



# The Link

Official Journal of the Buffalo Amateur Radio Repeater Association, Inc.

October 1999

## Program for October: Solar Energy Products

Our program for the September meeting was canceled at the last moment due to an emergency with our presenter, so this month we will be pleased to welcome Jeff Smith of National Solar Technologies who will give a presentation on the products offered by his company. Featured will be solar electric panels, batteries, and power pack systems. There have been many major advancements in the field of solar technology in recent years, so this should be an interesting and informative program.

As it turned out, it was probably best that Jeff couldn't make the meeting, as the prime business topic -- the purchase of Chet Riker's land next to the Cole Road repeater site -- occupied a lot of time with discussion and questions. We wouldn't have had a lot of time left for the program presentation.

The voting membership present at the meeting voted unanimously to pursue the purchase of the Riker land. The purchase will be funded through a no-interest, payable-on-demand loan from a group of members. The land will be purchased in BARRA's name and BARRA will hold title to the parcel.

Ed Swan, KD2JW, has been working with the Riker family and an attorney to complete this transaction, and should have an update for us at the October meeting.

## Dues are Due!

It's that time of year again, time for membership dues. Please check your mailing label for the amount you owe. We have tried to take into account everyone's discount, where applicable, but if we have made a mistake, please let Ed Swan, KD2JW, or Doug Alderdice, KA2WFT, know about it, and remit the amount that you believe to be correct.

## Get Well, Don!

We're sad to report that Don Ismert, K2IMF, has been under the weather the last month or so. He's been in the hospital but is now recuperating at home. We're sure he'd enjoy a card from friends. Get well, Don!

### *The BARRA E-Mail Listserver*

To join, send an empty e-mail message to:

[barra-subscribe@perdix.acsu.buffalo.edu](mailto:barra-subscribe@perdix.acsu.buffalo.edu)

To send a message to the list subscribers, address your e-mail to:

[barra@perdix.acsu.buffalo.edu](mailto:barra@perdix.acsu.buffalo.edu)

## Voting Membership List for 1999-2000

Pursuant to the BARRA by-laws, the following list of voting members for the coming year was approved at the September meeting. BARRA members are eligible for voting membership after performing some service for the club in the preceding year. If there has been an omission in the list, please inform a board member as soon as possible.

WA2CWF	Brian Neri
N2DAY	Ray Baker, Sr.
KG2DE	Mark Lienert
K2DSN	Keith Laudenslager
WB2DSS	Rich Poczalski
W2EUP	Gil Boelke
AJ2G	Bob Schneider
N2GH	Dave Sewhuk
K2GUG	Fran Stengel
WA2HKS	Ted Ertl
W2HYP	Mike Rink
N2IE	Kevin Ward
K2ILH	William Pike
K2IMF	Don Ismert
WB2JCB	Dick Diehl
K2JGI	Bob Dutschman
WB2JQK	Bill Havas
KD2JW	Ed Swan
N2MER	Steve Wiseman
N2NJH	Karl Weir
WA2NQD	Emil Kosmanski
N2OBW	Gene Kremzier
W2PB	Paul Beeman
W2PVL	John Latta
N2QJE	Steve Riek
N2RKQ	Eddie Hope
K2RSK	Peter Liaros
KD2SF	Bob Rohrer
VE3TIJ	David Faul
WB2VEU	Andy Foremiak
KB2VKK	Keith Hendershot
KC2VS	Leigh Reichert
KA2WEY	Bob Hughes
KA2WFT	Doug Alderdice
KF2WG	Ray Reichert
KA2WIO	Voit Drankhan
KB2WSK	Mary Rose Luckoski
N2WUV	Vince Luckoski
KB1XW	Stan Niesiolowski
N2YDM	Ben Bass
N2ZDU	Joe Eberle
WA2ZSJ	Nelson Oldfield

## Buffalo Amateur Radio Repeater Association, Inc.

### Club Officers & Directors

President	Mark Lienert KG2DE '00	447-1738
Vice President	Steve Riek N2QJE '00	731-3452
Secretary	Brian Neri WA2CWF '99	838-1673
Treasurer	Ed Swan KD2JW '01	877-0417
Directors	Voit Drankhan KA2WIO '99	941-5569
	Keith Hendershot KB2VKK '99	668-0391
	Gene Kremzier N2OBW '01	632-4369

### Committees & Chairs

Technical	Gil Boelke W2EUP
Link Editor	Doug Alderdice KA2WFT
Associate Link Editor	Dave Sewhuk N2GH
WNYSORC Representative Chair	Ben Bass N2YDM
Membership,	
Roster & Passwords	KA2WFT, W2EUP, KD2JW
Activities List	Ed Swan KD2JW
ID Badges	KD2JW
Erie County Emer. Coord.	Karl Weir N2NJH

### Voice Repeaters

WB2JQK	29.68 -	Buffalo
K2ISO	145.17 -	Wethersfield
K2GUG	146.73 -	Grand Island
W2EUP	146.91 -	Boston
W2OXB	147.00 +	Kenmore
W2EUP	224.82 -	Boston
WR2AHL	442.00 +	Wethersfield
WA2HKS	444.00 +	Buffalo
WB2DSS	444.75 +	Kenmore

### Digital Repeaters

W2EUP-1	145.59	Niagara Falls
N2GH-1	145.59	Wethersfield, NY
K2IMF-1	145.01	Marilla, NY

### RACES Net

Stop by Sunday evenings at 7:00 pm and join the Erie County ARES/RACES net which meets on the 146.91 and 444.00 repeaters. N2NJH is net control.

### BARRA Packet BBS

BARRA has a bulletin board area on the IPBUFF (N2NJH) Packet/Internet gateway system. Connect through any local node that shows IPBUFF in its node list. IPBUFF is available to 1200 baud users directly on 145.63 Mhz.

### BARRA Home Page

<http://hamgate1.sunyerie.edu/barra.htm>

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The *Link* is published eight times a year by BARRA, the Buffalo Amateur Radio Repeater Association, Inc. The opinions expressed herein, however, are not necessarily those of the Board of Directors, nor of BARRA. Letters to the editor are solicited and must be signed. Names and addresses will be withheld if requested. Material for the *Link* should be sent to the Editor:

Buffalo Amateur Radio Repeater Ass'n  
 P.O. Box 507  
 N. Tonawanda, NY 14120-0507

or may be submitted electronically to the editor's CompuServe address: 73323,672. If submitting through the Internet, the full address is 73323.672@compuserve.com. The editor may be reached by telephone in the evenings at (716) 833-8375.

**ARTICLES**

Articles for the *Link* on any subject, technical or general interest, are always welcome and encouraged. When submitting material to the *Link*, please type it or submit it electronically, if possible. Remember that the editor reserves the right to make necessary changes including reformatting and condensing for space and that Full Membership may be obtained by writing articles.

**LINK DEADLINES**

All material must be submitted to the Editor by the end of the month previous to the issue (e.g. December 31st for the January issue). Of course, if the material is received earlier than that date, you will have a better chance of getting your article in the next issue. All advertising is subject to the same deadline.

**ADVERTISING**

Want-Ads are free to BARRA members and are published in the next available issue. Ads from other hams are accepted free on a space-available basis. Ads appearing in other club newsletters with which BARRA has an exchange agreement are reprinted on a space-available basis.

Display advertising is available at the prevailing rates. Business card size is currently \$2.00/mo; full page is \$16.00/mo. Contact the editor for rates for other sizes.

**DUES**

Basic membership rate . . . . .	\$20.00
Family member in the same household as first member . . . . .	3.00
Discounts from basic rate	
Senior Citizen (65+) . . . . .	-5.00
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Full-time student with ID . . . . .	-5.00
Each new member recommended . . . . .	-1.00

**Note:** A voting member is a member who has performed a service for BARRA (e.g. helped out at an activity, written a *Link* article, etc.).

*Software Review*

**DeLorme's TopoUSA**

*Ben Bass, N2YDM*

I previously reviewed the initial CD-ROM release of Topo USA. While I found the program interesting and I even found a new use for it, predicting rf propagation and path interference, I was disappointed with the performance of the software. Despite some rather hefty hardware, the original version just crawled along.

With the latest release, there are now two versions available. There is the "conventional" CD-Rom version and the DVD version. Since I have DVD hardware, I opted for the DVD, which offers everything on one disk instead of the multiple regional disks in the CD-ROM version. To their credit, DeLorme listened to me (and I'm sure others) and packaged this in a real CD jewel case.

System requirements are Pentium 120 MHZ or faster processor, 233 MHZ recommended for 3-D flight, 16 MB RAM (32 MB recommended for 3-D), 30 MB available hard drive space, Microsoft Windows 98 or 98, SVGA card, DVD rom drive. DeLorme recommends a 3-D graphics accelerator recommended for 3-D map views. DeLorme GPS receivers (Tripmate and Earthmate) are supported. Most NMEA compatible GPS receivers are also supported.

I've come to expect easy installation and straightforward operating menus from DeLorme products. Topo USA is no exception. The program practically installs itself if you follow the on-screen prompts and instructions. With the software installed and my DVD hardware configured, I was ready to begin.

Like DeLorme's Eartha Global Explorer I previously reviewed, Topo USA utilizes the same cutting edge DVD format, and its ability to store up to 4.6 GB on a single layer or 8.5 GB on a double layer. This technology is essential to the functionality of this product.

Topo USA 2.0 includes over 300,000 miles of trails, including major parks and recreation areas, contours at 20 foot (based upon a new digital elevation model database) and 100 foot intervals, drawing tools to customize maps, a new user interface, a new 3-D engine, improved printing capabilities, the addition of 10 intervals to each detail level (for more precise map views) and a capability found in other DeLorme products, to connect to the Internet an download construction and event information.

You can find a point on the map by name or latitude and longitude. You can also search by roads or other points of interest. Once you locate the point, you can zoom in or out to select the level of detail you want. Then you can further magnify the chosen area using the photo zoom function. Detail includes rivers, forests, power lines and other things you might encounter on a road or trail.

These functions were easy to use and worked smoothly. Place names, contours, map grids and map center cross hair are easily turned on or off as desired. Maps colors are selectable

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*TopoUSA review continued*

day (dark on light) or night (light on dark).

The Navigate function allows you to plot a specific route with waypoints and field notes. You can change your route by simply dragging a point and seeing the change in distance, elevation, latitude and longitude in real time. You can name each waypoint and add relevant information to the waypoint's journal entry. You can also view a profile, a cross-sectional view of your route, with your selected waypoints, so you can see the changes in terrain. I found this view useful for trouble shooting radio frequency propagation problems. This can also be printed. The navigate tab allows you to customize your Profile display with climbing distance, linear and terrain distances, elevation gain or loss, average grade, and latitude and longitude.

The user interface is a bit different than other DeLorme products. Menus are at the bottom of the screen instead of the usual pull-downs. It takes some getting used to, but is not a problem.

Topo USA 2.0 features a new, enhanced 3-D engine. It provides nine times more data. Vertical exaggeration may be set at 1X, 2X, 4X, or 8X. It was easy to switch to the 3-D mode. While you can't fly over a route, the 3-D mode allows you to transform your map into a 3-D image. Using the Spin function, you can view a point from any direction. You can see how steep the terrain is from a given view and plan your route accordingly. The Pitch allows you to set the angle you view the terrain from. At 90 degrees, you're looking at a point from overhead. From 15 degrees, you can see the terrain rising above you. The 3-D mode is best described as dramatic. The 3-D view changes as you scroll the 2-D view.

Topo USA 2.0 is the promised improvement over the original version. The performance and functionality of this product is consistent with other DeLorme products. I was very impressed with this product. It exceeded my expectations and was genuinely fun to use. For the outdoor types, the topographical data is most useful.

Check DeLorme's web site at [www.delorme.com](http://www.delorme.com) for more information.

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## VCR Repair and the Internet

*Gil Boelke, W2EUP*

This is not about repeaters, but I thought it might be interesting. I have a high-end S-VHS VCR that has been acting up, so I thought I'd share this experience.

The deck has been usable in playback, but Stan, KB1XW, loaned me a tape to view and when I returned it he noticed that the tape wasn't rewind smoothly, the top near the outside of the roll was irregular. He suggested that I check the works inside to see if something's out of alignment. Also, for the past few months there has been an unstable herringbone pattern on the picture. Because when you tape something you get herringbone on the tape and more is added on playback, it was pretty useless. I put up with it because after it was on a half

hour or so the herringbone was softened enough to watch, but not to record.

Since now there were two problems I decided it was time to open it up and see what was wrong. It isn't a cheap deck, so fixing it is worthwhile, if it can be done.

First a bit of background. A couple of years ago it began leaving some of the tape behind when ejecting (what a mess). At that time I figured out the trouble: the pivot bearing had lube that hardened with age and it was jammed. I removed it with difficulty, cleaned off the gunk and re-lubed it. It began to behave itself again and that trouble has not recurred (I used a non-hardening silicone lubricant).

This time, investigation revealed that the hold-down nut on the shaft was more than a hold-down; there's a spring under the arm that holds it against this nut and the nut is a height adjustment for the guide! All I had to do was to turn it out a turn or so and the tape wound much more smoothly. That looks like the cure to the irregular rewinding.

The herringbone was a bit more subtle. I guessed that a cap might have opened up in the switching supply. That would account for the instability of the pattern since the frequency of a typical switcher isn't that well controlled, and of course the least reliable component in modern electronics is an electrolytic cap. So I took out the power supply and looked it over physically. Nothing was seen like evil liquid oozing out of a cap, so then I carefully turned it over so I could probe the bottom of the board while power was on to look for ripple on the power supply outputs.

When I plugged it back in, the fuse blew. I traced it to the expensive power IC that is the heart of the switcher. It had shorted out. Why it did that just then is a mystery. I checked everything and there is no way I could have had a short anywhere near it.

Anyway, I needed a new part but couldn't identify the make of the IC. All I had to go by was the part number on it. So I took a flyer and got on the Internet. I typed in the part number, to see what would happen, never expecting anything but junk matches.

Lo and behold it came up with an exact match! It turned out to be on a page that offers information on VCR repair and the part number was in a discussion on the Sony SLV R5UC, mine! They had information and a link to where you could order one. So I did and a few days later had a part in hand! Score one strike for the internet!

I installed it, worried like hell that it would just blow again, since I had no idea why it blew. Usually there's a definite cause, and it's a \$25 part. So I connected it through a light bulb that would pass less current than the fuse. It showed signs of life but couldn't sustain the load, obviously, but it at least showed that nothing was shorted. So I held my breath and took out the light bulb. It worked (sigh)!

Well, I guessed it wouldn't have any effect on the herringbone, and sure enough, it didn't. So I went forward with a scope and probed all the things that looked like outputs on the power supply connector, things that had electrolytics

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*VCR Repair continued*

across them. Bingo! I found one with big negative spikes on it. There was a 120 uf 16V cap across it. When I bridged it with another cap the herringbone disappeared, so my hunch had been right in the first place.

I replaced it with a cap of the identical rating but in tantalum instead of electrolytic. I was elated when it came up working great without that damn herringbone. My joy was short lived, because when I got to the end of the tape and hit the rewind button the thing just dropped the tape and draped it limply all over the innards without rewinding. To get the tape out meant a careful withdrawal with implements, gently nudging the tape out through the spring loaded trap door. I tried it again several times and the same thing happened every time. Nuts.

So I opened the bottom to see what was driving the reels... there was no movement of the rewind motor or the capstan on the audio head. I figured something ELSE went wrong in the power supply and I had lost power on one of the outputs to the motor. It turns out that the same motor drives both the capstan and reels, so apparently no power was getting to it, yet it played at first and the motor worked. I checked all the outputs on the supply, not knowing what voltages there should be, but each line that looked like an output had an output.

At this point I set it aside and made plans to order a service manual. But a few days later, before doing so I decided to try the Internet again. Maybe this is a common problem on these decks.

So I looked up VCR repair and got a bunch of hits. Most are advertising for service shops, but there was one that offered VCR repair information, and you could send E-mail to them with your problem. They'd post that and anyone with a like experience could reply. I didn't see anything on their page about my deck, so I sent an E-mail. At this point I'm still waiting to hear.

However, when I checked the next hit I found pay dirt. They listed my deck and had several problems common to it.

First, they described the sticking tape guide arm to a T! There they mentioned that you had to run that nut down the right amount to guide the tape correctly! Score another strike for that one.

Next, they mentioned the power supply IC: how you test it to see if it's bad and how to replace it. I had done it the same way. Score another strike. BUT...

Even though this wasn't the problem I was looking at I read it anyway, out of fascination. At the end, just before moving on I noticed a short line. When I read it it said (paraphrasing) "Be sure to allow enough time to recharge the internal battery after repairing the supply. If you don't, the tape will drop and drape all over the innards, requiring surgery to get the tape out (!). Leave it on for a while; a couple of hours should be enough."

So I eagerly got the deck and plugged it in. Left it for a couple of hours and came back. Damned if that didn't fix it! Another strike... this could be a 300 game if I find enough problems.

Again elated, I put back all the screws (found them all, amazingly) and installed it. Connected it to the TV set and couldn't get any output. Finally, by fiddling with the fine tuning on the TV (channel 3) I saw a noisy, snowy picture with no sound. Yet when I switched the VCR to antenna instead of VCR signals came through just fine. Drat, there's yet another problem. I checked and switched cables around and couldn't improve it. I was stumped. How can it work but output such a weak signal? I let it set another day and cursed my bad luck. For everything I fix another problem comes up. Score a split.

Tonight before removing the screws again I decided to try it on another TV, so I uprooted it and took it into the kitchen TV and tried it. It worked.

So I went back and tried it in the bedroom again. Same thing. Could I have a bad channel 3? Impossible... it's a set with a continuous tuner and 2 and 4 came in fine by tuning the same channel setting up and down. Then I checked the antenna connection. This is a small portable set and the external ant jack is a 1/8" phono jack. It had good contact. It needs an adapter from the TV F connector, of course, so I unscrewed it to check. Nothing wrong. I sighed and screwed it back on. When I plugged it back into the set it was working! Apparently that jack had a way of surrounding the center conductor while avoiding electrical contact! When operating straight through I must have a lot more signal level from my antenna system (which has a top mounted preamp), so the capacity coupling was adequate for that.

I've had fair luck finding things on the Internet before, but this one was absolutely amazing. With all the elaborate search strings I have sent out returning nothing but junk, who would suspect that an obscure part number on an unknown part from the bowels of a consumer product could return a winner?

So at last my VCR is back working! Knock on wood for me before something else happens to it.

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## Time for Board Nominations

October brings the time for elections to the BARRA board of directors. This year sees the expiration of the terms for Keith Hendershot, KB2VKK; Brian Neri, WA2CWF; and Voit Drankhan, KA2WIO. All incumbents have expressed an interest in running again. Bring your nominations for other candidates to the October meeting. If we have more candidates than positions open, we will have an election that night.

## New Member

BARRA welcomes Brian Baker, KD2DL, back to membership in BARRA. Brian was a member a few years back and is the son of Ray, N2DAY.

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# Calendar of Events

## GENERAL MEETINGS

General meetings are held at St. Bartholomews Episcopal Church, Brighton & Fries Roads, Tonawanda, across from Kenmore East HS. Doors open at 7:00 pm for rag chew, business meeting at 7:30, with program following.

**Monday, October 18, 1999** - Annual BARRA Meeting and election of board members. Program: Solar Energy Products (rescheduled from September).

**Monday, December 20, 1999** - Annual BARRA Christmas/Holiday Party.

**Monday, January 17, 2000** - Annual report by the Technical Committee.

**Monday, February 21, 2000** - Annual BARRA Auction. Bring your old goodies and turn them into cash!

**NO GENERAL MEETINGS IN  
MARCH, MAY, AUGUST OR NOVEMBER**  
The *Link* is not published in those months

## BOARD MEETINGS

Board Meetings are held the second Monday of every month at GLB Electronics, 151 North America Drive (formerly Commerce Pkwy), West Seneca. The meetings begin at 7:30 pm and members are always welcome to sit in on a meeting or bring concerns to the board.

## TECHNICAL COMMITTEE

The Technical Committee has work parties every Wednesday evening, 8:00 pm, at GLB Electronics. Stop by and give a hand to a repeater or other BARRA project.

The Technical Committee has formal meetings the first Friday of each month around 7:30 pm at GLB. Come on out to BARRA's own CCITT (Coffee & Crumpets Interrupted by Technical Talk), where progress of current projects is evaluated and new projects are planned. The meetings usually conclude with munchies at a nearby restaurant.