IN THIS ISSUE

Radisson Inn Dayton

IDRA President Paul Richter, W4ZB speaking at the Dayton Digital Journal Dinner . . . . more Dayton highlights inside

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President's Corner

A view from the top

by Paul S. Richter, W4ZB

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

The Dayton Hamvention in May is now over, and it was very enjoyable to see and meet the many of you who were able to attend. Both the DX/Contesting and the Digital Journal Dinners on Friday and Saturday nights were well attended, and the hospitality suite was open until well past 2:00 AM on one of following mornings. The IDRA booth was busy all three days.

Paul, W4ZB

The IDRA Board and Membership elected Ron AB5KD, and Glenn W6OTC as new directors. Glenn becomes the new Treasurer and business affairs manager of the IDRA, but he extracted a promise that these new duties will not conflict with his upcoming DXpedition activities in TY and VK0. Ron is taking over all responsibilities for IDRA's activities at Dayton next year, including the two Dinners. Dale, W6IWO will assist Ron (AB5KD has an amazing amount of energy and assures everyone that these new responsibilities will not crimp his contesting activities!).

The IDRA Board also nominated Neil ON9CNC, Ray WF1B, Don AA5AU and Arie 4X4UO as new directors. They will be duly elected either by mail ballot or at the next membership meeting. In addition to everything else, Neil and Don will be working very closely with Jim N2HOS as new Associate Editors of the Digital Journal. Ray, along with his XYL KA1JGB, will be taking over the day to day operations and development of the Software Store. All software and bookstore

ordering, however, will still go through IDRA's business address and telephone/fax numbers in Florida. Arie will bring additional international perspective to the Board, including insight into the upcoming 1997 ITU International Radio Conference.
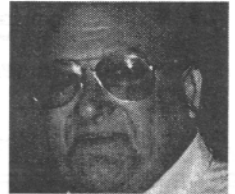
Ron, AB5KD

Everyone on the Internet should look at the new Digital Journal WWW site at <http://www.n2hos.com/digital>. Jim is doing an extraordinary job in getting very current materials posted each month, including up to the minute DX materials from Don AA5AU, in addition to all of his responsibilities as Editor of the Digital Journal. The IDRA WWW site at <http://www.iea.com/~adrs> which is continuing has hyperlinks to this new site.

One item which I heard talked about a lot at Dayton (and elsewhere) recently concerns the 1997 ITU International Radio Conference (see other news about this in Last Word). It appears likely that the long-standing International requirements for CW tests for HF amateur radio licenses will be eliminated or downgraded. CW, the original digital mode, is now obsolete for commercial and military uses, although CW continues to be a very enjoyable amateur radio mode for those who with sufficient interest to become proficient. I have no doubt that CW will continue to be a popular mode in ham radio for many more years regardless of any regulatory change.

We now hear the argument the CW requirement for HF licensing is keeping potential newcomers out of the hobby. Many youngsters, other potentially good ham operators and others with technical skills who are all very interested in the hobby simply cannot motivate themselves to learn CW which they regard as an anachronism. So this certainly seems to be true. And it explains the "graying" of the HF ham population.
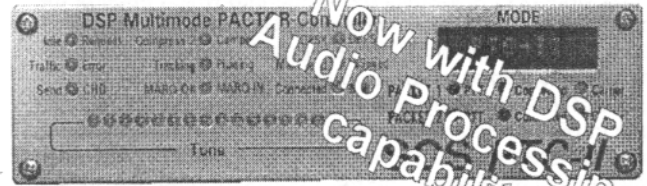
Glenn, W6OTC

PTModem

A universal Packet/Pactor file transfer protocol

by Robert W. Lewis

P.O. Box 522 • Garissonville, VA 22463-0522

Compatibility problems limit the transfer of binary and graphics files between Pactor and packet stations. Text files are generally limited to the printable characters between ASCII 32 and 127 whereas binary and graphics files can contain any of the 256 characters. Pactor and packet are 8-bit protocols which can transfer all 256 characters so you would think all would be well. Unfortunately many TNCs and multimode controllers utilize several of the ASCII characters for control functions between the controller and the terminal software. As a result, you cannot directly send those characters over the link. To make matters worse, all controllers do not utilize the same characters. Only printable characters are guaranteed to make it over the link without causing problems at one end or the other. There are several protocols currently in use but they tend to be a part of the terminal program in which they are implemented, requiring both ends of the link to use the same software - not very universal.

PTModem is my attempt at providing a universal file transfer protocol for Pactor and packet. The key word here is "universal". Converting all characters into the printable range is admittedly not the most efficient way to transfer data but it is the only way that is fully compatible with nearly all controller and terminal software combinations. If you can transmit a standard ascii text file then you can transfer binary and graphics files via PTModem.

PTModem relies upon the error detection and correction provided by the pactor and packet protocols, rather than duplicating these functions.

The PTModem protocol uses three switch characters (ASCII 125, 126, and 127) to identify the range into which each of the original file characters falls. The original character is then shifted into a relative position in the 32 to 124 range. Switch characters are only added when an original character falls outside the range of the preceding character, much like the figures shift function in RTTY (once shifted into figures you can continue to send numbers without using the shift key again). This improves the efficiency of the file transfer for graphics or other files which tend to have a large number of repeating characters. The worst case scenario would be a file in which every character is in a different range than the preceding character. This would cause every character to require a switch character so the size of the file would double. The best case is a standard text file in which all the characters are in the 32 to 124 range. Only one switch character would be needed for the entire file and the file size would remain nearly the same as the original.

The PTModem protocol includes a unique, readable header and footer. These can be used to visually spot the beginning and end of a file in a terminal's scroll buffer or to implement an automatic file save (similar to Zmodem) in terminal programs which have that capability. The header design permits PTModem to be implemented as a fully automatic function in a new terminal software development or to operate "off line" and outside the terminal program using the DOS based PTPACK and PTUNPACK utilities provided. When PTModem is included as an integral part of a terminal program all the operator needs to do is activate send and select the file to be sent. The file type is unimportant because PTModem will handle all types including text, binary, and graphics automatically. At the receive end of the link the terminal program will automatically save the file to disk without operator intervention. If the sending terminal program does not have PTModem implemented internally then the operator uses PTPACK to create a PTM file which can be sent as an ordinary text file. If the receiving terminal program does not have PTModem implemented internally, the operator saves the received PTM file to disk and then runs PTUNPACK to recreate the original file.

PTPACK.EXE, PTUNPACK.EXE, the Turbo Pascal source code, and all the details of PTModem are included in the self-extracting archive PTM30.EXE which has been left on a number of bulletin boards around the country and sent to the IDRS to be placed on the Internet FTP site. There are no fees for the use of PTModem, the utilities or the source code. Perhaps PTModem can be a starting point for a universal file transfer protocol.

The *DJ* WebSite

<http://www.n2hos.com/digital>

by Jim Mortensen, N2HOS <jem@n2hos.com>
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Navigating websites is an acquired art despite all the clever attempts to make it completely intuitive. I learned the hard way, about a year ago. After finding a particular site (with some difficulty) I was confronted with this beautiful welcome page. It was mostly a picture with the trademarked logo across one corner. There were no directions, no obvious places to click, no arrows. After studying this for a moment or two, about the time I concluded this single picture was the entire content of the site, I simply double clicked on the picture. I had hit the secret code! Up came the standard page of introductory remarks, index and the obligatory tour guide. It wasn't worth the wait—for I learned another lesson at the same moment. A website that isn't updated regularly is of less value than yesterday's newspaper!
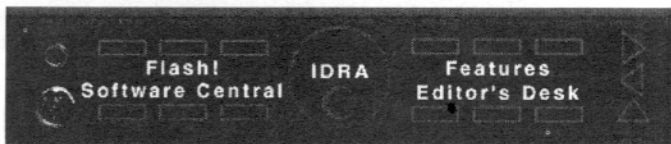
I vowed that the Digital Journal site would not make these mistakes. So far, so good. In fact, the damned site has become like a parrot sitting on the keyboard, saying "update me, update me, update me." Even when there is nothing to update! Unfortunately, that's the way it has to be if it is going to be worthwhile.

Despite the attempts at simplicity, there seems to be some question about how best to navigate the site. Well, there is no best way. But if you look at the radio on the welcome page (figure 1), there is a certain logic to the setup. Click any one of the words and something happens. Click 'Flash' and you are transferred to the late

SQUAWK BOX
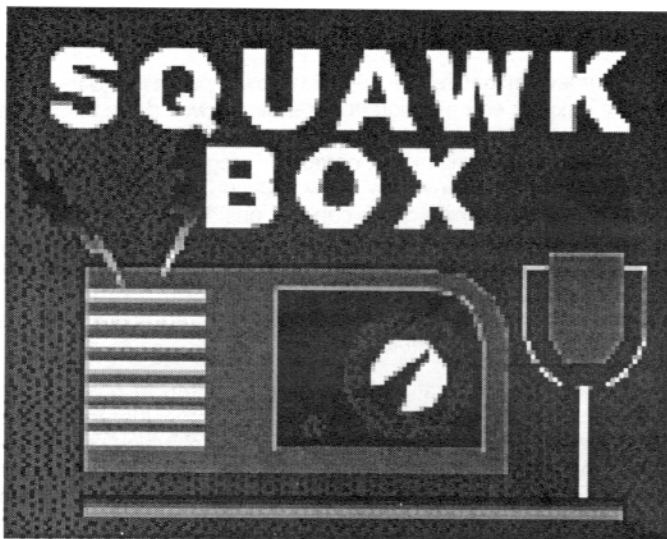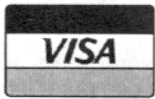
news page. Click 'Features' and you are off to browse the excerpted columns from the Digital Journal offered to the world at large. Or choose 'Editor's Desk' and learn what be on the mind of any one of the three editors of the Digital Journal (N2HOS, AA5AU or ON9CNC). Click 'Software Central' and you are one mouse click away from downloading the update or demo you need. Within most of these pages are obvious links to other pages or photographs (don't miss looking at the photogenic staff!).

The same words appear on the line below and they all produce the same result, save the 'IDRA' button. Click that one on the radio knob and you go to the IDRA site. Click it in the line below and you transfer to the IDRA news section of the Digital Journal site. Clever, we web authors. Hi!

Move further down the page and find that the highlighted text produce similar results. But, wait a minute! You went right by the 'Squawk Box' graphic (Figure 2) and didn't click it. Didn't you know that would take you to a new feature, one where you can read someone's opinion on some subject or other—and, more importantly, voice your own? There is a convenient form there, too. Type in your name and E-mail address, and your comments, click the button and away the mail flies. Try it!

For newcomers, further down the page, there is a link to the 'history' of the IDRA and Digital Journal, another about the authors and editors of the Journal and, finally down there at the bottom (near the visitors count) you will see a mail box icon. Click it and you have another way to send a note to the Journal, on any subject from membership application/renewal to just saying hello. Try it, too.

The Digital Journal page is an editorial extension of the magazine itself. The Journal will not contain everything posted on the web, nor will the Internet carry the full magazine. At least not until there are radical changes made in the way magazines are distributed and paid for. Enjoy it. Visit it often. And let us hear from you in the Squawk Box.

Operating schedules:

35Khz up on all bands - plus/minus 1Khz

AK0B - Low power beacon on 7030 intermittently but frequency may be changed

VE3RAT - Low power beacon believed to operate continuously on 18.101

G3IRM - Tuesdays at 1900z on 10135 - Thursdays at 1900z on 7035 - Saturdays and Sundays at 1900z on 14035.

VE3OXX - Sundays at 2000z on 7033

W6HDO - Thursdays at 0500z on 7035 and at 1830z on 14035.

W6HDO or **WB6RIJ** on Saturdays and Sundays at 1900z on 14035.

******

The 73 kHz band

UK amateurs can now apply to use a new low frequency band extending from 71.6 to 74.4 kHz. I wonder how many will use it and what sort of transmissions will be used.

CCW notes

As noted above there is now another low power beacon operating intermittently. Stan Wilson says that the beacon has been in operation and that he has had reports from 22 states and from Canada all received as CW. He hopes to have the beacon running again and possibly to operate it on the 10 mHz band as well next time using the PCW program. John Stockley G3FMW telephoned me on the 7th May to say that DJ3KK was calling CCW but getting no replies. He was heard again the following Thursday and, I believe, has also been heard by PA0OCD. Incidentally, Paul PA0OCD can often be heard at 1900z on Tuesdays and Thursdays on 7035. Unfortunately I was busy re-routing various cables and was unable to call DJ3KK on either occasion.

I am now back on my schedule so hope to find DJ3KK in the near future. Ernst DJ7HS, the author of the PCW program, has been thinking of using the SoundBlaster card for CCW and has made a few initial tests. As many stations now have the SoundBlaster card it sounds like a good idea and may even encourage more stations to try CCW if they do not have to provide additional hardware. Ernst also tells me that Manfred DJ3KK had some problems with the de Carle board so decided to design an interface for himself. This could become a new source of CCW hardware. The following stations are all reported by Ernst as having the PCW program - DJ2ZV, DJ3KK, DJ7HS, DK6JU, DL1BT, DL2AD, G3IRM, HA5KS, K4VQ, OE6WTD, PA0OCD, UN7BWG, WB6RIJ and WB9FLW.

Morse decoding

The recent survey of Digital Journal readers revealed that after RTTY readers prefer CW as a second choice ahead of Pactor. This has prompted me to consider including CW in these notes. It is now almost impossible to fill a column writing about CCW

alone as there is little in the way of new hardware and software and, although there are a few stations able to use the system, there is still little activity.

My interest in Morse decoding started 50 years ago when I was learning the code. I did not know anyone who could teach me and the only equipment I had consisted of a Morse buzzer and a very scratched 78 rpm gramophone (phonograph) record which I found in a secondhand shop. The problem was how to decide if I was sending correctly and how to confirm that I was reading what was on the record correctly. I then remembered seeing a Morse siphon recorder in the control tower at the R.A.F. station at Basra, Iraq where I was a meteorologist. The recorder consisted of a variable speed motor which drew a paper tape along under a stylus. The stylus was a narrow tube one end of which rested on the paper and the other end dipped into a bowl of ink. The stylus was attached to a relay. As the relay was energized the stylus moved from side to side drawing a wiggly line on the paper. Hence the other name for the device - the undulator.

I decided to build one. The mechanics of mine consisted of an assembly of Meccano (a toy construction outfit), the relay was made from an old door bell and the stylus was very modern consisting of a ball point pen refill. The paper tapes were a bit of a problem which was solved by cutting adding machine rolls into sections with a hacksaw. This wasn't very satisfactory as the rough edges tended to catch in the paper channel so I built a cutter consisting of a razor blade mounted vertically past which the rolls of paper were drawn so slicing off one long ribbon at a time. It worked well and greatly helped me with my code learning.

After these initial efforts it was many years before I took up the decoding challenge again. An article in Ham Radio described what was called an automatic radiotelegraph translator and transcriber or, more simply, an automatic fist follower. It was written by W7CUU and K7KFA and laid down the basic principles for Morse decoding. If I remember correctly it used about 40 TTL devices and the print out was on a small paper tape printer. I was younger in those days and the thought of duplicating, not to say improving, the design was not quite so daunting as it would be now. I couldn't get hold of a paper tape printer at a reasonable price so decided to build a visual display unit.

My complete decoder consisted of over 50 TTL and other devices even though I had simplified the original design considerably by using medium size integrated circuits. One example was the use of multiple dividers such as the CD4040 in place of the simple 7490 devices used in the original. I can't remember now how the original design worked but I do not think it included a microprocessor - mine was based on the 8080. Much help was available in the 8080 Bugbook and, thanks to the generosity of Jon Titus (KA4QVK in those days and now KZ1G) who gave me the software for the MMD-1 programmer which he had designed, I was able to build the programmer and write the software for the decoder. We used octal programming in those days! The completed decoder caused quite a stir when I demonstrated it at clubs in the area and formed a series of articles in the UK's Short Wave Magazine.

To show how good it was I used audio tapes for the demonstrations made with an audio oscillator - it would not have been quite so impressive if I had used Morse from a receiver. What did annoy me a little was that, although the series provided me with a reasonable financial reward for my efforts, the tax man wanted his share of the proceeds and I had a long fight with him to get him to change his mind pointing out how much it had cost me in components to build the design. Somehow I managed to make this figure more than the amount I received from the publishers. As a result I now only write articles without financial reward!

Future suggestions for the column

This somewhat long introduction has now brought me to the point where I ask for co-operation from readers. I would like to explore the subject of Morse decoding further in this column and ask for any information available on computer programs and interfaces for this purpose. I have one or two which I have tried though I have not yet found one which can be considered anywhere near perfect. I think the two best ones are the BMKmulty program by G4BMK which is comparatively expensive and needs a terminal unit and one called CW200 by W0NFU which also needs an interface. This interface is quite interesting and could form the basis of a review in a future column.

There are also several early programs written in basic which are somewhat primitive and need not be considered. I have also seen programs, mainly of German origin, which use a simple comparator as a terminal which is easy to build and seems to work well but somehow I still feel that a properly designed interface should be better. Perhaps this is because I have been brought up on hardware designs and still wonder about the efficiency of replacing hardware with software. There is still the possibility of improvements with *dsp* designs though I have not yet seen a complete CW system using this method although there are some around which operate as audio filters and could form the basis of a complete decoder design.

All contributions will be gratefully accepted and I will do my best to review them if there is sufficient demand. Any other suggestions for the column are also most welcome.

Software Review

Review by Glenn Vinson, W6OTC
36 Presidio Ter • San Francisco, CA 94118
e-mail: mgvinson@crl.com

Loq-EQF:
Software in the Best Tradition of Amateur Radio

When simple database programs for personal computers were first available, I (like many others) tried my hand at creating my own automated logging template using the venerable dBase software. Alas, like most, I found that moving beyond merely replicating the simple appearance and functionality of the standard logbook required more programming knowledge than I have.

Fortunately, Tom Dandrea N3EQF has that knowledge and provides, with his Log-EQF program, a solution for those of us having a need for a flexible and customizable logging, plus automatic calculation of beam headings, plus *tnc* control, plus rig control, plus PacketCluster, plus label making, plus DXCC/WAS tracking, plus RAC CD-ROM lookup, plus contesting, plus CW keyer operation (using the same keying adapter circuit as NA and CT)—plus more. This is a DOS based program at an exceptionally reasonable price.

The design of this program, first introduced several years ago, gives all of the basic tools for a comprehensive computer interface with an amateur radio station, but invites some degree of customization for the particular purposes most important to each user. And is in my view an excellent example of a product designed in the best traditions of amateur radio. Those traditions encourage experimentation with advanced but open-ended products, not burdened with extraneous 'features' and

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┌─────────────────────────────────────┐ ┌─────────────────────────────────────┐
│ CALLSIGN → ·                         │ │ HIT ANY HIGHLIGHTED KEY...           │
│                                      │ │ ══════════ Log-EQF 8.00 ══════════   │
│ REPORT SENT →                        │ │ FUNCTION: AUTOMATIC ENTRY            │
│ REPORT RCVD →                        │ │ OPERATOR: WA8DXD                     │
│                                      │ │ HELP SCREEN: <Alt-H>                 │
│ NAME →                               │ ├─────────────────────────────────────┤
│ CITY →                               │ │ <F1>  Save QSO 304                   │
│ STATE →                              │ │ <F2>  Log Start Time                 │
│ COUNTRY →                            │ │ <F3>  Edit Log: LOG                  │
│                                      │ │ <F4>  Clear Screen                   │
│ FREQUENCY →                          │ ├─────────────────────────────────────┤
│ MODE →                               │ │ <F5>  Callsign,Prefix Info           │
│ POWER LEVEL →100                     │ │ <F6>  Notepad Entry                  │
│                                      │ │ <F7>  Run Another Program            │
│ TRACK Z▶                             │ │ <F8>  Quick View Logbook             │
│ INFO I▶                              │ │ <F9>  Recheck Prior QSOs             │
│ QSL STATUS →                         │ │ <Esc> Main Menu                      │
│                          ─┤ <Alt> Keys ├─                                   │
│  ┌── BOTTOM WINDOW ──┐   <H> Help Screen      <L> Label Print               │
│  │ <0> Last DX Spot  │   <T> ID Timer         <B> ScratchPad                │
│  │ <1> TNC Monitor   │   <K> CW Keyer         <G> Grid Square Lookup        │
│  │ <2> Freq / Mode   │   <J> Prior QSOs       <E> External Control          │
│  │ <3> Last 6 QSOs   │   <W> WAS Report       <4> Rig Switch                │
│  └───────────────────┘   <X> DXCC Report      <#> TNC Macro #5-9            │
└─────────────────────────────────────────────────────────────────────────────┘
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EQF Main Logging Screen shown with alt-key functions display which can be toggled "on" and "off"

complications; and are developed by fellow amateurs at a relatively modest price. In the software field, the best amateur products are modified frequently in response to user input and allow users fairly wide latitude in configuring them for his/her particular needs. Revision 8 of Log-EQF is such a product.

While at Dayton this year, I spoke briefly to Tom at his booth, but the number of users and potential users waiting in line behind me discouraged much conversation. They wanted to speak to Tom about their personal configuration preferences and this prevented me from having any detailed discussion about the program. Clearly, Tom has already developed a large and devoted following.

As noted above, Log-EQF is a DOS based program (running on any PC with at least 512K of memory), but it runs fine as a DOS application in Win95. The setup routine in straightforward and comprehensive, with variables like station location, rig type, date/time format, screen colors, multiple logbooks, RAC CD-ROM (and other popular callsign databases) supported. Entering a callsign in automatic logging mode retrieves the available data from the callsign database in use and laces it in the appropriate fields (name, city, state) on the screen. Time and date are supplied by the computer while frequency and mode are taken from the radio interface.

One minor quibble I have is that 'IRQ sharing' is not supported. As you old DOS users now, standard COM1 and 3 and COM 2 and 4 share IRQs on PCs. When your computer is loaded with at least one *tnc,* a modem, a rig interface and one or more other serial port devices, IRQ conflicts often become a problem. Because data generated by rig interfaces is so small, some logging software (like KE6FV's AutoOp) disable the interrupts at the COM port chip register level, enabling the use of, say COM1, for the *tnc* and COM3 for the rig interface. The very brief data bursts from the rig do not, as a practical matter, interfere with the *tnc.* However, there are hardware solutions to this problem, such as the 8 COMport boards with selectable IRQs, which many PacketCluster sysops use with great success. Since Log-EQF supports custom IRQ specs, this solution works fine with it as well.

When controlling a *tnc,* Log-EQF, in the interest of overall simplicity, does not support host mode. Rather, the computer is used as a dumb terminal. Again, no problem; just remember not to leave your *tnc* in host mode on exiting another program. Only one *tnc* may be used at any time, permitting, for example, either RTTY or PacketCluster, but not both simultaneously, to be displayed in a window in the bottom quarter of the screen.

Log-EQF automatically optimizes the performance and uses all EMS (expanded memory) available, unless these functions are specifically disabled. Here, the difference in memory available if the program is run directly in DOS versus a DOS window in Win95 is quite dramatic. On my machine, with 32mb of ram, running Log-EQF in Win95, I can log 'only' slightly more than one million contacts. Whereas, if I boot directly into DOS and run the program there I can log several times more contacts. This is a heavy duty logging program any way you chose to run it.

In the version I tested, the program has 12 different contests (including DXpedition mode) pre-configured from Field Day to the ARRL International DX contest to the Pennsylvania QSO Party to BARTG RTTY. It has the capacity to handle 12 more user-defined contests. A caveat (per the manual) is that scoring for user-defined contests may not be entirely accurate. Scores should be checked and edited to reflect the specific rules involved.

The DXpedition mode is of particular interest to me. The CY0AA operation in June will provide the first major field test for the logging and labeling functions of Log-EQF. Also, the backup, restore and multiple log merge functions will be put to the acid test. Based on my experiences with the program during the past month, I expect the program will perform well.

Log-EQF is a versatile, all-purpose computer-based logging and rig control system. Its broad range of functionality is designed for a different market and use than the specialized programs that incorporate logging for particular areas of digital activity. If you work only RTTY contests and/or RTTY DX, you will probably want to use RTTY by WF1B . If you are a Clover enthusiast, choose Express by TY1PS. If you need a fully functional, general purpose, multimode, logging and contesting software product, try Log-EQF.

The full program costs $39.95. You may buy it from the Digital Journal's Software Store or direct from N3EQF at 396 Sautter Drive, Coraopolis, PA 15108. His CompuServe address is 71561,1441. Note that you can buy the Junior version of the program (complete except for the radio and TNC interfaces) for only $25. This program is a very good buy at those prices.

JAVA and Ham Radio

How to work 'em and more out of this world info

By Steve Holton, N2QCA • 1113 Sunset St • Yorktown Hts, NY 10598
Internet: slapshot@westnet.com

Less than a week after returning from that annual Ham radio "booster shot" at Dayton, I found myself once again headed West. This time it was toward San Francisco and JavaOne - Sun Microsystem's first Java Developers Conference. While the 6000 attendees were a mere shadow of a typical Dayton crowd, it was certainly an impressive number for a first time event - safe to say it was larger than the first Dayton! Now, of course, Java in it's liquid form has had a hallowed place in many a Ham shack since the very beginning. How could one get through those final contest hours, or wait for the that elusive DX station in the middle of the night without it? So fill up your coffee mug and sit back and find out a bit more about a new digital witch's brew called Java. I'll give you a little taste of what Java is today. The puns and coffee metaphors are getting out of control in this field - I came back from the conference with 7 different Java mugs and saw products with names like HotJava, Latte, Arabica, JavaBeans, Cafe, and even a hot product called Krakatoa - you may need to consult your atlas to see where this came from! But what I would really like to do is to have you join me in some pure speculation where this might all lead in terms of Ham radio in the future.

Today - Java and the World Wide Web

Today the principal visible focus of Java is found on the World Wide Web. Java burst into public view not quite a year ago. developed by Sun Microsystems with the goal of developing software for consumer electronic devices. The project was a bit ahead of the marketplace and was withering until it was realized that it was a perfect fit for the Web. As they say "and the rest was history" as it has met with phenomenal developer acceptance which is just coming to the community Web users. I'll return to the original consumer electronic marketplace that Java was aiming for, as that's where I think it's have some very interesting effects of Ham radio in the future.

What's happening today with Java is the fact that is being used to make Web pages more alive and interactive. The classical Web page is really quite static - you go to at it just sits there and looks at you while you examine it. Nothing happens until you click on a hyperlink and go to another page. Even if you fill out a form, nothing happens until you submit it. Even if you fill in the form with obviously invalid information you won't find out until you submit it and your browser sends it up to the server where it looks at it and then tells you that you entered your callsign where your zip code belongs. Java changes all that because it takes that static Web page and livens up with interactions and action like animation such as a moving tickertape across a page. Much of what you can see today is more cutesy than practical, but real productive applications are beginning to appear and will explode in number over the next year.

How to Get on the "Air" with Java

To see Java in action first you need to have access to the Internet and second you need to have a Web browser that's Java Capable.

All the popular Web browsers will be supporting it. You can download copies, in many cases free if for your own use or evaluation, For browsers: see Netscape's site at http://netscape.com for Windows - 95, NT & 3.1, MacOS, and many unix variants; or see IBM at http://www.raleigh.ibm.com/WebExplorer/ for a demo of OS/2 WebExplorer, Microsoft will have Java in the next beta of their Internet Explorer at http://microsoft.com/ie/. To actually develop and experiment with directly with the Java language see Sun's Web site (http://java.sun.com) for Windows NT, Windows 95, and Sun Sparc Solaris, or IBM at (http://ncc.hursley.ibm.com/javainfo) for OS/2 and AIX. Once you have a Java enabled Web browser visit http://www.gamelan.com for a vast selection of both the pretty and practical in Java applets. Seeing is believing and looking at the gamelan site is far more informative than me trying to describe things in words.

So What is Java?

I could write you a small book about what Java is, but not here as I just cover a few key points so we can get on to looking at what this might mean for Ham radio. Java for starters is a programming language which I don't suspect has gotten many of you excited yet. It claims to be better than the currently popular C and C++ and is available on many systems such as Windows95, Windows NT, OS/2, MacOS and numerous flavors of Unix with Window 3.1 coming, but this is true of a lot of programming languages. So what's really different is the fact that one version of a program will run on all these systems - that's different! Write and compile a program once and that single version will run on any system that supports Java. In fact, if a new microprocessor or operating system comes along it will also run that original version of your program. This feature has attracted unprecedented support in the industry. As a result, Java will be incorporated as a standard feature in all the major operating systems by the end of the year - this includes not just PC and workstations but heavyweights like the AS/400 and mainframe MVS.

So it's a programming language that allows one version of a program run on any system - where's the beef? The meat is in how it meshes with the World Wide Web. One or more Java programs can be associated with a Web page. When you visit that page the Java program (called an applet) is sent to your computer along with the other parts of the page. Since Java can run on any machine - it'll run on your machine as part of viewing the web page. Now it can bring some life to the page - perhaps showing an animation within the page or adding sound or an intelligent form or whatever the 6000 folks at the conference will come up with. The pace of acceptance and deployment is phenomenal even for the computer industry -they're saying in the Valley that " if you stop for lunch, you'll be lunch"! There's a lot more to it than just this, but it's beyond the scope of this article - visit the gamelan site and look at the 100's of applets they've collected.

The Future - Java meets Ham Radios

So let's focus on important things like Ham radio. What follows is speculation - that means a lot of it probably

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won't happen, but it also means that even wilder things are likely to occur and will do so long before we dreamed they were possible - so indulge me. Much of what I'm going to build on already exists, but in fragmented pieces. Other bits are beginning to emerge as prototypes etc. Some things are still to expensive or too slow, but we know that these things improve rapidly.

For starters, they are a lot of microprocessors in your home and particularly in your shack. You might be surprised if you stopped to count them. Let's see - the transceiver probably has 2 and maybe a DSP; your TNC/Modem probably has 1 and a DSP as well; that new noise reduction filter has a DSP and maybe a vanilla processor as well; probably a PC or two which, don't forget, has processors on sound cards, modems and in other nooks and crannies. The one thing that's certain is that the number of processors and their power will only increase rapidly in your shack and throughout your home. Today each of these processors operates rather independently, and there are many different processor architectures requiring different type of incompatible types of programs. There are two things besides the inevitable pace of improvement in processor price performance that are changing. These are better communication between the various component and the part Java can attack which is the incompatible programs issue. Things are rather basic now. Your computer can talk to the more modern transceivers. In many newer devices it can download or update programs in these devices. Examples in my shack include the TNC(HAL), a modem(U.S.Robotics), and noise reduction filter(JPS).

Many of these devices communicate via RS/232 - the not exactly "standard" standard. Other options for communicating among digital devices in the home and shack are beginning to appear. For example Sony has introduced FireWire(a high speed link for connecting new consumer devices like a digital video camera - that's talking high data rates! The computer industry is coming out with USB (Universal Serial Bus) a new common bus for all the slower speed devices like printers, keyboards, mice etc., combining the current serial, parallel and custom ports - can you envision radio to computer, or keyer to radio etc. over USB? Other companies are beginning to show home LANs running over your house wiring. Infrared links have been around for a while which are leading to infrared LANs. Looking out many see your home having a server in a closet with some form of high speed home network connecting all manner of increasingly digitally aware appliances and devices.

Interesting things are happening in the microprocessor world. Mitsubishi has shown a 2 megabyte DRAM memory chip. Well that doesn't sound too exciting until I tell you that it has a 66mHz 32-bit RISC microprocessor on it. Oh, by the way it also has a 2K cache and some DSP function as well and has a projected 1997 cost comparable to the DSP in some of today's TNCs and filters. A 16Mbyte version is on the horizon and for software - well it was running Java when I saw it. Sun Microelectronics has designed a picoJava processor core that runs Java directly on the metal and can be embedded within a chip customized for the consumer electronics market. Nortel is planning to put it in a new generation of telephones with Java applications and the ability to connect to the Internet! LG Semicon, Mitsubishi, NEC, and Samsung also announced that they plan to license it for consumer oriented products.

So what might your shack look like in, early in the next century - which is not very far away anymore?? Your brand new transceiver sports a receiver that is all digital except for the very first rf stage. It is connected to your computer and the rest of the shack and your home via a high speed home network. Your favorite contest software is now written in Java and can download Java applets to your transceiver to get just the radio control that matches it's latest feature - you ready Ray! You take a digital video of the (grand)kids and send it to your home server, then you select and edit some image frames on your 400Mhz PC and use Express 5.3 to send it over the air. You find a really neat filter applet on the Web and download it to your transceiver. Radio manufacturers may be reluctant to open up their systems, but another variation might well happen sooner. How about a shack in your closet along side your home server? No knobs, dials or lights - just antenna connections and a port for a fast network attachment. Control your radio from any computer in the house with Java Applets from the manufacturer that allows you to control your rig from any kind of computer. The transceiver, linear, rotator, filters are all linked by a bus and then attached to your home network. Sit out on the patio with a cold one and ragchew from your laptop over your home LAN. For us digital folks that's kind of easy. Want to do CW? Then attach your USB capable keyer to your laptop and call CQ. Work phone occasionally? There is telephone over the Internet today, why not SSB over your home's net tomorrow?

A dream? Well maybe, but the technology pieces are emerging today. In addition the cost, complexity and time to develop of software is far outweighing that of the hardware - just ask Bill Henry. The idea that Java software can be written once and run on all kinds of different hardware has gotten a lot of attention and interest in both the classical computer industry and the consumer based industries. I certainly have gotten things wrong in the details, but I also have probably been too conservative in areas we don't yet understand. Ham radio is fun for many reasons and advances in technology is one of them and the one guarantee is that there's no end in sight. Now it's time to get a real cup o' Joe and head for the shack - it's ANARTS weekend - see you on the air!

73 de Steve, N2QCA

LISTEN, THEN XMIT!

Across the Pond
A look at the digital-doings of our European neighbors

by Neal Campbell, AB4MJ/ON9CNC • *10817 Ann Davis Dr.* • *Fredericksburg, VA 22401*

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I hope you all had the opportunity to attend the Dayton Hamvention, as it was one of the best ever. I met many of my digital friends. The planners cleverly avoided the usual rainy and cold weather this year, although some felt the unusually high heat and humidity were as bad. Being Belgian-based, experiencing 80 degree weather in mid-May was a very pleasant experience, as we can usually count on mid-50s (15 degrees Centigrade) and rainy days.

There was a great deal of news at Dayton this year concerning Clover and HAL products. Just before I left to fly to the US, HAL released version 2.0 of the PCI-4000 and P38 files, with some dramatic improvements. New PROMs were announced for the PCI-4000. Likewise, the long awaited release of Express 3.6 arrived.

We all were awaiting Express 3.6. Amongst its users, it was usually mentioned in every QSO that I monitored. The good news is that it is everything we were hoping for.

The real surprise was the new firmware and program files for the HAL PCI-4000 and P38 cards. The new upgrades fixed Pactor problems, some bugs in the PCC and P38 programs, but the major change was the inclusion of a frequency tuning indicator for the TOR modes. Now, you can see how far you are off-tuned in the same manner as Clover, with a frequency offset!

I think the "Dayton Special" price for the P38 was quite an incentive for many to buy. We should be hearing a whole new generation of Clover users on the air.

In this article, we will explore a bit of Express 3.62 and start learning a bit about the Internet.

Express 3.62
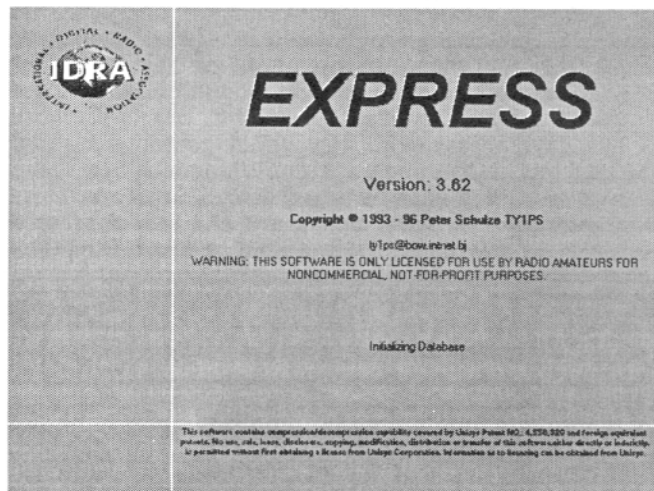
The first big sign that Express has changed with release 3.62 is the size of the program. What used to take 2 floppies now takes four. Once installed, Express will now occupy five megabytes of disk space. Compared to the 79 megabytes that my version of Microsoft Office occupies it is not such a problem.

Why has Express grown so large? The main reason is that Peter, TY1PS, has migrated the program to Visual Basic version 4. Visual Basic is the programming language in which most of Express is programmed. Why did Peter move to Visual Basic version 4? The latest release of Visual Basic offers facilities that are powerful enough for implementing our dreams for Express version 4!

Because of utilizing VB 4, a whole new set of DLLs and other magic files needed by Express to run are required.

If you download the files for Express 3.62 from the IDRA FTP site, you will need to download 4 files. It is also available at the Digital Journal site. Click 'Software Center' on the welcome page and you are on mouse click away from downloading the first zipped file. Each of these files must be UNZIP'ed to create files needed for the four installation floppies. To run version 3.62, you will also need the latest versions of the HAL firmware files for your Clover-capable card or DSP-4100 device.

To properly install the new release of Express 3.62, I forward the excellent recommendation from Pesi Sorab, G3NDO:

0. Change to Root directory by CD\
1. Make new directories by command MDIR for the following new extra temporary

    directories....\COPYLIB1, \COPYLIB2, \OLDP38 and \OLDEXP e.g. MDIR OLDP38
2. Copy C:\EXPRESS\EXPRESS.LIC C:\COPYLIB1
3. Copy C:\WINDOWS\EXPRESS.INI C:\COPYLIB1 followed by deleting DEL

    C:\WINDOWS\EXPRESS.INI
4. Copy C:\P38\P38.LOD C:\COPYLIB1
5. Copy C:\P38\P38.S28 C:\COPYLIB1
6. Copy by using special command XCOPY C:\EXPRESS C:\OLDEXP /S /E
7. Copy C:\P38*.* C:\OLDP38
8. Now delete ALL files from the old P38 directory by the command DEL C:\P38*.*
9. Now delete ALL files from the old EXPRESS directory by the command DELTREE

    \EXPRESS /S
10. Change to the empty P38 directory by CD\P38
11. Copy the downloaded file P38R20.ZIP (assuming it is on A: drive) by the command

    COPY A:\P38R20.ZIP
12. Unzip the file by PKUNZIP P38R20.ZIP
13. Delete the .ZIP file by DEL P38R20.ZIP
14. Copy two required old files to P38 by the following.
15. Copy C:\COPYLIB1\P38.LOD
16. Copy C:\COPYLIB1\P38.S28
17. At this time your HAL-COMM and P38 are ready if you wish to stay in DOS
18. Now if you want Express 3.62!
19. Change directory to CD\
20. Change directory to CD\COPYLIB2

21. Copy the first disk downloaded ....EXP36_1.ZIP by command COPY A:\EXP36_1.ZIP

22. Unzip the file by PKUNZIP EXP36_1.ZIP

23. Delete the zip file by DEL EXP36_1.ZIP

24. Copy the files for a fresh installation to a Diskette by the command COPY

    C:\COPYLIB2*.* A:\

25. Now clear the COPYLIB2 directory by DEL *.*

26. Repeat steps 21 to 25 for all the remaining 3 diskettes asking sure that for each disk the files is changed to the appropriate number, i.e., exp36_2.

27. A very important step ...copy your license to the new number four diskette by the command COPY C:\COPYLIB1\EXPRESS.LIC A:\

28. Eureka......voila....or plain fantastic....you have for your callsign 4 installation diskettes for EXPRESS 3.62

29. Now open up Windows and open the Group of the old EXPRESS programs.

30. Delete all Programs within the Group and finally the Group itself....(see under FILES) now all traces of the old EXPRESS are gone.

31. Install version 3.62 in Windows by using the RUN command under FILES and typing

    A:\SETUP and using the newly made 4 installation diskettes.

32. Close WINDOWS after successfully installing 3.62 and go to DOS and change directory to COPYLIB2 by CD\COPYLIB2

37. When all tested and you feel comfortable ...you may delete directories... COPYLIB1...COPYLIB2...OLDP38....and.....OLDEXP...

This procedure is an excellent one because it provides you with a fully intact copy of the old version of Express in case you have any problems.

Please remember that you must have a version of Express 3.x already installed before attempting to upgrade to 3.62. If you have removed it prior to trying the upgrade, you will discover that you must reload it before you can continue.

One more request, whenever you are considering to download a file from the Internet, please check to see if a file called README.TXT or something similar is present. Read this file before you download any programs, as README.TXT will usually have a good description of the files in the directory, along with important information on how to use them. For example, the Express README.TXT file will tell you some installation hints, a brief overview of the changes since the last release, and the warning that you must already own a license before you can successfully install the upgrade. It could save you a lot of wasted connect time and frustration if you read the README.TXT file before downloading 4 MB of files!

By the way, if you cannot download the new Express files from the Internet, IDRA will ship you a new set for 15 dollars in the United States. The charge is for the media, mailing expense and time, there is no fee for the upgrade itself.
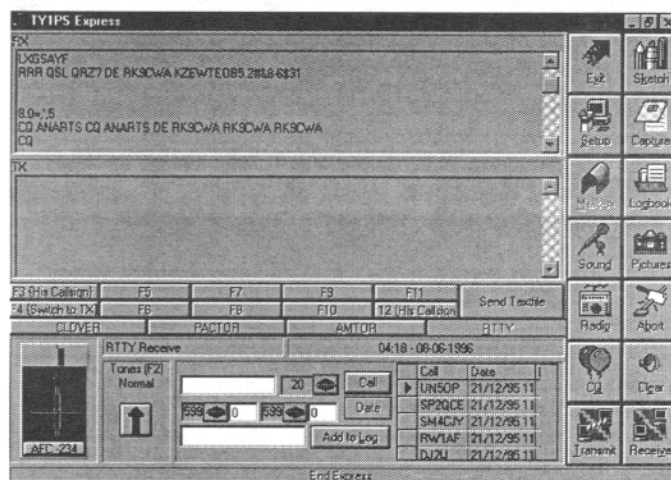
There is a major hardware requirement change with release 3.6: 386 processors are no longer recommended. I believe a minimum system is a 486/66 with 8 MB of RAM. With the price of computers today, this should be considered a minimum configuration for Windows 3.x and I would recommend no less than 486/100 with 16 MB of RAM for Windows 95.

Also, since the latest firmware files required from HAL needed with Express 3.62 require PROM changes in the PCI-4000 products, you will also need these to be installed before you can upgrade.

What's New in Express 3.62?

The current version of Express 3.6 is the third one released since just before the Dayton Hamvention. As sometimes happens, the first release had a few bugs, so Peter released version 3.61 within 5 days of the initial release.

Once HAL released new firmware files for their hard-

ware, Peter quickly incorporated these changes into the current release, version 3.62. This version of Express has been available for 3 weeks with no problems of which I am aware.

To witness one of the biggest changes, go to any TOR mode and tune in a signal. You can see the effect of the new HAL tuning system in the tuning indicator.

As shown above, there is new information in the tuning display. The first is the small number above the "cross-hairs" pattern. This number acts like the frequency off-set display in Clover, telling you how many Hz you are mis-tuned from the other signal.

I have found that the number displayed is the inverse of the actual frequency off-set. In reality, it depends on your perspective. In the example above, I am actually 3 Hz lower that RK9CWA, hence I would need to go up 3 hz to be exactly tuned in correctly.

The tuning indicator is color sensitive, displaying a red number if you are too far out of tune, a yellow number when you are close, and a green number when you are very comfortably tuned to the station.

As the DSP processors are calculating the tuning offset, you will have to tune very slowly to accurately align your frequency with someone else. Use the "cross-hairs" display to get very close, then tune very slowly using the offset number.

As Bill Henry said at the Digital Forum at Dayton, they finally got tuning indicators for a DSP-based processor right.

At the bottom of the tuning display you can see a small box that has AFC -234 displayed. This is a new feature introduced in the HAL firmware files. This feature, along with another new feature ATC, is an option activated from the new set-up screens, as shown below.
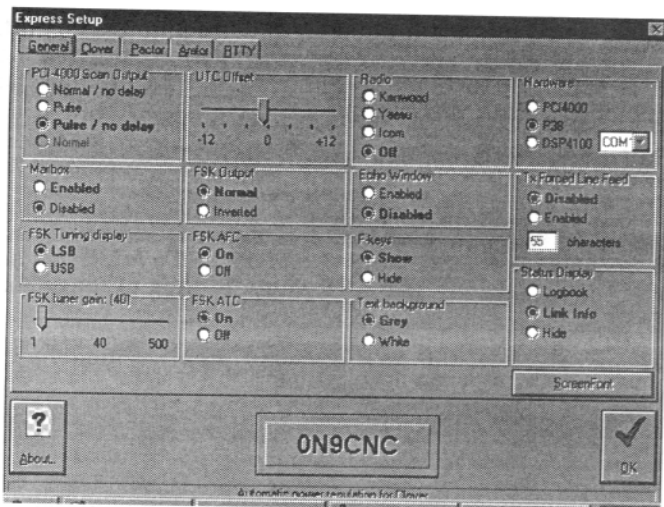
Hopefully, we will have more in-depth articles on these features in next month's magazine, so I will not go into any detail at this time.

EXPRESS 3.6 Help

☺ **Welcome**

🖥 **Installation**

🖊 **Configuration**
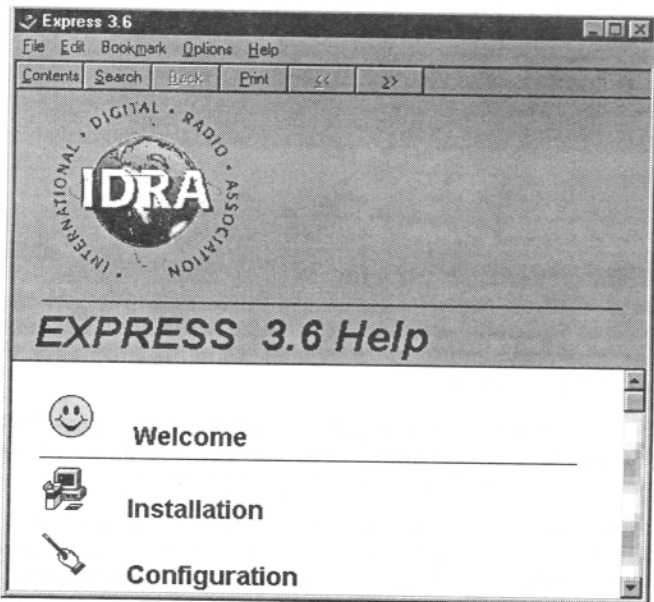
Since the release of version 3.0 of Express, one very common comment was the lack of an up-to-date Help file. As I mentioned in earlier articles, the help files contained in prior releases of 3.0 software were from the older version 2.0 software.

The help file included in release 3.62 are more current, reflecting the changes included in version 3.61. The help files do not include changes made in the 3.62 release, but this is not such a problem as the primary difference between 3.61 and 3.62 is the new HAL firmware file changes.

I am sure you will appreciate the new help files, they are very well written and organized.

What's Fixed in Version 3.62?

The biggest problems with version 3.5 are fixed in the latest release.

You will happily discover that link pictures now quickly appear for Clover contacts. A bug prevented these from being automatically displayed in version 3.5, and now that it is working again, you feel like you are seeing long-lost friends when you connect with someone.

Peter has re-worked the log system in the latest release, and it works much better. When people ask me how many countries

I have worked in Clover, I usually answer that I do not know. The logging program I use (DX4WIN, an excellent program in all respects) only has three choices for mode (CW, SSB and FSK). So how do you tell if you have worked someone in Clover as opposed to RTTY, Pactor, etc.?

I have just started using the logger within Express to record name and contact of all my QSOs made while I am in Clover. This means I have at least that part of my Clover operations recorded. I do not use the log in XPPCI, nor does P38 have any logging program.

Therefore, I do not have an accurate record of my Clover-specific contacts versus all other "FSK" modes. I need to work out a better system so I can track my progress towards DXCC-Clover!

Let me know how you track your Clover contacts, and I will report in a future article.

Final word on Express

With this release of Express, Peter has carried the program to a new level of user-friendliness and stability. For those of you who upgraded to version 3.0, it is a relief to see the program working so reliably.

There is one feature that I wish would be included with the next release, an Uninstall program. I think all well-behaved Windows programs must have an Uninstall feature that will safely and cleanly remove any files and INI settings.

Are You on the 'Net?

Do you have access yet to the Internet? If you use the more traditional electronic service providers (Compuserve, America Online, Delphi, etc.), you can access Internet features from within that service. This is particularly handy for non-technical people who want the user-friendliness of the service, as opposed to user-friendliness of programs like mailers, browsers, news readers, FTP programs and pre-processors.

Otherwise you can get directly on the Internet, with an Internet Service Provider. AT&T has recently offered Internet access in the US for a very competitive rate. In many towns and cities, you can get on the Internet with a local phone call, a monthly charge and unlimited time (or unlimited time within non-business hours).

If you are not connected to the Internet because you think it is too complicated or expensive, I will spend some time in the coming months to persuade you that it is simple and you cannot afford not to be on the Internet!

Mailers, Browsers, News Readers?

If I am going to convince you how simple it is to use the Internet, then taking the mystery out of the tools needed is the first step.

Most people will want to do three things with their Internet connection:

- send and receive e-mail
- look at other people's Web Page
- download files.

To send and receive e-mail, you will need a program that can help you do this very easily. They are classified as Mailers, but it simply means they are programs used for e-mail.

Mailers can be very simple, or more complex, depending on how sophisticated you want to be. A simple mail program will

allow you to compose e-mail messages without being connected to the Internet (saves you phone charges), provides an address-book function (so you do not have to remember all of those confusing addresses for your friends), and will download all of your mail very quickly and send any queued mail at one time so you can disconnect quickly.

More sophisticated mail programs provide a filtering feature which will look at the e-mail messages as they are being received from your service provider and file them in specific folders for easy access. These programs can even delete messages directly without you having to read them. For instance, if you do not like contests, you could have all messages that have the word "score" in the subject automatically deleted. Some mail programs will even look at the title or the sender before it is downloaded and allow you to prevent it from being sent to your house!

Another feature of mail programs is the ability to attach files to e-mail messages. This is a very complicated area which I will try to unravel next month!

A browser is the term for a program that you use to access Web Pages. A web page is a display that is very similar to the help system on Windows. Under the help system of Windows, words will be underlined that you can "click" on to see more information. This is very similar to how web pages work. Web pages can be very powerful though, as you can click on some underlined words and receive new files or actually be transferred to another location on the Internet.

A browser program contains all of the necessary functions to receive information and display it on your computer. These program will allow you to "remember" some of your favorite locations so that with the click of the mouse you can automatically connect and see the latest information. This function is usually referred as a bookmark.

The browser programs are becoming very sophisticated as it is the most competitive area for software providers. Microsoft gives their browser, the Internet Explorer, to anyone who desires it for free. Netscape is another company that gives away very powerful browser programs. Both of these browsers have a built-in mail reader and FTP client, so you would not necessarily need another program if you used these.

If you get a daily or weekly newspaper, you might already consider yourself a news reader. The concept on the Internet is similar. There are places on the Internet called News Groups, where people post questions, answers to questions or general information to whoever might be interested in reading them. For the world of amateur radio, my favorite news groups are:

- rec.radio.swap (a trading post of people with things to buy and sell)

- rec.radio.amateur.digital (where digital discussions occur)

- rec.radio.amateur,equipment (where people talk about their equipment)

- rec.radio.amateur.misc (a place to talk about things that do not fit anywhere else).

A news reader will keep track of the entries in each news group that you have read and display for you any new entries. Normally a news reader will sort all of the entries so you can see a question and any responses bundled together.

News groups are one of the most valuable resources of the Internet when you are trying to figure something out. People are always willing to help. People being people, however, means you get some very strange entries, often with no rele-

vance to the group. You can see offers that could make you a millionaire very quickly, tell you that someone else is a crook, or point out a location for pornography. On the Internet, you will get used to this "graffiti", even though it is quite annoying and disturbing.

E-Mail and Etiquette

Since we moved from the US to Belgium, all of our very close friends have migrated to some manner of Internet, usually America On-line. The amount of money we save each month in sending e-mail instead of calling our friends could easily finance a new FT-1000MP each year.

We have also discovered that e-mail can actually make you closer to people. E-mail can be either very good, or very bad. When used properly, it gives you the opportunity to structure your thoughts and send them to your friends based on your convenience, instead of waiting until there is a convenient time for you and your friend. I have found that the convenience and ability to plan out what you want to say has made me closer with many of my friends and family since I have moved.

It can be very bad when you re-act to other e-mails without considering how other people might perceive your response. As witnessed many times each day on many reflectors (not the advanced digital methods reflector though!), you can witness grown adults acting like 13 year olds, arguing about the smallest of trivia and calling each other horrible names. It would be interesting to make these people meet and read their mail and responses to each other face-to-face, as I am sure they would be very uncomfortable doing so.

Another way e-mail, especially on reflectors, can be very bad is the assumption that you are only being read by people who are like you and share your views. I sometimes cringe when I read e-mail on large reflectors that say horrible things about hams in other countries. Many hams assume that everyone is connected locally and that their mail doesn't go to Japan or Italy or wherever.

Another e-mail practice I warn against is the "me too" type of e-mail. Lets say someone sends a piece of e-mail that says "Clover is the greatest thing in amateur radio". Now, of course not everyone will agree, so you can expect many e-mail messages that violently disagree, as I mentioned earlier. You will also see many messages that merely say "Yep, its the greatest!". For some people, they have to pay for every message that they receive, and pay for the time they are connected to the Internet. These types of messages add no value to the discussion (other than confirming other people share the original view) and can end up costing many people money. Avoid the "me too" messages whenever you can.

The last e-mail practice I want to discourage is the tendency to send attachments to many people. An attachment is a file (which can sometimes be very large) that is sent to whoever reads their mail. Most people have no way to not accept an attached file. If someone sends an attached file that is 100 KB in size, that means that everyone receiving it will have to wait until it is safely sent to their computer. If you have a 2400 BPS connection, it could take quite a while, and you are not even sure if you want it!

That's it for this month.

Take care and if you have any ideas for future columns or would like to write an article, please send me a note on the Internet!

73, Neal

DX News
The latest digi-doings from around the globe

by Don Hill, AA5AU PO Box 625, Belle Chasse, LA. 70037 • email: AA5AU@aol.com

Oh boy! After reading the results of Jim's survey in last month's DJ, I see that the pressure is on for more DX related news. In the coming issues I hope to expand the coverage with 'DX Views'. I hope to incorporate more input from around the world to get a 'view' from other continents. I got a little taste of this when checking the high power logs for this year's WPX contest. For example, two of the logs contained a certain EP2 station. It's hard imagine working Iran on RTTY, let alone in a contest. So it's important that we view DX as it is, global, and not just from the eyes of one crazed RTTY DX operator from the swamps of Louisiana. Look for more expanded coverage in the near future.

1997 Bouvet Island DXPedition

The South Sandwich Island DX Group has announced that they will activate Bouvet Island in December 1997 and January 1998. The exciting news for digital operators is that there will be at least two experienced DXPedition RTTY operators on the team. Tony, WA4JQS (VP8SSI, 3Y0PI, etc.) and Gary, W5VSZ (HS0AC) are both slated to go on this one. Bouvet 3Y, is ranked in the 12th spot on the most recent RTTY Most Wanted Countries list. This should be an excellent time to get them in the log if you missed the last effort there in January 1990 from 3Y5X.

Dayton '96

The Dayton Hamvention was a lot of fun this year. The weather was extremely warm, reaching 90 degrees on Saturday. It was very humid with a strong southwest wind that typifies the weather we have here in south Louisiana, so I felt right at home. By Saturday night, the sunburned victims were numerous. It was great to see all the familiar faces and even better seeing the new ones. I'm already looking forward to next year.

Delta DX Association

Every year at Dayton I always hear the same comment "Gee, you sure have a lot of RTTY DX'ers in New Orleans!" I must admit that my RTTY totals soared after joining the Delta DX Association, which is based in the Crescent City. The DDXA is saturated with RTTY DX'ers.

It sure helps having five operators in the same area that all have over 300 countries on RTTY. There are several other eager RTTY operators here as well and the entire emphasis is on the HF digital modes. The big time RTTY DX'ers in the New Orleans area are Mike W5ZPA, Wondy K5KR, Randy WX5L, Silvano KB5GL, and Wondy's wife Shirley N5GGO. This group has helped me keep track of past and current digital DX. I'm sure there are other groups out there. I'd like to hear from you.

Kermadec Island DXPedition Wrap-up

The ZL8 DXPedition, signing ZL8RI on Raoul Island, first showed up on RTTY on 5 May. They started with a 2100-2300z schedule of working 20 meter RTTY to Japan and North America for 3 days straight. However, on the 2nd day of operation, 20 meters was so bad that they ended up going to 15 meters for a few contacts before going QRT.

Early on the 7th, after some strong persuasion from KB5GL on 15 meter SSB, they did agree to go to RTTY for one hour, but ended staying up to 4 hours. There, most of NA made contacts as there was a tremendous opening to the northern and eastern states late into the night on 15 meters. Those that did not

get through, had a good shot on 20 the next day during their scheduled 2100-2300z operation.

On 8 May, they missed an advertised 40 meter schedule at 1000-1200z, and then played CW on 20 and SSB on 15 straight through the 2100-2300z time frame. RTTY operators were not happy, especially those in EU, as they would have had their first chance at them with the solar flux rising to 76 and the geomagnetic field remaining quiet into 9 May. Instead, they played SSB on 12, 17, 15, and 20 meters to take advantage of the good conditions to increase their overall QSO total way into the 9th.

On the 9th, they were on 40 meter RTTY around 0930-1030z working JA and NA. They were back on 40 meters the following day. But on the 11th, they did not show.

Finally, at 0215z on the 12th of May, they came up on RTTY in a big way. Band conditions were the best they had been all year. They played RTTY for well over 6 hours working NA, SA, JA and even EU. It was a great pleasure to watch Tapani, OH2LU, break through the NA pile to make what might have been one of their first EU RTTY contact. I saw a several more EU contacts before they faded from my screen. QSL info for ZL8RI is: The Kermadec Association ZL8RI, PO Box 56099, Tawa, New Zealand.

All this happened amidst the A. Volta RTTY Contest. There were signals all over the RTTY bands all day long. The solar flux had jumped to 77 and the geomagnetic field stayed quiet for longer than expected. It was a lot of digital fun.

Rarest CQ Zone on RTTY Survey

What is the rarest CQ Zone on RTTY? That's a good question. The CQ magazine WAZ award is available for RTTY. It is a very nice award to work for. I am conducting a survey of the CQ Zones that are still needed by those chasing Worked All Zones. At present there have been only 98 RTTY WAZ Awards given out. This will be only a casual survey. I am asking readers to send me which CQ Zones they still need for WAZ. If you already have RTTY WAZ, just send me a note telling what number you have. E-mail is preferred, but you can send it any way you wish. Just be sure to send it! I will publish the results here and on the Digital DX reflector.

Digital Doings

Aland Island, OH0. Lars, OH0/SM3KOR, was very active in early May. Lars has made some big waves on RTTY since exploding into the digital scene in the past year, especially with big scores in the contests.

Annobon Island, 3C0. The ARRL DX Bulletin on 26 May reported that Teo, EA6BH, plans to return to Equatorial Guinea (3C) and hopes to operate from Annobon. No dates were given. Teo is a RTTY operator and was spotted on RTTY on 18 May from his home QTH. Let's hope he was practicing for this reported adventure. Keep your eyes open.

Burkina Faso, XT. XT2DP was active in May on 20 meters around 2030z. QSL via WB2YQH.

Burundi, 9U. 9U5CW was active in late May and early June. It was Peter, ON6TT, on his African tour.

Waldemar, DK3VN, reports that Peter is operating from Alfredo's (9U5CW) QTH. QSL is via EA1FFC for these contacts with Peter. Look for Peter from Heard Island. It's approaching fast.

Cayman Islands, ZF. Mike, W5ZPA, operated a lot of RTTY in May as ZF2PA. Unfortunately, the propagation numbers were as bad as they can possibly be. The flux was 66, A index was 12. Mike operated on all bands 10-80M on CW, SSB, and RTTY. Despite the poor DX conditions, I was able to make a QRP contact with him using only 5 watts on 20M RTTY. Mike plans to return to the Caymans in the near future.

Clipperton, FO. Jay, WA2FIJ, is hoping to return to this island in the Pacific off the coast of Mexico in the near future. He is trying to get a flotilla of private boats to make the trip. He is asking for help in many ways to make the trip less expensive than his last trip there in 1992. You can contact Jay via E-mail at <pcb4u@ix.net-com.com>.

Crozet Island, FT5W. FT5WE and FT5WF remain elusive, but Jack (FT5WF) was spotted on the 9th of May. Bob, AA9DX, reports that he has received his QSL card from Sam (FT5WE) for a CW contact. That is certainly good news.

French Polynesia, FO. Georges, FO5OP, has been active on 20 meters. Georges uses a Yaesu FT757 and FL2100 amplifier into a Cushcraft A3S tribander. QSL direct to PO Box 887, Raiatea, French Polynesia.

Iraq, YI. YI1FC, YI1RS, YI1US, and YI1ZN are well into their 6th month of RTTY operations and continue to be very active on 20 meters. I am happy to report that I received a card from Razaq, YI1ZN, in only 3 months direct from Baghdad.

Jan Mayen, JX. Per, JX7DFA, continues to be active on RTTY. He prefers leisure operating to schedules and prolonged pileups, so be patient. Eddie, W6/G0AZT, reports getting a piece of him on his screen from the west coast USA in early May around 1730z while Per worked C94AI. QSL to LA7DFA.

Gibraltar, ZB2. ZB2/DL7CM showed in the middle of May. DL7CM is not listed in the callbook. I do not have QSL info at this time. The last noted RTTY operation from Gibraltar was from Eduard operating ZB2/HB9DCQ in August 1989. So it has been a long time for this one.

Libya, 5A. The 5A1A operation in May 1995 has been approved by the ARRL for DXCC credit. Although there was no RTTY operation on this DXPedition, there are hopes that this will open the door for another operation that may include RTTY. Keep your fingers crossed, we are hoping for this one.

Macedonia, Z3. Z30M was active in May. It has been a few months since we saw activity from this Balkan country. QSL via Z37GBC (formerly YU5GBC) at: Radio Club, N Tesla, POB 71, 92001 Stip, Macedonia.

Marion Island, ZS8. Chris, ZS6RI, operating as ZS8IR (not a misprint) from this rare island is up and running on RTTY and has been spotted from Japan on 20 meters and from the USA on 40 meters. Greg, N4CC, worked him on 7039 *khz* around 0500z on 28 May. I was there, but could not copy Chris. There is no doubt that Greg's 2 element yagi at 150 feet helped him bag another new one. Chris is a medic on the island and will be there until the middle of 1997.

Mexico, XE. Nellie, XE1CI, is becoming an avid digital DX'er. She can found around 2300z on 20 meters calling CQ. What's makes this significant is that Nellie has been on several DXPeditions including operating from Revilla Gigedo and Jordan. Her interest in RTTY shows the continued worldwide swing toward the digital modes as a form of DX'ing.

Monaco, 3A. 3A/IK1CJO was worked in May. QSL via Mauro's home call. Barry, W2UP, reports that Mauro was calling CQ with no takers on a Saturday around 1500z. I was there, but could not print him. Poor propagation was a problem for this operation, but Mauro did a good job getting Monaco on the air.

Mount Athos, SV/A. Monk Apollo remains active on 20 meter RTTY and was spotted periodically in May and June, usually between 1200-1900z on 20 meters.

Sable Island, CY0. The same group that operated from CY9 in 1995 will operate from this Canadian island in the Atlantic October 1-8. The callsigns will be KW2P/CY0, AA4VK/CY0, and

WA4DAN/CY0. Although RTTY has not been mentioned, odds are that we will see at least Bob, KW2P, come across our screens. Bob has been the RTTY operator on a long list of DXPeditions.

Spratly Islands, 1S, 9M0, etc. Jaan, SM0OEK, operating now from 9M2JJ in Western Malaysia, has put word out that he will attempt to activate Pulau Layang Layang Island. Planning is in the early stages. Let's not let him go without bringing RTTY. You can contact Jaan via his E-mail address at <sm0oek@pc.jaring.my>.

Taiwan, BV. Rare CQ Zone 24 has been represented by Wang, BV7WZ. Mike, WB9B, reports that he worked him on 20 meter CW on 31 May and asked if he would QSY to RTTY. Wang replied with "085". Mike goes on to say that "faster than you can say Dxcluster.. I was on 14085.. him calling me!! Yes.... Zone 24 Worked 599 plus..." It was Mike's last CQ zone needed for RTTY WAZ. Congrats!

Prepare for the Excitement

If we have all this great digital DX activity going on at the bottom of the cycle, you can only imagine what fun we are going to have in the coming years. It's exciting. It is better to get prepared for these active times now. Now is the time to start working on your antenna system for the higher bands. Conditions are not going to change overnight, but there have been signs that despite the poor WWV numbers, activity on 10, 12, and 15 meters is coming back. The ZL8RI DXPedition proved that in a sense.

Hold onto your hat. A whirlwind of digital activity is on it's way that will sweep the DX community off it's feet. This may end up as good news or bad. Jim's survey proves that there is a strong emphasis toward DX from the DJ readers. And that the preferred mode is RTTY. There is nothing wrong with any of the other digital modes. But there is a strong following that RTTY should be recognized as having strong ties to the following frequencies:

80 meters	3525 JA, 3575-3625 NA, SA, EU.
40 meters	7025 JA, 7025-7045, 7080-7090, AF, AS, EU, NA, OC, SA.
20 meters	14080-14090, All continents.
15 meters	21080-21100, All continents.
10 meters	28080-28110, All continents.

This chart is not a personal wish list. These frequencies have been used for RTTY for at least 15 years, probably longer. If we hope to continue working in these areas of the bands, we must assert ourselves by remaining active on these frequencies. In order to preserve peace within the HF digital bandwidth now, and in the coming years, all digital operators are going to have to work together. It is extremely frustrating when you are trying to work a DX station on RTTY and all of a sudden an AMTOR, G-TOR, Pactor or Packet signal comes on top of the DX. I am sure the same applies to the "chirp" operator that is trying to make a QSO in the middle of a RTTY pileup. I am quite fond of the "chirp" modes, but RTTY is king. Let's keep it that way until someone can come up with a better way to work DX on the digital modes that encompasses a way to incorporate a pileup and allow the "little guy" to make a contact as well.

And always listen before you transmit.

The future is what we make it. If HF digital operators do not cooperate with each other into the rise of the coming sunspot cycle, the sport could be doomed. But for good reason, I am optimistic.

Problems do exist, but so far, there has been a co-existence between most HF digital operators that has allowed for an atmosphere of relative calm. Let's make every effort to keep it that way.

73 & Good DX de Don AA5AU

Contesting
Coming Events and Awards

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

—RTTY Contests - Coming Events —

Date:	Contest:	from:	Rules in:
JULY 20-21	No. Am. RTTY QSO Party	(USA)	May DJ
JULY 27-28	RUSSIAN RTTY WW	(Russia)	July DJ
AUG 17-18	SARTG WW RTTY	(Sweden)	June DJ
SEP 28-29	CQ/DJ WW Digital	(USA)	June DJ
OCT 19-20	JARTS WW RTTY	(Japan)	July DJ

LAST MINUTE NOTICES, received May 28th, from Ron AB5KD:
• The BARTG Amtor/Pactor Contest (July 13-14) has been cancelled.
• We have a brand new contest...
RUSSIAN RTTY WW which happens on July 27-28. Details here below.

— Reminders for Logs —

ANARTS WW Digital (June 8-9) Logs must be received by Sept 2, 1996.
Mail to:
Jim Swan, VK2BQS
Box 93
Toongabbie, NSW 2146
AUSTRALIA

N. Amer. RTTY QSO Party (July 20-21) Logs must be postmarked before Aug 20,'96.   Mail to:
Ron Stailey, AB5KD
504 Dove Haven Dr.
Round Rock, TX 78664-5926

— — COMING UP — —

-+- RUSSIAN RTTY WW CONTEST -+-
27-28 July 1996
Sponsored by Russian Center Radio Club (RCRC)
Ulyanovsk State Technical University (USTU)
Organized and run by Ulyanovsk Signal DX Club (SDXC)
(Ref: UA4LCQ)

CONTEST PERIOD: Starts at 0000 UTC Saturday, ends at 2400 UTC Sunday (48 hours) Single ops: 36 hours operation allowed. No restrictions on length of offtime.

MODE: RTTY only

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

CATEGORIES: A) Single Operator, All Band
B) Single Operator, Single Band
C) Multi-Operator, All Band
D. SWL

MESSAGE EXCHANGE: Send: RST + CQ Zone nr.
Russian stations send: RST + 2 letters to identify their oblast.

MULTIPLIERS: Count each DXCC country and each Russian oblast on each band.
(Band Multipliers)
NOTE: CQ Zones do NOT count as multipliers.

QSO POINTS: Count 5 points for each QSO on your own continent. Count 10 points for each QSO NOT on your continent.

FINAL SCORE: Total of QSO points x total multipliers. SWL rules apply as above.

LOGS and SUMMARY: Use separate logsheets for each band. Logs must show: BAND, DATE and TIME in UTC, CALLSIGN, MESSAGE SENT and RECEIVED, COUNTRY MULTIPLIER, and POINTS CLAIMED. Entries with more than 100 QSOs must submit duplicate check sheets. Multi-operator station should include names and callsigns of all operators.

LOGS DEADLINE: None given. Usual deadline is 30-45 days after contest. Mail to:

RUSSIAN RTTY WW CONTEST MANAGER
YURI KATUTIN, UA4LCQ
P.O. BOX 1200
ULYANOVSK, 432035 RUSSIA

COMMENTS: Here's a brand new contest... and the first ever from Russia! It's an RTTY DX contest, with band multipliers. The CQ Zones are NOT counted as multipliers. Instead, Russian oblasts are used, in addition to DXCC countries.
Since we have no contesting software that covers this one, I suggest that those who use *RTTY by WF1B* should set it to CQWW format. Don't worry about the QSO points or CQ Zone mults. At least you'll have the correct *Transmit Window* and it will keep track of DXCC mults on each band. The QSO points, oblast mults, etc.. can be edited with a text editor after the contest. The oblasts will count like DXCC multipliers on each band. Even if you don't have an oblast list, each 2-letter ID should be enough info to count as unique mults.
With no restrictions on length of rest periods, you can plan your off periods based on band conditions... as well as fatigue periods...
Let's give the Russians our full support on their first RTTY DX contest!

-+- JARTS WW RTTY -+-
19-20 October 1996
Sponsored by JARTS (President: JA1ACB)
Supported by Japanese CQ Magazine (Ref: JH1BIH)

CONTEST PERIOD: Starts at 0000 UTC Saturday, and ends at 2400 UTC Sunday. You can operate all 48 hours. (No OFF periods required.)

BANDS: 80, 40, 20, 15, and 10M (five bands). Japanese RTTY segments are:

BAND	JA RTTY SEGMENT
80M	3.520 —– 3.525 MHz note!
40M	7.025 —– 7.040 MHz note!
20M	14.070 — 14.112 MHz
15M	21.070 — 21.125 MHz
10M	28.070 — 28.150 MHz

MODE: Baudot (RTTY) only.

OPERATOR CLASSES: A) Single Operator, All Band
B) Multi-Operator, Single Transmitter
C) SWL   •

MESSAGE EXCHANGE: RST + Operator's age. (00 acceptable for YL and XYL) All Multi-op stations must send 99 as operator age.

QSO POINTS: Two (2) points for QSO within your own continent.
Three (3) points for QSO outside your own continent.

MULTIPLIER: Each DXCC country and JA/VK/W/VE call area count as a multiplier. But you cannot count JA/VK/W/VE *country* as a multiplier. **Multiplier will count once per band**. You can count your own country or call area (JA/VK/W/VE) as a multiplier.

FINAL SCORE: Total of QSO points times total of multipliers. (For SWL's, same rules as above.)

AWARDS: First place plaques to top winner in all three classes. First through fifth place will receive certificates, all three classes in

each continent, if number of QSO's is reasonable. Special award for 13th from last in all three classes.

LOGS and SUMMARY: The logs to contain: BAND, DATE/TIME UTC, CALLSIGN, RST/AGE sent and received, MULTIPLIERS, and POINTS claimed. Any entry making more than 200 QSOs must submit duplicate checksheet. Use separate logsheets for each band, and include a Summary Sheet showing the scoring, class, your call, name and address. Multi-Op stations please include names and callsigns of all operators. Logsheets and Summary sheets are available from Contest Manager, JH1BIH.

DEADLINE: Logs must be received by December 31. Mail to:

> **ARTS Contest Manager, Hiroshi Aihara, JH1BIH**
> **1-29 Honcho,**
> **4 Shiki Saitama 353,**
> **JAPAN**

COMMENTS: The JARTS WW RTTY Contest has grown to be one of the most popular and is really a lot of fun. From the clever "age exchange" we find just how young we all are, and who the bashful YL ops are, too! Band multipliers will open up ALL the bands. Note the JA RTTY segments on 40 and 80M. October propagation conditions are usually getting good again, with less low band static and better high band paths, world-wide. There are no time-off periods that must be taken, so you're free to pace yourself based on band conditions, and not on running out of time. If you don't intend to make a huge score, consider going for the award for 13th from last place in your class. It will require very precise timing and judgement on your part - and you have to send in your logs to JARTS Contest Manager, JH1BIH. Only he can decide. This is probably the most difficult award one can ever achieve in Contesting! Good Luck!

-+- Running... tips for those who MUST win -+-

*   *Finding a spot to CQ.* When bands are crowded during contests its hard to find a clear spot. Just when you tune into what sounds like an empty hole, it disappears, right before your eyes. I'm reminded of my days before WWII in Oakland, California, when I would see Henry Kaiser Cement trucks driving around town with a logo on their cabs that read:

" *Find a Hole and Fill It!*' Aside from using a spectrum scanner to see the whole band at once, here's some ideas:

a)   Ten minutes before the contest starts, you can easily tune into a blank spot. Send: **"QRL?"** just to make sure there isn't a QSO going on that you can't hear. (It happens! Someone on frequency may be in QSO with someone you can't hear.) If someone sends: **"QRL"** it means the frequency is in use. QSY and try again. When you find a spot, QRL it, then call a non-contest CQ to raise someone who is also waiting. When the contest starts, exchange the QSO data and you end up with a clear spot for your contest CQ.

b)   After the contest has started, or when QSYing to a new band, tune around to see what's going on. As you tune, do some S&Ping (Search and Pounce). Sooner or later you'll run into a blank spot. Carefully tune plus or minus 2 kHz. If no signals appear, send: **"QRL?"** and wait a couple of seconds. If nothing is heard, start your CQ.

c)   I like S&P more than Running. But one has to do both in a contest. With S&P there's always a new challenge... another pileup to nail. But while doing S&P you'll run into holes. Put on your "Running" hat and have at it! The main difference is that with S&P you'll have more mults, but with Running you'll have more Q's... and make the higher score.

d)   Stop Running when 5 minutes go by and there's no answers. Easy to check by glancing at the log time of last QSO and the present time. There can be several reasons for no answers:

1)   Band went dead. (Easy to check using RIT control) 2) Beam not pointed where propagation is better. 3) Towards the end of any contest there are fewer S&Pers and more Runners. 4) Your antenna fell down!

*   *Running is not just CQing.* Your ability to handle each QSO expeditiously is crucial. When band conditions are hot, and you have a pileup on you, send everything once. If callers don't get the exchange when you send it once, the caller can listen to the next QSO for the info. Some S&Pers won't stick around if exchanges are too slow. When Running, every second counts! As you finish a QSO, use "QRZ?" instead of CQing again because, usually, someone is waiting.

*   *Set a specific F-key for a panic reply to your CQ or a missed exchange.* When you have 2 or more stations calling you that are zero beat with each other, you'll most likely miss any legible callsign. I set the "F7 key" to immediately send: *"??—AGAIN—??"* The most alert caller will usually slip his call in... in front of others. (I've actually heard a contesting SSBer say,

" *Please... come back one at a time!*") This F-key can also be used to ask for a repeat of the caller's exchange info. Even if you got all the exchange except for one item, it's faster to ask for the caller to repeat all of it. The reason is that he is probably using a contesting program where he can press an F-key that sends all of the exchange and won't have to switch to "KEYBOARD MODE" and slowly type an answer to your specific request.

*   *Try to get a rhythm going* so that callers know what to expect next. Use a simple routine that is clear, quick, and efficient, based on band conditions, to keep all your happy callers waiting... happily. *Get rhythmized!*

*   *Running really requires contesting software.* You'll drive yourself bats if you try Running without it! *"RTTY by WF1B"* is one of the very best. It will: a) hilite any callsign preceded by a "DE", b) Put that call into your transmit window when you press "Home" key or mouse-click on first letter of his call. When caller finishes, press F2, which turns on your rig and sends his call and your exchange info. As he replies, you enter his exchange info in the receive window, or click on it. Press "Page Down" key to log and send QRZ? That's it!

> *((73)) See you in the pileups, Rich, N6GG*

> P.S.
> *Drop me a line with an idea to share,*
>   *Or, drop me a line with an item to air.*
> *Drop me a line with anger to bare...*
>   *But don't drop ME... 'cause I care!*
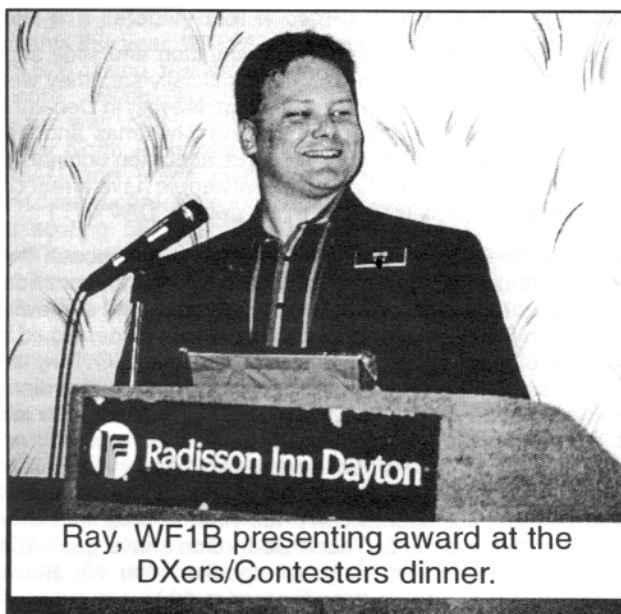
Ray, WF1B presenting award at the DXers/Contesters dinner.

Dayton'96......

Ray, WF1B and Arie, 4X6UO - two of the many happy contest winners at the Contesters/DXers dinner

Dayton this year was a large success for the IDRA and digital community. The activities at the convention center were all great. ALL speakers had good presentations.

This year we had our second annual Contesters/DXers dinner on Friday night at the Radisson Inn (North) We also had about a 10% larger crowd this year. The dinner was top notch as last year. I still think the Radisson has the best Chef in Dayton.

The after dinner program: Rick Davenport, KI1G gave a talk and slide show of K1NG station, where he set a new World Record in Single Operator Assisted (SOA) category during CQ/DJWW RTTY DX Contest last year. John K1NG has a fantastic station along with a fantastic operator. The station is much larger than it was when I was one of the Ops for CQ/DJWW Multi/Multi last year.

Tony De Prato, WA4JQS gave a presentation and slide show on their Peter-I DXpedition. Tony also officially said they were going to Bouvet for their next DXpedition, leaving in December of '97. Looks like they may be spending Christmas and New Years with the seals! Tony also provided about ten original Tee shirts from Peter-I DXpedition . Several people have a real collectors item. (I was NOT one of these people, DA#% IT.)

There is another part to this story I've got to tell you about. Tony was the featured speaker and slide projector provider. Somehow communications between Tony and I got somewhat mislaid!!! In the original announcement, it said dinner would be served at 6:30pm sharp. At 6:27pm there was NO Tony any where in sight. This tends to make to originator of the dinner somewhat NERVOUS to say the least.. (It seems Tony was running around the hotel looking for us just as frantically as I was for Tony! The hotel's front desk sent him to the JADE room and we were in the Mayfair room). At exactly 6:29pm Tony walked through the door.. I can't tell you the relief that came over me at that moment.. Thank God I didn't have gas. Tony has promised to return as guest speaker after his Bouvet DXpedition. I'm already looking forward to that..

WPX '96 Multi/Single World Winners - from L to R Pete, NP2DZ; Ron, KP2N; Drew, NP2E

After the speakers presentation we presented plaques for both CQWW'95 and WPX'96 contests. Some present to receive plaques in person were:

Rick Davenport, KI1G - Winner
World CQWW'95 S/Op Assisted H.P. Category

Jerry Jankowitz, NO2T - Winner
N.A. CQWW'96 S/Op Assisted H.P. Category

Ron Stailey, AB5KD - Winner
N.A. CQWW'95 S/Op L.P. Category

Tyler Stewart, KF3P stood in for W3LPL and crew -
World win CQWW'95 Multi/Multi Category.

Tyler Stewart, KF3P - (KE3Q) Winner
N.A. WPX'96 S/Op H.P. Category

Don Hill, AA5AU - Winner
World WPX'96 S/Op L.P. Category

Arie Sarkiss, 4X6UO - Winner
Asia WPX '96 S/Op L.P. Category

Mike Towbridge, KA4RRU - Winner
WPX'96 N.A. L.P. Category

Ron Hall, KP2A- (NP2DZ) - Winner
World WPX'96 M/Single Category

Ray WF1B & Ron AB5KD - Winner   •
N.A. WPX "96 M/Single Category

A special thanks goes to Ray WF1B, our M.C. who kept the program running smoothly the entire evening..

Don't forget the new NAQP RTTY Contest, this month. July 20th-21st. We have great hopes for this one. We would like to see all of you participate in the first one. That goes for all you DX stations also..

Until next time, 73's de Ron AB5KD

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

CQ/DJ WW RTTY DX Contest Results '95

By Roy Gould, KT1N & Ron Stailey, AB5KD

Entries were up by 15% to 466 logs, new countries appeared in a RTTY contest for the first time and conditions were somewhat improved for the 95 contest. New Low Power records were set by YV5NFL, New World Record in Single OP Low Power, I2KHM for a New World Record Multi Single Low Power, and Ron AB5KD set a new USA/VE Single OP Low Power. It will sure be nice to see 10 Meters come back in future contests, what with the new state of the art equipment, computers and software, I am sure in the future years we will see some very large scores.

Many thanks to Jerry N1DGC and Jim W1EWN for printing the certificates again and to the Co-Director Ron AB5KD for all his help. In addition to checking logs, Ron has been busy getting sponsors for the Plaque program and you will see his results this year and in future years. Thanks Ron. And thanks to all the participants, your comments, our sponsors and to the hundreds to take part every year but do not send in a log. Special thanks to Gail at CQ and the rest of the staff. See you the last full weekend in September for the 1996 Contest, our Ninth One, which once again will be co - sponsored by the *Digital Journal.*

Single Operator High Power Category:

This year we had a real war between CR9Y and P40JT over who was going to win the **Single Operator (SOH) Category**. When the dust all settled Fr. Hermani, CT3BX operating as CR9Y took top honors with a score of 1,791,180 also setting a New World Record.. Jay, WS7I operating as P40JT taking second place with a score of 1,668,194. Jay also set a new South American High Power Record.. Marijan, S56A finished third with a score of 1,254,800 taking the European high score plaque. Next was Robby, VY2SS with a score of 1,047,510 picking up the North American high score plaque. Very close behind was Steve, VE3XO with a score of 1,004,910.. The top five all finishing with over a Million points. **In the Assisted (SOA) Category,** Rick, KI1G operating at K1NG took top honors this year with a score of 1,347,367 also setting a New World Record. Congrats Rick, not many set a new World record from within the USA, outstanding performance.. Roland, DK3GI no stranger to the winners circle, took second place scoring 1,042,368. Nick , UT2IZ operating as UT0I took third place with a score of 706,800. The TG9VT Memorial plaque for North America went to Jerry, NO2T with Roy N4ONI very close behind.

Single Operator Low Power Category:

Low power category in CQ/DJWW is still the largest category entered by both USA and DX stations. Ricardo YV5NFL took the World Plaque, with a score of 979,572 setting a New World Record at the same time. Second place went to Shlomy 4X6ZK with his score of 809,964. Third place went to Ron AB5KD scoring 639,846 winning the North American plaque and setting a New USA record. Next was Arie 4X6UO operating with call sign 4X0A scoring 487,012. John WS1E scoring 462,672 winning the USA plaque. Mike KA4RRU scoring 437,987 the highest score he has ever turned in, and says he knows he can do better next year. We will be looking for that big score Mike good luck. Bruce V31JU in the big city of Gallon Gug, Belize made a showing this year, scoring 421,820.

Single Band Category:

With very little activity and a 12 hour requirement for awards, there were no 28 Mhz single band entrants. **On 21 Mhz:** Daniel, LU8EKC narrowly took first place with a score of 267,410. With Jan ZS6NW close behind, Jan scored 222,120. Ernesto LU6BEG operating at LT1A took third with a score of 216,625.. **On 14 Mhz:** Again this year Zelimir 9A2DQ took the honors pretty easily, with a score of 340,648. In second place was Serge UT2IO operating at UT7I scoring 279,948.. In third place was Tsuitomu, JA5EXW scoring 252,650. It's nice to see a Japan station scoring high, it's been a while. **On 7 MHZ:** Jeff K1IU took all the honors with his score of 185,277 setting a new World record at the same time. This isn't anything new to Jeff, he seems to set a new record about every other year for the last six years.. Next was 9A1A with a score of 155,414 Then Robert GI0KOW finished with a close 154,876. Hermann DJ2BW was in the race finishing with a 150,801. **On 3.5 Mhz:** We had three Ops all very close together, Zdravko, 9A9A took first scoring 42,700. Very close behind was Slavo, S57DX with his 40,250 score. Barberos, IK1HXN takes third with a 36,573 score..

Multi-Operator High Power Category:

Serge and crew of RK9CWA, have once again taken all the honors in (MOH Category), and at the same time scored the highest score of all categories submitting logs. Their score was 2,552,754. In second place was John, ON4UN and crew using callsign OT5T. Making a very nice score of 1,968,102. Close behind was Rob, PA3ERC and crew operating as VP5C, taking the North America plaque with a score of 1,845,152.. **Multi/Multi Category:** Only two logs were received in Multi/Multi category this year.. W3LPL made their usual slam dunk score of 2,154,385.. KB8ECG scoring 377,598... It's a crying shame we can't get Multi-Multi category rolling like in CW and SSB modes.. We have got to do something about Multi-Multi category.

Multi-Operator Low Power Category:

Here is a category that is catching on real well, with many entrants this year. I2KHM set the pace this year with a score of 925,628 taking the World Plaque and setting a New World Record. Taking second place and setting a new European Record was UX2F scoring 832,522 Next is AA5AU also setting a New North American Record with a score of 630,400. Don AA5AU and Eddie G0AZT almost doubled the old North American record. Nice job guys. RU4L also made a nice showing scoring 587,479.. K8UNP also breaking the old North American record there score was 554,652. TY8G put Africa on the list of records for some one to shoot at, they scored 328,486..

Summary:

This was my first year of assisting Roy as Co-Director and checking logs. I would like to thank everyone who participated in CQ/DJWW RTTY Contest and sent in logs. Checking logs is always a chore, as we want to do the best job possible. A special thanks goes to all the Check Logs sent in.. They were very helpful in making some final decisions.. I got a real kick out of reading the comments many added to their logs this year. I guess we should have some kind of an EXCUSE for not doing

well in the contest award. Something like Best Excuse Award!!

If we did have this award it would definitely have to go to Bob, K0RC: " Ron / Roy, I took time out during the contest to install a new ground system at my qth, and assisted with an 80' self supporting tower at KF0QR's qth. Also discovered the RX in my TS-950 had a source internal noise problem. (S-3 to S-5) with no antenna connected. My apologies to all that may have called that I could not hear." (There are three SOLID excuses for this years low score.) Real good excuses Bob..

Roy and I have discussed where to put off-times back in the contest or not. I personally have had many send me e-mail saying the CQ/DJWW has become an endurance test more than a contest with out off-time. Many feel having this is part of the strategy to win the contest . . . instead of just staying awake for 48hrs. As I said I have heard from most of the people that want to put off times back in the contest. Both Roy and I would like to hear form a bunch of you both USA and DX stations. Do you want off times or leave it the way it is? We need to hear form you. Please take the time and give you opinions we would like to settle this once and for all.

We would like to have more plaque sponsors. We are very low in this category. If you would like to support the program please get in touch with Roy or myself. The largest and best contest in the World should have a much better plaque program. I will be getting in touch with some of you in the future. Please if at all possible try to support CQ's plaque program..

PLAQUE WINNERS

World Single Operator, High Power:
Station CR3Y (CT3BX), Hernani M. F. Curreia

World Multi -OP Mutli Transmitter:
Station W3LPL
OPS: W3EKT, K4GMH, KF3P, WB4ITN, NE3H, N3KTV N3UN & ND3F.
Sponsored by CQ Magazine

World Multi - OP Single Transmitter High Power:
Station RK9CWA
OPS: UA9CGA, RW9CF, UA9CR & RA9DK.
Sponsored by Advanced Electronic Applications (AEA)

World Multi - OP Single Transmitter Low Power:
Station I2KHM
OPS: IK2SGF, IK2ZJJ & I2GXS.
Sponsored by HAL Communications Corp.

World Single Operator, Low Power:
Station YV5NFL, Ricardo Medina
Sponsored by East Washington Amateur Group

World Single Operator Assisted:
Station K1NG (KI1G), Rick Davenport
Sponsored by CQ Magazine

North America Multi - OP Single Transmitter High Power:
Station VP5C
OPS: PA3ERC, PA3BBP, PA3EWP & PA3FQA.
Sponsored by Eddie Schneider W6/G0AZT

North America Single OP Low Power:
Station AB5KD. Ron Stailey
Sponsored by International Digital Radio Assoc

North America Single Operator Assisted:
Station NO2T, Jerry Jankowitz
Sponsored by Jeff Bouvier, K1IU

United Staes Single Operator High Power:
Station N4CC, Greg Wilson
Sponsored by RTTY by WF1B.

United Stated Single Operator Low Power:
Station WS1E, John Gaffey
Sponsored by Dunestar Systems

Continents, Single Operator All Band: Africa:
Station ZS6NW, Jan Van Niekerk.
Sponsored by Phil Duff, NA4M.

Asia:
Station JA2IVY, Yohmei Sujita.,
Sponsored by the N5JJ Memorial Award

Europe:
Station S56A. Marijan Miletic,
Sponsored by HAL Communications Corp

North America:
Station VY2SS, Robby Robertson,
Sponsored by the TG9VT Memorial Award.

Oceania:
Station VK9NH/VK4, (7K3UZY), Ken Yamashita.
Sponsored by The Digital Journal

South America:
Station P40JT, (WS7I), Jay Townsend,
Sponsored by Neal Sulymeyer, AE6E.

World 3.5 Mhz.
Station 9A9A, Zdravkb Balen,
Sponsored by Neal Campbell, AB4MJ/ON9CNC.

World 7.0 Mhz.
Station K1IU, Jeff Bouvier,
Sponsored by Tri-County DX Assoc.

World 14 Mhz.
Station 9A2DQ, Zelimir Klasan,
Sponsored by Kunihiko Fujii, JH1QDB

World 21 Mhz.
Station LU8EKC, Daniel Cosso,
Sponsored by Denis WD4KXB & Mike KA4RRU

Station Operators, Multi OPS:

DF7RX: DF7RX,DK2OY,DL2NBU,DL6RAI.
PI4COM: PA3ACA, PA3ALP, PA3DMH, PA3GBQ, PB0AIC, PB0AOE. KB8ECG: K8AQM, N8CC, KG8CO, KG8CW, KG8EF, KB8MGY, KB8NVJ, KB8NVL, KB8QJF, KB8VIT & KB8YFT.
VE3UR: VE3DEH, VA3MAO & VE3LIB.
LZ1KMS: LZ3GM, TODOR IVANOV, VENNY ATANASOV.
TY8G: TY1PS, LA9IY, LA4GHA, LA5IIA.
T99MT: T94EU, T94NE, T94NF, T94TF, T94TU.
SP6YFU: SP6NVK & SP6OPE
UX2F: UT9FJ, UU2JZ, UR5FJA, UR5FEL, US-F-044 & 18 Boys and Girls from 11 - 18 years old.
PI4CC: PA0VHA, PA3EDP, PA3FWV, PB0AIU, Pemzr.
N9ENA: N9NCX, KB9KOZ, KB9FYB
I2KHM: IK2SGF, IK2ZJJ, I2GXS.
IK2MPV: IK2FEO, IK2IKT, IK2RXV.
VK9LZ: N4TQO, KE6FV, W6OTC.
EA3AOK & EA3BT.
RU4L: UA4LCQ, UA4LM, UA4LL, RA4LDW, RA4LFG, RA4LCC, SERGEY, EVGENI & VITALIJ.
DA0WCY: DJ5LA & DJ1XT. HA3KNA:: HA3OV, ?,
VE3FJB: VE3FJB, VA3CW, VE3VSM, VE3ABG, VE3IJM, VE3NDA. AA5AU & G0AZT.
RK2FWA: UA2FF, UA2FX, UA2FZ, UA2FBA & RA2FA.
OL3A: OK1DX, OK1CM, OK1MR, OK1AY.
K8UNP: KR4GJ, YV5DTA/W4, K7UPJ, WT3A, N4OLE, KB4PNH,KD4CGP, W4OVU.
I2UIY: & IK2DUU.
K2TW & W9NGA.

4U0ITU: LX10M & LX1KQ.
WU3V: W5WMU,KI5XP,N5SYF,WD0GML,WN5IJZ,W5VSZ.
OT5T: ON6TT, AB6MJ, ON9CNC, ON1CIK, ON4UN.
VP5C: PA3BBP, PA3ERC, PA3EWP, PA3FQA.
WA4VQD: AF4Z, KC4HW, AD4TG, AA4FC, W3ZNB, KD4HHF, KB9YW,WB4NPL.
W3LPL: W3EKT, K4GMH, KF3P, WB4INT, NE3H, N3UN, N3KTV, ND3F.

Comments from around the world:

ZS6NW: After working one after the other familiar callsigns, I searched and found 143 stations that have been worked before. It was indeed a great feeling to work so many old friends. *V31JU:* Thought I would not get the INV L for 80 up, ARMY ANTS at foot of tower, but as a a good field biologist, I braved the menacing hoard, THE CONTEST MUST GO ON!
ZS6EZ: A burst geyser costs me 4 hours, than my radio died, just wasn't my weekend. *K1IU:* Conditions were just great! Too bad I overslept during the 2nd morning sunrise. Sure wish we didn't have to wait 1 year for the next CQ/DJWW RTTY Contest!

N8FEH: Can't beat RTTY ops for courtesy. *VE3LPE:* Most fun I have had on the radio in a long time.

VE2FFE: I have to find a way to operate on 40 and not freeze the computer. *N1RCT:* Had a great time and worked 8 new countries. *SO5TW:* I worked a few new ones I haven't found on CW or SSB.

VK5GN: Had fun despite Murphy's attention in this contest. *KA4RRU:* Best score for me ever, and I know I can do better, next time. *ZL2AMI:* Took time out to run AMTOR traffic with New Zealand yacht fleet protesting French nuclear testing. *AA4M:* The good news is I worked two all time new RTTY countries.

the bad news is that i missed my own state! Is it legal to work your self? *W3FQE:* This was my first CQWW RTTY test, hope not my last, I had a blast. *VE2JR:* Conditions a pleasant surprise. DSP filter really works. *LU8EKC:* This was the best contest many stations to work. *WS1F:* My first RTTY contest. had a blast. can t wait for the next one. *W8CNL:* Worked 7 new countries and my last state for RTTY WAS.

KB4WQO: Half way through the AMP died. *N2FF:* Forty meters was a disappointment. there should have been more activity on that band. *N5NMY:,* I'm hooked! see ya next year. *LX1NO:* My first rtty contest. I never had so much fun in a contest. hope to print all of you again. *DL7VZF:* My first CQ RTTY contest, a very big pleasure. *VK1PJ:* First RTTY Contest for me, had a ball. *DJ2BW:* Another Great Contest Again. *GU0SUP:* Great fun! 14Mhz. in good shape. I caused many pile up with my "GU" call. *EY8MM:*   I will remember this contest, 15 new DXCC countries and my second son was born at 23:59Z.

VE3XO: Not the greatest of WW contests— had numerous visits form Murphy! *PY2XB:* I didn't have contest s/w, I will try to get contest s/w for next year. I had a lot of fun.

(A full rundown of scores can be found in the August issue of the Digital Journal.)

TOP SCORES
SINGLE OPERATOR HIGH POWER
CR9Y	1,919,102
P40JT	1,668,194
S56A	1,254,800
VY2SS	1,047,510
VE3XO	1,004,910
IK2QEI	952,302
ZX2A	808,640
DJ6QT	798,600
OM5ZW	720,643
N4CC	710,940

SINGLE OPERATOR LOW POWER
YV5NFL	979,572
4X6ZK	809,994
AB5KD	639,846
4X0A	487,012
WS1E	462,672
KA4RRU	437,987
V31JU	421,820
KA1SIE	399,434
N1RCT	391,678
WA4ZXA	285,948

SINGLE OPERATOR ASSISTED
K1NG	1,347,367
DK3GI	1,042,386
UT0I	706,800
DL4MCF	539,392
NO2T	501,042

MULTI OPERATOR HIGH POWER
RK9CWA	2,552,754
OT5T	1,968,102
VP5C	1,845,152
DF7RX	1,326,528
RK2FWA	1,206,000

MULTI OPERATOR LOW POWER
I2KHM	925,628
UX2F	832,522
AA5AU	630,400
RU4L	587,479
K8UNP	554,652

MULTI OPERATOR, MULTI TRANSMITTER
W3LPL	2,154,385
KB8ECG	377,598

SINGLE OPERATOR, SINGLE BAND
3.5
9A9A	42,700
S57DX	40,250
IK1HXN	36,573

7.0
K1IU	185,277
9A1A	155,414
GI0KOW	154.876

14
9A2DQ	340,648
UT7I	279,948
JA5EXW	255,910
EA2IA	244,084
YU1NR	229,824

21
LU8EKC	267,410
ZS6NW	222,120
LT1A	216,625

Until Next year, 73's
Roy KT1N & Ron AB5KD

Digital Satellites

How to work 'em and more out of this world info

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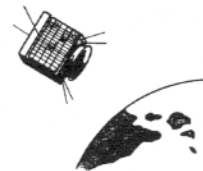
One of the fun things to do if you are into Digital Modes (well you are a subscriber to this Journal aren't you?) is with the digital satellites. In past articles I have dealt with hardware and some software requirements so this month I am going to discuss in more detail a software package called WiSP. This is a windows based program specifically written to interface with the digital satellites. A very sophisticated package written by Chris Jackson (ZL2TPO) and available through AMSAT for a modest donation.

WiSP will do everything you need to work with the PACSATS, KITSATS and UOSATS, including completely automating your station. Mine has been running here now for several weeks without attention and all I have to do is read the mail every day and enter any outgoing messages I may have. WiSP's inwards message handler runs after each satellite pass and removes the pacsat header, decompresses the file if necessary, inserts a new meaningful header and files it away in an appropriate folder (or directory if you are still with Windows 3.1). You can read these messages through the built in Reader. Messages to you will automatically appear on the screen as they are received.

In addition to this WiSP will update your computer clock on a regular basis from a selected satellite as well as updating the Keplerian Elements file from files regularly uploaded to the satellites. If you wish it will regularly intercept telemetry and kiss data, filing these away in appropriate folders. You can watch this data in real time or inspect this data at your leisure with built in data processors. There seems to be no end to what this software can do.

As with any package of this complexity the setting up process is lengthy but remarkably simple considering the quantity of data involved. The help files are extremely good and answer the majority of questions but like always there are some places where a little more clarity is desirable. So we will go through the process step by step here to try and make it a little clearer.

First you can get an unregistered copy of WiSP from the AMSAT home page on the World Wide Web. (http://www.amsat.org). Look in the downloadable files directory for WISP9502.zip and download it. Now create a WiSP folder (or directory) and unzip this file into it. This will produce a number of files including some more .ZIP files but ignore these for now. The executable file is GSC.EXE and you can go ahead and run this from Windows without further ado. GSC is short for Groundstation Control.

(Once you have tried this out and decide to use it you should send your donation to AMSAT and you will receive an official registration number and a disk if you wish.)

GSC will load quite quickly and you will see a screen called "Groundstation Control" with the usual Windows type format. This will all look quite familiar and you should immediately feel comfortable with it. Along the top you will see Setup Housekeeping Tracking Database Programs Help.

We will go through each of these in detail now.

It would seem reasonable to proceed first to Setup so lets do just that. Accessing this produces a large and formidable looking pull down menu containing the following items:

General Setup

Station Setup

Communications

Satellite Setup

Schedule Events

Rotator Setup

Programs

Sounds

Select font

MSPE Setup

Edit MSPE Equations

View-Dir Setup

Edit View-Dir Equations

Msgmaker Setup

Edit signature file

Procmail Setup

Wow! This will take for ever to wade through. Actually if you go carefully and methodically it should not take more than 15-20 minutes as we shall see. The trick is to start at the beginning and go through each screen logically. Don't try and be smart and jump the gun. This rarely pays off even if you are smart. I am not going to bore you with gruesome details of each screen because most of the detail is self evident but we will indicate where problems may be encountered. There is just one idiosyncrasy with all these screens and this is a button marked "Cancel". There is also one marked "OK". When you have completed editing the screen you must press the "OK" button. Then you press "Cancel" to exit the screen. When I first saw this I assumed that Cancel meant cancel what I had just done whereas it really means Exit the screen.

The **General Setup** screen can be mostly left with the default values. You can play with these later when the system is running. There are, however, two important matters at the bottom of this screen. The first is to do with time. You will make life much easier for yourself if you set your computer up on Universal Time (GMT or UTC) and select UTC here. The other matter concerns the way WiSP handles DOS files. If you are using Windows 3.1 select PIF but if you are up to Windows95 YOU MUST SELECT EXE on this screen. More on this later.

The next screen concerns details of your geographical location. If you don't know this and are like me who rarely knows where he is at then WiSP will come to your rescue. Just go along the menu bar to database and access the pull down menu. If you go to "Edit Observer Data" you will most probably find your town or city with all the data necessary to complete the **Station Setup** screen.

The **Communications** screen allows you to set up different parameters for different satellites. Just be sure you give the files names which are easily remembered. The TNC parameters can be left with the defaults unless you have some really good reason to change them. Just be sure you set the COM port correctly otherwise WiSP will come up with an error message and might even lock up.

The **Satellite Setup** screen allows you to nominate the satellites you are interested in tracking. The Callsign data is a little tricky but here again help is available with a little more trouble. You will find in the WiSP folder\directory a file called "Callsign.Txt". This contains the data you need. These are packet type callsigns; for example for PACSAT(AO-16) the Broadcast call is PACSAT-11 and the BBS Call PACSAT-12. Others all follow the same pattern but the KIT-SATS have calls like HL01-11 etc. Note carefully in this case that the third character is zero NOT oh. This is where you can have your computer clock updated but a word of warning. Be sure the satellite selected has a reliable clock which is closely monitored. UO-22 or PACSAT are the most reliable in this respect. Don't worry about the telemetry box at this time. Just leave it blank.

Schedule events is where you can have WiSP run other Windows or DOS files at specific times. This is not something you are going to want to do at this stage so leave this screen blank. If you really want to run something read the Help file. This is a fun thing to do and we will deal with this in more detail in a subsequent article.

Next we have **Rotator Setup**. Here you only have two choices at present, The Kansas City Tracker or the TAPR Trakbox. If you have a trakbox then the setup is simple. Just select Trakbox and access the setup screen. Again be sure to get the correct COM port for your trakbox. If you have the KCT then life is more complex. First go to the WiSP folder/Directory and unzip a file called ""KCT-DRV.ZIP"" This will produce a number of files including a long Readme. Read this and follow the instructions to set up the driver. As I use a Trakbox I have no experience with the KCT and WiSP so you are on your own in this respect. The instructions look clear enough to me.

The **Programs** Screen allows you to run other programs not related to WiSP but it is suggested you leave this screen blank for now. After you are really comfortable with WiSP you can experiment with this.

Sounds. If you have a multimedia machine you can dress your program up with audio. For example you can have it sound TADA every time it downloads a file etc. Just use your imagination and read the Help file. The instructions are quite clear. If you have Windows95 on a CDROM you will find a number of neat .WAV files tucked away on the CD.

Select font. This is pretty obvious. Just leave it with the defaults for now.

MSPE setup. It is here that you can tailor the sytem to your own specific needs. For example if you are not a Satellite Gateway you don't want to be bothered with a whole raft of BBS files so you check the "Block all BBS files" box. Just select what you feel you may need and experiment with it. The Help file is again good. ProcMail is the processor which removes the header from the files and decompresses them, if necessary. It is a good idea to run this after each pass. To make this work you need to be sure of the following:

There is a file in \WiSP called PKUNZIP.PIF. There is a folder\directory called \UTILS which should contain PKUNZIP.EXE PKZIP.EXE and LHA.EXE This is for Windows 3.1. If you are using Windows95 and the message processor does not work with zipped files try putting PKUNZIP in the \WiSP folder. This usually fixes that problem.

EDIT MSPE equations. WiSP uses some unfamiliar type equations to determine exactly what should or should not be downloaded from the satellite as well as determining some priorities. This is a complex subject and could be made the subject of a separate article. For now don't fool with these unless you are a software guru in which case you don't need me to explain the system. You might want to remove the last line which says source = "ZL2TPO". If you do this be sure to remove the vertical bar (I) at the end of the previous line, otherwise you will get an error message.

View-Dir Setup. View-Dir is the program which allows you to view the satellite directory as downloaded and to read your personal mail as well as certain other message files. Leave the default values here for now.

Edit View-Dir Equations. All you need to do here is to remove the following four lines:

```
[ZL2TPO]
{
 destination = "ZL"
}
```

MessageMaker is the unit which helps you prepare your messages for uplinking. This will compress them, if necessary, and add the PACSAT header. If you are using Windows95 it is a good idea to get the 32 bit version of MessageMaker which can be found in the Windows95 directory at the AMSAT Web page mentioned above. The signature file is one you can prepare from the next screen (**Edit Signature File**). This is just a short file which could say something like:

```
73 de Dave KI6QE
@KO-23 KO-25 UO-22
INTERNET dmedley@gnn.com
```

This will be appended to each of your upload files.

Well at last (Gasp) we come to the last Setup Screen. **ProcMail Setup**. This is pretty self evident but it is a good idea to check automatic updating for the Keplerian Elements. Every week updated Keps are upload to the satellites and WiSP will capture these and update the KEPS database. However as a start we need to do this manually. Either from AMSAT or your local BBS or wherever get the latest Keps file which may be in the form ORBS096n.ELE or something similar. Load this into the \WiSP Folder/Directory. Now pull down the Database menu and follow the directions to update the satellite database.

Well you have now got WiSP setup and you should have no further problems in working with the digital satellites. Next month we will go a little deeper into WiSP and explain how a lot more things may be done with it.

In the meanwhile "Happy Satelliting"

A few of our digital friends and associates enjoying "eye-ball" qso's and libation at the

Digital Journal Dinner held in the Radisson Inn.

See anyone you know?

Pactor Mode Throughput - Part II

Test Results

By Marvin Bernstein, W2PAT/AFA1DA • 1137 Hope Road • Asbury, NJ 07712-3162
Tel: 908.542.2688

An investigation of the data speed of the Pactor mode has made use of an Air Force Military Affiliate Radio System High Frequency for more then two years. The frequency used for this test series is approximately 7.9 MHz but the actual assigned frequency cannot be disclosed. The tests have been made between a MARS member in Kansas sending *ascii* files to the member in New Jersey, a distance of just over 1000 miles. Transmissions have been undertaken on a fixed time schedule without regard to HF propagation conditions. The first test each day is held at 1340 Zulu in the morning and the second test is at 2330 Zulu in the evening.

This report is the second one of a series that will detail the results of an extensive High Frequency Pactor Mode test. The first report has been published in the Digital Journal and the TAPR Packet Status Register1. It is important to point out that this long series of Pactor Mode tests, which started in April 1995, is still continuing. The objective of this program is to learn more about the circuits used in the demodulator which converts the audio tone output of the receiver into *dc* voltage changes required by the computer. The Pactor Mode is used only as a tool that accurately allows evaluation of the transmitted *ascii* file data speed and in this way, to determine the effects of changes in the system or circuit.

As of the date of this Report, a total of sixteen investigations have been completed, each of which consists of 25 tests. Each test involves one KAM-to-KAM run to obtain the propagation data speed, and then a second run of the system under investigation. Approximately 3.1 K bytes of file is sent twice for each of the 25 tests, or about 155 K bytes for each of the 25 tests.

In this long investigation, Two TNCs were tested as well as six different tests of a demodulator which used 88 mH toroids with changes in the demodulator circuit, and the use of a Digital Signal Processor. Two tests compared the performance gain with the W9GR DSP-2 unit in the Filter and DE-noise modes, when used with the KAM TNC. One test with a Timewave DSP in the Filter mode on the input of the KAM. The MFJ-1278B operated with a Switched Capacitor Filter and also with the W9GR DSP Filter. In addition, tests were made with a narrow band commercial unit, with and without the use of the W9GR DSP Filter. The last test used a Quartz Crystal demodulator to determine if filtering and detection at 6 MHz would result in significant speed improvements. The audio tones were input to an LM-1496 balanced modulator chip, filtered in a six crystal 6.0 MHz ladder filter, detected with a two crystal resonator discriminator and a dual operational amplifier used to increase the dc voltage levels.

This investigation is NOT concerned with Pactor Mode HF DATA SPEED. But measurement of speed is necessary because the speed results allow for the accurate evaluation of changes in the demodulator and systems with the resulting effects upon data speed.

REFERENCE DATA SPEED RESULTS

Figure 1
Pactor Data Speed
From April 1995 to
May 1996. Bytes
Per MINUTE.
KAM-to-KAM test mode
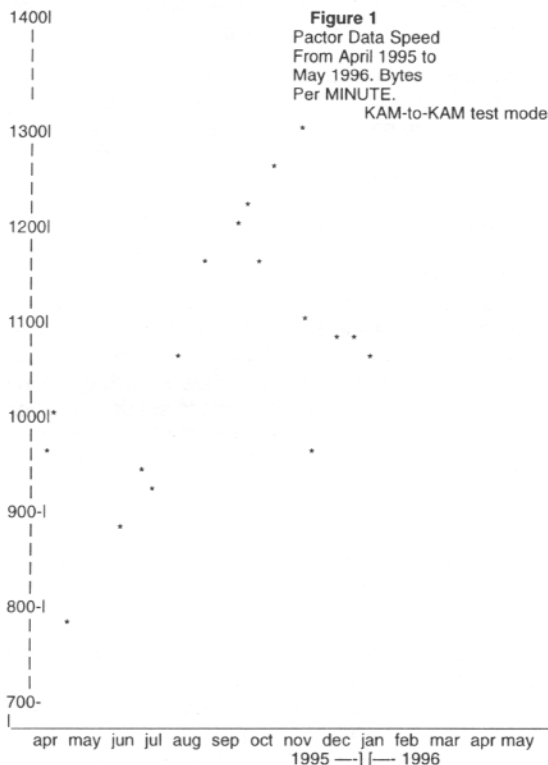
The data speed depends to a large degree on the HF Propagation conditions as well as the presence of noise. It has been determined that QRN, static, the natural noise from lightning strikes, is especially destructive and results in large decreases in speed. Due to these causes, a REFERENCE data speed is required for each test, and so a KAM-to-KAM transmission is a part of every daily test. To prove conclusively that these added tests are required, the KAM-to-KAM data speeds have been shown in the form of a graph.

Figure One shows the plotted average data speed for the KAM-to-KAM transmissions from the start of testing, April 1995 to May 1996. The plotted data shows a decreasing speed from April to May but after July there is a steadily increasing data speed for the rest of the year.

The KAM-to-KAM reference data speed peaks in the months of January and early February due to lack of QRN and above average signals. During the last part of February, speeds decreased due to lower signal strengths. From March to May, speeds decreased both due to the beginning of Spring Storms and decreased signal strengths. There were no tests made during June, 1996, due to vacations.

The average Pactor data speed for the whole test interval of one year is 1112 bytes per minute. During this test period, 3.1 million bytes of test files were transmitted from Kansas to New Jersey. The average signal strength over this period of time was 2.6 S-units. A test was made with a Measurements Corporation Standard Signal Generator which indicated that this value of signal strength, 2.6 S-units, was equal to 3 microvolts.

The most serious concern from change of the CW requirement does not relate to the introduction of operators lacking CW proficiency at HF, but rather to related regulatory changes affecting the usage patterns for the HF bands. Some have suggested that if the CW requirement were eliminated, SSB and other phone operations would expand throughout the current CW subbands. This would certainly create major problems for CW and other digital mode operators who occupy those subbands, particularly in North America, if it were to happen. But there is no reason why this should happen. Why not simply redefine the existing CW subbands as the digital mode subbands for regulatory purposes? CW could continue to exist in those subbands with the other digital modes for those who have or develop interest in CW operation. The SSB and phone operators would continue to have their own subbands as at present. And the new operators who become interested in the digital modes (including CW) would have access to the digital subbands.

Something to think about.

73 de Paul Richter W4ZB

TABLE ONE

DATES 1995	STANDARD DEVIATION Bytes/Minute	AVERAGE SIGNAL S - Units
06 April - 22 April	260	3.0
22 April - 06 May	267	3.1
07 May - 21 May	280	2.7
11 July - 20 July	212	3.3
02 Aug - 20 Aug	291	2.9
21 Aug - 01 Sept	281	2.0
04 Sep - 20 Sep	235	2.5
21 Sep - 07 Oct	259	2.0
08 Oct - 23 Oct	331	1.3
24 Oct - 07 Nov	340	1.9
08 Nov - 01 Dec	249	2.5
02 Dec - 17 Dec	236	2.6
1996		
18 Dec - 05 Jan	222	2.7
05 Jan - 20 Jan	237	3.0
21 Jan - 09 Feb	192	3.3
10 Feb - 25 Feb	315	2.6
26 Feb - 10 Mar	326	2.8
15 Mar - 30 Mar	284	2.5
30 Mar - 21 Apr	294	2.3
22 Apr - 09 May	285	2.2

Table one lists the starting and ending dates of each of the tests, the Standard Deviation and the average signal strength from the start in April 1995 to the last test in May 1996. The Standard Deviation is a calculated value which indicates the spreading of the individual test measurements of the data speeds .

The Average Signal strength was determined by observing the S-meter on the Icom-745 transceiver during the test, taking the lowest and highest readings, and averaging them. This was done every day, and finally the TEST AVERAGE was calculated from all the individual readings and is shown in the Table.

It is considered to be important to observe that the SD readings are relatively uniform, with an AVERAGE value of 261 bytes per minute over the 13 months of tests. The lowest value is 192 for the period 21 Jan to 09 Feb., when the average signal strength was 3.3 S-units. The highest value is 340 bytes per minute during the period 24 Oct. to 07 Nov., when the average signal was weaker at 1.9 S-units. There is a direct correlation between strong signals and low Standard Deviation values since under those conditions, Pactor data speeds are high with little variation due to noise and propagation changes.

DEMODULATOR TEST RESULTS

The following information contains the results of the investigation of the components of the demodulator that were constructed. The use of the G4BMK software Pactor program, BMK-MULTY2, was continued since it allows a very simple interface to the 386 computer serial port. The second section of the LM-558 dual operational amplifier easily supplied the required RS-232 voltage levels.(2)

There were unrelated systems that were included in the year of tests so to avoid confusion concerning the results of this work, it has been assembled into an ordered document. While a new circuit was designed and constructed, the investigation continued with other systems. The second part of this Report, will deal with the actual results of the investigation of elements of the experimental demodulators that were constructed for these tests. A very simple circuit was built to evaluate changes in this circuit with any resulting improvement in the data speed. Six tests were completed and the following TABLE has the information on the circuit and the percentage change in the data speed compared to the standard REFERENCE obtained with the KAM-to-KAM test. This speed was normalized to 100% so that the information then can be compared to that obtained with the experimental circuit.

Test #	Reference Speed	Demod. Speed	Difference
1.	1201 Bytes/min	1085 Bytes/min	Minus 9.7 %
2.	1152 "	1187 "	Plus 3.0 %
3.	1212 "	1249 "	Plus 3.1 %
4.	1165 "	1218 "	Plus 4.5 %
5.	1265 "	1327 "	Plus 4.9 %
6.	1109 "	1223 "	Plus 10.3 %

Test #	Experimental Circuit
1.	Two 88 Mh toroids, tuned to 2110/2310 Hertz. Driven by an NPN emitter follower transistor. Output of the tuned circuits rectified with half wave diodes. Dual Operational Amplifier used to raise voltage level.
2.	Input to (1) with W9GR DSP Filter.
3.	(1) Circuit modified, Half Wave changed to Full Wave Rectifier. DSP Filter not used.
4.	(3) Circuit added to input, soft diode clipper and 741 hard clipper. DSP Filter not used.
5.	(4) Circuit added after first DC Operational Amplifier consisting of a DC Restorer to reduce fading effects of one of the tone frequencies. DSP Filter not used.
6.	(5) W9GR DSP Filter added to input.

Note: The DSP equipment used was the W9GR version 2.3

CONCLUSIONS

The simple demodulator consisting of 88 mH toroids and half wave diode rectification was about ten percent slower than the KAM.

With the 1992 version of the W9GR DSP RTTY Filter mode used on the input of the simple circuit, the data speed increased 12.7%. That system ran at three percent faster than the KAM.

The simple demodulator circuit tone rectification was changed from half-wave to full-wave and the   data speed increased more than when the DSP Filter was used. The relative data speed increased by 12.8% percent and was faster by 3,1% than the KAM.

The soft/hard clipper circuit was added to the full wave modified simple demodulator. That resulted in a 1.4% speed increase.

The DC Restorer, a form of Automatic Threshold Control (ATC), only increased the data speed by 0.4%.

Finally, after all the circuit modifications were made, the W9GR DSP FILTER was again used, and it now resulted in a 5.4% speed increase. Therefore, with all the changes and use of the DSP Filter, the total increase in speed of the simple demodulator was only 20%. Further, the highest data speed for the experimental demodulator was only 10.3% faster than the Reference Speed of the KAM.

With a very simple demodulator circuit, the addition of the DSP filter resulted in a relatively large increase in data speed. As improvements were made to this simple circuit, the DSP unit did not   provide the same percentage speed increase, as would be expected.

Once again, it is important to understand that the actual values of the DATA SPEED, using the Pactor Mode, is not the object of this long term investigation. It is to learn more about how effective the Demodulator design can be made to increase the data speed in the presence of NOISE and WEAK signals.

NEXT REPORT

The next report will contain information on the relative speeds of the KAM REFERENCE compared to the use of

The Last Word
from the Editor

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The first word is WELCOME . . . and the second is new. Welcome to two newly elected directors, four new directors-designate (that means nominated!), two new Associate Editors, a new Treasurer, new management for the Software Store! Let's go over that list again: two new directors; Ron AB5KD and Glenn W6OTC. Four nominated; Arie 4X6UO, Neal ON9CNC, Don AA5AU and Ray WF1B. Treasurer; W6OTC. Software Store; WF1B. Hey, that's a hot hand in any game. There are pictures and details elsewhere, of course, but I want to thank each and every one of the names listed above for their willingness to take on significant responsibilities in IDRA. None of them have the time for they are all busily engaged in careers of one kind or another. But none hesitated a minute. What a bunch!

I do want to devote a bit of scarce space to a brief discussion about the new Associate Editors, their responsibilities and the future makeup of the Digital Journal. Both Don and Neal are extremely well qualified to fill their new role. They write well, they know what they are talking about, they have 'been there and done that,' when it comes to almost any phase of digital radio activity. No, that's not right—'they have been there and are still doing it,' so there expertise has that current and up to the minute quality so hard to find these days. Rare talents, both, and their arrival on the scene coincides with a needed shift in focus for the Digital Journal.

The survey of membership (reported in the June issue) confirmed our assumptions and underscored a need for a shift in direction. There is to be no drastic change, but we now have a clear picture of just where we are going. The Digital Journal will continue to serve the digital keyboarders (old, new and new-comer) of the world. We will strive to present outstanding coverage in three principal areas—DX, Operations and Contesting.

Under that banner we see our Contest coverage as second-to-none. But we don't give ourselves high enough marks in the other two areas. The Digital Journal needs to expand its DX coverage and enlarge and reorganize its Operations section. Enter the new Associate Editors. Don, the obvious choice for the DX assignment and Neal the ideal manager of Operations.

This new assignment does not mean to suggest that all they will do is write longer articles! Not at all. In fact, they will each be responsible for building a team of reporters/writers who can fulfill a well defined need. More attention will be paid to the tutorial approach, beginning with 'how to'—how to get started in the digital world or work your first hundred countries, etc.. More articles will show how real people do the seemingly complex things we may want to do ourselves. More attention will be given to in-depth studies of major subjects. All of this means more work, more planning, more organization and more volunteers. You are on their list! So be ready for the call.

Needless to say, I am very pleased to be working with two such bright and willing colleagues. They have already made my life easier! Welcome aboard.

A special welcome to Rhode Island, too. Ray WF1B, who isn't exactly in need of another chore, will now take over the Software Store. Well, not exactly. More precisely the Ortgiesen household is taking over the Store. Ray, you see, will spend his time finding and testing more products for the shelves while Suzanne KA1JGB handles all the fulfillment task. She even bought Ray a desk for his 33rd birthday anniversary (in mid-June) so she could

have a place of business. Nice, Suzanne. Ray didn't need that new rig anyway!! In any event it is wonderful to have this very important IDRA function in such capable hands.

Get out your word processor! The World Radio Conference of 1997 was not, until recently, viewed as a battleground. Now, however, Dave Sumner K1ZZ off the ARRL advises that all has changed. Representatives of the Low-Earth-Orbit Industry (LEO for short) filed for several frequencies for exclusive use by the mobile satellite service. Among them our 2 Meter and 70 CM bands, probably the most heavily used bands in the entire amateur spectrum! While some may view this as a greedy move by a bunch of uninformed satellite operators (and it probably is), there is every reason to take it seriously. Very seriously.

Action, action NOW, is the only answer. Write today and file your comment. Make it count, but no 'flames' please.

Here are some key addresses:

Cecily C. Holiday, Int'l Bureau FCC, Washington, DC 20554 or <choliday@fcc.gov.
Warren Richards, Chair, IWG-2A, Dept. of State, CIP 2529, Washington DC 20520 or <richardswg@ms682wpoa.us-state.gov>
Tracey Weisler, FCC Rep., IWG-2A, Int'l Bureau, FCC, Washington, DC 20554 or <tweisler@fcc.gov>
Mary Kay Williams, Final Analysis, Inc., 7500 Greenway Center, Ste. 1240, Greenbelt, MD 20770
Leslie Taylor, President, LTA, 6800 Carlynn court, Bethesday, MD 20817 or <ltaylor@lta.com>

Do it now!

Whoops! Some changes in WPX scores. Jay WS7I advises that a major mistake cropped up in WPX scoring. "I have made a rather major mistake in listing a World Plaque Winner in the wrong category. I2EOW who submitted a log in the Single Band 20 Meter category. It was mis-classed as a Single/High."

Jay went on, "So what is probably a new WORLD RECORD was overlooked. I2EOW's score was so large that it ranked #7 in Single/High and just didn't look like Single Band. Indeed, he set a 20 Meter standard that will be hard to beat for years to come. Our apologies to him for our mistake."

And speaking of contests . . . there is no rest for the contester. You thought the last weekend is July was free for that annual picnic? Think again. The Russians have come up with a zinger of a contest for the weekend of July 27-28. It is RTTY only, 80-10 meters, 36 hours of operations for Single (with no restrictions on rest period). Exchange for non-Russian stations—RST+CQ zone number. For Russians, RST+2 letter Oblast identification. Each DXCC country and each Oblast is a multiplier. Score 5 points for each QSO on your continent, 10 for other continents.

This is sponsored by Russian Center RC, Ulyanovsk PolyTech and is run by Ulyanovsk Signal DX Club. And this sounds like a good one.

Do we do SSTV?? This is a mode that failed to show up in the survey as reported to you last month. It isn't a digital mode, but some think we should cover it. I am not so sure about that but am happy to point out that there is a website devoted to SSTV DX. It is at <http://www.club.innet.be/~pub02749/sstv01.htm>. I

haven't tried the mode or the website, so your reactions will be appreciated.

What's an ADIF? Something you will here more about soon. Amateur Data Interchange Format—that's an ADIF. And WF1B and WN4AZY are spearheading the effort. The goal is so simply stated and so complex in execution—"Provide a standard interchange for amateur data regardless of operating system, programming language, or hardware platform, permitting easy and direct transfer of data conforming to the standard between various amateur programs . . ." Bravo! We hope they can accomplish something for it is sorely needed. Hopefully, Ray will keep us posted as this project moves forward.

Two notes of interest. Bob Lewis AA4PB has written a universal "Packet/Pactor file transfer protocol," and you can read about it in this very issue. You can also download the software from the Digital Journal website <http://www.n2hos.com/digital/software.html>. Bob has made a move in the right direction. Java, Sun Microsystem's widely promoted language standard for the Internet, may also have significant applications in the amateur world. Steve N2QCA reports on the subject in this issue—very worthwhile reading. Maybe there is hope for a standard yet.

IT'S OVER! And it's a good thing Dayton comes but once a year. I think most of the die-hard types who arrive on Thursday and depart on Sunday have had their fill. Wishing to avoid overdosing on the highs and lows of Hara they are happy to return to home base and some sense of normality. Was it worth it? Yeh. Will I do it again? Yeh. Do I like the three week delay? Nah! Do I want to go back to the Radisson? Nah! DARA swapped the rain for that lovely Midwest humidity and heat . . . and lost in the bargain. Hi!

Let me summarize the material side of the Dayton experience in a few well chosen words: 1) crowds seemed lighter 2) computers and amplifiers drew lots of attention 3) there was nothing deemed radically new 4) digital radio interest appeared to be higher than normal 5) there were fewer silly 2-meter beams on crazy hats than before and 6) Hara Arena remains an enigma . . . a hot and humid enigma.

The old and new friends, however, were more visible and more appreciated than ever before. Those who went to Dayton hoping to find some new hardware or some great bargain might have been disappointed. Those of us who went to rekindle the flame of long term friendships, discover new ones, grasp the unexpected intangible values lying about the meeting places, were certainly not (and never will be) depressed about the 'Dayton experience.' Over the years I have learned that every active amateur should get to Dayton once . . . once for the flea market and the exhibits. And then again and again and again for the real treasure, the people who enrich the digital community we call ours. If you haven't made it yet, lay your plans for 1997 now.

The highlight: the IDRA booth adjoined that of the Royal Omani ARS (ROARS). Aside from being wonderful companions the A45's were generous providers of colorful books about their most interesting country . . . and even more generous suppliers of the most delicious dates I have ever tasted. Al W2TKU, Jules W2JGR, Paul W4ZB (and many others) became addicted. They also provided free, high speed courier service. Tom A45AZ a new member who is with the American Embassy in Oman, needed a few back issues. No problem—and the delivery was confirmed by Tom a few days after Dayton. Thanks to all for most pleasant neighboring.

On the other hand, I learned a lot about a new technical subject, the downer of the weekend. My watch band broke just as I left for Dayton on Thursday. Despite promises, I found no replacement watch bands in the flea market (It was supposed to be right next to those $125 HAL ST8000s!). It is a solar watch and I really like it. Perfect time, no batteries, etc., etc. But when I pulled it

out on Saturday afternoon (circa 3PM) the watch read high noon! This was devastating news. My favorite watch was kaput! Someone (a nameless friend, who later told the entire world about my stupidity) told me how to fix it by suggesting that the sun might not shine in my pocket! Lesson learned. Watch back in service. Friend still on probation!

Peter 5X/ON6TT is looking for someone who has had experience with the Codan 9002 (Australian) modem. The World Food Program of the UN is using this in their relief work, with mixed results. If you have information or know someone who does, drop Peter a note at <peter.casier@wfp.or.ug>.

Correction: we inadvertently listed Ken Wickwire's (KB1JY) address incorrectly last month. It is 232 North Rd., Apt 17, Bedford, MA 01730. Our software also dropped a couple of sentences in his article as well. The two sentences beginning at the bottom of page seven should read "NVIS Windows could have raised MVIS packet throughput somewhat. However, this doesn't explain all of the improved performance, whose main source . . . ."

Sorry, Ken. It's always the software! And that's the last word.

73 de Jim N2HOS sk

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the LM-565 Phase Locked Loop integrated circuit and a unique new design in which the filtering and discriminator functions are done at a frequency of SIX MHz. There will also be information on the W9GR version 3 Digital Signal Processor and its performance with the KAM TNC as well as some data on the MFJ-1278B TNC.

I wish to acknowledge the huge amount of effort by Conrad Steinel K0UER/AFA3VP, Emporia, KS in his meeting the scheduled test times. He has been punctual and reliable and willing to interrupt his own personal daily life to get on the air and run the test files. It has been a pleasure for me, to have him participate in the long term investigation that is still in progress. Without his help, this Report on the work could not be published. Furthermore, I wish to also acknowledge the help of both our XYLs. We would forget about the schedule occasionally and they would remind us of the time so we could complete yet another test.

1 *High Frequency Performance Of Two Different Pactor Systems Packet Status Register, Tucson Amateur Packet Radio Corp., Winter 1996, issue # 61*

High Frequency Performance Of Two Different Pactor Systems International Digital Radio Association, Digital Journal Volume 44, Number 3, March 1996

2 *Schnedler Ststems P.O.Box 5964, Asheville, NC 28813 704-274-4646*

3 *QST, Sept. 1992 Low Cost Digital Processing For The Radio Amateur. Dave Hershberger, W9GR.*

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