

A few new radios, a few new antennas, and a ton of accessories and books ... the one-sentence wrap on Hamvention '03.

Hot Stuff at Hamvention 2003

BY RICH MOSESON,* W2VU

Very. It's the adjective most closely associated with the Dayton Hamvention®—very hot, very cold, very muddy, very rainy, very big, very overwhelming for the first-timer (“You mean there’s another room?” “I mean there are four other rooms!”). Whatever else it may or may not be, Dayton is always “very.” This year, it was very rainy. That made it very bad for the folks in the flea market, and very good for the people inside; and if you were looking for new gear, inside was the place to be anyway.

The rain made the corridors and exhibit halls very crowded with happy (if slightly damp and bedraggled) hams. It wasn't until Sunday morning that I was able to escape from the CQ booth long enough to do my annual “what's new” survey. Actually, the survey started right at the CQ booth, which was in a new location (in the main arena) and which featured

a wide array of new books, both from us and from other publishers. See “Books, Books, Books” for a rundown of new publications in print and on CD.

It's fascinating to me to see how a whole industry thinks, especially when it seems that we're pretty much all on the same page, even though we don't share plans in advance for obvious competitive reasons. But with the U.S. economy in a slump, and Japan's even worse, the focus this year was more on new products to help hams make the most of their current radios, rather than a raft of new radios that many of us can't afford to buy right now. We counted five new radios, one new amplifier, nine new antennas, more than 20 new books and CDs, and some 30 new accessories. Let's start with radios and other devices that generate RF energy:

Radios

The biggest buzz about radios surrounded ICOM's unveiling of the IC-7800, a full-color, 200-watt HF+6-meter transceiver with more buttons and dials than I could count. It features two independent receiver circuits, four 32-bit DSP (digital signal processing) units—one for the transmitter, one each for the two receivers and the fourth for the spectrum scope—the ability to operate RTTY and PSK-31 without a computer, a built-in digital voice recorder, and more. This is not a backpacking rig; it's just over 16 × 16 inches around (and just under 6 inches high), and weighs in at more than 50 pounds! ICOM says it spared no expense in designing and building this radio ... and you won't, either, if you buy it. The price is somewhere in the neighborhood of \$10,000. If cost is no object, you'll most likely get your money's worth.

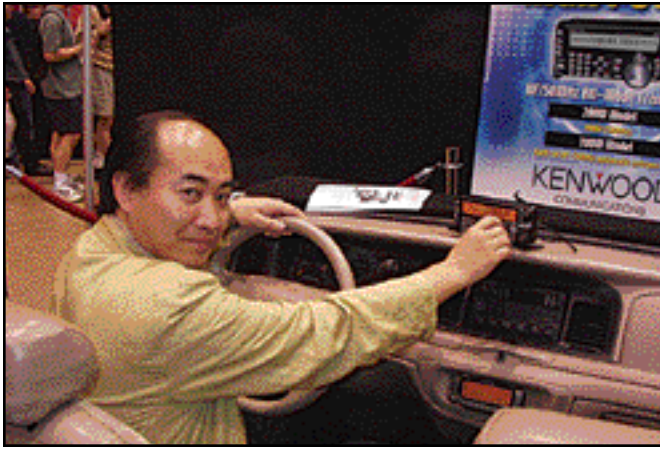
Much smaller, much lighter, and most likely much easier on the checkbook is Kenwood's new (yet unnamed) HF+6-meter mobile transceiver. It will come in two models, a 100-watt version with a built-in antenna tuner and a 200-watt



ICOM's new IC-7800 is a top-of-the-line HF+6-meter transceiver designed for fixed-station use.

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Kenwood engineer Toshio Torii, JA6QXW, poses with his newest creation, an as yet unnamed HF+6-meter mobile rig. When released it will include operation on the new 60-meter band.



The Ten-Tec Titan III amplifier runs 1500 watts PEP on all amateur bands between 160 and 15 meters (except 60 meters), and can be modified to operate on 12 and 10 meters if you have proof you're a licensed ham.

transmitter (100 on 6) without the tuner. It will be ready to operate on the new 60-meter band, includes various DSP features, a built-in memory keyer, a detachable control head, and a Packet Cluster tune function when used in conjunction with a TM-D700 VHF transceiver. A unique feature: CQ Contributing Editor Gordon West, WB6NOA, who will be doing a field review of this radio when it's released, says the 200 watt version runs on *two* 12-volt power cables, each running about 30 amps average and 40 amps peak current. At home, you'll need dual 40-amp power supplies; in the car, you'd best keep the engine running when operating at high power, to counter that 60–80-amp drain on the battery!

Yaesu (Vertex-Standard) introduced two new radios, the dual-band VHF/UHF FT-8800R mobile with 50 watts out on 2 meters and 35 watts out on 70 centimeters. (It's a dual-band version of the four-band FT-8900.); plus the VX-2R handheld, which Yaesu bills as the world's smallest dual-band HT with wideband receive. The receiver covers 500 kHz to 960 MHz (except for cellular frequencies and 730–799 MHz. The transmitter puts out 1.5 watts on 144 MHz and 1 watt on 440 MHz (3 and 2 watts, respectively, on an external 12-volt power supply). It features more than 1300 memory channels, broken down into 20 groups, an ultra-thin Lithium-Ion battery, and WIRES internet linking capability.

Another new entry in the VHF FM mobile field is ICOM's IC-208H, a two-band 2-meter and 70-centimeter (one at a time) transceiver with 55 watts out on VHF and 50 watts on UHF, plus 500 memory channels (in 10 banks of 2–100 memories each) and expanded receive that includes 118–173, 230–549, and

810–999 MHz (minus cellular frequencies, of course; one wonders why that middle range couldn't start at 220 instead of 230 and include 222–225 MHz receive), all in a very small package with a remote-head option.

This year's new entry from Ten-Tec is the Titan III 1500-watt linear amplifier. It comes ready to operate on all amateur bands from 160–15 meters (except 60 meters), and Ten-Tec will provide modification instructions to open up 12 and 10 meters if you provide proof of a current amateur license. A complete desktop unit, it weighs in at 84 pounds and runs on two Svetlana 4CX800A ceramic tetrode power tubes in a grid-driven configuration. It comes with full break-in transmit/receive switching standard, plus a variety of protective circuits to keep the Titan III "safe from operator error," a nice way of saying it's pretty much idiot-proof.



Elecraft's transverters for 6 meters, 2 meters, and 222 MHz will put your K2 or any other HF rig on VHF SSB and CW.

Elecraft is expanding into VHF with a line of transverters that are designed for the K2, but will work with virtually any HF radio. There's a 6-meter model, which puts out 20 watts with about 8 watts in, a 2-meter transverter, and one for 222 MHz, both of which put out about 25 watts. All three feature a noise figure on receive of 1 dB or better. The transverters are priced at \$349 each.



Yaesu's VX-2 handheld is billed as the world's smallest dualband handheld transceiver with wideband receive (500 kHz to 960 MHz, minus cellular, and 730–799 MHz).

Antennas

Array Solutions, the U.S. importer for the German Optibeam, introduced the OB2-40, a 2-element 40-meter Yagi. Each element is 49 feet long; they're both mounted on an 18 1/2

foot boom. The antenna sells for \$1295.00.

Degen, a relative newcomer to the U.S. ham market (the company is based in Canada), generated quite a bit of interest with its "Baby Boomer Quad." They have two models, a tri-band quad for 10, 15, and 20 meters; and a monoband version designed for 10 meters but which can be ordered for other bands as well. What sets apart these antennas is that they are portable, fold down into an 8" x 8" x 6" box, and can be put up and taken down by one person, making them attractive candidates for Field Day or emergency setups. The 10-meter monobander is \$480 U.S., and the tribander is \$678 U.S.

Fluidmotion has two new offerings, a 4-element Yagi and two sizes of SteppIR verticals. All operate on the principle of an adjustable copper strip inside a fiberglass tube, which extends or contracts as needed for whatever band you choose.

High Sierra has upped the ante in the motorized mobile HF antenna competition, introducing the Sidekick, which is only 15 inches high (minus a 3-foot whip) and ranges in total height between 4 and 4¹/₂ feet. Plus, it weighs in at about 2 pounds, making it just right for safely attaching to a no-holes trunk-lip mount.



High Sierra's new "Sidekick" motorized mobile HF antenna weighs only 2 pounds and stretches to only 4¹/₂ feet when fully extended. →

Speaking of HF mobile, Iron Horse has added a line of mini HF Stick antennas. Each is a single-bander; you need to change antennas in order to change bands, but it could be an attractive option if you're on a tight budget but still want to operate HF mobile.

MFJ introduced three new antennas, including a manual screwdriver (which requires moving the coil—by hand—for each new band); plus a line of single-band dipoles and a wide-coverage disc antenna. There are four varieties of the manual screwdriver, with varying band coverage and whip length. Weight ranges from 1 pound to 2¹/₂ pounds.

Accessories

Here's where the list really starts to get long. We'll start with one of the more



The AOR AD-9800 Fast Modem works through the mic and speaker lines to allow any rig to be used for digital voice, data, and image communications, all within the bandwidth of a typical SSB signal.

exciting pieces of gear we've seen in a while, AOR's ARD-9800 Fast Modem. This is an analog to digital (and digital to analog) converter that lets any transceiver send and receive digital voice, high-speed data (3600 bps, but typical HF speed is 300), and digital slow-scan TV. It is compatible with any other radio using the open G4GUO digital protocol. The ARD-9800 attaches to the mic and speaker lines, automatically recognizes received digital or analog signals and activates the correct mode, and operates on SSB by using the same frequencies as microphone audio (300–2500 Hz) to modulate the signal and stay within a standard SSB bandwidth. The ability to automatically recognize signals means you can hear analog signals on your frequency and QSY to avoid interference. AOR says the list price will be about \$600, with an expected street price in the \$400s.

If you've ever put up a ground-mounted ¹/₄-wave vertical antenna and driven yourself crazy trying to figure out how to hook up multiple ground radials, DX Engineering has an answer, its new Radial Plate. It's essentially a sheet of stainless steel with an SO-239 for feedline, a U-bolt for holding up the antenna, and 60 bolts with nuts for attaching the ground radials. DX Engineering also has a new insulated boom-to-element clamp for 2-inch booms, making it easier to build a Yagi for a reasonable price.

In addition to its transverters, Elecraft has also introduced an internal digital signal processing (DSP) module for the K2, featuring advanced noise reduction and autonotch; plus the KRC-2 band decoder, which detects which band you're on and automatically switches antennas to the right one! It works with the K2 and with ICOM and Yaesu HF rigs as well.

Gap Antennas has brought out a new line of "Quick-Tilt" mounts for antennas

on 1¹/₄–2-inch masts. The ground-mount version goes about three feet into the soil, while the ladder mount is designed for use on campers and motorhomes. On each, a bolt and wing nut can be removed to tilt down an antenna and put in to secure an antenna in place once it's raised to a vertical position. Gap also introduced the "Hear It" inline module as a companion to its "Hear It" DSP-enhanced speaker. The inline module allows you to use headphones or the speaker of your choice while getting the DSP benefits of the "Hear It" system.

Heil Sound introduced two new microphones and a noise-canceling headset at Dayton. The "Heritage" mic resembles the classic broadcast desk mics of bygone days (similar to the prop mic you see on David Letterman's desk), but with a Heil element optimized



The classic-look "Heritage" mic (foreground) and the sleek "Pro Line" mic are two of the newest offerings from Heil Sound, which also introduced a noise-canceling headset.

The TCB-I Tactical Communications Bridge from Link Communications is designed for emergency use in the field to link together normally-incompatible radio systems.



The MFJ Travel Tuner is just one of several new station accessories introduced this year at Dayton by the folks from Starkville. It's intended for use with backpack-portable HF rigs.

for ham communication. The "Pro Line" mic, on the other hand, is a sleek, modern-looking microphone, so there's something for all tastes. In addition, Heil introduced the "Quiet Phone" noise-canceling headphones. We gave them a try—starting with the noise canceling turned off, then turned on—and the difference was quite noticeable. Owner Bob Heil says the same noise-canceling technology will be included in the Pro Set headsets as of this summer.

LDG Electronics added two new antenna tuners to its product line: the AT-897, an automatic antenna tuner designed to work with Yaesu's FT-897 transceiver, and the larger AT-1000, an automatic tuner for use with high-power amplifiers. It will handle up to 1 kW on SSB, 750 watts on CW, and 500 watts on key-down digital modes.

A fascinating new piece of gear comes from Link Communications, the TCB-I Tactical Communications Bridge. The bridge acts as a connection point in the field between two radio systems, including those with different protocols. The unit contains a built-in radio database, so the user simply dials up the radios being interfaced and the TCB-I takes care of the rest. It will even link conventional and trunked radio systems, making it an excellent tool for emergency and disaster communications.

M² Antennas has a new MT-1000 elevation rotator, which can lift up to eight VHF Yagis and, in conjunction with an azimuth rotator such as the OR-2800, provide complete antenna control for satellite or Earth-Moon-Earth communications. The MT-1000 can be coupled to the azimuth rotator and run with a single cable to a computer-linked controller, such as the RC2800PX programmable controller, which owner Mike Staal says has new software, new features, and much easier calibration.

MFJ, as always, rolled out several new accessories for the ham shack, including an apartment-window mount, a tripod mount, a "Travel Tuner" for small portable HF radios, a dummy load and wattmeter, a wireless weather station, an "atomic watch" that updates itself with signals from WWVB, a 10 Hz to 3 GHz frequency counter, a kilowatt-rated lightning surge protector, and more.

The X-Sweeper from Optoelectronics is a professional-grade near-field receiver that displays signals in a spectrum format on an LCD monitor screen. It covers 30 MHz to 3 GHz and lets a user see all signals present in a frequency range at a given time. This can be helpful for tracking down repeater QRM that occurs only when some other



SGC's Pierre Goral, K17UA, shows us the new MAC-200 master antenna controller, a combination switch and tuner for up to five antennas, which remembers and returns to the last setting on each switch position.

nearby transmitter is active. It also has a professional price tag (\$1599 list), so it's really for the serious user.

SGC brought three new toys to Dayton. First is the ADSP² adaptive digital signal processing board, which will work with virtually any radio. There are two models, one for high power and the other for low power. For additional information, see this month's "What's New" column. The second item is the ADSP² speaker, which has the ADSP² board built in. Third is the MAC-200 master



M² Antennas owner Mike Staal, K6MYC, shows us his company's new MT-1000 elevation rotator for satellite and moonbounce communications.

antenna controller, which is a combination antenna switch and tuner. You can connect up to five different antennas to it, and it not only remembers the settings but also which antenna it's tuning, so the next time you switch to that antenna, it recalls those settings and retunes itself in less than 10 milliseconds. It will handle up to 200 watts power output.

Finally, TimeWave introduced its "Ham Hub" does-it-all digital interface, continuing in the tradition of the PK-232 multimode digital controller.

Books, Books, Books...

Along with the new radios and accessories introduced this year at Dayton, there seem to be more new books being introduced than at any time in recent memory. Here's a thumbnail sketch of what we saw, arranged alphabetically by publisher, including a few notable books that came out a little earlier in the year:

ARRL

ARRL Repeater Directory, 2003–2004—The latest edition of this annual guide. New this year is a listing of IRLP (Internet Repeater Linking Project), but not Echolink, nodes.

Now You're Talking, 5th edition—Updated Technician Class license manual based on the new Element 2 question pool. Arranged textbook-style by topic, with questions at end of book.

ARRL's Tech Q&A, 3rd edition—Updated for the new question pool, this goes through the pool, question-by-question, explaining which answer is correct and why.

ARRL's Extra Q&A, 1st edition—Same as the Tech Q&A book, only for the Element 4 Extra exam.

Hints & Kinks for the Radio Amateur, 16th edition—Yet another collection of mini-projects and problem-solving ideas from the "Hints & Kinks" section of QST.

YASME: The Danny Weil and Colvin Radio Expeditions, by Jim Cain, K1TN—A well-researched biographical look at three of the best-known early DXpeditioners, Danny Weil, ex-VP2VB, and Lloyd, W6KG, and Iris, W6QL, Colvin, and their adventures in operating ham radio around the world.

Simple and Fun Antennas for Hams, by Chuck Hutchinson, K8CH, and Dean Straw, N6BV—The title says it all.

Experimental Methods in RF Design, by Wes Campbell, W7ZOI, Rick Campbell, KK7B, and Bob Larkin, W7PUA—A successor to *Solid State*

Design for the Radio Amateur, which has become a classic technical text.

CQ Communications

Ham Radio Anthology: Antennas 1968–1972; 1973–1975—the first two installments in a new series of books featuring selected articles from *ham radio* magazine. These two volumes include antenna articles from the years listed. Two additional volumes are expected out later this year, covering 1976–1990.

Ham Radio Anthology: Homebrewing Techniques—a collection of articles from *ham radio* on the art of building your own equipment.

Ham Radio Anthology: Test Equipment and Repair Techniques—selected articles from *ham radio* to help keep alive the art of troubleshooting and repairing your own radio.

Heathkit – A Guide to the Amateur Radio Products, 2nd edition, by Chuck Penson, WA7ZZE—a must-have for anyone who has ever owned or wanted to own a piece of Heathkit ham radio gear. New edition includes additional radios, photos, and more.

Understanding, Building and Using Baluns and Ununs, by Jerry Sevick, W2FMI—Successor to *Building and Using Baluns and Ununs*, this completely updated and expanded book includes a complete new section on transmission line transformer theory entitled "Understanding Baluns and Ununs."

The Short Vertical Antenna and Ground Radial, by Jerry Sevick, W2FMI—An expanded and updated version of what began as the Appendix to the original *Building and Using Baluns and Ununs*, this provides a concise guide to theory and practice for hams interested in building and using electrically-shortened vertical antennas.

Idiom Press

The Complete DXer, 3rd edition, by Bob Locher, W9KNI—The classic guide to DXing, the classic ham radio activity, expanded and updated.

Up Two, Adventures of a DXpeditioner, by Roger Western, G3SXW—Tales of modern-day DXpeditioning (*interesting to compare with the descriptions of the early days in K1TN's YASME book—ed.*)

ITfM

Radio Amateur Callbook, Summer 2003 (CD only)—The famed *Callbook* is back, published by the German firm that created the software for the *Callbook* CD, beginning in 1995. ITfM

purchased the rights to the *Callbook* earlier this year and has brought out an updated CD complete with more than 200 maps and other features.

Master Publishing

Gordon West's *Technician Class 2003–2007* license manual—updated for the new question pool, this question-by-question guide features WB6NOA's enthusiasm and his unique style of clearly understood explanations.

Getting Started in Electronics, 3rd edition, by Forrest Mims, III—a complete "ground-floor" guide to basic electronics, this hand-written and illustrated text is a marvel to look at as well as to read.

Worldradio Books

Six Meters: A Guide to the Magic Band, 3rd edition, by Ken Neubeck, WB2AMU—expanded by 32 pages, includes updates to cover the recently-passed sunspot maximum and lessons learned. A valuable reference for any 6-meter operator.

Others

Hello, World: A Life in Ham Radio, by Danny Gregory, KC2KGT, and Paul Sahre, KC2KHN, Princeton Architectural Press—An introduction to ham radio and its connection to world history based on the QSL card collection of a Silent Key (see article in July CQ).

Practical Reliability Analysis, by Ken Neubeck, WB2AMU, Pearson/Prentice Hall—Not really a ham radio book, but rather a textbook on reliability engineering, Ken makes liberal references to his ham radio activities and uses several ham radio experiences as case studies. Many hams may find useful the reliability engineering skills that Ken teaches in this book.

Wrap-Up

Overall, as always, Hamvention was another great ham radio experience. Along with the chance to see and touch new products, attendees get to be part of the world's largest gathering of ham radio operators. There's nothing quite like it anywhere else, on or off the air. CU there next year?

More Dayton photos, including more new equipment, will be found on the CQ website photo gallery. Go to <http://www.cq-amateur-radio.com>, click on "Photo Gallery" at the lower left, then select "Dayton Hamvention 2003."