HAM HUM

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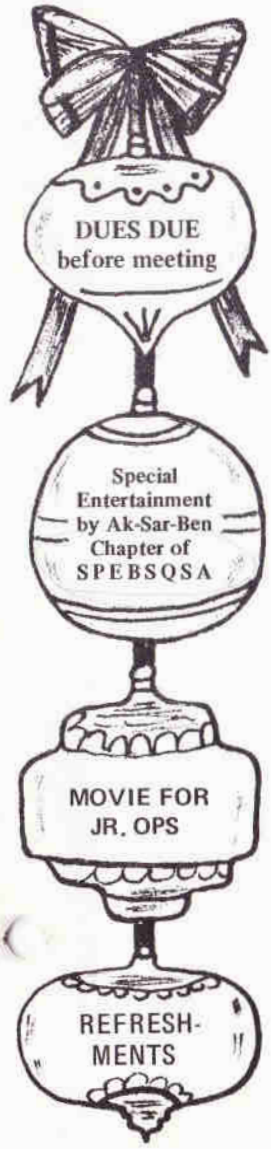

1968 ANNUAL MEETING
and
CHRISTMAS PARTY
of
Ak-Sar-Ben Radio Club, Inc.

DECEMBER 13, 1968 - 8:00 P.M.

WORLD INSURANCE COMPANY
CAFETERIA
203 South 18th Street

ELECTION of officers. PAID MEMBERS will vote on officers for the coming year.

EXCHANGE of gifts. ADULTS ONLY – please bring a gift of one dollar or more value. Paid Club members will exchange with each other. Non-members who bring gifts will be eligible for the guest exchange.

FOR CHILDREN – special gifts will be presented to each child by the Club.

GUESTS INVITED – BRING YOUR FAMILY AND FRIENDS.

BOARD OF TRUSTEES of AK-SAR-BEN RADIO CLUB EXTENDS TO YOU AND YOUR FAMILY WISHES FOR A VERY MERRY CHRISTMAS AND A HAPPY NEW YEAR.

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.

Next copy deadline: December 27th

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NOTES FROM THE BOARD
By Bob Lockwood, WAØDHU

The Board of Trustees of the Ak-Sar-Ben Radio Club, Inc. met at the home of Dick L. Eilers, WØYZV, at 8:00 P.M. on Tuesday, November 19th. Following is a brief rundown of the business discussed.

Plans were finalized for the annual meeting and Christmas party scheduled for Friday evening, December 13th. A lot of planning and effort has been made to assure the 1968 Christmas party will be one of the biggest and best ever. Don't miss it! More on the Christmas party elsewhere in this issue.

Plans were also completed for the January 1969 meeting, with a tour of the electronic gear at the new Methodist Hospital. We can thank Dr. Stan Bach, WAØIIX, for this one.

The upcoming tour of the new Methodist Hospital is the result of a suggestion by a Club member who proposed that such a tour would be of general interest and immense value to Club members and others who might wish to attend. I was in QSO with WØWRT, John Snyder, on 146.94 when he made the suggestion.

In a sense, each of us are "members of the board." It is the ideas and suggestions of each that makes our Club what it is. Your 1968 Board of Trustees had one goal in mind – to act in the best interest of the general membership. It is difficult to do this if members do not make their views known. Your 1969 Board will be eager to hear from you, so make your views known.

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ADDITION TO ROSTER

Dr. Edward A. Holyoke, WAØVSR
5444 Western Avenue
Omaha, Nebraska 68132
Phone: 553-6464

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SILENT KEY

Lee Witulski, WØAQQ
Route 2
Beatrice, Nebraska

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NOMINATIONS FOR 1969

The election of officers for the year 1969 will take place at the annual meeting of the Ak-Sar-Ben Radio Club, Inc. on December 13, 1968.

At this meeting a President, Vice President, and four members of the Executive Council are to be elected. The President and Vice President are elected for a one-year term; the Executive Council members are elected for a two-year term. The outgoing President remains on the Board of Trustees as Immediate Past President for one additional year.

Those remaining on the Board as members of the Executive Council for 1969 are: Robert C. Lockwood, WAØDHU; Norval E. Bowen, WAØ-NPF; James C. Droege, WØYCP; James L. Knudsen, WAØMHF; and Charles A. Michel, KØQVL.

The Board of Trustees, composed of these five remaining members and the six new ones elected, will then elect from the members of the Board a Secretary and a Treasurer.

The Nominating Committee, composed of the President and at least two Past Presidents, select and qualify members whose names can be placed in nomination at the annual meeting.

The nominees for 1969 follow with a brief write-up on each:

For President

Royce E. Johnson, WAØKIL

Age:	45
Address:	2424 South 46th Avenue
Phone:	558-4941
Wife:	Virginia, WAØNCO
Children:	2 girls, 1 boy (ages 22-19-10)
Employment:	Quaker Oats Company
License:	4 years
Hobbies:	Ham radio, hunting, fishing, camping

For Vice President

Frederick Fischer, Jr., WØEGP

Age:	43
Address:	836 South 88th Street
Phone:	391-4193
Wife:	Audrey
Children:	Son, Kurt, age 16
Employment:	Quaker Oats Company
License:	General - 20 years
Hobbies:	Ham radio, reading

For Executive Council

James C. Anderson, KØDNE

Age:	22
Address:	4828 Charles Street
Phone:	551-0630
Wife:	Sharlene
Employment:	General Communications Co., Inc.
License:	8 years
Hobbies:	Ham radio, Barber Shop chorus group, square dancing, night school (U. of N. at Omaha)

Carolyn (Connie) Bowen, WAØMYF

Age:	Over 21
Address:	3413 Bridgeford Road
Phone:	391-4859
Husband:	Norval, WAØNPF
Children:	3 boys, 2 girls
Employment:	Housewife
License:	2 years
Hobbies:	Ham radio, bowling, golf and family

Henry J. Dworak, WAØQLE

Age:	57
Address:	1409 Martha Street
Phone:	341-4823
Wife:	Mary
Children:	1 daughter, Rosemary; 2 sons, Joseph (married) and John
Employment:	Self-employed
License:	2 years
Hobbies:	Ham radio, bowling and fishing

John C. Ebright, WAØQGZ

Age:	43
Address:	17400 W. Dodge Road #12
Phone:	289-4165
Employment:	Post Office
License:	2 years
Hobbies:	Ham radio, genealogy, photography, motorcycling

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"I advertised that the poor are made welcome in this church," announced the minister, "and as the offering amounts to 95 cents, I see that they have come." -Signal Report

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It's the little things that bother
And put us on the rack.
You can sit upon a mountain
But not upon a tack.
de Ham Monitor

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NOVEMBER MEETING

We enjoyed seeing the computers in operation at Mutual of Omaha at our November 8th meeting. Sincere thanks to Tom Subject, Public Relations Office, for making the arrangements for us.

The discussion on programming, held at the Red Cross Chapter House, was conducted by Ray Schovanec, Head Instructor and Faculty Director of Electronic Computer Programming Institute. His discussion was most informative and we appreciate his attendance at our meeting.

Mr. Ak-Sar-Ben was Charles A. Michel, KØQVL. The third person to shake his hand was Dr. Stanley M. Bach, WAØIIX. Congratulations, Stan, on being the lucky winner!

Speaker, Ray Schovanec

Computers in Operation at Mutual of Omaha

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FIELD DAY 1968
By Bob Lockwood, WAØDHU

At long last, the moment of truth arrives. Yes, the November QST is out and with it the official Field Day results.

Last year the Ak-Sar-Ben Radio Club was in 11th place in national standings with 1241 valid contacts and a total point value of 8046. This year we are in 27th place in the national standings with 1114 valid contacts, just 127 contacts from last year's showing. The total point value of 1968 is 7935, just 111 points off last year's place. Why then a drop from 11th to 27th place in national standings?

The first place club last year chalked up 1507 valid contacts for a total point value of 13,973. According to QST, the first place club in 1968 competition, WIOP/1 Providence Radio Assn., racked up 2009 valid contacts with a point value of 18,292. The reason we went from 11th to 27th place in national standings was due to the fact other clubs scored better this year.

The Ak-Sar-Ben Radio Club received first place honors in Zero land again in 1968. We have succeeded in earning this high position for two consecutive years. However, this year the Lincoln Amateur Radio Club, KØLDP/Ø, came in a very close second place with 1,179 contacts for a total point value of 7874. They beat us on number of contacts made by 65, but lost to us with a point deficit of 61. A mighty close race! Our hats go off to KØLDP/Ø for a nice showing.

These few statistics about WØEQU may be of general interest. We made a good showing in 1968. Considering the higher scoring of other clubs, WØEQU/Ø can be proud of its position in national standings. Also, we have done quite well to hold first place in our call area. The statistics also make it clear that other clubs (out to give us keen competitio... KØLDP is hot on our trail. Also, the Bellevue Amateur Radio Club does not want us to hold the trophy next year. They are out to get it. Our job is to see to it they do not.

Field Day 1969 will be upon us before we know it. This upcoming event will be a real challenge for us. We will rise to the challenge. WØEQU will be victorious in Field Day 1969!

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It's a good idea to remember that all soft soap has a high percentage of lye in it.

Signal Report

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OFFICIAL BULLETIN NR 194 FROM ARRL HEADQUARTERS NEWINGTON CONN NOV 7 1968 TO ALL RADIO AMATEURS BT

The sub band restrictions announced in Federal Communications Commission Docket 15928 go into effect on November 22, 1968. A tear out chart of the portions of the bands available to each class of license after that date is on page 64A of November QST. Copies of the chart are availab' from ARRL Headquarters, Newingt Connecticut 06111 upon receipt of a stamped self-addressed envelope, with the words Amateur Frequency Chart in the upper left hand corner AR

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Following notice was mailed to all members of the Ak-Sar-Ben Radio Club. It is not too late to join the class. Next sessions December 9, 1968 and January 6, 1969.

SPECIAL NOTICE – CODE AND THEORY CLASSES

WHAT:	CODE and THEORY CLASSES for upgrading your license or for helping others to become amateurs. 2 Code Classes to be conducted concurrently – one for beginners and one for those going for their general.
WHEN:	16 Sessions – Beginning Monday, December 2, 1968 Next session Monday, December 9, 1968 Skip until Monday, January 6, 1969 and continue on Mondays through April 7, 1969
TIME:	7:30 P.M.
WHERE:	RED CROSS CHAPTER HOUSE 432 South 39th Street, Omaha
INSTRUCTOR:	John D. Snyder, WØWRT
ASSISTANTS:	Robert C. Lockwood, WAØDHU James C. Anderson, KØDNE Ervan D. Heinz, WAØEEM Charles A. Michel, KØQVL

NO FEE * * NO PRIOR REGISTRATION REQUIRED * *

This notice is being sent to all members of the Ak-Sar-Ben Radio Club, Inc. with the expectation they will invite friends and acquaintances who are interested in becoming radio amateurs or in upgrading their licenses to general.

Club membership is NOT required nor will anyone be coerced into joining.

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Public Affairs Division
Naval Communications Command
Bailey's Crossroads, Virginia 22304
Tel. 694-8453

"Gladys" Didn't Catch Them Napping: NAVY-MARINE CORPS MARS OPERATORS WERE BUSY DURING HURRICANE THREAT

Alert Navy-Marine Corps MARS (Military Affiliate Radio System) radio operators in the area threatened by Hurricane Gladys were quick to respond when called on to set up an emergency communication network.

Volunteer members in the Sixth Navy MARS District – North and South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee and the Caribbean area – were notified by the district director to start activating the network at 9:45 a.m. (EDST) on October 17. Within six hours, MARS members reported that 45 stations had emergency power available, 82 were capable of mobile operation, and 60 were ready with telephone patch capabilities. Additionally, 12 tri-service transfer networks had been activated among Army, Navy and Air Force MARS stations.

The emergency net was deactivated at 6:30 p.m. on October 19, but a number of stations remained on stand-by until the storm posed no further threat.

During the three-day emergency, a total of 370 stations checked into the net, with 49 operating continuously and 122 on stand-by listening watches. Two stations went off the air temporarily because of antenna damage, and two others had to resort to emergency power. Navy MARS stations near the Naval Air Stations of Jacksonville, Fla. and Memphis, Tenn. exchanged information on local weather and aircraft landing conditions.

The Sixth district Navy MARS director – Chief Radioman (SS) L. W. Crawford, USN, a veteran of 21 years' experience in Navy communications – provided periodic situation reports which were passed to Naval Communications Command headquarters at Bailey's Crossroads, Va. from the Navy-Marine Corps MARS headquarters station (NAV), Arlington, Va.

Volunteer Navy-Marine Corps MARS operators, amateur radio licensees affiliated with the MARS program, have the mission of providing communications available to both military commanders and civil officials during emergencies. The system serves as a valuable back-up for the Navy's regular communication service – which, in the specific case of Gladys, sustained no disabling damage.

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PRESIDENT'S NOTE

As we approach the New Year, I look back on 1968 with deep gratitude in my heart. Serving with me through the year was a dedicated bunch of guys; men who put a lot of time and effort into making 1968 a success year. It has been a real pleasure to work with the 1968 Board of Trustees. Thanks, fellas!

Bob Lockwood, WAØDHU

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FOR SALE

Following equipment of Silent Key Lee Witulski, WØAQQ, is offered for sale. Contact Harold Witulski, Route 2 Beatrice, Nebraska (phone 228-0633) or Mrs. Lee Witulski, 1009 Ella Street, Beatrice (phone 223-4970) or Louis G. Fink, KØCBV, 217 North LaSalle, Beatrice.

Heathkit Scope Model 0-8
Heathkit battery eliminator B E 4
Heathkit transistor and diode checker Model 1-T-10
Heathkit grid dip meter Model G D 1-A
Heathkit condenser checker
Eico TV FM sweep signal generator Model 360
Eico Signal Generator Model 320
B-K television analyst Model 1075
Tube caddy 150 tubes, with tube substitution book
Eico bar generator Model 352
B-K Model 400 Cathode rejuvenator with tester adapters
Heathkit SSB adapter Model SB 10
Hallicrafter receiver, Model SX 43
Side Band slicer, Central electronic Model A
Teletype complete with converter
Check 'n Tell picture tube checker
Sam's Photo Fact service from 120 to 496
Tester QMC 1-42 automotive tester for regulator, generator battery
Standing Wave relfectometer Model CM-52

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Build a better mousetrap, and some rat will copy it.

NUT-RAL-IZATION
The Ham Monitor

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ETCHING BRASS

Etched metal name plates, call letters, etc. can really dress up your shack, and can be done rather easily by the process of electro etching. Actually this process is so simple that anyone can do it without previous experience. The brass is merely connected to the positive cell of a six volt storage battery and a strip of sheet copper is connected to the negative. Both are hung in a glass or plastic container containing a copper sulphate (blue vitrol) solution, and the brass plate becomes etched at any point where the solution contacts the metal. Any part of the metal protected by a resistor such as wax or cellophane tape will not be effected by the solution.

To make the solution, stir one quart of copper sulphate crystals in a quart of water until the solution is a clear blue color.

To prepare for etching take the brass blank and dip it in hot paraffin. Then using any pointed tool scribe any lettering in the wax and then etch. The process can also be used in reverse in case raised lettering is desired.

Most methods of preparing printed circuitry for etching will work for this process. Blue vitrol crystals are quite easily obtained. One common useage is for discouraging the growth of roots in sewers.

de: The Ham Monitor

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One of the first things a man notices in a backward nation is that children there are still obeying their parents. — SERVICE

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POOR MAN'S T-R SWITCH

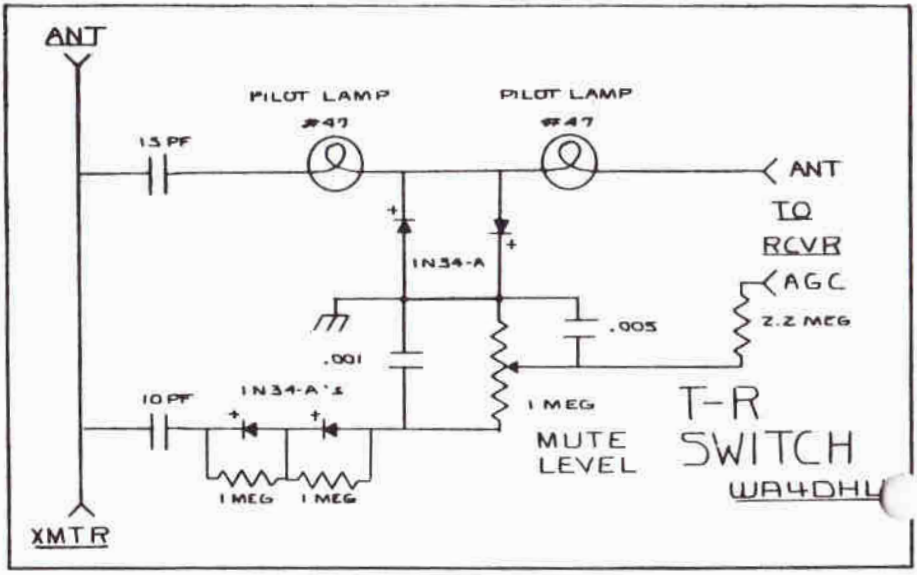
By Dick Blasco, WA4DHU–

Special Assistant to the Editor

Here's a dandy little evening project that will delight any CW man's heart. This circuit is a refinement of a design which is simple and effective. The pilot lamps have a characteristic low resistance when not lit and a relatively high resistance as more current is passed through them. A high level signal (from the transmitter) will exceed the contact potential of the IN34A diodes and cause them to conduct, drawing current through the bulb. The bulb glows and acts to isolate the receiver from the antenna line. The circuit shown includes an additional lamp in the receiver lead for additional protection of the antenna coils.

Some of the RF energy is also sampled and rectified to provide muting voltage. Simply connect this output to the AGC line of any modern receiver and adjust the mute level for the desired signal level. This circuit works with the AGC only when it's fully active, of course.

The circuit shown will work well at powers up to 100 watts. Additional power may be handled by inserting additional pilot lamps in series with the 15 pf capacitor. This unit causes some loss in received signal strength, but its simplicity and effectiveness will far outweigh this in all receivers. If you aren't full QSK by now, spend an evening and join in the fun!



de: The Ham Monitor and
Florida Skip via ARNS

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NEED RADIO TECHNICIANS
By August F. Gabriel K4BZY

The two-way radio industry really began in 1946 and up to this date has grown by leaps and bounds. Originally police departments – public safety were the users of two-way radio systems, which consisted of AM transmitters and receivers, low band 25-50 MC, and then they moved into FM and later they moved from 25-50 MC to 150-174 MC, and within the last eight years, the UHF 450-470 MC, has been very active.

Along with the growth of the number of two-way mobiles in service, there has been created a shortage of qualified two-way radio technicians. Today almost every two-way radio service company is crying for experienced two-way radio technicians. Radio schools are not turning out this type of technician – they are only producing men with second or first class licenses but with no practical two-way radio experience while in school. Therefore, practical experience must be accumulated by actually working with the equipment in a two-way radio service company. The radio hams who do have experience in repairing and installing mobile equipment in some cases have more training or experience than a man fresh from school with a second class license and no two-way radio experience. Also, the ham may be displaced – by this I mean that he may be working in a particular job that he really is not interested in but does have a great interest in radio communication equipment so that he would be in a good position to consider employment with two-way radio service and installation companies.

It also has been proven that TV technicians make good two-way radio technicians because they do have experience in repairing TV sets that do have many circuits which require some knowledge of the use of test equipment.

In servicing two-way radio equipment, the important thing is to be familiar with the particular set, test equipment and the procedures in using the test equipment. Also, it is important the man be familiar with federal communications commission rules and regulations, some system design, such as base station installations, tower, antenna and coaxial line. This can only be gained through actual experience by working on the equipment.

One may not realize the opportunities in this field today, but in the next few years almost every new vehicle will have some form of communication in it, with citizens band or commercial two-way radio or even ham radio, and this form of communication will be just like the juke radio in every car today. There will be a definite need for technicians to install and maintain this equipment.

If you are interested in the two-way radio field, contact the two-way service company in your area or Gabriel Communications, 1329 N.E. 4th Ave., Ft. Lauderdale, Fla. 33304. Phone 305-524-8686. 73

de: Florida Skip

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HINTS ON KIT ASSEMBLY, TESTING AND TROUBLE SHOOTING

Modern kits come with such complete and explicit instructions that it is hard to go wrong if you read them carefully and check your work as you go along.

Having assembled about a dozen kits during the last six years I would like to pass along some of the procedures that I have found useful.

When the kit is unpacked, check each part against the parts list. In so doing you should become familiar with the various parts, which will make them easier to locate when called for in the instructions. Do not discard any packing material until all parts are accounted for. This method will also enable you to reorder any missing or damaged components at once, so as to avoid delay in completing your kit.

Separate and lay out parts in an orderly manner. I have found that a couple of my wife's cupcake pans are ideal for keeping small parts, nuts, screws, etc. separated until used.

Tools, such as a screwdriver that will hold a screw clamped to its blade until started, and plastic nut drivers that hold small nuts in place until started on a screw, are helpful. *Do not* skip ahead of instructions or try short-cuts in assembly. The reasons for proceeding in the prescribed order will become evident as you go along.

When removing insulation from wires attached to power transformers, filter chokes, audio transformers, etc. do not pull hard on these leads as internal connections may be damaged.

Soldering is important. The Heath Co. tells us that 90% of their service problems on kits are caused by poor solder connections. Insufficient heat may cause rosin solder joints and these sometimes take a long time to show up and are hard to find. On the other hand, too much heat may damage some components. Germanium diodes, transistors and NPO capacitors will be damaged by overheating. Even half-watt resistors will permanently change value if they get too hot. On printed circuit boards you can usually solder with a small iron, 25-40 watts, without taking other precautions because the copper foil itself acts as a heat sink. When making point to point wiring, however, use heat sinks between delicate components and the solder joint.

When attaching leads to wafer type switches, place your work so that solder rosin will flow away from the switch contacts. These parts are also fragile and will not stand much pulling of leads or bending of the heavy wire around terminals. Loose solder on a circuit board may easily be cleaned off with an old toothbrush dipped in alcohol.

Before applying power to your kit, check resistance readings between the + side of the first filter condenser in your power supply and the B- or ground. The values you should read will usually be in the instruction manual. If you plug in the set and the fuse immediately blows, for goodness sakes don't put in a bigger fuse. Check for power supply diodes wired in backwards. Also filter capacitors may be reversed. If the trouble cannot be found by visual inspection or resistance checking you may have a component that breaks down only

when voltage is applied. I use a setup that makes it possible to connect a light bulb in series with the a.c. line to limit the current flowing into the power supply. With this setup you can leave the power applied to the device being tested while looking for a short circuit or overload without burning out the power transformer, rectifier tubes or diodes in the process. This also makes it possible to discover what voltage is missing and where. The value of the series light bulb should be about half of the wattage ordinarily used by the device under test. The voltage readings you find will be half or less than those noted in the instruction book but it is easy to find one that is missing entirely. When using this setup *be sure* that the device being tested is *not* connected to an earth ground. If you plug your brand new creation into the power line and smoke starts coming out of the innards, don't panic. Nine times out of ten it is only a half-watt resistor. Pull the plug and locate the overheated component. When you find it the difficulty can usually be tracked down by resistance checks. Remember that resistance readings in circuits containing diodes and large electrolytic capacitors will be misleading.

Circuit faults that do not yield to voltage or resistance checks can usually be found by signal tracing. A general coverage communication receiver will do a fine job of checking the output and frequency of carrier oscillators, mixers, intermediate frequency amplifiers, etc.

An alternate method is to inject a signal of the proper frequency and amplitude at some point in the circuit and follow it from there. By using an all band RF Signal Generator which is capable of being modulated by an audio frequency and also having a separate audio frequency output and using a VTVM or Oscilloscope for output indicators most any circuit malfunction can be tracked down.

When using output indicators do not connect them so as to load tuned circuits as doing this will give misleading and useless readings.

Happy Kit Building.

de WA4GUZ
de Signal Report

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What this family needs is family trees that will produce more lumber and fewer nuts.

NUT-RAL-IZATION
The Ham Monitor

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OFFICIAL BULLETIN NR 195 FROM ARRL HEADQUARTERS NEWINGTON CONN NOV 14 1968 TO ALL RADIO AMATEURS BT

Canada announces the conclusion of a reciprocal operating agreement with Norway which, along with Nicaragua, supplements the list appearing on page 91 of October QST. Additionally, the United States has concluded a reciprocal operating agreement with Monaco, effective December 1. Amateurs of one country visiting or residing in the other may obtain permission to operate their own amateur stations there. Monaco, along with the Barbados and Surinam, adds to the QST listing noted above AR

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GUEST EDITORIAL
By Ralph Coady W4BNI

Regarding amateur operating practices, I note that there is a great need for education on this subject including courtesy. A thorough knowledge of procedure and the customs of amateurs working in the various bands is necessary to achieve the highest efficiency in operating. All amateurs, particularly those new to the hobby, are urged to use standard procedure. Such use will serve to make your operating more enjoyable and allow intelligent employment of our frequencies with a minimum of confusion. Standard operating procedure is also a time saver, as you will learn from experience.

A cardinal rule of good operating is to listen carefully for several minutes before you use your transmitter to get an idea of what stations are working. Listening will show whether the spot in the band you have chosen is free of interference or whether another frequency is desirable. It will also show immediately what stations are working in the event you are seeking contact with a particular area. It will, in many cases, prevent you from needlessly interfering with contacts already in progress. Always listen first, then transmit.

Considerable QRM may be eliminated if the ARRL recommended procedures are followed for "Calling Stations" and "The CQ". These recommended practices are greatly abused. I find that with average conditions, if you can hear the QRMer, he can hear you. The worst type is the "Key Sitting Bird" that never uses a dummy antenna for adjusting his transmitter but chooses to have his carrier on the air with the key or mike switch closed. This taxes your blood pressure and your thoughts are not permissable to be changed to words that could be placed on the air.

We also have the "Crosstown Bird" who operate with excess power while separated a short distance and operate for long periods when the band near their operating frequency is crowded. This use of power, above that which is required for short distances, is in direct violation of the FCC regulations. Some of this use of excessive power is brought about by some manufactured equipment that has no provision to reduce the power sufficiently to meet the FCC regulations, thus contributing to the QRM. This is getting to be a real serious problem. What can we do to reduce QRM? First, we can do our part to be not guilty of bad practices, secondly, try to practice and live by the "Amateur's Code." An accidental break-in on a QSO can be handled nicely with a brief apology and then QSY to a clear spot.

If you like DX, look around the band and when you find it, go after it. If you like local contacts and the band is crowded, make your QSOs short. If it gets too lengthy, tell Joe Bloke to give it to you on the land lines and by so doing, you will not be the one to blame for QRM many miles away.

Did you ever consider getting into the VHF area of two and six meters? You can, so to speak, "have a ball." Set up a project to build a rig in these ranges or watch the trade papers where you might pick up a real bargain. Frankly, I am a latecomer as far as VHF is concerned and I find that I have really missed the boat by not

getting into it years ago. Another plus factor for VHF is that the power requirements are small which is definitely on the economy side. The use of diodes and transistors in the circuitry makes a very fascinating ject. The big plus is that you have helped eliminate some of the QRM from the HF bands when you work local. If you have only HF equipment, confine your local contacts to the 40 and 80 meter bands. We will never be able to eliminate QRM. However, by our own efforts we can effect a reduction and by passing word on, others may just catch-on.

Have a good vacation, come back all bright eyed and loaded with ideas and suggestions for future programs. It's your club and we need your attendance and help!

(From T.A.R.C. Bulletin)
Via Florida Skip

****

Speaking of Co-ax and the fact several have requested publication of an article taken from an old issue of "Auto Call", am quoting below:

It has been a long time since we have permitted the "co-ax" problem to grace the pages of Auto-Call and it's time to dig it up again. It seems that Mr. Ham has a ground plane antenna which he has determined in the usual fashion, is 37½ ohms, so he needs a ed line of 37½ ohms. So he parallels wo lengths of 75 ohm co-ax, connecting the shields together at each end, and connecting the inside conductors together at each end. What is the resultant impedance? It is *not* 37½ ohms.

Second section: The same ham has an antenna which he has determined is 150 ohms and he needs a balanced line. So he take two lengths of 75 ohm co-ax and connects the outside shields together at each end and uses the inside conductors as the balanced line. What is the resultant impedance? The answer is not 150 ohms.

In the first case, two 75 ohm lengths in parallel, the resultant impedance is 75 ohms. Why? Because the thing that determines the surge impedance of co-ax is the ratio of the inner conductor to the outer conductor. This has not been changed, therefore the impedance has not been changed. The answer is still 75 ohms. This is like connecting two 8 ohm windings of an output transformer in parallel (aiding, of course). The impedance is still 8 ohms because the turns ratio has not been changed.

In the second instance the answer is 300 ohms. This is like connecting two 8 ohm windings of an output transformer in series, which will give 32 ohms because the impedance varies as the square of the turns, and 2 squared is 4, so 4 x 8 gives 32 ohms. Before you start the correspondence, measure it and you will find the above is correct.

de: Ham Chatter

(Ed. Note: Any comments on the above?)

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A Geology Team has found an exciting fossil in Western Kansas. It is rumored that it is one of the last "stand patters" against SSB.

NUT-RAL-IZATION
The Ham Monitor

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"HERE'S A REAL WRL SPECIAL—

—the great GALAXY V Mark 3— plus two terrific package buys put together by our Experts!"

Larry Meyerson
WØWOX

GALAXY V
MARK 3
500 WATT
TRANSCEIVER
$420.00 Less Accessories

($22 Monthly)

- 500 WATTS PEP-SSB
- 475 WATTS CW
- Precision Dial and Vernier Logging Scale
- Solid State VFO
- CW Sidetone
- CW Filter (option)
- CW Break-in (option)

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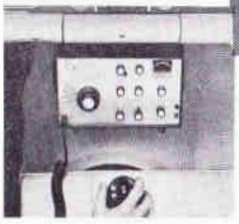

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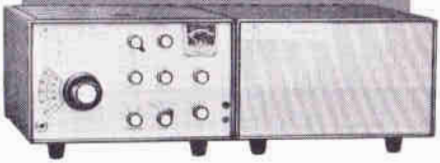

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