

# The RARa RAG

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## MAY 7th MEETING PROGRAM: MOONBOUNCE (EME)

The May RaRa meeting will feature Mike McHugh, W2AV, and his presentation on EME (Earth-Moon-Earth) transmissions also commonly called moonbounce. The meeting will take place back at our usual meeting place, the basement meeting room of the Eisenhart Auditorium at the Rochester Museum and Science Center. The meeting will start promptly at 8 p.m.

Mike's presentation will not be too technical, but is meant to show that EME is possible for the average ham who wants to do it, not just for the "big gun" homebrew "wizzards". He plans to bring some tape recordings of some actual EME QSOs.

The May meeting is also the Annual Meeting of the corporation as dictated by our Articles of Incorporation and By-Laws, and the annual elections will take place. Nominations from the floor will be accepted and solicited.

## PUBLIC SERVICE — SIGN-UP NOW!

RaRa will be providing public service communications for the following events this summer. See or contact Ed Holdsworth, N2EH, to sign up. No previous experience is necessary.

June 12-13 — Susquehannock Road Rally

June 13 — Victor Pony Rally

June 19 — Scotch Bonnett Sailboat Race

July 31 — Western New York Regional Pony Rally, Victor

## SILENT KEYS

DARREL WEED, AI2I

ISADORE P. LYMAN, K2HT

MARION NOAKES, W2UTF

Marion was a member of the RaRa RAG staff in the 1950's. She mimeographed the pages of the RAG for many years.

## HAMFEST NEWS MAY 15th

Yes, Matilda, there will be a ROCHESTER HAMFEST this year!

Even though publicity and ticket sales got off to a late start this year, there seems to be renewed interest probably due to the settling of the sales tax problem. Also, the Rochester Hamfest is one of the few hamfests where FCC exams will be administered, thanks to Dave Viglione, Buffalo Office Engineer-in-Charge and his staff who are conducting the exams on their own time and at their own expense.

Programming this year includes **Microcomputers for SSTV** by Jim Schueckler, WA2YZL; **Solving Interference Problems** by Chuck Hutchinson, K8CH/1 of the ARRL Technical Staff; **Error-Free HF Data Transmission** by Jerry Dijak, W9JD/2; and the **DX-pedition to Desecheo Island (KP2A/D)** by Barb Sweet, WA2KCL. There will also be the **ARES meeting**, the **3rd Annual W2RUF Memorial Code Contest**, local net meetings, an **NTS meeting** and the yearly **ARRL Forum**.

For the ladies, busses will again run from the fairgrounds to Long Ridge and Greece Towne Malls and a full day of entertainment and activities are also scheduled at the Marriott.

Tickets are \$4 in advance from K2MP and \$5 at the gate (children under 12 are free). Tickets will be available at the May RaRa meeting.

The flea market will be open at 6 a.m. Saturday. *There will be NO Friday flea market this year.* The Dome exhibits will open at 9 a.m. Saturday.

Talk-in will be provided by the Rochester Radio Repeater Association, Inc. using callsign WA2AAC on N2JC/R, 146.28/88.



## PLAN NOW !!!

Annual RaRa Picnic — June 5  
Wadhams Lodge, Powder Mill Park  
1 p.m. — 5 p.m.

# The RARA RAG

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## THE AMATEUR RADIO SALES TAX BILL — Assembly Bill 10233

by Rich McCracken, KA2CVN

An amateur radio sales tax bill was introduced into the NYS Legislature by Assemblyman Roger Roback on March 1, 1982 and has been referred to the Ways and Means Committee for further consideration.

This legislation provides an exemption from NYS sales tax on *all* "radio communications equipment, including, but not limited to, transmitters, receivers, antennas, towers, and electronic peripheral equipment purchased by persons holding a valid 'amateur radio license' issued by the Federal Communications Commission for use directly and predominately in amateur radio communications."

The sponsors of this bill estimate that more than six million dollars are expended annually by New York hams to purchase equipment from vendors outside the State of New York. New York vendors have claimed to be at an economic disadvantage in competing with out-of-state vendors because of the high NYS sales tax which is generally not paid to out-of-state vendors. New York hams report that many local vendors have closed their doors for this reason.

If sales tax were eliminated, NYS vendors could compete with those WATS line bargains and NY hams could once again purchase equipment "over-the-counter". And, NYS would *not* lose any revenue! Income taxes paid by vendors on that six million dollars of sales would actually increase revenues to NYS.

**WRITE YOUR LEGISLATORS!!!** Tell them about your public service activities, about RACES, NTS, ARES, & MARS. Tell them about how a local ham store would create jobs, commerce, and income taxes. Tell them about amateur radio!

EC's can seek support from local Red Cross, Civil Defense, law enforcement and other agencies with which you may have working relationships. Traffic handlers and rag chewers can help spread the word. Now is the time for every ham in NYS to get involved in the legislative process. This is a people's bill. Its success depends upon a "grass roots" lobby. There are no big bucks or professional lobbies for this one — just your support.

**WRITE YOUR LEGISLATORS.**

## THE COP'S COLUMN

by Howie Davies, N2CUN, R.P.D.

I interviewed a representative from Nory Construction Company and N.Y.S.D.O.T. and received more news about Route 590. Finish date (they hope) is late 1982. At that time the road will have 6 lanes open (3 in each direction) and improved lighting. The same bottleneck will appear this summer at the Empire Boulevard overpass, so it's time to figure out your alternate routes during rush hour. Observe the 40 MPH speed limit, as it will again be strictly enforced.

Also, during my interview with N.Y.S.D.O.T. I inquired as to when work would start on the project to straighten out the Can of Worms with the new crossovers. They said work would start in approximately 4 - 5 years as it is now in the planning stages. Won't that be a rush-hour mess when it starts!

Finally, since I forgot to look at the stickers on my windshield during the wintertime, my inspection expired before I realized it. So take some time to check out the stickers, and while you're at it, check your driver's license also. Those dates can catch anybody by surprise. Also, please make sure you carry your NYS insurance card ID in your car to avoid being issued a ticket if you are stopped.

Hope to see you all at the hamfest. Please drive safely.

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## RRRA MEETING — MAY 21st

The meeting of the RRRA is May 21st at the Pittsford Town Hall will feature Ed Gable, K2MP, with a presentation on the historical background of the group. Ed recently accepted the appointment of Historian for the RRRA.

Also at this meeting, the RRRA Nominating Committee will report, and nominations will be opened from the floor.



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## MAY RAG CALENDAR

- 7 - May RaRa Meeting, Lower Meeting Room of the Eisenhart Auditorium at the Rochester Museum and Science Center, East Avenue at Goodman Street, 8 p.m.
- 12 - June RAG Deadline
- 14 - VHF Group Meeting, Harris-RF Communications, 1700 University Avenue, 8 p.m.
- 15 - ROCHESTER HAMFEST AND NYS ARRL CONVENTION
- 21 - RRRA Meeting, Pittsford Town Hall, 8 p.m.
- 18 - RDXA Meeting, Colonial Hotel, 1129 Empire Boulevard, 8:15 p.m.

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## NOMINATING COMMITTEE REPORTS

The RaRa Nominating Committee, chaired by Keith Freeberg, N2BEL, reported their recommendations at the April meeting. Their nominees are:

- Vice-President - Bill Thiel, K2KGE
- Secretary - Al Goss, K2SPO
- Treasurer - Gil Chapin, WB2UTI
- Directors - Rick Berg, KS2F
  - Don Drennan, W2EBF
  - Irv Goodman, AF2K
  - Grady Griffin, KR2C
  - Art Minier, WA2HVT
  - John Schooley, K2NC
  - Harold Smith, K2HC
  - Harold Mundy, KD2K

Nominated from the floor at the meeting for Director was Alan Komenski, AC2K. Biographical sketches and personal information for these nominees appear elsewhere in this issue of the RAG.

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## SIARC MEETING:

### Frequency Hopping

If you missed the recent RaRa meeting on Spread Spectrum-Frequency Hopping, Dick Kessler, K2SZE, will repeat his excellent presentation at the May 11th meeting of the SIARC in Canandaigua. The meeting will be held at the Ontario County Office Building on county road 46 (Saltonstall Street Extension) about 1½ miles from Main Street in Canandaigua. Directions will be available on the 22/82 repeater.

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**WANTED:** Auto license plate collector desperately needs discarded Ontario province call sign plate to complete entire continental collection. Contact AF2K, Irv Goodman, (716) 671-4430.

Editor's Note: The following biographical and personal information is presented for those persons nominated by the Nominating Committee or nominated from the floor at the April meeting. The text is in the candidate's own words with minimal editing for gramatical clarity.

## VICE-PRESIDENT

### BILL THIEL, K2KGE

Since first begin licensed (with the same call) in 1954, I've sampled many aspects of amateur radio. In the '50s in the New York City area, VHF was very popular and 2 meters (A.M., of course) became a strong interest. This also lead to active participation in RACES and "Bunny" (hidden transmitter) Hunts. During that time I joined a club and also became a regular at Field Day. The '60s were taken up mostly with college, job, marriage, kids, etc. but in the late '60s, got active again, this time in contesting. Since moving to Rochester 12 years ago, have been active in both RaRa and the VHF Group, two of the strongest clubs of their type anywhere. As a past Secretary-Treasurer and Newsletter Editor for the VHF Group, I know the value of having as many people actively involved in a club as possible. Along with my wife and our four kids, I've enjoyed the RaRa Camping group for the past several years. Oldest son, Marty, KA2OMI, is a product of a recent club novice class. Professionally, a System Analyst for Lawyer's Cooperative Publishing designing computerized text processing systems, and on adjunct faculty at R.I.T. teaching Data Communications. Current ham interests are in constructing equipment and QRP operation on 10-15-20.

## SECRETARY

### ELBERT (AL) GOSS, K2SPO

Licensed 1955, holds Advanced Class, Member of ARRL, RaRa, VHF Group and A-1 OP. Primary interests are DX, CW, ragchewing, phone-patching of U.S. Military personnel and traffic handling. He is active 80 thru 10 meters as well as 6, 2, and 440 MHz FM. He soon plans to be active on 432 with CW and SSB.

Al has been employed by Harris-RF Communications for the past 9 years, 8 of them as a manufacturing test group leader of VHF/UHF two-way FM, repeaters and car telephones. He recently became a senior technician in the HF Systems Engineering group.

He resides with his wife Renate, sons Jonny and Rodney and daughter Lynnell at 857 Winton Road North. He moved to Rochester 9 years ago from Ilion/Herkimer, NY (Utica area).

## TREASURER

### GIL CHAPIN, WB2UTI

"Gil" Chapin has been active in amateur radio since 1974. He presently holds the Advanced Class license. He is employed with Eastman Kodak as an electrical engineer in the Apparatus Division where he evaluates product safety of most of the Division products. Gil resides at 35 Haymarket Road in Chili with his wife Valerie (KA2BHF) and their sons Brian and Jeff. He is active primarily on 2 M FM and has taken part in many RaRa public service activities including the Hospital Emergency Communications. He is our present RaRa Treasurer.

## DIRECTOR

### RICK BERG, KS2F

I was first licensed in 1961 as WA2RLQ and decided to change my callsign last year. For many years I have been a member of RaRa and have from time to time written DX related

articles for the *Rag*. My radio activity is mainly DXing on the HF bands with some two meter activity. Although reaching the top of the DXCC Honor Roll in 1978, I have not lost interest in chasing DX and am past president of the Rochester DX Association.

I work in the Research Labs at Kodak Park involved in the design and interfacing of electronic hardware into a chemical testing lab. Along with other Kodak Park hams, I helped in the publishing of the Kodak World Wide Amateur Directory.

There are several reasons for placing my name on the ballot for a position on the board of directors of RaRa. Having contact with hams from all around the world, I have had the opportunity to hear about many ideas and projects that draw club members together. It is true that my contact with the local Amateur community has been minimal and by some a negative point for a board position. But, to me, this could be an advantage when rendering a decision on a subject requiring an objective opinion.

If I am elected to the board, I would strongly favor open discussion of all matters concerning present and future objectives, goals and membership.

### DON DRENNAN, W2EBF

"Don" was first licensed in 1939 and was active on forty cw until World War II when he became Radio Officer for the Seventh Corps. He taught ham radio for 2 years for the Boy Scouts in the Town of Webster. His activities are church committees, golf, bowling and ham radio when he can be heard both on phone and cw on the low bands as well as 2 meters. Don, his wife Robbie, and their son Donnie (WA2LNZ) reside in West Webster. Don graduated from the University of New Mexico with a BSME in 1949. He joined Eastman Kodak Company in 1967 and is an Engineering Associate in the Facilities Engineering Division where he has been Project Engineer for several steam/electric plants and refrigeration plants. Don is currently RaRa President. In prior years he served RaRa as Club Secretary.

### T. GRADY GRIFFIN, JR., KR2C

I am 54 years old. I have had a strong avocational interest in electronics and Ham Radio for many, many years. However, I did not obtain my first Amateur license (KB2MC) until 1979. I would describe myself as being technically oriented (NOT technically proficient - just technically oriented!) as opposed to "operator" oriented.

I am presently working on a "home brew" computer which I hope to interface with my ham rig in the near future. Also, I have recently become interested in "Packet Radio" and hope to start some hardware to get going on that technique as soon as the computer project is finished.

I would like to see a major Amateur organization, like RaRa, involved in the forefront of a "state-of-the-art" communications technique like Packet Radio. This would make a challenging and exciting club project for RaRa.

### IRWIN J. GOODMAN, AF2K

"Irv" was first licensed as WN2WCE in 1974, and subsequently WB2WCE. He is a Life Member of RaRa, and has been active on the Membership Committee for the past four seasons. As a current Board member, he is serving as Membership Chairman. Other club affiliations include ARRL (Life Member), RRRRA, GRA, Rochester VHF Group, RDXA, LARS and NCDXF. He is active on 2M FM, HF Bands, an avid DX-er, Field Day enthusiast, and enjoys VHF Contests and Public Service activities. Other call signs he holds are ZB2EN and VP2VGY.

A graduate of R.I.T., Irv is employed as Litho Preparatory Planner and Art Estimator with Office Products Division of Burroughs Corporation. He and "Rusty" reside in Webster.

## ALAN KOMENSKI, AC2K

Alan, a RaRa life member, has been nominated for a position on next years Board of Directors. Alan is no stranger to RaRa activities having served in the past as our president, vice-president, secretary, and director.

He was last elected to the board in 1980 but regretfully, was forced to resign before the beginning of his term when a career move took him to St. Paul, Minnesota. He returned to Rochester last year when he assumed his current position with the city of Rochester as Manager of the Office of Emergency Communications.

First licensed in 1964 as WN2TJR, he received his general ticket in 1965 and for many years operated under the call WB2ZFM. He upgraded to advanced in 1977, and he received his current call with his extra class license in 1978.

An avid CW operator and DX'er, Alan can be heard pounding the brass from 80 to 10 meters. He is a member of the RDXA and RRRR.

Alan and his wife Julie reside at 31 Cullens Run, Pittsford.

## ART MINIER, WA2HVT

"Art" has been active in ham radio for about five years, on the VHF bands. His main interests have been emergency communications, vhf contests, and vhf dxing. He is a member of ARRL, RRRR, GRA, AMSAT, and ECARS. He has participated in the Genesee Hospital Emergency Radio Team, the Western District Net and is past Director of the Livingston Amateur Radio Service. He is also one of "Holdsworth's Coolies". Art and his family live at 896 Grosvenor Road in Brighton. He is employed with Citibank as Risk Asset Manager.

## HAROLD E. MUNDY, KD2K

Currently I am the supervisor of an engineering group in the Kodak Apparatus Division Research and Engineering organization. My Amateur Radio interests include technical experimenting, teaching the RaRa Advanced Course, Amateur Radio satellites and DX. I am a member of ARRL and a life member of AMSAT. I have enjoyed sitting on the RaRa board this year and would like to carry this experience over into next year. If elected, I would like to solicit an inputs from the general membership so that I could bring these thoughts to the board meetings and in this way better represent the general membership.

## JOHN SCHOOLEY, K2NC

"John" was first licensed as W8PAB from Ohio in 1953. He moved to Rochester in 1964 and changed his call to W2BLU, becoming K2NC in November 1977. John operates the hf bands and is found on 2M FM. He is a member of RRRR, ARRL and QCWA. He has been very active with the Hamfest Committee as one of those responsible for the FCC exams in Rochester. He is a past Chairman of RRRR, and a current RaRa Board Member. John is a 1966 graduate of RIT, (BSEE). He is employed with Eastman Kodak as Department Head of Telecommunications at Kodak Park. John resides at 329 Fiesta Road with his wife Sally and their two daughters.

## HAROLD SMITH, K2HC

Harold is Regional Sales Manager for FTCC Communications and the president and owner of Com Center, a telegraphic message preparation center with headquarters in Rochester. He and his wife Helen, WA2YRH, live at 153 Mason Avenue in Greece. Harold was Managing Editor of the *RaRa Rag* for twenty plus years. He is also General Chairman of the Rochester Hamfest, having performed that job since 1963. Harold is a member of the Board of the Antique Wireless Association. He holds an Extra Class amateur license and holds a private pilot's license.

## RDXA MEETS MAY 18th

The Rochester DX Association will hold its May meeting on Tuesday, the 18th, at 8:15 p.m. The Colonial Hotel at 1129 Empire Boulevard will provide a room for our get together.

The nominating committee should have a slate of officers ready for presentation and will accept additional candidates for all positions from the floor.

Remember, Field Day is next month, so all involved in this endeavor should be finalizing the plan of attack by now.

The program for the evening will cover the topic of working new countries in a manner which will best utilize ones available operating time. Other topics, such as equipment, antennas and QSLing will be covered also.

As in the past, the RDXA meeting are open to everyone who wishes to find out more about this aspect of Amateur Radio.

## ANTIQUÉ WIRELESS MUSEUM OPEN MAY 2nd

The Antique Wireless Museum located in East Bloomfield reopens for the season Sunday, May 2nd. The AWA museum houses more than 25,000 items covering all facets of early electronic communication. It is the largest museum of its kind in America.

The museum is normally open Sundays from 2 to 5 p.m. and Wednesdays from 7 to 9 p.m. from May thru October.

On Hamfest Weekend, May 16th, the museum will be open special hours from 10 a.m. to 12 noon and again from 2 p.m. until 5 p.m. A visit there is an experience to remember. There is no admission charge.

The A. W. A. Museum is located in the Bloomfield Academy, in the Village Square, East Bloomfield, NY on Routes 5 and 20, directly south of NY Thruway exit 45.

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7-10 p.m.

## WARC and MA BELL

Someone told me about an idea Ma Bell is supposed to have come out with a few years ago, to replace Amateur Radio. Thought you'd like to know about it now, since the emerging and retracting nations at the WARC meeting were demanding more space in the high, very high, and giggle-hertz frequencies. (The big powers have 10% of the population and 90% of the radio spectrum, and we intend to reverse that, etc.)

The idea is that the telephone companies would distribute random groups of phone numbers of folks who enjoy talking with strangers. Instead of calling CQ on the wireless, members of the American Relay Telephone League would dial random numbers. Prizes, I suppose, would be given for "Phoned All States", "Called All Florida Counties Collect", and nets would be conducted on party lines or through conference calls.

Lean back and let your imagination flow. . . .

The phone rings and a voice says, "Hello, this is (303) 288-4660. The handle is Shorty. I'm using a Princess handset with a lighted dial. How do you read me, old man? Over?"

And a guy on the other end says, "Colorado! Hot finals! I've had a few 916s, but this is my first (303) QSO. I read you loud and clear on my red Ericaphone. Mind telling me your ringer equivalent? The handle here is Frank."

"My ringer equivalent is one-point-two, Frank. This is a straight, barefoot rig. I tried a mod on it; one of those receiver-ease type 61, shoulder rests for long QSOs but the darn thing does not fit tightly enough. To be candid about it, I'm thinking of trading the whole station in on a GTE Flip-phone with the push-buttons that give rotary pulses, so you don't have to pay for Touch-tone."

"You a Touch-tone operator?"

"Most of the time. I used to have a hot fist with the old dial, but I guess I'm getting lazy. I don't know."

"Shortly, have you heard that the FCC is considering a new Amateur rating that would not require a rotary-dial proficiency test?"

"No!"

"Fact! Read about it in a thing from the Land-Line Lovers Linkage League. Some sort of restricted license, but no rotary dialing test involved."

"That's crazy, Frank! What would some kid who could only push buttons do in an emergency, like he was locked in a pay booth that had a rotary dial phone? Couldn't even raise the operator."

"Serve him right, too. I tell you it's all getting too easy. First they took away the crank on the side, and you didn't have to memorize how many rings for different people. Then came those push buttons. I understand you can buy a gadget now where you just push one button down next to a name, and the thing dials the number for you all by itself."

"That's terrible."

"Right. Amateur phoning is getting too simple. Well, its after eleven, and the overseas lines are at half cost now and not nearly so crowded. So I'll let you go and thanks for the QSO, and we can look each other up in the directories for addresses and send each other QSL cards. Okay?"

"Roger. (303) 288-4461 clear with Colorado. And good luck on the overseas calls, I really admire you DX hounds."

Tnx RAGS REVIEW

## INDIAN RIVER AMATEUR RADIO CLUB

The Indian River Amateur Radio Club (IRARC) will participate in a "Sun-Day" exercise in conjunction with the Florida Solar Energy Center at Cape Canaveral, Florida on Friday, May 7 and Saturday, May 8, 1982.

The IRARC station will be using the Club Call W4NLX/4 and at that time, will be operating completely on power generated by the sun (Solar Power).

The hours, frequencies, and mode of operation on both days are as follows:

- 1300 to 1400 GMT. 40 meters,  
7,250 to 7,275 KHz., SSB.
- 1400 to 2000 GMT. 15 meters,  
21,350 to 21,375 KHz., SSB.

A certificate confirming contact or reception will be issued free to each station or Short Wave listener who sends a QSL and a self-addressed stamped envelope (Foreign - 1 IRC) to:

Florida Solar Energy Center

Attention: "Sun-Day"

300 State Route 401

Cape Canaveral, Florida 32920

James C. Kneeland, Publicity Chairman

## TROUBLE SHOOTING CHECK LIST

1. Replace all transistors
2. Replace all resistors
3. Replace all capacitors
4. Replace all diodes
5. Check fuses
6. Turn power on
7. Return to step One.

BARC's Bark, Boulder, CO

# WHAT'S ECARS?

by Tom Rosica, W2GIR

Does everyone know what ECARS is? Well, after being in Amateur Radio for 30 years, I finally learned what this service is, thanks to our old friend, Stu Bowden, WA2SYR. He had told me to look for him on ECARS – I heard the expression before, but I didn't know what it really was all about.

ECARS stands for *East Coast Amateur Radio Service* and is a group that meets daily on 40 meters (7.255 MHz) from 8 a.m. till about 6 p.m. It is primarily a "meeting frequency" whereby you can check into the group, give your call and QTH and see if anyone is looking for someone in your area. You can also ask for someone in a particular area in the country you may be trying to reach. You should call "Contact," and then find out whether your contact, or someone you are looking for, is on frequency. Then you should slide off – up or down, 4 or 10 kc, or wherever – and carry on your QSO.

I tried it the other day and it works fine. I understand that ECARS is 10-12 years old and that it has 620 members. You don't have to be a member to use it – you can use it any time by just calling in when you need the service. It doesn't run after 6 p.m. in the evening because of the heavy interference which is on 40 due to foreign broadcast, like Radio Moscow.

*GRAM NEWS, Batavia, New York*

## THIS MONTH'S DEFINITION

Bet you didn't know that BNC stands for Bayonet Neill-Concelman. Paul Neill and Carl Concelman, both engineers at Bell Labs, invented this famous connector. Paul, incidently, also invented the Type N connector, and Carl the lesser-known Type C – used mostly in aircraft and avionics.

There's also an HN (high-voltage type N), an SC or Screw C, and a threaded version of the ubiquitous BNC, called TNC. Learn something new every day. *Tnx - NARC NEWSLETTE*

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# WORKED EUROPEAN LARGE CITIES (WELC) AWARD

Anyone who qualifies for the WELC award has proven capability as a good DX operator. There is no band, date, or mode limitation associated with this award. The 27 cities are listed herein:

Common Prefix	English Name	Foreign Name
CT	Lisbon	Lisboa
DT	Bonn	Bonn
DM	Berlin	Berlin
EA	Madrid	Madrid
EI	Dublin	Baile Atha Cliath
F	Paris	Paris
G	London	London
HA	Budapest	Budapest
HB	Bern	Berne
I	Rome	Roma
LA	Oslo	Kristiania
LX	Luxembourg	Letzeburg
LZ	Sofia	Sofiya
OE	Vienna	Wein
OH	Helsinki	Helsingfors
OK	Prague	Praha
ON	Brussels	Bruxelles
OZ	Copenhagen	Kobenhavn
PA	Amsterdam	Amsterdam
SM	Stockholm	Stockholm
SP	Warsaw	Warszawa
SV	Athens	Athinai
TA	Istanbul	Constantinople
TF	Reykjevik	Reykjevik
UA	Moscow	Moskva
YO	Bucharest	Bucuresti

If you want to apply for this award, do not send QSL cards. Just send an alphabetical list of the stations contacted, showing call sign, date, time, band/frequency, and mode for each contact.

Have your list verified by an officer of any amateur radio club, or two other amateurs.

Send ten IRCs with your list to Wilfried Beck (DD0ZB), Rahnofstrasse 29, D6452, Hainburgh/Hess, West Germany.

This award is sponsored by Seligenstadt Amateur Radio Club in three classes. Class 1 requires 18 contacted cities; Class 2 and 3 WELC awards require contacts with 15 and 12 cities, respectively.

*Tnx NARC NEWSLETTE*

**TALK-UP THE  
ROCHESTER HAMFEST !**

## RIG LOST OR STOLEN ? ?

Lost a rig this year? If you've had a rig stolen within the past 12 months, please forward a complete description, any special markings or identifiable features and serial number to AF2K, Irv Goodman, 515 Drumm Road, Webster, NY 14580. Information is being compiled for posting at the Rochester Hamfest.

## ANTENNA TESTS FOR HANDHELDS

I recently participated in some antenna tests which should be particularly interesting to the 2-meter handheld user. The tests were conducted by members of the Rocky Mountain Rescue Group. Most of the data was taken at 155 MHz rather than 146 MHz, but the results should be very applicable to 2 meters.

The test procedure involved antenna substitutions on handhelds, measuring the signal strength 100 feet away. The measuring equipment used was a 5/8 wavelength antenna at ground level supplying a Hewlett-Packard Spectrum Analyzer used as a glorified field-strength meter. While the tests were not as rigorous as a classical laboratory situation, they were performed with some care and a surplus of electrical engineers in attendance. The estimated error was 1/2 to 1 db, based on repeatability of measurements. A total of 30 antennas were compared, most using more than one radio.

The biggest surprise of the test was that an antenna that was good on one radio was not necessarily good on another. In one extreme case, Antenna A was 1 1/2 db better than Antenna B on the first radio, and 3 db worse on the second radio! This was attributed primarily to different imped-

ances: the antennas were not the same length, and the radio probably put out more or less power depending upon the impedance of the antenna. The "best" antennas for most of these radios were significantly longer than 1/4 wavelength!

Many of the results confirmed and quantified things that experienced HT users already know. An HT on the belt radiating into the armpit was 20 to 30 db down from the same radio held in front of the face. A Rubber Duck was 3 to 4 db less effective than a 1/4 wavelength antenna, but with almost a 3 db range between the worst and the best duckies. Resting an HT on the car as an impromptu ground plane was good for 2 to 3 db more signal. A 5/8 wavelength antenna with 1/4 wavelength radials was only 2 db stronger than a 1/4 wavelength vertical with 1/4 wavelength radials. A 4-element Cushcraft Yagi was about 4 db stronger than a 5/8 vertical with radials.

The big winner was a Larsen 5/8 wave base-loaded antenna without radials that was plugged directly into a HT. While this was not as good as an antenna with radials for a ground plane, it was 6 db better than a 1/4 wavelength antenna, and 10 db better than a Rubber Duck! While the VoCom telescoping 5/8 antenna was not tested here, other tests would seem to suggest that its performance would be very similar to the 5/8 base-loaded antenna used here.

While these tests can hardly be considered exhaustive, they do confirm some things most HT users already know, and point out that an antenna good for one HT may not be good for another. Borrow a pocketful of antennas from friends, and perform your own tests on your own radio. You may find that your favorite Rubber Duck is eating your signal!

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