

DIGITAL

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NEWS FLASH

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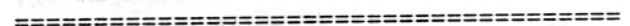
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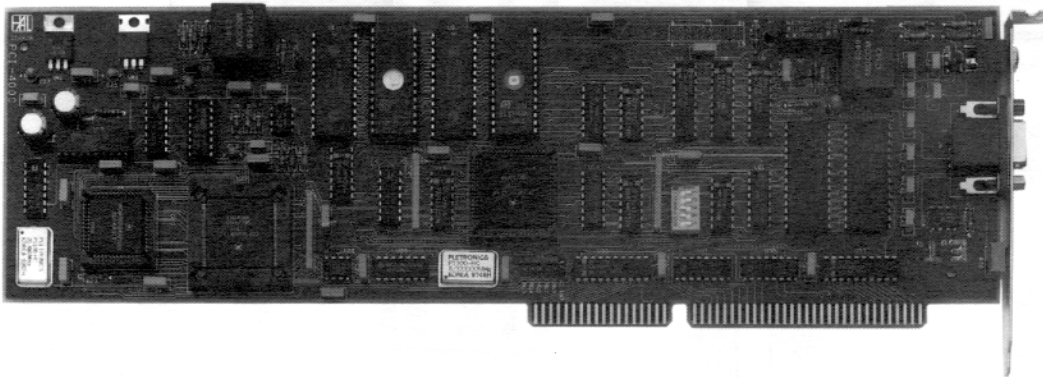
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The principal goal of the IDRA is to advance digital technology as it applies to amateur radio and promote the wisest use of the digital portion of the spectrum. Being a member makes you a partner in advancing these digital goals. IDRA is a not-for-profit corporation and contributions to the Society are deductible for income tax purposes to the extent allowable under the tax laws of the United States.

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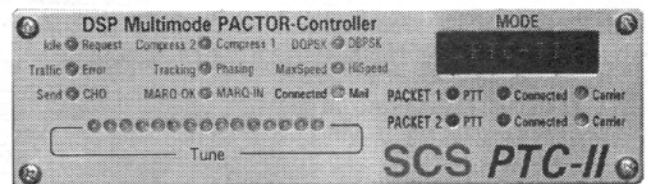
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WARP FACTOR - Part 1

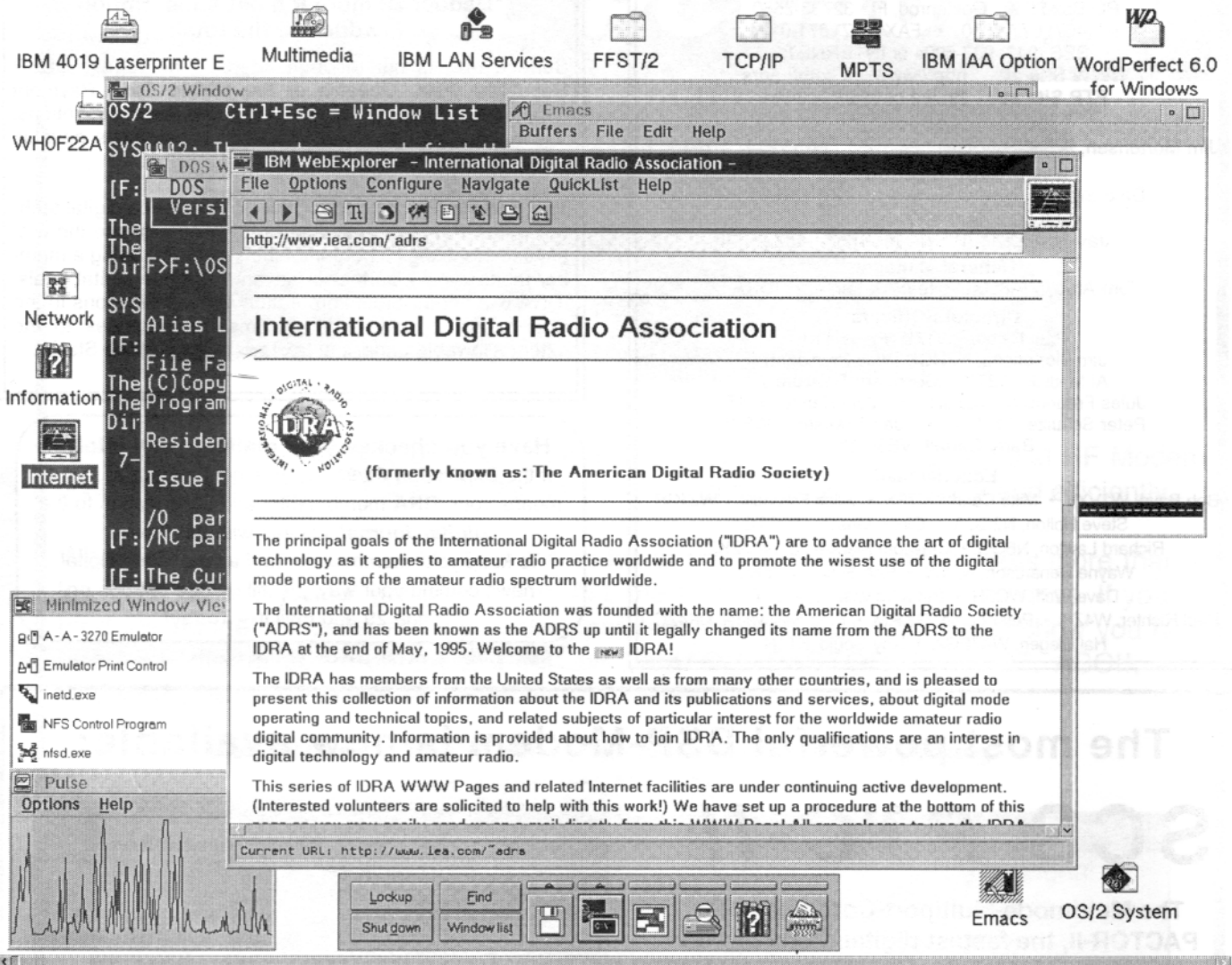
Taking a closer look at IBM's OS/2 Warp

by Steve Holton, N2QCA

1113 Sunset Street • Yorktown Heights, N.Y. 10598

The PC Operating System World

When the IBM PC first came out with 16Kb of memory, the Intel 8086/8088 processors of that era could only address 1MB of memory which looked gigantic. So the decision to limit DOS to just 640KB of that 1MB seemed eminently reasonable at the time. The next generation of Intel processor, the 80286, which appeared in the PC



IBM's OS/2 Warp brings a new level of Operating System capability and performance to the PC desktop. IBM's claim of "a better DOS than DOS and a better Windows than Windows" is not just marketing hype. In this article on Warp we'll look at the basic system, its installation, capabilities and some first impressions. There is a little confusion in naming. OS/2 Warp actually comes in two flavors. The initial release of Warp last fall is officially known as Warp for Windows, and assumes you already have a copy of Windows. It uses your Windows Disks during installation to provide Windows support. Warp with WinOS/2, recently released (also called by some Warp FullPack), doesn't require that you own a copy of Windows. Warp with WinOS/2 costs more as it provides full Windows support. Once installed there is virtually no difference and thus you generally find people just call them both Warp interchangeably. Additional Warp packages are being released, the first of which is Warp Connect which is Warp with a number of connectivity features integrated, including IBM TCP/IP version 3.0, IBM LAN Server 4.0 requester, Novell NetWare client, IBM Peer for OS/2, and IBM Lan Distance Remote. Again Warp Connect comes in both a Windows and a WinOS/2 flavor.

AT in 1984, could address up to 16MB of memory. The increased raw speed of the 80286 and simple use of the memory above 1MB (like RAM Disks) were immediately taken advantage of by DOS and DOS applications.

To make real use of the increased memory addressability of the 80286 required something more than just DOS. The 80286 offered something called protected mode which had two potential advantages. It made all memory directly addressable, and offered the opportunity to isolate the operating system from ill mannered applications. Early versions of both OS/2 and Windows tried to take advantage of the new protected mode of the 80286. Neither was all that successful. This was due in part to some severe limitations and deficiencies in the 80286 processor. This made programming for it downright ugly and left a lot to be desired in terms of being able to run old DOS applications along with any new ones written for the 80286 in an efficient and reliable environment.

(Cont'd on page ??)

President's Corner

An Introduction

by Paul S. Richter, W4ZB

P.O. Box 19190 • Washington, DC 20036-9190 / CIS 70743,3517

I will be using this President's Corner column beginning this month to keep you apprised of various matters of interest to the members.

Last month's Digital Journal announced the change of the name of our society to the International Digital Radio Association, and the election of new officers and two new directors. More volunteers. The IDRA runs on the efforts of numerous volunteers who are able to contribute their time, creative abilities and energies. We are always looking for help and almost everyone has something or some area in which he or she can contribute if time can be found! With modern communications means now available, it is possible to assist in useful ways and to work effectively with others in diverse or remote locations. Please keep this in mind and think about how you might be able to help! Let us know!

The directors will be holding an informal "planning meeting" for IDRA in Orlando, Florida during the second weekend in August. If you have ideas you would particularly like to have considered at that meeting, please be sure to communicate them to one or more of the directors. The interest areas of the members of the IDRA are wide ranging, and you should not assume that all others necessarily have your viewpoint. Communicate!

Many of you know me already; but those of you who don't might be interested in hearing how I first got involved "hands-on" with digital radio communications about 33 years ago: It was the spring of 1962, I was 15, had had my ham license (K1SDX) then for a little less than a year and had been quite active operating mostly on CW on HF from my QTH in Connecticut. One day a new CQ Magazine arrived with a classified ad from a ham in Ohio with a Model 26 Teletype machine for sale or swap. My brother (now N3KVV) and I had been watching out for this and we acted without delay: we pooled what we had and figured out what we could offer, made several long distance telephone calls and then struck a deal with the offerer.

A few problems remained: we hadn't told our parents what we were up to yet, but we had already agreed to meet the seller and make the swap at the midpoint in Western New York, about a six hour drive away, mid-afternoon the following Sunday. We leaked the story in pieces. First we told our parents we had agreed to swap some ham radio stuff with another ham in Upstate New York on Sunday, a "few hours" drive away. Our mother agreed to drive us, leaving right after church on Sunday morning. The outbound trip took "longer" than officially planned, but we had time to do more "explaining". Eventually, we arrived at the rendezvous point where the ham from Ohio was waiting and we quickly made the pre-agreed swap. I still remember my mother's words as she spotted us carrying the Model 26 to our car: "That's not a radio and it looks too big to put in the trunk! What is that for?" But it was too late: the swap had been completed, the Teletype machine did fit in the trunk, and the other ham was already leaving for his long drive back to Ohio. We found a telephone and called home to let our father know everything was OK, but that we wouldn't be back until after dark.

We spent much of that night examining our new toy, an electro-mechanical marvel designed in the late 1920s. We had not seen one before except in photographs and in what even back then were regarded as the "old" movies. The machine was in

(Cont'd on page 7)

Beedle Beedle

The first in a series of digital snippets

by Crawford Mackeand, WA3ZKZ

115 S. Spring Valley Rd. • Wilmington, DE 19807



(Thus begins a notable series of whimsical looks at this hobby of ours, from one of the more astute and experienced observers. As always, Crawford's offerings enlighten and amuse but are always capable of making a serious point. Read with care. Hi!—N2HOS)

You know, it used to be easy to decide what was digital radio and what wasn't. RTTY was always an easy one, and so were AMTOR and Pactor. After all, they were two-state situations, binary if you like, and so were obviously like the computer we know and love. (On second thoughts, strike love. It's a love-hate relation, so lets just add a ?) And then we realized that CW was certainly digital, and no-one wants to deny this patriarch of radio modes a place at the table. So far so good, as the man said when he was passing the tenth floor of the skyscraper without a parachute.

But now come some people with complications. (Greeks bearing gifts, to any classics fans out there.) Let's think about modems for a moment. When speeds on phone lines got much above 300 Baud, straight two-state FSK got more difficult, and so we got PSK and DPSK and all those good things. On HF radio we got Clover and now Pactor2, and just to confuse me even more. Peter TY1PS ups and sends his little girls singing over HF Clover. Now we all know very well that such activities as singing are analog. So, it's sampled. Is that what makes it digital? Well, yes, it sure is what digitizes the original analog signals, but it makes for a poor sort of a definition, relying on the hardware implementation. Of course, to emphasize the situation, we now hear that high definition TV (HDTV) will almost certainly not now be analog and who knows how many digits that will hand us. So I thought that I could use, just for my own understanding, a definition of what we all claim to be interested in—digital radio.

Probably I am lagging (does that make me an inductive reasoner?) behind the front-runners here, but I needed a peg to hang my thoughts on. And as I have not seen a definition (or have missed it on the way past), here is my offering. **Digital radio is radio communication in which the transmission has only a finite number of previously defined modulated states, which are known only to the stations in contact.**

73, Crawford WA3ZKZ



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Digital DXing

Planning your own RTTY DXpedition (pt. 1)

by Glenn Vinson, W6OTC

#2 Embarcadero Center, #1660 • San Francisco, CA 94111

of local regulations governing the use and importation of radio transmitters, as well as the ups and downs of local voltages. However, I had never thought through the entire process of activating an amateur radio station temporarily in a foreign location.

My first DXpedition to work RTTY in the CQWW RTTY contest was to T32 in 1992. A group of seven operators, led by Bob, KN6J, a veteran of a single-handed, multi-island RTTY DXpedition to the Pacific in 1989, put five stations on the air from Christmas Island. I was T32GV and our contest call was T32RA. As much as experiencing the thrill of operating on the other side of big pile-ups, I found I enjoyed learning how to plan the logistics of the trip, erecting antennas and installing the DXpedition station(s), trying to solve the inevitable technical problems that arose as soon as we started operating, making an operating plan based on expected propagation and learning how to get along with folks I did not know well.

The next year, 1993, Bob, I and N6OXR, another Bob, returned to the Pacific for the contest, activating NH6T from Maui. While I thought I was prepared for this trip, I found I had much to learn about trying to run amplifiers from 5kw gasoline generators as well as suppressing RFI from stations literally adjacent to one another (in T32 we had been mostly in separate bungalows).

Lord Howe Island



Balls Pyramid

1811

Wheatsheaf Islet

South East Rock

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The combination of traveling to exotic locations and working pileups as a DX station is a dream that has come true for many amateur radio operators, particularly during the past few years. Reasonable airfares to locales with a small or non-existent ham population combined with highly portable (or luggable) rigs and antennas has made feasible turning vacations into mini- or not-so-mini-DXpeditions. Of course, chartering a boat to go to uninhabited Conway Reef with generators, tents and your own food is a far different undertaking, logistically and financially, and requires a different set of skills, than flying down on a commercial airliner to George Town, Grand Cayman and checking into the Holiday Inn, even though the jobs of erecting antennas and fighting RFI in multi-transmitter stations may be much the same. For the former type of operation, I recommend that you read "3Y0PI, The 1994 DXpedition to the Most-Isolated and Most-Wanted Country in the World," by Robert W. Schmieder, KK6EK, as well as "DXpeditioning Basics" by Wayne Mills, N7NG (at BV9P earlier this year), published by INDEXA and ARRL. A useful source of information on licensing is the "DXpeditions Worldwide Licensing Guide," by Craig M. Maxey, KH8AL. Here, I will focus on the practical planning aspects of smaller DXpeditions.

Prior to going on any DXpedition, I spent almost 20 years traveling extensively throughout the world as part of my job. While that background was useful, it was by no means sufficient for preparing a trip requiring the transportation and erection of complete amateur radio stations. Having lived outside the U. S. for seven years during that period, I was well aware of the vagaries

In 1994, I went with Eddie, W6/G0AZT, to 8R, a relatively rare country on RTTY, where we established a new M/S record as 8R1TT in the JARTS contest, working with relative ease from the top floor of a hotel, with our antennas on the roof. The "ease" of that trip, however, was the product of Eddie having done extensive homework starting a year in advance of the trip, including everything from obtaining a license to determining from prior visitors the specific room that was optimal for our operations. The next month, I was off to YK, a very rare RTTY QTH, with a great group of CW enthusiasts who wanted someone (luckily, me) to activate RTTY from Syria as YK0A. There, the hardest task, obtaining a license to operate, had already been accomplished by Rusty, W6OAT. Also, rigs and antennas had already been secured. I expected the remaining jobs of planning which tools to take, erecting antennas and trying to deal with RFI from multiple stations in close proximity would become fairly routine. But as usual, I learned much from my talented fellow-travelers as the inevitable snags occurred.

1995: Where to Go?

As the winter rains settled in over Northern California this past winter, Eddie and I started discussing where we might travel for this year's WW RTTY contest, which is always scheduled for the last full weekend in September, just after the Fall Equinox. The best QTH for a serious contest effort is in the South American portion of the Caribbean because virtually all contacts from there in that contest count for 3 points, and reliable North-South propagation allows working Europe and the U. S. for long periods each day. However, having been to 8R just last year we

thought a change was in order. We briefly considered several spots in West Africa, but decided the logistics would be too difficult for a two-person team on a tight travel schedule. Finally, Eddie suggested Lord Howe Island because he had found it is widely needed on RTTY by those in the Mid-West and on the East Coast, air travel and accommodations are reliable and good, Australian amateur radio licensing procedures for US and English license holders are simple, and, perhaps most importantly, Eddie has a son, daughter-in-law and newly born grandson living in Brisbane. I proceeded to obtain my Australian tourist visa from the Australian Consulate in San Francisco and my amateur radio license (by mail) as VK9LZ from the Australian Spectrum Management Agency.

Answering this set of fundamental travel questions then, is almost always the first step in planning a DXpedition: what country do U. S., European or Japanese DXers want to work (and on what mode(s)); is a license (easily) obtainable; is practical transportation available; is reliable power (and at what voltage) present; what RF power restrictions apply; are accommodations adequate; are there customs problems with importing electronic gear; how much time do you have for the trip; what are the likely propagation conditions for the period when you can go?

Taking these factors into account, it is certainly no accident that year after year we see DXers traveling to the Bahamas, the Cayman Islands, Aruba, Fiji, Tahiti, etc. All of these places are great to visit, attract a pileup, allow U. S. licensees to operate or easily obtain a local license, provide reliable power and good accommodations, do not impose serious restrictions on importing gear, are easy to get to and are generally workable from the U. S. and/or Europe or Japan.

There is another factor that makes locations such as Aruba or Fiji popular for DXpeditioners: the pileups are readily controllable. While almost any "DX" station will attract callers, the difference between Barbados and Canton Island (not to mention Heard Island) in the size and orderliness of the pileups is considerable. As the ZL8 operation in May of this year shows, knowing how to manage pileups, and developing the endurance to work for several hours continuously are essential skills to learn before going to a particularly rare location.

When to Go?

For any successful DXpedition, a knowledge of propagation fundamentals is essential. Many folks do not have vacation time except during the summer. Take a look at the projections produced by Miniprop or at the monthly charts and forecasts in QST and CQ to determine the anticipated propagation to from the desired DX location at that time. You may find you should wait to make that DXpedition until sunspot activity has increased again. If your time off is flexible, you will certainly find interesting and nice places to visit and operate from in the fall or spring months even in low sunspot periods.

What Rig to Take?

This question really is one driven in the first instance by one's pocketbook. For most people doing their own DXpedition, the answer is obvious: take whatever you can lug from the gear you have at home. If you have an Icom IC-751A, a Yaesu FT-900 or a Kenwood TS-450 or TS-850, this answer is fine. However, if you want to work RTTY, the TS-50 or the FT-900 is not so fine. A more general answer is to take, if possible, a transceiver that works in FSK mode (the FT-990 does not work in true FSK mode, but it does a reasonable job on RTTY), is equipped with narrow (250 Hz) filters and is not too big and heavy. A dual-voltage power supply is a very big plus. Large step-down transformers or heavy external power supplies like those made by Astron (for rigs that can be powered with 13.8v DC) add too much weight to your already strained baggage allowance. Another alternative may be the 22 amp, 13.8v DC power supply

made in Germany and sold by Electro Automatic Corporation (in Lawrence, MA) via adds in ham magazines. This unit can use either 110v or 220v AC input and weighs only 6.4 pounds. I have not yet received any reports of its actual performance in the field but its specifications are impressive.

Because of the risk of lost or mis-directed baggage, you will want to carry as hand luggage as much of the core station—and in all cases the TNC—as possible. The 751, 990 and 450/850 are luggable if you have the stamina. As will be seen below, you will have plenty of other items to check, within your weight allowance. An IC-765 or FT-1000 is nice to have at home, but on airplanes is too heavy to carry and puts a big dent in your weight allowance if you check it.

A final word on this subject: Murphy is ever-present; rigs and amplifiers fail. If two or more of you are going on the DXpedition, take a spare rig, even if you do not plan to use both transceivers/amplifiers simultaneously.

A major mistake that many DXpeditioners make is to emphasize power and neglect antennas, to take full KW amplifiers where local regulations allow them but erect only vertical antennas. KW amplifiers are, for all but the largest and best equipped DXpeditions, more trouble than they are worth. They are very heavy and often will not work acceptably with low line voltage, they cause serious interstation interference when more than one station is operating (an issue discussed incessantly among serious contesters using home-based stations), they worsen TVI problems if you are in a location that has broadcast TV (Lord Howe has a local, 5 watt rebroadcast station!), they work poorly with many low power (5 KW or less) gasoline generators because those generators often have poor rise times and therefore big voltage drops when keying on RTTY, and they are a poor tradeoff in gain per pound and overall problems compared with a beam. Unless you are visiting a place you know well and that has a steady 220/240v mains supply, my advice is to take no more than a 500 watt amplifier—and if it is tube-type, to take a set of extra tubes. Amplifiers using 811As are generally inexpensive, relatively lightweight and durable. Obtaining a further 3 dB gain for your transmitted signal—not to mention hearing better—on a DXpedition is much easier to achieve with a good antenna than with a big amplifier.

This is the halfway point in Glenn's discussion. Next month the installment will begin with the reasons why a beam antenna is of major importance to any DXpedition. Then follow Glenn and Eddie in subsequent issues as they pursue the Lord Howe dream. It will be a great story—ed.

(Cont'd from page 5)

good mechanical condition, but we discovered that if it ran for a while, it heated up and you could smell the heated oil. We had been stockpiling parts in anticipation, and had a new breadboard full of 88mh toroids, tubes, diodes and a polar relay wired up as RTTY Terminal Unit within a few days. Then, with connection of an audio line to the TU, and careful tuning of the HF receiver so that the neon tuning lamps blinked properly, we could get the Model 26 to print the then standard 850 Hz shift RTTY signals. It took another week to modify the transmitter VFO for stable shift RTTY transmission. That was how it began for me!

My two teenage sons (KE4PES and KE4RTL) today regard that old Model 26 which still chugs along as an antique from another era — which it most certainly is. Just as we can confidently predict that the most up to date technology we are using today in this very interesting and rapidly advancing field of digital radio communications will be regarded as primitive and antique by others (and ourselves) within just a few years!

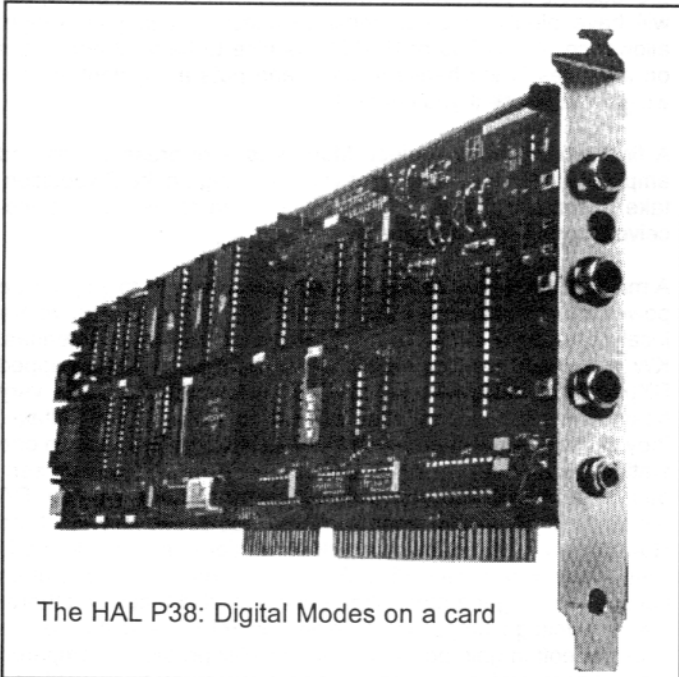
73, Paul Richter W4ZB

The HAL P38 DSP

and other thoughts

by Hal Blegen, WATEGA

2021 Smythe Road • Spangle, WA 99031



The HAL P38: Digital Modes on a card

I'm a self-made advertising pariah. I have not been approached to do a product review since I submitted scientific evidence, a few years back, proving that on RTTY, a PK232 was only slightly more efficient than my dog Brownie who learned baudot by sleeping in the furnace room next to a Teletype model 15.

I don't like to work on computers. It has been months since I last pulled the cover on my 486. The anxiety I associate with trying to get WINDOWS to talk with all the ports and interrupts so that a mouse, modem, sound card, FAX, cd rom, printer, joystick and a pair PK232s will all work has me stressed to the point where the mere sight of a phillips screwdriver gives me diarrhea. It's no wonder that the UPS delivery guy thought I was acting a little strange. All that was visible to him was a mailing label indicating that the package came from HAL COMMUNICATIONS but to my, more experienced eye, what it said, DANGER, THIS PACKAGE CONTAINS A POISONOUS REPTILE! My P38 HF RADIO DSP MODEM had arrived.

Installation instructions: Turn off the PC and stuff the board into any empty slot. Naturally, the pint-sized fan that my good friend Jeff Flashnerd mounted on my processor chip to solve the meltdown-lockup problem stuck up into the only open slot and the P38, not one of your whimpy little serial port boards, needed the whole slot. The first sunshine in my otherwise rainy life was, after shuffling the deck to get an open slot, the computer still worked! Unless your rig cannot use open collector switching for FSK keying, no switches or jumpers have to be configured to get the board to work.

While this is not about software but trying to talk about a software driven device without mentioning software is like describing a fish without mentioning water. One unique features of the P38 is the lack of E-PROMs. The basic run-time software for the micro-processor is downloaded each time you initialize the control program—it's just a file. This should significantly reduce the handling and distribution overhead of software upgrades, allowing the

newest version can be downloaded from a BBS or an FTP site on the Internet.

HAL's software runs under plain-vanilla, DOS but for mouse-bigots there are several authors offering WINDOWS compatible, P38 software. The only compatibility problem I found was that different authors used unique names for the run-time files and some renaming was required (RAGCHEW

worked fine until I installed EXPRESS at which point I had to re-install RAGCHEW to get it to work again).

It was refreshing to run the install program and not have the screen all cluttered up with dire warnings about insufficient free RAM and EMM386 incompatibility. The programs don't require much disk space and, best news yet, THE P38 DOESN'T NEED EITHER AN INTERRUPT OR A COMM PORT! The hex memory address for I/O is user selectable so you can avoid conflict with common cards like Sound Blaster or the ever-popular Dental-Surgery adapter. I installed it and it worked, the first time!

The interface to the radio is dead simple. In recognition of the fact that most HF operators aren't smart enough to run AFSK without transmitting 5 khz worth of birdies, the P38 comes with a built-in FSK keying line. On most radios, unless you want to run CLOVER, all you need is FSK, Audio in, and PTT. I'll probably go down in flames for saying so, but the average human who ragchews and works a little DX needs CLOVER like a guy in rubber life raft needs a chainsaw. CLOVER is for adults.

Noticeably absent was any sort of scope driver output. The P38 operating screen displays a set of bar graphs for real-time tuning that takes about 10 seconds to confirm what a scope shows at a glance. Solid state tuning indicators annoy me so much that I have resurrected an old Flesher TU-170 just to drive a tuning scope.

The P38 does CLOVER, AMTOR, PACTOR, ASCII and BAUDOT. It doesn't do the G thing (You know, the one that was named by Dr. Ruth?). At Dayton somebody asked Bill Henry why the board didn't do PACKET. He just laughed and pointed out that, "The P38 was designed to work on HF."

PACTOR on the P38 was another happy experience. In fact, if they leave things along and don't invent 10 more modes to confuse the issue, FEC PACTOR may well replace BAUDOT. It's just a matter of getting a few of us old die-hards to buy some new equipment. With 5 watts out, I linked with a ZL (no timing problems on my elderly ICOM 751 using the default parameters) and once I changed from 250 to 400 hz bandpass, the P38 switched to 200 baud which boosted the throughput to about 10 pages of copy per minute and made an instant convert out of me. When I went to SSB filters at 2.8 khz, the DSP filters completely ignored another station that was in the passband even though the interfering signal was pumping my AGC to levels above the linked signal level!

A rumor about the P38 that peaked my interest enough to buy (I paid—no cozy deals), had to do with some supposed comparisons to HAL's, top-of-the-line ST-8000. The P38 was supposed to be "only 1 db down" from the 8000. I didn't know what that meant but that I thought I would find out.

Error correcting modes give perfect copy under varying conditions. The down side, since only one device can control a link, is that getting any useful data in real-time comparisons between boxes requires more than just a couple of radios. Rather than spend a lot of time with multimode boxes in ARQ LISTEN modes I figured that overall demod effectiveness was unchanged on all modes except CLOVER so I went back to the old standard, RTTY-BAUDOT to do my comparisons.

(Cont'd on page 22)

The Contest Chair

Hints, Tips & Inspiration for Better Scores

by Ron Stailey, AB5KD • 504 Dove Haven Dr • Round Rock, TX 78664

Internet: ron481@austin,relay.ucm.org



Chiru Morita JA3DLE/1 proudly displaying his plaque from the 1st Annual WPX Contest sponsored by the Digital Journal

Hello Contesters and DXers. We asked Arie 4X6UO in the May issue about how to have a tree planted in Israel's Silent Key Forest- (4X4SKF), if possible. Yes you can. All you need to do is send a letter to this address. KEREN KAYEMETH LEISRAEL 96 Hayarkon St. Tel Aviv, Israel

All information will be sent to you. Most important you don't have to be a silent key to have a tree planted in someone's name or call (or your own). Arie is also going to plant a tree for one of the WPX WW winners each year for one of the categories. This year he chose S/O H.P. and I think you very much. It came with a Certificate with Ser No#363402. He also planted a tree for Hal WA7EGA who sponsored the plaque Arie won during this year's WPX contest. Arie, I framed the certificate along with the 4X4SKF qsl card, and it will hang on the wall in my radio room for the rest of my life.

The contest season is about to take off starting with SARTG this month. In this contest all of us have the same on and off times world wide, and its a great contest to start the season. We will even have time to take the XYL out for dinner. So lets all get in there and give it all we've got.

By now most of you have heard about the new RTTY Contest Reflector on Internet. It's up and running, sponsored by Ray WF1B. Ray says he would like contest related subjects such as: RTTY contest results, high claimed scores, RTTY the Mode, RTTY the Program. The address to subscribe is: <wf1b-rtty-request@eng.pko.dec.com> type subscribe in the message area.

While I'm thinking about it, Rays program Ver-2.20 has several updates. Ver-2.20 now supports the new P38 Modem, PK-232 host mode, it also supports Com Ports 1 thru 8. This should make many of you very happy. If you already have Ver-2.20 and want the updates they are listed on WF1B's WWW page and the IDRA's BBS. Ray also has several other things in ver-2.20 that I won't go into at this time. Be sure to get a copy before SARTG—you will be glad you did.

This month we are going to visit with Chiru Morita JA3DLE/1, a call sign that's no stranger to any of us. He is employed with Nikkoh Trading Co.,LTD, home office in Tokyo Japan.

Other than CQWW and BARTG, I can't remember a single contest I've been in that Chiru wasn't passing out badly needed mults.

He has to travel to Europe on during those two months on business instead of participating in these two big contests. Work sure can foul up your contesting plans sometimes, can't it. However, Chiru did man-

age to operate at a Multi/Op station: IK2QEI in Italy during CQWW'93. That was the first multi type operation he had ever done. He will try to sneak in a contest on these trips if given a seat to operate from. Some of you European multi stations should check with Chiru too see where he will be during these contests and offer him a seat, he would definitely be an asset to your contest team.

Chiru's home station looks like a radio store with wall to wall goodies. His equipment consists of: IC-781 with a IC-4KL Amp, another IC-781 with an Alpha-87A Amp, a TS-950SD with a TL-922 Amp. If conditions get real bad he can use his Big Amp that uses a 3CX-3000A7 tube. He is also a Collins Radio collector. If a radio goes out during a contest at Chiru's station, it's 'Nooooo' problem.

Terminal units: He uses Tono-5000E, Tono 9000E, Tono Theta 777, a pair of Tono Theta-7070's, a Proco CT-678, AEA PK-900, Doverton, Hal ST-6000, last but DEFINITELY not least, my favorite, a Hal ST-8000 HF Modem. :-) I would say if a TNC goes out during a contest, it's also 'Noooo' problem.

Towers and Antennas: He has one (1) crank up tower that extends about 35 meters or 116 feet high. He uses a 4 elm cubical quad for 20-17-15-10m. For the low bands he has trapped verticals for 40 and 80mtrs mounted on the roof of his house. He always has a strong 599 plus signal into Texas.

Computers: He uses a NEC one 2 X 9801, and an IBM laptop.

Software: Chiru likes, none other than RTTY by WF1B for contesting. He also uses JH1BIH S/W for Pactor operation. He doesn't need S/W for the Tono and Proco operation at all.

Contests: He loves contesting and tries to participate in as many contests as possible other than CQWW and BARTG.

While he was in Italy he was surprised the bands were so crowded. Especially on the low bands, it was really amazing to him. They have very little activity on the low bands in his area, especially with conditions being at the bottom of the cycle.

He also said, he really understands how European and American stations earn so many QSO's during contests. Even on 20m he can only hear the stations with big signals. With very few participants in Asia during digital contests it makes it very hard to win ever there own JARTS contest from Asia.

Contest Record: Roundup- He was the top Japan station in: 94, 93, 92, 90 ADRS WPX- He won the Asia plaque '95 WAEDC- 9th in '94 Volta- 11th in '94 Volta- 12th in '93 ANARTS- 6th in '93 ANARTS- 5th in '92 CQWW- Team member at IK2QEI finished 6th over all M/S category in '93 JARTS- 11th in '93 JARTS- 9th in '92

Contest operation: He uses RTTY by WF1B in contests but normally doesn't use any memory operations, except for CQing. He likes to hit all contacts by hand. Even if he is in a contest, he wants to add that personal touch or make a warm QSO, of course his QSO rate drops, but he wants to enjoy communications.

Chiru if you ever make a trip to the U.S. you will always have a seat to contest from, just let me know when you will be here..

Thanks for all your help in preparing this article, and we will see you in the next contest.

Next month we will talk with Tapani OH2LU in Finland.

The next three contests:

Contest	Dates	Start Time	End Time	Opt'gTime
CQ/DJWW	Sept 23-24	0000 UTC Sat	2400 UTC Sun	No off times
JARTS	Oct 21-22	0000 UTC Sat	2400 UTC Sun	No off times
WAEDC	Nov 11-12	1200 UTC Sat	2400 UTC Sun	30 of 36 hrs

Until next time, 73's

de Ron AB5KD

"Remember" Big antennas high in the sky work better than little ones close to the ground...

Contesting

Coming Events and Awards

by Rich Lawton, N6GG • 14395 Bevers Way • Pioneer, CA 95666

RTTY Contests - Coming Events

Date:	Contest:	
AUG 19-20	SARTG WW RTTY	(Sweden)
SEP 3	DARC CORONA 10M Digi	(German)
SEP 23-24	CQ WW Digital	(USA) CQ Mag.
OCT 21-22	JARTS WW RTTY	(Japan)

— REMINDERS: —

August starts up the fall digital contesting season. SARTG WW RTTY is a very popular contest and should have lots of activity. Prepare for August 19-20th.

DARC CORONA 10M Digi (July 2, '95)

log entries deadline is Aug 2nd.

Mail entry to:

Werner Ludwig, DF5BX
P.O. Box 12 70
D—49110 Georgsmarienhutte
GERMANY

BARTG Amtor/Pactor Contest (July 8-9, '95)

log entries deadline is Sept 10.

Mail entry to:

JOHN BARBER G4SKA
P.O. BOX 8
TIVERTON, DEVON
EX16 5YU, ENGLAND

DARC HF RTTY Contest, Part 2 (July 15-16, '95 log entries deadline is Sept 1.

Mail entry to:

Werner Ludwig, DF5BX
P.O. Box 12 70
D—49110 Georgsmarienhutte
GERMANY

— COMING UP: —

— SARTG WW RTTY Contest —

August 19-20, 1995

Sponsored by the Scandinavian Amateur Radio Teleprinter Group.

(SARTG)

Third full weekend in August. (Ref: SARTG, SM4CMG)

CONTEST PERIODS: Three separate periods:

0000-0800 UTC Saturday, 1600-2400 UTC Saturday, and 0800-1600 UTC Sunday.

BANDS: 80, 40, 20, 15, and 10M. (five bands)

CLASSES: A) Single op, All Band C) Multi-op, Single Tx, all band
B) Single op, Single Band D) SWL, all band

NOTE: Single op, All Band stations may also enter as a single band entry of their choice, too.

MODES: RTTY only.

EXCHANGE: RST + QSO number, starting with 001.

MULTIPLIERS: Each DXCC country on each band, including first contact with Australia, Canada, Japan and USA. Additionally, each call area in VK, VE, JA and W will count as one multiplier on each band.

QSO Points: QSO with own country, 5 points. QSO with other countries in own continent, 10 points. QSO with other continents, 15 points. In VK, VE, JA, and W, each call area will count as a separate country.

SCORING: Sum of QSO points x sum of multipliers = TOTAL SCORE.

AWARDS: To the top stations in each class, country, and district, if the number of QSOs is reasonable.

LOGS: Use separate logsheets for each band. Logs must show: BAND, DATE/TIME (UTC), CALLSIGN, EXCHANGE MESSAGE SENT and RECEIVED, MULTIPLIERS, and QSO POINTS. Summary sheet must show scoring, class, your callsign, and name and address. Multi-op stations must show the callsigns and names of all operators involved. Your comments will be very much appreciated.

DEADLINE: Logs must be received by May 30 to qualify. Mail logs to:

SARTG Contest Manager
Bo Ohlsson, SM4CMG
Skulsta 1258
S-710 41 Fellingsbro
SWEDEN

Comments: This popular contest has 3 separate operating periods, each 8 hours long, and separated by two 8 hour rest periods. The concept is quite unique and there can be no excuse of fatigue from the more senior ops.

Band multipliers mean that activity will be spread over all the bands.

August means summer conditions are still in effect in the Northern Hemispheres so the low bands will have plenty of static and the high bands will have mediocre propagation. But not to worry. Activity is usually high from all over the globe. Another unique item for this contest is that single ops can also enter as a single band entry, with the band of their own choosing.

The exchange (RST + QSO serial number) means that you can keep track of your competition by comparing your number with his. If he suddenly appears with 10 more QSOs than you, it means you were a) goofing off, b) playing around on the wrong band, or c) stuck in a pileup and wouldn't give up.

Note that the first QSO with VK, VE, JA and W counts as a multiplier on each band. Also, each call district in VK, VE, JA and W will count as a multiplier. Separate logsheets are required for each band.

— DARC CORONA 10M Digital Contest —

September 3, 1995

Sponsored by Deutscher Amateur-Radio-Club e.V. (DARC)

(Ref: DF5BX)

NOTE: This contest occurs 4 times a year on the first Sunday of March, July, September, and November.

CONTEST PERIOD: Sunday, from 1100Z to 1700Z (6 hours)

MODES: RTTY, Amtor, Pactor, and Clover **BANDS:** 10M ONLY

CLASSES: 1 - Single op 2 - SWL **CONTEST CALL:** "CQ CORONA TEST"

EXCHANGE: RST + QSO number, starting with 001.

CONTACTS: Additional QSOs are allowed with same station on different mode.

MULTIPLIERS: Each DXCC/WAE country, and each call district in JA, VE, and W.

QSO POINTS: Count 1 point for each completed QSO.

FINAL SCORE: Total QSOs x total multipliers.

AWARDS: To top stations in each class, country, and district mentioned above.

LOGS: Use separate logsheets for each mode. Logsheets must contain: Date, Mode, Time UTC, Callsign, message sent/received, first-time multiplier prefix, and QSO points. Also required is a Summary sheet with a list of claimed multipliers. Comments are very much appreciated.

DEADLINES: All logs must be postmarked within 4 weeks of the Contest. Mail to:

Werner LUDWIG, DF5BX
P.O. Box 12 70
D—49110 Georgsmarienhutte
GERMANY

WAE country list as of 1 MAR 94, (72 countries):

1A0	C3	ER	GJ	HB0	LA	OJ0	R1/fjl	SV	TF
3A	CT	ES	GM	HV	LX	OK	R1/mvi	SV5	TK
4J1	CU	EU	GM/sh	I	LY	OM	RA/eu	SV9	UR
4U/ITU	DL	F	GU	IS	LZ	ON	RA2	SY	YL
4U/MC	EA	G	GW	IT	OE	OY	S5	T7	YO
9A	EA6	GD	HA	JW/bear	OH	OZ	SM	T9	YU
9H	EI	GI	HB	JW/mayen	OH0	PA	SP	TA1	Z3
									ZA
									ZB
									ZC

COMMENTS: The following major changes were made in February '95:

Multi-op class deleted.

Exchange is now RST + QSO nr. (name and state deleted)

Mode change for additional QSO now allowed immediately after first mode QSO.

USA states do NOT count as mults - only call districts.

VK districts no longer count as mults.

This is a 6-hour all-digital (no Packet) WW 10M contest. It occurs on Sundays, 4 times a year. Count multipliers for each country worked on DXCC/WAE country list, and for each JA, VE, and W call areas. This means that your FIRST JA, VE, and W QSO in the contest will also count for a DXCC/WAE country mult.

-+ The Whys, Wise and Wives of Contesters -+

In contesting there are "3-W's" that should get more attention than they get: the *Whys*, the *Wise*, and the *Wives*. Each have their own rationale, as you'll see.

WHYS: Why do we contest? All of nature is competitive, from survival of the fittest on down to game playing. Perhaps man created game playing to teach children how to survive, to hunt, or maybe just to try the untried. We tend to admire the most skilled, the best of the best, as in football or baseball.

In ham radio there are many reasons to contest. Aside from the sheer excitement and fun, we have various awards, such as WAC, WAZ, DXCC, all encouraging the exchange of QSL cards that confirm the QSO. Just collecting cards is fun. As one gets more into contesting, there is the operating skills part. If you seem to be unable to make a higher score than your buddies, maybe you need a better antenna setup — or a more modern rig. Or maybe there's another way to improve your skills by practicing touch typing, or keyboard labeling, or changing bands more frequently and easier. Challenges abound!

WISE: How do we get wise? Experience is the best teacher. For instance, knowing when to change bands during a contest can best be learned by trying. When is it wise to call CQ rather than search and pounce? It's a matter of rate versus multipliers and that particular band activity. And, it depends on propagation conditions, too. Some contests give bigger score advantages to number of QSOs rather than combinations of QSO points versus mults. ARRL Roundup is one. The Roundup is all flat-out speed, and let the mults fall where they may. Other contests are quite the opposite. The Swedish SARTG contest emphasizes mults (W, VE, and VK districts count as different mults on EACH band). Lots of mults add to the challenge of hunting more and CQing less.

WIVES: I've saved wives for last because they are special. A wife who really understands how much an all-out effort means to a contester is *really special!* When you're smack in the middle of a frantic session, they're the ones who go that extra mile. The ones who bring you the sandwich. The ones who bring you a refreshing cold drink, or a cup of coffee - even when you don't ask for them. That's *extra special!* If you absolutely **MUST** put up a 100 foot tower in the front yard, those special wives would understand, wouldn't they? Well-I-I... maybe she wouldn't back you quite that far...

But contester's wives are a truly exceptional class. They help keep peace in the neighborhood. Some would actually comfort the TVI/RFI complainers, like: "Well, he's in a contest right now... I'll tell him right after it's over, OK?" Bless their hearts. How could we live without them?

((73)) See you in the pileups,

Rich, N6GG

Public Service

Florida Crown Digital Network News

by Steve Barber, WA4B, ADEC Digital

Note: Nick and I have had many E-Mail conversations over the past months about the health and future of Public Service activity. He dedicates virtually all of his time to the subject and feels very strongly about the need for 'more and better' PS on the part of all of us. It is, in his mind, the responsibility we acquire along with the band privileges we enjoy. He is right, of course. We also share the view that PS must change and adapt to the new technology, borrowing from any mode or medium that is available. The Special Olympics, held in CT during July may be a prime example of that concept. He promises to give us a full report. In any event, the brief article by Steve WA4B outlines the Northern Florida setup for emergency communications. It is impressive, as are the questions asked by Nick at the end of the piece. They must be answered if we are to stay abreast of our responsibility. de Jim N2HOS.

The members of the Florida Crown ARES, the North Florida Amateur Radio Society (NOFARS), the First Coast Amateur Digital Association (FICADA), the North Florida DX Association (NFDXA) and other area ham radio clubs and individuals have constructed a network of TheNet X-1J4 nodes in the Florida Crown District that join several digital services. We have a four node stack at 190 feet in South Jacksonville that is the heart of our network. We have two VHF radios, one 220 MHz radio and a UHF radio linked via the node stack at this site.

ARRL:KC4ZGH-2 1200 Baud VHF 50 Watt DRSI TNC Tri-band Antenna 145.73
DX:AC4ET-2 1200 Baud 220 MHz 25 Watt MFJ 1270 TNC Tri-band Antenna
MTC:WA4B-3 9600 Baud UHF 2 Watt Tekk Radio PK96 TNC Tri-band Antenna
NTS:W4IZ-2 1200 Baud VHF 50 Watt DRSI TNC 11 Element Beam 144.99

At our north east Jacksonville site we have a two node stack: One VHF radio and one UHF radio.

FICADA:W4IZ-2 1200 Baud VHF 50 Watt MFJ 1270 TNC Vertical Antenna 145.07
PEANUT:AB4UF-2 9600 Baud UHF 2 Watt Tekk radio PK96 TNC Vertical Antenna

In Starke, Florida, about 50 miles SW of Jacksonville, we have a node on 145.73 running 1200 baud, 50 watts at about 500 feet above sea level. There are other nodes and ROSE switches that are linked via RF but these are the heart of our network. From any of these node we can reach any other node. When any station connects to the FICADA node from any other node, that station goes across the 9600 baud link which is working very well for us. Here is a run down of some services available from various nodes.

FICADA Link to the AC4WZ FBB BBS and to points north of Jacksonville PEANUT and MTC are 9600 baud UHF radio link. Now testing AC4WZ BBS via direct hook up to 9600 baud and the UHF 9600 baud JAXBBS:KC4MII node. The DX node is a 220 MHz link to the NO4J DX Cluster which is linked to several other DX Clusters in Florida. The ARRL node can connect with the STARKE node for points south to Gainesville and the WF3F FBB BBS in Palatka and the ARES2 node, ROSE switches, and others.

The NTS node is the main link to the WX4J ARRL/ARES NTS APLINK BBS in Switzerland, Florida. This is our traffic/emergency digital link from UHF/VHF packet in the Florida Crown District to the outside world. WX4J scans many HF frequencies and provides us with a great NTS traffic outlet and also links us to the EOC in Tallahassee. From just about anywhere in the Florida Crown District, a ham with a TNC, VHF radio and a computer can send traffic via WX4J with no problem. The NTS node also provides us with an additional southern link to many other nodes and ROSE switches.

Our network SYSOP, John Hale, AC4ET has programmed the nodes so that in most cases you can reach the BBS, the DX Cluster or the WX4J APLINK BBS with one or two commands. DX for the cluster, BBS for the BBS, and HOST for the WX4J APLINK BBS. In some cases all you have to do is connect to HOST, BBS or DX and it will get you to your final destination with this one command. We

(Cont'd on page 30)

DX News

The latest digi-doings from around the globe

by Jules Freundlich, W2JGR • 825 Summit Ave., Apt. 1401 • Minneapolis, MN 55403



Even with declining propagation, there are optimistic courageous dxpeditors out there; people who will travel almost to the ends of the earth to put a wanted country on the air. As mentioned last month, there is a possibility of 3Y/R0FL from Bouvet in early November. In the quest for contest honors, VK9LZ on Lord Howe Island, will be active in September. See DX Doings below for details. Then there is Heard Island.

We were recently awakened from our usual midsummer lethargy by the stunning simultaneous announcements by Ralph, K0IR, and Peter, ON6TT, that some members of the 3Y0PI team had been quietly at work on making arrangements to mount a major DX'pedition by a multinational team, to VK0, Heard Island in November of 1995. Up to the time of the announcements, this effort had been a very well kept secret. This is indeed great news for all DXers, as this will be an all-band, all-mode effort, including satellite and RTTY.

The permit to visit the island has been granted, and the necessary environmental assessment, and letters of indemnification have been approved by the Australian Antarctic Division.

The team will set sail from Freemantle, West Australia on 1 November 1995 on a 140 ft. chartered vessel, and land on Heard on 12 November, weather permitting. Departure from the island is scheduled for 1 December. The members of the team all expect to be home in time for Christmas.

The roster of participants reads like an extract from the Who's Who of Dx'peditioning, and includes such notables as:

Ralph, K0IR (Team leader - 3Y0PI)
Peter, ON6TT (European Coordinator - 3Y0PI)
Bob, KK6EK (Scientific Coordinator - 3Y0PI)
Willy, HB9AHL (3Y0PI team member)
Arie, PA3DUU Satellite/RTTY
Vince, K5VT
JH4RHF
Bob, N6EK
Franz, DJ9ZB

Key support staff includes JH1AJT as Japanese Coordinator, and VK2BEX as Australian Coordinator.

Sir Edmund Hillary has consented to be Honorary Expedition Leader.

As Ralph, K0IR told me "I wish propagation looked better, but it is going to be this way for several more years, so waiting makes little sense if you have the opportunity."

Major equipment contributions are being provided by Yaesu, ETO and Cushcraft.

Along with Yemen, 7O, Heard Island ranks as the Number 1 most wanted country by RTTYers. It has been a good many years since the last time this remote Antarctic island was active on any mode. It will probably be a good many more before the next one after November. Obviously, financial support from the amateur community is needed. Be generous with your support. The makeup of this seasoned team, and its leadership, guarantees a first class operation.

Contributions in the U.S. can be sent to:

The Heard Island Expedition
P.O. Box 563
Waite Park, MN 56387-0563, USA

In Europe send your donation to:

Peter Casier, ON6TT
Oude Heerban 30
B-9230 Melle
Belgium

(When sending cheques to Peter, use Eurocheques only, drawn in your currency, and with the Eurochequecard number written on the back.)

Other contributions can be channeled through JH1AJT and VK2BEX.

Last month, I chronicled how I had inadvertently fallen into the "wormhole universe". By accessing a foreign gateway station, which forms a bridge between the TCP/IP of the Internet, and the AX.25 protocol of two meter radio, I was then able to sign on to a packet-cluster station at a distant location. For all intents

and purposes, to those other users who were signed on, I looked just like any other local user, and could perform most of the commands available to local users. This, of course includes reporting DX spots, leaving messages, noting what DX was being heard in that part of the world etc. I saw DX spots reported by other users in the U.S.A. I do not know by what route they achieved the access.

A few weeks after my enlightenment, the "worm turned". I was surprised to see several DX stations on my local Minnesota network. They included 9K2HN, PA3GML, and 4X6TT. It seems they had found a gateway at WD5B in Arkansas, which is connected to our Wide Area Network (WAN).

They were using (A)nnounce commands to make their presence known. Responses to them were made in like manner. This had the effect of making all stations who were connected, captive members of what was effectively a cluster network-wide 'conference'. 4X6TT did not stay very long, as he was pestered by numerous queries about whether or not he had received specific QSL cards. He answered these questions politely, always affirmatively, but soon disappeared from the cluster. 9K2HN appeared again several days later inquiring about whether certain DX prefixes had been heard. When 4X6TT appeared again a few days later, he was again barraged by questions about QSLs. That time I did not see such ready responses from him. One day, DD3DJ appeared on the cluster, and gave his local weather report!

Checking into far away amateur stations via the Internet is apt to become commonplace. However there is a question as to whether it will be acceptable to all. Recently, when connected to IK5PWJ-6 in Pisa, I noticed a message in the directory labeled "Spot/Internet". I called it up and found it to be in Italian, a language I do not understand. I left a message there for my good friend Luciano, I5FLN, to translate it for me. The next day, when checking in, I found the translation. Here is the gist of the message, which was addressed to ALL.

The writer of the message, IK0NGI, noted that there has been a steady stream of DX spots from the U.S.A. coming to the Italian (and European) network via the Internet. He concurred with the "technical validity" of such spots, but observed that many European ham sysops do not consider them "sportsmanlike." He said that he had seen many instances where some stations in a neighboring country became disconnected from the European cluster network with the result that the Italian cluster had lost DX spots, from other nearby countries, in which they (the Italians) would have been interested.

IK0NGI further went on to say "At this point I feel that it is right and necessary to collect the opinion of all guys to avoid an incorrect decision from the top. I ask now those of you REALLY INTERESTED in this matter to send me a message." He concluded that the results of this "sounding" will be carefully appraised. I presume he would expect cluster operators to adopt a policy based on his analysis.

The opinions reflected in IK0NGI's message, it seems to me, are typical of reactions that occur when a new technology is applied in ways that were never intended. Certainly the uses to which Packet Cluster software is applied today are far beyond the intentions of the author. To confirm that, recall what your local cluster screen in the U.S.A. looked like on the weekend of ARRL Field Day this past June! DX Cluster??

DX DOINGS

(Signals are 45.5 Baud RTTY unless noted.)

Note that the DX Doings below include activity as reported from worldwide sources. Therefore, some stations may not be seen, in your particular part of the world, at the hours indicated. To make best use of the data given, couple it with your knowledge of propagation paths to your QTH. For help in this regard, see the monthly propagation charts in QST, and listen to the hourly propagation forecasts at 18 minutes past each hour on WWW. Good luck!

ALGERIA, 7X - Algeria is not completely absent on RTTY thanks to occasional activity by 7X4AB on 20 meters around 0800Z. QSL route is needed.

AZERBAIJAN, 4J - Using a TNC furnished by Chiru, JA3DLE/1, Piero, 4J0/IK2BHX, has promised to be active on RTTY. Look for him on 20 meters around 1700Z. QSL to IK2MRZ.

BOSNIA-HERZEGOVINA, T9 - T94NF can sometimes be found on 20 meters around 1530Z. QSL via N2AUK.

BOUVET, 3Y - Since we reported, last month, the possibility of a November operation by two Russians signing 3Y/R0FL, there has been no further information forthcoming. If this operation does indeed take place, as originally reported, it could very well dovetail with, or overlap the Heard Island expedition.

BURUNDI, 9U - Even though there are several hams stationed in Bujumbura, capital of Burundi, the security situation has recently worsened, so not too much activity can be expected from there in the near future. If you are lucky you may catch 9U/F6IQA on 20 meters between 1400Z and 1930Z. QSL via home CBA.

CEUTA and MELILLA, EA9 - EA9AN keeps this country on RTTY on 20 meters around 2000Z. QSL route is needed.

CHAD, TT - Further to the report by Ken, WA4OBO that appeared in last month's DX NEWS, he has just about given up hope of getting the Chadian government to revise his TT8OBO license. Ken writes "I have, after nearly three years of frustrations and many dollars thrown in the towel in getting the TT8OBO license approved by the ARRL. But after all the money, the frustrations, three changes in the Ministry of the PTT in Chad, the death of the Ambassador in Washington from Chad, I am at my wit's end. The ARRL refuses to accept the fact that it was never a license meant for business, but the word Amateur does not appear on my license unfortunately."

Ken goes on to say that he is now concerning himself with the TY8OBO license, and the newly applied for licenses from Senegal and Ethiopia. In the next two years, he has the possibility of many short business trips to Benin, Senegal, and Ethiopia. He will be concentrating on SSB but also will try to include RTTY, as he hones his skills on that mode.

For those who were counting on the TT8 card, he expressed his sorrow that it will not count, but hopes to get it resolved ultimately with a new license at some time.

CHAGOS Is., VQ9 - Pres, N6SS is back at VQ9 until the end of September. He operates all bands/modes especially Pactor using a TS-940S at 50 watts, a TH7DXX at 30 meters, and a PK-232MBX with an old computer. QSL to his home call though the W6 bureau.

EASTER ISLAND, CE0Z - The "cutting edge" expedition to two islands in this group by Bob, KK6EK, and company, described last month has been rescheduled due to availability of transportation. The main trip to Easter Island proper, signing XR0Y, is still scheduled for 2-23 September. The makeup of the team is mind boggling, and is as follows: KK6EK, K4UEE, XE1XA, AH9B, XE1L, WT8S, G0LMX, KE6QZZ, W4ETO, WJ2O, K0IR, HB9AEE, AA6TT, W3UM, PA0ERA, W8FMG XE1CI, N1OCS, K9JSC, HB9AHL, W0ZV, plus 6 non-radio persons.

The second part of the expedition, to Salas Y Gomez will occur the following month from 1-22 October. This group will be led by Carlos, NP4IW and will sign XR0Z. Most of the period will be spent getting to and from the island by boat from Valpariso, Chile. The team will be heli-coptered on and off the island, allowing them a week of activity there. There are openings for 2-3 operators for this part of the expedition. Sala Y Gomez will count as Easter Island for DXCC, but will be a new IOTA.

Anyone interested in joining the group can contact KK6EK at the address given on page 13 of the June 1995 issue of the DJ.

FERNANDO DE NORONHA, PY0 - Confirmation has been received that JH2MRA has returned to Brazil and will be there until the end of August. His specific dates for returning to the island to operate RTTY have not yet been learned. Keep alert for PY0ZFB. Check the weekly VK2SG RTTY DX Notes for reports. QSL to his home CBA.

FRANZ JOSEPH LAND, 4K2 - Previous reports of the imminent dearth of amateur radio activity from this frozen north location apparently were exaggerated. Slava, RX10X/FJL told Sergei AA8OT/UA3AP that the

main problem has been a shortage of diesel fuel deliveries every year. This problem is now 80-90 percent solved. Slava himself will be active until October, when he goes on vacation. Also there are two other hams on the island, R1FJC and R1FJZ.

GEORGIA, 4L - 4L1BR is active on 20 meters between 1700Z and 2000Z. QSL via the CBA of UF6FFF.

ISLE OF MAN, GD - This one does not appear too often on RTTY. We happy to report that GD4EBA plays 20 meters anywhere from 1130Z to 1930Z. QSL via CBA.

IVORY COAST, TU - TU4EY operates 20 meters between 1900Z and 2200Z. QSL via KE4I.

JUAN FERNANDEZ IS., CE0Z - Veteran Dxpeditors Bob, K4UEE, and Randy, K0EU will activate this place from 13-21 September. Stay tuned for announcement of callsign, frequencies and QSL route.

KALININGRAD, UA2 - UA2FAC adds to the RTTY activity from here. Watch for him on 20 meters around 1630Z. QSL route is needed.

LORD HOWE I, VK9 - Looking ahead to the CQ/DJ World Wide RTTY DX Contest, September 23-24, Eddie, W6/G0AZT, Glenn, W6OTC, Steve, KK6EV, and perhaps one other operator, will arrive at Lord Howe at 0230Z on Tuesday, 19 September, and depart at 0430Z on 26 September. They will run multi-single in the contest using their assigned call VK9LZ. Before and after the contest, you may find them on 40 or 30 meters RTTY or CW, depending on propagation. They will be using a C-4 antenna from Force 12, and an amplifier. QSLs go only direct to P.O. Box 5194, Richmond, CA 94805 with SAE and return postage. Eddie specifically requests that cards not go via the bureau.

MADAGASCAR, 5R - Shun, JF1MGI/VK9MG, a frequent contributor of news for this column, who is a Doctor of Veterinary Medicine, will be in Madagascar from late August to the end of September to investigate ecosystems of rare animals, such as the Lemur Catta (Ringtail Lemur). His radio activity, with emphasis on RTTY and Pactor, will be concentrated during the third week of September using the call 5R8EU*. Shun has promised the DJ a writeup of his experiences there. QSL to his home CBA. Stations regularly active from here on 20 meters between 1500Z and 1800Z include 5R8DS (Pactor 14075 khz), 5R8DG, and 5R8NH. QSL 5R8DG via F6FNU. QSL routes are needed for the others.

NEPAL, 9N - Satish, 9N1AA has returned to Pactor, RTTY, and Amtor, since his PTC-Plus was returned to him after being repaired. Look for him on Pactor on 14077 khz, or on RTTY at the lower end of the 20 meter RTTY slot, around 1700-1800Z.

Satish, in collaboration with Richard, 9N1ARB, an American working for the UN, plan to establish a club station as a memorial to the late Father Moran, 9N1MM. They are hoping to have 9N1MM on the air during September 1995. A beam antenna from 9N1ARB, with a rotator and cables donated by 9N1RHM will be installed at the site.

QATAR, A7 - A71CX operates 20 meters in the middle of the UTC day around 1400Z, or later around 2130Z. QSL route is needed.

RWANDA, 9X - Mark, 9X/ON4WW left Kigali at the end of June, with the possibility of returning in August.

SOUTH SHETLANDS IS., VP8 - Andy, SP2GOW, at VP8CQS continues to be active on 20 meters around 1730Z. He has changed his QSL route to his home address: Andrzej Grotha, ul Mikolaja Gomolki 5 m 1, 80-279 Gdansk, Poland.

SRI LANKA, 4S - 4S7/JH4FM often operates RTTY on 20 meters around 1800Z. QSL via JA1FHK.

SVALBARD, JW - Dominick, DL5EBE will be operating from JW0K until 10 August on 10-40 meters. QSL to his home CBA or via bureau.

TUNISIA, 3V - The club station, 3V8BB was active on 20 meter RTTY at random times during June. If you have missed them, keep a lookout for an early August operation planned by Selim, OE6EEG, and Drago, S59UN.

TURKEY, TA - TA3D may be found on 20 meters around 1600Z. QSL via CBA.

UNITED ARAB EMIRATES, A6 - If you can catch Don, WB2DND, operating A61AD before he leaves on 2 August, QSL to his home CBA.

VIETNAM, 3W - A group of Arizona hams are planning to be active on CW, SSB and RTTY between 23 January and 2 February 1996. Details to follow.

ZIMBABWE, Z2 - Look for Z21HD on 20 meters around 0600Z. QSL route is needed.

"AM I A GENIUS OR WHAT?"

That is a question posed by Peter, ON6TT as he makes the following observation.

"Maybe thousands of people thought about this before, but here it is anyway. Maybe you go on a lot of trips or use a lot of different rigs, like I do. As I (being a RTTY addict after my 9Q exploits) plan to take my PK-900 with me on my trips. I am faced with the eternal wiring problem: Each type of rig has other wiring, other plugs, etc.

Solution: I have a Heil Proset (Heil boomset) which comes with two universal plugs (one for PTT, one for audio). They sell adapter cables for all kinds of transceivers, hooking the universal plugs onto each type of transceiver.

I have a set of these adapter cables for all transceivers. So I made the PK-900 cables/plugs compatible with the Heil adapter sets (and boom set); one jack for PTT, and one for audio. So now I can not only travel with my Heilset from rig to rig, but take my PK-900 with me as well. Voila!"

NOTED IN PASSING

At the Dayton DX Forum, K5FUV noted half the DXCC members are now on the Honor Roll. He suggested that new DXers should be recruited. To that suggestion, we would add "Go Digital" for new challenges. There is plenty of room on the RTTY Honor Roll!

QUIZ

What would you think is happening if you heard the following RTTY stations giving their callsigns on the same frequency at the same time? K1IU, KR4DA, KA2HQR, KD2ZB, W3KHZ, W2JGR, K14XO, N2LEB, RYRYRY, NI4H, QRX QRX, K2PEQ, W1BIH, and others undecipherable. You are right. There is a much wanted DX station buried under them trying unsuccessfully to pick out one callsign. What finally ensues? He realizes he has to operate split. When he does, his frequency is clear and he proceeds to make contacts. 3V8BB, like others, had to learn it the hard way...but learn it he did!! Why didn't someone tell him ahead of time?

INTERNET REMINDER

Start your search for Digital DX News on the Internet by connecting to the IDRA World Wide Web site at URL <http://www.iea.com/~adrs>. You will be pleasantly surprised at the amount of current information available at that site, as well as through the available hyperlinks. Look particularly for Digital Mode Flash DX Bulletins for information on up and coming hot ones.

If you are not familiar with the IDRA's WWW Server, read the excellent tutorial series entitled "IDRA's presence on the Internet" by Paul Richter, W4ZB, which started in the June issue of the DJ. Of the numerous articles I have read in the ham press that have attempted to describe ham radio and the Internet, this series by Paul is by far the most lucid of them all, making it the easiest to read and understand.

HAVE DX NEWS?

Leave a Pactor message at W5KSI.#NOLA.LA.USA.NOAM mbx (1), or via any of the following:
 Packet: W2JGR @ WB0GDB.#MSP.MN.USA.NA
 FAX:612 377 3600 (Mark for my attention)
 Internet: w2jgr@millcomm.com
 USPS to my CBA.

THANKS - Thanks to the following for all your information:
 AA8OT/UA3AP, I5FLN, IK5PWJ, KE3Q, KK6EK, K0IR, JF1MGI, JH2PDS/1, ON6TT, WB2CJL, W5KSI, W6/G0AZT, ZS5S and 425 News.

See you all next month. For now, bye bye from Minnesota, PAX....73 de Jules W2JGR

1. W5KSI scans 7069, 7071, 7075.5, 7076, 14068, 14070, 14073.5, 14074, 14079, 21074, 21075, and 21079 khz.

RESULTS OF JARTS 1994 RTTY CONTEST

JARTS Contest Manager JHIBIH

S/Op:	All Band	OSO's	Point	Mult	Total
Nr.	Callsign				
1	AB5KD	1031	2384	182	433,888 World Top
2	5W1MM	698	2067	123	254,241 OC 1st
3	I4AYP	628	1735	139	241,165 EU 1st
4	IV3FSG	466	1282	138	176,916 EU 2nd
5	N9NCX	486	1119	138	154,422 NA 2nd
6	K4HSF	509	1192	127	151,384 NA 3rd
7	V63AS	538	1586	95	150,670 OC 2nd
8	N6GG	520	1215	122	148,230
9	S53MJ	409	1020	144	146,880 EU 3rd
10	VE7SAY	508	1173	123	144,279
11	W7LZP	539	1252	109	136,468
12	KP2N	540	1275	104	132,600
13	SV2BFN	387	984	131	128,904
14	AA7UN	548	1223	103	125,969
15	KC5GEE	468	1099	112	123,088
16	OH2GI	390	991	121	119,911
17	WA6SDM	420	1013	112	113,456
18	PA3ERC	395	1079	97	104,663
19	KE7GH	457	1029	100	102,900
20	DJ3IW	305	813	112	91,056
21	G0ARF	446	1191	73	86,943
22	S56A	264	756	113	85,428
23	4X6UO	288	844	101	85,244 AS 1st
24	W2IJB	311	835	101	84,335
25	JH7QXJ	270	762	110	83,820 AS 2nd
26	W2JGR/0	327	773	96	74,208
27	AH6JF	351	1039	71	73,769 OC 3rd
28	N2FF	329	774	94	72,756
29	WA6VZI/7	288	682	105	71,610
30	UN5PR	239	596	112	66,752 AS 3rd
31	A35MW	323	955	68	64,940
32	JR1RCQ	193	552	96	52,992
33	IK1HSR	211	557	93	51,801
34	KC7V	238	597	85	50,745
35	NI6T	285	652	75	48,900
36	N9BHH	221	529	88	46,552
37	W5TZN	232	532	87	46,284
38	N0FMR	262	579	77	44,583
39	JA6COW	169	440	101	44,440
40	PT2BW	226	671	64	42,944 SA 1st
41	KR4NY	238	529	78	41,262
42	ZL2JON	188	539	76	40,964
43	I2HWI	199	518	79	40,922
44	VE7OR	286	623	61	38,003
45	AB8K	177	457	79	36,103
46	KQ4QM	392	392	91	35,672
47	W1BYH	204	462	77	35,574
48	N4ONI	166	407	82	33,374
49	JA3EOP	130	370	87	32,190
50	SP3EJJ	160	412	78	32,136

Multi Operator All Band

1	8RITT	1214	3631	181	657,211 World Top
2	VE3FJB	406	1004	114	114,456
3	JA1ZLO	272	741	112	82,992 AS 1st
4	VK6GOM	274	805	75	60,375 OC 1st
5	IK1TWC	121	301	73	21,973 EU 1st
6	LZ1KBB	135	341	49	16,709

SWL

1	ONL383	361	951	127	120,777 World Top
2	DE0GMH	91	221	53	11,713
3	I1-928/TO	78	201	52	10,452

Check Log:YB2CPO

CQWW Top Scores

Edited by Jay WS7I & Ron AB5KD

Complete results on pages 18 & 19

SINGLE OPERATOR / HIGH POWER

HH2PK	1,304,485
S56A	1,154,880
S50A	1,151,416
EA3NY	1,063,044
CJ3XO (VE3XO)	1,050,404
VY2SS	1,031,751
4U1ITU (DJ6QT)	1,029,752
UN8PY (UN7PCZ)	1,021,992
K4JPD (AE6E)	951,080
SM5FUG	839,202

SINGLE OPERATOR / LOW POWER

OD5PL	1,024,899
9K2ZZ	962,104
YW5RY (YV5KAJ)	772,540
ZL3GQ	737,741
VP5JM	657,454
AA5AU	572,355
IV3FSG	471,245
TY1PS	462,680
SV5BYS (SV1BDO)	423,470
OH2GI	399,100

SINGLE OPERATOR / ASSISTED

DK3GI	1,186,185
DF3CB	603,060
N2TW	567,816
N4ONI	421,940
KB4GID	370,326

MULTI-OP, SINGLE TRANSMITTER / HIGH POWER

RK9CWA	2,535,864
GW8GT	1,691,870
IK2CFH	1,603,836
RW2F	1,515,104
PI4COM	1,404,356

LOW POWER

Z30M	830,396
9A5D	824,980
F6EKX	525,837
KF4KL	353,260
RK4LWZ	295,568

MULTI-OP, MULTI TRANSMITTER

K1NG	2,756,590
W3LPL	2,515,752
3Z0RY	884,260
OH3NE	863,512

SINGLE OPERATOR / SINGLE BAND

3.5 Mhz	
PA1A (9A2RA)	47,894
IK1HSR	21,248
7.0 Mhz	
DJ2BW	135,168
IK2QEI	84,240
IK1HXN	58,707
14 MHz	
9A2DQ	201,096
IS0QDV	180,018
DJ5LA	179,800
YV5NFL	174,736
EM0F (UX0FF)	167,688
21 Mhz	
KP2N	93,562
LU8EKC	198,738
ZS6NW	154,628
K8UNF	113,399
CE8SFG	72,864

CQWW Plaque Winners

World Single Operator, High Power: Patrick Cardozo, HH2PK.

Advanced Electronic Applications, Inc. (AEA) Award.

World Single Operator, Low Power: Station 9K2ZZ

Eastern Washington Amateur Radio Group Award

World Multi-Operator, Single Transmitter, High Power: Club Station RK9CWA

Advanced Electronic Applications, Inc. (AEA) Award.

World Multi-Operator, Single Transmitter, Low Power: Club Station Z30M.

HAL Communications, Inc. Award.

World Multi-Operator, Multi Transmitter: Station K1NG.

(K1NG, KI1G, AB5KD, K5ZD/1 & K1IU)

CQ Magazine Award

North America, Multi-Operator, Single Transmitter: Station WU3V

(WU3V, WU3U, W5WMU, W5VSZ, KI5XP, N5MEG, N5KQQ & WX5L)

The G0AZT Award

World Single Operator Assisted.: Roland Mensch, DK3GI.

CQ Magazine Award.

Continents, Single Operator All Band:

North America: Dr. Steve Tobe. CJ3XO (VE3XO)

The TG9VT Memorial

North America, Low Power: Jody Millsbaugh, VP5JM.

American Digital Radio Society Award.

South America: Pasquale Casale, YW5RY (YV5KAJ)

The Contest Committee

Europe: Marijan Miletic, S56A

HAL Communications, Inc. Award

Oceania: Peter Watson, ZL3GQ

The Digital Journal Award

Asia: Alex Lebedev, UN8PYL (UN7PCZ)

The N5JJ Memorial

Africa: Dave Heil, A22MN

The Contest Committee

High Score, United States: Neal Sulymeyer, AE6E, OP @

K4JPD

The RTTY by WF1B Award

High Score, United States, Low Power: Don Hill, AA5AU

Geoff Malta Award

World Single Operator, 3.5 Mhz.: Station 9A1A, (9A2RA)

Reggie Corey, KA1UQU Award

World Single Operator, 7.0 Mhz.: Hermann Samson, DJ2BW.

The Contest Committee Award

World Single Operator, 14.0 Mhz: Zelimir Klasan, 9A2DQ.

Kunihiko Fujii, JH1QDB Award

World Single Operator, 21.0 Mhz: Ronald A. Hall Sr., KP2N

Denis WD4KXB & Mike KA4RRU Award

World Single Operator, 28 Mhz.: NO ENTRY

The International Scene

A regular look at the odds & ends from around the digital globe

received from various sources

A letter from our digital friends in the UK ... BARTG

Hi Jim. I'm back on the Unix box typing up this letter from BARTG. It is a little (oh boy!) longer than I intended it to be. It is about the forthcoming BARTG rally. I'll also aim to send you a report of the event itself soon after it has happened (Sept 10th).

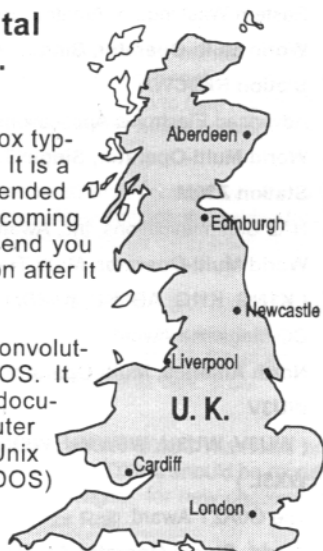
This letter will have taken a convoluted trip simply to reach N2HOS. It started off as a WordPerfect document on a networked computer and was then saved onto a Unix system as an ASCII Text (DOS) file. Next, it passed into the email system here in Nottingham, reached the world outside of the Nottingham University campus via two networks and then headed west to cross the atlantic to arrive at N2HOS. Of course, the journey time was hundreds of times less than the typing time! (*The journey is not over yet...from ASCII to Word 6.0, on to a floppy, then to Goldenrod, then converted into Quark Xpress!—ed.*)

BARTG is the UK's national group for data comms and has been ever since it was formed in 1959. As a part of its role as national leader, BARTG organises an annual rally. A description (only a brief one) of a typical BARTG rally (let's take the upcoming BARTG 95) may give Digital Journal readers an insight into ham radio and data comms here in the UK.

The venue is a 10,000 square feet exhibition hall inside a terrace at a racecourse named Sandown Park. This is a very few miles south of Heathrow airport (itself to the west of London) and is located in the heavily populated south east of England. This venue therefore offers a very good catchment area for BARTG 95 and is one reason why this will be the eleventh or twelfth rally that we've held there. The RSGB also use this venue for their annual VHF convention.

Trading stands are composed of one or more trestle tables, each table being six feet long. We usually have around 250 tables and form about sixty stands with them. Note I use the term stands rather than booths. These stands are literally just a group of trestle tables. No walls, no headboards and no chairs. If the exhibitor wants walls or chairs then they bring their own. Some other rallies do provide chairs but walls and headboards are very much the exception at any rally.

So, we expect up to sixty traders. These traders might well be fully formed commercial traders or they might equally be individual amateurs producing or just selling ham radio items in their spare time. The customer is the judge of which trader is reputable and which trader perhaps should be avoided. This is only partly due to the Fair Trading laws here in the UK and partly due to the frequency with which some companies close down under one name and start up under another. (One firm, so the grapevine has it, were successfully



prosecuted for selling reject goods as new goods. The manufacturer whose name the goods bore was rather unhappy that their rejects were being sold as new because the customer obviously got the wrong impression of that manufacturer. The grapevine said that the trader was saved from jail only due to poor health. His company closed down ... and started up doing exactly the same thing. The saying "caveat emptor" (buyer beware) really IS true.)

Actually, these days the shoddy traders have mostly gone bust. The worst problem that the optimistic buyer may encounter is that the goods they buy aren't really what they appeared to be. Surplus PC boards may turn out to be populated with u/s lcs, radio equipment turns out to blow its fuse every time rather than simply to transmit and receive correctly. Fortunately, the retailers of the expensive stuff (transceivers and the like) tend always to be well established companies though I do hear stories of visits to dealers with pages of adverts in the ham radio press where the shop itself stocks TVs, washing machines, videos, computers and ... in a corner ... ham radio equipment. The UK has few retailers who really specialise solely in ham radio equipment. An estimate would be about 40 in total throughout the whole UK.

The UK rally-goer has, therefore, to be "streetwise". This is no bad thing given the technical nature of the hobby. Right - we have 10,000 square feet of hall that is to be filled with up to sixty stands. What else?

BARTG, being a not-for profit specialist interest group, is keen to support other such groups. We will provide stands free of charge for selected groups (we have to be selective because we have finite space and stands) such as local radio clubs, other special interest groups such as remote imaging and satellites (AMSAT - whose main UK man, G3AAJ, recently met the Queen to receive a well-deserved OBE award in the New Year's Honours List). BARTG itself has a stand and also runs a Bring & Buy stand.

A talk-in station is provided and 2m and 70cms would be used. The venue is close to the junction of London's "ring road" (the M25 motorway) and other motorways are quite close. To my knowledge we've not yet had anyone take advantage of nearby Heathrow and fly in for the rally.

Now all we have to do is open the doors and let in the customers. Because of the cost of putting on the rally we have to charge the customers simply to come into the rally. BARTG 95 will cost two pound (\$3.20) per person and this level of charge is by no means unusual at big rallies such as ours. We expect anything up to 3,000 customers. This might sound small by USA standards but one long running and popular annual rally (held in Leicester, central England) usually receives only about 8,000 customers in its two day run. BARTG 95 is open from 10:30am until 5pm (UK local time) on Sunday September 10th. Most ham radio rallies are Sunday events because many traders have shops to run on Saturdays and the customers are mostly at work on weekdays.

The venue for BARTG 95 offers a licensed bar with hot and cold food. We've found that the typical UK ham will happily pay over \$1,000 for a 2m/70cms transceiver but will never part with \$3-\$5 for a coffee and a sandwich. In fact, we find that many customers live locally and go home for a meal then come back to the rally for a second look.

One item that is missing from BARTG 95 will be a stream of lectures about data comms. Before we moved to this present

venue we used a village hall (well under 1,000 square feet) at a place named Harpenden a few miles north of London. We could and did run a lecture stream at that venue but we had no added charge for the lecture room and had no difficulties in finding lecturers. The traders, however, disliked the way that they lost their customers who mostly all went into the lectures (we had only a few hundred customers in those days). The current venue allows far more space for traders and is mostly big enough for the customers (though we have had to close the doors for a time when the crowd got too big) but a lecture room would cost a significant amount and we've simply no-one volunteering to organise and run a lecture stream. Come to think of it, finding lecturers would be quite a challenge! If we could find a volunteer to organise the lectures and lecturers then BARTG would be very happy.

Finally, what of our customers. From where do they come and what do they buy? They come, mostly, from the south east of England though, as ours is a small country and the motorways are really not too crowded, we get customers from Wales and the English midlands as well. They are usually searching for bargains, be it surplus equipment, second-hand equipment or new equipment from a trader who is keen to make a sale. Many customers are actively in data communications though not many use anything other than packet. The traders which cater to the constructor are usually very busy - building your own equipment (especially HF QRP) is getting ever more popular in the UK.

The customers mostly arrive by car or van though our venue is only a ten minute walk from a train line out of central London. They try to make their stay at the rally a pleasant one and the bar and food areas are usually busy throughout the day. Some bring their own food and drink and go onto the terrace itself, as high up the terracing as possible, so they can watch the aircraft using Heathrow. Many are regular BARTG rally-goers, coming back year after year. Not so many are actually BARTG members and it is pleasing to see that our rally is not perceived as an event solely for the members of BARTG. BARTG itself will sign up many new members and will sell many BARTG GUIDES to data comms modes, Multyterm units and other items.

The customers will go home happy and we few (usually less than 15) who did all the manhandling of trestle tables, stewarding, gate guarding, announcing, talking and selling at the BARTG and mthe Bring & Buy will go home tired but with the satisfaction of a job well done.

G/G/G/

Callsign changes took place recently on Special Event (Club Greeting) calls in the UK. It all makes sense, or so we are assured because, with some exceptions the capital's first letter is used as you can see in the first column. London, however, does not begin with an "X." Here is a summary of the changes:

Na	England	G	GX
Tynwald	Isle Of Man	GD	GT
N (for north)	No. Ireland	GI	GN
St. Helier	Jersey	GJ	GH
S	Scotland	GM	GS
St. Peter Port	Guernsey	GU	GP
Cymru	Wales	GW	GC

7Z/7Z/7ZI

Rudolph HS0/DL1ZAV (7Z1AB's sysop, monitoring 14.080 in Pactor II) reports a surge of Pactor II units on the air. By his count, almost fifty can now be spotted on the bands. Over half sport DL calls six have HB calls. The rest scatter

through Spain and the US with one each in Canada, Mexico, Japan, Belgium and Australia. Most operate in 14.070-80 area, but a few seem to prefer 14.090, which is rather off the beaten path for the Pactor mode.

TA/TA/TA/

An old Turkish proverb says that "Whoever tells the truth is chased out of nine villages."

G/G/G/

One day it is a change in telephone area codes for the IDRA BBS (from 813 to 941). As you may have heard, the US ran out of area code options under the original rules, so new ones are being added. And they create chaos in their wake. The US is not alone. The UK is altering their digits as well and it is no less complicated. They have added a "1" after the initial "0," new area codes have been introduced—all very confusing. But, as an example, a London number that was 0707 659017 is now 01707 659015. Sounds simple, except from the US we would dial 011 44 1707 659015. Always drop the first "0" in the area code when dialing from outside the UK. Is that clear? To keep it simple, if you wish to reach any of the BARTG officers, here is a mini-directory:

G1XKZ	Arthur Bard	DataCom editor	44 1884 34500
G0PCA	Ken Godwin	Component/software sales	44 1634 271548
G3ZYP	Andy Matheson	Chairman	44 1394 460441
G4EAN	Ean Brothwell	Secretary	44 1159 262360
G8GOJ	Alan Hobbs	President	44 1816 882564
G6LZB	Peter Adams	Membership Secretary	44 1923 220774
G8VXY	Peter Nicol	BARTG Rally Manager	44 1216 805963

As with IDRA, all BARTG officers and directors operate from their own QTH, serve without anything but their satisfaction and/or member's complaints to show for it! So don't call and tell them you are dropping by to see the BARTG office or store. Hi!

VK9/VK9/VK9/

Lord Howe, that soon to be invaded Island 425 miles off the coast of Australia (see article by Glenn W6OTC in this issue), is not one of those DX countries that disappears at high tide. LH is about two miles wide and almost seven miles long and sports two mountains that reach altitudes over 2500 feet! Heavily forested and a major breeding ground for a wide variety of Southwest Pacific wildlife, over 70% of the island is an Australian national park. Something less than 300 people live on Lord Howe. Sounds like a beautiful and quite civilized place to go.

W/W/W/

Please note: this is a new column and its success depends entirely on those of you who represent all of our various countries, large or small. The Digital Journal hopes to have at least one letter a month from a digital group outside the US (ala BARTG), but there is no limit. In addition, it is hoped that our readers around the world will use their E-Mail facility to pass along news of general interest to the digital community—about people, rules and regulations, technical developments, mailboxes Dxpeditons or whatever. For the time being, please send your mail to Jim N2HOS 71573,1077 on CompuServe or drop a note on the IDRA Web Page. Meanwhile, if you wish to volunteer to act as editor of the column, drop a note to the same address. It will receive priority treatment!

de Jim.

Windows 95

Part I - A Brief Look At The Final Beta Version

Jim Mortensen, N2HOS • PO Box 596 • Somers, NY 10589
CompuServe ID: 71573,1077



August reminds us of traffic jams at the beach. It's the month of 'dog days,' vacations, count-downs to school and college; the month when listless days produce little even where work is on the agenda. But not this year. Microsoft, by some twist of logic or luck, chose this unbustiest month of the year to be its most frenetic. The Windows 95 launch, the techno-event of this year (or most others), gets underway as most of the world chooses to think of little or nothing but lazing away at the beach with a tall, cool, adult beverage in one hand and, at the very most, an undemanding adventure novel in the other. We will see it and hear of it wherever we choose to stay or go. News of its magic will pervade our environment as the advertising and publicity power of Microsoft tees off on its biggest single challenge ever. Why now? Why August? Maybe it is because they live in Seattle where our languor, heat and humidity never invade their August misty rain and chill. Who knows?

Interestingly, the battle is being fought neither with IBM's OS/WARP, Unix or Apple's System 7X, but with Microsoft itself. Windows 3.0 (and 3.1, 3.11) is currently the overwhelming leader in the Operating System (OS) race in every corner of the world. Microsoft wishes to trump its own ace and build a similar position in the 'next generation' OS market before any other entrant wraps its first package in plastic film. Every little skirmish becomes a crisis, every computer builder who signs up to install Win95 a victory, every WARP announcement a potential setback. This is all about space on tens of millions of computers, profit, leadership into the next century, immortality and all that sort of thing, folks, so sit back and enjoy it.

But should you try it, switch to it, buy it now? Or should you enjoy the fireworks then wait around for a year or so until the bugs are gone, the battle over, the casualties counted; until all those new software upgrades are there ready to be installed under the new platform? Or should you move to a far less risky OS/2 or Windows NT, seasoned alternatives worth serious consideration. There is even the option, for the true conservative (and I know many of them by name), to remain with DOS as operating system of choice. Finally, for the true heavy-hitter there is always Unix, perhaps the most open, high potential system of all.

If this discussion was a tree we would build a branch here. We cannot treat these systems as equals nor measure them by the same standards. WinNT and OS/2, true 32-bit systems, abandon MS-DOS completely. No trace of it survives. Win95, described by Microsoft as a 'hybrid' system, neither abandons MS-DOS nor utilizes full 32-bit architecture. So, the 32-bit systems go down the left branch and we, intent on only an early glimpse of Win95, traverse the branch to the right. (See N2QCA's discussion of OS/2 elsewhere in this issue).

Hybridized? Why would MS spend so many thousands of hours and millions of dollars developing and marketing a system that does not compete in the 32-bit arena? The subject will be discussed ad infinitum. The truth may never be known. Two reasons might justify the move. First, MS made a monumental effort to maintain compatibility with virtually any piece of software and every conceivable hardware configuration. MS claims to have tested "1900 hardware devices and 3500 software applications" during the development process. I do not doubt the claim and this almost endless task produced a commendable ability to read almost any system setup. For the most part, based on my observations they succeeded with software as well. Neither NT nor OS/2 attempted any such thing, for good reason.

Secondly, and this is pure speculation on my part, MS possibly anticipates a 'two-system' future unseen by others. This may be the time for a fundamental split in computer design. Until now, the Windows/MS-DOS world handled every computing chore up to but

not including the very demanding work station environment (where the typical configuration might include 64 megs or more of RAM and several gigs of hard disk). Thus almost all business PC's (and there are millions and millions of them) operated happily within the parameters of Intel/Win3.1. The next step up in capacity, to a RISC-based computer for example, cost too much and offered far too much power for the routine desktop assignment. But that world has turned upside down.

RISC and mini-computer pricing plunged while the power of 32-bit PC's increased dramatically, and the lines between the two blurred to the point of extinction.

This might lead to a situation where the typical corporate network manager (they love standards!) says, "What the heck. If I build my network around 32-bit machines, I can provide a desktop that will handle any and all assignments from secretarial to engineering. And every machine on the network will be identical inside and out." Win95 can't do that. OS/2 and WinNT can. If true, then MS clearly sees a different role for Win95. They may have said, "What the heck. Personal machines are selling like hotcakes and will soon outnumber Business PC's. And the trend will continue well into the next century. Let's give the 32-bit role to NT and focus on the Personal PC world." That's not a bad strategy, for Win95 is a more forgiving system, designed more for Microsoft's "BOB" utilities and wizards than for the professional columnists who will review the product after introduction. The more those 'pros' sneer at and demean "BOB" and its primerish approach to computing and systems, the more you can be certain that Microsoft is moving more more deeply into pure consumer marketing. In so doing, Win95 leaves the hackers and the heavy-hitters and the power users in their wake. This is the plug-and-play world. It is a situation somewhat akin to a company like Yaesu bringing out a complete, no-brainer, plug-and-play all-band digital mode station in a sealed box about the size of a notebook computer, simple enough for all of the unwashed and unenlightened to sit down and make a Clover or Pactor contact at the press of a single button. Its appeal to the old guard might be limited, but think about the newcomers!

Win95 makes the grade as a consumer product. Let me give you one example. I first loaded the system on a Toshiba 4850CT laptop, a tough assignment for the installation program. First, it's a brand new model built around new chips and components and second, because of two PCMCIA cards I installed after purchase. Win95 skimmed through the CD-ROM install sequence, called my attention to the presence of the 14.4 PCMCIA modem in slot one and the Slim-SCSI card in slot two. Further, it told me that there was a hard drive and a CD-ROM on the SCSI chain. (It also spotted the Clover card on another computer). And when the system rebooted, everything was there, recognized, in place on the "My Computer" icon in the upper left hand corner of the Win95 screen. I harked back to my experience with Windows 3.0 and the horrendous 48 hour installation agonies. . . and stood up and cheered!

Compare that performance to the NT installation, as well. I first put in Version 3.5. No luck. I asked different CompuServe forums for guidance and was told to wait for 3.51. MS sent me 3.51 beta with the assurance that notebook computers could now benefit from PCMCIA support. I installed it once. No dice! I installed it a second time after finding out which driver I needed to use. NT recognized the modem but not the SCSI. I installed it a third time. No dice! I called MS Engineering. No help. "Wait until 3.51 is announced officially. I can't even find Slim-SCSI in the database." The forums produced nothing. So, even though I prefer NT to Win95 in some ways, it is a system not yet ready for main street. NT is unforgiving. This characteristic no doubt makes it more fool proof, stable and iron clad, but it fails to make it friendly. Perhaps it isn't designed for 'the rest of us.' By the way, it cannot 'see' the Clover card either because there is no 32-bit driver available yet.

Try Win95, then. Get the CD-ROM version (highly recommended) and go to Windows Program Manager, Click File/Run and begin the installation. I do believe that in all probability, Win95 will successfully

read all the pieces of your computer, put them in proper order and bring up the new Windows look. This is the spot for surprise number one. Install NT and it brings up a look very similar to Win3.1. Win95 sports a look all its own and it will take some getting used to.

In the lower left corner is the 'Start' button, the master key to Win95. It appears to be a Program Manager in disguise and better by far. The other icons on the screen, like My Computer, Recycle Bin, Network, etc., are much less important in the Win95 scheme. After looking around a bit, Click the Start key, then Programs/Windows Explorer. (See figure 1) Up comes a new version of File Manager. The folders are listed by drive in the left hand column, just as they are if you chose My Computer. In fact, they are interchangeable as far as I can tell. Programs can be launched from either by double clicking the executable file of your choice. Go ahead. Launch several programs- word processor, spreadsheet, calendar, communications, database, radio stuff. Then minimize them all by clicking the "_" in the upper right hand corner. Discover the first great news about this new system. You can open as many programs and utilities as you regularly use without much concern about Resources. I routinely have about 15 icons across the bottom. They are open and available with the click of the mouse. Even though the resource monitor shows only about 30% available, there is no visible degradation of performance. It is possible that huge text or data documents might create a problem, but the average ham radio heavy user may forget the term "resources." Try that in Win3.1!

Click Start/Find and name the most remote file you can imagine. Within a few seconds every occurrence of the file will be listed in the window. This is a first class addition to the inventory. Click Settings and find the Control Panel, Printers and Task Master. While the term Settings doesn't quite fit this assignment in my mind, it nevertheless delivers single stroke access to a frequently used set of controls. And that's another benefit of Win95. Essentially anything is a single key stroke away. Click Start and move from one screen to the other with the movement of the mouse. No additional clicking to move from one menu column to the next. This little feature is not enough to make you decide to switch but the one-click concept symbolizes what Microsoft has tried to accomplish with this operating system. Click Start again, but this time with the right mouse button. The Start Menu appears. This loads your desktop exactly as Startup did in Win3.1. 'Drag and drop' any executable file (at least according to the Help File) and make it easy, or Click New and type in the path and other instructions. Either delivers the complete Startup file. Click Help and discover one of the best assistants yet.

Discussion about other features of Win95 must await the final version. While we can applaud the plug-and-play, the ease of installation, the virtually unlimited resources, the long filenames (habit still prevents my using them. Hi!), other claims about speed and memory requirements need further evaluation. Will Win95 run with 4 Megs of RAM? Walk is no doubt a better term, since they 'recommend' eight Megs, and that means it will really function well if you have 12 or 16 Megs! The system is indeed very fast at the 16 Meg level on my machine. Program switching is instantaneous and loading any program from the hard disk consumes but a few seconds. Speed will improve, too, as we switch to programs designed to utilize the power of this system. Will it be stable? From all indications Win95 seems to have taken a giant step forward. If it runs with but a very few GPF's (general protection faults) in the configuration the system faces on this machine, and it does, then there is hope for a highly stable platform when Win95 software replaces the 16 bit programs now in use. The fabled 'Windows Crash' horror stories may be a thing of the past.

Many minor details will change though I doubt the basic feel and look of the desktop will do so. The Microsoft Network issue has not yet

been resolved at this time. Can they include it or will the Justice Department prevent it? Who knows? There are bugs, (in the print drivers for me) but we must assume that the several hundred-thousand beta testers out there identified every last problem.

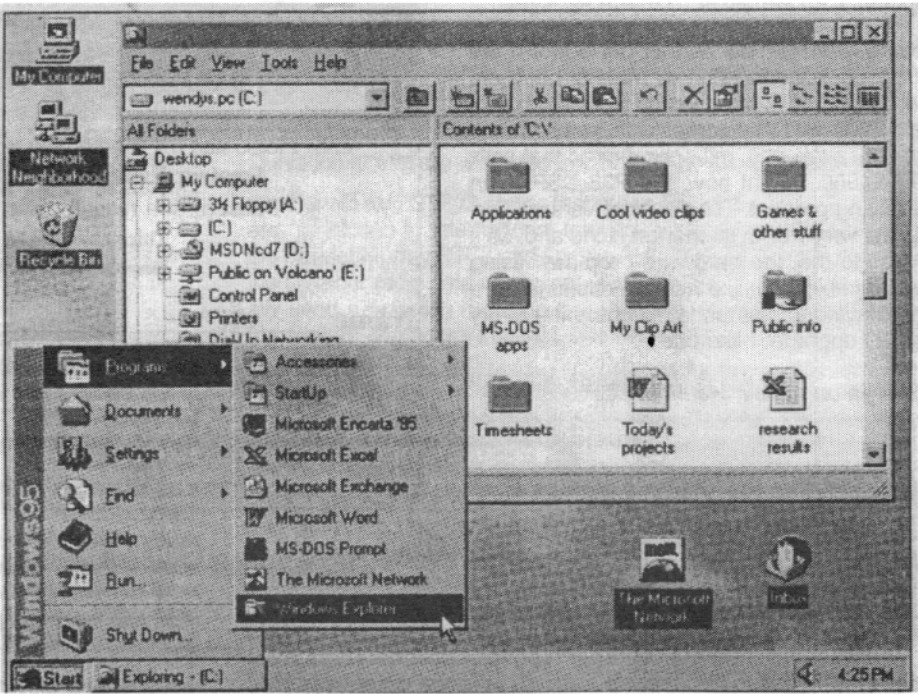
I must mention one bug involving Word 6.0. I have the 32 bit version of the product and have it in the start-up menu. When the time comes for Word to take its place on the lower menu bar, there is an error message stating "Winword created a serious system error and must be closed . . ." I click okay, the program closes. I then reopen it and all is well. Win95 seems to have a bit of difficulty with 32 bit programs designed for NT. Surely they will fix this one! They have already announced that the MS Office Suite (in Standard and Professional versions). It will appear, like Win95 on August 24th and will be "Designed for Windows 95," and will not run on Win3.X. All software and hardware upgrades will carry that logo, and every major program by every manufacturer will be upgraded by late October. Count on it!

Many chose to remain on the sidelines throughout the 'age of Windows 1-3.11' and might make the same choice this time around. DOS is a simpler, efficient world and though there may be few new software options, the list of DOS-based programs found on any BBS rivals the size of the Library of Congress. But if you wish to enter the graphic, multi-media, multi-tasking world now available on even the lowest price PC's, the Win95 system probably is your logical choice, particularly if the plug-and-play simplicity appeals to you. We may witness the end of the 'IRQ conflict' era with this system. If Win95 brought nothing else to the table, thousands would applaud this single feature. Win95 may even create painless computing, just as water-based paints brought painless painting to the do-it-yourselfer who detested the cleanup. Don't underestimate its appeal to the consumer market.

If you can't make up your mind, there is one simple solution to your dilemma. Avoid making a 'system' decision! Go out and buy a new PC this fall. Focus on getting the most RAM and the biggest hard drive and the fastest CD ROM. Act surprised when you find, as you will anytime after August 24th (if the introduction takes place on schedule), Win95 installed on the hard disk. You'll use it!

73 de Jim N2HOS sk.

Note: At deadline, the Pre-release 2.0 arrived from MS. Now the CD comes up with heavenly music and asks if you wish to install Win95. Hi! From a quick look it seems as though they have solved some of their earlier problems. More next month. j



(Cont'd from page 8)

On VOLTA contest weekend, I connected a HAL ST8000, an AEA PK232, a DOVE-TRON MPC1000, and the P38 to a single, buffered audio source and, armed with VCR to record audio, went in search of the crummiest signals I could find. No surprise. The ST8000 still wins. The P38 was an improvement over my early-serial-number PK232's and held it's own against a 15-year-old Dovetron. On over-the-pole, warbly dx signals (20 meters) there wasn't enough difference between the 8000 and the P38 to cost me a single contest QSO. At the point where both units started taking hits, the ST8000 usually recovered several characters sooner than the P38 but I was impressed.

Next, I dropped down to 80 meters. Yeah, I know, NOBODY runs RTTY on 80 meters. On the low bands, propagation does some funny things. On an otherwise loud signal, the mark and space can fade separately. There is also a lot of pulse stretching that can be a challenge. I remembered that Mike, N7RY maintains a rig on autostart at 3612.5 and I started playing his message-of-the-day file. The MPC-1000 (an AM unit) and the ST-8000 (running FM) never missed a beat. The PK232 fumbled now and then but the P38 might as well have curled up next to the furnace and gone to sleep. Not good.

I would have expected HAL COMMUNICATIONS to know all about selective fading and multipath so Monday morning I was on the phone —amazing, straight through, first time, to Bill Henry. Since I've heard a lot of variations on the I'll-look-into-it routine. I didn't expect very much. When I saw the E-mail saying the engineering department had more-or-less had confirmed my findings and were working on the problem, I was sorta impressed. When about a month later a new version of the code showed up on the internet, I was really impressed.

There is a point to be made here that doesn't fit the format of a product review. As far as the ability to put copy on your screen, I don't see a lot of practical differences between multi-mode boxes, what you're buying is just different bells and whistles. You might as well just look at the price. What I do think is important, is the general attitude that I found when I called the manufacturer. "Yep," they said, "We agree with you and we can fix it." What a concept!

Nope, the P38 still cannot out perform the ST8000, especially on 80 meters, but then, what kind of dummy would actually expect a \$400 board that comes with free software to beat a top-end, mil-spec demod that sells for \$4000. Right now, the P38 DSP is an evolving product. The current version performs very well in its market niche and, as it looks to me, the hardware I am now using will be able to utilize future evolutions without having to dismantle my computer every time I upgrade. I like that.

See ya on the air, Hal WATEGA



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What's New

in Packet Radio? Baudot RTTY? AMTOR? PacTOR? G-TOR?

by Norm Sternberg, W2JUP

1101 NW 58th Terrace • Sunrise, FL 33313

There's not much new in these modes these days, so let's go backwards a step in time to see what's OLD! "OLD" stuff is "formatting". It's one of my favorite "bugaboo" topics. It seems that in data transmission on ham radio, text formatting is a subject that many users seem to ignore. Such ignorance - in the literal sense of that word - qualifies this topic as a subject for an attack here in these columns.

Before we begin to look at and discuss some of the format questions, let's take a gander at the philosophy of what we're doing.

Most of our ideas on formatting message texts come from habits we've acquired as we read letters and printed matter, and as we've prepared texts in "human" modes. We're trained and habituated to use certain specific text formats when writing letters and other types of formally-prepared documents. Some of what we actually do in formatting letters is useful in amateur radio. Some of it is NOT useful, and indeed can be rather wasteful of our most precious resource - bandwidth.

Unfortunately, in the real world of data transmission a large part of the formatting rules don't apply to messages and other texts prepared to be sent using any radio or wire medium.

When using a computer program that drives or controls a radio data controller or telephone modem, we depend on the data controller or modem to take the computer-generated ASCII characters we type and translate them into the "language" and form we send to the radio.

MORSE CODE

Consider Morse code. It really doesn't matter HOW we type the message or text information if the output result is Morse code. Morse lends itself easily to complete variance in the character stream. No matter what you type or how you type it, if the receiving station is copying by ear, then there's nothing to be formatted. If, on the other hand, the receiving station is copying with some form of electronic data demodulator, detector or controller, then typically that device will put out its own specification of data characters.

Consider this: Morse code itself doesn't have any questions of upper or lower case, or discreet spaces, carriage returns, line feeds, paragraph separations, etc. Your data controller may contribute some format effectors to the received data stream, but that's strictly between you and the controller and the controller's designers. It really has nothing to do with what goes out over the air as a direct result of you're having typed some characters.

Let's face it - nobody has ever sent a CARRIAGE RETURN and LINE FEED in Morse code.

BAUDOT/MURRAY "RTTY" CODE

Look at the original Baudot/Murray code, or International Telegraph Alphabet Number 2 (ITA#2). This is the code that's called out in FCC's Part 97, under the section addressing "RTTY". This is what we're SUPPOSED to use on the American amateur bands.

The FCC's rules clearly state that the so-called "RTTY code" produced by the average American teleprinters is NOT what the FCC had in mind. These machines, such as the famous Teletype Corporation's Model 15, Model 19, Model 28, Model 32, (are there still really a lot of them around??) generally use the five-level Western Union code, or the American military code, or the U.S. Weather Bureau code, or the FAA variant code.

But unless you're dealing with a genuine telex machine (a teleprint-

er from the old international telex network), you're NOT compliant with the rules!

For example, the standard Teletype Corporation machines almost always used the FIGURES (or upper) case of letters F, G and H as printable characters - which DOES NOT comply with Part 97. Judging from what I see on the amateur bands, the majority of active RTTY operators don't seem to care

much about this issue.

Let's take a look at the FCC's Part 97.309, titled "RTTY and data emission codes"

(a) Where authorized by 97.305(c) and 97.307(f) of this Part, an amateur station may transmit a RTTY or data emission using the following specified digital codes:

(1) The 5-unit, start-stop, International Telegraph Alphabet No. 2 code, defined in International Telegraph and telephone Consultative Committee Recommendation F.1, Division C.

If we look at the CCITT's Recommendation F.1, we see that ITA #2 prohibits the transmission of the secondary characters FIGURES CASE of 'F', 'G' and 'H', which "are reserved for use in each country in accordance with determinations of that country's Administration". The exact wording for Note 2, referring to the secondaries of 'F', 'G' and 'H' goes like this:

"Available for the internal service of Administrations".

CCITT Recommendation S.4 states that these symbols should NOT be used on international circuits. They may appear as printable characters but the keyboard should not be capable of generating them. This means that each nation reserves the right to use FIGURES 'F', 'G' and 'H' as it best sees fit for its own languages.

For example, in Spanish-speaking nations, the FIGURES G is the ENYAY, "ñ" the upper-case N with the tilde over it. In Portuguese-speaking and French-speaking countries, the FIGURES H is the "ç", the C-CEDILLA, the upper-case C with the little squiggle under it.

Each of these lands (in which English is NOT spoken) has its own internal standards, which are guaranteed to them under the terms of the ITU conventions. They can do whatever they please with FIGURES F, G and H as long as the resulting communications stay within their own national boundaries - which is not likely when using HF radio.

In addition, in ITU #2 the DOLLAR SIGN (\$) is prohibited because the FIGURES 'D' character is the 'WRU' or international answer-back command.

In ITA #2, the QUOTATION MARKS (") are actually the PLUS SIGN. Quotation marks are emulated traditionally by two apostrophes (").

In other places, ITU #2 states that these FIGURES 'F', 'G' and 'H' are "prohibited in international telecommunications". When using the Baudot/Murray RTTY code or the AMTOR/SITOR code, some of the amateur radio data controllers (such as the AEA products) actually send a question mark on the air when you type one of these "prohibited" characters into that data controller.

We have a few more conventions according to ITA #2:

- To indicate "WAIT", transmit the characters "MOM"; - To indicate a BLANK, transmit the signal "SPACE"; - To indicate ADDITION, transmit the cross sign (+) - To indicate SUBTRACTION, transmit the dash (-); - To indicate MULTIPLICATION, transmit the letter X; - To indicate DIVISION, transmit the colon (:); or transmit the fraction bar (/); - To indicate PERCENTAGE, transmit successively the figure 0, the fraction bar and the figure 0; - To indicate QUOTATION MARKS, transmit the apostrophe twice ("); - To indicate MINUTES and SECONDS, transmit the apostrophe sign once for the minute sign (') twice for the seconds sign (");

Let's summarize the rules or conventions of International Telegraph

Alphabet #2. We've got to accept ITA #2 with the same calm and peace that we've used before in amateur radio. It's kind of like coming of age. As long as the FCC clearly states that this is what we have to use, we can assume that the days when we all could bang away on our venerable Model 15s and Model 19s and Model 28s are simply gone and forgotten.

Personally, I don't know anyone who's still actually using one of these old-fashioned electromechanical teleprinters. I'm sure these folks must be out there, especially outside the U.S.A., but I just don't know of them. So much for ITA #2 and Baudot/Murray Code.

ASCII CODE

In ASCII, as far as the characters you type being sent to your radio, basically it's a "you get what you pay for" situation. Whatever ASCII characters you put in to the terminal unit are what come out of your radio. That's the way it should be. That's the way it is. But how many people presently use ASCII RTTY on the air - besides W1AW in its RTTY Bulletins?

AMTOR CODES

In AMTOR, your data controller (assuming it obeys the FCC rules) complies with the Recommendations of the CCIR, the International Consultative Committee on Radio. These are Recommendations 476 and 625, the main "regulations" that govern SITOR in the commercial maritime radio service.

For AMTOR, the FCC has simply adopted and quoted all of these CCIR Recommendations in its Part 97. Simple and direct. Probably saved the FCC a bundle of think-time and dollars. Again we're slaved to ITA #2 in all its glory. And that's really all there is to AMTOR.

FORMATTING FOIBLES

Many of us "multi-moders" presently enjoy operating some form of digital "interface" device such a PK-232 or a KAM or a MJF-1278 or a PacComm PacTOR controller. Some of us are using one of the HAL devices for Baudot/Murray code, ASCII, AMTOR, PacTOR and CLOVER. If not, then we're using some plain "packet-only" Terminal Node Controller.

But no matter what we're using to generate our digital data words, we need to pay some attention to the ins and outs of exactly what our stuff LOOKS LIKE at the receiving end.

I wonder just how many of us have actually logged on to a packet BBS or an AMTOR/PacTOR APLINK system and READ OUR OWN MAIL?? You might just be a bit shocked if you do this!

In general, and especially in packet radio, I see three "formatting" problems:

1. Problems created by the way the user actually types his or her original message;
2. Problems created by the program being run on the computer, and the methods and means of terminal emulation;
3. Problems created by the way that the data controller actually formats the typed data and sends that message.

All these data controllers that use internal "firmware" already contain the software routines needed to put the data characters in some form of logical, rational order and format. In most cases, the original factory default values are adequate. They've been arranged to produce a properly-formatted text message in the receiving system when used with a "standard" terminal program.

In those "dumb" terminal units or controllers that depend on external software, the problems arise from Steps 1 and 2 only. That may simplify things a bit — we may need to attack only the typist!

For example, in AEA's PK-232 there are a number of commands that affect the way the text is formatted. I discussed them in great detail in an old issue of the former Digital Digest, so I won't bore you with repeating them.

The net result of all of this formatting aggravation is "wasted bandwidth". This is spectrum space that should be carrying data of some kind, but instead is being used to repeat and re-run data that can't be or hasn't been properly received, or data that is just plain unnecessary.

WASTING BANDWIDTH IN AMTOR

Let's look at some examples of "wasted bandwidth" in AMTOR and PacTOR. Here's the type of "CQ" call you can see sent in FEC any day:

```
RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY
RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY
CQ CQ CQ CQ CQ CQ CQ CQ DE W2JUP W2JUP W2JUP SELCAL WJUP WJUP WJUP CQ
CQ CQ DE W2JUP W2JUP W2JUP SELCAL WJUP WJUP WJUP CQ CQ CQ CQ CQ CQ
WJUP WJUP WJUP WJUP CQ CQ CQ CQ CQ CQ DE W2JUP W2JUP W2JUP SELCAL
WJUP WJUP WJUP SELCAL WJUP WJUP WJUP CQ CQ CQ CQ CQ CQ CQ CQ DE
W2JUP W2JUP W2JUP SELCAL WJUP WJUP WJUP ...and so forth for five, six or more lines
```

What's wrong here? Lots of "wasted bandwidth" is what's wrong!

1. Sending "RY" in AMTOR is a TOTAL waste! No AMTOR or PacTOR controller in the world can synchronize to data characters. The only thing required for a synchronization signal is the idle characters that your AMTOR/PacTOR controller automatically sends BY ITSELF.
2. How many times do we need to see "CQ" in an error-correcting mode?
3. How many times do we need to see our callsign in an error-correcting mode?
4. How many times do we need to see our SELCAL in an error-correcting mode?

The truth, in my opinion, is "very few".

I'd suggest that a more adequate and less wasteful CQ call in AMTOR or PacTOR might look like this:

1. {Turn on your transmitter and just LET IT SIT for five seconds!}
2. {Press the ENTER key three or four times here}
3. Type the following text:

```
QRA W2JUP CQ CQ CQ DE W2JUP (WJUP/MZUUPPP) CQ CQ
CQ DE W2JUP (WJUP/MZUUPPP) CQ CQ CQ DE W2JUP
(WJUP/MZUUPPP) QRR ARQ/FEC PSE KKK
```

4. {Press the ENTER key once or twice here}
5. {NOW turn OFF your transmitter}

The first thing to learn is NOT to start typing immediately!

Let the data controller SEND its built-in idle characters so that anyone on the channel can automatically synchronize to your FEC signals. Let the data controller "idle" for at least FIVE seconds before typing. That way, anyone monitoring the channel has time for his or her controller to acquire synchronization.

Next, type a carriage return and send your ID characters in some standard and legal format to mark the beginning of your FEC transmission:

```
QRA W2JUP
```

Then send two or three, perhaps even four lines of CQ call as shown. Three lines of CQ should be adequate, especially if you're calling directly on an AMTOR calling channel such as 14.075 or 21.075.

```
CQ CQ CQ DE W2JUP (WJUP/MZUUPPP)
```

If you're using a data controller that provides the CCIR Recommendation 625 seven-letter IDENTITY SELCALs, be sure to include that seven-letter group after your "regular" four-letter SELCAL. The reasons are simple but perhaps not obvious to the AMTOR newcomers.

It's easy to derive the four-letter SELCAL from anyone's callsign. But it's NOT that easy to come up with the seven-character identifying code because there is no amateur radio standard yet!

AEA does it one way. Kantronics does it another way, HAL may do it still another way. I don't even know what MFJ does. I DO know that you can't assume that anyone can "know" the seven characters you're using for your IDENTITY under Recommendation 625. But how do you determine what your IDENTITY is?

In AEA's PK-232s, just type your regular callsign into the MYIDENT command argument. The controller automatically translates your callsign into its IDENTITY. Once you know it, just append it after your SELCAL.

With the KAM, just type in your regular callsign into the MYSELCAL command argument. All of the identification/callsign parameters are automatically set using Kantronics' unique standards.

Now you're ready to wind up your CQ call. Type something relatively informative to your listeners. Let them know that you'll accept EITHER an ARQ or an FEC call. Use the proper "Q" signal. Then sign over to anyone else. Don't use the "+?" signal because it just doesn't DO anything here!

End your transmission with something that has meaning:

QRR ARQ/FEC PSE KKK

The "QRR" means simply that you're "ready for automatic operation" in either ARQ "chirpy" mode or in constant-carrier FEC.

Be sure to type a carriage return or two BEFORE shutting off your transmitter. Don't leave the other guy's cursor out there in the middle of his screen! It's a very bad habit and generates much confusion - especially if the other guy is using an electromechanical printer or teleprinter.

By observing these tips, you've sent an efficient "CQ" call with minimal wasted bandwidth. If nobody calls you during at least 30 seconds, then you call again, repeating exactly what you sent the previous time.

For maximum efficiency and minimal typing "discomfort", I recommend that you "record" your "CQ" calls as "macros" or stored texts and save them as convenient disk files.

PACKET PROBLEMS

If you're into packet radio (and how many aren't?), you've seen plenty of formatting problems, although you may not have recognized them yet. Let's look at a few.

THE UPPER CASE DUDE

This guy appears to be the most common offender. You've all seen this one. You've all seen messages and texts sent by folks who simply either don't know or don't care that UPPER CASE is really HARDER to read than lower or mixed case.

Some giant international companies (Siemens and several others) make their Baudot telex machines print in lower case because it IS more readable for the average person. If this were not true, then all of our standard reading materials would be printed in UPPER CASE. Maybe the Chinese, Japanese and Koreans are luckier - they don't seem to have CASE considerations.

I can think of only one reason other than a broken keyboard, for anyone with a data terminal or personal computer made during the past fifteen years having to type everything in UPPER CASE. If the user has vision problems, then he or she can and should use UPPER CASE if it's more easily read on their screen.

I'm truly dumbfounded by the number of folks in packet radio who insist on typing EVERYTHING in UPPER CASE all the time. Save for a few, rare individuals with vision problems, there's NO EXCUSE for UPPER CASE ALL THE TIME! Frankly, even though I'm not into Unix, I'd rather see ALL of the typing done in lower case than all in UPPER CASE! It's really a heck of a lot easier to read!

Sure, there must be a FEW of these rare, UPPER CASE terminals (such as the original APPLE-II computers) that produce ASCII characters, but normally they're not usually found in amateur radio any longer.

Typing everything in UPPER CASE is just pure bad form! It's like SHOUTING AT EVERYONE FOR EVERYTHING! Granted, UPPER CASE is fine for lending emphasis to a few words or ideas, but that's really where it should end - emphasizing portions of a statement. Anything else is just typographical baloney!

THE LONG LINES DUDE

This one is an absolute gem. This sin is usually committed by the packeteer who doesn't know the difference between the packet parameter PACLEN and the length of his or her typing lines. They are NOT the same.

PACLEN sets the actual number of bytes (or characters that YOU type) that appear in a single packet frame. The standard TNC default value of 128 bytes means that IF you don't type a carriage return in LESS than 128 bytes or characters, then your TNC will actually SEND your packet frame on the 129th character you type. In this case, the packet frame will have exactly 128 of your typed characters in it. If you've reset the PACLEN (as many folks do!) to 256 bytes or characters, then IF you don't type a carriage return in LESS than 256 characters, then your TNC will actually SEND your packet frame on the 257th character you type.

How many of you have terminals or computers with screens wider than 80 characters? Yes, I've seen some screens with 132 character spaces. But I've NEVER seen a screen whose width would permit a single line of such size!

What happens is very simple. When receiving text, the average terminal emulator or computer communications program will do either of two things:

1. The long line runs off the right-hand edge of the screen, or
2. The long line is wrapped in some broken, inappropriate form, with split words and strange paragraphing structures.

What do you do to prevent this? Simple — type a carriage return at some point just short of 80 characters! (We assume here that you DO have your SENDPAC character set to be the default carriage-return character \$0D or CONTROL-M.)

When you type the ENTER key to insert a carriage return at the right-hand edge of your screen, the text will be neatly formatted on the other station's screen or printer. It looks neat, it is neat, and most important of all, it's easy to read.

THE INDENT/JUSTIFY DUDE

I wonder just how many of you have seen the messages and texts where the writer has carefully, diligently indented paragraphs of text and uses right-hand margin justification (where all the characters are neatly arranged so that they line up vertically at the right-hand end of each line. I'm sure you know the kind I mean.

Formatting a packet message or a text file with an editor or a document type of word processor allows a lot of freedom to the writer.

But every NEEDLESS "space" character or byte is wasted bandwidth. Each time someone sends indented lines, imitating the stuff done in sending a mailed letter or a typeset book, the sender is wasting both time and data bandwidth. And that is a practice that should be strictly shunned in the average, run-of-the-mill packet message.

Indenting text is fine for letters sent by mail, for typesetting books, and for other non-radio communications. It's also acceptable when you're communicating via telephone modem. But on the frequently cruddy radio links, and especially on the unforgiving HF links, indenting and justifying text can be detrimental to efficiency. Some people think that indenting and justifying text can be next to a capitol offense!

(cont'd on page 26)

(cont'd from page 25)

Leave the fancy line formats and indents out of your packet messages whenever possible, UNLESS the indenting really is important or is intended to have a specific effect on the meaning of the message. Justify everything directly to the LEFT margin whenever possible.

THE JUSTIFICATION DUDE

The same thing is true for justification of the right-hand margin. In nearly all cases in amateur radio, justification of the text is done by inserting extra SPACE characters between words, to make each line the same length. Some text editors or word processors offer the writer the temptation to "justify" the text of the message. Many word processors or text editors "justify" the text by putting in the extra space characters in a semi-random fashion. Sometimes these extra spaces are inserted in groups of two to five or even more "space" characters.

This is another real pain in the whatsis!

What is the value of inserting great gobs of extra "space" characters into a message text simply to make all the right-hand line endings come out at the same point?

Don't justify texts that will be sent by radio UNLESS you're doing some project in which you're trying to send a so-called "finished" or "camera ready" piece of writing. And try to remember that the "good" desktop publishing programs will do their OWN justification when told to do so.

SOME THOUGHTS IN CLOSING

What we "say" and how we "say it" when we use today's digital amateur radio forms a definite opinion in the mind of the readers.

When someone sends a sloppy or poorly-prepared piece of message text, we can assume that either the sender is a newcomer, or the sender doesn't know what his/her stuff looks like, or the sender doesn't care what his/her stuff looks like. In any case, the physical appearance of text messages and files is an area that deserves increasing attention as our digital modes grow in number and become more popular.

When you see one of your local brethren and sistern making junque on your screen, take a few minutes to dump the screen to your printer if you can. If not, then save the text to a disk file and print it out later. Present the printout to the sender as a modest suggestion as to how things could be better. Take some time. Explain the situation with some patience. You'll never know how much appreciation you can win if you try.

73, Norm W2JUP



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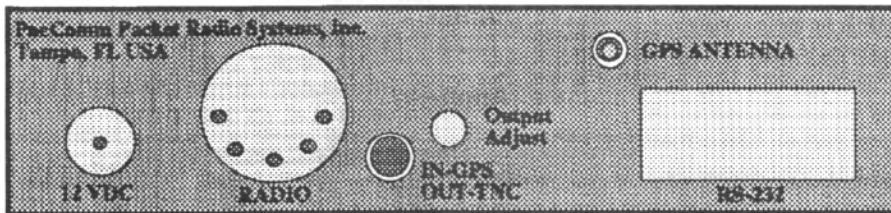
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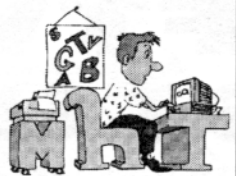
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The Last Word

from the Editor

Jim Mortensen, N2HOS • PO Box 596 • Somers, NY 10589

CompuServe ID: 71573,1077



those just getting interested CCW is ordinary CW at 12 WPM, so listen in! The PCW program allows use of any stable radio for decoding of signals when reasonable tuning care and patience is used."

Note that the calling frequencies have been changed to conform to the new "35 up" concept that seems to be the evolving standard for CCW contacts on all bands, including

WARC. Cliff and Bill are also attempting a link with G3IRM at 0500 GMT each Thursday at 7035 Khz. They report EU signals are strong in California at that time. Tune in.

Pete K4CFQ writes via the Internet "I must admit that I haven't been as active on the digital bands and I was a few years back. Once I became active on the Internet I couldn't take the slow speed of our packet system anymore. I do enjoy the Journal and the information it provides." Thanks Pete, but let's get back on the air as well. The NET is a wonderful tool but it doesn't replace the pleasure of a "real-time, virtual, interactive" keyboard QSO on some HF band or another. Having been away from that pleasure for over two months, I can tell you all about it!

The MAC is not dead! As one of the very early Mac owners who, while still in love with the Mac, gave it up several years ago in order to 1) be compatible with my consulting business clients and 2) have a portfolio of ham radio software. I discovered a crusader who wishes to help those Mac owners who have trouble locating the software, the forums, the help to run all kinds of ham software including TCP/IP. Jon N9OUM (rcoxadv@quake.xnet.com) works with Macs professionally so knows the territory. He said in a message, "I wish we could have equal use of both computers. That way some people would not get left behind like myself. I am mostly talking about the availability of ham software and the help to get it up and running. I work in a pre-press shop and about all there is going on now is Macs doing the electronic stripping. Now all I do is lay the 4-color Mac film into grid position and take notes as to version and color. The Macs do all the layering. How boring." He then lists three authorities for Mac users:

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WD1V\$WB1DSW.NH.USA.NA
jseney@aol.com
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John keeps a Macnet going and a hypercard stack with over 675 hams who use Macs.

Terry Stader KA8SCP
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adam@iag.tno.nl (files, etc)
pa2aga@pa2aga.ampr.org (ham radio TCP/IP)
Adam is the developer of NetMac.

Jon asked that we put selected Mac links into the IDRA Web Page. They will be up and running soon!

Will KN6DV worries about the lack of scope output on the P-38 board from HAL. And, after learning from the manufacturer that there was no way to get the output on the board (because everything is digital, not analog), started to look for suggestions on tun-

"It's in the mail." Peter TY1PS assures me the master disks for Express 3.0 have been mailed. To this moment nothing has arrived, and let me remind you this is the same post office that took seven days to deliver a Priority Mail packet from Goldenrod! Al W2TKU assures one and all that the disks will be shipped the very day he receives the masters. It would sound like this is the time to get your order into the hopper because the orders will be shipped in the order they were received. Prices are: \$25 for the new program for those who own V2.0, \$50 for first time purchasers. Don't miss out on this one! As a reminder, Express 3.0 requires a HAL PCI-4000/M or P-38 card, Windows 3.1, and DOS 6.0. The program runs Clover, Pactor, RTTY and AMTOR. Reviews are on the way!

When the antenna is in the attic, propagation is always lousy. Sure, the numbers are atrocious or were on those days when I bothered to check. But the Hustler dipole sitting about 12 feet above the rig in a house in a valley provides little beside reasonable reception of those few strong signals we hear on 20 meters these days. Oh yes, I am going to try during the upcoming contests, but my regimen of "at least one QSO each day" suffered a severe setback here. Fortunately, (or unfortunately depending on one's point-of-view) I have had more than enough to keep me very busy. Necessity is, as the old saying goes, the mother of invention. Thus, given a bit of time and friendly help from an expert or two, it is possible that I soon may be operating my Florida rig from Somers, NY via the Internet. One R7 up 20 feet in Florida is worth about 30 dipoles in the attic-in-the-valley! The plan involves carrying a computer south to the Board retreat in Orlando on August 12, driving with Al W2TKU to Indian Rocks Beach, installing the computer with a unit that allows remote power-up via modem and then flying back here for . . . trial and lots of errors. I do hope to do a bit of testing here beforehand! This isn't one of W6OTC's Dxpeditons, but the act of planning sure beats sitting here without a viable HF link! Other old saws come to mind as I think of this operation, like 'many a slip twixt the cup and the lip.' Hi!

The mail bag is heavy this month. A few moments ago an Internet message arrived from Milem LZ2MP, a very familiar call-sign to many of us. "Sorry you didn't hear from me for ages, but we had problems with Internet here for a very long time. But since July 10 we are back on Internet, so I thought I would drop you a line. At the new QTH I am living in a hotel so a lot of antenna problems. But it looks like I will get a permission for installing a homebrew HB9CV for 20 meters. So I do hope soon to be very active again in the contests. Hi!" Milem's Internet address is <lz2mp@npp.cit.bg>. Why not drop him a note? And speaking of familiar call signs, be sure to look closely at the graphics in the OS/2 article by Steve N2QCA. That KB2VO leaps out as always. Good to see that George is still keeping the bands busy!

Cliff W5HDO sends CCW news. "A number of successful CCW QSO's have occurred between WB6RIJ and W6HDO using both the deCarle program and the newer PCW program (available on the IDRA BBS). As well as ham contacts, a beacon has been put up on the experimenter's band on a frequency of 187.65 Khz in San Luis Obispo. The ID is: DE CUESTA TECHNOLOGY CCW 73 AR (and it run 30 seconds of 100mSec on/off . The message repeats every minute. With a signal now available in California, getting used to CCW has become easier. Making QSO's becomes easier as well. At 1900 Pacific Time on 7055 Khz (now changed to 7035) and 2000 Pacific Time on 3605 Khz (now changed to 3535) Bill WB6RIJ and W6HDO have been on. For



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ing. Worry not, Will. Next month Bill Henry, President of HAL, begins a two part series on the subject of TUNING. He will escort you and all the Digital Journal readers through the entire library of tuning devices. And, if that is not enough, Bob W1VXV will discuss the same subject from the standpoint of his experience with scopes, as a DX-er and contester. This will be a rare combination of technical and personal perspectives on the same subject. Enjoy it (and I do hope you will solve your problems).

Danny G3XVR outlined a new mode in his note. This extract should explain it enough for serious discussion to begin. Or, contact him at Ivy End, Framilode, GLOUCESTER GL2 7LH, England. As mentioned before Danny is a professional in the business we call a hobby—radio communication.

"Coherent CW is good, but why not transmit a coherent key-up tone 10 Hz away? The tone detectors for CCW have deep nulls in their response every 10 Hz away from the tuned frequency (based on a 100 MS element length). This gives a positive indication of key-up rather than relying on determining the noise threshold for the detector. This is a two channel version of the commercially available Piccolo modulation. The occupied bandwidth is still only 20 Hz and is effectively coherent FSK with a 10 Hz shift.

"The other tone could be 1, 2 or 3 Khz away, or even on another band so long as it was an integer multiple of 10 Hz away. This would reduce the effects of selective fading and narrowband interference which might otherwise impair communications.

"CCW requires accurate timing information. This can be achieved if we select, for example, two tones (mark and space) each of which are 50 MS long and 20 Hz apart, then the following could apply: MM=dot, SS=dash, MS=key-up and SM=invalid.

"Key-up would result in a string of 50 MS tones (MSMSMSMSMS) which could be used to provide time and frequency information. Because a dash contains no more information than a dot there is no reason for it to be three times as long. And since we can distinguish the transition between dots and dashes there is no reason to send the gap between them either. Based on this, it is possible to achieve about 36 WPM with 100 MS tone sequences. Data would not be recognizable as Morse, would be generated directly by a computer or by the DSP chip in the modem. Error detection and correction could be incorporated into the waveform.

"It is possible to introduce 180 degree phase changes to the transmitted waveform, controlled by a pseudo-random sequence. This produces a direct sequence spread spectrum waveform which can be limited to a 3 Khz bandwidth. Theoretically this should be capable of providing a further 36 dB of signal to interference rejections (and would also allow several QSOs on the same channel!).

"The development answer obviously can be found in DSP. I have acquired a TI TMS320C50. If anyone out there wants to exchange ideas or can help me with the 'C50' code, please let me know." Danny's packet address is G3XVR@GB7GLO.#46,UK.EU (or so he thinks!).

Peter TY1PS mentioned another interesting piece of freeware. It is in the SoundBlaster forum on CompuServe. The program is SPECGRAM and can be found in ZIP files named FREQ3 or FREQ4. It's loaded with bells and whistles and gives you the opportunity to turn your computer screen into a scope (well, sort of).

Paul W4ZB will write more about the Internet, but not this month. He feels that working for a living is still important enough to devote several hours each week to the task (and even give it a high priority). This 'attitude' has taken him out of town several times in the last month, so we both felt it would be best to wait until the September issue for part three. Besides, there may be new and interesting developments by then. He continues to make it one of the best Pages on the Net.

The ARRL Digital Communications Conference takes place

this year at Arlington, TX (minutes from the DFW airport) on September 8-10th. The full text of the announcement is found <<http://www.tapr.org/tapr>>. This year the conference is co-hosted by TAPR and Texas Packet Radio Society (TPRS). Papers are due in Newington by July 21 (to Maty Weinberg). Contact him at ARRL for the requirements. Reservations at headquarters hotel, La Quinta (800 531 5900), may be made at a special rate up to August 25. Be sure to indicate you are attending the conference. The hotel provides transport to and from DFW. Contact TAPR (817 640 4142) if you wish brochures for your club.

Winding down to September. Next month we begin the series on tuning devices, well worth the price of admission. Also more on the Internet by Paul W4ZB, more on Win95 by yours truly. Crawford WA3ZKZ continues what will be a monthly look at the amusing or puzzling side of this wonderful hobby of ours. Glenn W6OTC counts us down to his sojourn to LH. Jay WS7I returns to the fold as a monthly contributor! His assignment is that of roving commentator (who commentates better than Jay, particularly late at night in Dayton?) and he has license to look at any subject, product or service relating to digital communications. And the contest season begins in earnest with the CQWW late in the month. 'Twill be a good month to be a digital keyboarder.

The Digital Journal needs more help. We need writers, for example. We also are looking for a few hams interested in or knowledgeable about electronic publishing. We need an editor for the 'International Scene.' We need correspondents from Asia, Oceania and South America. Drop me a note via CompuServe or via the Web Page (or, if worst comes to worst, via the mail) if you would like to talk more about some of these opportunities. Be famous. Be on the Digital Journal masthead!

"Gee, it's nice to have Hal WA7EGA back on these pages."

73 de Jim N2HOS sk.

(Cont'd from page 11)

are now in the process of expanding the services and improving the system with better equipment and radio sites. Just this week we used the system to send priority traffic during hurricane Allison. During a hurricane drill planned for later this month we may link our system up to the SEDAN (Southeast Digital Network Association) which is a wide coverage packet radio keyboard to keyboard for emergency communications. If you have any questions about our network or any advice or information to help us improve our network, I sure would like to hear from you. Send NTS message to zip 32257 at NTSFL 904 733 8307 and BBS messages via @AC4WZ.#NEFL.FL.USA.NA or Internet barbers@freenet.fsu.edu 73, AR

Hi Steve: Many thanks for the rundown on the Florida Crown Digital Network...looks great to me! I do have a few questions, though.

Does the FICADA link reach as far as southern Georgia (reliably)?

Is there any sort of precedence in the systems? (During emergencies do the routine things still continue or are they suspended for the duration of the hurricane or whatever).

Have you given any thought to future types of operation? I believe that the guy mobile on VHF/UHF packet with a TNC and radio will be a key player in the future. It may happen that, as time goes by he will need a video camera of some sort which can put out a digital picture (maybe even TV) and transmit that to WX4J for instance, for relay to the SEOC in TLH. This would give those folks an almost real-time "real look" at weather conditions, water levels and/or damage information after the disaster has passed.

I believe the bottom line is two-fold: first, the day of yelling into a microphone to pass such information is about to be passed by in favor of on the record written reports. Second, "a picture is worth a thousand words"—time will tell, but these are interesting possibilities.

Nick N4SS

GPS (NMEA) Compatibility and G-TOR™ Monitoring in Kantronics KAM Plus

by Phil Anderson, WØXI

Due to customer requests, Kantronics has recently added two firmware features to the KAM Plus and KAM Enhancement board: GPS compatibility and G-TOR monitoring within the unit without separate software. All new units shipped from the factory will include these features, and current users may order an EPROM upgrade.

The use of the Global Positioning System (GPS) for amateur radio, recreational, and commercial activities is increasing in popularity. By combining a portable GPS unit, a KPC-3 or KPC-9612, and an FM radio, amateurs are already tracking local events, such as bike races, walk-a-thons, and transmitter hunts. Remote stations, watching the progress of stations equipped to transmit their position, do so by receiving packets and displaying them on maps on their computer screens using mapping software.

Tracking events outside of the local community has gained popularity as well. Since transmitting and receiving from longer distances requires HF capabilities, we've added GPS commands to the KAM Plus and KAM Enhancement Board. These GPS capabilities are highly advanced for maximum performance and flexibility, yet they are very easy to use. All our GPS-capable units offer multiple string parsing (users select as many as four GPS NMEA data strings); storage of outgoing data in tracking buffers accessible via the TNC's mailbox (GPS data can be stored for later retrieval); time-slotted location broadcasting based on the GPS clock, so users specify beacon start time and amount of time between beacons (multiple stations report without collision); and remote access so

the system operator can reconfigure the GPS unit from a remote location.

In addition to adding GPS commands, we've made our popular G-TOR mode an even better digital choice. While monitoring G-TOR QSOs has always been possible in a variety of ways such as switching to GMON (a G-TOR monitoring program) or using third-party software to call up GMON from within the terminal program, customers have asked that we include monitoring within the KAM Plus rather than via a separate communications program. These other alternatives still exist, and the commands to do them have not changed; however, monitoring G-TOR is now more convenient and much more high performing.

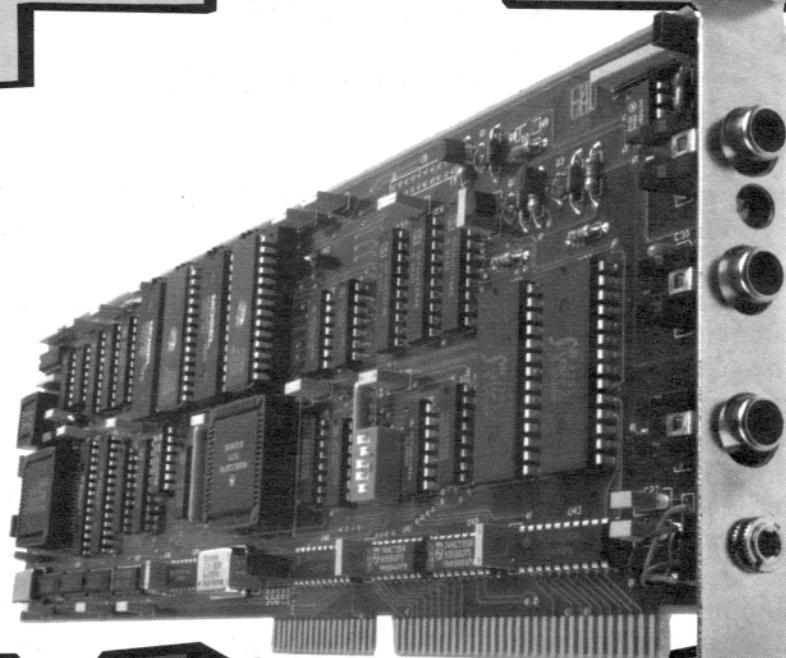
Additionally, the implementation of G-TOR monitoring within the KAM Plus and KAM Enhancement Board was done cleverly. After carrier detect drops, the program goes back and scans the two seconds of data stored in memory, determines data speed, 100, 200, our 300 baud, and looks for good G-TOR frames. Good data or parity frames are searched for first. If none are found, then the firmware attempts to combine the last two frames, data and parity, using the Golay data recovery algorithm.

As a result, the version 8.0 firmware for the KAM Plus and KAM Enhancement board have added eight commands and modified two. These new commands add GPS (NMEA) compatibility and G-TOR monitoring. Versions prior to 8.0 can be upgraded by replacing the existing EPROM with the version 8.0 EPROM.

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