



The Monitor



March 2001

From the Prez:

Thanks to all who helped with the search last month. It was greatly appreciated by the Nichols family. After the meeting those interested are asked to stay and participate in a critique of the event and help us better prepare for the future.

On Mar. 9th and 10th is the Oxbow High School Expo in Bradford, VT. If you can help out please contact WB1BRE.

Next month the nominating committee for officers will be formed so if you would like to participate start thinking of who you would like for officers.

Field Day planning will be kicking off soon so if you would like to help please let Mill K1IB know and he can add you to his committee list.

de Verne N5IEP

Upcoming Events

Oxbow Expo	Mar. 9-10, Bradford, VT
TSRC Meeting	Mar. 10th, 9:00am Gillam's Restaurant, WRJ, VT
Flea Market	Mar. 25 - Contookcook Radio Club Flea Market, Henniker, NH
TSRC Meeting	Apr. 14th, 9:00am Gillam's Restaurant, WRJ, VT

Oxbow School Expo

This is pretty late, but we have an opportunity to demo Ham Radio again this year at the Oxbow School Expo in Bradford, VT. The event will be this weekend- Friday, March 9 from 3:00 PM to 9:00 Pm and Saturday, March 10 from 9:00AM til 3:00 PM. As in the past, we have a space to set up one or more stations in the building and the trailer/tower can be parked outback adjacent to the stations. It would be a mix of operators making contacts on HF/VHF and one or two Hams to talk with the public. The most effective display has been a world map where we can add colored pins to indicate the countries/states with which we are in contact. Neither Verne nor I will be available, but if a group does want to do this, I can arrange to get the trailer up there during the week, if I get early notice. You would need to get the necessary club rigs from World HQ, which could arranged through Alan Bradford. Let me know if there is a group willing to support this by Tuesday.

73, Bill WB1BRE

REVIEW OF AN INEXPENSIVE WAY TO DRAW SCHEMATICS ON YOUR COMPUTER.

Since I tend to get involved in a variety of projects that require the design and/or construction of electronic PCBs and breadboard construction, I have been looking for an inexpensive means to draw schematics on my computer. My search led me to a simple, easy to use method developed by Steve Daniels and published in the September 2000 issue of *Nuts and Volts* magazine.

Steve was also looking for inexpensive software for creating schematics and hit upon the idea of using MSPaint as the basis for a simple package. MSPaint is a basic drawing package available on Windows 95/98, and in addition to allowing direct drawing of objects, also provides a means to drag items from an existing library of objects.

The package that Steve developed includes a palette of basic electronic symbols commonly used in drawing schematics. This palette is in bitmap format and includes over a hundred symbols and can be purchased from Steve through his website at: <http://home.netcom.com/~smallbearelec>

With Steve's scheme, you can drag a given symbol from the palette to the blank page on MSPaint to start creating your schematic. In addition to moving the symbols in place, you can use the tools in MSPaint to draw connecting lines and add text.

I won't go into the details of implementing this software as Steve has info available on his website. Once you get used to the process of moving and positioning objects, you can put a schematic together quickly. You can also add a title section and even a parts list if needed. The result is a reasonably good looking schematic that provides a permanent record of your design or construction efforts for a very small investment.

73, Bill WB1BRE

Disclaimer

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March Propagation Outlook

by AD5Q, edited by K1IB

Equinox time is here again, and this means we will have some nice openings deep into Asia. Look for a 20 meter long path opening around sunset and short path at sunrise. On 15 meters, this part of the world should be workable for much of the day, especially from morning to noon.

10 Meters: This band will only be good for another month or so. Ten meter propagation to Europe and Japan will gradually drop out as the MUF along these paths dips below 28 mHz. Signals will get weaker and the activity will move to 15 and 20 meters. The sunspot cycle appears to have peaked—so enjoy 10 meters now because it won't last.

15 Meters: Fifteen meters will improve, as it will now remain open in the evening. Since the daytime paths won't deteriorate until midsummer, many DX windows will stay open longer. This is especially true of the polar paths. Tune carefully around mid-day for exotic Asian stuff. Around this time of the year the band still closes early at the northern latitudes, so signals skip over Siberia to points further south in Asia.

20 Meters: Twenty meters is open all night again and prime time evening hours bring us a sunrise peak sweeping over Russia. Springtime is the peak season for working the Russians and former Soviet republics in Asia. Long path is still good, and an interesting path to watch for at this time of year is the northerly path to the Indian Ocean coast of Antarctica.

40 Meters: Activity on 40 meters peaked during winter and now is moving to higher frequencies. Propagation on 40 will remain excellent however.

DXCC in One Week?

Is achieving DXCC in a week a realistic goal during this high point in the solar cycle? The Ohio-Penn DX Bulletin reports 241 countries were spotted on the AR-Cluster Network during the week of Sunday, Feb. 18 through Sunday, Feb. 25.

Countries: 3A, 3B8, 3B9, 3D2, 3D2/r, 3V, 3W, 3Y/b, 4J, 4L, 4S, 4U1I, 4U1U, 4W, 4X, 5A, 5B, 5H, 5N, 5R, 5W, 5Z, 6W, 6Y, 7P, 7Q, 7X, 8P, 8Q, 8R, 9A, 9G, 9H, 9J, 9K, 9M2, 9M6, 9N, 9V, 9Y, A2, A3, A4, A5, A6, A7, A9, AP, BV, BY, C3, C5, C6, C9, CE, CE0A, CE0Z, CE9, CM, CN, CP, CT, CT3, CU, CX, D2, D6, DL, DU, EA, EA6, EA8, EA9, EI, EK, EL, EP, ER, ES, ET, EU, EX, EY, EZ, F, FG, FH, FJ, FK, FM, FO, FO/m, FP, FR, FW, FY, G, GD, GI, GJ, GM, GU, GW, H4, HA, HB, HB0, HC, HC8, HH, HI, HK, HK0/a, HL, HP, HR, HS, HV, HZ, I, IS, J2, J3, J5, J6, J7, J8, JA, JT, JW, JX, JY, K, KG4, KH0, KH2, KH4, KH6, KH8, KH9, KL, KP2, KP4, LA, LU, LX, LY, LZ, OA, OD, OE, OH, OH0, OK, OM, ON, OX, OY, OZ, P2, P4, PA, PJ2, PJ7, PY, PY0F, PZ, R1FJ, S5, S7, S9, SM, SP, ST, SU, SV, SV5, T2, T32, T33, T7, T8, T9, TA, TF, TG, TI, TK, TL, TR, TT, TU, TZ, UA, UA2, UA9, UK, UN, UR, V2, V3, V4, V5, V7, V8, VE, VK, VK9N, VP2E, VP2M, VP2V, VP5, VP8, VP8/h, VQ9, VR, VU, XE, XU, XX9, YB, YI, YK, YL, YN, YO, YS, YU, YV, Z2, Z3, ZA, ZB, ZC4, ZD7, ZF, ZK1/s, ZK3, ZL, ZL9, ZP and ZS. *Editor's note: The report could contain "Pirate SLIM" operations. As always "Work First, Worry Later."*

A GLIMMER OF GOOD NEWS FOR AO-40

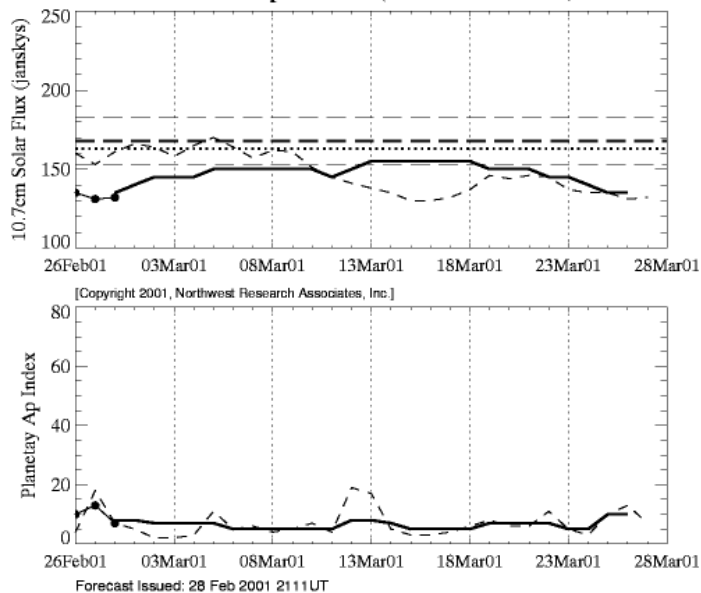
AMSAT reports that the sun began triggering AO-40's sun sensor as the satellite emerged from Earth's shadow on orbit 147. The news has boosted ground controllers' optimism that they might be able to regain control over the satellite's spin rate and attitude sooner than had been predicted.

AMSAT-DL's Peter Guelzow, DB2OS, said this week that as soon as the sensor unit delivers good sun sensor data, controllers will be able to reduce AO-40's spin and make it easier to adjust attitude. "This also will lead to an improvement in reception of the S-Band telemetry," he said.

For the past few weeks, the AO-40 has remained in what AMSAT called "a semi-hibernation state," because the satellite's high angle has prevented the sensor from seeing the sun's light. Controllers had planned to work around the sun sensor issue by using a software routine.

Once ground controllers can get accurate AO-40 attitude data, they should be able to correctly aim AO-40's high-gain antennas for optimal reception on Earth. Ground controllers have been relying on telemetry from AO-40's S-band (2.4 GHz) downlink—the only transmitter now operating—but they are holding out hope that at least some of the satellite's other transmitters still function. Since the satellite went si-

F10 and Ap Forecast (NOAA/SEC 27DO)



Solar & Geomagnetic Activity Forecast

These plots show forecasts for the 10.7cm solar radio flux (F10) and the planetary geomagnetic activity index (Ap) for the next 27 days (heavy solid lines). The light solid lines and filled circles at the start of each plot are the observed F10 and Ap for the past few days, and the light dashed lines show the observed F10 and Ap from the previous solar rotation. The three horizontal long-dash lines on the F10 plot indicate the mean (heavy line) and expected range (light lines below and above the heavy line) of F10 from the NOAA SEC long-range prediction for Solar Cycle 23. The single horizontal dotted line is the 90-day mean F10 flux for the preceding 90-day period.

lent for about two weeks in December, ground controllers have had no luck hearing the 2-meter, 70-cm or 1.2 GHz transmitters using AO-40's omnidirectional antennas.

The next major step will be to bring AO-40 into an orientation where ground controllers can fire the onboard arc-jet thruster—using only gaseous ammonia and no electrical power. The test firing will allow checking out the guidance electronics and the arc-jet valves. Guelzow said the thrust of the test will be enough to lift the satellite's perigee by about 100 km.

Guelzow said plans call for optimizing the current orbit with a live arc-jet firing. He said that several independent analyses—including one done by the French space agency, CNES—confirm that the current orbit will be stable for many years—longer than the spacecraft's anticipated lifetime.

For more information, visit the AMSAT-NA Web site, <http://www.amsat.org>.

SPACE STATION SHIFT CHANGE SET WITH NEXT SHUTTLE LAUNCH

It's almost time for a shift change aboard the International Space Station, and two hams are among the new crew members. Relieving the current ISS crew will be the Expedition 2 team of Commander Yuri Usachev, UA9AD/R3MIR, of Russia and US astronauts Susan Helms, KC7NHZ, and Jim Voss. The Expedition 2 crew is scheduled to head into space March 8 aboard the space shuttle Discovery. The Expedition 1 crew has spent more than four months in orbit.

The Space Station Alpha crew is staying in space a couple of weeks longer than planned because of a tight shuttle launch schedule and necessary refitting on the Discovery. Expedition 1 Commander William "Shep" Shepherd, KD5GSL, and Russian cosmonauts Yuri Gidzenko and Sergei Krikalev, U5MIR, arrived at the station November 2. During their stay, Shepherd has spoken via ham radio with students at several schools as part of the Amateur Radio on the International Space Station—or ARISS—program.

In addition to ferrying the Expedition 2 crew, Discovery will have in tow an Italian-made cargo carrier that's filled with laboratory experiments and equipment. At the end of its almost 12-day flight, Discovery will transport Shepherd, Gidzenko and Krikalev back to Earth. Discovery is planned to land March 20 at NASA's Kennedy Space Center in Florida.

Commanding Discovery will be Jim Wetherbee. Jim Kelly, KC5ZSW, will be the shuttle's pilot, and Andy Thomas, KD5CHF—a Mir veteran—and Paul Richards, KC5ZSZ, will serve as mission specialists. No Amateur Radio activity from the shuttle is scheduled.

HIKING HAMS CLAIM PEDESTRIAN MOBILE DISTANCE RECORD

Bonnie Crystal, KQ6XA, of San Mateo, California, and Max Pompe, ZL1BK, of Auckland, New Zealand, are claiming the record for the longest direct-path, pedestrian-to-pedestrian Amateur Radio contact. The two worked each other February 18 on 10 meters using compact SSB transceivers and homemade antennas.

On the New Zealand end, ZL1BK used a 1.8-meter (5 feet 11 inches) homebrew telescopic whip mounted on his Yaesu FT-817 running 5 W. Crystal had a 6-meter (19 feet 8 inches) fishing pole strapped to an aluminum pack frame and ran 20 W using a Vertex/Standard VX-1200 HF Manpack transceiver, a radio that's not marketed in the US. "Both of us used 3-meter insulated-wire dragging counterpoises," said Crystal.

The 6500-mile contact began on 15 meters but ended on 10, because conditions were better there for that path. "Other stations in the HFpack group here in the US had been trying to make a go of it, but we just lucked out," Crystal said.

For his part, ZL1BK said, "I still can hardly believe we did it, but the Pacific gods smiles on us as we rode the air-waves today."

The HFpack Web site has more information at <http://groups.yahoo.com/group/hfpack/>. More information on Bonnie Crystal, KQ6XA, is available on her Web site, <http://www.qsl.net/kq6xa/>.

A Virtual QSL Card Service.

VQSL was designed to help the QSL effort when friends and I myself saw some outrageous prices on postage for some far away DX contacts. VQSL is easy for anyone to use and offered to those that want to have fun, and also save on postage and send a high quality QSL card that can be printed and added to their collection right away.

There is NEVER a charge for ANY service on VQSL! It is simply our way of giving something back to ham radio. This service is totally free and no money is ever solicited for any of the online services found there.

Full instructions are given on how to design and setup your first web page, how to find email addresses of your DX contacts and how to design Virtual QSL cards. Email technical support is also offered.

If you have any questions please feel free to contact me directly (ka9tnd@vqsl.net) Also feel free to visit <http://www.vqsl.net>

73's --- Michael KA9TND

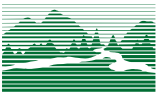
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Don't forget to check the TSRC Home Page! Make it your
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