



# Recent Advances in HF Receiver Design

Presented by

**Jim Andem, KB1SH**

## This Month at CARA

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### Meeting

**Nov. 27** – 7:30 PM  
Room 401,  
Gateway Center

**I**n this month's program we will explore the evolution of the modern communications receiver, building on the introduction to direct digital synthesizer presented last month by John Phelan, N3DRA. Jim Andem, KB1SH, will discuss the differences between traditional HF receiver design and the newest digital techniques and show how this applies to the COMINT (communication Intelligence) mission requirements. It shows block diagrams of the latest receivers, their specs and features as well as sample Windows NT screens. A receiver example will be demonstrated.

Jim has been a Ham since 1958 (K1EGB, then KB1SH), was radar system repairman for USAF, has ASEE from Merrimack College, numerous post graduate courses in engineering, business and marketing. He served as a technical advisor in Vietnam where he flew many signal intercept missions. Since 1975 he has been involved in product design, application engineering and sales/marketing of communication intercept receivers and systems covering HF, VHF/UHF and microwave requirements for U.S. Government Agency applications.

Currently he is the Director of Sales/Marketing and Business Development at Communication Solutions, Inc., a Baltimore firm engaged in the design and manufacture of a wide range of surveillance receivers and associated equipment. He is active on the HF bands with a preference for 75 meter DX and 17 meters for rag chewing. His current homebrew project is a 17 meter cw transceiver and has just finished building a complete 40 mter receiver/transmitter pair using "tubes" with construction identical to the 50's era.

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## Prez Sez

### *Elections*

This is election month for CARA. There are five offices up for grabs, President, Vice President, Secretary, Treasurer, and Member-at-Large. Term limits in the by-laws restrict the terms of President, Vice President, and Member-at-Large to three years. Tim Titus, W1TRT, our incumbent Member-at-Large has reached his term limit and is not up for re-election. The remaining incumbents are on the ballot.

Each eligible member will receive a ballot in the mail; family members will receive all of their ballots in a single envelope. Space is provided for write-in candidates for each office. Completed ballots should be mailed in, using the preaddressed envelope provided with the ballot. To count, ballots must be postmarked by Saturday, December 8, 2001.

### *Hamfest*

Also on the ballot this year is a referendum asking you to approve the concept of combining our CARA Hamfest and the FAR-Fest into a two-day hamfest to be held on the first weekend after Labor Day.

Under the plans that have been put forward, costs of the event will be underwritten equally by both organizations, and the profits will also be shared equally. The hamfest organization would consist of a chairman, vice chairman and co-chairmen for each of three

committees, programs, publicity, and volunteers. FAR would provide the chairman and CARA the vice-chairman in even numbered years, and vice-versa in odd numbered years. One co-chairman for each committee would come from each organization.

Tim Titus, W1TRT, the FAR Treasurer has volunteered to be the chairman for 2002, and John King, KB3WK, CARA's Vice President has volunteered to be the vice chairman. Bernie Basel, K3BAZ, and Chuck Dickert, K3CRD, have volunteered as co-chairmen for the publicity and volunteer committees, respectively. CARA still needs to identify a co-chairman for the promotions committee.

It was decided that each organization would put forth a referendum to its members to formalize their support for the venture. Hence, its inclusion on the ballot.

### *Newsletter format*

Based upon reader comments and a discussion at the last meeting, we've made some changes in the format of the newsletter. The handi-talkie watermarks interfered with the readability of the pages when printed, so it's history. We also changed the calendar page to make it more timely.

While we're on the subject, we call this newsletter the CARA Newsletter. Not exactly an original or exciting name. If any of you have suggestions for a name for the newsletter, I would enjoy seeing them. If we get a few,

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we'll publish them and ask for comments.

This is your newsletter and your comments and contributions are welcome.

### *Dues Renewals*

It's late November, which means that it's time to renew your membership in CARA. We will be sending out renewal forms in the mail, asking you to verify the address, e-mail, and other information that we have in the club database.

Future plans call for putting the database up on the club's web site, with appropriate password protection, so that you would be able to review the information there, and even use PayPal to make dues payments on line.

In the meantime, please watch for the renewal form.

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## **The 100th Anniversary Of Marconi's Historic Trans-Atlantic Radio Transmission**

December 11 - 16, 2001

The Marconi Radio Club, W1AA and The Falmouth Amateur Radio Association Amateur Radio operators are making plans to celebrate a Marconi world historical event. December 12, 2001 will mark the 100th anniversary of the first Trans-Atlantic radio transmission by Guglielmo Marconi. That signal was a

series of " S S S " transmitted on CW across the Atlantic from Poldhu, Cornwall England to St John's, Newfoundland.

The Marconi Radio Club will be using the call sign W1AA/CC and will be operating from Cape Cod, Massachusetts, U.S.A. the location of Marconi's 1903 Trans-Atlantic radio station. Marconi's 1903 call sign was " C C "

See this link for times, frequencies and modes of operation for W1AA/CC:

<http://www.qrz.com/database?callsign=w1aa>

Bob Doherty K1VV  
Pres. Marconi Radio Club W1AA  
<http://personal.tmlp.com/k1vv/w1aa/>

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## **OSCAR Satellite Straight Key Night**

You are cordially invited to participate in the 30th annual Straight Key Night on OSCAR, conducted by AMSAT-NA for radio amateurs throughout the world.

It's entirely informal: no rules, no scoring and no need to send in a log. Just operate CW using a straight hand key through any OSCAR (including OSCAR Zero, the moon) on 1 January 2002 between 0000 and 2400 UTC.

In keeping with the fun nature of this event, please nominate, from among

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those you worked, the operator with the best fist. Nominations may be sent to me by e-mail at [w2rs@amsat.org](mailto:w2rs@amsat.org), by packet radio to W2RS @WA2SNA.NJ.USA.NA, or by ordinary mail to my Callbook address. All those receiving nominations will be recognized in an ANS bulletin in early February, and in The AMSAT Journal.

73, Ray, W2RS

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### ARRL Members Needed to Help with CC&R Effort

Have you ever been denied the ability to put up an antenna, or to operate a radio transmitter, or had any other restriction on your Amateur Radio activities because you live in a housing development or condominium complex governed by private land use regulations? (These are often referred to by lawyers and real estate professionals as CC&Rs.) As a result of requests from members, the ARRL Board of Directors, at its July meeting, adopted a goal of trying for legislative action that helps overcome the unreasonable restrictions of CC&Rs that prohibit or restrict Amateur Radio antennas.

Like any other telecommunications issue, this one, upon closer inspection turns out to quite entangled with many issues affecting a wide range of commercial telecommunications services. These include wire-line telephone, cellular and PCS phones, and over-the-air-receiving-devices, all seasoned by the

politically hot-pepper issue of private property rights, and, of course, a great deal of confusion on Capitol Hill over the whole thing. In order to build awareness in Congress that CC&Rs really have become a problem for many in the Amateur Radio community, and to backstop our efforts to meet with elected representatives and their staff on Capitol Hill, letters from ARRL members to their representatives have become increasingly important. In the meantime, we continue to prowling the halls of Congress in search of supporters!

If you are affected by a CC&R, or know someone in your Congressional district who is, and you want to help out, please adapt our sample letter to your own situation and consider sending it to your member of Congress. By the time you read this, there will be a sample of the letter [/govrelations/ccr-sample-letter.html](http://govrelations/ccr-sample-letter.html) on ARRLWeb to save you some time. If you decide to write to your member of Congress, it would help ARRL's Office of Legislative Affairs to receive a copy of the letter you send.

To find your Senator's mailing address check the following URL: <http://www.senate.gov/contacting/index.cfm>. To find your Representative's, check this URL: <http://www.house.gov/writerep/>. { Taken from the ARRL web Site, September 17, 2001 - <http://www.arrl.org/news/stories/2001/09/17/101/?nc=1> }

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## For Beginners

Do you know someone who is interested in getting into amateur radio and who needs a source of guidance and instruction? If so, then here's an interesting web site:

HamGuide: A Beginner's Guide to Amateur Radio

Introducing a new web site <http://www.qsl.net/hamguide/> for newcomers to Amateur Radio. Whether you are a newly licensed ham or just thinking about getting that first license there is useful content here for you. Some of the content you will find includes:

- What is Amateur Radio?
- Amateur Radio Activities
- How to get licensed in Canada and the U.S.
- How to get started operating phone and CW
- Operating various modes from SSB to IRLP

In addition you will find information on

- QSLing, QSL bureaus and e-QSLs.
- How to make propagation work for you
- Band Plans
- DXing
- Contesting
- Special Events

and much more. Because there is so much information on the Internet that support Amateur Radio, links are

provided to established sites that expand on what is provided here on HamGuide. So come here for the introduction and as you need more you are given the appropriate direction..

Clubs and Webmasters: Add HamGuide to your club web site. Instructions are provided on the first page of <http://www.qsl.net/hamguide/>.

Sample Links: Check out the ODXA web site at <http://www.odxa.on.ca/> the Peel Amateur Radio Club site at <http://www.peelarc.org/> and the Kitchener/Waterloo ARC [www.kwarc.org](http://www.kwarc.org) to see several ways that HamGuide has been linked to their sites.

While HamGuide is a complete site, it is new, and no doubt there will be many updates to it as time permits. Your feedback and comments are welcome.

73, Don Cassel VE3BUC  
[hamguide@qsl.net](mailto:hamguide@qsl.net)

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## Far Announces 2002 Scholarships

The Foundation for Amateur Radio, a non-profit organization headquartered in Washington, DC, plans to administer 62 scholarships for the 2002-2003 academic year. FAR - composed of more than 75 local area Amateur Radio Clubs - fully funds seven of these scholarships using the income from grants and its annual hamfest. The remaining 55 are administered by FAR without cost to the donors.

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Amateurs Radio licensees may compete for these awards, if they plan to pursue a full-time course of studies beyond high school and are enrolled in or have been accepted for enrollment at an accredited university, college or technical school. The awards range from \$500 to \$2500. Preference in some cases goes to residents of certain geographical areas or to those pursuing certain academic programs. FAR encouraged clubs - especially those in Delaware, Florida, Maryland, Ohio, Pennsylvania, Texas, Virginia and Wisconsin--to announce and promote these scholarship opportunities.

For more information or an application, send a letter or QSL card, postmarked prior to April 30, 2002, to FAR Scholarships, PO Box 831, Riverdale, MD 20783. The Foundation for Amateur Radio is an exempt organization under Section 501(c)(3) of the Internal Revenue Code of 1954. It is devoted exclusively to promoting the interests of Amateur Radio and those scientific, literary and educational pursuits that advance the purposes of the Amateur Radio Service. For more information, visit the FAR Web site <http://www.amateurradio-far.org/>.

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## For Sale

GAP Eagle DX vertical antenna

- 6 bands: entire band on 40, 20, 17, 15, 12 and 10 meter over 500Khz
- Height: 21 feet
- Weight: 11 pounds
- Supplied pole fits 1.5 antenna mast and can be installed at ground level, on a pole, on a roof top or on a tower. Three 80-inch counterpoise rods are mounted

to a mast bracket at 3, 6 and 9 o'clock positions.

- No traps, coils or transformers.
- Now fully assembled on a 13-foot antenna mast and is in excellent condition.
- Cost: \$230

Gerald Kern NE3C  
410-823-7395  
gwkern@hotmail.com

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**Please remember:**

**CARA Elections**

**Hamfest Referendum**

**2002 Dues**

**No Meeting in  
December**

## Calendar of Events

N o v e m b e r	<b>Sun</b>	<b>Mon</b>	<b>Tues</b>	<b>Wed</b>	<b>Thurs</b>	<b>Fri</b>	<b>Sat</b>
	18	19	20	21	22	23	24 <b>Laurel VE</b>
	25	26	27 CARA Meeting	28	29	30	

D e c e m b e r	<b>Sun</b>	<b>Mon</b>	<b>Tues</b>	<b>Wed</b>	<b>Thurs</b>	<b>Fri</b>	<b>Sat</b>
							1
	2	3	4 ARES / RACES Net CARA net	5	6	7	8 Breakfast at Forest Diner
	9	10	11 RACES COMEX Marconi 100 <sup>th</sup>	12 Marconi 100 <sup>th</sup>	13 Marconi 100 <sup>th</sup>	14 Marconi 100 <sup>th</sup>	15 <b>Laurel VE</b> Marconi 100 <sup>th</sup>
	16 Marconi 100 <sup>th</sup>	17	18 ARES / RACES Net	19	20	21	22
	23	24	25 <del>No</del> CARA Meeting	26	27	28	29
	30	31					

J a n u a r y	<b>Sun</b>	<b>Mon</b>	<b>Tues</b>	<b>Wed</b>	<b>Thurs</b>	<b>Fri</b>	<b>Sat</b>
			1 OSCAR Straight Key Ops	2	3	4	5
	6	7	8 ARES / RACES Net	9	10	11	12 Breakfast at Forest Diner

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## Club Information

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### Repeaters (K3CUJ)

147.135 / R+ Net repeater. CTCSS: 156.7 Hz  
147.39 / R+ Open autopatch ("\*\*" to activate, "#" to clear) and direct dial 911  
448.275 / R- CTCSS: 156.7 Hz  
449.475 / R- CTCSS: 156.7 Hz

### Mailing Addresses

#### Club Business

CARA  
P.O. Box 911  
Columbia, MD 21044-0911  
[CARA@QSL.net](mailto:CARA@QSL.net)

#### Newsletter

c/o Dave Prestel W8AJR  
10160 Tanfield Court  
Ellicott City, MD 21042-5808  
[dprestel@home.com](mailto:dprestel@home.com)

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### Activities

**Club meeting:** the fourth Tuesday of the month at 7:30 p.m., at the Gateway Center, on Columbia Gateway Drive, off of Rt. 175, near I-95. Monitor 147.135/R- for directions. Room number will be posted in the lobby.

**On-the-air RACES / ARES net:** 147.135/R- at 7:30 p.m. on the 1st and 3rd Tuesdays each month.

**On-the-air RACES exercise:** 147.135/R- at 7:30 p.m. on the 2nd Tuesday each month.

**CARA breakfast:** 9:00 a.m. on the second Saturday of each month, at the Forest Diner, on Rt. 40 across from the Enchanted Forest Shopping Center. If you wish to attend, contact Bob Scarburgh, KC3EV, 410 465-2421.

**Executive board meeting:** Held monthly, before the regular meeting. All members are welcome.

**CARA on the World Wide Web:** Visit us at <http://www.qsl.net/cara/> for the latest "hot tips" and electronic edition of the newsletter.

## Officers and Chairpersons

### Officers:

President.....Dave Prestel .....W8AJR .....H: 410-203-9432 ..... dprestel@home.com  
Vice-president.....John King.....KB3WK.....H: 410-465-6324 ..... kb3wk@arrl.net  
Secretary .....Dan Goulette .....N3LDC.....H: 410-796-2587 ..... danjanis@connex.net  
Treasurer .....John Pinkston.....W3GJN.....H: 410-531-3450 ..... jpinksto@erols.com  
Member-at-large .....Tim Titus.....W1TRT .....H: 410-730-8420 ..... w1trt@aol.com  
Past President .....Bob Scarburgh.....KC3EV.....H: 410-465-2421 ..... rscarburgh@aol.com  
License Trustee .....Alan Chedester.....N3AC.....H: 301-596-6543 ..... alanc1@juno.com

### Committee Chairpersons:

'Elmers' .....John Pinkston.....W3GJN.....H: 410-531-3450 ..... jpinksto@erols.com  
Field Day.....Alan Chedester.....N3AC.....H: 301-596-6543 ..... alanc1@juno.com  
John Pinkston .....W3GJN.....H: 410-531-3450 ..... jpinksto@erols.com  
FAR Rep .....Tim Titus.....W1TRT .....H: 410-730-8420 ..... w1trt@aol.com  
Hamfest .....Randy Krenz.....N3HFK.....H: 410-750-0739 ..... randykrenz@erols.com  
Newsletter.....Dave Prestel .....W8AJR .....H: 410-203-9432 ..... dprestel@home.com  
Publicity .....Vacant  
    Satellite.....Ed Cabic.....N2EC.....H: 410-992-7197 ..... edcabic@home.com  
Social .....Vacant  
Quartermaster.....Vacant  
Technical .....Art Goldman .....N3OY.....H: 410-997-3838 ..... artg@home.com  
T-MARC Rep .....Dave Prestel .....W8AJR .....H: 410-203-9432 ..... dprestel@home.com  
VE Testing .....Bob Scarburgh.....KC3EV.....H: 410-465-2421 ..... rscarburgh@aol.com  
Youth Education .....Dave Anderson.....WA3WZX .....H: 410-465-8557 ..... dranderson@juno.com  
Youth Group.....Vacant

### ARES / RACES:

ARES .....Ed Wallace .....K3EF .....H: 410-465-0042 ..... k3ef@home.com  
RACES.....Mike Carr .....WA1QAA.....H: 410-799-0403 ..... bamcc@erols.com