



HAM HUM

Published by

AK-SAR-BEN AMATEUR RADIO CLUB, INC.
Post Office Box 291 — Downtown Station
Omaha, Nebraska 68101



Vol. XXXII
No. 5

May 1982



Life Membership Award Presentation
Charlie Rodgers, W0QQN

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.

Full permission is granted for reprinting articles appearing in this official organ provided a credit line is given to HAM HUM and in reprinting, to the author and publication from which the article was taken.



Published by:
AK-SAR-BEN AMATEUR RADIO CLUB,
INC.

Post Office Box 291
Omaha, Nebraska 68101

President ... Walt Brown, KAØDMB

Phone: 451-1072

Editor Dick Eilers, WØYZ

Res.: 397-3999

Phones: Bus.: 342-1402

X-200

Assistant Editor John Snyder,
WØWRT

Res.: 556-1538

Phones: Bus.: 390-4622

Copy deadline for June is May 21

Dues-Quarterly Basis (For each quarter or part thereof for balance of calendar year.)

New member initiation fee\$1.00

Regular member\$3.00

Regular member and spouse ..\$3.60

Student member\$1.05

Dues-Annual Basis

(Due and Payable each January 1.)

New member initiation fee ... \$ 1.00

Regular member \$10.00

Regular member and spouse . \$12.00

Student member \$ 4.00

NEXT MEETING

WHEN: FRIDAY, May 14, 1982

TIME: 7:30 P.M.

WHERE: HEARTLAND CHAPTER
AMERICAN RED CROSS
38th and DEWEY AVENUE
OMAHA, NE 68105

PROGRAM: **CIVIL AIR PATROL EMERGENCY COMMUNICATIONS**

COME ONE — COME ALL! EVERY HAM BRING A NEW HAM. JOIN THE GANG FOR EYEBALL QSO's. LOTS OF HOSPITALITY, INFORMATION, HOT COFFEE AND REFRESHMENTS AFTERWARDS!

THE PREZ SEZ

Thanks to Joe WAØWRI we had another outstanding program. Someone once said, "To be forewarned is to be forearmed." If such is the case, I believe we all are more knowledgeable now on the subject of "The Amateur and Cable TV Problems." This should prove most interesting in our tour of Cox Cable on July 9, where the "the other side of the coin" will be reviewed as well as a "look see" of the new cable equipment that will be used in this area. You should plan to attend.

Thanks to all for making the Club Auction another success. A grand time, a renewal of old acquaintances, a lot of good bartering, fine food and refreshments, not to mention all the "Boat Anchors," made for a GREAT DAY for all of us. Thanks, Jim NØAIH, Mitch NØAZF, Chuck KCØDB, and all their helpers; without you we couldn't have done it. Dick KAØAAB with his helpers managed to keep the equipment and finances straight. So again, to all of you, thanks.

I want to mention that the Club Special Events Committee is receiving requests for our participation in furnishing communication support for various events coming up this month. On May 15 we are in need of operators who can help with the White Cane Walk-a-thon and

again on May 23rd with the Boys Town to Linoma Beach and return Bike-a-thon. If you can spare a couple of hours, or if you can work as long as it takes, please let Scot WBØWOT know. He can be reached at 592-1775. If you are planning to come out to Field Day (June 26th), let either Mitch NØAZF or me know as there are still spots open for Shack Chairmen as well as operators. Sign-up sheets will be available at the next Club meeting. There's no better way to brush up on your operating skills.

Again, I want to call your attention to our June 11th meeting which will be held at Internorth's main auditorium located at 2025 Dodge Street. Parking should be available in the lot to the west of the building. See more about the program in this issue.

So you see, the Club members are busy, busy, busy; why not join them. Nuff said, see you at the May meeting.

73's
de Walt KAØDMB

FOOD FOR THOUGHT: A good thing to remember and a better thing to do — Work with the construction gang and not with the wrecking crew!

NOTES FROM THE GENERAL MEMBERSHIP MEETING
Held April 9, 1982, at the American Red Cross
Building, 38th & Dewey Avenue, Omaha, Nebraska

President Walt Brown, KAØDMB, called the meeting to order at 19:30 hours.

There being no objections, the Minutes of the previous meeting were approved as printed in the April, 1982 issue of Ham-Hum.

Asst-Treasurer Jim Wilson, WBØJPN, gave his report and it was moved and seconded that the Treasurer's Report be accepted as presented.

President Walt called forward Life Members Dick Eilers, WØYZV, and Bob Lockwood, WAØDHU. Dick and Bob then presented to Charles and Alma Rodgers, WØQQN, and XYL, a Resolution passed unanimously by the Board of Trustees at their meeting of April 6, 1982. The purpose of the Resolution was to recognize their work for the Club and the amateur community and to confer on them Life Memberships in the Ak-Sar-Ben Amateur Radio Club, Inc.

Committee Reports: Auction Committee, Mitch Gagne, NØAZF; Education Committee, Bob Lockwood, WAØDHU; Publication Committee, Dick Eilers WØYZV; D-X Committee, Chuck Peaker, KCØDB; Courtesy Committee, Charles Michel, KØQVL.

The evening's program was presented by Joe Eisenberg, WAØWRI. The news is not good news as Joe explained what the Ham fraternity has to look forward to as Cable TV encroaches into ham frequencies. PUBLICITY, according to Joe, will be the Ham's best weapon.

Door prizes were won by Chuck Carroll, KCØJP; Bob Miller, KØZLY; Don Eden, WBØVGB; and Mike Wilczynski, WBØBMV.

The meeting was adjourned at 21:10 hours, after which coffee, cookies and doughnuts were served.

Respectfully submitted,

Lysle Renne, NØCKH

Secretary

NOTE: Attached to these minutes is a copy of the Resolution presented to Charles and Alma Rodgers, thereby becoming a permanent record of the action taken by the Board of Trustees on April 6, 1982. (See next page.)

CORRECTION

Last month's issue gave an incorrect date for the Tour of Cox Cable TV, with Frank WAØIWF. The correct date is **July 9**.



OF, BY AND FOR THE RADIO AMATEUR

Ak-sar-ben Amateur Radio Club, Inc.
Omaha, Nebraska

QST
OFFICIAL ORGAN

RESOLUTION

WHEREAS it has been the practice and policy of the Ak-sar-ben Amateur Radio Club to recognize individuals who have made significant and enduring contributions to the state of amateur radio and to the membership of the Ak-sar-ben Amateur Radio Club; and

WHEREAS Charles and Alma Rodgers have been long and devoted members of the Ak-sar-ben Amateur Radio Club specifically and the amateur radio community as a whole; and

WHEREAS Charles Rodgers has given unselfishly of his time and knowledge in the teaching of amateur radio theory in classes for many years; and

WHEREAS Charles Rodgers continuously and generously offers his assistance and support to amateur radio operators in technical and operating problems; and

WHEREAS Charles and Alma Rodgers manage a highly efficient QSL Bureau on behalf of the Ak-sar-ben Amateur Radio Club and all amateur radio operators in the Zero call area; and

WHEREAS Charles and Alma Rodgers offer and provide the time and effort to bring the QSL Bureau activities to innumerable hamfests at their own expense thereby providing an invaluable service to the amateur radio community; and

WHEREAS Charles and Alma Rodgers have for many years represented the spirit and image of the Ak-sar-ben Amateur Radio Club; and

WHEREAS the Ak-sar-ben Amateur Radio Club takes great pride in the sponsorship of the best ARRL QSL Bureau in the league and in the dedication of the many volunteers who give of their time under the guidance of Charles and Alma Rodgers;

NOW THEREFORE BE IT RESOLVED that, in recognition of their outstanding and enduring contribution for these many years, Charles and Alma Rodgers are hereby elected lifetime members of the Ak-sar-ben Amateur Radio Club and entitled to all the rights and honors thereof; and

BE IT FURTHER RESOLVED that this Resolution be made a permanent part of the minutes and records of the Ak-sar-ben Amateur Radio Club as a tribute to a respected Gentleman and Lady.

Ak-sar-ben Amateur Radio Club, Inc.

ATTEST:

Secretary

President

THE AMERICAN RADIO RELAY LEAGUE, INC.

ADMINISTRATIVE HEADQUARTERS NEWINGTON, CONNECTICUT, U. S. A. 06111



"THE PREZ FINDS A QUORUM"

Hamboree #6, Sioux City

Left to right: Dave, NØCLW; Mitch, NØAZF; Walt, KAØDMB; Frank, WAØIWF; Chuck, KCØDB. Credit for picture to KAØKDL, Gary.

ROSTER CHANGES

Call Letter Addition

Charles D. Plotkin, KCØOH

Change of Call

John R. McNaught from
WBØWYI to KCØFM

Change of Address

Lloyd R. McElhaney, KØDKM
12620 Glenvale Plz.
Lot #367
Omaha, NE 68164
Phone # 496-0549

DONATIONS

34/94 REPEATER

W. L. Pedigo, WAØOMB
Ted Parsons, WBØTYB
Olie Olson, KAØJNS
Carman Swaim, KAØILM
John McNaught, KCØFM
Gary Wamsat, NØBY
Robert W. Arant, Sr., WØGOT

40/00 REPEATER

Ted Parsons, WBØTYB
Olie Olson, KAØJNS
John McNaught, KCØFM
Robert W. Arant, Sr., WØGOT

22/82 REPEATER

Ted Parsons, WBØTYB
Olie Olson, KAØJNS
Ron Sundsboe, WAØMQM
Robert W. Arant, Sr., WØGOT

MINUTES OF THE BOARD OF TRUSTEES MEETING held on April 6th, 1982 at the Blue Cross/Blue Shield Building at 19:30 hours.

Present were: President Walt Brown, KA0DMB; Bill Martin, N0ANQ; Jim Wilson, WB0JPN; Dick Fehrman, KA0AAB; Mitch Gagne, N0AZF; Chuck Hoffman, WB0NVL; Lysle Renne, N0CKH; Ray Fink, WD0GIL; Frank Bruner, K0SST; Jim Sanford, N0AIH. Also present was guest Dick Eilers, W0YZV.

Minutes of the previous Board Meeting were approved as corrected by adding the words "up to" before the \$200.00 in paragraph six.

Treasurer's report was approved.

Auction Committee Chair was turned over to Mitch, N0AZF, due to job requirements of Jim, N0AIH.

ARRL LRPC Committee report was given by Ray, WD0GIL. Moved and seconded that a reply of rejection be drafted and presented to the Board for approval and forwarding to ARRL.

Club LRPC report was given by Frank, K0SST.

Moved and seconded that a Christmas Raffle be conducted with the drawing for prizes to be held at the Ak-Sar-Ben Radio Club's Annual Christmas party.

Moved and seconded that a special Board Meeting be held June 19, 1982.

Moved and seconded that the Board go into Executive Session, with Dick, W0YZV, being invited to attend.

Meeting was adjourned at 22:00 hours.

Respectfully submitted,
Lysle Renne, N0CKH
Secretary

Note: Unless otherwise noted, all motions carried.

 **Need help? Call us. Want to help?
Call us.**
Red Cross is counting on you.

A Public Service of This Magazine
& The Advertising Council



INTER**NORTH**

Presents

Maximilian's Journey

1832-1834

Explore the wild Missouri River with
Prince Maximilian and Artist Karl Bodmer

"Maximilian's Journey" recreates the exciting 1832-34 expedition of the Prussian prince Alexander Philip Maximilian and the Swiss-born artist Karl Bodmer. These two men explored the Missouri River from St. Louis to near the present site of Great Falls, Montana.

The Prince was the first trained Naturalist/Scientist to follow the trail blazed by Lewis and Clark in 1804-06. Bodmer was the first artist of great talent to visit the Northern Plains. He painted the inhabitants, terrain, and wildlife with such detail and realism that his pictures are now recognized as historical documents and priceless works of art.

In 1962, InterNorth acquired the entire collection of over 500 original watercolors, pencil sketches, and hand-colored prints produced by Karl Bodmer, plus Prince Maximilian's diary and notes. Since that time, it has been on permanent display at the Joslyn Art Museum in Omaha.

The color and detail of the paintings, preserved in their original condition for over 140 years by Maximilian's foresight, are reproduced across the vast, three-screen area so that one
els he is there viewing with Maximilian and Bodmer that primitive panorama.

By offering this educational program, InterNorth is able to share this magnificent portion of our heritage with others. The program recreates, with authentic realism, this historic expedition. Using Bodmer's originals and Maximilian's description of the land and Indians, and by employing animated photography and a three-screen movie technique, our Production Department has produced a breathtaking film of the Early West that expands the appreciation of this collection beyond the museum walls.

The June meeting will be held at
InterNorth, Inc. (East Annex) 2027 Dodge St.
West entrance... Across from Central High School

DX ANYONE

Now that the "DX Bug" has a firm hold on your backside and you are beginning to work towards "DXCC," the next thing you will need is a QSL card from the DX. The ARRL will not take your word for it.

You have three ways in which you can "QSL" (four, if you deliver in person, Hi).

1. You can send directly to the DX, via the Callbook address.
2. You can send your card to this QSL Manager, if he has one.
3. You can QSL via the "Bureau."

Sending Direct is generally faster than the Bureau, however it's going to require \$\$\$\$. The first \$\$ you will need is 40¢ for the first one-half ounce for air mail postage to get your card to the DX. Along with your card you will also include **return** postage, if you have his country's stamp to get his card to you. If not, then \$\$ in the form of IRC's (International Reply Coupons) or a greenie (dollar bill). IRC's are by far the most expensive. IRC's are 65¢ **each** and, depending on the country you worked, you will need two to five IRC's. It ain't **cheap** sending direct Uncle!!

By far the least expensive way to QSL is to have the postage stamp from the country you worked. (That is, if you want the QSL card returned in a fairly short time; otherwise, the bureau is the least expensive.)

The following info is not a plug, it's the only DX stamp service I know of at this time. Write the man and ask for his catalog, if you're interested.

George N. Robertson — W2AZX
DX Stamp Service
7661 Roder Parkway
Ontario, NY 14519

One final comment about "QSL-ing Direct." If you do not send return postage, you might get a card via the Bureau and, again, you might not get a card at all. Keep in mind, most DX have enough QSL cards from your state to paper their walls, so he surely doesn't need any more and you can bet he won't pay the postage.

Summer propagation seems to be upon us early this year but it isn't all that bad. Time to load up on all the Central and South American countries, even "LU" (or will it be "GLU" Hi).

Next month: "All you wanted to know about QSL Managers."

73's es Gud DXing
de KCØDB

Post Script: Going to Cedar Rapids in July? Need a room close to the activities? No!! Well I do! A roomy that is. Need someone to share hotel expenses for three nights, Thursday, Friday and Saturday. If you are interested (I smoke and have known to imbibe in strong drink, but I don't snore) give me a ring at 347-6945 after 6:00 p.m.

RB Associates

R. H. BRENNEMAN

W P U Q J

COMMUNICATIONS CONSULTANTS
ENGINEERING SERVICES
(712) 323-1390

953 OAK PARK ROAD
COUNCIL BLUFFS, IOWA 51501



IMPERIAL MOTEL

110 NEBRASKA STREET • SIOUX CITY, IOWA 51101

DON BOUSQUET
GENERAL MANAGER

TELEPHONE
(712) 277-3151



BRUCE STARKEY

BRUCE'S GLASS SERVICE

MOBILE SERVICE

PH. 554-0635

Your card could be in this spot for
\$2.50 per month.

R F Sorcery **by Bob Wheaton** **W5XW-VP1XW-XERXW** de CHARRO

Trying to get a new solid state rig on the air can be frustrating. It shuts down, or appears to work only on RX. But is the problem in the rig or the antenna? Here, a dummy load is by far the single most useful station accessory; you don't need to be a service tech to need a good dummy load. The KW models can be had for \$30.00, factory wired (Dentron Big Dummy & MFJ-250); Heathkit's HN-31 kit is \$20.00 plus transformer oil; or they are easily built from scratch. Good transformer oil sources are power company service yards, X-ray supply houses, or pharmacy mineral oil can be used (derate to 80%). It isn't uncommon to first learn how sorry the antenna system really was, when going from vacuum state to solid state. The known characteristics of a good dummy load can be invaluable for isolation problems to either the rig or the antenna any time RF misbehaves.

A word about antenna tuners... If the final stage of the Tx has tuning controls, the Tx should first be tuned into a 50 ohm dummy load before attempting to adjust the tuner. The tuner's main function is normally to transform an unknown down to 50 ohms non-reactive. By presetting the Tx tuning for 50 ohms output, you fix the tuner input Z at 50 ohms and compel it to do the job correctly: matching Z unknown to a known Tx 50 ohm output. This also insures the Pi network will provide best harmonic attenua-

tion. If the Tx has no tuning controls, its output tank will be fix-tuned at 50 ohms (except rare cases), so only the tuner is adjusted.

High VSWR conditions during actual tuning can be hazardous to output transistors. A tuner not yet adjusted can appear extremely High Z. As an example: 100W of RF dumped into a purely resistive 1000 ohm load would generate over 300V of RF (for about one atto-second or until the final transistors trash — whichever occurs first). The 50 ohm Tx tank may load the 1000 ohm Z down and keep the voltage from hitting 300V, but why risk it? Solid state rig tune-up with a tuner should be at the lowest power level necessary to get a reading. After tuner resonance is achieved, then go to full power and gently tweak for resonance, since Tx output Z will not be at exactly 50 ohms during QRP tune-up.

And, yes, there's even a better way; it is a method of special value with either a new rig or a new antenna until some "by-the-numbers" parameters can be established and recorded. An RF noise bridge can be installed between the transceiver output and the tuner input (but DO disconnect the mike, key, kill the VOX, or whatever is necessary to avoid accidental transmission. RF noise bridges blow as fast as final transistors, maybe even faster). With the bridge set for 50 ohms, nonreactive, adjust the tuner for minimum noise. That's

all there is to it. If tuner tuning is not right on the money, it will be awfully close and you'll have saved lots of wear and tear on the rig (and the frequency). Palomar even has a tuner with built-in RF noise bridge that switches out of a circuit automatically during Tx. As neat as solid state, no tube radios are, they very often require a tuner for they are extremely temperamental about VSWR. Now, instead of 2 knobs to twiddle with we have at least 3. Progress!!

So you're building your own KW final? When you have calculated the values of C for C Plate and C Load, and need to locate the L tap positions for various bands, try this trick: With the Amp OFF, put an RF noise bridge in the line between the station Rx and Amp Output (jam the Amp RF relay in Tx if necessary, for the bridge must "see" the Pi network). Set the bridge for 50 ohms non-reactive. From plate cap to ground, put in a carbon resistor equal to the value of the plate load resistance (you used it to calculate the values of C). Disconnect the plate and loading variables from the tank temporarily, and pull the plate caps off the tubes. With the bandswitch on the correct band, connect fixed capacitors to ground at both ends of the tank coil (using the calculated values of C Plate and C Loading). At this point, when the coil tap is at the proper inductance, the noise bridge will be looking at 50 ohms non-reactive. The value of the carbon resistor representing Plate Load Resistance will be transformed by the Pi network to 50 ohms at the output end. Just

tap around on the tank coil until you find resonance, as indicated by the null in the noise. Repeat on each band, using the correct values of fixed capacitors. This is an extremely precise method; it is simple, quick, and can save wear and tear on tubes. It's also safer, for HV is never applied. **DON'T FORGET TO REMOVE THE RESISTOR WHEN YOU FINISH!**

EXPLODING BATTERIES

Many of the new hand-helds on the market today are operating with lower voltages — in the neighborhood of 9.6 volts and some as low as 7 volts. Users are cautioned to use proper charging devices, especially proper cigarette lighter charging units in the mobile.

At the Shelby Hamfest, Huland Gardner WB4THL, was displaying his Yaesu FT-202 batteries by means of a normal cigarette lighter plug in his truck. The charging hand-held was lying on the dashboard in the sun. He believes that the combination of the 13 to 14 volts coming from the alternator and the hot sun attributed to the explosion that "sounded like a shotgun blast".

To be safe, buy the inexpensive cigarette lighter plug charging unit (with it's built-in voltage dropping resistors) that is designed for your unit. If you must build your own, be sure to consider the voltage increase when your vehicle is running and, most importantly, do not exceed the recommended voltage for your hand-held.

Gene KA7AFW de CVRA
Repeater Journal Via
Arizona Desert Air Waves.

KER-CHUNK

It seems time for another article on repeater operation since there seems to be a fast growing amount of button pushing (or ker-chunking) on the various machines in town.

1. When a transmission (or series of them) is not identified, it is illegal. Therefore, button pushers usually are.
2. Button pushing quickly becomes a nuisance to people who usually monitor, and makes them curious to who the *@#! button pusher is.
3. It creates unnecessary wear and tear on the repeater, which is usually a very expensive piece of equipment, and hastens its failure.
4. It is a psychological crutch to the user to reassure himself that the repeater is still actually there.

To solve these problems is quite simple:

1. If you find you must ker-chunk a repeater, simply give your call and say testing. This makes it legal and is a courtesy to those who are monitoring at the time. Also, if you are testing into a dummy load, that repeater is still likely to hear you, since you probably have the covers off your radio and the RF conductors act like reasonable antennas. A 2 watt hand held into a dummy load has been easily copied through a repeater even though it was four and a half miles away.
2. Have faith, Brother, that the repeater is really still there.

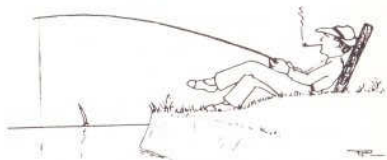
If you hear this type of operation persistantly, don't hesitate to let the offender know

that his operation is somewhat questionable. Do it nicely, **only once**, and state the reason. Two and three above should be sufficient. If he then persists, the best thing to do is ignore it (him). Most hams, given a reason to do or not to do something, are more than happy to cooperate. If the instigator turns out to be a turkey, he has gotten one response, don't give him another. That just keeps him going.

Even though it is no longer a legal requirement to give your call at the beginning of a QSO, it is still a good idea to I.D. before an autograph call. First it is a courtesy to those who must listen as control ops. It satisfies their curiosity as to who it is and announces your intent.

WBØCMC

Fishin'



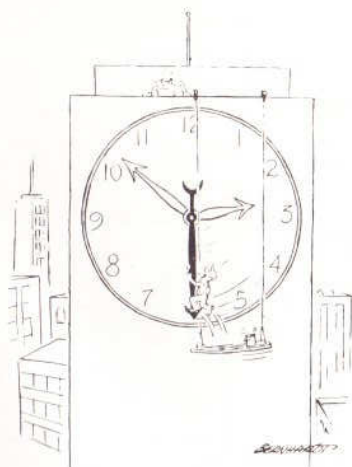
An antidote for all one's cares
And moods of fretful wishin'
(Especially when one despairs)—
Is just to go a-fishin'.
You have to leave your work behind,
And out in God's great open,
Beside a lake or stream you'll find
No reason for your mopin'.
And even if no fish you hook
You have achieved your mission.
And you will bless the time you took
To just go out, a-fishin'.

Carl C. Helm

Solid Statements

Each month as I read the various amateur magazines that appear on my desk I always wonder why the many contests listed therein hold such a fascination for so many amateur operators. Maybe I am just plain lazy but the idea of spending a weekend battling the already crowded bands to make contacts looks like a waste of time to me. Maybe I only hear the bad operators but contests seem to bring out all the bad points in amateur operators. We hear splatter from overdriven rigs, the lack of courtesy and the idea that the bands should only be used for the particular contest in progress leaves me with a bad taste. There must be a better way to improve the quality of Ham Radio other than to spend a weekend on the radio calling CQ contest. . . CQ contest . . .

WØDLM
de LOGIC - Cen. NE
Radio Club



“Be with you in half a minute—”

ARRL NEWS de WESTLINK REPORT

The ARRL did more than select new leaders at their last Directors' meeting in Newington three weeks ago. They decided to: (1) prepare a response to FCC Docket 79-144 concerning the biological effects of RF energy, (2) petition the FCC to permit Amateur use of AMTOR transmissions, (3) file comments on Docket 82-83 requesting 20 meter phone expansion with 14.150-14.175 for Extra Class only, 14.175-14.225 for Extra and Advanced only, and 14.225-14.350 for General Class and above, (4) file an application for review of RM-3855 and other petitions that request an early allocation of the new 10 MHz band to the Amateur Service, (5) adopt a position strongly opposing the issuance of any Amateur license with no Morse code requirement, (6) direct the League to not award any credit for operating activities on the 10 MHz band, nor sponsor any awards or competition on it, (7) adopt the 23 cm and 6 meter Band Plans, as recommended by the Plans and Programs Committee, (8) direct the General Manager to place additional emphasis on educating the general public on the problems of RFI and CATV RFI.

Watt's new...on 2 meters?



All mode (FM/SSB/CW) 25 watts, plus...!!!

TR-9130

The TR-9130 is a powerful, yet compact, 25 watt FM/USB/LSB/CW transceiver providing increased versatility of operation on the two meter band. It features six memories, memory scan, memory back-up capability, automatic band scan, all mode squelch, CW semi break-in, and incorporates microprocessor technology. It is available with a 16-key autopatch UP/DOWN microphone (MC-46), or a basic UP/DOWN microphone.

TR-9130 FEATURES:

- **25 Watts RF output**
All modes (FM/SSB/CW), utilize a new high power linear module, for more reliable FM operation and increased DX on SSB or CW.
- **FM/USB/LSB/CW all mode operation**
For added convenience in all modes of operation, the mode switch, in combination with the digital step (DS) switch, determines the size (100 Hz, 1 kHz, 5 kHz, 10 kHz) of the tuning step, and the number of digits displayed.
- **Six memories**
On FM, memories 1 through 5 for simplex or ± 600 kHz offset, with the OFFSET switch. Memory 6 for non-standard offset. All six memories may be operated simplex, any mode.
- **Memory scan**
Scans memories in which data is stored. Stops on busy channels.
- **Internal battery memory back-up**
With 9 volt Ni-Cd battery installed, (not KENWOOD supplied), memories will be retained approximately 24 hours, adequate for the typical move from base to mobile. A terminal is provided on the rear panel for connecting an external back-up supply.
- **Automatic band scan**
Scans within whole 1 MHz segments (ie., 144.0-144.999 MHz), for improved scanning efficiency.
- **Dual digital VFO's**
Incorporates two built-in digital VFO's, selected through use of the A/B switch, and individually tuned.
- **Transmit frequency tuning for OSCAR operations**
On SSB or CW, the tuning knob or UP/DOWN buttons on the microphone may be used to adjust the transmit frequency during transmission.
- **16-key autopatch UP/DOWN microphone version**
The TR-9130 is available with the MC-46 16 key autopatch UP/DOWN microphone, or with the basic UP/DOWN microphone. Manual UP/DOWN scan of entire band possible using either microphone.
- **Squelch circuit on all modes (FM/SSB/CW)**
The squelch circuit is effective on SSB, CW, and FM.
- **Repeater reverse switch**
For checking signals on the repeater input, on FM.
- **Tone switch**
For activating a tone device, (not KENWOOD supplied).
- **CW semi break-in circuit with sidetone**
Built-in, for convenience in CW operations.
- **Digital display with green LED's**
- **High performance receive-transmit design**
The use of a low-noise dual gate MOSFET plus two monolithic crystal filters in the receiver front-end results in excellent two signal characteristics. Care in transmitter design assures clean signals in all modes.
- **Compact size and light weight**
170 (6 1/16) W x 68 (2-11/16) H x 241 (9-1/2) D mm (inches), 2.4 kg (5.3 lbs.) weight.
- **Extended frequency range**
Covers 143.9 to 148.9999 MHz, which includes certain MARS and CAP frequencies.
- **Transmit offset switch**
- **High performance noise blanker**
Suppresses pulse-type noise on SSB and CW.
- **RF gain control**
For all modes of operation.
- **RIT (Receiver Incremental Tuning) circuit**
Useful during SSB/CW operations.
- **Amplified AGC**
Enhances SSB and CW operation. The AGC time constant is automatically optimized for each mode of operation.
- **HI/LOW power switch**
Selects 25 or 5 watts RF output on FM or CW.
- **Accessory terminal**
A four pin accessory terminal is provided for use with a linear amplifier or other accessory.
- **Quick release mounting bracket** (Supplied)

KENWOOD
...pacesetter in amateur radio



CALL: Tues./Sat. - Noon/5PM
A1 McMillan W/JJK
(712) 323-0142

WRITE:
Box 864
Council Bluffs, Iowa - 51501