

# Feedline



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The Voice of The Cary Amateur Radio Club N4NC

September 2001

## Pheedline Phun Phacts

Please allow me to introduce myself, the new editor. I am W4KAZ, Keith(or KAZ). I volunteered to undertake the administration of the Feedline at the August meeting. I would like to thank Tom Klimala for providing all of the information associated with performing the job. After reviewing past years issues of the Feedline, I see I have high standards to meet.

My goal as editor is to continue the Feedline in a timely manner, and in the same form it has taken over the last several months. Please feel free to provide any suggestions for articles, format changes, or any other comments. I promise to accept all comments and suggestions in the spirit which they are presented. I have no plans to make any drastic changes, but I hope to make the letter entertaining as well as informative. I shall limit any editorial comments to this section, "Pheedline Phun Phacts". I shall try to keep the commentary limited to mundane and non-objectionable topics, but in this I may well fail. I will therefore be glad to include any dissenting commentary, when it is presented in writing. I have found that most hams have interests in widely varying areas, and I may sometimes throw in short items to see if you folks really read this thing.

While I have been attending CARC meetings intermittently for just over a year now, I know I have not yet met all of the club members, so I will give you all a quick "ham bio". As a native of Thibodaux, Louisiana, I first became a ham back in 1976, as WB5VWK, General Class, when I was a junior in high school. I spent quite a bit of time operating CW on the 40 meter novice band, which was always active at that time in that QTH. My rig was a 50 watt Knight transmitter, and my brothers Hallicrafters receiver. My elmer helped me obtain a loaner upgrade to a Heathkit HW-101, which allowed a short period of SSB activity on 40 and 15 meters. I participated in several Field Day operations of the Thibodaux club, and one hurricane event. Field Day remains my favorite ham activity. On entering college, the realities of working a full time night job and carrying a full course load put my operating on the back burner. Not to mention having to give the loaner back to its owner! Unfortunately, I do not know what happened to my old CW rig.

Fast forward 15 years.....While out for a walk one day I noticed a group of two meter, six meter, and HF antennas atop the home of one of my neighbors, a CARC member and club officer, and this sparked a latent interest in the hobby. Unfortunately, I found my license had been expired for more than two years...yikes, that last renewal was in 1986! Well, this applied the required incentive for me to learn CW again. I was able to obtain my Technician, then Advanced licenses in late 1999. I obtained my Extra by just barely squeaking by the 20 wpm code test, just before the 2000 license requirements changes. The morse requirement had always been the difficult part for me, I was determined to pass 20 wpm before the change in requirements. Atypically for most hams, I have yet to buy any VHF or UHF equipment.

Any questions or comments regarding the Feedline should be directed to Keith, W4KAZ at a club meeting, via e-mail ([w4kaz@arrl.net](mailto:w4kaz@arrl.net)), or by phone at (919) 462-8629. Tom is happily retired from any responsibility for the Feedline, so please bug me and leave Tom alone! If you decide to call me by phone, please be aware that I do not have a Pavlovian response to telephone calls, so be prepared to leave a message. My recently ended career of 7/24/365 software support have forever broken me of the innate curiosity required to answer the telephone..... ☺

## CARC Minutes - 23 Aug 2001

The August meeting of the Cary Amateur Radio Club was held on 23 August, 2001. The meeting was opened by Mike, WA4KE. Introductions by the attendees were done, there were 15 in attendance, all members.

Announcement of CARC hats for sale was made by Lee, N4AJF. The comment was made to "get them now", as they came from the Cap'N'Badge man, who died earlier this year, and there are only a few left.

After some prodding, Mike, WA4KE, announced that he has been selected by the SERA (South-Eastern Repeater Association) Journal, to be the North Carolina repeater news reporter. Any North Carolina news, for the Journal, should be forwarded to Mike.

Herb, W3HL, reported that we have gotten a letter from the Cary Band Boosters, inviting (or requesting) our help again this year for Cary Band Day. It will be held this year on Nov. 3rd, and it is always an opportunity to provide communications for this activity. The jobs are usually for about 2 hours, and starting times run from about 7:00 AM to 10:00 AM. The club agreed to participate again this year.

Clare, N2RJB, requested that the mailing list for the newsletter be updated to his present address. It will be done.

Al, KQ4FP, inquired about the usefulness of the FCC database. A discussion was held, with the outcome being that the database part of it is covered by QRZ or the like, and the FCC Commission Registration System (CORES) is only necessary, at this time, for Club license obtaining or renewal, or for application for a vanity call sign.

Herb, W3HL, reviewed the license renewal "window", which is the time that the FCC will accept the renewal of the license. He also noted that the FCC no longer automatically renews your license for a change of address or class of license.

The program for the September meeting will be a "Foxhunt". Ed, AB4S, will coordinate this.

Al, KQ4FP, asked about any interest in a club shirt. There did not appear to be much, and it was dropped for this meeting.

There had been mention of a possible beginners ham radio class this fall, several months ago. Lee, N4AJF, raised the issue again. It was suggested that it be done just after the first of the year. Herb, W3HL, and Al, KQ4FP, are going to check on the cost of tapes. Al, KQ4FP, and Lee, N4AJF, are going to try to locate a place to hold the class. Larry, KD4HSL, has some suggestions on the process, as he has worked with the Charlotte club on one of these.

Herb, W3HL, mentioned that Tom, KM4LB, has asked to be relieved of the remaining duties on the newsletter, the "Feedline", as he has become a full time student. Mike, WA4KE, has been doing the editing this year, and Tom has still been doing the physical mailing of any newsletters that still require this. Susan, WA4AKB, has been formatting it for the CARC webpage. Keith, W4KAZ, volunteered to take over all parts of this. (Thanks, Keith.) We will look into a means of honoring Tom, for his many years of this service.

There was an informal discussion of the status of the 145.39 repeater.  
September 2001

The meeting broke for refreshments and to prepare for the program.

The program this month was presented by Clare, N2RJB. He gave a "show and tell" of the Tiny Trak II, by Byonics. It is used for APRS, but only a subset of it, as it is a 'send-only' device, it cannot receive any data. While a normal mobile APRS station includes a GPS receiver, a computer and APRS program, a TNC, and a 2-meter radio, this scheme uses just the radio, a modified DeLorme "Tripmate" GPS receiver, and the Tiny Trak II, which is a kit to be built and installed inside the Tripmate. This makes for a much less expensive and less complex APRS mobile station.

This was a very interesting program, especially for those who had experimented with APRS. Thanks, Clare, for stepping in on such short notice with such a fine program.

Lee H. Swanson, N4AJF  
Secretary, CARC

## **September Program: FOXHUNT!**

Last years foxhunt was won by Dennis, KA4ATK. Who will be the one to take the honors this year?

Speaking of Foxhunts...

Area ham and CARC member Charles Scharlau, NZ0I, placed second in his category at the ARDF event held in New Mexico in August. Congratulations Charles! Hmmmm, might make this months foxhunt interesting.....

## **ARDF USA Championships**

By Charle Scharlau, NZ0I

The ARDF USA Championships were a lot of fun, and I'd recommend them to anyone with an interest in transmitter hunting.

I've been giving presentations to local amateur radio clubs (including CARC) saying that international-style fox hunting is a lot of fun. But I'd never actually participated in a sanctioned ARDF competition. So I went to Albuquerque with the goal of learning a lot, and hopefully finding all the daggum transmitters within the time limit.

Not only did I achieve those two goals, but I somehow managed to take the silver medal in the men's 40 division for two meters, and bronze in the same division for 80 meters. (That actually translates into 4 medals, because medals were awarded for the top 3 USA finishers, and for the top 3 overall finishers in each category.)

You hear a lot about transmitter hunting in California. Well, the Golden State sent more hunters to the Championships than any other region... but they didn't come away with the most medals. Here are the results by USA region:

LOCALITY	PARTICIPANTS	TOTAL MEDALS	GOLDS
Cincinnati, OH	2	8	3
Los Angeles, CA	7	7	4
Oregon	1	4	4
Denver, CO	3	4	0
North Carolina	1	4	0
Atlanta, GA	4	3	0

The Tar Heel State came away tied with Denver, CO, and took Dixie bragging rights away from the Atlanta, GA team. Imagine what we could have done with two or three participants!

The Atlanta, GA group may be participating in some of the transmitter hunts we hold in the Triangle. And I hope to visit them a time or two next year. Everyone is welcome to join the fun. Let me know if you're interested.

I'll send the hunt announcements to this e-mail reflector. You can also find out more at the following web site: <<http://www.qsl.net/nz0i/>>

Happy Hunting,  
Charles  
NZ0I

## N.C. State Fair Communications

Excerpted from RARS e-mail reflector, by John Guerriero/KG4HDT

Anyone wishing to participate at the fair must attend one of the orientations for radio operators. This is a requirement of the American Red Cross.

We will have two orientation sessions for Radio Operators just as we did last year. There will be an orientation session at the Red Cross Office in Cary at 19:00 (7:00 PM if you can't stand military time) on Wednesday, October 3rd and Monday, October 8th. You only need to attend one of these orientations. The Office is located behind Western Wake Hospital at 305-A Ashville Avenue in Cary. For those of you that have signed up for shifts, we should have tickets available at the orientation.

For those of you that have signed up for shifts, there will be an orientation and cookout on Sunday, September 30th from 14:00 (2:00 PM) to 17:00 (5:00 PM). Bernard will hold a radio operators meeting after First Aid orientation has been completed or after we eat, which ever fits the schedule best. You must let me know by Friday, September 21st if you plan on attending the cookout. We have to turn in a head count for the people responsible for the food purchase. If you attend this orientation, you will not be required to attend one in Cary.

As always, the American Red Cross appreciates our help and support at the North Carolina State Fair. I look forward to working with you again this year. The Operators schedule can be found on the RARS web site:

<http://www.jmpstart.com/fair-opsked.html>

John Guerriero/KG4HDT

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# The KD4RAA Repeater Group in Raleigh launches first Internet Repeater Linking Project (IRLP) node in North Carolina

The KD4RAA repeater group recently activated North Carolina's first node for the Internet Repeater Linking Project on 146.775 MHz. IRLP is a growing cooperative effort linking more than 150 repeaters across North America, Australia and England. Participating repeater owners use full-time high-speed internet access, allowing local users to link to repeaters around the world. Information on IRLP can be found at <http://www.irlp.net>, and global maps of IRLP nodes are at <http://www.ipass.net/~jimprice/irlp/>. The IRLP Linux-based interface and control board is the brainchild of Dave Cameron VE7LTD in Vancouver, British Columbia.

The 146.775 NC4SU repeater is operated by the KD4RAA Repeater Group for the NCSU StARS, W4ATC (<http://w4atc.ncsu.edu>) and is linked to several 440 MHz repeaters operated by the Group. It's on the air from a 350-foot tower west of the North Carolina State Fairgrounds in Raleigh and requires 88.5 Hz tone. Regular coverage extends from Pittsboro and Durham to Smithfield.

## How it works:

IRLP allows users to link repeaters via the internet. There are two connection modes -- Direct (one-to-one) and via a Reflector (one-to-many, like a hub). You must use a radio to access IRLP via repeaters -- you cannot connect directly from the internet. Connections are activated using DTMF tones, just like an autopatch.

Direct connect is just like it sounds, where repeater (node) "A" connects direct with node "B". In this mode the two nodes are connected and no other IRLP nodes may connect with them. Direct connections will time-out after 5 minutes of inactivity.

A Reflector is a Linux computer hub that sits on lots of internet bandwidth capable of allowing many repeaters to be connected together by streaming received audio back to all other connected nodes. The most popular IRLP connection in use today is via the Denver Reflector -- at any given time there are usually 6 to 10 or more repeaters around the world interconnected through the Denver Reflector. Other reflectors are hosted in Toronto (Ontario), Saskatoon (Saskatchewan), Yellow Knife (Northwest Territories), and Sydney (Australia). Reflector connections do not time out -- some node owners leave their repeaters connected for long periods of time.

IRLP use differs a bit from conventional FM repeater use -- please familiarize yourself with this new mode before keying your mic. The repeater can be heard around the world and we want to make the best impression possible. As with any linking system, the IRLP is subject to some audio delays caused by the time it takes for data to be compressed and traverse the internet. The most important guidelines to remember are to LISTEN longer before using the node repeater, and to PAUSE after pressing the PTT button and between transmissions to allow for the delays. By pausing between transmissions and before you speak you 1) allow users on other nodes a chance to check in, 2) allow other nodes time to send touch-tone commands to drop their node, and 3) allow time for IDs you may not hear but which are playing on other nodes. For information on IRLP operation see <http://www.musten.com/kd4raa/guide.html>.

## IRLP Nets

Every other Sunday an IRLP net is held inviting check-ins from around the world, providing an excellent chance to hear IRLP at its best. With the large number of check-ins and participating repeaters, guidelines have been established to ensure that nets flow smoothly. To participate in the net there must be a local net controller designated by a repeater control op, otherwise you will only be able to monitor. Please refer to the IRLP website for additional information on IRLP nets.

For more information on the Raleigh IRLP node on 146.775 NC4SU, please contact [kd4raa@yahoo.com](mailto:kd4raa@yahoo.com) or [ww4m@ipass.net](mailto:ww4m@ipass.net).

# New RTP Repeater to sign on:

August 23, 2001

from Danny Musten, KD4RAA, via RARS e-mail reflector

The N4ZBB 444.675 + (100.0 pl) signs on the air from Hwy 55 and Cornwallis in the Research Triangle Park. Designed coverage area favors the West-SouthWest of the RTP but includes mobile penetration as far as the RDU airport. The repeater will be linked to the KD4RAA-K4JDR repeater linking system and will have the features of the link system including the MTS Weather Alert, autopatch and IRLP internet linking access. Primary participants in the project include: Charles Durst WA4WTX, Danny Musten KD4RAA, Ken Edwards N4ZBB, Ron Casey K4JDR, Harold Henion KF4AUF, Charles Bruckner KG4MXV, and David Thompson. Information on the 444.675 Repeater can be found on the KD4RAA Repeater Group site at [www.musten.com/kd4raa](http://www.musten.com/kd4raa).

## Pheedline Pheature:

## Building an APRS Tracker using a Tripmate and a TinyTrak II

By Clare Owens, N2RJB

When my son Bill (N2RKL) and his family came here for a vacation in August he gave me a present. And he brought one for himself as well. In the box were two DeLorme GpsTripmate units, two TinyTrak II kits and several assorted audio and computer cables. While they were here Bill and I built two trackers for use with our 2M HTs. I gave an impromptu presentation of my unit to the last CARC meeting and there was enough interest shown that I thought I'd write this article to give more details and references. I will put all of the references and pictures at the end to avoid cluttering up the text.

First, an explanation of what these two devices are and what they do. The DeLorme GPSTripmate, which usually is called the Tripmate, is a 12 channel GPS receiver housed in a yellow moisture resistant case. It has no display and is intended for use with a PC running the DeLorme Street Atlas software. The Tripmate has been superseded by the DeLorme Earthmate receiver and DeLorme has been selling the Tripmates on their web site as remanufactured or surplus for \$50.00. The two that Bill bought appeared to be brand new.

The TinyTrak II is a small inexpensive radio controller that uses a pre-programmed PIC chip to receive the NMEA sentences from a GPS receiver, interpret them and format 1200 baud APRS packet data suitable for use with almost any transceiver. When the TinyTrak is used between the GPS receiver and a radio, no TNC is required, so there is a very significant saving. The TinyTrak kit is available from Byron Garrabrant (N6BG) for \$30.00.

A web search using Google or one of the other search engines using the key words TinyTrak and/or Tripmate will show several sites where hams have given information about their tracker versions. My reference list will show several of them.

### Construction

The TinyTrak is designed to be used with most GPS receivers but it is a particularly nice match for the Tripmate since there is room inside the Tripmate to house the TinyTrak. Once you decide to do that however, there are several decisions to make about the mechanical mounting of components and the setup of the cabling.

The Tripmate's output is serial ASCII, through a cable intended to connect to the serial port on a PC. It will not operate in GPS mode until it hears its own initial data transmission echoed from

the PC. It does not mind hearing all of its outputs echoed back so the easiest way to handle the echo is to tie the Tripmate data transmit and receive lines together.

The TinyTrak serial port needs to receive the serial ASCII output from the Tripmate but does not send anything to the Tripmate. The TinyTrak serial port also has to be available for connection to a PC so the TinyTrak setup and testing program can be used. The TinyTrak also needs connections to the Mic input, to the PTT line if it is separate and to the speaker/earphone output.

Last but not least is the connection for the DC power input. Although both units only require 5V most people will operate them from a 12V DC source,

Bill and I read the TinyTrak instructions and looked at the pictures and written descriptions of several hams' trackers from the web and then we discussed the plusses and minuses of several approaches. We finally decided to take a different approach than any of the ones we had seen on the web. Our trackers have kept all of the original capabilities of both the Tripmate and the TinyTrak. In order to achieve this we have more cables coming out of the unit than would be usual and we also have a small mode selection switch. the Tripmate can still be used with the Street Atlas software and that the TinyTrak can be cabled to another GPS if for some reason the Tripmate wouldn't work, perhaps in a place where an external antenna is required.

Another decision is whether to use the four status indicator LEDs that come with the TinyTrak. We decided we wanted to use them and that we would place the TinyTrak PC board in a position where the LEDs could be seen without using anything other than their own leads to mount them. The N0HZN web site shows a mounting method using twisted pair leads for the LEDs and a couple of the other sites show mounting the TinyTrak without regard to the LEDs.

The following description assumes you will be duplicating what Bill and I did.

The original battery case in the Tripmate is removed; it's just held in place by a piece of double sided tape and its cable plugs into the Tripmate main PC board. We'll modify and reuse this cable later to supply power to the Tripmate and a signal voltage to the external RS-232 cable. Both the Tripmate and the TinyTrak need 5V power and the tiny regulator supplied with the TinyTrak will not be sufficient. A TO-220 5V regulator LM7805 or equivalent will be used to supply regulated power to both units from a 12V source. It will be mounted to the Tripmate internal metal plate using one of the original plate mounting screws.

The Tripmate's plastic case is fairly soft plastic and can be drilled, filed or cut easily when making the holes for the TinyTrak's DB-9 connector, the four LEDs, the switch. and the external power and radio cables. Careful measuring is required for the DB-9 connector hole so the PC board will mount in "clear air." It's probably best to assemble all of the TinyTrak except for the cables, regulator and LEDs at this point so you'll have an accurate idea of its size when deciding on where to mount it.

We trimmed one of the rear corners of the PC board almost to the nearest trace in order to clear one of the pillars for the case screws. Also, be sure to leave enough space around the metal body of the DB-9 connector so the outer shell of the connector on your TinyTrak to computer cable will fit between the plastic case and the TinyTrak connector. This cable is used for the setup of the TinyTrak parameters and for setting the transmit audio level. The other holes are not as critical but if you don't plan and drill or file well enough you'll have difficulty using the stiff leads of the LEDs and may have to use flex leads and then glue the LEDs in place. Bill and I just filed a rectangular slot in each case lid between two of the LED holes for our power and radio cables and

rounded the edges of the slots to protect the cable insulation. The switch may be mounted wherever it will be convenient.

You should use two thin headed #4 screws to hold the TinyTrak DB-9 connector to the case and a small standoff and another #4 screw to support one rear corner of the PC board.

Now that you know where the TinyTrak will be located you can plan the leads of the LEDs, bend them and solder them to the board.

Remove the small screws that hold the metal plate in place and remove the Tripmate from the other half of the case. If you remove the data cable from the case be sure to note how it is routed through the strain relief molding. Now find where the external data cable connects to the PC board. Strip and tin a piece of small stranded hookup wire and form the tinned end into a very small loop. Wrap it around the base of the black wire at the point where it is soldered to the PC board and carefully solder the loop to the original solder bead, leaving the black lead undisturbed. This will be the signal input to the TripMate. We filed a small notch alongside the battery connector hole in the metal plate so that the added wire could get top side. You could do that or drill a hole for the wire. The other end of this wire will be attached to the SPST mode switch and then the other side of the switch will be connected to the TinyTrak DB-9 pin 3. There is a pre-drilled hole on the PC board in the pin 3 land.

At this point you can replace the Tripmate board in its half of the case. Leave one of the screws out and use it to hold the LM7805 in place once you solder flex leads to the regulator. The other ends of these leads will be soldered to the TinyTrak PC board where the original regulator would have been located. You'll probably have to enlarge the holes to do this.

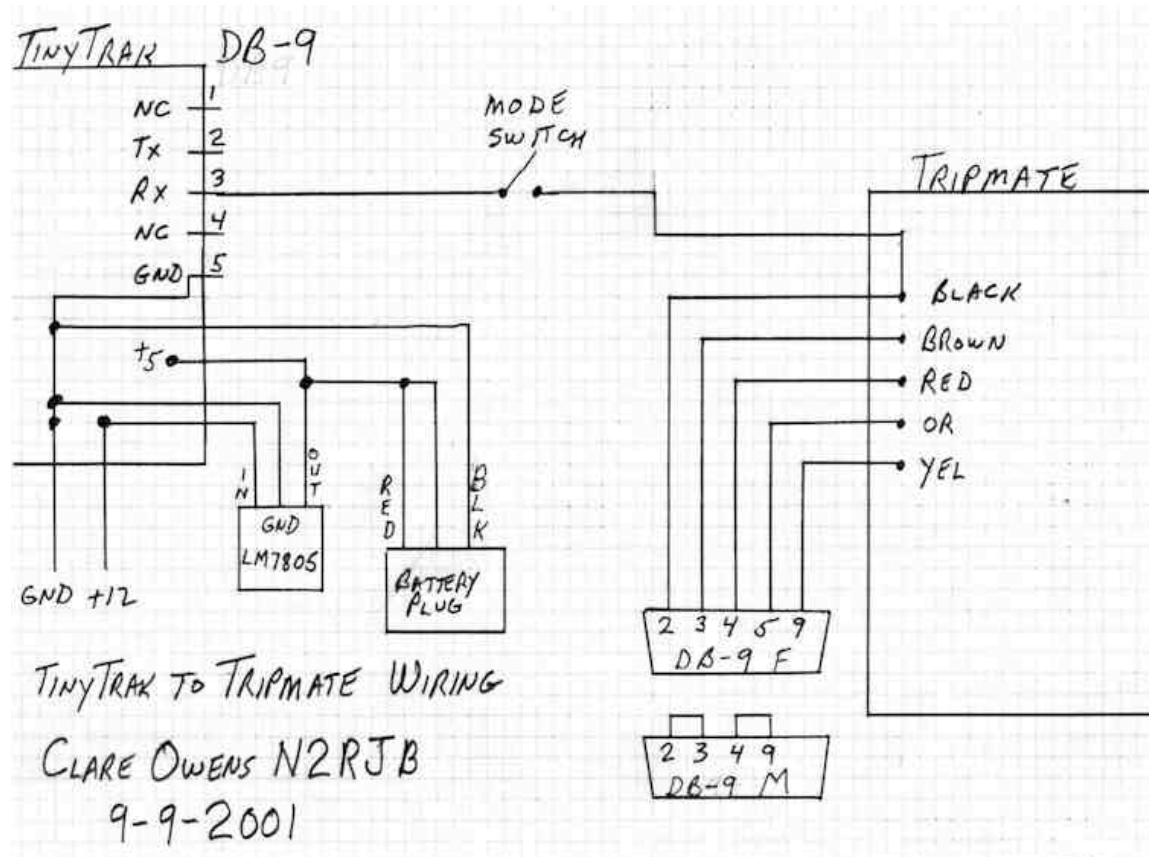
Cut the Tripmate battery pack leads right at the pack so there'll be enough wire to reach the TinyTrak. You need to add one more wire to the battery connector. Bill and I took wires from a CD ROM drive audio cable that had a connector with inserts that were compatible with the Tripmate connector. The red and the new wire will be twisted together and soldered to the +5 distribution point on the TinyTrak PC board. The black wire will be soldered to a ground point on the TinyTrak board. The purpose of the added wire is to supply +5 to pin 9 of the Tripmate's DB-9 connector.

Since I've mentioned the Tripmate's DB-9, let me explain what we did there. I bought DB-9 male solder-type connectors at Radio Shack and matching shells. We soldered two jumpers on the male connector, between pins 2 and 3 to turn the Tripmate ASCII output back into its input, and between pins 4 and 9 to put that +5V on the Tripmate DTR (Data Terminal Ready) line. Putting 5V on the DTR line puts the Tripmate into active mode. Placing this connector on the Tripmate's cable sets it up for use with the TinyTrak. By doing the jumpering in the external connector rather than on the Tripmate PC board the Tripmate is still OK for use with the Street Atlas program by just removing the jumpered connector and plugging the cable into your PC.

Well, I think I'll stop for now at this point. The details of the TinyTrak cabling for the radio connections are yet to come as well as information on the TinyTrak setup. However, since setup instructions are in the TinyTrak documentation and the radio connections have to be customized for each radio, my information on those subjects will be of limited use.



I am hoping to have some good pictures of the completed unit available soon. I have to borrow a digital camera from one of my sons and should have it in a few days. For now, here is a diagram of the power and signal connections between the TinyTrak and the Tripmate, the way Bill and I did it.



## References for the APRS project:

Byonics, the site run by Byon Garrabrant, the maker of the TinyTrak.  
<http://www.byonics.com/tinytrak/tinytrak.html>

DeLorme's Tripmate offer: <http://www.delorme.com/user/gpstripmate.asp>

Wes Johnston's Tripmate mods pages: <http://wes.johnston.net/aprs/tripmate.htm>

K6NE's Tripmate lashup page: <http://rain.org/~jkrigbam/tripmate.html>

N9URR's TinyTrak pages: <http://home.wi.rr.com/n9urr/tinytrak.html>

N0HZN's TinyTrak/Tripmate pages: <http://members.aol.com/n0hzn>

Another nice TT/TM description: <http://www.nwaprs.org/DelormeTinyTrakProject.htm>

How about another TT/TM site: <http://www.faribault.k12.mn.us/brian/aprs/tinytrak>

That stream of ASCII at 4800 baud coming out of the Tripmate is in the form of NMEA-0183 "sentences." Here are some sites that explain what that's all about:

This is the short explanation [http://www.rtm.es/nmea\\_0183.htm](http://www.rtm.es/nmea_0183.htm)

This is the long one <http://rpss28.uni-regensburg.de:8080/PiechullaWeb/NMEA0183>

## FCC Invites 60-Meter Petition Comments

The ARRL Letter, Vol. 20, No. 33, August 17, 2001

The FCC is accepting comments on the ARRL's petition seeking the allocation of 5.250 to 5.400 MHz to the Amateur Service on a domestic (US-only), secondary basis. The Commission put the proposal on public notice this week and assigned a rulemaking number, RM-10209, to the proceeding. Comments are due by September 12, 2001.

Interested parties may comment on the proposal using the FCC's Electronic Comment Filing System (EFCS) <<http://www.fcc.gov/e-file/ecfs.html>>. Comments should reference "RM-10209" in their postings. Even if the FCC eventually okays the petition, it's likely to be several years before the new band actually becomes available.

In its petition, the ARRL told the FCC that the new band would aid emergency communication activities by filling a "propagation gap" between 80 and 40 meters, particularly for emergency communications during hurricanes and severe weather emergencies. The ARRL also said a new 150-kHz allocation at 5 MHz also could relieve substantial overcrowding that periodically occurs on 80 and 40. The ARRL has proposed that General class and higher amateurs be permitted to operate CW, phone, data, image and RTTY on the new band running maximum authorized power. No mode-specific subbands were proposed. If allocated to the Amateur Service on a secondary basis, hams would have to avoid interfering with--and accept interference from--current occupants of the spectrum, as they already do on 30 meters.

A copy of the ARRL petition is available on the ARRL Web site, <<http://www.arrl.org/announce/regulatory/5MHz>>.

## New county for Colorado

The ARRL Letter, Vol. 20, No. 34, August 24, 2001

**County hunters take note.** The State of Colorado is gaining a new county. Effective November 15, 2001, the City and County of Broomfield will officially come into existence. Roy Wright, WA0SJQ--who lives in Broomfield--reports that the new county was created to consolidate the City of Broomfield into a single jurisdiction. At present, Broomfield lies within four different counties.

## Amateurs Complete First 24-GHz Earth-Moon-Earth QSO

The ARRL Letter, Vol. 20, No. 34, August 24, 2001

Here's another one for the Amateur Radio record books. On Saturday, August 18, hams in Texas and Manitoba completed the first 24-GHz Earth-Moon-Earth (EME) QSO. The contact followed by several months the first documented echoes from the moon on 24 GHz.

Noted microwave enthusiast Al Ward, W5LUA, of Allen, Texas (EM13), says his QSO with Barry Malowanchuk, VE4MA, in Winnipeg, Manitoba (EN19), was a result of several years of effort in trying to optimize antenna gain and receiver sensitivity, and to obtain adequate power to make the roughly half-million mile path to the moon and back. "Signals were weak but easily copied at both ends," Ward said. The August 18 QSO took place at 1417 UTC on 24,192 MHz. Malowanchuk said the two exchanged "M" reports.

After many failed attempts, Ward succeeded last March in hearing 24 GHz EME echoes and documenting them for the first time. Such accomplishments on 24 GHz are particularly significant because water-vapor absorption of signals peaks at around that frequency.

VE4MA used a 2.8-meter offset-fed dish and a travelling wave tube amplifier producing 70 W. W5LUA has a 3-meter prime focus dish and a TWT amp producing 80 W. A fixture in the VHF-UHF and microwave standings, Ward was the recipient of the 2000 ARRL Microwave Development Award.

Additional details are on the North Texas Microwave Society Web site, <<http://www.ntms.org>>.

## **ITU Adopts Recommendation On Amateur Qualifications**

The ARRL Letter, Vol. 20, No. 35, August 31, 2001

The International Telecommunication Union has adopted a recommendation that outlines basic qualifications for Amateur Radio operators worldwide. Recommendation ITU-R M.1544, Minimum qualifications of radio amateurs, states that minimal operational and technical qualifications are necessary for proper operation of an amateur or amateur-satellite station. It recommends that any person seeking an amateur license at least be able to demonstrate specific theoretical knowledge of radio regulations, radiocommunication methods, radio systems, radio emission safety, electromagnetic compatibility, and RF interference avoidance and resolution.

## **ARRL E-Mail Forwarding Service**

The ARRL Letter, Vol. 20, No. 35, August 31, 2001

Address changes with call sign: ARRL Information Systems Manager Don Durand reminds ARRL members who are planning to obtain new calls sign that their ARRL E-Mail Forwarding Service address will follow suit. So, plan ahead. The @arrl.net system is designed to provide only one e-mail forwarding address per member, based on your current call sign. Durand says the system will automatically update your ARRL E-Mail Forwarding System address to reflect your new call sign. ARRL membership records also are automatically updated using data provided by the FCC Amateur Service database. Visit the ARRL E-Mail Forwarding Service page <<http://www.arrl.org/members-only/emailfwd.html>> for more information.

## **Lower Amateur Radio Vanity Fee Is Effective September 10**

The ARRL Letter, Vol. 20, No. 36, September 7, 2001

The FCC says the fee for a new or renewed Amateur Radio vanity call sign will drop to \$12 on September 10. Applications received on or after that date will be subject to the new fee. The current vanity call sign fee is \$14.

## **CQ Contest publishes its final issue:**

The ARRL Letter, Vol. 20, No. 36, September 7, 2001

CQ Contest magazine has put out its last issue. Publisher Dick Ross, K2MGA, says the magazine, in publication for almost six years, has been losing money for the past several years, and the decision to cease publication with the October issue was strictly a business decision. The content for the ham radio niche publication will be absorbed into CQ. "CQ's dedication to the contest community is in no way diminished," Ross said in "A Message from the Publisher" in CQ Contest's final edition. All CQ Contest subscribers will be converted to CQ subscribers or have their CQ subscriptions extended on a dollar-for-dollar basis, starting with the November issue of CQ. In his "The Band Edge" editorial in the October issue, CQ Contest Editor Bob Cox, K3EST, says the magazine's legacy might be carried forward in the form of a Web publication to serve the contesting community. The demise of CQ Contest leaves National Contest Journal--published by ARRL--as the sole hard-copy magazine aimed at the Amateur Radio contesting community.

## **FCC Registration Number Becomes Mandatory In December**

The ARRL Letter, Vol. 20, No. 36, September 7, 2001

Get ready (again) for the FRN! Although the FCC has slipped the deadline before, the Commission said this week that, starting December 3, 2001, everyone doing business with the FCC--licensed or not--must obtain and use a 10-digit FCC Registration Number--or FRN. The FCC called the move "a first step" toward streamlining fee collection and tracking. Many amateurs registered with the Universal Licensing System (ULS) were assigned a 10-digit FRN by the Commission Registration System--or CORES--in a one-time cross-registration last year and notified by mail.

Details to implement CORES for the Amateur Service are still being worked out. Steve Linn of the FCC's Wireless Telecommunications Bureau said just how CORES and ULS will work together remains up in the air. "CORES is not replacing the ULS database," he explained, "but there are a lot of questions as to how it is to be integrated." A final implementation with respect to Amateur Radio is "yet to be determined," he said. Under the most likely scenario, however, CORES registration will supplant ULS registration for those who do not already have an FRN.

Those without an FRN will be required to register and provide one before transacting business with the FCC, whether or not a fee is required. An individual does not have to hold an FCC license to obtain an FRN. The requirement to obtain one extends to applicants for an Amateur Radio license as well as to anyone required to pay a fee to the FCC, such as those applying for a vanity call sign. CORES registrants will be required to supply a Taxpayer Identification Number--or TIN--typically a Social Security Number (SSN) for an individual. The FCC says CORES information is not made public.

An FRN will not be needed to file comments in rulemaking proceedings. Filings that do require an FRN but don't include one will be rejected. The FCC has not yet proposed replacing the ULS Licensee Identification Number with an FRN; many amateurs already have both, and both numbers appear in FCC licensee records. The ULS continues to be available to new registrants. The FCC began implementing CORES last year. The agency announced the adoption of its new CORES/FRN rules on August 31 and detailed the requirements in a Report and Order.

In its Order, the FCC sounded almost apologetic for imposing yet another set of numbers on licensees and applicants. "We realize that the manner in which our electronic systems have developed has results in a multiplicity of numbers, passwords and identifiers," the FCC conceded. The FCC said that once various electronic filing systems--such as ULS--incorporate CORES and FRN into their application process, "the need to maintain registration information in multiple systems will be eliminated."

The FCC said CORES makes provision for the registration of foreign nationals unable to obtain an SSN by providing the ability to register without one. The FCC has required that club stations obtain an assigned TIN when registering in the ULS. In an apparent about-face, the FCC's CORES Order states that unincorporated radio clubs registering in CORES should use the TIN/SSN of the license trustee. The ARRL has asked the FCC to clarify.

The on-line filing system and further information on CORES is available by visiting the FCC CORES Web page, <<https://svartifoss2.fcc.gov/cores/CoresHome.html>>. A copy of the FCC R&O is available on the ARRL Web site, <<http://www.arrl.org/news/stories/2001/09/04/3/cores-ro.pdf>>.