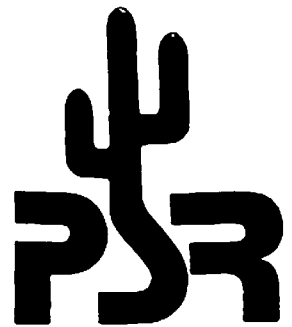


Packet Status Register

Oct. 1983
Number 7



Tucson Amateur Packet Radio Corporation



JEFF EIRVIN DOES IT AGAIN!

St. Louis - Jeff Eirvin of Interconnection, Inc., a St. Louis firm specializing in intricate PC board layout design, has once again proven his mettle on behalf of TAPR.

The TAPR TNC kit is based on a revised board incorporating the lessons of the historic Beta Test which included a board layout generated by Jeff (and featured on the cover of the July, 1983 issue of Ham Radio).

The new kit is designed to fit in a commercial enclosure of a standard size and the PC board has specifically been engineered to this end. Furthermore, revisions in the on-board modem, for greater dynamic range and lower noise floor, as well as an expanded memory capability have been incorporated in the new board.

Jeff did an incredible job of fitting the modified TNC design on the new board and TAPR wishes to express a hearty thanks for a job well done!

Two prototype kit TNC's were constructed in late August. A very minor problem was noted in the revised design and a few components were too close together. As a result the layout was updated and new prototypes constructed in mid September, complete with silk screen masks. Their performance was flawless. A final prototype is being constructed this week (25 September) as a test of the documentation for kit construction.

The first test kits should be shipped to the selected test sites by the end of the first week in October, +/- a week. Thus, it is hoped the kits will ship in mid to late October, depending on certain factors such as documentatin completion and printing lead times.

Please be patient -- and warm up your soldering irons!

Meanwhile, interest in the kits has been amazing. We have in hand deposits for nearly 300 kits! As a result, the rate of 50 kits per month has been increased to 100 per month for December and January. We will continue to watch the demand and adjust output accordingly. If you are wondering why your kit has a lead time of 90 days or so, the semiconductor industry has demand far in excess of capacity. As a result many parts used in the TNC are on allocation. So we see a 3 month or longer lead time from order to delivery for your kits.

Space is being provided for TAPR members with packet-related gear they wish to sell. We will not accept commercial advertising. This is NOT intended for dumping 100 VIC-20s or selling your vintage Swan. It's for selling gear that is surplus to your needs, such as a Beta board or a computer, etc.

NOMINATIONS

The Tucson Amateur Packet Radio Corporation is overseen by a Board of Directors elected by the membership. Currently, there are fifteen Directors, each of whom serves for a three year term. The terms are staggered so 1/3 of all Directors, or five in the present case, are elected every year. This lends long term stability to the organization while allowing the members to have a direct effect on the affairs of the corporation by their annual vote. The actual elections take place during the Annual Meeting held in Tucson every February.

Nominations are now open for the five slots that must be filled this coming February. The procedure is quite simple. Either you, or someone you can convince, submits your name for consideration. If someone else does it for you, you will be contacted and asked for a brief description of yourself for publication in PSR. You will also be given the opportunity to withdraw your name from consideration.

We expect to publish the names and qualifications of all candidates for Director in the November PSR. The January issue will contain a ballot for you to select five names and mail in, or bring with you to the annual meeting when the votes will be tallied and the results of the election announced. Following the meeting, the new Board of Directors will meet and elect the Officers of the Corporation who will then serve for one year term. Simple, eh?

Directors are expected to play an active role in TAPR by advising the Officers, expressing their opinions on the issues we face and generally helping to see that TAPR continues to be the leading organization and motivating force in packet radio by its research, development and information dissemination efforts.

Please consider this matter carefully and place your nominations now. If you know the person you are nominating (and don't nominate them if you don't), please include a short description of the nominee. Time is very short for this if the information is to be included in the next PSR so

DO IT TODAY!

I want to apologize to anyone whose feelings are hurt by the promotional hype and editorial liberty taken by 73 magazine in the lead on my article appearing in the September issue. I am not, and have never claimed nor allowed myself to be represented as "the chief architect of packet radio". I am troubled by this misrepresentation and trust you will accept my regret for this incident. I will write a letter to 73 and request they publish it to this effect. I don't think any of us can claim this mantle, certainly not I. I was not aware of this until my subscription issue arrived today. I never saw an author's courtesy copy and they apparently never sent one.

Thank you for your understanding.

Lyle Johnson, WA7GXD

Presidents Corner

by Lyle Johnson, WA7GXD

The past two months have been quite the opposite of the doldrums many people associate with summer. TAPR has made quite an impact in the magazine arena, the TNC kit project has made great strides and the organization has grown at a feverish pace. And the pace isn't slackening!

Oscar

We haven't been the only active ones, either! I am sure you are aware of the successful launch of AMSAT-OSCAR 10 (known as Phase IIIB prior to launch). While an accident just after separation from the third stage "sylda" cocoon apparently damaged at least one antenna and caused a crack in the fuel system, the mission has marked a number of milestones in the amateur space program. The Mode-B transponder was activated for general operations on August 6 and has opened a new world of reliable dx communications.

A digital communications channel has been set aside in the transponder passband and packet activity should begin soon as part of the worldwide AMICON network. If you are not already a member, I urge you to join AMSAT and support their efforts.

Articles of note

I hope you all had an opportunity to see the July 1983 issue of Ham Radio magazine. The cover featured the TAPR beta TNC in all its glory and the lead article was "Amateur Packet Radio" co-authored by Dan and Margaret Morrison, KV7B/KV7D. These folks happen to be two of your Directors and have had a very high profile in nearly all of TAPR's doings. The August issue of Ham Radio followed with a technical description of what makes a TNC different from a typical home computer. I was glad to assist Dan and Margaret in the preparation of that article.

The September issue of Popular Computing carried the results of an interview held by Ms. Dara Pearlman with many packeteers including KA6H, WA7GXD and KA9Q. I have been amazed at the response we have seen in the TAPR mailbox as a result of that brief article. Expect to see more coverage in the personal computing press as we focus attention in that area.

The September issue of 73 magazine has the first of a three article series on packet radio that I wrote. The September article is an introduction, while October will carry a TNC construction article based on the TAPR TNC and November will highlight protocol and applications of packet techniques. I must apologize for 73's enthusiasm -- I am NOT the chief architect of packet radio and never have claimed to be. I don't think anyone can claim that title although Doug Lockhart, VE7APU, seems to come closest as near as I can determine.

TNC Rev. 2

The TNC kit is coming along after a few minor setbacks. The PC layout took about six weeks longer than scheduled -- but what a board! When you see yours, I think you will agree that Jeff Eirvin of Interconnections in St. Louis is an artist! By special arrangements through Pete Eaton, WB9PLW, a TAPR Director and packeteer extraordinaire, I made a special trip to St. Louis the weekend of August 6th to help where I could with the layout efforts. I want to express my sincere thanks to the many packeteers of SLAPR for their kindness and interest during my visit. Packet is alive and well in St. Louis.

The initial block of 200 TNCs has been sold (at least, deposits have been received) and another block will be ordered. We are presently planning on a rate of 50 per month and hope to

scale it as we see demand vary. Right now many parts used in the TNC are on allocation from various manufacturers -- in fact, I have been quoted lead times of 54 weeks on some parts! Nonetheless, every effort is being made to meet the present demand in a timely fashion.

Allow me to digress and philosophize (that means grope for a good sounding reason why your postcards are starting to say "shipment in December" and its only September!). TAPR is fundamentally an R and D operation. We are trying to put packet in your hands, educate you on its potential and encourage you to refine it and apply it to your communications needs. Thus, we mention many possibilities, but it is YOUR responsibility to do it! Anyway, being an R and D group, and not a profit-making manufacturing facility, we have to watch our money -- not that there is much to watch! We can't just order up 300 TNC kits and hope to sell them to get rich.

Instead, we cautiously order 200 TNCs, spread over 5 months, and expect orders to have them sold before we ship 100. This way the project finances itself and a little extra gets diverted into such things as answering mail, speaking at conventions and clubs, and especially further research into developing the high speed wide area system we all recognize is needed for packet to really take off.

The upshot of all this is that we can't gamble and assume that, if we order 1000 TNC kits for November, we will sell them before the bills come due. Rather, we anticipate we will sell 40 boards in November and order 50 hoping we are not blowing the TAPR R and D budget. After all, it wasn't so long ago that we were digging in our own pockets in Tucson to come up with \$4.50 for mylar and tape for an Alpha board... So, please be patient and we will see you get your kit as soon as possible.

Growth

TAPR membership has grown to about 450 as of mid-August. I find this almost incredible but not totally unexpected. With this kind of growth, however, comes growing pains.

For example, the TAPR mailbox today contained eighteen (18!) separate pieces of mail -- TNC deposits and final payments, renewals, new memberships, manual orders and requests for information. Now, that is quite a lot of mail if you have to answer each letter individually. A few require such attention, and either Heather or I wind up writing personal responses to about three or four folks a day. For the most part, however, we send out preprinted form letters, post cards and information kits. And we occasionally slip up and someone's letter lays around for a week or two before it gets answered. We appreciate your patience when this occurs.

Most of the membership services functions are handled by TAPR Secretary Heather Johnson, N7DZU, with a big assist by Margaret Morrison, KV7D. This is a big load and we are currently looking at ways of reducing duplication of effort, since much of the information is handled manually. Another person who devotes many hours a week to TAPR's day to day activities is Chuck Green, N0ADI, TAPR Director and Treasurer.

I am mentioning these people by name because we all owe them a debt of gratitude for their uncompensated efforts on all our behalfs. Next time you have occasion to write to TAPR, try to include a note of appreciation. Sometimes a small word of thanks can go a LONG way in making a volunteer's tasks lighter.

That's it for this President's corner! Please let us know your thoughts on packet linking, as mentioned last time. Inputs now are better than "I wish's" later. 73....Lyle Johnson, WA7GXD

Anaheim

Boring

by Harold Price, NK6K

The ARRL SW Division Convention was held at the Anaheim Marriott during the weekend of September 2-4, 1983. TAPR officers and directors were present in force and the packet booth was literally mobbed!

Two presentations were scheduled for Saturday. The morning session, Introduction to Packet Radio, was held at 9 AM. In spite of the fact that most people were still registering at that time, a group of over 250 were in attendance as Harold Price, NK6K, and Pete Eaton, WB9FLW, gave an overview of our favorite mode and a description of the St. Louis network.

The afternoon session was billed as a technical one, and during the two hours from 2 PM to 4 PM there were six separate presentations on various packet topics, including Beta test, protocols (including AX.25, Internet and Dynamic Addressing), PACSAT, a 1 Megabit per second experimental modem and bulletin board design. In spite of an air-conditioning system that thought we were happy at around 50 degrees, the session was well attended.

The booth was well staffed and interest was high. Lynn Taylor brought his bulletin board up from Laguna Beach and installed it on the 8th floor of the hotel. Mike Brock brought his mobile packet station, which we used as a digipeater while he was traveling along the Interstate to get into another digipeater to finally get into the San Diego area (whew!). The bulletin board made it very easy to demonstrate packet operation to the curious. If you have an Apple computer, send Lynn three disks and a post paid return mailer and he will supply the code. Marc Chamberlin had his Dynamic Addressing system running on a pair of TNCs at the booth as well and a lot of interest was shown in it.

While convention attendance wasn't exactly overwhelming, TAPR's membership increased by about 30 (and now stands just over the 500 mark) and about 35 kit orders were placed.

The Tucson contingent would like to take this opportunity to extend our appreciation to the many folks in Southern California who worked so hard on the packet booth and especially to Harold and Terry Price for opening their home and sustaining the invasion!

These days nobody says "Lets go use Single Side Band". But when SSB was being developed, just using it was a big deal. The same is true for packet radio. It is exciting to use a new mode for the first few weeks, interesting for the first few months, and boring thereafter. About like watching uranium decay into lead. Ho Hum.

Let's face it, 1200 baud point to point packet for a hand-entered realtime QSO is not efficient communication. The continued thrill of a new mode is what you do with it not simply using it. And with packet there is so much to be done!

Before we discuss futures, look at an average Beta Test Site. 14 TNCs were shipped to the LA area, tested, and put on the air by the beta coordinator. Eight months later, two have yet to be used, another was up once and has since been sold. I'm not condemning those folks, two of them are busy elsewhere and remain active supporters. Of the truly active, one is building a mountain-top digipeater, another an OSCAR-10 gateway station, a third is working on a bulletin board system, while a fourth is pushing packets thru the AO-10 special service channel. At least two others are regularly on the air. That's 28% active, 14% semi-active, and 57% inactive.

The ones who are most active are doing something WITH packet radio.

In the San Diego group, one of the folks is running a BBS, another has the first 2m to 70cm packet link and has built the first reported mobile packet station, with everything supplied from 12V. I hope all of the above mentioned people will write up their experiences for PSR, so I won't steal their thunder by naming them here. The point is, they are all advancing packet radio in particular, amateur radio in general, and may have been the first person in a world of 4 billion to do what they did.

Anything that can be digitally encoded can be transmitted via packet radio. High quality color SSTV transmitted from continent to continent via OSCAR-10 can probably be done within six hours after the right people read this. How about digital voice? Sure 1200 baud won't support it real-time, but wouldn't a high fidelity static free "Happy Thanksgiving" from a distant loved one do far more than a piece of paper traffic?
(continued on page 4)

MEMBERSHIP APPLICATION

Tucson Amateur Packet Radio Corporation
P. O. Box 22888, Tucson, Arizona 85734

If you wish not to have any of the above items published in a membership list, indicate here which they are:

Name: _____

I hereby apply for membership in TAPR. I enclose \$12.00 dues for one year.

Call _____ License _____
Sign: _____ Class: _____

Signature: _____ Date: _____

Address: _____

City & State: _____ Zip Code: _____

Which Beta Test site (if any) is closest to you?

Home Phone: _____ Work Phone: _____

BORING (continued from page 3)

There is plenty of room for the non-technical person. Working with the local marathon group, police, CD or RACES requires special skills too. Being truly active in packet radio isn't limited to writing software or designing hardware!

So get on the stick. Think up new things to do with packet. Then write up your experiences. QST, 73, Ham Radio, Orbit, and Popular Computing have published the "How To" articles, some of these probably got you interested. But another type of article that will get people interested will mention packet only in passing. "Yes, I was in contact with the base camp at all times during my climb of Mount Everest" and somewhere else is the "by the way, it was Packet Radio".

Get Active!

The Tucson Amateur Packet Radio Corporation is a nonprofit scientific research and development corporation. The Corporation is licensed in the State of Arizona for the purpose of designing and developing new systems for packet radio communication in the Amateur Radio Service, and for freely disseminating information acquired during and obtained from such research.

The officers of the Tucson Amateur Packet Radio Corporation are:

Lyle Johnson WA7GXD ... President
Den Connors KD2S Executive VP
Heather Johnson .. N7DZU Secretary
Chuck Green N0ADI Treasurer

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Dynamic Addressing

Marc Chamberlin, WA7PXW, has been working on a dynamic addressing protocol that was devised on paper early in TAPR's existence. Undaunted, although slowed down at times, he has been faithfully coding since early 1982. In August, a preliminary version of this protocol was running on a pair of TNCs communicating on a wire link. He expects to have it working via radio later this month.

Dynamic addressing has several potential benefits but is more complex than the "balanced" end-to-end protocols such as AX.25 and VAUCG. Once the system is running reliably on a radio link with multiple stations we expect to run an article more carefully detailing its structure, as well as its potential advantages and disadvantages.

PSR Mailing address:

Minnesota Amateur Packet Radio
c/o Pat Snyder, WA0TTW
University of MN Computer Center
208 Union Street S.E.
227 Experimental Engr. Bldg.
Minneapolis, MN 55455

via CompuServe Information Service:
70225,1252

TAPR HF Net:

21.280 or 14.235 MHz
1900Z Sundays

The Packet Status Register is edited and prepared by the following members of the MAPR group in the Twin Cities using material contributed from wherever we can get it:

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