ARTS

PAT NO. 2,051,399 SIMPSON ELECTRIC CO. CHICAGO, ILL., U.S.A.

AMATEUR RADIO TELETYPE SOCIETY
V. H. F. TELETYPE SOCIETY
MODEL 29

42

AUGUST 1956
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. It's 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 dysentary 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)

ARTS-42-2
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)

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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.

J. J. Duran
Don W. West
Thomas R. Deluca
Richard F. 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

ARTS 42–3
The Midwest RTTY Meets at 1600 CST Sundays on 3624 KC, 8500C Shift, Mark High. Bob W9TCJ is NCS. W9BGC is Alternate NCS.

San Francisco, National ARRL Convention, July, 1956. Plans for the RTTY portion of the National ARRL Convention include: Trip to RCA Communications Center; Press Wireless at Belmont; and W6ITH Reg Tibbets of United Press, Moraga. The Extensive RTTY Convention activities have been made with the ardent cooperation of Roger Wixson, W6PDJ, SCM for the East Bay Section.

ZL1WB, Onerehi, New Zealand reports hearing W6PDJ Roger Wixson while PDJ was working W6NKP on 7150. ZL1WB Bruce reports hearing W6WIS also, but weaker than W6PDJ. Bruce was coping on borrowed equipment, but his own equipment has been shipped from the States.

AT&T and IBM PATENTS. Information on several thousand IBM and AT&T patents is available at the 37 field offices of the Small Business Administration. The patents are open for public use, license free. A guidebook, available for inspection at SBA field offices, lists the patents by number and industrial classification, and names libraries where copies of the patents may be examined.

Three IBM radio clubs are thinking about RTTY. They are K2ERQ, Endicott, NY; KE2KP, Poughkeepsie NY; and VE3IBM, Tadmore. Of course, 60 wpm is slow stuff for these computer men!

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B O O K S: Here are some more books we have on hand to sell:

ADVANCE MATHEMATICS FOR ELECTRONICS TECHNICIANS, NAVPERS 10094
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PHYSICS FOR ELECTRONICS TECHNICIANS, NAVPERS 10095 $1.25

MAGNETIC AMPLIFIERS, ELECTRONIC DESIGN & DEVELOPMENT, BuShips 40$

ELECTRICAL FUNDAMENTALS, DIRECT CURRENT, TM1-661... $1.00

BASIC THEORY AND APPLICATIONS OF ELECTRON TUBES, TM1-662...

HANDBOOK OF PREFERRED CIRCUITS FOR NAVY AERONAUTICAL ELECTRONIC EQUIPMENT, BuAer USN $1.75

BULLETIN OF THE AMATEUR RADIO TYPE SOCIETY
PUBLISHED FOR ALL RADIO AMATEURS INTERESTED IN RADIO TYPE, FACSIMILE, AND AUTOMATIC TELEGRAPHIC EQUIPMENT. EDITOR, CLAY COOL. W2EBZ. PUBLISHED AT 163 W 13 ST, NEW YORK 11, N Y. SUBSCRIPTION RATE—$3.00 A YEAR (12 ISSUES). SINGLE COPIES 25¢

ARTS 42-4
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 INDIKAED 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 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 CAPACITORS, 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 TIMETRIED 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 NONLINEARITIES 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 MILLIAMMERE 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 42-9
AMATEUR RADIOTELETYPE SOCIETY
V. H. F. TELETYPE SOCIETY
38-06 61st Street
Woodside 77, N. Y.

AUDIO FREQUENCY METER CIRCUIT
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 Waveshape 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.

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 one-way tape-to-page translator or manual retransmission.

WBNY ROLFE UTS HAS BEEN WORKING ON THE W2BFD JUNKKEYBOARD. IT IS THE ONE MISSING LINK IN HIS EQUIPMENT ... W2EHW MURRAY COHEN, 207R 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... W6NB BOB SHRADER HAS BEEN ON LOW FREQUENCIES FOR ABOUT TWO YEARS, AT THE SCHOOL CLUB STATION WYIM, WHERE BOB TEACHES, HE OPERATES LOW FREQUENCIES AND 2 METERS ALSO... W5DEH ROY RUST, WARING, TEXAS WANTS A 26 WITH SYNC MOTOR AND TABLE... ARTS 42-11
Armed Forces Day results are on page 3. The QSL wallpaper is shown above. This year's broadcast was copied by 59, 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 W2BFQ 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.