



HAM HUM

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AUCTION

The next meeting will be the annual auction. Here's your chance to get rid of the excess gear you have around the shack and also the opportunity to procure some new goodies as somebody will bring just the gear you need. The usual rules will apply - the Club will get 10% of all transactions as a contribution to the treasury. Last year's auction was a real success. This year it should be even better. The official starting time will be 7:00 P.M. in order to give everybody a chance to look over the gear before the auction starts at 8:00 P.M. This will give us a chance to get the tags all set and be ready for the main event.

The attendance drawing will be held as usual. However, the regular business meeting will be dispensed with in order to give more time for the auction and still get through at a reasonable hour. If you bring enough stuff to sell you will be able to buy all the goodies you want with the money you realized. If you haven't got anything to sell, bring money.

DATE - October 11th

TIME - 7:00 P.M. - AUCTION
starts at 8:00 P.M.

REFRESHMENTS

4-H BUILDING

AK-SAR-BEN FIELD

S-66 SATELLITE TO SEND ON 7 FREQUENCIES

NASA plans to place an ionosphere beacon satellite in polar orbit at about 600 miles altitude (above the ionosphere) in late September. Nearly *all* amateurs should be able to hear the 20 mc. signal. Frequencies are 20.005, 40.01, 41.01 Mc. c.w. for measurements; 136.17 Mc. for tracking, 162 and 324 Mc. for Doppler readings and 360.09 Mc. for measurements. Purpose is to find out more about the form and structure of the ionosphere than soundings from ground alone disclose. The test sigs are supposed to be good for 2 to 3 years; we'll try to cue you in from W1AW that it's up there after it's orbiting.

de--ARRL CD Bulletin

HAM HUM is the official organ of the Ak-Sar-Ben Radio Club, Inc., of Omaha, Nebraska, mailed monthly to all members and to others upon request.



MIDWEST DIVISION CONVENTION

The Midwest Division Convention is to be held at the Broadview Hotel, Wichita, Kansas on October 26 and 27, 1963. The advance registration is \$7.50. After October 19th the registration is \$9.00. The special advance registration prize is a National NCX-3 Transceiver; the main prize at the Sunday banquet is another National NCX-3 Transceiver. Your advance registration should be sent to: Wichita Amateur Radio Club, Inc., Post Office Box 6141, Washington Street Station, Wichita, Kansas.

The convention starts at 9:00 A.M. on Saturday and will continue until after the banquet on Sunday. We are not sure of the entire program as yet but the registration does not cover the price of the special breakfast on Sunday morning nor the YL dinner on Saturday noon. The YL dinner is \$2.50 with special program and prizes for YLs. There will be a dance Saturday night.

The main speaker at the convention will be Herbert Hoover, Jr., W6ZH, President of ARRL.

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PICNIC

Members and friends of the Ak-Sar-Ben Radio Club, Inc. enjoyed another of the annual picnics which was held at Dr. Ben Ewing's Beaver Brook Farm on September 15th with about 150 in attendance. Weather was practically perfect and we all met a few new friends and saw a lot of old friends. This is an annual affair so start making your plans now for attending next September. You will find some pictures taken at the picnic. If yours is not in and you were there, we will try and get yours in next year. If your were not there, you missed a good time.

Our many thanks to the picnic committee and especially to the XYLs who assisted so nicely with the good arrangements.

I wish to thank all the girls who helped me at the picnic - Lou Droescher, Minn Cutler, Lipp Droescher, Julie Eilers, Max Donze, Grace Gutmann, Margie Gutmann, Joyce Welch. Thanks, gals, you're fun to work with.

Mary Berounsky



NATIONAL COMMUNICATIONS PLAN (ARPSC) TAKES SHAPE

ARRL ADOPTS PRECEDENCES AND HANDLING INSTRUCTIONS

de--ARRL CD Bulletin

FCC's "basis and purpose" (par. 12.0) stresses expected activities of the amateur "particularly with respect to providing emergency communications." Message handlings, inspiration for the formation of ARRL, now number close to two million handlings reported per year. Thousands are dedicated to the fun of working in nets. Some 35,000 actives are enlisted in an Amateur Radio Emergency Corps. Section or statewide nets (phone, c.w., v.h.f., RTTY) are registered in the ARRL Net Directory. Nets are interconnected by our National Traffic System.

With this bulletin the League is pleased to announce that with the advent of its AMATEUR RADIO PUBLIC SERVICE CORPS (ARPSC) we bring together both our chief patterns for useful operations. Assigned functions and procedures in AREC and NTS have been reviewed. Each supplements the other to do the best emergency and public service job. We'll cover some new procedures in this Fall bulletin. Future discussions will be spelling out more and more about the ARPSC. We must test both local and regional communications frequently. ARRL's October '63 Simulated Emergency Test will be the first chance to do this.

NEW TOOLS FOR THE COMMUNICATOR

To accomplish every communication requirement better for every trafficker, and for ARPSC, especially under emergency conditions, ARRL effective October first is adopting *precedences* (to facilitate classification of traffic), and announcing the availability of a set of definitions constituting *handling instructions*. The latter, of course, are for exceptional use. But the precedences (which will always follow the number) are definitions that automatically apply on every piece of traffic.

PRECEDENCE

The priority system now announced by the League has been kept simple to understand. It has been adopted only after considerable study. Most amateurs have heard an NCS call for taking any emergency or priority traffic first. We will now have the principle of traffic precedences being assigned, where called for, by the operator of the station originating a message. Precedence is a tool to use *all the time* even though a lot of traffic is routine. It is important to have some association with precedence in all our work to get the principle well understood among all traffic handling amateurs and so there will be no misunderstandings in emergency! Precedence therefore will be

a required part of every message preamble.

A precedence specifies an order of handling. Those messages with highest precedence are handled *first*; those with the lowest, last. When the circuit catches up, lower precedence traffic can be handled. A good rule: Keep all traffic flowing, high precedence first. No operator has authority to change a precedence designator once a message is on its way. All messages without precedence designators are automatically "routine."

To resolve any problem when originating a message please study the definitions of PRECEDENCE given herewith carefully. Note that "emergency" does *not* include such things as worry, agony, or notification traffic between individuals trying to get data on the status of friends or relatives or notifying friends or relatives of their well-being. Where the definitions of public necessity more closely apply these are, however, ARRL-recommended tools to apply to our handling of emergency and priority traffic, as may be required.

HANDLING INSTRUCTIONS

As part of our ARPSC overhaul of procedures we're adopting a W4MLE idea ('62 E & T bulletin.) An optional part of message preambles, mainly for emergency use

will be "special handling instructions." These go in ahead of the station of origin, when used. To identify "Handling Extra" instructions (avoiding confusion with ARRL- and Q-Code) we'll print an HX- series of report-back and handling definitions in QST, new log books and the next revisions of other ARRL booklets.

Last season's Net Directory showed 657 net names, an increase from 599 in the previous registration. 80 meter c.w. and 75 meter phone show the greatest number of net sessions and carried a bulk of traffic. Half the registered nets (312) indicate the purpose emergency-only, 197 are traffic-only; 184 indicate the purpose *both* emergency and traffic. Both long and short-haul nets are indicated...with their session-per-week pattern. In emergency all traffic nets become emergency nets.

ASSIGNMENTS OF SPECIAL DUTIES TO NETS?

Net registrations show that many states or sections have not more than a single radio net. In such cases it is essential that all local agencies and AREC/RACES nets tie closely together with this net. Every net should constantly recruit and get in additional towns and cities to maintain useful coverage and extend the potential service

of amateur radio. All nets handle messages of all precedences, of course. If there's more than one section net, the SEC and Net Managers may develop plans so each net has definite assigned tasks to perform. This is load sharing to the extent possible giving each net a different and non conflicting mission from that of other nets. (Florida currently is an example of a state with as many as five nets (1) an AREC party line working 3910/7230 kcs. watching over any mobiles reporting in those bands (2) a personal welfare traffic net, 3836/7260 kc. (3) an s.s.b. net 3940/7275 specializing in civil defense traffic, an alternate for weather and out of state traffic (4) a c.w. circuit, 3650/7115 kc. for traffic addressed to the American Red Cross and all between-agency state and federal government traffic (5) an amateur RTTY circuit between key city points for their traffic and ARC. There are even further nets for medium distance uses and liaisons, these on 145.3, 50.3 and 29.6 Mc.) The principle is excellent, but few sections will at once be able to go this far.

ACTIVATING NETS FOR EMERGENCY READINESS

It has always been a principle that NTS and section nets as required be self-activating in emergency. *Net managers in NTS and at Section level*, have this responsibility (new) to maintain contact with appropriate ECs and SECs through

their net members or direct to consolidate the service and facilitate traffic flow between AREC and NTS. At this level it is necessary to check normal working frequencies, so customary frequencies and alternate ones can be used without local conflicts. The exact procedures and methods and check lists to be followed by all concerned need to be discussed and set down in black and white.

NTS nets normally meet daily, some twice daily. The plan in emergency to give the essential coverage must be to step up the net operating schedule to any extent required to take care of the need for stand-by radio, so the job can be done.

The ARRL SEC has primary responsibility to ask some alerting in advance. SECs of adjoining sections will work together to determine joint useful action if and when it appears emergency conditions may be regional. Section Net managers will keep the NTS Region net manager closely informed by whatever means available, and in any situation where more than one ARRL Section is concerned, the region net will be activated. (if larger than a region, this procedure will extend outward to the area net, and where it is beyond NTS area boundaries, even the TCC stations may be alerted.) NETS IN ANY PART OF THE NATION MAY BE ALERTED TO BE MANNED AS FULLY AS POSSIBLE TO MEET AT TWO, THREE, SIX OR TWELVE HOUR INTERVALS INSTEAD OF THE

NORMAL 24 HOURS. NET MANAGERS ALSO IN CONSULTATION WITH ECs AND ROs MAY NOTE THE NEED FOR SPECIAL CIRCUITS THAT WILL DEVELOP BETWEEN KEY POINTS AND AT ONCE SET UP SCHEDULES OR SPECIAL CIRCUITS IN ACCORDANCE WITH ACTUAL TRAFFIC REQUIREMENTS. THE ARRL NET DIRECTORY AND LATEST STATION ACTIVITY REPORTS IN QST MAY BE CONSULTED FOR ESSENTIAL DATA ON NET FREQUENCIES AND STATIONS WITH RELIABLE TRAFFIC KNOW HOW AND RECORDS.

EMERGENCY COORDINATORS AND ARPSC

Each ARRL EC has primary assigned functions, as set down in numbered sequence in the Operating and Amateur Radio Station booklet. Beyond these it is his function to arrange for his AREC group's readiness and training and report same to officials and agencies we are most bound to assist as a Public Service, come emergency. We develop our capabilities through *doing*. The new ARPSC concept changes none of the above, but it involves the EC's running a more active drill pattern--operation of some kind once a week twice a month seems minimum to us.

One member of each AREC/RACES group should be assigned to maintain radio or other contact with an NTS/section net. It is recom-

mended that both AREC and NTS amateurs *use radio* in developing and extending their organization of facilities. Make it a point to radio-report net sessions, number participating, message traffic, etc. Transmitter hunts, special emergency simulations, etc. are good...but review an article by Walt Ermer W8AEU, Page 50, Sept. 1960 QST) for the whole picture of fascinating activities that can be engaged in to the improvement of group capability and the public credit of amateurs! Make your traffic *record traffic* (written) and handle some through your section net.

ARRL recommends check lists and alerting-plans be prepared (1) for NCS (2) for net members (3) for EC (4) for AREC members. Examining the agency and weather personnel problems and criteria to be used for activation of nets as hurricanes and floods threaten is important. If possible ascertain a probable volume of agency traffic (such as from Red Cross, Weather Bureau, Civil Defense officials etc.) and note the points between which it may develop. Advance study of the ARRL Net Directory will indicate the frequency and times of operation of *adjacent state's amateurs*. ECs can make tests (simulated) at surprise intervals so that hot-line point to point schedules between the key areas and offices may be established reliably without uncertainty and delay when the chips are down.

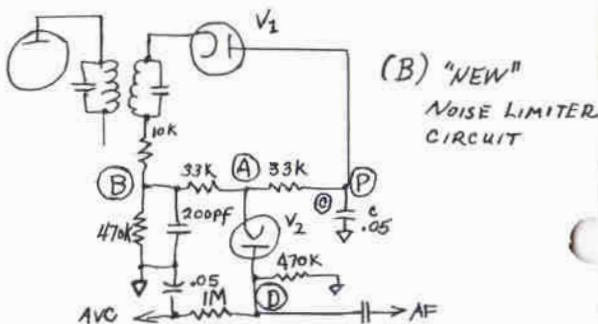
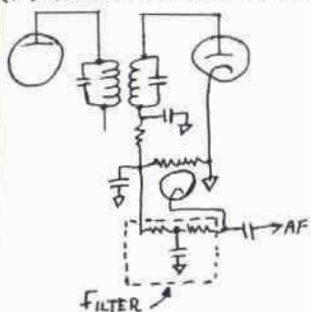
NOISE LIMITER - DE K6MBL

Here's a new noise limiter circuit originally presented in the January 5, 1962 issue of Electronics. It has been incorporated in two receivers at K6MBL's ham shack with exceptionally good results. It was first tried in a BC-453B Q-piver. This receiver was selected because of its narrow selective 85 KC IF amplifier system. Impulse noise applied to a narrow or high Q IF system tend to ring at the IF frequency and stretch the noise pulses making the noise limiters job difficult. This limiter passed the test. Listening tests, using ignition noise via a 2 Meter converter- 5X-28A to the modified BC-453B, showed this

limiter to perform as the original author said it would. Ignition pulses actually seemed to decrease background noise on weaker signals. This was probably due to the gated diode V2 cutting off during the period of the pulse, silencing the background noise during this period. The circuit was incorporated into a BC-348N with even better results. Impulse noise wise, the two meter band is quiet until V2 is shorted and then the realization of the "new" noise-limiter's capabilities become clear.

Here is the original author's circuit explanation and comments:

(A) CONVENTIONAL N-L CRT.



"A conventional noise-limiting circuit is shown in Figure A and the improved noise-limiting circuit in Figure B. In the improved circuit, the RC time constant is large and the plate of the detecting diode V1 is negatively charged by the detected input signal. Its voltage is kept steady by capacitor C. Even if the signal includes audio modulation, the voltage at point A will be equal to half the peak value of the carrier signal, and its fluctuation will amount to half the modulation of the signal. When impulse noise is introduced to this detector circuit, the potential at point P will not change, according to the time constant of the circuit, but the voltage at point A increases positively and the limiting diode V2 shuts out the noise by its rectification characteristic. No audible noise can pass this limiter, even if the impulse noise has hundreds of times as large a voltage as the carrier wave.

If the conventional noise limiter (Figure A) is used, strong impulse noise will leak through the filter circuit that determines the plate potential. Other than the performance of the limiter circuit for impulse noise, the characteristics of the AVC circuit, which is charged to peak value by strong noises, often cause the decline of sensitivity. The AVC circuit should also be designed so as not to be effected in its voltage by the impulse noise. This noise limiter can suppress electrical noise up to

approximately 1,000 times that of the signal level with only a slight trace at the audio output.

When noise limitation is insufficient, the clarity of the received signal is deteriorated by cross modulation between signal and noise in the audio-frequency amplifier. With the new noise-elimination circuit, the transceiver gives better sensitivity and articulation than other VHF equipment, even if it is mounted in a poorly shielded airplane."

It is noted in Figure B, the AVC is derived from the noise limiter output (point D) and is thereby not affected by impulse noise, controlled by the carrier only.

The circuit works, try it!

G. F. Tillitson, K6MBL
de Pomona, Calif. Modulator

**OFFICIAL BULLETIN NR 914
FROM ARRL HEADQUARTERS
NEWINGTON CONN SEPT 12 1963
TO ALL RADIO AMATEURS BT**

United States amateurs are reminded that the following countries object to communications between their amateurs and those of other countries. Cambodia, Indonesia, Viet Nam and Thailand forbid such radio communication. The prefixes to avoid are XU PK (JZØ) 3W8 and HS AR

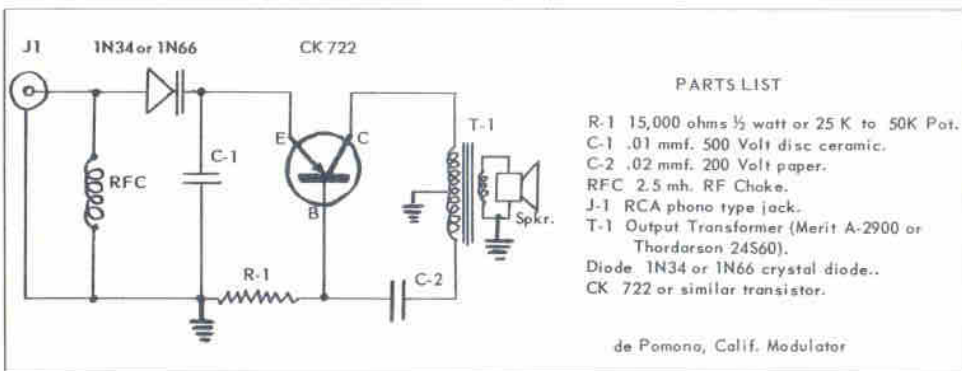
SELF-POWERED CW MONITOR

Lyle Baker, K5QJT

The few parts needed for this simple device are no doubt hidden somewhere in a box around the ham shack. This monitor can be assembled in any small minibox or meter case that will accommodate a 3 or 4 ohm 3-inch PM speaker. If possible, make all chassis grounds at one common connection. It would be best to insert a transistor socket in the unit so that it will be easier to experiment with different types of transistors if necessary. The audio frequency can be varied by replacing the fixed resistor R1 with a 25K to 50K potentiometer.

The input lead is made of small coaxial cable connected to a RCA type phono jack mount-

ed at any convenient location on the back of the monitor. I have built several of these little units and have found the results excellent when one was attached to the back of a Johnson Matchbox (with an inside pick-up loop) and also in conjunction with a Viking Challenger. In the latter case, the coax braid was removed from 3 to 4 inches of the pick-up end of the coax and the remaining inner insulated "hot wire" was pushed down through a hole in the top of the cabinet so that it could pick up RF in the vicinity of the final. This wire must not touch any part inside the transmitter. Adjustment of its location will tend to vary the signal volume.



OWENSBORO, KY. -- Several innovations feature the tenth edition of the General Electric receiving tube, capacitor, and picture tube handbook, "Essential Characteristics"

with the same base pin connections now are listed together alongside the respective basing diagrams. This is particularly useful in finding substitutions.

In addition, the basing diagrams are on separate "strip" pages at the bottom of the book--which permits the use of larger diagrams and still allows the basing diagram for the tube under consideration to be viewed at the same time as the essential characteristics at the top of the page.

The book includes typical characteristics curves, outline drawings, circuit diagrams showing typical applications, and construction data for loudspeaker enclosures.

Tube classification charts have been expanded to facilitate reference to similar types. Cross-reference lists of prototypes for Five-Star and other special purpose tubes also are included.

Priced at \$1.50, the book is available from authorized distributors of General Electric receiving tubes or from the General Electric Company, 3800 N. Milwaukee Ave., Chicago, Ill.

ARRL PRECEDENCE DEFINITIONS

(1) *Emergency*: Any message having life and death urgency to any person or group of persons which is transmitted by amateur radio in the absence of regular commercial facilities. This includes the official messages of welfare agencies during emergencies requesting supplies, materials, or instructions vital to relief of stricken populace in emergency areas. "Emergency" precedences will be *very rare* normally. When in doubt *do not* use it.

On c.w. this designation will *always* be spelled out.

(2) *Priority*: Important messages having a specific delivery time limit. Official messages other than those covered in the "Emergency" category. Personal inquiry and notification welfare traffic. Press dispatches and other emergency-related traffic requiring prompt handling but not of the utmost urgency. This designation, fairly common in an emergency situation is relatively rare under normal conditions. Use the abbreviation P on c.w.

(3) *Routine*: Most traffic in normal times will bear this designation. In a disaster situation traffic labeled "routine" (R on c.w.) should be handled *last*, or not at all when circuits are busy with emergency or priority traffic. Most traffic handled on amateur circuits in normal times will fall in this category.

The precedence indication always will follow the message number. For example, a message number may be 207R, or 207 EMERGENCY on c.w., "Two Zero Seven Routine (or Emergency)" on phone.
de--ARRL CD Bulletin



Attention!!

All ye amateur radio operators

For Sale

MOTOROLA FM TRU 41V MOBILE UNITS

Perfect for a 2meter F.M. Complete with tubes, power cables and cases. Transmitter power output 10 Watts - 6 or 12 Volt units available. All are narrow banded and comply with current FCC rules for use in the commercial radio services.

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