



HAM HUM

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July 1969

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No. 7

SPECIAL DINNER MEETING

WHAT: Joint dinner meeting with the Bellevue Amateur Radio Club.

WHEN: Thursday (not Friday), July 10, 1969—7:00 P.M.

WHERE: Richfield Cafe, Richfield, Nebraska
(See page 3 for further details.)

PRESENTATION OF FIELD DAY TROPHY TO WINNER

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.



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PRESIDENT'S CORNER

I have been looking around for the last few days, trying to find a soapbox to get on for this month but haven't come up with anything. I guess that I have spent too much time planning and getting ready for vacation along with some other things. The XYL (WAØNCO) and myself celebrated our 25th Wedding Anniversary last month.

By the time this gets to press we will be in the middle of a month's vacation in the Pacific Northwest and hopefully enjoying some sightseeing, camping, salmon fishing, etc. Yes, some Ham Radio too, as I am taking along a mobile rig and intend to operate it some on 40 meters around the Mid-Cars Net frequency of 7.258 MC. I hope to be able to work back into Omaha some nights about 10:00 P.M. local time.

Plans are being made for the annual Ak-Sar-Ben Radio Club Picnic in September. Last year's was real enjoyable and I'm sure this one will be. We could use a bigger attendance and anyone that is willing to help out, please contact one of your Board members. I plan to catch the Central Nebraska Radio Club Picnic at

Victoria Springs on July 27th, returning from vacation. This is a real nice campground and a chance for a lot of enjoyable eyeball QSO's as well as a button-popping meal.

73's

Royce E. Johnson, WAØKIL

P.S. Hope to see the Field Day trophy when I get back and I would hate to have to make a trip to Bellevue. GOOD LUCK!

**OFFICIAL BULLETIN NR 223
FROM ARRL HEADQUARTERS
NEWINGTON CONN
JUNE 5 1969 TO ALL RADIO
AMATEURS BT**

The United States has concluded a reciprocal operating agreement with Sweden which becomes effective immediately. Amateurs of one country visiting or residing in the other may obtain permission to operate their own amateur stations there. This new United States agreement adds to the QST listing appearing on page 83 of June QST AR

HAM HUM WINS IN ARNS PUBLIC AWARDS PROGRAM

The Amateur Radio News Service (ARNS) again this year sponsored the ARNS Public Awards Program in which numerous amateur publications were submitted in competition. Several issues of HAM HUM were submitted. The contest is over and the results have been published.

We are happy to report that in the Single Club Category, HAM HUM placed as follows in the various categories:

- First - in the General Overall Category
- First - in General Format
- Third - in Usage of Items From Other Publications
- First - in Illustrations
- First - in Legibility of Content

Special Award for perfect scores in Illustrations and Legibility of Content.

Honorable mention for technical article.

JULY MEETING

The July meeting will be a joint dinner meeting with members of the Bellevue Radio Club. The purpose of this meeting will be the presentation of the Field Day Trophy to the club with the highest score for this year's contest.

The Bellevue Radio Club is host this year and arrangements have been made by Mrs. Dorothy Sledge for the awards dinner to be held at 7 P.M. Thursday, July 10th, at the Richfield Cafe at Richfield, Nebraska.

The cost for the dinner will be \$2.25 per person. The dinner will be served buffet style and seconds and thirds are encouraged. The private dining room has been reserved for the dinner and meeting.

Richfield is located about 3 miles south and 2 miles west of Papillion, Nebraska.

Here is an opportunity to have a nice ride in the country, a good dinner, a friendly meeting and hopefully the trophy for a job well done on Field Day.

NEBRASKA AMATEUR RADIO HALL OF FAME

The SELECTIONS COMMISSION for the Amateur Radio Hall of Fame met in Kearney, Nebraska (Sunday, June 15) for the purpose of selecting the 1969 Member to the Nebraska Amateur Radio Hall of Fame. This program was originated in 1965 in North Platte for the Nebraska Amateur Radio Clubs. Each year an amateur radio operator in Nebraska is

honored for his merits and services in the field of Amateur Radio. The 1969 member of the Nebraska Amateur Radio Hall of Fame will be honored at a Ham Convention later this summer. Those clubs represented at the meeting were: Hastings, Crete, Lincoln, Ak-Sar-Ben of Omaha and North Platte.

NOTES ON ARRL NATIONAL CONVENTION

By John Snyder, WØWRT

I took a day of vacation time from my job and with my 13-year-old son, Bill, left for Des Moines at 10:00 Friday morning. Our thought was to get there early enough so as not to miss some of the sessions which were to begin sometime on Friday the 20th. (The Convention continued thru the 22nd.)

After a pleasant trip on the Iowa interstate we arrived at the Fort Des Moines Hotel, checked in and had some lunch. About 20 miles or so outside Des Moines we tried the 2 meter Motorola handie-talkie to see if a repeater was in operation — there wasn't! We were advised later that work is now being done toward this end, also hope they won't have some of the many problems that can arise in the engineering of one of these systems.

Right after lunch we managed to get in on a good part of the ARRL open forum and found the remarks of Robert Booth, W3PS, General Counsel for the League to be very timely and interesting. Of special interest was the subject of towers and local zoning ordinances, building codes, etc. I think that we have been particularly fortunate here in the Midwest not to have had some of the legal hassles which have been encountered by amateurs in other parts of the country. Sorry to say, but I missed most of the discussion concerning the case of the Sarasota ham and his \$1,000,000 lawsuit. The need for good ham publicity was again stressed.

As usual, many manufacturers had equipment on display on the 3rd floor.

One of the most spectacular I thought was the newly developed Signal One radio. A very sophisticated piece of ham gear, but no doubt on the expensive side.

Trying to describe a large convention such as this is probably like the 3 blind men giving their description of the elephant. Naturally, it is not possible to attend every session available. There was the premier showing of an Amateur Radio film which would be wonderful for everyone to see; it features narration by Arthur Godfrey, K4LIB and also a segment with Barry Goldwater, K7-UGA, showing his MARS station.

Stu Meyer, W2GHK, gave a very interesting and informative talk on amateur FM communications and test methods for same.

From 3 to 5 P.M. Saturday there was a demonstration of NASA communications, with films and slides; a very large turnout for this one.

Frank Parsons, WØEMS, and myself attended the VHF session by Ed Tilton, W1HDQ who also gave some history and pointers on VHF FM. Interest seems to be increasing in this field.

The finale of the Convention was the banquet which began about Sunday noon and featured Gov. Robert Ray of Iowa, Sylvia Margolis representing the RSGB and Sen. Barry Goldwater, K7UGA, of Arizona. Very enjoyable.

I think the only unpleasant things connected with the Convention were the somewhat slow elevator service and costly auto parking. Guess these

are to be expected nowadays. The problem seems to be that it's difficult to find any facilities really large enough to handle the big conventions these days. Maybe someone will come up with some answers, we hope.

We had a lot of enjoyment just meeting people that we hadn't seen before or perhaps for many years, such as, Frank W. Cooper, W3NV (ex WØIOS) of Pittsburgh, Pennsylvania (first editor of Ham Hum) and Tom Fifer, K8BKF (ex WØAQJ) of Saginaw, Michigan (second editor of Ham Hum). Some others attending from the Omaha area were: Mac McGovern, KØMSS; Dick Eilers, WØYZV, and XYL Julie; Norval and Connie Bowen, WAØNPF and WAØMYF; Cecil DeWitt, WØRMB; Bob Schellhorn, WØYSX; Ferris Kramer, WØYZK; Frank Parsons, WØEMS; Bob Miller, KØZLY; Alan McMillan, WØJJK; Alan Bierbaum, WØJHD; Chuck Juvenal, KØKKL; Darrell Van Winkle, WAØSOW; Frank Christy, W9DWY/Ø; and Al Comisar, WAØKST; Ed and Marjorie Askew, WAØRDZ and WAØRDY.

Best wishes for a speedy recovery to: Royal M. Enders, KØLYO, who is in Clarkson Hospital for the removal of an eye cataract.

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NOTES ON JUNE MEETING

by Connie Bowen, WAØMYF

The monthly meeting of the Ak-Sar-Ben Radio Club, Inc. was held on June 13, 1969 at the Red Cross Chapter House.

New members accepted were: Robert D. Andrus, KØLUG; Harold F. Jacobs, KØJBC; and Raymond E. Weghorst, KØCVA.

Royce Johnson, WAØKIL, presented a test entitled "Can You Follow Directions?" Needless to say, many found after a torturous trail that all effort could have been avoided if they had only followed directions.

The majority of the program was handled by Bob Lockwood, WAØDHU, who discussed past field day efforts and outlined due procedures to be followed on June 28th and 29th of this year. A most interesting and challenging weekend is in prospect for all who are able to participate.

Harold McClenahan, WAØDGA, and Jim Droege, WØYCP, gave a report on the mobile communication effort during the canoe race which was held on June 8th.

The National ARRL Convention, to be held in Des Moines, Iowa, was discussed and all present were urged to attend.

The meeting adjourned for refreshments and eyeball QSO's.

MIDDLE AGE: The time of life when a man feels he gets less for his money each time he goes to the barber.

TRANSMISSION LINES

Bob Spain, WB2RVE

A transmission line is a system or medium, primarily used as a device to transfer electromagnetic energy from one point to another. It may take on various forms and sizes, varying from a conductor with a O.D. of 1 mil to a nitrogen line a foot in diameter, or a rectangular waveguide with its characteristic ductwork.

Transmission lines are used for many applications. A resonant section of line can be used as a harmonic filter, or as an impedance matching device. For example, if a length of line is cut so that it will be a quarter-wavelength at the fundamental frequency, with the unterminated end shorted, it will look like an open at the fundamental frequency, and a short at the second harmonic. Such quarter-wave shorted stubs are frequently used in FM Broadcast transmitters as harmonic filters (most power amplifier stages in FM Broadcast transmitters are operated Class C). Such a filter is inexpensive, easy to construct and effectively attenuates the high-level harmonics of the preceding Class C amplifier.

A half-wave line will reflect the impedance of the load back to the generator, and is used in multiples in some VHF installations. This is usually only practical for use on the six and ten meter amateur bands. BELOW ten meters, a half-wave line becomes impractical, due to its physical length.

A quarter-wave line will reflect the inverse of the load impedance back to the generator; i.e.--a short at the generator end will look like an open at the load, and vice-versa. Using this principle, transmission lines of appro-

priate length may be used to match impedances. This is what is done in a balun.

By the maximum power transfer theorem, we know that for most efficient energy transfer, the generator must have the same impedance as the load. Likewise, the transmission medium must have the same characteristic impedance as the generator, if maximum energy is to be transferred to the load. When the impedance of the line is not the same as that of the generator or the load, energy will be reflected back towards the generator. As the waves travel back the line, they will be alternately in and out of phase with the forward signal. Due to this, voltage peaks and nulls will exist along the line. If the mismatch is too bad, the voltage peaks may rise above the breakdown voltage of the line, and the dielectric may be destroyed. Due to high currents at some points along the line, the cable may heat up and suffer thermal damage. Another effect of a bad mismatch would be possible damage to the final PA tube and/or tank circuit by the reflected energy.

In audio work, miterminated lines may cause distortion and loss of power. In video and pulse circuits, an impedance mismatch may cause reflections, inversions, and ghosting in the picture. The sync pulses may appear widened by the out of phase reflections, and loss synchronization may result. To avoid these conditions in TV stations, lines not in use are terminated with resistors which are of the same value as the characteristic impedance of the line. The industry has standardized and now uses 75 ohm coaxial lines for video, and 600 ohm balanced lines for audio.

To reduce the level of a signal passing through a transmission line, we usually make use of a resistive attenuation pad. This pad may be designed to produce either a fixed or variable attenuation to the signal. Whatever the case, it is usually designed so that the characteristic impedance is the same as the line.

A dummy load is simply a non-reactive transmission line of infinite length. Whenever a line is terminated in a resistance the same as its characteristic impedance, it appears to have infinite length.

At high frequencies, coaxial transmission lines become highly reactive and inefficient. At frequencies above 1,000 megacycles, skin effect is predominant, and waveguides are usually employed as the transmission line. A waveguide is a transfer device that relies on skin effect to guide the signal down a hollow tubular device from generator to load. Waveguides are usually rectangular or square in physical appearance, and primarily used in a vertical plane. Long horizontal runs of waveguide are to be avoided, due to the fact that moisture might collect inside and stagnate, thus changing the electrical characteristics of the transmission path. Sharp bends and discontinuities in the waveguide are also to be avoided, as they may present considerable attenuation to the desired signal.

de Crosstalk, New Jersey

FLATTERY: Telling the other fellow what he already thinks of himself.

OFFICIAL BULLETIN NR 224 FROM ARRL HEADQUARTERS NEWINGTON CONN JUNE 12 1969 TO ALL RADIO AMATEURS \overline{BT}

Amateur radio will be prominently featured at the National Jamboree of the Boy Scouts of America July 16 through July 22, 1969. The site of the Jamboree is Farragut State Park, Idaho and the call used will be KF7BSA. Probable hours of operation, beginning about July 14, are 1600 to 0500 GMT. QSO frequencies for phone operation will be 3940 7240 14290 21360 and 28990 kiloHertz. Code contacts will take place on 3590 7050 14080 21140 and 28190 kiloHertz. QSL via ARRL. Other details will appear in July QST \overline{AR}

NEW MEMBERS ADDITIONS TO ROSTER

Robert D. Andrus, KØLUG
4116 North 100th Street
Omaha, Nebraska 68134
Phone: 397-7755

Harold F. Jacobs, KØJBC
2312 Deer Park Blvd.
Omaha, Nebraska 68108
Phone: 346-8393

Raymond E. Weghorst, KØCVA
328 North 35th Street
Omaha, Nebraska 68131
Phone: 345-8407

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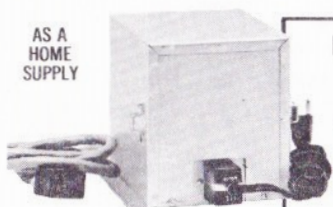
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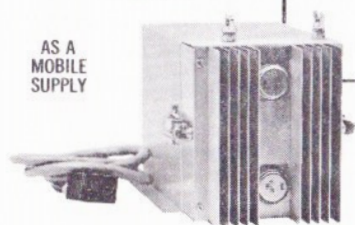
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