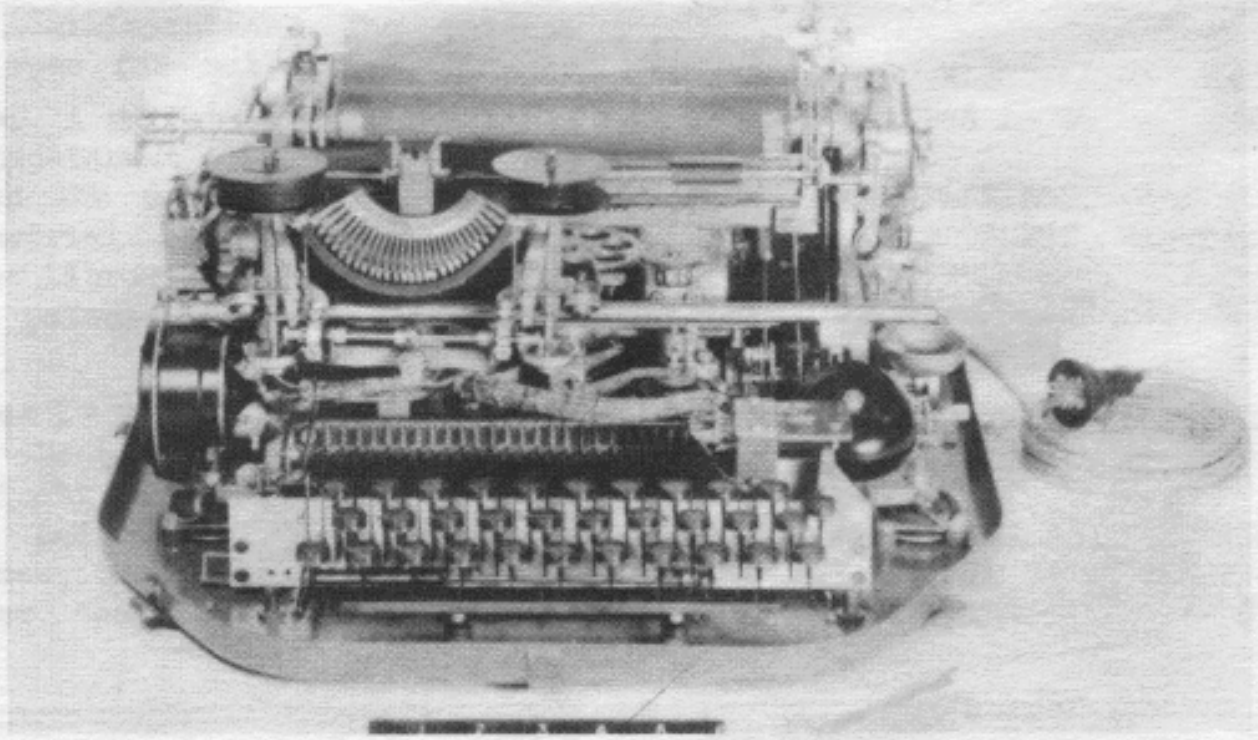
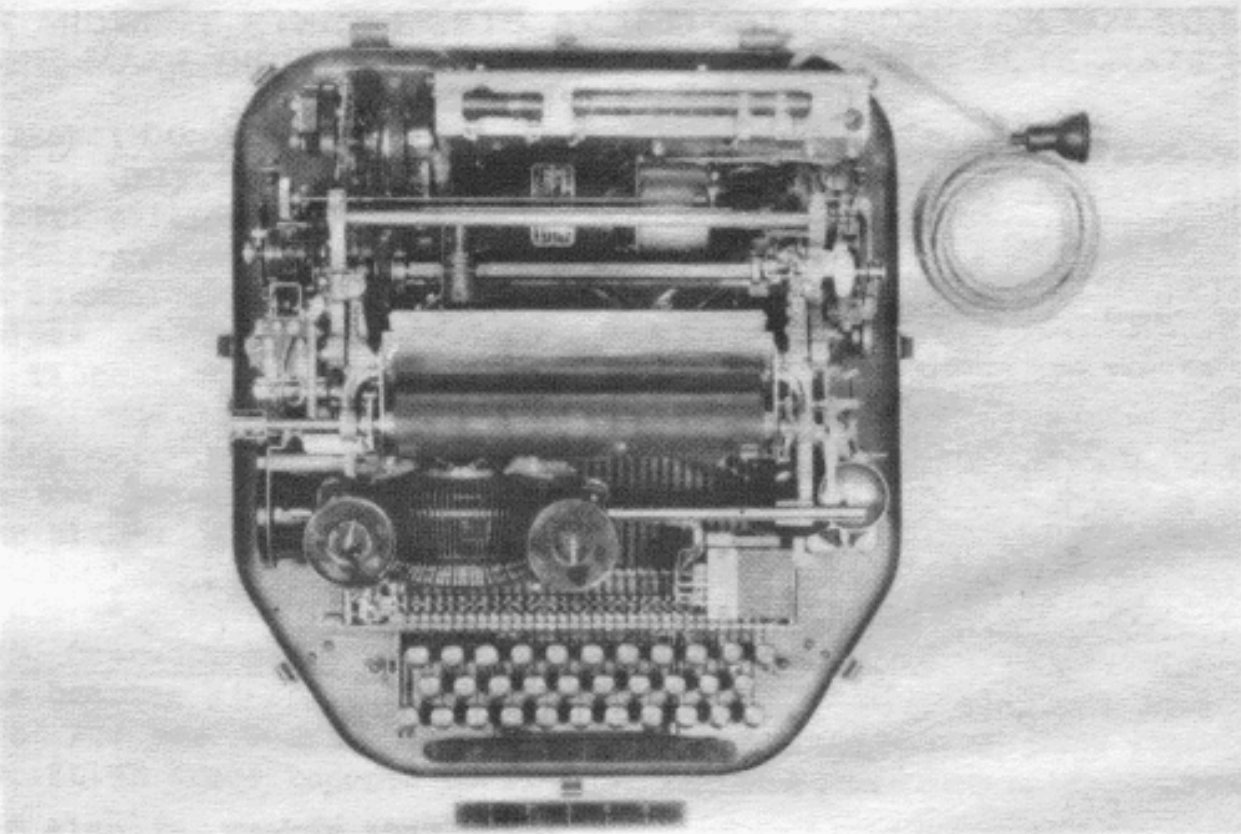
J. J. DURAN  
 DON W. WEST  
 THOMAS R. DELUCA  
 RICHARD P. STAUFFER  
 DEAN J. FRAZER  
 G. M. HILTON, JR  
 G. E. BOOTH  
 KENNETH GRAY  
 N. A. PARTRIDGE

JOHN F. DURAN  
 J. HALAPOFF  
 GREG G. ROSE  
 JOSEPH W. STEVENS  
 FRANK C. WHITE  
 J. E. BLANCHETT  
 DOUGLAS H. FOX  
 M. H. CALDWELL, JR

C. W. CHRISHOLM  
 A. L. CHARLTON  
 ROY F. LAVIOLETTE  
 R. M. TODD  
 N. D. ROSENBERG  
 F. C. WHITE  
 K. W. TUSKIND  
 W. T. PHILLIPS, JR  
 R. A. MYERS

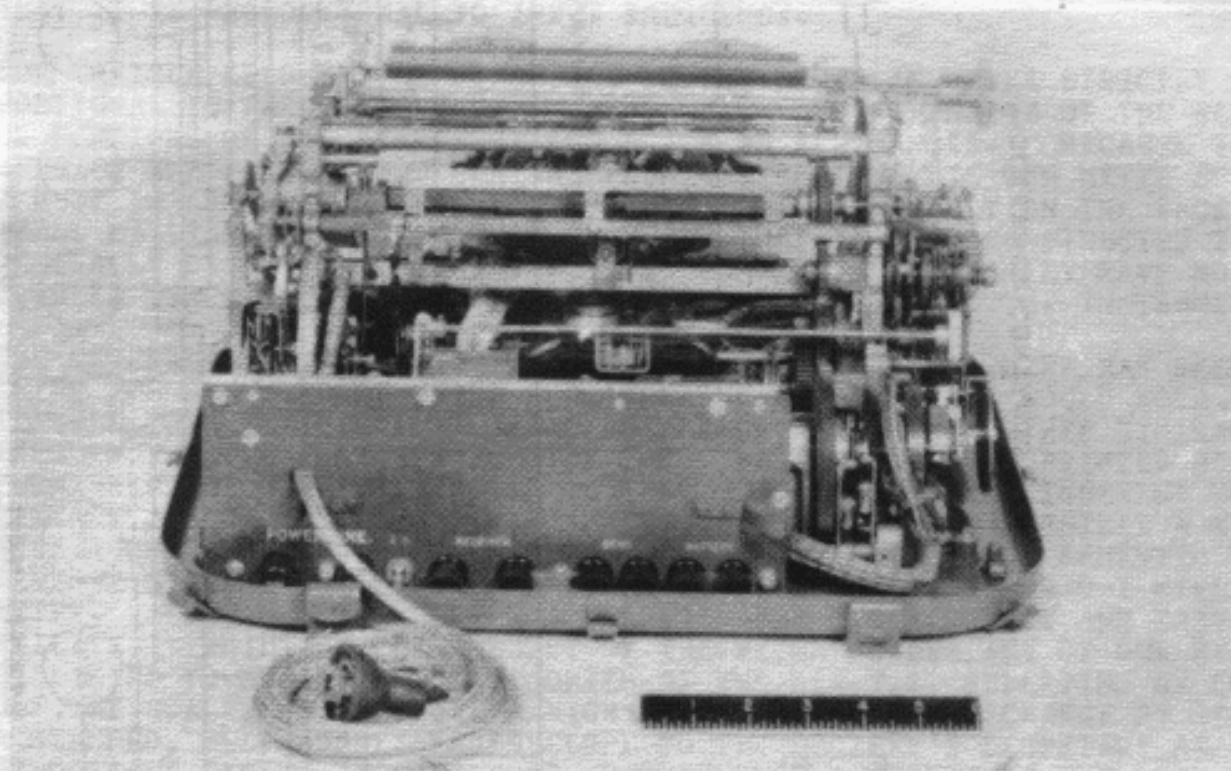
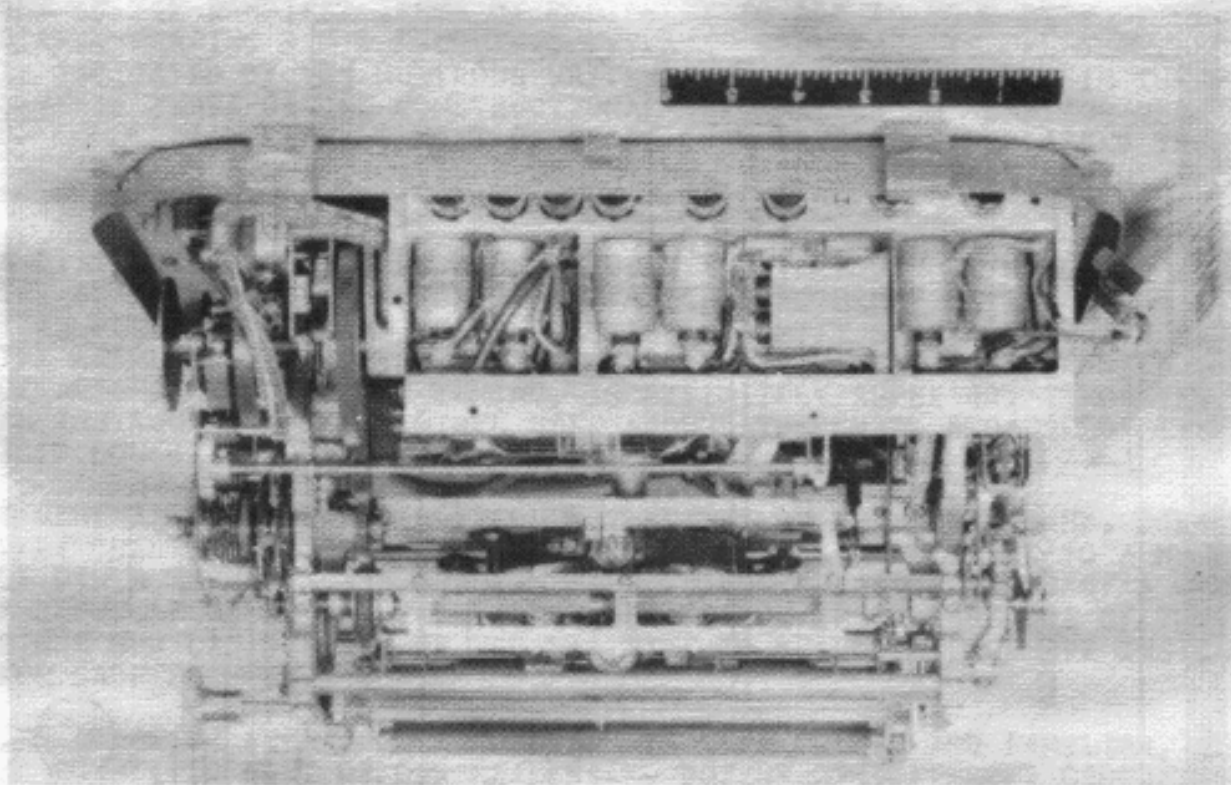


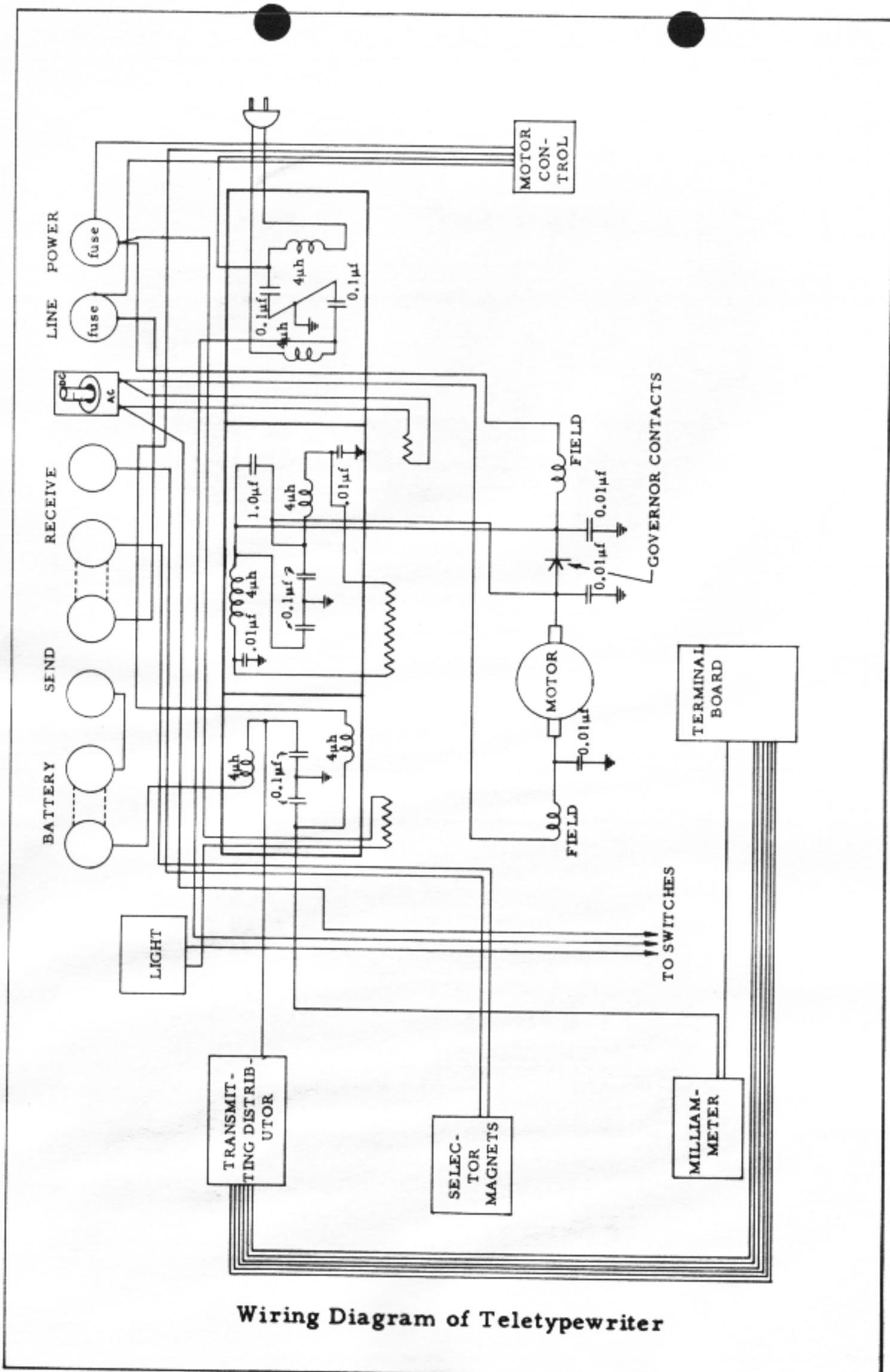




SOLE AGENTS FOR ALL RADIO AND TELEPHONE EQUIPMENT IN PORTUGAL AND  
ADJACENT COUNTRIES: TELEGRAPHIC EQUIPMENT, BATTERY, CABLES,  
CABLE WORKS, PUBLISHED AT 103 N. 7TH ST. NEW YORK, N.Y.  
SUBSCRIPTION RATE—\$2.00 A YEAR (11 ISSUES) SINGLE COPIES 15¢

MAJOR DIVISION OF INVESTIGATION





Wiring Diagram of Teletypewriter



## THE GENERAL-PURPOSE AUDIO FREQUENCY METER IN THE AMATEUR RTTY SHACK

ONE OF THE HANDIEST ITEMS OF EQUIPMENT TO ADD TO YOUR RTTY SETUP IS A DIRECT-READING AUDIO FREQUENCY METER. THAT THIS IS FULLY APPRECIATED IS INDICATED BY THE NUMEROUS WRITEUPS THAT HAVE APPEARED IN THE PAST SEVERAL YEARS GIVING CONSTRUCTIONAL INFORMATION ON "AMATEUR VERSIONS" OF COMMERCIAL GEAR. MOST OF THOSE THAT HAVE BEEN PUBLISHED THUS FAR ARE AMATEUR SIMPLIFICATIONS OF THE NOW-FAMOUS MILITARY PROTOTYPE TERMINAL UNIT AN/FGC-1.

A DISTINCTION SHOULD BE MADE BETWEEN THE "FREQUENCY INDICATOR", SUCH AS THE AN/FGC-1 UNIT MENTIONED, AND A TRUE FREQUENCY METER. FOR A SPECIALIZED PURPOSE, SUCH AS KEEPING AN AMATEUR RTTY SIGNAL TUNED IN PROPERLY, THE FREQUENCY INDICATOR, WHICH SHOWS THE DIRECTION AND MAGNITUDE OF THE DEPARTURE FROM CORRECT TUNING, IS DEFINITELY SUPERIOR. HOWEVER SUCH AN INSTRUMENT HAS FEW OTHER USES AROUND THE SHACK BECAUSE OF ITS SPECIALIZED CONSTRUCTION.

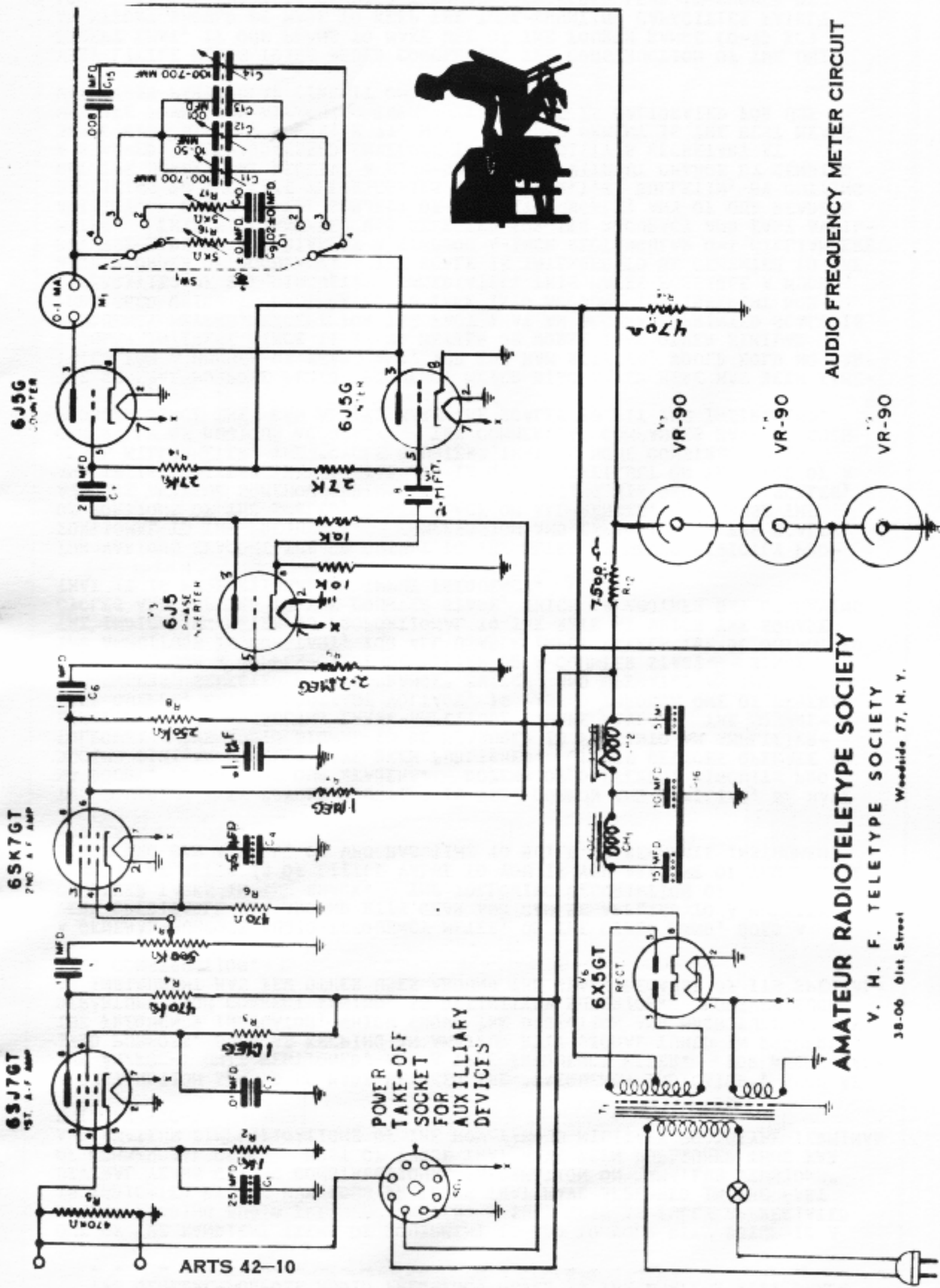
A GENERAL-PURPOSE AUDIO-FREQUENCY METER, ON THE OTHER HAND, DOES A VERY CREDITABLE JOB AROUND RTTY GEAR AND CAN BE APPLIED TO A MULTITUDE OF OTHER TASKS IN THE SHACK. THE FOLLOWING DESCRIPTION OF A GENERAL-PURPOSE AF METER IS OF LITTLE VALUE TO YOU IF YOU ARE ONE OF THOSE RARE BIRDS WHO CAN AFFORD, OR WHO HAS TIME TO BUILD, A SEPARATE INSTRUMENT FOR EACH PURPOSE.

THE SQUARING TYPE "CYCLE-COUNTER" IS VERY COMMON AND FAMILIAR, WE HAVE NO DOUBT, TO MOST OF OUR READERS. DOZENS OF DIFFERENT CIRCUITS PRODUCING SIMILAR RESULTS HAVE BEEN PUBLISHED. THESE DEVICES OPERATE AS FOLLOWS: THE AUDIO SIGNAL TO BE MEASURED IS FED INTO AN AMPLIFIER-LIMITER SYSTEM PRODUCING LARGE-AMPLITUDE SQUARE WAVES. THE SQUARE-WAVE OUTPUT, HAVING CONSTANT VOLTAGE, IS PASSED THROUGH ONE OF SEVERAL CONDENSERS, SELECTED BY THE "RANGE" SWITCH, AND OPERATES AN INDICATING METER THROUGH A COPPER-OXIDE RECTIFIER OR A COUNTER STAGE. SINCE THE AMPLITUDE IS CONSTANT, FOR ALL USABLE INPUT LEVELS THE DC OUTPUT TO THE INDICATING METER IS PROPORTIONAL TO THE RATE AT WHICH THE SQUARE CYCLES ARE APPLIED TO THE COUNTER STAGE, WHICH IS ANOTHER WAY OF SAYING THAT IT IS PROPORTIONAL TO INPUT FREQUENCY.

FOR VARIOUS REASONS THE DC OUTPUT TO THE METER IS NEVER STRICTLY PROPORTIONAL TO THE FREQUENCY. COMPRESSION AND EXPANSION OF THE SCALES, OR PORTIONS OF THE SCALES, TAKES PLACE ON ALL RANGES. BECAUSE THE AVERAGE AMATEUR SOMEHOW SHRINKS FROM CALIBRATING HIS OWN METER SCALES, AND IT IS ADMITTED THAT A NEAT JOB IS QUITE DIFFICULT ON THE FACE OF A SMALL MILLIAMMETER, THE "CYCLE COUNTER" THAT IS HOME CONSTRUCTED IS GENERALLY OF DUBIOUS ACCURACY. THE COMMERCIAL COMPANIES HAVE NO SUCH PROBLEM SINCE THEY CAN ALWAYS MAKE THE SCALES TO FIT THE INSTRUMENT.

THE GENERAL-PURPOSE AUDIO FREQUENCY METER DIAGRAMMED HERE HAS BEEN TIME-TRIED FOR A NUMBER OF YEARS AND, FOR THE HAM RTTY'ER, WOULD HOLD NO PARTICULAR INTEREST SINCE IT IS NO BETTER OR WORSE THAN OTHER SIMILAR FREQUENCY METERS, EXCEPT FOR THE FACT THAT AN ACCURATE PRINTED SCALE IS FURNISHED WHICH IS CALIBRATED TO TAKE INTO ACCOUNT THE INHERENT NON-LINEARITIES OF THE CIRCUIT. IMMEDIATELY THIS MAKES POSSIBLE A MUCH HIGHER ORDER OF ACCURACY. THE SCALE IS INTENDED TO BE CEMENTED TO THE REVERSE SIDE OF THE DIAL OF A SIMPSON 4-INCH RECTANGULAR 0-1 MILLIAMPERE METER. THIS MILLIAMMETER WAS SELECTED FOR ITS ACCURACY AND EASY AVAILABILITY. WHILE ON THE SUBJECT OF THE METER SCALE; ANY OF OUR READERS DISLIKING TO MUTILATE THEIR COPIES OF THE A.R.T.S. BULLETIN, BY CUTTING OUT THE SCALE, MAY RECEIVE A HIGH-GRADE COPY WITHOUT CHARGE BY SENDING A STAMPED, SELF-ADDRESSED ENVELOPE TO THE SOCIETY'S SECRETARY AT 38-06 61ST STREET, WOODSIDE 77, N.Y. RUBBER CEMENT IS THE BEST MEANS WE HAVE FOUND FOR ATTACHING THEM. THE SCALE IS CALIBRATED FOR USE WITH THIS PARTICULAR CIRCUIT ONLY.

VERY LITTLE NEEDS TO BE ADDED CONCERNING THE CONSTRUCTION OF THE UNIT EXCEPT THAT, IF ONE PLANS TO MAKE USE OF THE FOURTH RANGE (0-75 KC) AN EFFORT SHOULD BE MADE TO KEEP THE TUBE-SHUNTING CAPACITIES FAIRLY LOW. IF THE INPUT IS CARRIED THROUGH A SHIELDED LEAD IT SHOULD BE SHORT AND OF THE LOW-CAPACITY MICROPHONE CABLE VARIETY OR THE FOURTH RANGE WILL BE INACCURATE.



ARTS 42-10

POWER TAKE-OFF SOCKET FOR AUXILIARY DEVICES

AUDIO FREQUENCY METER CIRCUIT

AMATEUR RADIO TELETYPE SOCIETY

V. H. F. TELETYPE SOCIETY

38-06 61st Street Woodside 77, N. Y.



ALTHOUGH A POWER SUPPLY IS SHOWN AND DESIRABLE, IF THE INSTRUMENT IS TO BE PORTABLE, THE REQUIRED VOLTAGES COULD EASILY BE "BORROWED" FROM ANY OTHER SOURCE IN THE HAM STATION. THE VR TUBES ARE ESSENTIAL, ALTHOUGH THE MINIATURE EQUIVALENTS MAY BE SUBSTITUTED. A SINGLE 6SN7 CAN REPLACE THE SEPARATE TRIODES IN THE COUNTER STAGE IF PREFERRED. SEVERAL VERSIONS OF THIS FREQUENCY METER HAVE RECENTLY BEEN CONSTRUCTED USING MINIATURE TUBES WITH IDENTICAL PERFORMANCE.

CALIBRATION IS OF THE UTMOST SIMPLICITY. A KNOWN FREQUENCY AT OR NEAR THE HIGH FREQUENCY END OF EACH RANGE IS APPLIED TO THE INPUT AND THE CALIBRATING ADJUSTMENT FOR THAT RANGE CORRECTED UNTIL SCALE READING IS CORRECT. THE CALIBRATION CONTROLS FOR THE TWO LOW FREQUENCY RANGES ARE VARIABLE RESISTORS WHILE ADJUSTABLE CONDENSERS SERVE THE SAME FUNCTION ON THE TWO HIGH FREQUENCY RANGES.

INPUT SIGNALS OVER 2.5 VOLTS OF ANY WAVESHAPPE WILL INDICATE CORRECTLY. THE GAIN CONTROL AIDS IN VERIFYING THAT SUFFICIENT INPUT FOR ADEQUATE SQUARING IS BEING APPLIED. AS GAIN IS TURNED UP FROM ZERO THE METER READING WILL INCREASE TO A MAXIMUM AND THEN DROP SUDDENLY WITH FURTHER ROTATION OF THE CONTROL. THE HIGHER INITIAL PEAK IS THE REGION OF INADEQUATE INPUT.

RANGE TWO, 0-1000 CYCLES, IS VERY USEFUL FOR SETTING TRANSMITTER SHIFT AND THE TYPICAL METHOD OF MAKING USE OF THE INSTRUMENT (AS IF MOST OF YOU DIDN'T KNOW!) IS TO TUNE IN YOUR OWN SIGNAL IN THE RECEIVER AND ADJUST THE BFO TO ZERO BEAT. THEN SHIFT THE TRANSMITTER TO SPACE AND YOUR METER SHOULD INDICATE 850 CYCLES IF YOU ARE USING STANDARD SHIFT.

### Standardized Teleprinter Keyboard Recommended by W. U.



New standard key layout eliminates £ and %, places ¶ on upper-case F on tape keyboards, and ('), #, (,), (.), in same positions on both tape and page keyboards. Blank key perforates feed holes



Keyboard arrangement used many years with tape teleprinters, which needed no carriage-return or line-feed functions. Keys S, F, (.), N, M, =, were unlike page teleprinter keys

The need for systemwide compatibility of all teleprinter keyboards became apparent with the introduction of page printers for customers' tie lines and particularly following consummation of the Postal-Western Union merger in 1943. Interchange of traffic between teleprinters with nonmatching keyboards depended on a one-way tape-to-page translator or manual retransmission.

The keyboard layout recommended was essentially

a Western Union page type with bell signal on "J" but included a "¶" on upper case "F". The purpose of "¶" is to facilitate original "punching" of tape on perforator or tape teleprinter keyboards, and ensure recognition of the paragraph on messages received on tape printers. Since tape or page reception of messages originating on page teleprinters is not facilitated by "¶", this character will not be installed on existing page printers.

**W8NIY ROLFE UTS HAS BEEN WORKING ON THE W2BFD JUNKEYBOARD. IT IS THE ONE MISSING LINK IN HIS EQUIPMENT ... W2EHW MURRAY COHEN, 2078 WALLACE AVE, NEW YORK 62 WANTS A MODEL 26, COMPLETE OR COMPONENTS. HE HAD A 14 BUT DID NOT CARE FOR IT TOO MUCH. MURRAY HAS A PANEL READY TO GO, BUT NEEDS THE PAGE PRINTER... W6BNB BOB SHRADER HAS BEEN ON LOW FREQUENCIES FOR ABOUT TWO YEARS. AT THE SCHOOL CLUB STATION W6YM, WHERE BOB TEACHES, HE OPERATES LOW FREQUENCIES AND 2 METERS ALSO... W5DEH ROY RUST, WARING, TEXAS WANTS A 26 WITH SYNC MOTOR AND TABLE...**

AMATEUR RADIOTELETYPE SOCIETY

1 6 3 WEST 13<sup>TH</sup> STREET

**A. R. T. S.**  
NEW YORK 11, N. Y.

AMATEUR RADIO

443



FORM 3547 REQUESTED

**A. R. T. S.**

AMATEUR RADIOTELETYPE SOCIETY

443 WEST 47<sup>TH</sup> STREET

NEW YORK 19, N. Y.

U S NAVAL RADIO STATION

**NSS**

CONFIRMING CONTACT WITH W2KYN  
ON ARMED FORCES DAY, 19 MAY 1956  
BAND 80Mtr MCS (NSS ON 3.269 MCS) RST QRK4 TTY



CONFIRMED

*Miller*

NAVAL COMMUNICATIONS DIVISION

*Frank White*

OPERATOR

Armed Forces Day results are on page 3. The QSL wallpaper is shown above. This years broadcast was copied by 159, compared to 52 in 1955, and 91 in 1954. In the RTTY Military-to-Amateur QSO contest, a new feature this year, 35 contacts were made by NSS with amateurs. This score would have been much larger, but transmission to the west coast on the frequency used was difficult. Also, this feature of Armed Forces Day did not receive as good publicity as the RTTY broadcast. So next year, we should be able to double the QSO score.

Our front cover gives the meter face for the audio frequency meter article by W2BFD on pages 9, 10, and 11. Page 11 also shows the TT keyboard, which we have not illustrated for some time. Pages 5, 6, and 7 picture a recent lightweight teletypewriter, and page 8 shows its schematic. Page 2 relates the experience of a TT supervisor in service.

ARTS 42-12