

DIGITAL JOURNAL™

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Volume 42, Number 4, April 1994

The Premier Source of Digital Radio News and Knowledge Since 1953

ADRS SAYS NO BANDPLAN!

The ADRS Board of Directors affirmed its attitude toward band planning at HF. They stressed these points as fundamental to the ADRS philosophy.

1. If the FCC determines that fully automatic operation of digital stations is appropriate at HF, then it is agreed all such activity be allowed to operate within designated, permanent sub-bands (along with those non-automatic stations who also choose to operate there).

2. The balance of the spectrum must remain open to all qualified amateurs. CW and Digital modes share equally the non-phone portions of the HF bands. Both are subject to the three basic rules of amateur radio:

- a: no party or group owns a frequency.
- b: a frequency in use is not available to any other station.
- c: listen first, then transmit.

3. Traditional courtesies such as the digital "DX" windows should continue. So should the so-called "gentlemen's agreements" regarding mode clustering. But these traditions must evolve and even disappear as habits and technology alter operations.

At its birth the ADRS committed itself to the "wisest" use of the spectrum. Band plans proposed even by the most sagacious of licensed operators inevitably reflect the past, never the future. Efficiency thus falls victim to the myths and myopic views of current practice. The dynamic progress of digital radio requires freedom of movement and experimentation. Obsolete bureaucratic regulations clutter our minds and hinder progress. For digital radio . . .

The best bandplan is no bandplan.

(see Last Word for discussion)

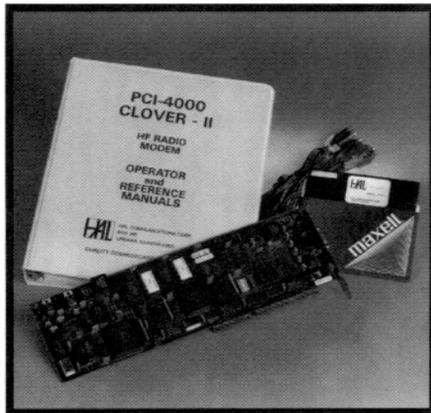
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Dawn of
A New Day

RTTY

DIGITAL JOURNAL

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FCC NEWS

Report No. DC-2582

ACTION IN DOCKET CASE

April 4, 1994

COMMISSION AMENDS RULES CONCERNING MESSAGE FORWARDING SYSTEMS IN THE AMATEUR SERVICE

(PR DOCKET NO. 93-850)

The FCC has relaxed the amateur service rules to enable contemporary message forwarding systems to operate at hundreds of characters per second while retaining safeguards to prevent misuse.

A message forwarding system is a group of amateur stations participating in a voluntary, cooperative, interactive arrangement where communications from the control operator of an originating station are transmitted to one or more destination stations via forwarding stations, which may or may not be automatically controlled.

Currently, the control operator of each station is held individually accountable for each message retransmitted, resulting in unnecessary content review and delays. The American Radio Relay League, Inc. (League) stated that the obligation of the control operator of the first forwarding station should be the establishment of the identity of the station originating the message. Only when this is not done should these control operators be held accountable for improper message content. Also, there are currently no central supervisory authority in an ad hoc amateur service digital network, making these unsupervised systems easy targets for misuse by uncooperative operators and non-licensees. Moreover, the Commission said that it could be difficult to establish after the fact that a particular VHF station originated a fleeting high speed digital transmission. For these reasons, the Commission said there must be on-going oversight of the system and the control operators of the first forwarding stations are in the best position to provide such oversight.

Therefore, the Commission will hold accountable only the licensees of the station originating a message, and the licensee of the first station forwarding a message in a high speed message forwarding system. The licensee of the first forwarding station must either authenticate the identity of the station from which it accepts communications on behalf of the system, or accept accountability for the content of the message.

The Commission also clarified that the station that receives a communication directly from the originating station and introduces it into the message forwarding system is the first forwarding station.

The League and the Colorado Council of Amateur Radio Clubs suggested that the Commission substitute the word "simultaneously" for "instantaneously" in the redefinition of a repeater. The Commission concurred and adopted this modification.

The Commission believes that these rule changes will enable contemporary high speed message forwarding systems to operate as their designers intended, while retaining the minimum safeguards necessary to prevent misuse.

Action by the Commission March 30, 1994, by Report and Order (FCC 94-76).

Chairman Hundt, Commissioners Quello and Barrett.

HITS & MISSES

Dale Sinner, W6IWO

S + T + M = Progress

Science, Technology, Mathematics

Within those three arenas we find our hobby being escalated almost daily. We have been enjoying this forward movement for many years and no doubt this thrust will continue. As I look back through some of the older *journals* I find that our phase of ham radio has been blessed with many innovative ideas and improvements. I'm sure Merrill Swan, W6AEE, (deceased) felt in the very beginning that a *journal* to help RTTYers was going to be a hit. I cannot remember a month going by that I could hardly wait for my copy to arrive. I even wished for a more often cycle. The first *journals* were no different than those of today. They were packed with up to date information, pictures, drawings, circuit diagrams, and technical know-how to help all in our ranks.

There were great engineers who contributed to the *journal* as well as the tinkers. At that time even though in the mechanical age of digital communications, many improvements were published in the *journal*. No matter who you talked to on the air or in person, everyone knew of the *journal*. It was then and still is, "the premier source of digital news and knowledge" as stated in our front cover motto. How could anyone even remotely interested in the digital modes not be a subscriber?

Each step along the way, each publisher has contributed to the advancement of our hobby by providing you with timely information. Now the *journal* (RDJ) has taken another step in it's history. At last a dream of many has come true. Not only does the *journal* continue to be your source of knowledge but it is backed by a great organization, the American Digital Radio Society. Some of you may not know that digital organization has been tried before by various groups around our country. But each did not last long enough to be considered. I can remember being a part a Los Angeles effort back in the 70s. The local club was pretty large and encompassed many from the San Diego and Santa Barbara areas. However, this effort did not last even though at the time some progress was made to help validate the digital modes.

If you have a copy of the May/June 1993 issue of the RDJ, take a few moments and read the material presented by some of the columnists about the history of the

digital modes as it was reported from a talk given by Bill Henry, K9GWT, at the RTTY dinner last year in Dayton. Throughout Bill's talk his reference was the RDJ. I have attended many meetings, forums, and seminars on the digital modes in past years but never did I consider how much our hobby has grown over the last forty years. Nor did I realize how much the RDJ contributed to that growth. Listening to Bill's presentation brought me to reality.

Today we live in realm of virtual reality. All around us our hobby advances. Forty years ago it was 45 Baud, 850 Hz shift. Now we see 200-300 Baud speeds and on VHF, Baud speeds up to 9600. There are even higher speeds being tested by various groups. In this issue alone we find articles on 9600 Baud and the "new" Information Super-Highway. It will be difficult to put this issue down once you start reading it.

We are living in an age, (thanks to computers) that is pushing us into the next century at faster speeds than we had ever dreamed possible a few short years ago. We can thank **science, technology, and mathematics** for taking us on this exciting journey and be assured, the RDJ will be right in there keeping you informed for the entire trip. You don't dare miss an issue if you wish to keep abreast of the fast pace at which we are moving. Not only will you be kept informed, you will belong to a strong organization that will give our digital modes the representation needed to keep us moving forward. Keep your membership current and enjoy each issue of the RDJ. Also enjoy a special bonus issue of the RDJ that will be published this Summer. In the Fall your September issue should arrive at the same time as other September publications arrive thus solving a publishing problem the RDJ has had for years.

BUSSES FOR DAYTON

By now many of you have probably heard that transportation to and from the Hamvention would not be provided by the Dayton Amateur Radio Club this year. This was not a rumor. It is true, unfortunately. I have been told various tales about why the busses had to be discontinued this year and surely someplace in one of the tales lies the truth. Whatever the reasons, now is not the time to enter into a tirade but instead it is time to find a solution for the digital

gang who will be attending this year.

Fortunately, the Radisson hotel has come to our rescue. They have arranged for bus transportation from the hotel to the Hamvention on a limited schedule. I have been working with them to establish the best schedules possible to take advantage of the most convenient times of each trip. At present there will be two trips each morning and two in the late afternoon. Since busses do not come for free, there will be a small fee charged for the ride each way. The hotel does not intend to make any money on this arrangement, only cover costs.

It appears we have transportation for this year even though it may not be the best we would all like. However, without some form of transportation to the Hamvention, all of us would not have the opportunity to enjoy the Hamvention fully. As for next year? I can assure you we (ADRS) will apply as much pressure as we can to the DARC so that this terrible situation is rectified 1995.

See you in Dayton for an eyeball and a highball.

de Dale, W6IWO ■

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Esta revista se publica bimestralmente y en una de las páginas iniciales se indica cómo suscribirse. El precio de la suscripción, seis ejemplares anuales que incluyen la **GUIA DE EQUIPOS y ACCESORIOS** (edición de Noviembre/Diciembre), en sobre cerrado, por vía aérea al domicilio del lector, es de US\$40.00 para todos los países con exclusión de México y Canadá. En razón de las más bajas tarifas postales, para los dos últimos la suscripción anual cuesta US\$20.00. Para los Estados Unidos y Puerto Rico el precio de la suscripción anual es de US\$18.00. Los pagos deben hacerse en moneda norteamericana mediante cheque de cuenta bancaria en los Estados Unidos, cheques de viajero, giro postal u orden de pago internacional a nombre de:

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UPDATE

Jim Jennings, KE5HE

What you hear can now be displayed on your monitor!

Product Review: SpectraVision and SpectraPlus Software Evaluation.

Both Paul Richter, W4ZB, and I reviewed these products. I will first include his review and then add some comments of my own. Thanks to Paul for the nice work.

- Pioneer Hill Software, 24460 Mason Road, Poulsbo, WA 98370 Tel: 1-800-401-3472 or (206) 697-3472
- List Prices: SpectraVision: \$89.00, SpectraPlus: \$179.00

Be sure to mention the RTTY Digital Journal and ADRS when you call.

Reviewer: Paul S. Richter, W4ZB, P.O. Box 19190, Washington, D.C. 20036 Compuserve: 70743,3517

The SpectraVision and SpectraPlus software packages from Pioneer Hill Software, Poulsbo, Washington, represent a new category of instrumentation software of particular interest to HF digital ham operators. This review evaluates these packages from that perspective.

SpectraVision and SpectraPlus produce displays of spectrum, spectrum time histories, and other measurements by sampling and processing a real-time audio signal provided by the user. The basic spectrum display is a spectrum analyzer type display which shows a rapid succession of spectrum or frequency component measurements for the audio signal. The displays and measurements provided by the software can be used as tuning aids for precision tuning of HF digital signals, for limited band segment surveillance, monitoring of band conditions and activity, and other purposes of interest as will be described. The software runs under Windows 3.1 and utilizes a sound card as a digitizing device for the audio signal from the user's HF radio receiver.

The software packages may be purchased on a credit card for evaluation in demo versions for \$4.00 each. Telephone: 1-800-401-3472. The demos work very well, but have built-in time-outs which seem too short and may cause high frustration levels for the new demo user in the initial stages of learning this software! However, perseverance is well rewarded in this case! The software developer is a ham which may explain some of the features included in these commercially oriented software packages.

Hardware and Software Requirements and Evaluation Procedures:

SpectraVision and SpectraPlus each require a '386 (or higher) computer running Windows 3.1 with at least 2.0 Meg of

RAM. A 20 Mhz '386 computer which included a 80387 math coprocessor was used for the evaluation. No testing was done without a math coprocessor, and no comment can be made on how much slow down occurs if one is not present. Math coprocessors are now inexpensive (\$40 - \$60) and are strongly recommended. The software makes very effective use of color and a color monitor is highly recommended. The system used in the evaluation included an ordinary VGA color monitor which worked well. A 16-bit SoundBlaster card was used in the evaluation, but 8-bit and other sound cards meeting the Windows Multimedia specification should also work.

The enhanced SpectraPlus software includes all of the real-time capabilities of SpectraVision as a subset and has an interface which is completely consistent with the SpectraVision interface. SpectraPlus, unlike SpectraVision, also includes the ability to digitally "record" incoming audio signals and then later analyze (i.e. post-process) that recorded audio from a *.WAV file. Use of these recording, file storage and post-processing functions in SpectraPlus are RAM and disk storage space intensive operations.

In performing the evaluation, I utilized all functions, options and different settings available in these software packages using what I describe as several different modes of operation: for limited band segment surveillance and as an aid for HF digital signal tuning. I did a lot of listening using SpectraVision and SpectraPlus on all digital HF modes, receiving and decoding many signals of different types, while using different receivers and making various adjustments to the different receivers. This software is primarily useful for analysis of received signals, and the only mode on which I transmitted during the evaluation of this software was Clover.

Summary and Conclusions In Brief:

I found the real-time "Spectrum" display mode under SpectraVision and SpectraPlus to be the most useful display mode. The "Spectrum" display mode presents a spectrum analyzer type display for a limited band segment corresponding to the range of frequencies in the audio from the HF radio receiver. The range of audio frequencies is, of course, controlled by the filter and passband adjustments for the particular receiver being used, and typically ranges from a few

hundred hertz for narrow filters to several (or more) kilohertz for wide filters. I found that conducting limited band segment surveillance in real-time was the most effective, value-added, use for the software.

In the limited band segment surveillance mode of operation, the user may "watch" with his eyes what is going on around (e.g. plus or minus 1.0 to 2.0 Khz about) a predetermined operating frequency, including one which the user is not currently using. With appropriate set up, it is possible to observe on the monitor the activity on nearby frequencies. Actual QRM signals of all types can be seen, and the effects of receiver or RIT tuning, receiver filter and passband adjustments, notch filtering, etc. can also be "seen" on the display almost immediately. Potential QRM sources can be evaluated in advance if QSY to a nearby frequency range is being considered. Gains and display dynamic ranges may be set by the user so that background noise levels are displayed along with the received signals. With this type of setup, changes in band conditions (i.e. changes in the relative levels of the received signals to the background noise) can be observed on the monitor as they occur.

I also found that the software could be used effectively in the Spectrum display mode for fine, precision tuning and measurement of HF digital signals. Due to perceptible time delays between successive display updates, the Spectrum display mode does not match the effectiveness of phase shift network - oscilloscope or LED (frequency) read-out tuning aids (which appear to respond to changes instantly) for initial acquisition and quick tuning of RTTY type signals. The Spectrum display, however, is more accurate than those older type tuning aids for fine, precision tuning to match preset filters or to optimize decoder discriminator operation. Frequency resolutions of less than 10 Hz are easily achieved with this software in normal operation.

With a little practice, the user can also identify different digital signal types (e.g. Packet, RTTY, AMTOR, PACTOR, Clover) by inspection directly from the "Spectrum" or "3D Surface" monitor displays. The "3D Surface" type display depicts a spectrum time history which retains a representation of the actual measured spectrum shape at discrete points in time during the time history. A 3D Surface time history display may be accumulated while the Spectrum display mode is being used.

The software provides a very precise on-screen frequency and frequency difference measurement capability using the mouse buttons. It is very easy to "see" right from the display screen, for example, which RTTY stations are using 200 Hz shift (e.g. as with a PK-232) rather than

170 Hz shift. Anyone who still contends HF packet is "efficient" in spectrum utilization (in the frequency domain) will be forced to change that view after watching an active HF packet frequency for only a very short time! The other non-Clover HF digital modes are also seen to have relatively "wide" (i.e. spectrally inefficient) sidebands as well in comparison to Clover, but nothing as broad as HF packet! Identification of Clover signals is trivial because of their distinctive shape.

The "3D Surface" and "Spectrogram" time history display modes in the software are also useful for "watching" activity on frequencies which the user is not currently using. The "Spectrogram" display mode is similar to the 3D Surface mode but does not retain a representation of the spectrum shape at discrete points in time over the time history; instead spectrum intensity at points in time over the time history is represented by a varying color scheme. Each of the time history modes can accumulate time histories when the software is "minimized" in the background under Windows. In this manner, the time history modes can be used to monitor activity or propagation conditions in limited band

information about what is happening on or about his operating frequency or other band segments of interest, thereby making operation easier and increasing the user's enjoyment. Use of oscilloscope (and LED) based digital signal tuning aids will decrease, although such tuning aids are still superior for fast initial tuning of RTTY type signals. Ham and non-ham visitors will be impressed!

End of Review by Paul

More Comments on Spectra Vision / Spectra Plus

I found Spectra Vision to be a very interesting product. My analysis of the software results in comments very similar to those made by Paul, so I will not repeat them. I did make copies of the screen so that you can see for yourself how useful they are in tuning and analyzing interference. The first 7 figures are from the "Spectrum" mode. In Figure 1 I have shown the entire screen. On the remaining 6, I have clipped out only the spectrum in order to save some space. These spectra were

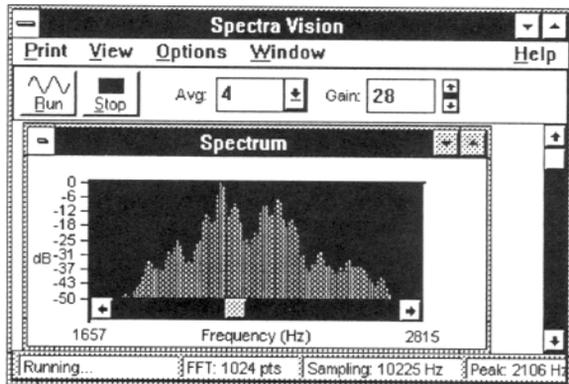


Figure 1, FEC (PACTOR) Spectrum

segments which the operator is not currently using or when the operator is not present.

Both SpectraVision and SpectraPlus are polished products. SpectraVision alone provides the basic facilities needed for real-time use in a HF digital ham station. The additional capabilities of SpectraPlus are of interest primarily for general test instrument use and for detailed analysis of particular sounds or acoustical signals. SpectraPlus has post-processing, test instrument facilities which are not discussed due to space limitations.

The displays provided by this software are professional looking (like on expensive test equipment) and effective. The software interface is easy to learn and the on-line help system is satisfactory. The user has the benefit of a new and improved precision tuning aid for HF digital signals and can obtain better

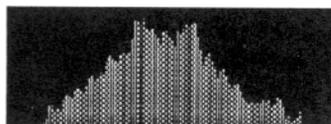


Figure 2, PACTOR ARQ signal

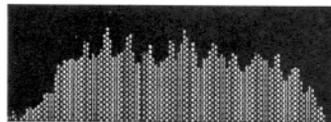


Figure 3, No Signal (Just noise)

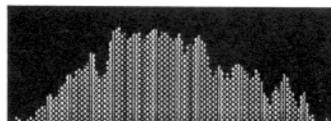


Figure 4, HF Packet

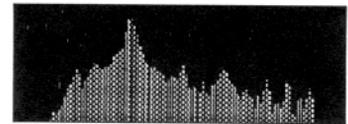


Figure 5, 20 WPM CW, (2067 Hz tone)

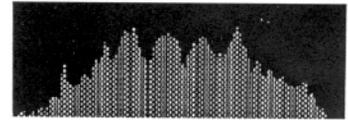


Figure 6, Clover

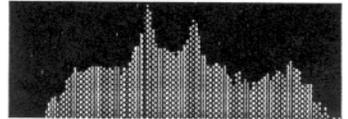


Figure 7, 170 Hz Shift RTTY

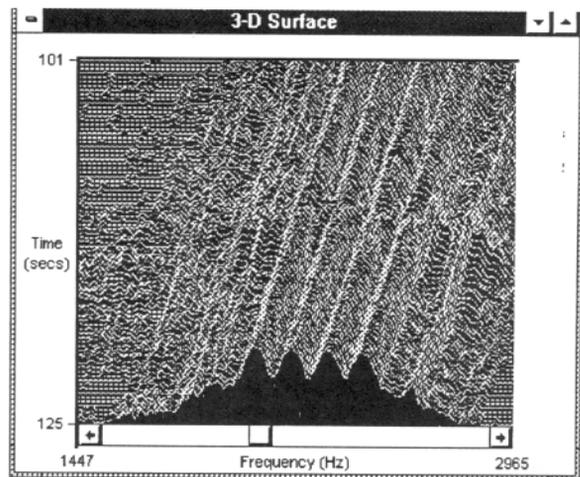


Figure 8, 3D Surface Display, Clover Signal

taken using my TS-850S and a "Bug-catcher" mobile whip antenna. This is the equipment I regularly use while on the road. I have a 750 Hz filter in the 8.83 MHz IF that was used while recording these spectra. The radio was in the LSB mode. On each figure the markers were set at 2067 Hz (frequency of the low tone of Clover), 2125 Hz (Mark frequency for 170 Hz shift FSK), and 2295 Hz (Space frequency of 170 Hz shift FSK). AMTOR signals are not shown, they are very similar to the PACTOR signals. Figure 8 shows the 3D Spectrum display of a Clover signal.

I think that both Paul and I agree that Spectra Vision could be put to good use by any ham on the HF. We both found the real time analysis especially valuable. I can heartily recommend that you acquire Spectra Vision. If you have the need for post processing and recording of the digital data, then Spectra Plus is for you.

73 and God Bless, de Jim, KE5HE ■

CONTESTING

Richard Lawton, N6GG

Three rules of thumb are declared!

RTTY Contests - Coming Events

Rules + logsheets are in the RTTY Contester's Guide

| Date: | Contest: |
|-----------|--------------------------------------|
| APR 23-24 | SP DX RTTY (Polish)--NEW! |
| MAY 14-15 | VOLTA RTTY DX (Italian) |
| JUN 11-12 | ANARTS WW Digital (Australian) |
| JUL 3 | DARC CORONA 10M Digi (German) --NEW! |
| JUL 9-10 | BARTG AMTOR/PACTOR (English) --NEW! |
| JUL 16-17 | DARCHF RTTY Part II (German) --NEW! |
| AUG 20-21 | SARTG WW RTTY (Swedish) |

-- REMINDERS: --

DARC HF RTTY Contest (Part I March)
log entries mailing deadline: May 1, 1994.

Mail logs to:

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

DARC CORONA 10M Digital (March)
log entries mailing deadline: May 6, 1994

Mail logs to:

Werner LUDWIG, DF5BX (address
above)

SARTG WW AMTOR Contest log entries
mailing deadline: June 10, 1994

Mail logs to:

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

-- COMING UP: --

-- SP DX RTTY CONTEST --

April 23-24, 1994

Sponsored by: Polski Zwiasek Krotko-
falowcow (PZK).

It is organized and run by Polish Ra-
diovideography Club (PK RVG).

CONTEST PERIOD:

From 1200Z Sat. to 2400Z Sun. (36 hours)

No rest periods required.

CONTEST CALL: "CQ SP RVG TEST"

MODE: RTTY only

BANDS: 80, 40, 20, 15, and 10M

CATEGORIES: A. Single Operator, All
Band

B. Multi-Operator, All Band

MESSAGE EXCHANGE:

Send: RST + CQ Zone Number

SP stations send: RST + Province (2 let-
ters)

NOTE: Polish stations will use a two let-
ter abbreviation of their province. There
are 49 SP provinces.

MULTIPLIERS: Count each DXCC coun-
try and each SP province on each band.
(Band Multipliers) Also, each continent
(6) will count once, not once per band.

NOTE: CQ Zones do NOT count as mul-
tipliers.

QSO POINTS:

■ Count 2 points for QSO with own coun-
try

■ Count 5 points for QSO with other
countries on your continent.

■ Count 10 points for QSO with countries
not on your continent.

FINAL SCORE: Total QSO points x total
mults x number of continents (max 6).

SWL rules apply as above.

LOGS: Use separate log sheets for each
band. Logs must show: BAND, DATE
and TIME in UTC, CALLSIGN, MES-
SAGE sent and received, country mul-
tiplier and points claimed. Entries with
more than 100 QSOs must submit dupli-
cate check sheets. Multiple operator sta-
tions should include names and call signs
of all operators.

Those submitting logs on disks: please
send us your computer disk. IBM, MS-
DOS compatible disks are encouraged.

The format we prefer is your CT.BIN file,
for example; SP2JPG.BIN, or your
K1CC.DAT file, or your SP1LOP.DBF
files. If you use a different program than
mentioned above, the generic format we
want is a separate file for each band, con-
taining vertical single column of calls in
chronological order.

DISQUALIFICATION: Violation of the
rules of the contest or taking credit for
incorrect QSOs or multipliers, or dupli-
cate contacts in excess of 3% of the total
made, will be deemed sufficient cause for
disqualification. The decision of the SP
DX RTTY Contest Committee are final
and not contestable.

DEADLINE: Logs must be received by 15
June 1994 to qualify. An extension may be
granted if requested.

Mail logs to:

SP DX RTTY Contest Manager
Christopher Ulatowski, SP2UUU
P.O. BOX 253
81-963 GDYNIA 1
POLAND

COMMENTS: And yet another RTTY
contest comes on board! This time Poland
steps forward, presenting a 36 hour, no
rest periods required, complete with
band multipliers, contest. Their use of
Polish provinces, like the Spanish and
others, stimulates interest, too. This is
their first WW RTTY contest, and will be
held each year on the last full weekend in
April. (This year it's one week before the
Dayton Hamvention!)

These rules are very similar to the EA
RTTY Contest except that each QSO with
your own country counts for 2 points,
rather than zero points. It is also 12 hours
longer.

NOTES: Everyone, mainly W/VE sta-
tions: don't forget to count 1 multiplier
for your first W/VE QSO on each band.
Also note: CQ Zones do NOT count as
multipliers. They are only a part of the
exchange. This is really a DX contest.
Note the 10 points for off-your-continent
QSOs. That means you have to work 5
locals to equal 1 DX station.

Since there is little time to prepare log-
sheets, you could use the EA RTTY log-
sheets in the "RTTY Contester's Guide."
They can be horsed to make do.

Let's give the SP Club our full support for
their first World-Wide effort!

-- VOLTA RTTY WW Contest --

May 13-14, 1994

Sponsored by SSB and RTTY Club of
COMO and A.R.I. (Associazione Ra-
diomatore

Italiani) honoring Italian discoverer of
electricity, ALESSANDRO VOLTA.

CONTEST PERIOD: 1200Z Saturday, to

1200Z Sunday

(24 hours, no rest periods)

BANDS: 80, 40, 20, 15, and 10M.

CLASSES: A1 - Single op, all band

A2/xx - Single op, single band
(xx=band)

B - Multi-op, single transmitter

C - SWL.

EXCHANGE: Send: RST + QSO number + CQ Zone.

MULTIPLIERS: Each DXCC country, plus each call area in W, VE, and VK, count as country mults on EACH band. (Band multipliers) W, VE and VK do NOT count as DXCC countries. (*Stations with callsign from one district but are now living in a different district should give proper identification, such as: W2JGR/0.*) An additional multiplier is given for each INTERCONTINENTAL COUNTRY worked on at least four bands. A contact with a station that would count as a multiplier will only be valid if that station appears in at least 4 other logs, or a contest log is received from that station.

QSO POINTS: Use Exchange Points Table (Uses CQ Zones). QSO's made outside one's own continent on 80 or 10M are worth *double QSO points*. QSO's between stations within the same country will not be valid, such as: a W2 station can work W1, W3, or W4, etc., but not W2.

SCORING: Final score: Total QSO points x total multipliers (band multipliers + each INTERCONTINENTAL COUNTRY worked on 4 bands) x total number of QSO's.

AWARDS: A SPECIAL trophy will be awarded to the top stations in each class. In addition, all entrants will receive a certificate with special sticker.

LOGS: Use separate logsheets for each band. Logs must show: BAND, DATE and TIME (UTC), CALLSIGN and MESSAGE Sent and Received, POINTS and NEW MULTIPLIER PREFIX. Summary sheet must show full scoring, and list of multipliers worked.

Logsheets, summary sheets and multiplier and dupesheets and the EXCHANGE POINTS TABLE are all available for copying from the RTTY Contester's Guide, published by RTTY Journal.

Logs must be received by July 30, 1994, to qualify.

Mail logs to:

Francesco Di Michele, I2DMI

P.O. Box 55

22063 Cantu

ITALY

COMMENTS: This is a 24 hour contest. The QSO points are determined by the EXCHANGE POINTS TABLE. This table, based on the 40 CQ Zones, is arranged so that the further away the QSO is from your Zone, the higher the points scored. **NOTE: CQ Zones DO NOT count as multipliers.** The Table is on page 24 of the RTTY Contester's Guide. It also appeared in the April 1993 issue of the RTTY Journal, page 20.

Since W/VE/VK call areas count as separate countries on each band, CQing will be the best way to make a good score for W/VE/VK ops. Band multipliers will spread out the CQing, too, and will make the low bands more active.

Don't forget to try working DX on 40 and 80M, as QSO's with countries on other continents will increase your multiplier if you manage to work those countries on the high bands. Also, QSO's outside your own continent on 80 and 10M are worth **double QSO points**.

This contest uses the number of QSO's as an additional multiplier, making for astronomical scores... millions!

ANARTS WW RTTY/Digital Contest

June 11-12, 1994

Sponsored by Australian National Amateur Radio Teleprinter Society

CONTEST PERIOD: from 0000Z Sat. to 0000Z Mon. (48 hours)

Maximum operating time allowed: 30 hours for Single op entries and SWLs. There are no restrictions on the duration of rest periods. Multi-op stations may operate the entire contest period. Summary of operating times must be submitted with each score.

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

CLASSES: (A) Single-op; (B) Multi-op; and (C) SWL.

MODES: All digital modes permitted; RTTY, AMTOR, FEC, and Packet.

EXCHANGE: RST + Zone + Time (UTC).

MULTIPLIERS: Each ARRL DXCC Country, and each call district of VK, JA, VE, and W count as separate countries on each band. QSO's with one's own country is not valid for multiplier count. (W6 may work W7 or W5 for mult, but not W6.) Each continent QSO counts as a multiplier (maximum of six).

QSO POINTS: Use Exchange Points Table to determine QSO points. (See the Table at the end of my column.)

SCORING: Total QSO points x total multipliers x number of continents worked. (max. 6) After the above calculations, world stations add 100 points

for each VK QSO on 20M, 200 points for each VK QSO on 15M, 300 points for each QSO on 10M, 400 points for each VK QSO on 40M, and 500 points for each VK QSO on 80M.

AWARDS: Awards will be issued for 1st, 2nd, and 3rd place on world basis, and also on a country basis.

LOGS: Separate logsheets are required for each band. Logs must show: BAND, DATE and TIME (UTC), CALLSIGN, MESSAGE Sent and Received, NEW MULTIPLIERS, and QSO POINTS. Summary sheet must show: Your callsign, name and address of operator, bands used, points claimed for each band, number of VK stations QSOed, total points claimed, and signature/s. Multi-op station logs must contain the signatures and callsigns of each operator.

Logsheets, summary sheets, multiplier and dupesheets, EXCHANGE POINTS TABLE, and a Band Use Chart for recording ON/OFF TIMES are all available for copying from the RTTY Contester's Guide, published by the RTTY Journal.

Logs must be received by the Contest Committee by September 1, 1994.

Mail to:

Contest Manager, VK2BQS
Jim Swan
P.O. Box 93
TOONGABBIE, N.S.W. 2146
AUSTRALIA

COMMENTS: For single op stations, this is a 30 hour contest (out of the 48 hours). Multi-op stations may operate the full 48 hours. QSO points are determined by the Exchange Points Table. This table is based on the 40 CQ Zones and is arranged so that the further away the QSO is from your Zone, the higher the points scored. (PLEASE NOTE: CQ Zones DO NOT count as multipliers.) Each VK, JA, VE, and W call areas count as separate countries on each band. This contest counts band multipliers, making the low bands more active, and giving more bonus QSO points, too. Don't forget to work the continents for additional mults. Try to keep track of your operating time, as single ops are only allowed a maximum of 30 hours out of the 48 hour period. Your Summary Sheet requires that you list your TIME ON/OFF records.

Bandplans for Modest Stations

Before each contest, modest station owners should take a moment to consider the following:

■ One should know and understand your station's limitations for the upcoming activity, such as; antennas, power, location, etc.. For instance, with a tri-

band beam at 30 feet and 100 watts, you shouldn't really expect to keep up with more superior stations. But, NOT TO FRET.... there's hope. Read on.

■ In a World-Wide contest, modest station techniques for good QSO rates are more limited to how fast you can hunt and pounce, rather than CQing. After all, the louder the CQs of your high power competitors, the more the attraction. (Strong pollen, more bees)

■ It is prudent to master successful ways of cracking pileups. (The precise time to call is everything - almost, but that's another story.)

■ Give some thought for creating ways toward improving quick band changing. The need arises when, checking other bands for new multipliers, you run across a rare multiplier CQing. (Color-coding band and antenna switch positions with brightly colored self-sticking darts works well for me, but that's another story.)

■ Rather than being stuck in a CQ marathon with the heavyweights, learning how to deftly handle yourself in the pileups (hunt and pounce) will run up your multipliers. It's another - and more skillful - way to compete with the high QSO rates used by "Power CQers". Acquiring this talent will certainly raise your score, but in a different way. It also will help you to polish up your operating skills for cracking DX pileups. That was my original interest in getting into contesting in the first place. I got hooked when I found out how much fun it was, too! (Still another story.)

Second Rule of Thumb: (The first is: "Keep thumb out of mouth!")

Operating on the band closest to the MUF (Maximum Useable Frequency) - at your QTH - is the great power equalizer. Almost always, it has the most activity.

When you notice that everyone seems to be getting louder and louder, you can try CQing for a while, but don't get trapped into endless tries of CQing with no replies. Many's the time I've done that, and after realizing it by tuning around, I found out I was CQing on a dead band! That happens here on 10 Meters when I'm working JA stations. When 10M really peaks, its superb! Then suddenly, in a matter of minutes, the band goes dead - KAPUT! It's quite dramatic. (With the JA's it might be a Greyline propagation act, too.) So, what to do? Keep a watchful eye on the time between QSOs, hunt for a couple of more multipliers, and prepare to QSY.

Third Rule of Thumb: *Signals get louder just before the band folds. The higher the band, the more dramatic the fold.*

If the time interval between QSOs when CQing becomes longer than 5 or 6 minutes, consider this to be your next step:

a) Tune around the band to quickly check band activity, and for any possible multipliers to pick up,

b) Change the beam heading to another area that might possibly have good propagation, and look for new multipliers. Maybe try 2 or 3 more CQs.

If a) or b) is not productive, then it's best to QSY to the next lower frequency band. More than likely, the MUF slipped down a peg. However, if the time of day is morning, you'd better QSY UP to the next higher band.

You've heard the expression, "Follow the money path," Well, in HF propagation circles, it's, "Follow the MUF path."

((73))

See you in the (Dayton) pileups,

de 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!

Exchange Points Table

Use with VOLTA and ANARTS RTTY Contests

| CORRESPONDENT | | ZONE | |
|---------------|-----|------|------|
| 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 |
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| 17 | 18 | 19 | 20 |
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| 997 | 998 | 999 | 1000 |

E X C H A N G E P O I N T S T A B L E Y O U R Z O N E

Part II--You Can't Get There From Here

A Mini-DXpedition to VP8

by Crawford MacKeand, WA3ZKZ, VP8CMY

Given the still rather strained relations between Britain and Chile's big neighbor after the 1982 Falklands War, I expected us to depart over Chile's short Atlantic coast, but to my surprise the Twin Otter flies out under Argentine air traffic control, over Argentina's Patagonian plain and the dusty little coal port of Puerto Gallegos. This railroad buff was delighted to see quite clearly below us the coal streaked yards of the world's southernmost standard gauge railway. Then a long, very long expanse of open sea, and at about 1.00 p.m. the first small and rocky western islets of the Falklands come into sight.

There are about 420 islands, islets and rocks altogether in the Falklands group, two of which are the main land masses of East Falkland and West Falkland, and our flight path goes low along the hills and inlets of the north coast of both before dipping south into Stanley at the far eastern end of East Falkland. The geology from the air is its own story of past glaciers and there are white ponds and green ponds and dark peaty black ponds among the hills but one aspect is unique. Nowhere else are stone rivers to be found. These grey and expansive stretches of boulders, called stone runs by the Falklanders, appear to course down hillsides, along plains and across valleys and have been the source of much speculation on their origin since before Charles Darwin visited in the Beagle in late 1832. But the little town of Stanley, stretching out along the hillside looking North over the wonderful natural harbor of Port Stanley, is below us, and soon we land neatly on the small civilian airstrip. No one seems to be celebrating the fact that my guide book says this has to be the 303rd anniversary of the first landing on these islands, but I am not deterred.

I had seen Bob only in a small snapshot, but there was no mistaking the genial smiling face in the small crowd. So, far from being deterred, I am greatly en-

couraged. We both exchange waves and I soon pass Customs and Immigration and get some rare stamps in my passport and we are heading into town. Stanley is a very small capital, with only about 1700 inhabitants, although that's most of the total Falklands population of 2000 or so. A comment from Bob, on the road into town. "Be careful and don't blink, or you'll miss it". The Chilean flights only operate on Fridays and so Bob is in a hurry for me to pick up my ham license and drivers license before everything closes down for the weekend. First the temporary ham license which needs only a very short stop at the Post Office, due to Bob's prior negotiation, but the drivers license is not quite so simple. I have a US license but not an International Permit, and my British license has long since lapsed. So I take a driving test ... wrong side of the road, first time in the little French car, and a long 45 minutes under the stern eye of an English bobby. But all is well by a minor miracle and by the kindness of Police Constable Bell, and so we head home to meet Danuta VP8BOQ, Bob's charming XYL, who asks exactly the right question for any Englishman at 4.30 p.m. in the afternoon, "Would you like a cup of tea?"

The peat fired cooker soon produces a fine brew and we make rapid headway

getting me installed upstairs, making friends with Rozz, whose tail wags happily at all the attention, and inspecting the shack. I unpack clothes and some stateside presents and cogitate contentedly on my new license - VP8CMY - very appropriate for my initials and for my hometown of York, England. And soon we are on the air to CE3GDN with a message for Charlie AE3H back home in Delaware to say that I have arrived in one piece. We try to insert my call and selcal in the PAMS program which Bob is running with his clone, PK-232 and FT-1000 set up, but it resists, and my brain refuses to understand why until long after we hear the supper call from Danuta. After supper we watch TV, a new arrival in Stanley, with which we can receive British Forces military programming from Mount Pleasant some 30 miles away.

Next morning after breakfast, Bob mows the lawn, while I get a feel for the rig and program. The antenna is a Cushcraft A4 salvaged from the VP8SSI operation and it sits sturdily braced on a mast in the yard. No rotator ... as Bob notes, there is no need ... all the civilized world is North of us. First QSO is with ON4DST then DK9MKA and NX3Y, all on SSB. Then I get the feel of the digital system, having unlearned my own automatic key responses! ARQ first to CE3GDN APLink and then DF3TH and G0GBK, but conditions are not wonderful and the bands close on me. The following two weeks are a mixture of hamming, being sociable with my hosts, visiting, sight-seeing and even sometimes trying to be a little bit useful. On this first afternoon,



after lunch we take a ride out in the trusty old diesel Land Rover. Familiar vehicle, I used them for years in Venezuela and in England when, in what now feels like another life, I made my living laying and testing long distance telephone cables. It seems that over 40% of all the vehicles in the country are Land Rovers. There are very few roads outside town, just the one from Stanley to Mount Pleasant, which is half paved and half gravel, and the other, which is a new branch off the Mount Pleasant road, north over the rolling hills to Teal Inlet.

Our excursion takes us a few miles out of town towards Mt. Pleasant and then Bob heads off the road for some camp driving ... low gear and four-wheel drive, and hold tight. We skirt a couple of carefully marked and fenced minefields left over from the 1982 conflict, and take off over the heather covered countryside, making our own track as we go. This camp driving is an art ... camp being the term for all the country that lies outside Stanley ... and when I later drive the Land Rover it seems to me not a prudent use of a borrowed truck! I stick to the roads and tracks. But here we are in the midst of the heather at the peat bank. Peat is a fairly compact settled decomposition product of many thousands of years of marsh growth, and it can be cut by hand with a sharp spade or a contractor will use machinery for you and deliver it to your peat shed. It burns well in the proper stove and while many Falklanders have converted to oil, many still use peat fuel. After all, except for cutting and carrying it is free. I used the term heather, but this southern equivalent has its own name "Diddle Dee", said to originate from a Royal Navy slang word for 'tipsy', as the early islanders made a brew from its red berries. Now it is sometimes made into a jam to sell to tourists, but no brew. We inspect the peat bank and turn peat lumps or turves over so they will dry better, while Rozz, who has been left to her own devices after we check there are no sheep in the area, follows some urgent scents. This evening we visit two parties, an engagement and a 21st birthday, come home, pacify the so neglected dog and to bed.

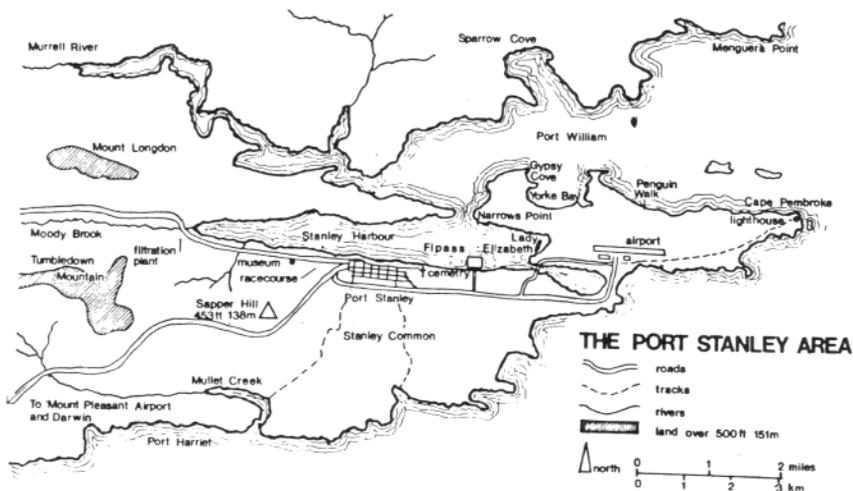
Sunday I QSO with Don CE3GDN in Santiago and with Don AA5AU in Louisiana. He is comically startled to find me on the end of a VP8CMY QSO, but I really can't see why, especially when he is off next week to HK0 San Andres. I will miss him, but that is one I have. In the evening we watch TV and some VCR tapes, including a fine documentary on South Georgia, and some of Bob's own footage from VP8SSI. What a pestilence is the division of the world into NTSC and PAL, and no easy way to convert tapes from the one to the other.

It's Monday and I walk into town, visit the one bank, and later I test drive the

Land Rover, gingerly, into town and take some photos and investigate the stores. There are six or seven altogether in Stanley and I think two at Mount Pleasant, which makes I suppose a total of less than ten for the entire country. No malls here. I write a couple of batch programs to simplify restarting PAMS under VP8CMY and VP8BFH calls. Tuesday comes and is not a hamming day at all. Arrangements have been made for me to join a Land Rover trip out to the nature reserve at Volunteer Point at the North Eastern tip of the island, and after equipping myself with a woollen cap which I am told is necessary summer gear, as well as my good warm Massachussetts jacket, I meet my host for the day and his other passengers. Mike is an ex-Royal Marine commando and owns an hotel, one of the two in town. We take the one road out of town, turn onto its one branch, and after about 10 miles on that, take off across country. There are no mail deliveries in VP8 so we visit two outlying farms with their mail which we picked up at the Post Office. Mike has 2 meter FM in the vehicle ... 2 meters is used almost like CB and all the farms have it, and he calls ahead so they know we are coming. The first farm, Green Patch, a sheep farm like all the others, is at the end of the gravel road, and from there onward it's camp driving. Along beaches, over the moors, up and along river beds, sometimes well marked, and sometimes hard to discern. And oftentimes the best marked section is the one so rutted and boggy that we take long diversions to avoid it. The last farm, Johnson's Harbor, is pretty typical I am told. It is set in country which is low windswept and treeless, like the rest of the Falklands and consists of a dozen houses, barns and structures scattered around a small green. Most of the farms now use motorbikes to round up the sheep, though some still keep a few of the hardy gaucho ponies, which they also race at the annual Stanley Races in December. These farms are not small by any standards. The biggest, in the Lafonia area in the South West of this island has

450,000 acres and others are quite comparable in their size. We head on North and East to Volunteer Point, where a team of biologists is staying in the old shepherd's cottage in the reserve making a survey of the penguin colonies.

The track passes Mount Brisbane and another unnamed hill, skirts some strange ponds which stand with the water surface inside a natural peat wall, well above the surrounding terrain, and as the sea comes into view we are in range of the penguin colonies. Fortunately we are able to stop upwind for lunch, the smell being no better than a mushroom farm. There are three distinct colonies, Magellanic or Jackass Penguins, Gentoos who are a little larger, and King Penguins who are the largest breeding on the islands. The Jackasses, not the same as the South African bird of the same name, here live in burrows in the soft earth near the shore, burrows which one of the biologists ruefully tells me, are just as full of fleas as are the penguins. He is trying to measure a reluctant young Jackass, the theory being that as the penguins depend on the fishing, they can assess the health of the fishing grounds by the health of the penguins. Deep sea fishing in Falkland waters by Asians and Europeans is now the major income producer for the islands. But the Jackass, he says, is not well designed as a test animal. It nips and wriggles and has those fleas. I have a much easier time taking photographs of the penguins in their colonies and on the silver sands of the long arc of beach. Besides the penguins, everywhere there are sheep and Upland Geese, like a Canada Goose, and in the air South American terns, which take a dislike to my hat and force a hasty retreat. On the way back we meet traffic! One of the Smith brothers who run Johnson's Harbor is out in his Land Rover looking for a battery for his 2 meter HT which he thinks he dropped the day before. We wish him luck and head inland, as the beach is now closed by the high tide, and with many fordings, climbs and descents, and a little highway work the trip is over. Part III next month.



HARDWARE

Mike Candy, KI7FX

How fast is fast?



Greetings once again to all RDJ readers. Another month has come and gone and there are a lot of projects stacking up here. There is never a shortage of new stuff to review, or innovative ideas to check out. Remember, a lot of my articles are based directly on your comments and suggestions, so keep 'em coming!

This month I would like to extend a special hello to the Dayton Hamvention readers. If you are not a member of the ADKS, you are missing out on a wonderful opportunity to become involved in the cutting edge of digital technology. Unfortunately, it looks like I won't be able to make Dayton this year - After spending 20 years in the Air Force, it's time to prepare for a career change, so look for me next year! If this is your first time checking out the HARDWARE column, keep reading! I review and evaluate everything from the latest high tech goodies to the best of the old reliable Terminal Units - if it does digital, you'll read about it here.

Last month, I discussed some of the latest innovations in high speed VHF/UHF Packet. I received a few letters of interest, and I have come to the conclusion that there are two types of packet operators - those who "know" about the secrets of 9600 baud and those who don't have a clue. Up until the last few weeks, I was in the second category. With a little research and with the help of the great tech-help from AEA (Thanks Andy), I think I finally have a grasp of the basics of 9600 baud VHF packet. First of all, I hate 1200 baud packet. It is slow and clunky, and on a busy multi-users system, throughput is slower than 45 baud RTTY! In defense of 1200 baud, we all know it's easy to install - just plug it in and you are ready. On the other hand,

9600 baud packet is NOT a matter of plugging in and getting on the air. 9600 baud requires a little knowledge of what is happening with the transmit and receive signal, and how it is processed in your radio. There is some information available on the Packet BBS' or Internet to help you get started, but after you have done it, you will agree: 9600 baud packet is an incredible mode, and it is a lot easier than you think. You will probably never have a chance again to learn so much, with so little effort.

* AEA's PK-96 *

Advanced Electronics Applications (AEA) has just released the latest in their line of high quality products for the Radio Amateur - The PK-96, high speed 1200/9600 baud packet controller. This controller has standard AX.25 level 1 & 2, 1200/9600 baud operation in the Command, Host and KISS modes. My PK-96 just arrived in the mail a few weeks ago and I have spent quite a bit of time getting familiar with it. My first impression of the PK-96 is that it is another high quality, nice looking product from AEA. Measuring in at 6 inches wide, 1 1/4" high and 7" deep, and has connectors on the back for RADIO (5 pin DIN), COMPUTER (DB-25), RX AUDIO, and POWER (13VDC). To top off the good news, the PK-96 has an external RESET switch in the back and two TX LEVEL adjustments (one for 1200 and one for 9600). Finally, someone putting the RESET and AFSK adjustments on the back of the controller where the operator can reach them! The separate 1200 and 9600 adjustments are a great idea. The two modes are so different from each other and I appreciate the ability to set each level independently. The nice dark

grey/light grey color scheme is also a pleasant surprise and looks good in the shack sitting on top of my ICOM 275/475 twins. The front panel contains a power switch and a green LED along with red LED's for XMT, DCD, CON, STA, and Mail. Nothing earth shattering here, but necessary stuff. The PK-96 runs on 12-16VDC @ 400mA max. The PK-96 comes standard with an 18K RAM mailbox and is upgradeable to a 100K mailbox from AEA.

It seems lately, the worst part of getting a new piece of equipment up and running is opening the manual and wading through pages and pages of information until I find what I need. Well, I was in for a surprise this time. I opened the manual and snooped around - I called AEA on the phone and asked "Who wrote this manual"? It is the best written, most informative, and most useful manual I have seen in a long time. This manual not only covers the usual installation and command features, but goes into detail and gives examples of what is needed to get on the air with 9600 baud packet. If you remember from last month's article, I told you that you can not simply plug a 9600 baud TNC into your radio's microphone/speaker jacks. The manual discusses connecting the TNC to these ports, but don't let that fool you, that is for 1200 baud connections ONLY. When you get to the part about 9600 baud, the rules change fast. Radio connections for 9600 baud are different, much different. Most VHF/UHF FM transceivers are primarily designed for voice operation and require special connections for high speed data use. With one or two exceptions, you can't connect the transmit section directly to the microphone jack, nor the receive section to the speaker output. Don't even bother trying, I can save you the trouble because it won't work (just ask me). The transmit audio (TXA) output signal from your TNC must be directly connected to the modulator stage of the FM transmitter, and the receive section must be connected to the discriminator of the FM receiver.

Presently, most FM transceivers don't have these connections for high speed controllers, but this is starting to change and radio manufacturers are beginning to make these connections available. What is needed is a connecting point on the back of the radio - usually a DIN connector for DATA. In particular, the TEKK KS-900, Kantronics DVR 2-2 and DVR 4-10, and the (newer model) Yaesu FT-5100 are 9600 baud connectable, right out of the box. Although identified as a 9600 baud radio, I have heard the Alinco DR-1200/H is not quite up to speed yet. The rule is don't always believe what

you read. According to my ICOM 275 and 475 manual, the back port connectors tap into the receive detector stage. I am here to say it isn't so. Check and double check carefully before you decide to buy a new radio for this purpose. Don't worry if you don't have one of the new radios though, as "mods" are very easy to do.

Fortunately, it's not difficult to locate the connections needed for 9600 baud operation in most modern FM transceivers. The PK-96 manual included a pretty thorough list of radios that are "known" to work at 9600 baud with a little work. AEA says it's embarrassing to call them "mods" - since you're only bringing out terminations of existing signals in the radio. I can personally attest to that fact. Bringing out the TX and RX signals of the radio is a very easy procedure so you might as well get with the times - 9600 baud is here to stay! AEA includes an excellent section on connections or modifications to most radios - getting wired up is an easy process with the help of this manual.

For new packet users, don't be afraid of the PK-96's high tech, high speed abilities! This is the perfect TNC for new users as well as old timers. The manual includes a section on "Packet Protocol Basics" which explains (in understandable terms) the meaning of all those strange commands like FRACK, RETRY, and MAXFRAME, etc. The PK-96's commands are explained well, and again for the new users, the EXPERT command will shield you from too many cryptic commands until you are ready for them. As a replacement for your existing Packet controller or for your first Packet controller, the PK-96 is right on target.

Unfortunately for me, there are no other 9600 baud systems running in the Spokane, Washington area, so I had to rely on a little help from my friends. I shipped my AEA DSP-2232 (which has the 9600 baud G3RUH compatible modem) over to Jay's (WS7I) house and convinced him to open up his Yaesu FT-736R and tap into the necessary points. He agreed, the mod is an easy one, and nothing for most users to be afraid of. After making all the necessary connections on his end and me connecting the PK-96 to my external data port, we could not make a 9600 baud connect. For that matter, we failed to make a 1200 baud connect - it appears the 8 miles or so between us is a pretty poor path for VHF - We couldn't even work FM simplex. I guess it's understandable, since I am shooting directly over the "noisy" Fairchild Air Force Base. I opted for a different path/direction to work from. After some successful tests on FM and SSB with Mike (N3CEV) 10 miles directly to the south (and NOT over the base), I decided to ship the DSP-2232 over to his place. With strong S-7 signals, we

figured there would be no problem connecting. I got home and called Mike - we were ready for the big test! 1200 baud connects worked fine, but no luck at 9600. We checked and re-checked the parameters and everything else I could think of, but no luck. After a couple of hours of trying, I got Mike to admit it - he connected the input/output of the TNC to his MICROPHONE CONNECTOR! I guess it was my fault, I didn't stress the importance of direct connections at high speed, although I did leave him with clear and easy instructions on wiring up the Yaesu. Initially, he seemed a bit concerned about taking the cover off his shiny new Yaesu FT-736R and I can't blame him. It may seem a bit intimidating, but take my word for it, AEA has covered a lot of radio connections in their manual, and I (and Mike) can attest that once the change is done, it's for the better (where have I heard that before).

* Psssst, Psssst, Psssst *

A test is a test, and we can't stop now! Mike called me up the next day and said the wiring was complete and it only took about 20 minutes. We were ready to try again and Mike was feeling better al-

Faster Than a Speeding Bullet!

ready. After more frustration and 1200 baud connects, we had to stop and think about it some more - something was not right and this thing wasn't going to work. The only link in the puzzle that was not "known" was my ICOM VHF and UHF rigs. Although this combination is not mentioned in the manual (how come guys?) I did have some conflicting information on setting them up for 9600 baud packet. I decided to open the case and give it a shot. From start to finish, the whole procedure took about 30 minutes and that was including trying to read the confusing and conflicting instructions I accumulated over the last 6 months or so. I should have done this in the first place, because as soon as I issued a connect to Mike this time, the radios came to life - 9600 baud - Connected to N3CEV! This stuff is amazing! Although I am certainly not new to high speed data, running 9600 baud packet is a thrill that everyone should experience. Monitoring the audio while we were testing, all you would hear is a fast (and I mean FAST) Psssst, Psssst signal from each radio. No more of this BRRRRRRRRRAAAAAAPPPP stuff

here! Great sound effects, 'eh? We had the PK-96 and the DSP-2232 transferring files so fast, I never would have believed it was possible over the air. It reminded me of a fast (less than one second per packet) AMTOR signal. Working 9600 baud packet is a BLAST!

A few things we learned along the way relating to 9600 baud packet, thanks to Glen (WB6W via Packet Radio) and our experience (we are expert's now - grin):

1. 9600 baud is VERY sensitive to carrier frequency. If possible, use a multimode rig with 1 KHz steps. Being 1 KHz off makes for a very erratic 9600 baud link. Being 2 KHz off results in a system that just doesn't work.

2. 9600 baud operation is sensitive to multipath propagation. Use directional antennas to reduce the multipath. Horizontally or Circularly polarization works best. We used circular polarization and found excellent results.

3. The optimum parameters for 9600 are different than they are for 1200. Not that 1200 baud parameters won't work, but you won't get the throughput that 9600 is capable of - reduce the TXD settings to the minimum. I set my TXD to 10mS and made the connection just scream!

With all this information laid out, and 1200 baud as an alternative, it is clear that 9600 is the way to go. It is easy, fast and incredibly efficient. You can move a lot of data at 9600. I suspect that 9600 baud nodes will start showing up in a lot more places over the next year. Hopefully, we will have a 9600 baud node here in the Spokane area in the next few months. Check with your local packet group - 9600 baud is here to stay, and AEA has made the PK-96 within easy reach of all hams. If you don't have other 9600 Baud users or a 9600 baud node in your area, use it for 1200 now. Listen on the common packet frequencies for the familiar Psssst, Psssst sound. When 9600 baud hits your area, you will be ready! Weighing in at less than \$200.00, the PK-96 is an excellent bargain. In the dollar/feature ratio, the PK-96 is outstanding. Stay tuned and I will let you know how it works on satellite.

If you have the chance, drop me a line - I would like to hear from you. There is always something going on here at the Shack. Between projects like G-TOR, DSPs, Satellites, and just about everything else, I would be happy to hear your opinions and ideas. I have received and successfully connected on Kantronics new G-TOR HF Digital mode, and it's looking good. You can contact me on Internet "mikec@comtch.iea.com" or through my telephone BBS - the "Think Tank" at 509 (509) 244-3511. Packet: KI7FX @ WB7NNF.#EWA.WA.USA.NA

73,

de Mike, KI7FX ■

PACTOR

Phil Sussman, KB0LUJ

Your questions receive an answer in this issue.

*** CONNECTED: KB8LUJ

The First of January is New Years Day for much of the world. Americans gather at Times Square in an annual ritual of renewal. For Amateur Radio operators the year begins on the last week-end of April as hams worldwide gravitate toward Dayton, Ohio. If you can't go to this RF 'hot spot', look for the DAYTON PACTOR REPORT next month.

There's a lot of ADRS activity planned for the Radisson Hotel; the general meeting, the hospitality suite, and of course the RTTY Digital Journal dinner on Saturday night. An "Early Bird Forum" will be held from 8:00AM to 9:00AM on Friday, the 29th of April at the Radisson. Please join us if you can.

This month there were messages from Bob, AA4PB; Steve, AC4IW; Hans, DJ1IJ; Tom, DL2FAK; Peter, DL6MAA; Francisco, EA2CNT; Andy, G3ZYP; Ted, HC5K; Bienve, HI8BG; Bill, K5ZZ; Jim, N2HOS; Ken, N4SO; Rich, N6GG; Ken, N9VV; Bojan, S51CN; Bruce, V31JU; Joe, W3/G3ZCZ; Dale, W6IWO; and Tom, WD8DXD. Thanks to all of you.

PACTOR NEWS

Here's an update of the latest PACTOR news. To help keep ahead of the crowd, I need whatever information you can muster! Thanks.

* GTOR, PACTOR, and CLOVER will be discussed at the Digital Digest forum. * A report says the DK0MHZ BBS has been closed. Anyone have more info?

* Dual port LAN-LINK, for the AEA PK-900, PK-1232, and PK-2232 may be released at Dayton, says Joe Kasser W3/G3ZCZ.

Look to this column for the most up to date information in the field!

MAILBAG QUESTIONS

I was asked about an article ("A Practical Comparison Between Clover and Pactor Data Transfer Rates" by Mike Van der Westhuizen, ZS6UP, CQ FEB-94, pp40-42) comparing PACTOR to CLOVER. The author used a KAM all-mode with PACTOR in "long-path" mode vs- a stock CLOVER board. (He didn't mention what ZS5S uses for PACTOR.) Is this PACTOR/CLOVER comparison a good one?

- The KAM does NOT have an analog-to-digital (AD) converter and has a SUSS Effectiveness of about 78 per cent. (As opposed to 92-93% for TNCs with an A/D converter: SCS PTC, AEA DSP products, PacComm Controller, etc.)
- Using long path mode adds 150ms to the timing 'window'. The comment that long-path in the KAM worked better for him than short path typifies the missing A/D converter. PACTOR runs faster, obviously, in short path mode.
- Huffman Compression is not as rigorously applied in the KAM.

My opinion is the article did an excellent great job of comparing KAM's average PACTOR in the long-path mode to CLOVER, but it's not a true test of robust PACTOR. Better results would be achieved by comparing two full protocol PACTOR TNCs (with A/D converters) in the short-path mode with two CLOVER units. Has anyone done that? I'd love to hear from you!

More from the mailbag:

Q: What is PACTOR?

A: PACTOR is a protocol for ASCII data transfer on HF which links two stations together for correcting errors under difficult conditions.

Q: SSB works well on HF. Why use PACTOR?

A: PACTOR moves more than mere speech. It can transfer typewritten text, pictures, graphics, and computer files. It also provides error correction under poor propagation conditions where SSB would be unintelligible.

Q: I use PACKET on VHF. Why is another protocol necessary for HF?

A: PACKET has distinct high speed advantages and works very well under good signal to noise ratios, as on VHF/UHF FM. But with high noise, poor conditions and intersymbol interference (ISI) on HF, packet only repeatedly retries sending data. It has no adaptive error correction or compression. So it is not effective on HF.

Q: What hardware do I need for PACTOR?

A: You need three items: A computer (with appropriate software), a data controller (KAM, PK-232, PacComm PTC, MFJ-1278, etc), and a rig capable of HF operation.

Q: Can I use PACTOR without a computer?

A: A dumb terminal can be used alone, but a computer and with control program makes communication much more enjoyable.

Q: I can't type at all. Can I possibly use PACTOR without typing?

A: I must admit that I don't type well. Frankly, I use two fingers most of the time and still do fine. (touch typists cringe when they watch) Many control programs let you send character strings and text files, which reduces the amount of typing actually needed during a QSO, but some typing is required.

Q: I've been on RTTY for years. Why should I change now?

A: Remember when you first saw RTTY? That was some difference from CW! So check out PACTOR in the same way and make your own comparisons.

Q: How is PACTOR better than AMTOR?

A: PACTOR has many advantages over AMTOR. It uses 256 character ASCII which allows upper and lower case, text files, graphics, and binary file transfers. It is typically 4 times faster, using reconstructive error correction, adaptive speed, and data compression.

Q: Is more than one type of PACTOR? Is one type better than another?

A: PACTOR protocol has a uniform technical standard written in Germany. But all PACTOR TNCs (like many things) are not created equal. Some makers take cost shortcuts which sometimes circumvent the standard, especially in the area of MARQ. Read all you can and do some comparative shopping before you buy. Remember: Buyer Beware

Q: What is Memory ARQ (MARQ)?

A: It is the scheme used by PACTOR to reconstruct defective data frames. Data errors are not discarded, but digitized and stored. Then they're compared with later frames for restoration. Some manufacturers omit an analog-to-digital conversion which reduces MARQ effectiveness. Comparative MARQ is measured by a factor called SUSS, the higher the better.

Q: Why does PACTOR move so fast? I can't keep up.

A: Speed is not the only consideration. Accuracy is another important factor. Also PACTOR protocol works regardless of the input typing speed. So you can slow down and type at a comfortable speed. Data arriving from another station can be saved or printed, to be read later.

Q: I think PACTOR is very complicated and don't understand how it works.

A: Luckily you don't need to understand exactly how PACTOR works in order to

use the mode. All you need to do is read this column. (HI)

PACTOR BASICS

Assembling a PACTOR STATION Part III - GETTING IT TOGETHER

This is the third of three parts. In the first (RDJ FEB-94) we discussed RS-232 and connecting a computer to a TNC. The second (RDJ MAR-94) covered connecting a TNC to a rig. Now we conclude with getting the PACTOR station up and running.

Once the computer is connected to the TNC (or MODEM), interfaced to the rig, and tested to your hearts content, it time to get on the air. Be sure to follow the 'set-up' instructions for your particular software and/or hardware. Don't forget to 'insert' your call-sign in the proper place(s). Most TNC's have a separate PACTOR callsign to enter.

Set the rig for speech compression: OFF, and ALC in FAST. If using LSB with AFSK, set the microphone gain as LOW as possible. Set the RF power out at about half of maximum.

Before you begin...

* Know how to get the rig to stop transmitting. Write down the software commands or be able to quickly disconnect the TNC from the rig.

* Know how to 'OVER' the link. There's nothing like thumbing through a manual in the middle of a QSO.

* Understand how to start an FEC transmission and how to start a link with another station, both in the standard and long path modes.

* Listen and practice tuning PACTOR signals before you start your first QSO. If you are connected across your speaker, you may need to 'play' with the AF gain

(volume control) to achieve good copy.

Once you have practiced tuning some PACTOR signals and have a 'feel' for the operation, it time for our first PACTOR QSO. Let's establish our first link together.

CALLING CQ

We call CQ by entering the FEC mode by entering the appropriate 'Call FEC' command to your controller. (See Chart) For example, on an AEA controller we type 'PTS' and return (enter). Our transceiver should immediately go into transmit continually. Now we type our FEC message:

```
CQ CQ CQ de KB8LUJ KB8LUJ
CQ CQ CQ de KB8LUJ KB8LUJ
CQ CQ CQ de KB8LUJ KB8LUJ
PSE ARQ
```

We then conclude with the END command. For the AEA we add a Control-D after our CQ message. The TNC should broadcast the FEC message and then return to receive.

When another station sees our CQ and wishes to connect, he will start sending connect requests. If our TNC receives a connect request, our transmitter will start quickly cycling on and off about 1/4 second per second and the message:

*** CONNECTED TO: {callsign}

appears on our screen. Congratulations, we have done it, we are linked!!

The other station will start typing, saying Hello and give an introduction. Suddenly the link will shift, and our transmitter will be transmitting for about a second and then give a 1/4 second break. It is now our turn to send. So, we type "Hello" and acknowledge his information. We give our name and QTH. (don't worry about speed or spelling, that comes in time) When we are done and want to turn the link back around we type a changeover

character (for AEA it's a Control-Z) and the link timing should reverse.

The QSO continues by each station changing the link direction when they are done typing. After a nice exchange, it's reluctantly time to say our 73s and disconnect. The sending station does the disconnect by typing the END command (Control-D for AEA) to 'drop' the link.

ANSWERING A CQ

If we monitor a station calling CQ and want to answer we attempt to link to the other station by entering the appropriate 'Start ARQ Link' command to our controller. (See Chart) For example, on an AEA controller we type 'PTC {callsign}' and return (enter). Our transceiver should start sending a connect request by cycling on and off about once per second.

When the other station acknowledges our ARQ, our transmitter will start cycling on and off for about a second followed by a 1/4 second break and the message:

*** CONNECTED TO: {callsign}

appears on our screen. We are linked!!

It's our turn to start, so we type Hello, our name, QTH, and perhaps a signal report. When we're done it's time to reverse the link and give the other station a turn. So, we type the changeover character (for AEA it's Control-Z) to reverse the link.

The QSO continues by each station changing the link direction when they are done typing. After a nice exchange, it's time to say 73 and disconnect. The sending station disconnects by typing the END command (Control-D for AEA) which 'drops' the link.

OPERATING HINTS

Here are a few hints to help enhance your PACTOR operation.

* If a station is calling CQ, be sure there are no other nearby stations interfering in the bandpass of your receiver before you attempt a connect.

* If you have a narrow filter, turn it on (or off) BEFORE you connect. Once you are connected making a change in the filter will corrupt the timing and in many cases disrupt the link.

* When answering a CQ, use the callsign of the station as an indication of his location. For example, if a

COMMAND CHART

| | LISTEN | Call | FEC | Start ARQ Link | OVER | END | BREAK |
|-------------|--------|------|-----|-----------------|------|-----|---------|
| AEA | PTL | PTS | | PTC {callsign} | ^Z | ^D | ^C ACHG |
| PacComm/SCS | L 1 | U | | C {callsign} | ^Y | ^D | ^Y |
| MFJ 1278 | | U | | C {callsign} | ^Y | ^CD | ^CC |
| KAM | PTLIS | ^C T | | ^C X PAC {call} | ^CE | ^CD | ^CE |

Notes:

1. ESC = Escape Key, ^C = Control C, ^D = Control D, ^Z = Control Z

2. The ENTER or Carriage Return should follow each of the above

3. The text refers to the dumb terminal operation. If you are using control software, such as PCPACRATT, KA-Gold, LAN-LINK, MT.EXE, etc, refer to the proper documentation for procedure to follow.

HF ARQ Protocols

by Phil Anderson WØXI

Teletype-Over-Radio (TOR) techniques were introduced with AMTOR and are characterized by their automatic repeat request (ARQ) protocols. With ARQ systems, additional bits are added to the message data prior to transmission, and these parity bits and the data are used to detect errors at the receiving site. If errors are detected, a retransmission of the message is requested. In this way, error-free data will eventually be received.

AMTOR (1985) transmits three characters with each data frame using the Moore code, a constant-ratio code of four MARKS and three SPACES. Errors are said to exist if the MARK:SPACE ratio is not four:three for any of the characters received. The receiving station requests from the transmitting station new data or retransmission of the old message. The hand-shaking cycle takes 0.45 seconds.

Pactor (1991) transmits either 12 or 24 characters depending upon baud rate, either 100 or 200. Four characters are used for control, including two checksum bytes. Errors are detected at the receiver by comparing the checksum with the accompanying data. Pactor uses the AX.25 checksum (CRC-16). The receiver requests new data, a retransmission of data, or a change in system baud rate.

G-TOR™ (1994) transmits either 24, 48, or 72 characters depending upon baud rate, either 100, 200, or 300, respectively. Errors are detected at the receiver using a CRC-16 checksum. The receiver requests new data, a repeat of the last data or parity, or a change in baud rate.

The protocol for each system – the rules of hand-shaking between transmitter and receiver – determines system timing, linking and disconnecting procedures,

data retransmission rules, and forward error correction methods used (if any). Figure 1 displays the cycle duration of each mode. AMTOR data frames are 0.21 seconds in duration and are repeated every 0.45 seconds. Pactor frames are 0.96 seconds and repeated every 1.25 seconds (short path). G-TOR frames are 1.92 seconds with a 2.4 second cycle.

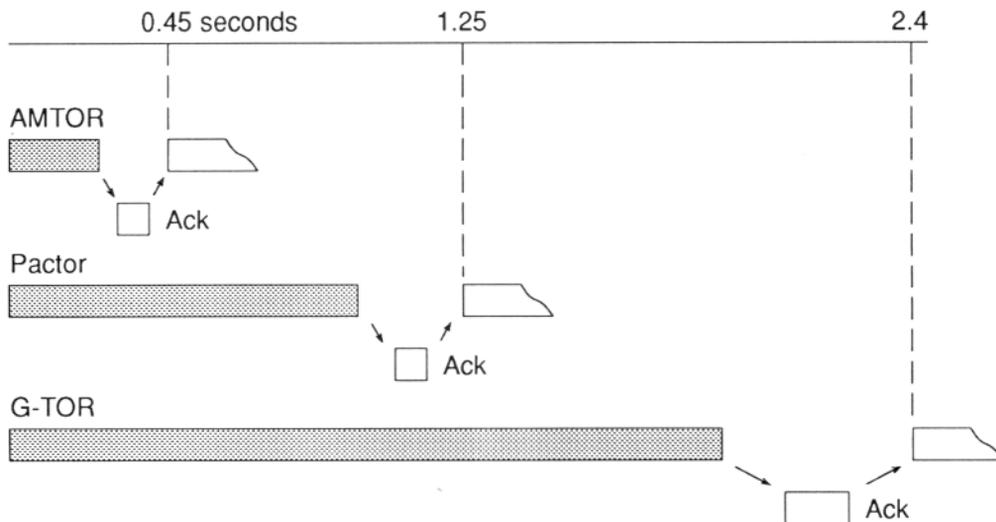
Figure 2 tabulates the frame and cycle efficiencies of each mode. It also lists the bit-rate that would be received under ideal conditions: no noise and no data compression. For example, AMTOR sends 15 data bits (plus parity, as three characters) every 0.45 seconds at 100 baud. That's a cycle efficiency of 33%. G-TOR, at 300 baud, transmits 552 bits in 2.4 seconds for a cycle efficiency of 77%. G-TOR has the highest frame efficiency (96%), using 552 of 576 bits transmitted.

AMTOR detects errors in transmission but does not correct errors at the receiver site. Pactor, using memory-ARQ, corrects errors at the receiver by combining past and present frames received. G-TOR corrects errors at the receiver by combining the last two frames received, data and parity, correcting up to 3 bits out of 24 sent.

Figure 2

| mode | baud rate | data bits/f | frame eff-cy | cycle eff-cy | ideal bits/sec |
|-----------|-----------|-------------|--------------|--------------|----------------|
| AMTOR | 100 | 15 | 71.4% | 33.33% | 33.3 |
| Pactor-LP | 100 | 64 | 66.7% | 45.71% | 45.7 |
| Pactor-LP | 200 | 160 | 83.3% | 57.14% | 114.3 |
| Pactor | 100 | 64 | 66.7% | 51.20% | 51.2 |
| Pactor | 200 | 160 | 83.3% | 64.00% | 128.0 |
| G-TOR | 100 | 168 | 87.5% | 70.00% | 70.0 |
| G-TOR | 200 | 360 | 93.8% | 75.00% | 150.0 |
| G-TOR | 300 | 552 | 95.8% | 76.67% | 230.0 |

Figure 1. TOR Protocol Cycles



G-TOR is a trademark of Kantronics Co., Inc.

Pactor is fast. G-TOR is more along these lines.



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The KAM Plus strikes again. It's now available with lightning fast G-TOR, a Kantronics innovation. More than twice the speed of Pactor in most band conditions, this error-correcting mode is the fastest HF mode available in a stand-alone TNC.

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KAM Plus with G-TOR. Together, the two are taking HF digital communications by storm.

Kantronics

ZL or VK station is calling CQ, it's a good idea to attempt a link using LONG PATH MODE.

*When responding to a CQ, others might also be trying to connect. You may receive a "CONNECTED" followed by a lot of ERRORS or REQUESTS. If the signal is pretty strong, chances are you may have a 'false connect'. This can occur as a result of the 'hidden transmitter' syndrome on HF or if there is interference in the bandpass of either party attempting a link. Issue a disconnect and monitor for a while. If clear, try another connect.

Once you make that first PACTOR 'connect', you'll feel that same excitement that you experienced with your first HAM QSO. Don't worry about your typing. Just practice with your system and you'll gain experience. We all started at the bottom and have steadily kept growing by not giving up.

FEEDBACK

I must thank you for all the suggestions and comments. Many said we need to keep informed. I received some new and exciting ideas about PACTOR. One is to explode the myth that digital modes are hard to use.

When it comes to a voice for digital, we have the ADRS, an organization that fills a void. The theme is relevance. PACTOR and CLOVER have been regular columns in the RDJ for a while. Others are only now 'discovering' the popularity these modes. And that's only the start...

You'll find the best of the Digital world right here: timely information, interesting topics, and the best writers all together in the ADRS. Digital operators epitomize the 'Best of the Art' and we all need to spread that message.

I ask for YOUR help, because I need it. Our members are the greatest part of this mix. It is your contributions that drive us to excel and make the ADRS what it is. So please send what you can and thanks for your support. This time of year we look in our wallets, await income tax refunds, and contemplate buying something. Why not try PACTOR?

Now we renew our quest for excellence and improvement of our ever changing art. Next month a comparison of specifications between PACTOR and GTOR, a new mode introduced by Kantronics for the KAM. You may be surprised. So keep reading...

Thanks for sharing your time with me and until next month - 73 - de Phil - KB8LUJ. May God Bless you and yours. Link d-o-w-n..

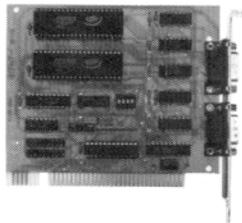
*** DISCONNECTED: KB8LUJ

LOOKING BACK

21 +/- Years Ago (RDJ)

- ✕ I1KG awarded DXCC plaque Nr 3. No cards submitted by FG7XT (110/102). WB6RXXM reports 51/61.
- ✕ W6FFC describes the TT/0, a cleverly designed unit for measuring Mark and Space tones, complete with calibration chart.
- ✕ Three-speed kit for 28ASR available for \$225.
- ✕ K9LUG describes RTTY without gears, ink or noise using new HAL RVD-1002 system.
- ✕ AFSK more popular than FSK but clean audio generator is a must.
- ✕ W8BBB discusses teleprinter codes, bit lengths, word lengths, including ASCII commercial teleprinter codes which most hams cannot print.
- ✕ First RTTY from HV3SJ in the Vatican is highlight of Giant Flash Contest. Ops are IOJX and I1PEP. Another first is MII in San Marino.
- ✕ VP8ME on So. Orkney active at 50 Baud and 425 shift, inverted. Jay receives OK at 45 Baud and 850 shift.
- ✕ George, VK9GG, New Guinea Territory expecting machine and TU soon, another first-ever RTTY.
- ✕ JA1ACB, Gin, working West coast around 3790 kHz.
- ✕ Based on a letter to W6FFC from Heath company, the SB-220 appears rugged enough for most amateur operations in the key-down mode.

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DX NEWS

Jules Freundlich, W2JGR

Unofficial guess gives Mt. Athos 50/50 chance for separate country status.

The announcement, by HAL Communications, that there will be a third generation of PC-4000, that will provide automatic switching between CLOVER, PACTOR, AMTOR and RTTY, brought to mind the first demonstration I ever saw of automatic digital signal analysis.

In the early-mid 1980's, in connection with a business project, I made many trips to Egypt. On one visit, I found myself in the U.S. Embassy in Cairo, conferring with a technical officer of the U.S. Agency for International Development. He turned out to be Charles "Sig" Signer, WA9INK. As a career foreign service officer, Sig had previously signed C3IIL, DA1SI, F0ZR, FO0ZR, TU4CN, ZB2DA, 5Z4EE, and FO0XA-H, the last one being the legendary 1978 Clipperton expedition. At the time we met in Cairo, Sig was struggling with the local PTT to obtain an amateur license. It took him a full year's effort before he obtained the call, SU1EE.

Following our business conference, Sig invited me to his home, which contained a roomful of radio equipment, most of which he was not yet allowed to use. He turned on a commercial multimode RTTY demodulator to show me the wonders of detection with automatic analysis. Unfortunately I do not remember the make or model number, but, needless to say I was impressed.

After he obtained his SU license in 1988, Sig, over the following year, gave many of the deserving a new RTTY country. His next assignment took him to Zaire, where for the next two years he signed 9Q5EE, also giving out numerous RTTY contacts. After that, I lost track of him. Can anyone tell me where he is now, and what call sign he is using?

DX DOINGS

(Signals are 45.5 Baud RTTY unless noted.)

CENTRAL AFRICAN REPUBLIC, TL - In addition to his 20 meter appearances around 1700Z, TL8NG has been reported on 15 meters around 1740Z. QSL via WA1ECA. I'll get this one yet!

CUBA, CO - CO2KG often operates 20 meters between 2115Z and 2330Z. Try QSLing via the Bureau.

DJIBOUTI, J28 - A Pactor signal from J28BM has been reported on 14071 khz around 1950Z. QSL to Bill De Lage, K1SE,

P.O. Box 685, Manassas Park, VA 22111-0685. J28BS maybe found between 2030Z and 2200Z on 15 or 20 meters depending on propagation. QSL to WA4WIP.

EGYPT, SU - Hahmed, SU1AH has been reported at around 1340Z on 20 meters, while Ezzat, SU1ER sometimes shows around 2010Z. QSL SU1AH to Hahmed Hassen Ahmed, 40 Al Zahras St., Ein-Shams, Cairo. QSL SU1ER to Ezzat Sayet Ramadan, P.O. Box 78, Heliopolis, Cairo 11341.

FRENCH POLYNESIA, FO - FO5NA likes 20 meters around 0450Z. QSL route is needed.

GUANTANAMO BAY, KG4 - Another active one from GTMO is KG4CW, reported on 20 meters around 1345Z. QSL via K3HSK.

KAMPUCHEA, XU - XU7VK has been reported on 15 meters around 1100Z. QSL to Laszlo, HA0HW. I do not know the length of stay.

KUWAIT, 9K - Both 9K2IC and 9K2USA like 20 meters between 1430Z and 1745Z. QSL 9K2USA via K8EFS. QSL route for 9K2IC is needed.

MADAGASCAR, 5R - 5R8DS, previously reported as appearing as early as 1330Z on 15 meters, is now active on that band around 1140Z. QSL to F6FNU.

MALAYSIA, 9M - 9M2MW can be found on 20 meters between 1600- 1700Z. QSL route is needed.

MOLDOVA, ER - ER1PE, previously reported active on 15 meters around 1355Z, is now also active on 20 meters around 1415Z. QSL via I8YGZ.

NAMIBIA, V5 - Gerd, V51GB has taken up Pactor and may be found on 21076 around 1550Z. For QSL instructions, see RDJ for January 1994, p. 14.

NEPAL, 9N - Satish, 9N1AA, in addition to appearing on 15 meters around 1030Z, may sometimes be found on 20 meters around 1730Z. We have not seen any reports of the other licensed ham there, Surish, 9N1NA. Thanks go to Baldur, DJ6SI, and Heinrich, DJ6JC for their generous contribution of the equipment that has enabled Nepal to become activated by native operators. Others, not identified, also assisted in sharing the considerable expense. QSL both call signs, including the operator's name on the envelope to: P.O. Box 4292, Kathmandu, Nepal.

OMAN, A4 - A41KB is now on Pactor, and was worked on 14072 at 1555Z. QSL via ON6BY. A71CW may be found on 15 meters around 1230Z. QSL via K1SE as for J28BM, above.

PHILIPPINES, DU - It is good to see Lynn, DU1AUJ back on RTTY. Look for her on 20 meters around 1600Z. QSL via CBA.

QATAR, A7 - A71CW frequents 15 meters around 1230Z. QSL to Chris Dabrowski, Box 22101, Doha, Qatar.

SAO THOME & PRINCIPE, S9 - Glenn, S92ZM continues to show frequently, including popping up in the middle of contests. Latest reports show him on 20 meters as late as 2245Z and as early as 0600Z. QSL to Glenn Britt, C. Postal 522, Sao Tome DRSTP, Portugal.

TAIWAN, BV - If you still need this one on RTTY, look for BV7WB on 20 meters around 0800Z. QSL route is needed.

TURKISH REPUBLIC OF NORTHERN CYPRUS, 1B - If you operate Pactor, you may be able to find 1B1AD on 14079 around 1430Z. As mentioned below, this country has no DXCC status at the present time, but that could change. QSL 1B1AD to DK7ZZ.

ZAMBIA, 9J - 9J2BO frequents 15 meters around 1515Z. QSL via W6ORD. Stations signing 9I2A and 9I2Z were reported on 20 meters around 2000-2130Z. 9I2M has shown on 15 meters after 1500Z. If you worked any of them, QSL to DL7VR0.

DX ADVISORY COMMITTEE (DXAC)

There are three interesting items under consideration these days. First is the question of BV9, Pratas Island, to be considered as a new country. This has been removed from the agenda of the DXAC pending receipt of requested additional substantiating information. The five day operation from Pratas, in mid-March, did not include operation on any of the digital modes.

Second, the question of continuing Mount Athos as a DXCC country is under serious consideration. A possible basis for deleting it lies in questioning the validity of the original decision to declare it a separate country. This entails re-searching the records. An unofficial guess, at this time, shows a 50/50 split, by the DXAC, for/against deletion.

Third, is the interesting question of 1B, Turkish Republic of Northern Cyprus, qualifying as a DXCC country. In past RDJ issues, I have spoken negatively on this subject. Last month, I quoted Aris, 5B4JE as stating that the 1B prefix "is absolutely illegal", and does not exist in the ITU allocations. There is sufficient precedent, as in the cases of 1A0, 1S, FS, and S0,

for the use of unofficial prefixes by DXCC countries. So this argument does not seem to be a particularly strong one.

The original petition, by Cliff, KR4M, to the DXAC for 1B country status was withdrawn a couple of months ago. But, now Igor, KU0J, who recently operated CW from TRNC, has submitted a new proposal, which has many believable elements. Igor points out that TRNC has had its own government since 13 February 1975. It has its own consulate in Washington, D.C., as well as in other countries. It has its own army, customs and immigration office, police, and issues its own stamps. It has trade relations with over 60 countries, including USA, Japan and the U.K. There are currently two locally licensed hams, one of which is 1B1AD. (See DXDoings.)

Igor says that low diplomatic recognition is no excuse for not considering separate country status. TRNC has representations in 10 countries including Western Europe, Japan, USA, and the UN. He points out that, of all the countries in the western bloc, only Sweden recognizes "our recent pile-up target P5." He also points out that the high presence of the Turkish military is not unlike the heavy presence of Soviet troops that formerly existed in Cuba and East Germany. Such a presence did not disqualify these countries from being DXCC accredited.

Continuing talks about possible unification of Cyprus, could take years before any results are evident. Such uncertainty should not preclude DXCC recognition, he avers. Bosnia is still at war, yet has achieved DXCC status.

It seems to your scribe that the situation with Turkish Republic of Northern Cyprus is akin to what we had when Martti, OH2BH, proposed Western Sahara as a DXCC country. At that time, the "Polisario", the controlling political entity, was considered by some to be a rag tag rebel group with little, or no, diplomatic status in most of the world community. Yet, Western Sahara was eventually given DXCC status in 1988, by undeleting EA9, Rio de Oro. The arguments in favor of TRNC seem to be even more cogent than those that were set forth on behalf of Western Sahara.

If you would like to see his complete justification for his proposal, drop a postcard to Igor Zdorov, KU0J, 5980 Anna Ave., #308, Minneapolis, MN 55432. If you are convinced of the validity of his arguments, let the DXAC know. A letter to its attention, at ARRL, will be circulated to all members of the committee.

DIGITAL BAND PLANNING?

As expected, raising the question, as I did last month, on the subject of digital band planning, brought forth some spirited comments about frequency usage. However, the responses were in the nature of criticism of past actions, as well as bemoaning the current practice of not listening before transmitting; or, what seems to be more common, the practice of ignoring a QSO in progress, and attempting to bulldoze one's way over it. Jerry, AI9W, reminded us of the need for expanded spectrum for the ever proliferating digital modes. But as whose expense?

I had addressed 20 meter digital usage, and the apparent informal restructuring of the 14064-14090 khz slot, but had neglected to discuss what happened on 40 meters. I confess, I was not familiar with the 40 meter situation. Bruce, KO5T expressed a bitter opinion, among other things, about what happened there, particularly on 7076 khz, which apparently had been a favorite rag chew frequency for years. He tells me that early in 1993, Clover signals showed up there briefly, while the frequency would be in use. Without achieving much success, after a couple of weeks, he says they then moved to 7066. From mid- March to 1 November, he goes on to say, 7076 was again a peaceful ragchew frequency. Then on 1 November, three active Amtor stations adopted the frequency for traffic forwarding, and collisions again exist.

I was not trying to open old wounds. Rather I had hoped to learn what current progress was being made. The subject of frequency allocations is a complicated one, crossing as it does national boundaries. Look elsewhere in this issue of the RDJ for ADRS news on band planning. As a user of three, and soon four, digital modes I have a strong interest in the eventual outcome.

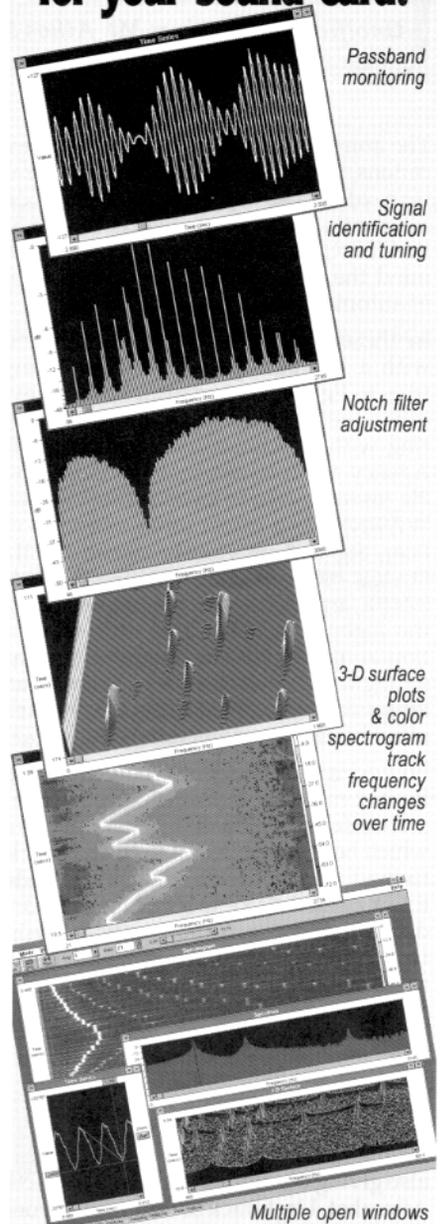
HAVE DX NEWS? Drop mail into my personal AMTOR mailbox on 14070 khz, leave a message in the W2TKU/4(1) mailbox (AMTOR or CLOVER), send me a packet message addressed to W2JGR@WB0GDB.#STP.MN.USA.NA, telephone me at (612) 377 7269, or use the U.S. Postal Service. THANKS - Thanks to the following for all your information: AI9W, DJ3IW, I5FLN, IK5AAX, K05T, KU0J, W2TKU, WB2CJL, W6GO, ZS5S, and 9X5LJ.

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

de Jules, W2JGR ■

1. W2TKU/4 scans 7070, 7076, 14072, 14086, 14078, 21074, and 21080 khz. on AMTOR. On CLOVER, he scans 7066, 7068, 14066, 14068, and 21066 khz.

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PacTOR Chip Shortage?

Our German friends are selling a new PacTOR model because they have run out of ICs for the original design. PacComm planned ahead and we have plenty of ICs for new production and for repairs.



PacComm's PacTOR Controller

Reviews of PacComm's PacTOR Controller: (Call or write PacComm for a reprint). January 1993 *QST*, New Product Review and February 1993 *Ham Radio Today* (UK) November 1993 *RTTY Digital Journal*, page 18. "Review" by Phil Sussman, KB8LUJ March 1994 *QST*, page 67. "Plug into PacTOR".

PACTOR, PACTOR-II, CLOVER, G-TOR, Who knows what else!

There has been so much development recently in HF protocols that we now have a tower of Babel situation. Your PacComm PacTOR unit will communicate with most all other HF digital operators - PacTOR, AMTOR, RTTY. Specialized protocols severely limit the number of stations you can communicate with.

Keep this in mind: PacComm pioneered PACTOR in the USA with a solid product that WORKS. We will continue to offer the PacTOR model. Perhaps other vendors are announcing 'something new and better' because their PacTOR implementation didn't work very well!

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an exact representation of its received value. If Memory-ARQ is attempted without the ADC, the value of each bit must be rounded down to a zero or up to a one and the 'marginal value' of the signal is lost.

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INFORMATION SUPERHIGHWAY

Wayne Renardson, NZ4W

You are invited to come along for the ride.

The amateur radio community has long been a worldwide network, an electronic superhighway of information exchange. Marshall McLuhan called the future electronic network the global village. He assumed that television would bring the world closer together, and help eliminate differences that lead to human conflict and strife. To McLuhan, the earth was one tiny village that must learn to live in peace by eliminating poverty, prejudice, and hatred in order to survive. And the electronic network of television was the vehicle that would allow us to become that village.

But amateur radio operators were linking with each other on a global scale long before McLuhan. Radio waves know nothing about borders, countries, ethnic or racial groups, flags or national symbols, or any of the political differences that cause nations to resort to the ultimate political act, war. Radio waves leave a transmitter and travel where they may, limited only by wave characteristics and propagation. International borders and political differences are meaningless to a RTTY or CLOVER signal traveling toward the stations of JH2JGV, VP8DZ, TY3PS, VE3JHG, SP9DBE, or ZS5S, all linked globally in the ether network.

Amateur radio operators were in the vanguard of the digital communications revolution. Early on they discovered the TI-99A and Vic-20 could easily generate digital codes, and they linked them to thousands of transceivers to generate two-bit CW, RTTY, 8-bit ASCII and five-bit Baudot codes over the airwaves. During the early seventies and eighties, when many more amateurs, computers, and modems bonded, another network became available to the amateur radio operator--the network in CyberSpace, where millions of electrons flow freely every moment, each conveying information, data, and different types of communication to people linked globally over land lines. Not only can these telephone lines transmit text and voice; they can transmit graphics, pictures of things forbidden and illegal in some countries, including the US. They are also capable of carrying information that in the hands of unscrupulous users, can cause misery to others by victimizing them through credit card fraud, cracking into their computers, and other forms of abuse. A friend and I were once discussing the ethical ramifications and the right of a BBS sysop to post a list of stolen credit

card numbers and she said, "Look! I will defend to the death your right to swing your arm. But that right ends where my nose begins."

Digital communications in the United States is at a crossroads. Since the Regional Bell Operating Companies (BOCs) are now free to provide content, with cable and movie/entertainment/publishing conglomerates merging, the development of information networking and exchange is about to be irrevocably altered. But will that network, the superhighway currently being touted by Vice President Albert Gore, be the open, accessible, affordable network that the American public needs?

The Electronic Frontier Foundation (EFF) presented a plan to Congress calling for the immediate deployment of a national network based on existing Integrated Services Digital Network (ISDN) technology. ISDN is a public, high-speed, digital end-to-end telecommunications network that is the digital backbone for the telephone system. It provides multiple features, including data, voice, music, video, and leased-line services. ISDN is a worldwide network built on two main types of communications channels: a B channel that carries data at a rate of 64 Kbps (kilobytes/second) and a D channel that carries control information at either 16 or 64 Kbps. Computers connect to ISDN through simple interfaces and should be accessible to anyone with a telephone connection, and priced like local voice service. Deployment of such a platform will spur the development of innovative new information services, and maximize freedom, competitiveness, and civil liberties throughout the nation if--and only if--the issue of who controls the new system remains firmly in the hands of those unwilling to abuse the technology.

More than 250 companies emerged from the 1984 Justice Department breakup of AT&T's monopoly into seven independent BOCs, and they either sell or resell long-distance service. Most of them, including such big guns as AT&T, MCI, and Sprint, are interested in the action. But the issue of who will exercise the greatest control over the definition, access, and content of information superhighway is yet to be resolved. The network that might serve as a model in the vast linkage of computers is the InterNet.

In the beginning, circa 1969, there was the Advanced Research Projects Agency network (ARPAnet), a wide-area experimental system connecting hosts and terminal servers together. It was set up as a consortium between university research departments working on Department of Defense (DOD) and the DOD's vast network of computers. Procedures were created to assign addresses and to create voluntary [emphasis added] standards for the network. As local area networks (LANs) became more pervasive, many hosts became gateways (connection between networks in which protocol conversion takes place) to local networks. A protocol was developed to allow the inter-operation of these systems. Known as Transmission Control Protocol/Internet Protocol (TCP/IP), it permitted other networks to establish a gateway to the Internet. Some amateur radio packet protocols even use a variant of TCP/IP in KISS mode. Such groups as NASA and the National Science Foundation (NSF) created long-haul IP-based networks, and it is IP that allows these networks to communicate with each other. The collection of all these inter-operating networks, funded run by the National Science Foundation (NSF), became known as the Internet, and has been described as a model for the information superhighway of the future.

One of the keys to the Internet is that while it originated with government support, it remains private, and, like the amateur radio service, self-policing. With the current influx of people inundating it as the hippest thing, (What? No Internet address. Where are you?), it remains to be seen how well the self-regulating mechanism of the pathways will withstand the onslaught. Word on the street is that AmericaOnLine and some of the other commercial BBSs are so busy that they are often inaccessible.

A recent advertisement from Network MCI claims that a single fiber-optic cable will carry as much data as all the radio frequencies combined, times 1000. Aside from the hyperbole, there is no doubt fiber-optic cable networks will soon carry a wealth of digital information and entertainment, much as the amateur bands carry millions of messages through digital gateways all over the world. The difference is that amateurs have a hierarchical system in place, with the systems knowledge to operate and maintain the system for the mutual benefit of all licensed users. Unlike access for everyone, the amateur radio frequencies were not meant to be for everyone. Originally, the airwaves were anarchic, just as were the early BBSs and hacker boards. Amateurs shared the airwaves with government and commercial stations, with no rules. Regulations were established to provide a framework for purpose and conduct, the attraction to chaos being

non-existent in the old FCC and ARRL. A testing program to issues licenses was soon instituted, requiring the user of the spectrum to earn the privilege of occupying the airwaves.

With the rapid expansion of the amateur digital modes, thousands of messages are passed daily, and in order to avoid road-kill on the data highway, routing information and protocols were established to enhance the mutual exchange of information, both among amateurs and for the public served by the amateur radio service.

Scanning the traffic passed by such Win-Link stations as K4CJX and W3GL, there are numerous messages from the public. But once the public becomes linked to each other over fiber optic lines, the need for the amateur radio service to deliver cost-free information will wane or even disappear. In September of 1993, the FCC released its historic decision to auction added spectrum for use in personal communications applications. Fueled by the convergence of the ability of wireless computing and the public demand for mobile technology, the demand for wireless will outstrip the resource, leaving the amateur radio service vulnerable to commercial interests.

Nathan Myhrvold, a prognosticator from Microsoft, claimed that in order for the big guns to provide video-on-demand, they must compete with the present system, which includes the video rental business and cable television. The current rates are about three dollars a movie, or a dollar an hour, to transmit the video. If the large players plan to charge one dollar an hour to transmit video, which occupies much more bandwidth than voice, the cost of transmitting voice should fall rapidly, making most telephone communication free over the information superhighway. Telephone service will become part of a basic package, given away to induce consumers to pay for numerous other entertainment and information services. Myhrvold even cites an endangered species list of newspapers, banks, and retailers, who as mere middlemen will be eliminated once the highway is in place. One might add the amateur radio operator, who justifies occupying commercially-eyed spectrum on the basis of a provided service to the public and their former ability to advance the technological state-of-the-art.

Since amateurs have already built a digital highway for passing information point-to-point, our knowledge should be used to advance the future shape of the network. We can turn some of the immense processing power of our distributed minds to the task of finding useful new metaphors for community, expression, property, privacy, and other realities of the physical world that seem up for grabs in the world of digital communica-

tions. We can also try to communicate to technically unsophisticated friends the extent to which their future freedoms and well-being may depend on understanding the broad forms of digital communication, if not necessarily the technical details.

Just as amateur radio operators were in the vanguard of digital communications, wedding their computers with their radios, (Is amateur radio now a radio or computer hobby?) the superhighway will marry the telephone, computer, and television set, a national menage-a-trois, merging them into one gigantic electronic Ohmmmmmm. Prodigy offers everything from banking to news services, and they are testing their offerings through

cable wires, speeding up transmitted data and allowing customers to receive photographs and video images displayed on their computer monitors.

The digital pathways of the future hold great promise, but the road is fraught with peril. The impact of the emerging network will alter the nature of communications for not only the public but also for the community of amateur radio digital operators. What form this network will assume and how it will affect the Amateur Radio Service will be covered in a future article. Since the U.S. Government is sending representatives to the Dayton Hamfest, we will report on their vision and viewpoint next issue.

73 de Wayne, NZ4W ■

SOFTWARE REVIEW "Log Windows™"

Bob Boyd, W1VXV

Log Windows is an attractive multi-purpose program.

A Review of AEA's LOG WINDOWS™

by

Bob Boyd, W1VXV

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LOG WINDOWS™ is an application which combines the functions of logging, award tracking, packet cluster interface, and transceiver control. It runs under Windows 3.1 on an IBM-compatible PC which has 4 MB of RAM and a VGA display; a mouse is very highly recommended. My review was mostly done on a 486-based system, but I verified that the product functioned properly (although somewhat slower) on a 386-based system. The product supports COM1-4 connections to a TNC data controller for a packet cluster connection, and to a late-model transceiver with RS-232 adapter (ICOM, Kenwood, and Yaesu) for QSY and mode control. An interface is also provided to either a Buckmaster or SAM online callbook for automatic display of name and QTH when a call sign is entered in the log.

Perhaps I should begin by stating that I have held the call W1VXV since 1952, I had my first RTTY QSOs in 1964 (I still miss my Model 19!), and I have been a software developer since 1966. My current operating environment is DesqView under DOS on a 386 where I run PK-PAK-RATT with the ability to hot-key to J-COMM's online callbook or to KI6LO's logging program, i.e., I can switch between the programs with a single keystroke. Award-tracking is done by a set of

menu-driven programs (which I wrote) which track progress toward WAS, DXCC, CQ and ITU zones, counties, and other awards. Accordingly I have some pretty strong feelings about what logging and award-tracking functions are necessary. While satisfied with my present set of programs, I'm beginning to plan the move to a Windows environment on a 486 where my logbook, callbook, and controllers for rig, antenna rotor, and packet cluster hopefully are all integrated!

LOG WINDOWS™ provides for import of data from other major logging programs such as CT, DXBase, Easy-DX, HyperLog, and LogMaster, as well as a generic ASCII file. Knowing that a review would be more meaningful with live data, I wrote a C program to unload one of my logs to an ASCII file. The import required about fifteen minutes for 2600 QSOs; the product examines the callsign during this process (or later online data entry) and uses it as the basis for determining prefix, continent, and CQ/ITU zone fields. Two records were rejected during the import because the product couldn't determine the country prefix from the commemorative callsigns which had been used. Errors such as these can be easily corrected and re-imported. Twenty minutes after beginning the import, I was able to look at the new log, search for entries, and print reports. Frankly, I was very impressed with how easy and accurate this process was!

LOG WINDOWS™ uses an attractive split screen with logging entry and display at the top, and optional packet cluster display at the bottom. Control is performed via pull-down menus or with

push buttons or function keys as in other Windows applications. The packet cluster window features a seven hundred line scrollable buffer and twelve user-definable buttons on the bottom row of the screen which are used to send commands to the packet TNC. (My buttons are currently defined to connect/disconnect to a cluster, and to direct that the cluster show dx, show bulletins, show users, etc.) Simply click the button with the mouse to cause the TNC send the command. These buttons give new meaning to "ease of use"; they are great! Filters can be easily set to determine when a DX spot alarm is to be sent; for example, for specific band(s), mode(s), or prefix, or you can indicate that a spot be shown if: a) the prefix has never been worked, or b) the prefix has been worked but never confirmed. The optional spot alarm can be a beep from the PC speaker, or "DX" sent in Morse thru an MCI-compatible WAV device (Soundblaster, Speaker Driver, etc.). Another feature I particularly like: one of the Tool Bar buttons will pop down a window listing the last thirty DX spots; you can click on a spot and, if the transceiver control is installed, instantly cause the frequency and mode of your rig to be set for working the DX!

A logbook can be searched sequentially, or by specifying one of the following fields: call sign, QSO date, state, country, grid square, CQ zone, continent, or prefix. A wildcard format is supported, and the search may be controlled by function keys, or by clicking on a Tool Bar button or pull-down menu selection. You can specify that a label be printed for your QSL card by displaying the QSO and then pressing the Print Screen key. If you haven't received a card, the label says PSE QSL; if confirmed, TNX QSL.

When making a new log entry, the date and time are automatically provided from the PC clock, and mode and frequency will be entered automatically if you are using a computer controlled radio. (If you are not using a rig interface, the product will insert user-defined default values). To log a QSO you should enter the callsign and press ENTER; this will lock in the QSO starting time and cause LOG WINDOW tm to automatically enter country, CQ and ITU zone, continent, prefix, beam heading, and distance in miles/kilometers! If you have an online callbook configured, the name and QTH will be retrieved as well and entered into the appropriate fields. RST's of 59 or 599 are the default entries but you can overwrite them. You may enter optional info into the grid square or remarks fields if you wish, and then click a button or press a key to save the record to the logfile. The process is easier and quicker than it may sound; typically you'll only have to enter a couple of fields and then click the mouse.

LOG WINDOWS™ uses special tags (and check boxes) to record and indicate the status of ARRL DXCC, WAS, VUCC, and CQ zone awards. The check box has three states:

- Blank - does not count for any award
- Checked - counts for this award
- Dark gray - has been submitted (to ARRL or CQ) for this award

If you work and log a new prefix, the tags for the QSO are automatically checked for DXCC Mixed, MODE, and Band. If you import a series of records, you should scan those entries, check the appropriate award tags, and update the record. When you submit the card to ARRL or CQ, update the check box to indicate that it has been submitted. Truly an accurate and easy way to track DXCC, VUCC, WAS, and CQ zone awards! (I should note here that the supported award modes are mixed, phone, CW, FSK, and bands.)

You can view and/or print your logs in order to determine progress toward awards or to see detail about specific contacts. The reports include: CQ zones, CQ bands, VUCC, DXCC, DXCC bands, WAS, and WAS bands, and options include: countries (or grids, states, or zones) worked (or needed), duplicates, full report (chronological or by prefix), QSL needed (or sent), entries submitted (or not submitted), or not tagged. After creating a detailed report, you can view it in a window and even edit a record without exiting the report. I was very satisfied with the types of reports and the amount of detail.

Other features include menu selections to facilitate exporting, backing up, and restoring the database, obtaining help, rebuilding database keys, and sending an ASCII file. Also, a menu selection can invoke a country database management program which allows you to add, change, and delete entries, and to print a list of all entries.

I spoke several times with the author of LOG WINDOWS™; he is an active ham as well as a proficient software developer. He said that the product had been beta-tested by a number of amateurs with differing backgrounds, and he mentioned that he has an agreement with AEA to provide enhancements in the future.

Enhancements that I would like to see added are:

- ability for the user to customize (personalize) the QSL label
- ability to view in a window some number of entries (say twenty at a time) which satisfy search
- criteria, and to then click on an entry to see the details, or to scroll to see the next window

- ability to search without the criteria (for example, QTH) being case-sensitive, with resultant search-failure

My initial reaction to the tool-bar was that the purpose of the icons were unclear, but then I've had that first reaction to most Windows applications; however you usually quickly learn what they mean as you use the product. The operating manual was brief but adequate; it is well-written and contains many examples of procedures, as well as an appendix which explains error messages and suggests corrective steps.

I like LOG WINDOWS™ and may decide to switch to it someday from my current logging program. I was quickly comfortable with the screen layout and user interface, and I was impressed with the ease of importing 2600 entries from my old log. I will use the packet cluster interface as a benchmark for all other packet cluster programs in the future; I think the product is worth purchasing for that alone. But let us not forget the rig and CD-ROM interfaces which also add considerable ease of use; it is a feature-filled product which will find a home in many shacks!

Available from:

Advanced Electronic Applications, Inc.
2006 1906th Street SW
Lynnwood, WA 98036

INTRODUCING!

Spiraling through space at the speed of light, tumbling, girating not knowing where I was going, my space vehicle wandering into this planet's atmosphere. As I was reeling in your atmosphere, I kept hearing these beings calling this special person. CQ, CQ, CQ, they called, sometimes without response. Who could CQ be, I wondered. Upon landing on this planet, I realized the true meaning of CQ. Since my name is Sonic but without a first name, (like this planet's beings) I chose CQ to be my first name. Now you know me and how I arrived here. More next time.



"CQ SONIC"

OPINION

Tony Deprato WA4JQS/VP8BZL

From those who chose to write.

(It all started with N6HM's plaint a few month's ago regarding software marketed to all, but written for world class computer experts. He has received some support on these pages, even from an expert, but this month receives a strong rebuttal from an unusual source. Tony, just returned from the 3Y DXpedition is a RTTY operator of some renown. His experiences lead him to take a strongly worded opposite stance. Thus this slightly shortened missive from an operator who knows something about operating under severe handicaps. Nobody has ever accused Tony of being shy and retiring. Now that the pot has been stirred up, let us hear from you as well. Let's keep the dialog going!)

MY OPINION

I have just returned from a two month vacation in the deep south and was trying to catch up on my mail when I came across this letter from N6HM stating that we are too advanced with our software programs. And that the older hams can not understand or use them. I could not disagree more!

What Mr. Krawetz is saying is that we need more appliance operator type programs from the way I read the letter. I think I can be classed as one of the older hams. I have been a ham now for 33 years and swore I would never have a computer in the shack. Wrong! I bought an 8088 computer 3 years ago even though I had never used one. And I had no guru of the computer world in my town of 500 souls, so I had to learn the old fashioned way. It is called trial and error (a new term for some of the newer hams). Well to make a long story short, I now have six of the things in the shack and over 300 programs.

Mr. Krawetz states that Procomm is too hard. His friends can't tell if they are connected. How simple can you get? Programs like Procomm, Qmodem, Sidekick and others are as simple as it comes when you want a terminal program. That is unless you can not read or just do not watch the screen. These programs tell you when you are connected, disconnected, have a link failure and so forth. We have an eight year-old YL ham here that uses these programs! As for the AEA Windows program, it is point and click with pictures. You do have to be able to read or have someone explain the pictures to you. But as far as the basic functions of the

program it is about as simple as a Windows program can get.

The DOS version is more for the appliance operators. All you need is a crib sheet with the F-key functions above the keyboard and you are on your way. I think Mr. Krawetz is trying to go backward to more appliance operators! This we do not need. We have too many of these now--75% of the hams now have no idea what tune and load controls are for, let alone how to use them! We have become black box changers. If it quits, send it back to the factory and let them change the fuse.

I do not think we all need to be electronics experts but we are expected to have a knowledge of electronics and a basic grasp of how our equipment works. I am a VEC and it makes me sad to think what fun the new hams are missing. They have no understanding about the way electronics function, no experience in building a simple receiver. I still remember the thrill and pride I felt when I applied power to that first set I built in 1960, then heard the earphones come alive with the sound of distant stations.

We are fast approaching the sci-fi world where we have our lives run by machine, yet we know nothing about how they work. All we can do is reach for the on-off switch and the volume control. We need to go back a step in time to the tests of the early 60's when you had to have a basic knowledge of radio. Today we just memorize the questions and answers.

I for one am glad I had to do this. And if the 800+ RTTY operators I just worked from 3YOPI will stop and think, they will be glad as well. If I hadn't had to do this they wouldn't have this new one on RTTY! Every contact was a contact of pride because I was able to get on the air after trouble shooting and jerry-rigging the smashed RTTY gear enough to get it to work.

I am sure I have stepped on many toes and have raised the blood pressure levels of many an amateur out there who just read this. What can I say but GREAT! At least it has caused you to stop and think and increase the blood flow to your brain. Hi Hi ...Sorry if I offended anyone. This was written in hope that it might cause some of us to stop and think a minute!

73, Tony, WA4JQS

1993 RTTY DXer of Year

The International RTTY DX Association (IRDXA) bestowed it's "1993 RTTY DXer of the Year" award on Randy Martin, K0EU, for his 9G1XA operation (See pix below). The award will be made in Dayton by IRDXA Board Member, Jules Freundlich, W2JGR at the RTTY Dinner.

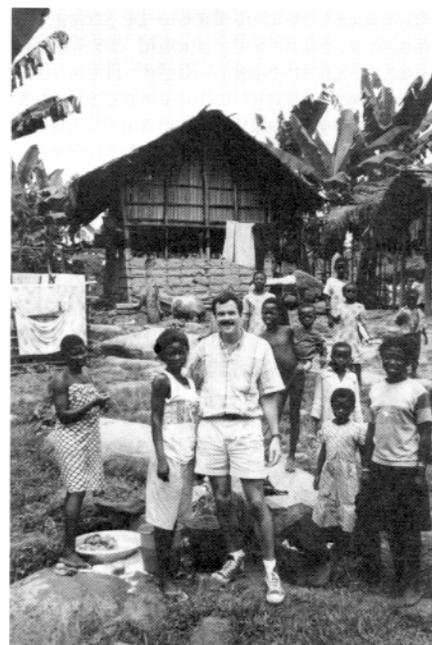
Randy's operation was a joy to work, and to watch on screen. He had a good signal and a clean, efficient QSO style. It was easy to synchronize with his operating pattern and get the contact. He made certain every contact was complete and also paid attention to propagation, working each region at the appropriate time.

As 9G1XA, Randy made almost 900 RTTY contacts including 46 countries. Approximately 50% were W/VE, 20% JA and 25% EU. The 9G1XA rig was a notebook computer, WF1B RTTY software and a PK-232 into a Kenwood TS-440S with an Alpha 76PA amplifier and Cushcraft R7 vertical.

K0EU is an experienced contester and DXpedition operator handling most of the RTTY pileups on the AH1A Howland Island expedition in early 1993. Randy was first licensed in 1970 and has over 300 confirmed on both CW and SSB. He is a late-comer to RTTY DX but now has 150 countries worked from his home QTH in Wheatridge, Colorado.

Randy is a computer consultant to the mining industry. He was on a five week assignment in Ghana when he took advantage of the opportunity to do some Dxing and give us this new one on RTTY... FB Randy, great op.

Don Simon, W6PQS, for IRDXA



Randy Martin, K0EU, poses with local folks.

THE LAST WORD

Jim Mortensen, N2HOS

Times are changing ... so we are changing to keep pace.

Bandplan. Pactor, G-TOR and Clover are but the latest variations on a theme by Marconi. These new sounds currently fill large parts of our digital space. And there will soon be more innovative modes to keep them company. Such technical has a downside and progress forces adjustments in band utilization, sometimes not so peacefully. Amtor and Pactor appear to be pushing north into the traditional RTTY segment (already squeezed by the buzz of those inane packet signals) while Clover edges south into what some wrongfully consider to be exclusive CW turf. There is a bit of tug-of-war over Pactor and some complaints over its band-width and its place on the dial. CW and Clover engage in a bit of a skirmish down around the 066 spot on each major band. Collisions abound and as more beginners jump into the fray and it is almost certain that conditions will worsen before any improvement emerges on the horizon.

Newcomers to Pactor often create havoc for they don't know where to go on the band. Thus they show up almost anywhere, sometimes transmit without listening and then, worst of all, fail to adjust their transceivers. So they often put a big, wide signal in a crowded portion of the band, unknowingly interfere with others already there, and then wonder why people swear at them!

It's a mess. And it should be straightened out. Somebody should do something about it! Right? Right! There are several ways to go about correcting the problems we have. Some group or other could petition the FCC, begging them to carve up the bands into small, permanent subbands. This action could ultimately result in rules that for example, assign 5 Khz to each of the existing digital modes. It would thus be illegal to transmit a Pactor signal in the 5 Khz assigned to RTTY, even though the RTTY segment was empty and the Pactor portion packed to the gunwales. Even if RTTY was practiced by only thirty amateurs around the world during contest weekends. The reverse would also be true. Is this a good idea? Remember the FCC ruling is the law! Somehow "set it in concrete" approach doesn't sound too practical.

The second course of action is similar but less binding. It is called "band planning." A well-intentioned group could sit

down, and in all their collective wisdom, carve up the non-phone portion of the bands. They might say, for example, that 14060-14065 is for QRP CW only, 14065-14070 is for semi-automatic operation, 14070-14075 for Pactor only, and so on and so forth. In truth, by the time the deliberations were over, the findings parsed by three committees and boards, the proposal would be so out of date as to be unrelated to the actual practice on the air! A typical approach is the IARU (September 1992) band plan which awards HF packet "priority" over other digital modes in half or more of their proposed digital space. An example -- on 15 meters, digital would operate between 21070-21125. With packet priority at 21090-21125. What is packet priority? "Packet, being an automatic mode, doesn't require much protection from itself, and would not have to protect other modes from interference in Packet Priority sub-segments." If you like the sound of packet taking over 35 of the 55 Khz 15 meter digital space, then this is for you. But somehow, "play funny games" approach doesn't sound too effective, either. In truth, there is no easy, fool-proof way to "straighten out the mess" when the mess is created by a combination of advances in technology and many new users. We willingly suffer the awkwardness inherent in the new modes and accept, at least temporarily, the choppy practice of beginners. People using digital bands are not out (with few exceptions) to waste spectrum, interfere with their neighbors or own a frequency . . . even though their actions belie their intent! Ground rules, traditions and routines take a beating in this environment. But let's not lose either our temper or our sense of good sense.

Read the front page of this issue of RDJ again. The three basic rules are easily understood and memorized . . . and they apply to **all** modes. The key word is LISTEN. If a frequency is busy, move. Move up or down. And listen again until you find a quiet spot on the band. (Please don't say you can't hear those signals or that you didn't know that funny sound was a digital signal). If you have to go above or below your normal operating frequencies to find an idle QRG, that is your right and privilege as long as you stay in the non-phone portion of the band and play by the three basic rules. Such moves, over time, develop new

habits, attract more operators and develop a community of hams with similar interests.

Clover users have adapted to a new way of life. BBS operators tend to use well defined frequencies between XX066 and XX068 lower side-band. Clover keyboarders avoid that segment and look elsewhere for companions. Most CQ calling now takes place on XX065.5 and QSO's take place on down the bands to XX064 or even lower if need be. And they know a Clover CQ at 14075 would be a waste of time because nobody looks there for a signal.

Pactor (and soon, G-TOR) must now define their turf. Signals are all over the lot, above XX090 and below XX064 and across the middle. In time that should change and (unless Pactor completely replaces Amtor) each mode will gradually shift into its own friendly spot on the dial. Signals may still be mixed with one another, but coexistence is possible, all of the time. But only if each operator pays strict attention to the "Listen, Then Transmit" rule. Remember, that is the law.

Hey! Where did the pictures go? Please notice that the infamous mug shots of the regular columnists disappeared without a trace. Blame popular demand. Some actually had the temerity to suggest that some of the pictures belonged the "25 Years Ago" column instead of the top of the current column. We cancelled their subscription, of course!

Seriously, there is good reason for their demise of the Rogues Gallery. First, most of the pictures are old and most are not very well done. While some suggest the subject matter is the limiting factor we know better! But we always respond to reader's requests. Thus, AI W2TKU will be posing and recording the face of each member of the staff during the Dayton shindig. We will then run a page-full of their faces later on, probably in the September issue. They will not appear monthly, so please clip the pictures and pin them on the wall of your shack, or on the dart board, whichever you prefer. Space limitations force us to eliminate them in the rest of the issues.

911. To those of us who populate the 50 states of the USA, those three digits have come to mean . . . "I NEED HELP." Most counties in this country have an emergency system built

upon this durable concept. There is even a television series extolling the virtues of those who answer the call. Most often the emergency medical technicians who run with the emergency vehicles get the bulk of the glory. And it is well deserved.

It is in this context our own "911" space was born. Every one of us needs help at times, sometimes lots of it. Whatever the problem, there is an RDJ reader who has the answer, someone who has experienced the difficulties afflicting us. So, we said, call "911" and get some help (not in a few minutes but, at least, in a few weeks). Great idea!

Oooooops! But "911," like some wines doesn't travel well. In Germany for example, the number is "110" not "911." In one small country in Africa, if you dial the number you get a recording that says "that number is no longer connected." I am certain there are other more humorous examples. We should have known that, of course. We no doubt should have labeled the column "SOS." After all that was one of the earliest of all the great digital signals. However, dit dit dit dah dah dit dit dit, the very signal sent from the Titanic connotes a disaster of such magnitude as to be well beyond the resources of our little group. Hi! So, please bear with us you DX readers, and understand that "911" is a modest plea for assistance. Accept it as a request from one digital devotee to another. No ships are sinking, no aircraft are in distress, but some operator or other needs the wise counsel of one who has experienced the hassles of our craft. And please feel free to dial the number yourself.

QST. Every now and then (as often as every third night at 0300 local time) some of us review the wisdom of the ADRS and its purchase of the Journal. Adventure is a word not quite strong enough to describe the journey on which we are all embarked. Imagine our delight to read a small item in the March QST. They have, in very small type, a tidbit or two called "75 years ago." To my utter surprise I read that the ARRL board back then voted to reorganize the League . . . and voted to purchase QST from its owner . . . for \$4700 (including several months unpaid printer's bills). Since the League had only \$33 in the treasury, the actual purchase seemed a bit obscure." And I thought we were doing it by the bootstraps! I have no idea what the price would be adjusted for inflation, but I stand and cheer for those who, 75 years ago, did exactly what we are doing now. Their daring exemplifies the very best ham spirit and we applaud the guts of those who made the choice in 1919. I trust that 75 years from now, there will be a few who say the same of us!

Zip+4. Al W2TKU devotes 72 percent of his waking hours to the conversion of our database to the nine digit zip of the future. This is a very important step for it will save us a significant amount of

money over the years. Why? Because we do some of the Post Office's work and they reward our efforts with a lower price. So, PLEASE . . . check your label once again. Is it correct? If not or if it does not contain the Zip+4 code, please drop a note to Al, W2TKU, at 1817 Buccaneer Terrace, Sarasota, FL 34231 and give him the accurate information. Your magazine will appreciate it!

W1VXV contributes a first class piece of work this month. I appreciate Bob's willingness to tackle the AEA program on such short notice. And, of course, we thank Kevin Cox at AEA for a prompt response to our request.

Wayne, NZ4W begins a series on the biggest electronic issue of the decade--the superduper information turnpike. Ever since the politicians have invaded this turf we see one series of headlines after another (many of them misleading, un-

If you think the RDJ staff people are all good looking now ... Standby, you're in a for a big surprise!

fortunately). Internet has been tagged by the network news anchors as the "only" way to go, even though most people can't even sign up for it. We will hear more about that next month. In the meantime, don't think for a moment that the amateur community and its privileges are immune to attack. The issue is too large, the stakes too high, the pressure too great for us to get off the hook without some damage. Don't miss it.

DK4ZC is our new European correspondent. Fred volunteered to be our stringer in the middle of one of the largest digital pools in the world. Since he travels a bit, he is in a position to observe the latest developments there. He will also work toward a more frequent exchange of technical articles between the RDJ and the major digital magazines on the continent. We appreciate his help. You will soon be reading one of his articles.

Reminder. This is the last chance I have to alert you to the price increase that takes effect on June 1. Now is the time, before you spend all your money at Dayton, to write a check for a three year extension to your membership and save a fortune. And while you have the checkbook in hand, it is also time to send in a gift subscription and make a contribution as well. Your magazine will benefit from your generosity.

Finally, the software story of the month. The following is a true story, only the

names have been withheld until the end of the story, at which time the names will be released however the tale unwinds! Seems I bought a piece of search software recently. It was heralded to be the fastest thing in the world. And it is truly remarkable . . . for those files recognized by it.

I called the company and complained that it would not find ACCESS database files. "Oh," they said, "for \$20 we have this disk full of new viewers--162 of them and .MDB files are included." Ship it I said. The disk arrived promptly. In went the viewers, up went the program and the message flashed, "No files found."

Blood pressure up a bit, I called again. "Oh," they said, "seems those files were corrupted. Let me send you a correct version out via overnight. Our treat." They did. In went the viewers, up went the program and the message flashed, "No files found." Now out of patience, I called again. They referred me to Tech Support in Chicago. "They will get you up in no time."

Tech Support in Chicago said, "What version of Viewers do you have?" 1.02 I said. "Oh, we only have 1.01 here. But let's run some routines." We did. In went the viewers, up went the program and the message flashed, "No files found."

I was getting very impatient at this point, but his nice voice calmed me and he then said, "You know, we don't have any .MDB files around here. Maybe you could send us one and we will work out a viewer for you." At first, I was going to get real mad, but I decided to go along with the gag. I asked if he was sure they didn't have a copy of the fastest selling Windows data base. He assured me that the answer was a definite no. In an instant, my curiosity outweighed my shock, and I decided to send it along and await the consequences. This is not the largest or even second largest software company in the world. But they are widely advertised and have a good reputation from what I have seen and heard. And they most certainly have a different kind of tech support than I have experienced to date. So, stay tuned and see what happens.

See you in Dayton. 73

de Jim, N2HOS SK ■

NEXT MONTH

To Wrap or Not to Wrap, Compression Opinion, Designs, Dayton pictures, and much more. Stay tuned always to the RDJ where every issue makes life a little easier and more exciting.

UNUSUAL EQUIPMENT

Info supplied by Ivan Bourn, N8LCU
& TransWorld Communications

Throughout the world a company named Jane's is known for its catalogs and books on military equipment. Jane's publishes books on communications, tanks, artillery, warships, etc. Some of these books sell for hundreds of dollars. Within these books you will find details of the subject equipment including specifications and pictures. One such book is on Military Communications.

The 1988-89 version is 8 1/2 by 15 inches and is 1 1/2 inches thick. It covers communications equipment used by armed forces of the world. There are hundreds of different models of equipment. Some of this equipment was developed by never sold while other listings were sold by the thousands.

This particular book that Ivan refers to for this information, sold originally for \$250.00. He purchased it for \$60.00 but says it might be purchased these days for even less. This book lists some very sophisticated equipment. For example on one page a "Time Diversity" modem, "Full-duplex Time diversity Encoder-decoder/Modem", "Ruggedised Time and tone diversity Modem" and an "Airborne Modem" are listed with full specs and who manufactured the equipment.

On another page a "Message Terminal" unit was listed. This unit was designed for operation on SSB, FM and wire-line communications. It includes a video display, word processor and AFSK modem, all in a compact package. The terminal operates in either Baudot or ASCII formats at all standard speeds up to 110 Baud with an external modem. A plug-in option provides full error correction (both SITOR and FEC) in accordance with CCIR specification 476-2. Tone pairs (up to three) can be selected and programmed for front panel control. A built-in dot matrix printer is employed along with a fold down keyboard. The printer prints at one line per second and uses full-size standard single or multi-copy roll paper. Standard typewriter ribbons are used to allow for local replacement.

The unit is very ruggedly built within a metal cabinet with ample RF radiation protection. Direct compatibility is provided for standard radio interfaces and a variety of encryption devices.

This unit was manufactured by Trans World Communications, Escondido, CA. It is no longer in production and has

been replaced by a new state-of-the-art terminal unit with high resolution LCD display and many different modes i.e. CW, RTTY, AMTOR, SITOR/ARQ/FEC/SELFEC, Packet.

The Jane's book contains literally hundreds of interesting pieces of equipment for communications. For more information on availability of these books, contact Global Sales, Ltd. P.O. BOX 1000, Delta, UT 84624-1000.



Transworld RT5500 RTTY message terminal

FACTS You Should Know About the ADRS

Dues go up June 1, 1994. However, you may extend your membership for one, two or three years at the current rate or even less. See below.

For all of you this is a very special offer indeed. The basic ADRS membership for US/Canada/Mexico rate increases to \$20 on June 1, 1994. First class North America and foreign surface increases to \$25. Foreign airmail to \$35. These increases are required for a very good reason. The Jour-

nal evolves to twelve issues per year in 1995 and, according to current plans, to more pages as well. So the new rates must pay the postage as well as the anticipated increase in rates!

However, loyalty earns a reward. Save by extending your current membership for two years at the present rate, then deduct \$3 from the third year's rate. For example, if your current membership rate is \$16, your total bill for three years is \$45. That

is a savings of \$15 when compared to the new rates. But wait, if you extend your membership for three years and add a gift membership to anybody, anywhere at the current rates, you save \$2 more! So, renew for three years for \$43, send a gift membership at the current rates, and do the ADRS a great big favor. The same savings apply on all the other membership levels as well. Details below.

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First 30 words \$7.50, additional words 10 cents each. Cash with Ad. Deadline for ads is the 1st of month of publication..

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SOLAR MAX: the HF propagation game for DX contesters. Specify 3.5 of 5.25 MS-DOS disk-size; \$10 postpaid from Bob Brown, NM7M, 504 Channel View Dr., Anacortes, WA 98221-9501

NEWS - NEWS - NEWS -- NEWS

Amateur Radio's Newspaper "WORLD RADIO". One year subscription (12 issues) \$14.00 for U.S., non U.S. \$24.00, 2 Year subscription (24 issues) \$27.00 U.S., non U.S. \$47.00, 3 year subscription (36 issues) \$39.00 U.S. non U.S. \$69.00, Lifetime subscription \$140.00 U.S. non U.S. \$240.00. Contact: WORLD RADIO, P.O. BOX 189490, Sacramento, CA 95818

CQ Magazine, The Radio Amateur's Journal — If you enjoy ham radio, you'll enjoy CQ. All year long CQ brings you the best writers, the best reading in Amateur Radio. Subscribe now and see for yourself. One year \$24.50 U.S., \$27 Canada/Mexico, \$29 Foreign. Contact CQ Communications, Inc., (also publishers of Popular Communications, ComputerCraft, Electronic Servicing & Technology and numerous amateur radio books/videos), 76 North Broadway, Hicksville, NY 11801, Phone (516) 681-2926 or FAX (516) 681-2926.

RS-232C and COM PORT booklet: This is a compilation of all articles published in past issues of the *RTTY Journal* on these two very important topics. If you are using a computer in conjunction with Ham Radio, you will find this booklet an invaluable tool to have in your shack. The booklet contains information about COM ports 1,2,3 and 4 as well as the RS-232C information. Send \$5.00 to the ADRS, PO BOX 2465, New York, NY 11801 and you will receive a copy of this invaluable booklet by return mail, postage paid.

What is your TNC doing? A book about how packet radio works and how to make it work better. Author; KA5ZTX. Publisher: zm xpressions 913-842-6805. Available at amateur radio stores.

FOR SALE - YAESU 990 (internal power): This superb transceiver is one of the very best for digital communication and a lot closer to the FT1000D performance than the price suggests. Used less than 20 hours as temporary replacement during lightning repairs. Cost at AES \$2209. Still under warranty. Yours for \$1850 delivered. Don't miss this opportunity to upgrade your station. Call or FAX. Jim Mortensen, N2HOS, (813) 596-3105 FAX (813) 596-7473. Don't delay.

RTTY CONTEST SOFTWARE:

This is the program used by WINNERS. RTTY by WF1B is the premier teletype contest software. Supports CQWW, ARRL, SARTG, BARTG contests. New DXpedition mode recently used by AH1A. Supports HAL PCI-3000, PK-232, KAM, MFJ-1278, UTU, AMT-1, and Standard TUs. Online features: Automatic duping, Automatic multiplier identification, Automatic scoring, Mouse support, Break-in buffer, Buffer tags for dynamic custom transmissions, File transfer. Post Contest features: Complete paperwork generation, QSL labels, Statistics. Call (401) 823-RTTY for fact sheet. IBM-PC, \$41.95 (US/VE) \$44.95 (DX). Specify disk size. Wyvern Technology, 35 Colvintown Road, Coventry, RI 02816-8509

BACK ISSUES - All Back Issues of the Following: RTTY Digital Journal - ATVQ - A5 SPEC-COM & ATV TODAY. Write for list & prices - SASE - ESF Copy Service, 4011 Clearview Dr., Cedar Falls, IA. 50613 (319) 266-7040

PCI-3000, PK-232 and RTTY/CW SOFTWARE FOR IBM-CP!

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FOR SALE: HAL ST-5000, DS 2000, with monitor, cables and manuals, \$120.00 postage paid in USA, Tony Vitolo, WB4BKU, 1967 Tanglewood Drive, Snellville, GA 30278, (404) 979-7429

PakTERM - Professional PC-based terminal software developed specifically for the PacComm PacTor Controller. User friendly, Menu driven. Mouse compatible. 65K receive buffer with scroll back and text block save. Call sign capture. Automatic CQ. File send. Station log. Automatic print control. Programmable buffers. Imbedded commands for buffers and files. Printed manual. Write for details or send \$35 with call sign and disk size to INTELLIGENT SOFTWARE SOLUTIONS, P.O. BOX 522, Garrisonville, VA 22463.

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Software for Clover (requires HAL PCI-4000). Send stunning full color graphics, digitized voice, run a full Clover BBS; all while using the best keyboard QSO software available anywhere. Available exclusively from ADRS, \$25 to ADRS members, \$50 all others. Order from ADRS, P.O. Box 2465, New York, NY 10185. Postpaid worldwide.

AEA Q&A

In this month's issue of *RTTY Digital Journal*, we'd like to answer some of the questions you've asked us lately in your letters and phone calls.

- Q) *After going through the set-up procedure in PC-Pakratt for Windows, I noticed that I had goofed when I entered my call sign incorrectly. Is there a way I can fix it?*
- A) Afraid not. When you exited the set-up routine, the program wrote your call sign—and other information—permanently to its floppy disk. Don't worry, though—your goof has no effect on the MYCALL command but only shows up in the program's licensing screen.
- Q) *I can't get my Pakratt program to show the correct UTC time even though I know I entered the SET TZ command correctly in the program's set-up menu. What gives?*
- A) It's a quirk with DOS—it installs the SET TZ command line in the AUTOEXEC.BAT file everywhere *except* where it should be: on the first line. Use DOS's—or another—text editor program to move the SET TZ command line to the top of the AUTOEXEC.BAT file. When you reboot your computer, the problem will be fixed.
- Q) *After hooking up my controller to my radio and firing it up, other hams have reported back to me that my signals are distorted or have a hum in them. The radio cable checks out okay, so what's going on?*
- A) Many cases of this type result from a ground loop—a condition caused by connecting different accessories and your radio in such a way that a voltage potential exists on the ground lines between pieces of equipment. Make sure all of your equipment's chassis are electrically tied to a single point, usually the ground lug on your radio. From the ground lug, use a braided cable to a good Earth ground. (Astron power supplies have also been known to generate a hum, too. To see if this is the case, operate your controller off a pure DC source like a car battery. If the problem disappears, you'll know it's the power supply. Call Astron for assistance with this problem.)
- Q) *I just bought your PK-96 and it works great at 1200 bps, but at 9600 bps I'm having difficulty making contacts and my signal splatters all over the place. I went through the CALIBRATE routine but didn't hear any tones when testing the 9600 bps modem. Is the unit broken?*
- A) Not at all. Most likely, the problem is that the deviation is set too high—make sure its level peaks no higher than 2.4 KHz. As for the CALIBRATE routine: the tones we've come to know and love at 1200 bps just don't cut it for 9600 bps operation because a different modulation scheme is used, hence the reason why you don't hear the expected tones. If you listen to a 9600 bps packet burst you won't hear the typical *braaaaaap!* but "white" noise, instead.
- Q) *The AEA-FAX II system I bought from you guys is terrific, but I have a question: is there a way to capture WEFAX images directly from satellites instead of from ground stations?*
- A) Yes, there is! OverView Systems manufactures a device you can connect to AEA-FAX II to do just that. (Of course you need the proper radio gear to receive the satellite's signals.) Contact OverView at P.O. Box 130014, Sunrise, FL 33313, USA for more info. Their phone number is (305) 748-8315.

AEA...we have the answers.



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0 to 9600



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Satisfy your need for speed with the new PK-96 9600 baud packet controller from AEA.

This high-performance machine comes standard with 1200 baud AFSK tone signaling, as well as 9600 baud K9NG and G3RUH compatible direct frequency modulation. The PK-96 makes an excellent terrestrial or satellite data controller. It can be used for high-speed data links to eliminate bottlenecks and increase system capacity.

Big capability in a small package is

what you get from the PK-96. Under the hood, there is a 18K battery-backed MailDrop which is easily expandable to 100K. MailDrop allows you to automatically control third-party traffic and receive and reverse-forward messages.

Bring your system up to speed. Call AEA's Literature Request Line at (800) 432-8873 for more information, or call us direct at (206) 774-5554. Contact your favorite ham radio equipment dealer for the best pricing.



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To those of you who use HAL equipment, we thank you and look forward to serving you again. To those of you who haven't, call or write for our free catalog and examine our range of products for yourself.



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