DIGITAL JOURNAL™

Price: $2.95

A Dedicated Digital Publication Since 1953

Volume 41, Number 1, January 1993

ARUBA TEAM SETS NEW RECORD

L. to R. Eddie, G0AZT, Don, AA5AU, Frank, W0FMR, and Ron, KP2N. All stand tall as they pose for this picture, taken after the 1992 CQ/RJ WW RTTY Conest. They operated as Multi-Op Single Transmitter entry, setting a new record breaking score of ove 3.5 meg. points. . (Story Page 20)

RTTY DIGITAL JOURNAL

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USA/Canada/Mexico . . . $16.00
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Foreign . Surf. $24.00/AIR $32.00

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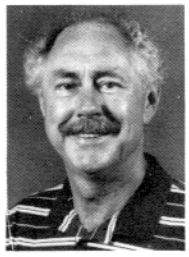
POSTMASTER:

The *RTTY DIGITAL JOURNAL* (USPS 391850) is published ten times per year except bimonthlyMay/June and July/August issues, for $16.00 per year, by the *RTTY DIGITAL JOURNAL*, 1904 Carolton Lane, Fallbrook, CA 92028. Second Class postage paid at Fallbrook, CA 92028 and additional mailing offices.

POSTMASTER:

Please send all address changes to: *RTTY DIGITAL JOURNAL*, 1904 Carolton Lane, Fallbrook, CA 92028-4614

ISSN 0033-7161



HITS & MISSES

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For Beginners Only

Trying to keep up with technology these days has become a real task. Just look at the way computers have been advancing in the past year. About a year ago I updated a 286 machine here that I had been using for production of the RJ. I purchased a new 386 machine with all the goodies and so my plan was to retire the 286 to the ham shack. However, the older motherboard had given me trouble from time to time so I decided it had to go. I called up my favorite computer candy store and talked to my salesman who had been very good to me in the past. We discussed what I could do with my machine. He suggested a couple of ways to go. First, I could update my motherboard to a 16MH 286 board with on board memory slots for a nominal fee plus installation. But, he also urged me to install a 386 motherboard instead because that was the way things were moving. The price of the 386 motherboard was slightly higher and in the end I opted for the 16MH 286 motherboard. That turned out to be a big mistake.

Technology has passed my 286 by, and I'm stuck with a motherboard that will not run "Windows" software satisfactorily. At the time of my purchase, running "Windows" was not on my mind. However, today, I'm sitting here unable to run any programs in a multi-tasking mode. Also the new APlink software now coming out will run under "Windows." Also, AEA announces in this issue, their new software for "Windows." What to do?

Well, my advise to anyone who is contemplating buying a new computer, buy the biggest and fastest machine you can afford. Even if you cannot afford a fast machine, don't but one until you can afford one. The difference is phenomenal. Besides, even if you buy the latest super machine, there is still no guaranty that it will not be outdated before you get it home. So take the advise of your friendly computer salesperson and hope the purchase he suggests will keep you up to date for a year or more.

So what has that got to do with beginners? Well, I have asked all the RJ columnists to write for the beginner in our next issue. The recent "Readers Survey" that ran in the RJ, indicated a need for beginners information. So that is what we will be doing in the February issue. To some of you this will be old-hat information, but please be patient while we take an issue and devote it to those who need some help in getting started in the digital modes.

Once we get their feet wet and they show up on the bands, then you oldtimers can take over. Help them along so they become good dedicated digital types. Be an "Elmer" to these beginners. It will be time well spent. (See MSO column this month.)

Dayton Rooms

If you are still planning on going to Dayton for the Hamvention, be sure to secure a room. The block of rooms that I had for the digital gang are now all gone. It looks like we are going to have fun in Dayton this year. If all those double rooms I registered are going to have two people in them, then we will have the largest turnout ever. I'm excited about this and I would like to encourage all you to join in on the RTTY dinner affair that will be held on Saturday night at the Radisson hotel. You will find the dinner details on page 17 of this issue. Steve Waterman has again promised a great evening with good food and the best of company. Even a door prize will be given away. Bill Henry, K9GWT, has been signed up to speak at the dinner and his topic will be "The Evolution of the Digital Modes." Bill tells me he is excited about this opportunity to relate how the digital modes have progressed over the years.

What's ahead?

I think we are in for a very exciting year in the digital modes. More and more hams around the world are discovering the fun of the digital modes. All the latest advances in digital technology have attracted many to our ranks and new software advances are making operting a snap.

As we move into this new year, I urge you all to stay with the RJ as we report state-of-the-art advancements in our hobby. Further, if you have something to share with us, please submit your material for publication.

All for now. 73

de Dale, W6IWO ■

HARDWARE

Jay Townsend, WS7I
P.O. BOX 644
Spokane, WA 99210

HAPPY NEW YEAR

May 1993 bring to each and everyone of you a little bit of a better year than the previous one. It is a time to look forward and not backward and to gain a little bit more in the circle of life.

This month from under the snow pile we will be looking at one major piece of hardware and a number of other issues that I think continue to be pressing and of interest. The mailbag had a great letter from a dear friend, Ted, HC5K. All is well in Ecuador and Ted is getting involved in more and more projects as always. Bill, W6OWQ, writes that he is still not happy with the contest programs. He uses K1EA and CT for his regular contesting and isn't pleased with the other offerings. Bill, I agree and so far I still think that WA7EGA's Scotchlog is the best of the offering and the price is right. Still a bit hard to use but now it works on the KAM, PK232, and probably the PCI-3000, but the latter I haven't actually hooked up yet.

I know of at least one author working on a new program for RTTY contesting and from the great turnout for the 1993 RTTY Roundup it's clear that RTTY contesting is the new kid on the block as the "big guns" are loading up and showing up. AA6TT from the big time world class station was talking new all time record just after the contest. Jim, WB7AVD, Betsy WV7Y, and I did the contest from Jim's new country estate. Computer control is now essential in contest programs as well as a PacketCluster interface. Perhaps K1EA will bring out a RTTY version. I know they were looking at it a year ago. Maybe a note to K1EA will shake them up about the potential of the market?

BAND PLAN

Well the January 1993 QST arrived here on the 22nd of December and I must admit that it contained the major disappointment of 1992. Included in there new special supplement was a "gentleman's" band plan. This plan contained a bunch of new things most of which came out of the Region Two changes and which was "supposed" to be discussed by the Digital Community. Far to long the ARRL has purported to represent people that it doesn't. I for one am tired of it. A letter to my ARRL Director will be forthcoming. It is perhaps high time that those of us in the Digital World start talking about band plans. This plan's frequency segments were totally absurd. In total contravention of it's own Digital Committee who recommended that the bands not be divided by modes but rather by use in there last September 1992 document the ARRL decided that RTTY and PACKET were the only modes. Packet band segments were greatly increased that encroached on areas of the band normally not traditionally packet.

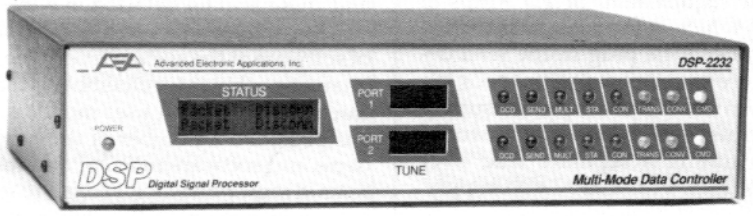
What happened to AMTOR, PACTOR, CLOVER? I hate to ring the toll of death for a mode so dear. But let's get realistic! RTTY, as a mode is shrinking so fast that it simply doesn't require the band width that it once did. From the sounds on the band here in the Northwest, AMTOR is now by far the popular mode, with PACTOR and CLOVER signals increasingly found all over the place. I know many of you old RTTYers are feeling the squeeze. Other than DXing and Contesting it's hard to find many old time rag chewers in the segment other than 14.085 to 14.090.

I have no problem with band plans, but I do have a problem with speaking out of both sides of the mouth. If we need Automatic, Semi-automatic, Ragchew, Traffic, DX, etc. areas let's just do it that way. Packet as a mode deserves space, Amtor as well. Where should the Clover guys go and how about Pactor?

ARRL you need to discuss before you publish and not only that, you need to listen to your OWN committee. Sheesh, I must admit, I'm back on my horse again. I have filed comments against any extension of the STA. Seems that TWELVE months and a great committee isn't even enough for the league these days, they have to ponder more. Thirty more days, very hard to believe that anything more is going to happen. I fail to see what's wrong with the Digital Committee's report. I don't agree with a lot of it, but it's sure a good spot for a rule making proposal. Foot dragging is just plain political.

Enough of that. Perhaps when I finish my tour of duty here in the Hardware area which by the way will be with the April 1993 issue I should be the political columnist.

DSP and the AEA PK-2232



The buzz word of the 90's is DSP (Digital Signal Processing) and we in the digital world are lucky to have a manufacturer who has pursed and continues to pursue the latest technology. In April 1990 Advanced Electronic Applications, Inc. announced the PK-2232 one of the first amateur radio DSP units. It has continued this evolution up to this time which will continue to evolve for some time to come.

AEA perhaps says it best when they mention that the DSP-2232 was designed to provide you the amateur with the complete digital operating position. It was designed to couple your radios (yes both HF and VHF) to a personal computer that would allow you to communicate with other hams in the local area and around the world.

CAPABILITIES

AX.25 Packet both HF and VHF RTTY
Baudot and Ascii
AMTOR/SITOR CCIR 476 & 625
CW (Morse Code)
HF Weather FAX, WEFAX
Satellite Operation
SSTV Analog
NAVTEX Reception

FIRST IMPRESSION

The DSP-2232 box arrived here in Spokane (RTTY Capital of the World) and following my normal procedure I opened up the carton to have a look see. Having hooked one of these up a couple of months ago for the local AEA Ham Dealer, I was somewhat familiar with the unit. An elegant box was my first impression. The DSP has screws which in a number of cases are recessed. An attractive unit, indeed.

INTERFACING

The first thing I noticed was that none of my existing cabling would work because the DSP 2232 uses 5 pin DIN plugs. Not to worry, AEA provided the cables and ends. Actually I prefer working with the 5 pin DIN plugs as they are much easier than the plugs on the PK-232 units.

I had to break down and open the manual (which is an attractive 3 ring binder type) to find out how to hook the DSP up to the various radios. One of the first things was the power requirement of 1.5 Amps at 13.6 Volts which is far beyond the capability of those little plug in the wall devices that are usually used with TNCs. It's my opinion that a "real" power supply should be used with this unit. I would suggest running a separate lead over from the station's normal 12 volt supply.

Found the first "hardware" problem with the DSP-2232. The power cable provided was "bad." This was the cable that is color coded so that you maintain proper continuity. Evidently the plug end of this cable was/is defective, because after breaking out the ohm meter I found an "open" on the center conductor side of things. No big problem, with this little cable, I just cut off the end and soldered on a new connector. You might have to make a parts run.

There is no way that a manufacturer can check each of these little cables so they have two choices: just give you the connector and the wire or to give it to you assembled and hope that the supplier does a pretty job. I prefer fixing an occasional one to having to put connectors on each every time I hook up a peice of gear.

The rest of the interface job was a breeze and the manual contains very detailed instructions on a number of radios and situations. AEA does an excellent job in this regard.

MODEM CHARACTERISTICS

DSP 2232 - Modulator/Demodulator Motorola 560001 DSP at 24 Mhz

DSP RAM - 24 Kb Will hold up to Two User Modems

DSP ROM - 128 Kb of Modems for downloading to processor

Analog to Digital Converter - AD7870 12 Bit

Digital to Analog Converter - AD767 12 Bit

Receive Band-pass VHF - Center Frequency 1700 Hz, bandwidth of 2600 Hz

Receive HF Packet - Center Freq. 2210

MODEM CHARACTERISTICS

The DSP 2232 is a number of things. It is a computer, complex Digital Signal Processor, and a complex computer software program. As such, I think it is hard to understand. AEA doesn't attempt to explain the unit in simple language and it is beyond me to do so. Here is what AEA details about the Modem.

There are a number of ROM modems provided when you receive the DSP-2232 and these will be detailed in a later discussion of the unit. They are the first level of software at the system level. One of the interesting things to remember is that you can make your own user modems. AEA has provided a number of different modems and software EPROM updates will remain important. Don't forget to send in your registration as the documentation suggests.

For the skeptics of the DSP-2232 unit I merely suggest that if you don't like the performance of a certain modem, to simply roll your own. Not an easy task I am sure, but most of the help must be available to the accomplished programmer. Look also for a couple of new modems, the rumor is that Pactor should be coming soon.

DSP-2232 Processor

The DSP-2232 uses the Zilog Z-180 processor and 64 kilobytes of random access memory as well as an additional 384 kilobytes of ROM. 256K is available for Z-180 programs. The processor uses the Zilog 8530 SCC as the HDLC.

Further interesting controls on the DSP 2232 are a Satellite UP/DOWN output that will let the satellite software control the frequency of the radio for doppler shift. Further discussion of this will take place in one of the later segments of the DSP-2232.

The unit comes complete with the proper cable and is a snap to hook up to the computer. It supports data rates up to 19,200 KB and TBAUD adds rates up to 38,400. Front panel controls include the ever popular row of LCD displays showing status and a ten segment LED bargraph to assist in tuning on HF. One discovery I made was that the bargraph continues to display curious things even while the modem is on VHF. It either displays processor noise or a random selection of some type. Under full squelch condition it continues to flicker and form displays. Frankly, I found this to be rather objectionable.

The bargraph does work properly on HF and it is quite easy to tune signals. I being of the old school would like to have a scope output. After years of scope watching, I still prefer to do so.

The Status Display shows the calls of the stations that are on the various channels and is one of the neatest little features of the DSP unit. It's quite nice to see who is connected or last on the channel.

The backside of the unit contains the computer interface port, the now traditional RS-223 in the 9 pin configuration along with a printer port which is a nice feature. It has the RESET switch for the unit which at long last solves one of the persistent problems with the PK series of internal and then that strange little hole on the bottom. You just reach behind the unit if it becomes necessary to reset the processor. Cw keying jacks as well as FSK outputs are also found on the rear panel.

One item of note is that the rather large transistor case is found on the back and it does get warm to the touch. It seems to be out of the way and works well in this location. The Unit also has a number of adjustment holes on the side for AFSK and AGC levels which are handy for adjusting the unit to various radio configurations.

CONCLUSION

AEA's DSP 2232 is an attractive unit with an outstanding manual, as has become normal from this company. The unit is easy to interface to both the computer and the various radios that you might own.

The unit is not for the novice operator but should fit the needs of the experienced Digital operator. I look for this unit to continue to grow far into the 90's with the ever changing digital radio scene.

DSP-2232 is a complex interaction of hardware and software on a number of different levels and will continue to evolve for quite some time. It now has a large number of modems available including 9600 bps FSK K9NG/G3RUH modems, 4800 PACSAT, Analog SSTV and on and on. New modems should be coming along from time-to-time as well as some improvements to the basic suite of programs provided.

Next month we will look at a number of the above mentioned modems as well as share some of the processes I have gone through in trying to locate user software for the DSP-2232. We continue the following month with a look at the DSP-1232 as well as a special examination of some of the Oscar and Space applications for the units.

1993 will be a great period for the digital world as we sort out some of our problems and as we expand into more and more new arenas of experimentation and expansion. Both Betsy and I look forward to seeing a lot of you again in Dayton.

73, **de Jay WS7I** ■

WS7I @ WS7I.WA.USA.NA

CONTESTING

Richard Lawton, N6GG
14395 Bevers Wy
Pioneer, CA 95666

RTTY Contests - Coming Events

All rules are in RTTY Contester's Guide

Date:	Contest:
FEB 13-14	EA WW RTTY Contest (Spain)
MAR 20-22	BARTG WW RTTY Contest (England)
APR 17-18	SARTG WW Amtor Contest (Sweden)
MAY 8-9	VOLTA RTTY WW Contest (Italy)
JUN 12-13	ANARTS WW RTTY Contest (Australia)
AUG 21-22	SARTG WW RTTY Contest (Sweden)

REMINDERS

- The EA WW RTTY Contest date has been changed to the 2nd full weekend of February, as mentioned in last month's column.
- Don't forget to send in your logs for the ARRL RTTY Roundup to:

ARRL RTTY ROUNDUP CONTEST
225 MAIN ST
NEWINGTON CT 06111

Entries must be postmarked no later than 30 days after the end of the contest. That means February 3, 1993. If you made more than 200 QSO's, they want a dupesheet, too. You can also submit your log by diskette. See page 126 of December '92 QST for details.

COMING UP

February 13-14 EA WW RTTY Contest

Sponsored by Seccion Territorial Comarcal De Ure De Aranda De Duero. Starts 1600Z Saturday, ends 1600Z Sunday. (24 hours)

Bands: All five bands, 10 through 80M.

Classes: A) Single op, all band; B) Single op, single band; C) Multi-op, single transmitter, all band; D) SWL.

Exchange: For EA stations; RST + CQ zone + Prefix of Province. All others; send RST + CQ zone.

Multipliers: For EA stations; each CQ zone and DXCC country contacted on each band. QSO with own country is not valid. For non-EA stations; each DXCC country and each EA province on each band. Prefixes of provinces are: A, AB, AL, AV, B, BA, BI, BU, C, CA, CC, CE, CO, CR, CS, CU, GC, GE, GR, GU, H, HU, J, L, LE, LO, LU, M, MA, ML, MU, NA, O, OR, P, PM, PO, S, SA, SE, SG, SO, SS, T, TE, TF, TO, V, VA, VI, Z, ZA. Scoring: For EA stations (EA, EA6, EA8, and EA9); on 10, 15 and 20M, one point for QSOs with European stations, and two points for QSOs outside Europe. On 40 and 80M, three points for QSOs with Europeans, and six points outside Europe. For non-EA stations; On 10, 15, and 20M, one point for QSOs within own continent, two points for QSOs outside own continent. On 40 and 80M, three points for QSOs within own continent, six points for QSOs outside own continent. Final score is sum of QSO points on all bands times sum of multipliers on all bands.

Awards: Gold, Silver, and Bronze medals for the top three in Class A, both EA and non-EA stations. Award to winner in each DXCC country and each EA district. To qualify for a certificate, participants must have 50 or more QSOs.

Logs: Use separate log sheets for each band. Include a summary sheet showing scoring and other essential information. Log sheets for copying as well as dupe and logsheets are available in the RTTY Contester's Guide, published by RTTY Journal, 1904 Carolton Ln, Fallbrook, CA 92028. Logs must be received by April 10

Mail logs to:

EA WW RTTY CONTEST Manager, EA1MV
Antonio Alcolado
P.O.Box 240
09400 Aranda De Duero (Burgos)
SPAIN

Comments: This is a 24 hour contest. While everyone exchanges CQ zones, they only count as multipliers for the EA stations. Non-EA station multipliers are DXCC countries and EA provinces. Point bonuses encourage low band operation. This contest uses band multipliers - work same country on different band gives new multiplier.(NOT like the ARRL roundup.) Use separate dupe and multiplier checksheets for each band. Consider making an alphabetical checkoff list of EA provinces for each band, as they do get confusing when changing bands.

March 20-22 BARTG WW RTTY Contest

Sponsored by British Amateur Radio Teleprinter Group. Starts at 0200Z Saturday, and ends at 0200Z Monday, a total of 48 hours. Single operator and SWL stations are permitted only 30 hours of operation. Multi-operator stations may operate the full 48 hours. Time off periods may be taken at any time but must be not less than 3 hours per period. Times off operation must be shown on contest summary sheet.

Bands: All five bands; 10 through 80M.

Classes: 1) Single op, all band; 2) Single op, single band; 3) Multi-op, all band; 4) SWL.

Exchange: RST + QSO number + time in UTC

Multipliers: All DXCC countries (including W, VE and VK) AND all call areas in W, VE, and VK count as multipliers on each band. The same multiplier counts again on a new band.

Scoring: Each QSO counts as one point. For scoring purposes, continents will be counted only once, regardless of the band worked. Max. of six continents. Final score = QSO points x multipliers x continents (max 6).

Logs: Use separate logsheets for each band. Logs must show: BAND, DATE and TIME (UTC), CALLSIGN, MESSAGE Sent and Received, COUNTRIES and POINTS claimed. Summary sheet must show full scoring, times of operation, and address for correspondence.

Logsheets, summary sheets and multiplier and dupesheets are all available for copying from the RTTY Contester's Guide, published by RTTY Journal. Logs must be received by May 29 to qualify.

Send logs to:

BARTG c/o John Barber, G4SKA
32 Wellbrook Street
Tiverton, Devon
EX16 5JW, ENGLAND

Comments: This is a 48 hour contest, but only 30 hours operating time allowed for single ops. The time off periods must be 3 hours minimum length and listed in the summary sheet. This contest gets great activity from all over the world. Try to plan your off times to be during the least productive time of day, such as when propagation does not favor your area. The fact that W/VE/VK call areas count as separate countries on each band means that CQing should be the most productive way to make a good score for the W/VE/VK ops. Also, band multipliers help to alleviate the QRM on the high bands, by spreading out the CQers to other bands. Finally, don't forget the WAC bonus of six multipliers.

Hint of the Month:

LED tuning indicators and weak signals

I would guess that more than half of the RTTY operators out there are using RTTY gear with LED tuning indicators. A quirky problem with these indicators is trying to precisely tune in a weak signal that's down in the noise.

There is very little problem with strong signals because the LEDs between the bright end ones are dim. But when a weak signal is tuned in, the RF gain must be raised. That causes the noise to brighten up the middle LEDs. When the signal is very weak, the entire indicator is bright, and one has to discern exactly where the bright edges are, in relation to the rest. (The bright LED on the left indicates the Mark-part of the signal, and the bright one on the right is the Space.) This means careful judgement of relative brightness - a task that requires a minimum of light shining on or around the indicator.

Compounding this problem is the power supply's questionable ability to handle additional current drawn by the LEDs. The PK-232's indicator uses 10 LEDs. When all are brightly lit, they can draw a total of over 100 mils. The current is drawn from the external 13 volt DC power source for the unit. If the power source has poor regulation, such as those high impedance wall-mounted types with the skinny power leads, the DC voltage can drop to a low, unacceptable value. Then two things can happen: a) the indicator's lighted width shrinks, and, b) the outer edge LEDs that indicate Mark and Space will become dimmer, thus reducing your ability to accurately tune in the weak ones. I found all this out in 1987 when I first fired up my PK-232 and was using the afore-mentioned high impedance DC supply to furnish the required 13 volts DC.

Here are some solutions:

a) Get rid of that marginal power supply. I use a 13.8 volt 2.5 amp regulated DC power supply that I purchased from Radio Shack some years ago. They sold it as a power source for CB radios. Since this DC source is regulated, the LED current drain changes will not effect the voltage, and the LEDs will behave themselves.

(By the way: high impedance power supply leads tend to collect undesirable birdies from the units they supply, act as antennas, and can radiate them into your radio. This is BAD NEWS and was (or is) a possible source of birdie problems that plague some '232 owners. I don't have this birdie problem with my PK-232, and it has always sat on top of my TS-930S.)

b) Reduce the ambient light that shines around the LED indicator. My PK-232 sits on the TS-930S transceiver, on 1 inch rubber-footed spacers. This allows for adequate ventilation of the '930. Just above that is a shelf that holds other equipment, and also serves to partially shade the indicator.

c) If your room lights shine on the LEDs, you might consider challenging your ingenuity by fabricating a cardboard shade out of a manila folder or an old QSL card and cleverly fasten it to the unit.

NEWCOMER'S CORNER

Operating a computer with bifocal glasses? NOT!

I noticed in the recent JARTS RTTY contest that there is a significant number of the past-40 crowd out there. I found that out - as did others - through the exchange of the contest (RST + age). Well, this encourages me to write about a problem of the past-40 crowd - namely wearing bifocal glasses when operating a computer. While this is not necessarily an RTTY newcomer's dilemma, it certainly is a recent and ongoing problem for the bifocal species.

The problem is simply this: The keyboard sits there on the desk at about book-reading length, and the monitor is a bit further away but up higher. For us bifocal operators, this means that, to keep everything in focus during a contest, our heads are constantly bobbing up and down, fishing for the macros and Function keys, and watching the monitor answer what you just did.

Well, I found an answer for this: get yourself, what I call, a pair of "computer glasses".

This needn't be expensive. Most of us bifocaliers (new word?) have some old glasses laying around that are out of style or out of focus. The next time (soon?) you have your eyes examined, bring your old glasses along and explain your situation to the examiner. Ask him to prescribe non-bifocal lenses that will keep your eyes in focus from a minimum distance of, say 10 inches, to a maximum of about 22 inches. Then have your new prescription fit into your old, comfortable frames. This is very simple for an examiner to do, and shouldn't take but a minute or three of his time.

That's it! No more nodding and bobbing. It really does make contesting more fun. Before I stumbled onto this (suggested by my optometrist), my neck would get sore during a contest. Now it's the eyes that do the work, not the neck. An additional bonus: all those little labels for your transceiver knobs and pushbuttons, the frequency readout, and the S-meter, are now much easier to see and use.

I found out (the hard way, of course) that variable focus lenses with no bifocal line required a specific tilt of the head for focusing to a specific distance, and was not the solution to this unique problem. Even tri-focal lenses are likewise annoying, requiring similar head tilts.

For those who log manually, make sure the close distance is within your comfortable reading range so that you can accurately fill in those callsigns. Oh, by the way - Please - don't try to drive with these "computer glasses"! Even wearing them around the house can be hazardous to your health!

((73)) for now...

See you in the pileups,

de **Rich, N6GG** ■

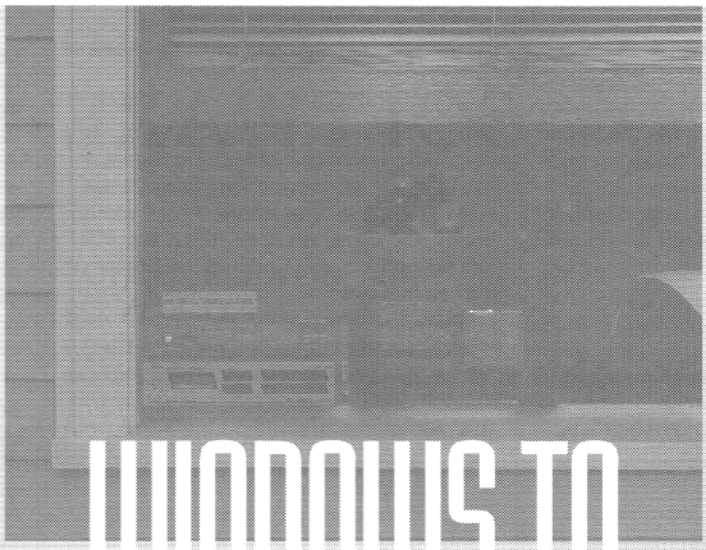
P.S.

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!



WINDOWS TO THE WORLD.

Pakratt for Windows is the only data controller program for Microsoft© Windows™ on the market today. AEA gives you a true Windows application for controlling AEA's entire family of data controllers, including the new DSP-2232 and the new PK-900.

This graphics-oriented program offers all standard Windows 3.x features (cut-and-paste, custom window sizing and color selection, etc.) and can run minimized or in the background if desired. Also, PC-Pakratt's multi-tasking allows you to run two data controllers simultaneously. Other features include complete parameter screens, binary and ASCII file transfers, macros, QSO logging, comprehensive help and much more.

Get a whole new outlook on ham radio
with PC-Pakratt for Windows from AEA.

Connect with us for your nearest AEA dealer or for a
PC- Pakratt for Windows fact sheet.
Call our literature request line at (800) 432-8873.

Advanced Electronic
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'We Are All Beginners' Part One

A distinguished group (names on request) of digital communication experts met in Sarasota, FL during mid- November. Well, if not "distinguished," the group was certainly mature. Three were genuine senior citizens, the fourth so young he scarcely made it as a new member of AARP. (I remember his waving his new membership card at a cigarette machine in his search for every possible discount). When I say "expert" I don't mean to imply that each individual deserved world-class ranking. Collectively, however, they had by this point experienced many if not most of the failures and triumphs of DOS-5 and WIN3.1. Sometimes this was accomplished with great fanfare, other times in the quiet of the wee small hours while trying to run an APlink station. Nevertheless, fulfilling the objective of the seminar, this stag foursome exchanged notes and tall tales, software and advice; enjoyed excellent food, fine wine, bad judgement and a great deal of fellowship. I left early, a mere 25 hours into the weekend, but not before the group first violated and then reaffirmed the validity of the two fundamentals of the PC domain. First, from the ancient Roman Law, "Neither software nor hardware is foolproof ... fools are far too ingenious for that." And, from a more modern elementary school textbook, "At the keyboard of a modern computer, we must behave as though we are all beginners." Forget either at your own peril.

THE BEGINNING

Shortly after enjoying the Sarasota seminar, Gen and I flew north for the holidays, just in time for the storm of the century. Please, don't ask why we migrated north in December! Getting here all in one piece is a challenge these days, but a trivial undertaking compared to what followed. After a full day of settling down, reading mail, shopping and such, the real business began. Two computers arrived at the front door within thirty minutes of each other-first via FedEx, then UPS. IBM shipped a 486 for the office; a 386 came from Sarasota for the shack. Excitement and desperation, thrills and spills, late and sometimes sleepless nights followed and became routine. But I enjoyed it all for that is what a "learning experience" is all about.

BACKUP TIDBITS

The radio 386/40 computer contained only DOS-5 on the disk, so I quickly added Windows and the backup software. Within 30 minutes sixty megs of data was installed and the station was up and running. Note that I installed Win 3.1 in its entirety before I restored data, even though Windows was on the tape. That sounds as though I believe in taking a raincoat and an umbrella along on a sunny day. But I have found that restoring a used version of Windows to a brand new computer without that step often leads to trouble. I presume it comes from the endless variety added by all the .ini files. Give them the orderly structure of a newly installed 3.l, however, and they install properly as the tape backup modifies the virgin version. In any event, the few extra minutes invested is very cheap insurance.

IBM's splendid 486 offered a few challenges. OS/2 occupied a large slice of the disk. Since I choose not to use that system for at least a year (or until I can run it with Win3.1 in Enhanced mode), I zapped it, partitioned the disk, formatted both drives, loaded the startup software and turned on the tape; then compressed part of the data. I wrote that sentence a lot faster than I performed the tasks! For me, the endless beginner, tinkering with the hard disk is like the "red zone" in football...very tough territory. Build a complete plan before the start or else! We will come back to that subject in a moment.

By the way tape backup has been the rule around here for several years, but the rule is often abused. DON'T! I made last-minute backups in Florida. All that data restored to the new disks without a hitch. But I corrupted some critical files later on by violating rule #1 (see above). Bad? I had to delete the win.ini and sys.ini files to break out of the nightmare created by some rogue Font files. Without tape to restore the files, rebuilding the data would have been a slow and painful process. Back it up, and keep it handy until you know you have a stable situation.

Another reminder for those of you who use Win3.1. Put sysedit.exe on your desktop as soon as you have installed everything on your disk. The file is in the Windows directory. Move it to the STARTUP group. Then click print from the menu and get hard copies of the win.ini, sys.ini, autoexec,bat and config,sys files. This invaluable reference should be put in a safe place. Later on, after your files have been thoroughly tainted by various and sundry software (all are guilty) you will be able to restore sanity to these files. And, of course, sysedit is the perfect way to edit the contents of that portfolio even though nothing will happen until the next time you boot the computer.

PARTITIONING

The big lesson, now twenty days into the experiment, involves handling a disk that, despite its apparent huge size appears potentially deficient. I list the hard disks owned over the past few years-10, 20, 40, 80, 120, 170 megs. Software developers rapidly devoured each and it will happen again,. (The typical Windows program now consumes about 10-14 megs). But I am going to defer it to the extent possible with intelligent use of data compression. It seems so simple. Thumb through the journals and, according to the advertising claims, the problem goes away in a jiffy, just as soon as you install "brand X." Maybe, but maybe not. Experience, the foolproof kind, strongly suggests that this technology be applied with great care.

The great care strategy requires the use of more than one drive. For the purpose of our discussion the drives must be software creations, simulations if you will. Thus, the need to partition, a word DOS understands thoroughly and describes badly! We will go through the process step-by-step.

This subjects raised red flags in my circle of friends and experts. Most think that partitioning died a natural death along with DOS 3.1. Until then DOS addressed but 32 megs of disk space so that, if a 105 Meg drive had been available, the user would have to set up C,D,E and F drives. What a pain! (I just bought a new DOS 5.0 book and it still recommends disks of that size, feeling that no larger drive can be managed properly!). In general, the expert panel feels that partitioning these days is a tool to be used only if more than one operating system is present on the disk drive. For example, if you want to have both DOS and OS/2 system options, or DOS and Unix on your drive, you must separate the two worlds through partitioning. Oil and water do not mix! Otherwise they deem the DOS file structure to be adequate to their need. Okay, I respect that, but I also know that they all have VLD's (very Large Drives). Space is not a

problem for them. For some others, however, capacity is an acute problem; as keen as the limitations of the budget or the hardware. After all, upgrading the hard disk costs about $3 per megabyte in whatever form it may take. The investment can be deferred (I won't say avoided) through a systematic approach to managing your resources.

Moving right along to the first step...back up your data! Back it all up, or at least everything that you want to save, for it won't be long until your disk will be erased. Use tape, disks or whatever, but do it first. Next, make a boot disk. Go to DOS, insert a disk in drive A and type Format:A/S. That command puts command.con on the disk and it will get you to the C:\ when you need it most. There are also two hidden files that come along for the ride. (Does hidden mean clandestine? Don't ask me why DOS chooses to play these games.) I add autoexec,bat and config,sys files for convenience but they are not required. Label the disk. Store it nearby.

Go now to the DOS directory of the C drive. Type Fdisk and examine the four options. Create, Set and Display are possibilities but Delete is the operative word. Drive C is the sacrificial lamb and disappears at this juncture. In a word, the drive is zapped, so be prepared when you select the "Delete partition or logical DOS drive.: Press 3. The next menu gets down to business. Select 1, a choice that brings up four delete options. Choose the Primary Dos Partition which, while not described as such is your C drive. Press Enter and it's gone. The drive destroys itself in a small slice of the time it took to build it!

PAUSE

The disk is now a wreck. Rebuilding rests now on your view of the manner in which the disk should be divided. No firm rules exist but let me suggest an approach. If you plan on all DOS disk, are hurting for space and wish to avoid Windows at all cost, try a 25/75 split-the 25 being the uncompressed C drive. Thus, on a 60 meg disk about 45 megs would be compressed and the net gain would be substantial. For the same size drive in a Windows environment, the bonus is smaller. A ratio of 50/50 approaches the optimum level depending on the size and type of programs you wish to keep in drive C. At minimum allow space for DOS, Win3.1 and its SWAP file, TSRs and the two or three programs that are used whenever you are at the computer. Then, allow working room for new files and programs. Uncompressed space is at that kind of premium! We discuss this later on, but for now tilt your plan in the direction of choice.

PROCEED

Once the decision is reached, go back to the Fdisk menu and press 4. The next message reads No partitions defined. That is the signal to move on. Press Esc to return to the menu and press 1 (Create DOS partition) then press 1 again to get down to the business of creating the Primary DOS Partition. Say No to the first question, then, after pressing Return, type in the number of megs desired in the C drive...30 if you are using Win3.1 on a 60 meg disk, for example. Press Return and, behold, drive C is setup.

Go back to the main Fdisk menu, press 1 again, then 2 on the next screen to begin the process of creating an Extended DOS Partition. Fdisk asks how many megs are to be used. Press Enter to allocate the remaining portion of the disk. Hit Enter once more and the Extended Partition will be named Drive D. You will be assured in the last message that all space on the disk has been assigned. The deed is done, and the machine leads you by the hand to the insertion of your boot disk.

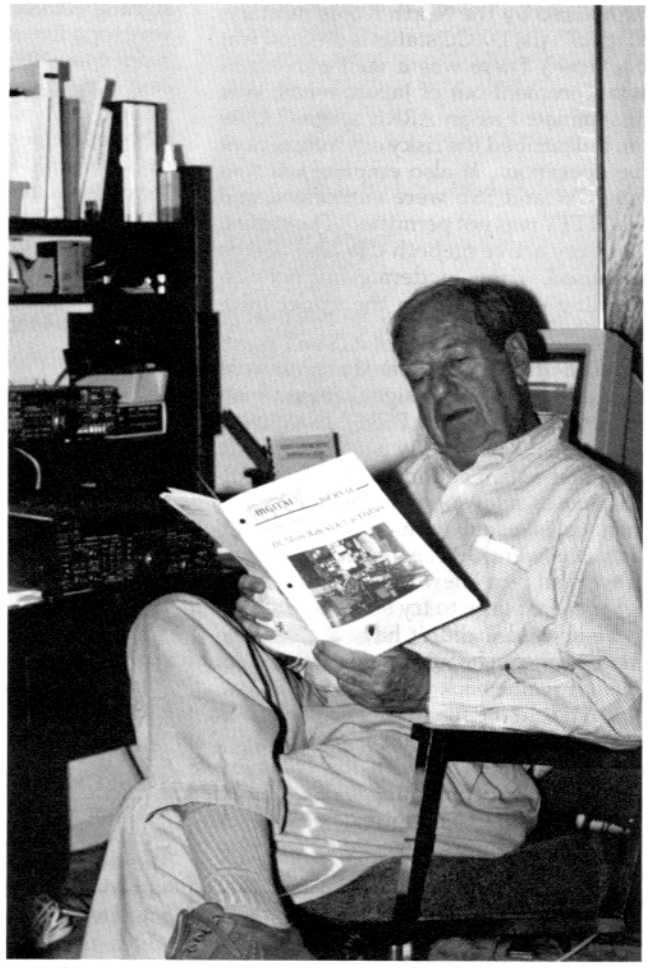
Begin the process of loading DOS now. No comment needed here, except that if you are going to load Windows later, make sure you do not let DOS load the Shell. The option comes up early on disk one. You are then reminded that the drive is not formatted. Format C, then drive D as well. The install program leads you through these easy steps. Congratulations! You have arrived at the point where drive C is ready for loading. Go ahead and install whatever you need on that drive. Do put at least one small program on D drive in order to see how DOS recognizes and cares for programs on that alien disk every bit as well as those at home.

That's it! Next month we venture into the world of installing and managing SuperStor/Pro (or any other program you choose) and the compression of the D drive. Stay tuned.

Two items from the mail bag need attention this month. Howard, N6HM needs software for his FT-990. He has a CAT interface and is looking for software to run under either DOS or Windows with Pakratt II. The J-Comm offering, in his judgement, covers only some of the potential functions available. The program should, for example, select and remember the various offsets by mode. Sounds to me like an application for Visual Basic. Can anybody out there help?

Word of a new piece of software arrived from Japan. Kuni JH1QDB has developed KSR a program for old style demodulators like ST5, ST6 or ST8000. While Kuni modestly claims to be but a novice programmer this is a full-featured undertaking. Type-ahead buffer, full duplex operation, normal split screen, five 64 character programmable messages and 15 default messages and my favorite, auto TX/RX switching all adorn the package. While the letter can't substitute for a live demonstration, there are a lot people out there that could use a sophisticated program like this. You can have it for a song - a formatted 720K 51/4 inch disk (only!), a return mailer and five dollars U.S., two dollars extra if you choose not to send a disk. Please follow these directions carefully. And, if you try, let the Journal world know about it.

See you in the ARRL test or on APlink (3620 7066 10126 14066 18105 21070 28126 24 hours). 73 de **Jim, N2HOS** SK ■



APlink Sysop Warren, W2NRE. (Note his choice of reading material)

DX NEWS

Jules Freundlich, W2JGR
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Despite the slow decline in solar activity, there is no shortage of activity in the world of RTTY DXing. With several interesting expeditions coming on line in the coming months, and the activation of 5R, 5T, and 5X as detailed below, there should be plenty of action for all. What is surprising is the size of the pileups for even a not-so-rare country. I suppose everyone just wants to keep the rig in operating condition while waiting for the real rare one like A51, 9U, or ET.

It's funny how we all fall for the obvious "Slim." Starting in the middle of December, Romeo Stepanenko, 3W3RR, etc. and some JAs operated with a call, apparently authorized by the North Korea military, as P5RS7. (Its DXCC status is unknown at this time.) There was a well publicized announcement out of Japan, which was disseminated as an ARRL special bulletin. It described the risky environment of the operation. It also emphasized that only CW and SSB were authorized and that RTTY was not permitted. The station was very active on both CW and SSB as promised, with a moderate, but not outstanding signal here in the upper midwest.

Then on Christmas Eve, as if to present us with a nice present, a signal came up on 15 meter RTTY signing P5RS7. In the midwest USA, it was really a good 599. The ensuing bedlam continued for about 15-20 minutes, a few of us worked him, and then, as is usual with many Slims, he suddenly went QRT. All of us who heard or worked him knew that he was a phoney, yet that urge to try to work him had to be obeyed. I didn't have a chance to check the beam heading. I was too excited when he came back to my first call. Don, AA5AU said the signal peaked west from the New Orleans area. And Shin, JA3AUQ chimed in with the comment that if they were operating RTTY, Romeo "would be shot." Did anyone else check the beam heading? It would be interesting to get some bearings for a little international triangulation. Oh well, WFWL.

A reminder....many of the RTTY DX operations recently underway, or soon to be active (KP5, 5R8, KH5, KH5K, HS) would not have been possible without the energetic efforts of Don, W6PQS, and Dean, WA6PJR of the IRDXA. IRDXA resources are just about depleted. Send your evidence of appreciation (money or equipment) to IRDXA, Don Simons, W6PQS, 356 Hillcrest Street, El Segundo, CA, USA 90245.

DX DOINGS

BELAU, KC6 - Between 10 and 20 February look for KC6SS, KC6RR, and KC6OK operating ll modes between 2 to 160 meters. QSL to P.O. BOX 73, Owasso, OK 74055. (tnx OPDX/EARF8O)

BOUVET, 3Y - UZ9OWD reports that a Russian round-the-world expedition aboard the yacht, "Admiral Nevelsky", signing ROL/MM has applied to Norway for a license to operate on Bouvet in April-May 1993 as 3Y/ROL. At the present time the ship is somewhere in the Pacific, and plans to pick up 4-5 hams when it arrives at either Chile, Uruguay, or Argentina. They are prepared to wait for good weather, at Bouvet, if necessary to affect a landing. The planned period of operation would be 10-15 days, after which the operators would be put ashore at Capetown. This sounds like a long shot to me, but keep tuned for further developments.

BHUTAN, A5 - Jim, VK9NS, is still in regular touch via telephone, FAX and correspondence with the Bhutanese Minister for Communications in Thimpu. He is still hopeful that Amateur Radio may be introduced in Bhutan within the next six months.

CZECHOSLOVAKIA, OK - Following the breakup of this country, on 1 January 1993, stations in Slovakia have started using the prefix OM, while stations in the Czech Republic will continue to use OK and OL. DXCC action on this matter is still pending.

DESECHEO, KP5 - An adventurous encounter with the U. S. Coast Guard, the Border Patrol and the local Police, plus the dumping of some equipment overboard delayed the start of this post-Christmas operation for about 24 hours. Once they were underway, however, with 4 stations on the air at once, the team was kept busy by plenty of callers on all bands and modes....a fitting end to 1992 and a running start for 1993. Using IRDXA's #2 HAL Telereader, Bob, KW2P/KP5, did a yeoman's job (operating split) and should have satisfied most of the needs for this country. QSL to N0TG at P. O. Box 891, DeSoto, TX 75123.

HOWLAND ISLAND, KH1 - This major expedition is now a "go" and is scheduled for 26 January for a full seven days by a team of 10 experienced operators. Among the group are Walt, W0CP and Randy, K0EU, both of whom are RTTY operators. There will be operations from two different sites on the island so that two modes may be on the same band simultaneously.

Although the major efforts will be on CW and SSB we hope that a suitable portion of the 50,000 targeted QSOs will be on RTTY. The equipment list that was detailed in a packet announcement by Peter, ON6TT, is quite extensive although no specific RTTY gear was mentioned. I received a requested clarification from Peter who assured me that they have included RTTY equipment and there would be RTTY operation. The entire operator complement includes Burt, W0RLX, Mike, K9AJ, Phil, W9IXX, Paul, F6EXV, Ian, G4LJF, Arie, PA3DUU, Walt, W0CP, Randy, K0EU, Bob, K4UEE, and Peter, ON6TT. Even though each operator has committed to $6000, they still need financial support to reach their $75000 goal. W0RLX is the expedition Treasurer.

KAMPUCHEA, XU - John, PA3BTQ, been traveling the length and breadth of this place installing HF AMTOR gear for the International Red Cross. He is licensed as XU6TQ and can be reached via the APLink MBO of VK2AGE, which he accesses almost daily. He has worked into Europe on ARQ around 1440Z on 14077.19. No North American reports have been noted. John will leave XU-land at the end of January 1993. In the meantime, there are UN stations, one being XU3UN which has been worked on 80 meter CW from the midwest USA, but no sign of RTTY. XU6TQ has been encouraged to convince the UN people to operate RTTY. Keep your fingers crossed.

KINGMAN REEF, KH5K - PALMYRA, KH5 - The team of 12 seasoned operators will assemble in Los Angeles on 27 February, depart from Hawaii by boat on 28 February and arrive Kingman Reef around 5 March. Eight operators will land there, and the remaining four will go to Palmyra. Locations will be switched from time to time so that all will have a chance to operate from both places.

Licenses and landing permits are in and the operation is scheduled to last nine days (2 weekends, 1 week included). Callsigns will be announced later. All stations will operate with at least one KW. On Kingman Reef there will be four HF sta-

tions, one 6 meter station, and one satellite station. IRDXA's HAL #1 will support RTTY. On Palmyra there will be two HF stations, one 6 meter station, and one satellite station. IRDXA's HAL #3 will support RTTY at this location. It is intended that all stations will operate simultaneously.

All up-front costs have been covered by the participants and commitments from DX organizations. Support from individuals is still desired. Europeans should contact G0LMX or PA3DZN. All others should contact N0AFW. Operators include N0AFW, N9NS, W7KNT, NH6UY, OZ1LGF, G0LMX, HB9AEE, HB9WHL, PA3DZN, PA0ERA and 2-3 others. As KH5K is No.4 on the 1992 Most Wanted Countries List in Europe, Europe will be the main target area. Both locations will pay special attention to the low bands as well as the WARC bands. We certainly hope that USA RTTY will get a reasonable share of attention.

LORD HOWE I, VK9 - We are still expecting JA2NQG to operate RTTY here sometime in February. No details yet as to time and callsign.

MADAGASCAR, 5R8 - The RTTY gear destined for Madagascar from IRDXA arrived successfully at 5R8DG. George came up in late December on 10 and 15 meters. He was off to a rocky start, fighting the pileups on transceive, in frustration, before he picked up the technique of operating split from Don, W6PQS, Les, KE6XJ, and others. He is enthusiastic about operating RTTY and should now be in the process of filling your need for this rare DXCC country. Thanks, Don, for getting the gear to him, and thanks, George, for being such a willing learner. QSL 5R8DG via F6FNU.

MARSHALL ISLANDS, V73 - George, AD1S and Darrell, AH9B should be signing V73S and V73B about now. QSL to OKDXA, P.O. Box 88, Wellston, OK 74881.

MARKET REEF, OJ0 - Braving what could possibly be the worst weather of the year, the OH3AC club will conduct their 3 day operation from the lighthouse starting 25 February 1993. They will operate 160-10 meters, all bands/modes. QSL to OH3AC, Box 74, SF-15141, Lahti, Finland.

MAURITANIA, 5T - 5T5EV (Selcal TEVC) likes AMTOR and may be found in ARQ near 28078 around 1915Z. If you can catch him on SSB around 1900Z, he will oblige by making a RTTY schedule if requested.

MOUNT ATHOS, SV/A - Doc, JA3PFZ's hope for operating permission never did materialize. The DX Advisory Committee (DXAC) has been asked to consider dropping Mount Athos from the DXCC list.

PITCAIRN ISLAND, VR6 - Japanese operators will sign VR6JJ and VR6BB from mid-January to the end of March on all bands and modes. QSLs go to JF2KOZ, Yuji Miura, Room 101 Main Haitsu, 7-3 Yanagigaoka, Tahara Atusumi-gun, Aichi 441-34, Japan. (tnx OPDX/BARF8O)

SAN ANDRES, HK0 - Silvano, HK0/KB5GL, and Don HK0/AA5AU will operate from this Caribbean island from 27 February to 7 March, 1993. Silvano will operate 10, 12, 15, 17, and 20 meters on SSB and RTTY. Don will operate on 10, 12, 15, 17, 20, 30 and 40 meters on CW and RTTY. QSL HK0/KG5GL to KA6V, and HK0/AA5AU to his home CBA.

SOUTH AFRICA, ZS - ZS1CI is quite active and may be found on 20 meters around 2030Z, on 15 meters around 1715Z, and on 10 meters around 1300z or 1745Z.

SOUTH SHETLANDS, VP8 - In response to the publicized need for RTTY from this location, and the refusal of the previous operator to work RTTY, Vald, SP4KM offered to instruct the new HF0POL operator before he left on assignment from Poland. However, Vald had to be assured of the availability of RTTY gear. It became a race against time to see if IRDXA could come up with the necessary equipment. More later.

THAILAND, HS - Look for club station HS0AC on 20 meters around 1500Z. It uses the PK-232 donated by IRDXA.

UGANDA, 5X - Since the termination of DJ6SI's 5X5WR operation, there has been sporadic RTTY activity from Mario, 5X5MB. No operating patterns have been reported. Apparently the ban on amateur radio no longer exists here. We hope that Mario can get up a decent directional antenna, and will soon learn the technique of "split" operation.

WAKE ISLAND, KH9 - Kenn, KK4DK has a civilian job working for the Air Force. Current plans (subject to change by his employer!) are to reactivate KK4DK/KH9 in RTTY starting 21 January 1993 for a duration of 2-3 weeks. He will start out around 21085 and stay there as long as conditions and activity holds out. If no action, he will QSY to 14085. Normal times will be 0900-1100Z daily. As work permits, he will also try to be on from 1100-1200Z, and from 2300-0100Z. QSL to Oklahoma DX Association (OKDXA), Box 88, Wellston, OK 74881.

POTPOURRI

In case you have been wondering about the whereabouts of Eddie, W6/G0AZT, word has been received via the mail and commercial telephone service that Eddie is alive and well after his extended vacation in P40-land. He is planning to return from England to the USA for the Dayton convention. He stated he misses all his friends. (It's mutual, Eddie).

Tad, KT7H, in his Christmas Eve Propagation Bulletin opined that the Solar Cycle will reach a probable minimum of activity around early 1997, with the next peak around the turn of the century. (This one sure will be a tough one to beat for good DX!)

If you hear BA, BD, or BG prefixes you will know they are the licensed callsigns of individual amateur stations. Kudos to the Chinese Radio Sports Association for their patient efforts over the years.

Bat, JT1CS started on RTTY last August with a C-64 and a used TS-520. After 14 days, his computer "broke." It is not repairable in Mongolia. Bat has not requested any help, but Bill, WA4MCZ feels Bat would be a RTTY regular from this semi-rare DX country if he could again be operational. Contributions, especially a replacement Commdore C-64 would be most appreciated. Bat's address is Z'Bat Erdene, P. O. Box 125, Ulaanbaator, Mongolia. VIA JAPAN.

Carl, WB4ZNH, has promised to take a laptop, for RTTY, with him on his next trip to ET, which might occur within the next two years.

There is not much new to report on DX Advisory Committee activity. Consideration of how to treat Macedonia is on hold, probably pending the settlement of the dispute regarding the country name....No vote is yet scheduled regarding the effect of the breakup of Czechoslovakia.

QSL MISCELLANIA

My query last month about the means of obtaining a QSL card from Cuba brought a response from Chod, VP2ML who enclosed two letter reprints, on the subject, from The DX Magazine. One suggestion was to go via the Outgoing ARRL QSL bureau. Admittedly that takes a long time but does apparently work. (A call to the Outgoing QSL Service at ARRL elicited the information that certain categories of mail for Cuba are accepted by the Postal Service. They told me they have no problem mailing boxes of cards to Cuba, and do receive same in return.) The other suggestion was to go via a third party foreign route, such as a friend or a National Society such as the RSGB. I can't vouch for the effectiveness of either of these approaches, but I pass them along for what they may be worth.

Good news from **Ted, KR9O**. He received his YV0AA card via the Radio Club Venezolano, YV5AJ, just before Christmas. And Hal, W9RY (love that callsign!) reports having received his cards for four bands. Hal laments, as do many others, that RTTYers seem to be the worst QSLers. With a score of 242

worked, he has only 227 confirmed. All went with green stamps, and many more than once. A few are outstanding for over a year.

LZ2TU is now managed by WB2RAJ. All requests for cards must go to WB2RAJ. LZ2TU is not a member of the LZ Bureau. WB2RAJ now has logs in hand covering 2 June 1991 through 11 October 1992. Requests relating to contacts before 2 June 1992 will be accepted but will take longer to confirm. WB2RAJ also handles cards for EM3W and UZ3AYR.

I recently received my card from **FR5ZU/E**, which was worked and QSLed after the FR5ZU/G operation, but none from FR5ZU/G. Conclusion: the /G enclosure made some postal worker a little richer. So another card has gone off. There was some original confusion about Jacques exact address so here it is again (proofreader please N.B.): Jacques Quillet BP 347 1, Cite Meteo Chaudron 97494 Sainte Clotilde Cedex REUNION ISLAND

Several have reported receiving **S2/HA5BUS** cards from the Globex address in Hungary. Some, including Yours Truly, are still waiting. Again, just to be sure, the address is: Globex Foundation Box 49 1311 Budapest HUNGARY

During his last day operating in Angola, December 16th, **Jose, D2EL** said to QSL via EA7WC "from the last three weeks". He had previousy advised all to QSL to his home call of EA7EL.

OH2BU has promised that the cards for the late May/early June 1992 M-V Island, 4J1FS, operation were to have started going out in January 1993.

Has anyone yet seen a QSL card from the October operation of **CY0NSM**?

Required Reading on the subject of QSLing is the article entitled "QSLing the 3rd World" by **Peter, TY1PS** in the RTTY Journal, p 12, Vol. 40, No. 2, February 1992. I would add to his advice: 7. Do not address the envelope in any unusual manner that might call attention to it, such as using cute computer generated bold-face type. Hand address it, or use an ordinary looking typewriter type face. Anything unusual catching the eye, or feel, of a postal thief is an invitation to your loss.....My own experience is that registered mail to a third world country, for the most part is a waste of money.

A registered letter sent to Bat,JT1CS, by **Bill, WA4MCZ** via Russia, was carefully rifled of its green stamps, resealed and returned marked "refused." Bat subsequently advised Bill, on the air, to send mail to Mongolia marked "via Japan." Bill then sent an ordinary letter via Air Mail that way. It was received in Mongolia with no problem....a good tip!

THE VK2SG RTTY DX NOTES

Since the passing of TG9VT, the APlink distribution of the weekly VK2SG RTTY DX Notes has necessarily undergone revision. John's distribution has not been exactly duplicated. With the editing of these notes now being done by four stations on a rotating basis, the initial distribution each week is not exactly the same. For those of you who obtained them directly from TG9VT, try CE3GDN. Stateside distribution to ALLUSA is kicked off by W5KSI. They are also carried and disseminated by 9X5LJ, ZS5S, I5FLN and W2JGR. The APLink operating frequencies of these stations may be found in APlink Directory Information carried by most major APlinks such as WA8DRZ and WA1URA. For some of the operating frequencies of these last mentioned two, see the abbreviated listing in the RTTY Journal, Vol.40, No.6, July/August 1991.

HAVE DX NEWS?

I can be reached directly by dropping mail into my APLink MBO, leaving a message in the APLink boxes of CE3GDN or ZS5S, sending me a packet message addressed to: W2JGR@WB0GDB.MN.USA.NA, finding me on RTTY, telephoning me at (612) 377 7269, or FAXing me at (612) 374 8161. (If you FAX me, please address it with my full name, as that FAX number serves a number of people.) When these high tech approaches fail, the U.S. Postal Service can find me. When I am not chasing DX, my APLink listens on 21074 during daylight hours and 14074 at night in the Central Time Zone. Set your chirping to WJGR.

THANKS - Thanks to the following for all your help: AA5AU, CE3GDN, DL1FL, I5FLN, IK5AAX, K2ENT, K0KX, KB5GL, KC4CH, KE0KB, KR9O, KT7H, KW2P/KP5, OH2LU, ON6TT, PA3DZN, SP4KM, TY1PS, VK2SG, VK9NS, VP2ML, W6PQS, W9RY, W0SFU, WA4MCZ, WB2CJL, WB4ZNH, UZ9OWD,XU6TQ, and ZS5S. Without you there would be no column.

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

de **Jules W2JGR** ■

FSK for PK-232/TS-850S

Don Garrett, WA9TGT[1]

If you are having trouble trying to figure out how to modify your radio for FSK with the PK-232, hopefully, this explanation will simplify the hook-up for you. These instructions are not found in the Kenwood Users manual. To make this mod you will need a Din plug such as the Radio Shack No. 276-003. Use port 1 (J4) of the PK-232 to facilitate this mod and accessory plug 2 of the radio.

Pin 1 connects to pin 3 of the TS-850 accessory plug 2 (green wire).

Pin 2 has no connection (white wire). This line is for AFSK only.

Pin 3 has no connection (black wire). This line is the squelch circuit.

Pin 4 connects to pin 8 of the TS-850 accessory plug 2 (brown wire).

Pin 5 connects to pin 9 of the TS-850 accessory plug 2 (red wire).

Note: Be sure to solder the shield wire to pin 8 of the radio accessory plug. This is the same pin that the brown wire is also soldered to. Insulate this connection with tape or shrink- wrap so shorting will not take place.

1. 2610 Tacoma Ave.
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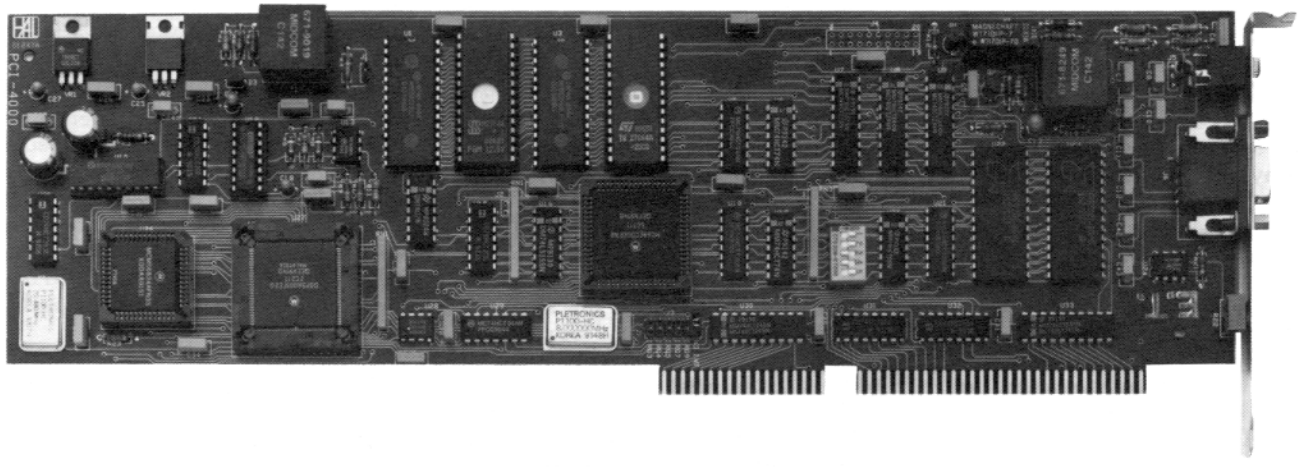
NEW!

HAL Announces the PCI-4000 PC-CLOVER System

For Fast, Bandwidth-Efficient HF Data



The PCI-4000 uses the latest development in HF data transfer methods–CLOVER-II. CLOVER-II is designed to maximize the amount of data which can be transferred in a narrow bandwidth over HF radio frequencies. It uses a combination of four tone frequencies with phase and amplitude modulation to achieve data transfer rates as high as 60 characters per second–about ten times faster than AMTOR. The PC-CLOVER system incorporates Reed-Solomon error correction, not simply a retransmission scheme. The PCI-4000 is a full-sized PC card which operates in a 80286-based PC or higher.

The PCI-4000 PC CLOVER system features:

- Higher throughput than RTTY, AMTOR, Packet, or PACTOR on similar HF channel
- Simple pull-down menu operation
- Signal bandwidth of 500 Hz (@50 dB down)
- Plugs into your PC (286, 386SX, 386, or 486 machines)
- Easy interface to your transceiver
- Automatically adapts to HF band conditions
- Error correcting using Reed-Solomon error correction

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Richard Polivka, N6NKO
5800 South St #221
Lakewood, CA 90713

ORG 0x0100

As I am writing this, I am in El Centro, California. The weather is cold and there is a storm on the way. I have never been here before and it is an interesting place. So remote, yet compact. On the way here, I spotted several places that have ham radio arrays around their homes. Amazing how we can talk around the world for the cost of the electricity and the cost of the equipment to do it with. I have found that I lose the sense of reality when I am on the radio talking to someone. It took me a little more than four hours to travel 220 miles and yet I can just grab the mike, and if conditions are right, I can talk half way around the world in the time that it takes to key up the radio, of course not allowing for propagation delays.

We as amateurs have the ability to learn about the world that we live in and be able to teach others what we experience and share it with young and old alike. I spent about two hours talking to New Zealand one day on ten meters and it turned into a geography lesson for my wife while I sat back watching her and listening. This hobby has the ability to train and teach people into how to talk and get along with our fellow man. All we have to do is DO IT! That is what we are going to be covering next month, how to start from the beginning.

Subroutine 1:

Question for the observant. What has happened to the end of the articles that I have been writing? Amazing how something has appeared that looks like a node path. Both of those addresses could be one and the same but they are not. Given the software that is available from G1EMM, KA9Q, PE1CHL, and others, the two could be made one. They are, at some locations around the world. I am talking about the internet and packet radio. The packet radio network and the internet can be considered parallel networks, sorta. The packet radio network is designed to pass mail between BBS stations that are worldwide. The internet is designed for passing mail and news items between host computer systems spread around the world.

There are a couple of differences between the two. The amateur packet network can't pass ANY traffic that is, or construed to be, commercial in nature. The internet can pass some commercial traffic. The amateur packet network relies on radio transmission where the internet uses wireline and non-wireline transmission. If I wanted to get a file from a remote system over the amateur radio network, I would not be able to do it unless it is a direct connection. The network at present can't support remote file transfers too effectively. Node transfers are slow because of the slow speeds that are used and because of limitations that are imposed using radio transmission. We do have 1200 and 9600 baud links on VHF and UHF. However, these speeds do not realize their full potential because of multiple users on a single channel, retries, etc. The internet uses very high speed links that are in the megabit and multi-megabit per second range. Wouldn't it be nice if we, as amateurs, had channels like that available to us on radio. We do. They are the microwave bands. Up there, you can have the high speed needed to achieve the high throughput of the internet. But here again, microwaves are not that forgiving at all.

A proposal. Set up a microwave network to link cities with other cities or just to be a very high speed network for users. We have the technology and we can all use it. Interesting thought to think about. Microwave omni-directional repeaters can be made using a skeleton slot antenna and the appropriate hardware.

Subroutine 2:

I had mentioned above about the various packages that are available from KA9Q et al. There is a routine in the majority of the packages called NNTP. NNTP stands for Network News Transport Protocol. NNTP allows news to be passed over networks from a central server. This server could have news from a group or club, or it could pass the appropriate news off of the internet from a gateway station.

I doubt that the amateur network could handle the current stream of data of internet. The current throughput of internet is about 35 MB daily. Try passing that much data over a shared 1200 baud link. Oh, one more item, most of that 35 MB of data is compressed to speed throughput. Something to think about.

Subroutine 3:

In subroutine 1, I was discussing microwave links to transmit data at high speed. Now how would you pass the data between systems? It has been performed by using an ethernet card fed to a microwave tranceiver. This is the best way to achieve high amateur network speed.

There are many amateur groups around the country that have experience with the process of sending ethernet data. The San Diego Microwave Group is a group that publishes information on how to make your own microwave equipment. There have been many papers published involving this process. Some of them have been published in the papers from the Amateur Networking conferences. These are available from the American Radio Relay League. We need to proceed up in speed and technology to keep pushing packet radio forward.

Subroutine 4:

I am glad that I do not live here in El Centro. I am lying very still and I can feel the ground shake. And no it is not like a truck going by. I am quite near to the San Andreas Fault. There are places where the fault is always moving. This gets to be a bit disconcerting. Truck movement is vertical, this movement is all horizontal.

This is why, in California, we have amateur radio clubs working with government agencies. When the big one hits, we will all have to work together. Government thinks that they can do it all. Boy do they get a lesson when things really fall apart and the hams are right there ready to pitch in. Packet radio is the best way to send long reports. Voice is great for immediacy but try to talk to a person on the other end describing staffing and equipment requirements for a shelter when you are having problems hearing the other end.

Subroutine 5:

I feel that I can now comment on the following. I know that the ARRL Digital Committee had a meeting with five representatives from the STA group. There have been several other publications that have presented the information, including this one by the publisher who is on the committee. I think that the meeting finally resolved the problems that have been present with the existing STA network. Yes, there was an admission that HF packet does not work effectively. (One for my side).

Now, now. I can hear all of the HF people out there saying that it works for them. Well, what are the settings that you are using? Word has it that they were using a packet length of 32 and sending one packet at a time. I would be able to get faster response by using AMTOR with less power on the same band.

The outcome of the meeting will help forward packet radio networking and hopefully will be not that obtrusive to existing operations. HF forwarding is a necessary evil because there are no high speed continental links. The ground based links are loaded enough without the cross country traffic. There was a proposal sent up based on the discussions. Now to see if it is accepted by the powers that be.

Think Microwave

Subroutine 6:

In Subroutine 3, I was discussing sending ethernet data over a microwave link. I know that there are products out on the commercial market that allow for a LAN to be set up using low power transceivers. I am not sure at what speed they work at or in what band. They are supposed to have enough power to cover a reasonable sized office. Of course, if someone out there has an idea to get some and fiddle with a pair.....

Subroutine 7:

This month's article has a built-in design problem. This problem occurs many times in business and causes more problems than one can think about, especially if one has to deal with someone else's work. Think about it. The answer is next month. A hint can be found in ORG 0x0100.

Last month the address of Oak Bay Technologies was inadvertently omitted. They are located in Redmond, WA or ask your local dealer for information on the CA-232U and other products they offer.

de **Richard, N6NKO** ■

Packet: N6NKO @ WB6YMH-2
Internet: elroy!swc!owlsnest!richardp

Great for Shack or Office

For the past 8 years, John, KB1T, has been publishing his Ham Photo Calendar. I just received my copy and it is definitely going to adorn a special place here in the office until my Ham shack is ready. This calendar shows all holidays (USA & Canadian), contest dates including the RTTY contests, convention dates, a propagation tutorial, meteor shower data, and much more. The calendar is complimented with 17 color pictures of DXpeditions and other rare places.

We probably all have a calendar that we picked up Free someplace but I' bet you don't have one with as much Ham related data as this calendar contains. The price is $12.95 plus $2.50 for S/H, slightly higher for foreign. John has a very nice brochure available for the asking. Why not send him an SASE today and see for yourself. Club prices are also available. Write to KB1T Radio Specialties, BOX 1015-YJ, Amherst, NH 03031. Or if you simply can't wait for the mail to handle your request, call John at (603) 673-4100 and be sure to tell him you read about it in the RJ.

SARTG

1992 WORLD WIDE RTTY CONTEST RESULTS

Nr.	CALL	SCORE	QSOs	PTS	3.5	7	14	21	28
Single Opr All Bands									
01	ZD8LII	1,112,055	505	7565		17	43	62	25
02	K1IU	876,264	416	5036	16	30	77	49	2
03	LZ2KIM	850,850	439	5525	15	29	60	50	
04	VE3XO	814,420	401	4735	9	25	70	63	5
05	VP5JM	734,655	486	5695	6	20	45	50	8
06	OG2BP	704,235	421	5295	19	25	62	25	2
07	NO2T	637,275	373	4395	14	29	76	26	
08	OH2LU	598,300	323	3860	14	20	67	53	1
09	KP2N	592,800	427	5200		4	55	55	
10	HH2PK	548,250	475	5375		17	52	33	
11	OZ7GI	544,355	280	3605	17	14	67	52	1
12	SM5FUG	489,900	279	3450	16	23	53	49	1
13	DJ6JC	482,310	261	3495	12	20	40	60	2
14	AI7B	475,800	349	3900	7	21	50	37	7
15	N3SL/0	437,265	344	3555	13	20	50	36	4
16	K6WZ/0	387,630	300	3285	12	20	50	36	
17	NV1G	368,480	256	3290		8	66	38	
18	NT0V	350,300	277	3100	12	16	51	34	
19	VE6ZX	336,960	315	3510	4	13	51	28	
20	W1BYH	321,000	251	2675	12	23	43	39	3
21	I2UIY	317,280	245	3305	1	4	46	45	
22	HK3GAL	279,720	250	3330		14	32	38	
23	P29BT	270,580	220	3260			31	52	
24	W2UP	264,195	224	2565	7	37	31	28	
25	LA4LN	262,650	211	2550	13	19	52	18	1
26	AH7JF	237,300	192	2825	2	13	38	31	
27	LU3DSU	233,230	191	2810			31	37	15
28	I2TQU	222,310	188	2365	12	18	49	14	1
29	AM5FEL	207,270	182	2205	4	14	42	33	1
30	JA3CMD	206,510	160	1930			55	48	4
31	IK4BWC	200,900	197	2450	8	9	41	24	
32	YO6JN	198,565	184	2135	13	9	42	27	2
33	ZL3GQ	194,445	151	2235	1	11	43	30	2
34	ZP6XD	192,660	170	2535		2	24	47	3
35	XE1/JA1QXY	183,750	230	2625			32	38	
36	G5LP	165,170	170	1990	11	13	40	19	
37	N0FMR	163,200	172	1920	5	10	45	25	
38	GOARF	145,820	128	1585	12	7	41	31	
39	AA5ZX	144,210	202	2090	2	22	33	12	
40	JW2IJ	143,200	180	2440			50	5	
41	KF9CX	140,700	154	1675	9	16	36	22	1
42	SM4AAY	139,380	165	2020	5		51	13	
43	UO4OWQ	136,175	174	2095			37	28	
44	W1VXV	130,720	125	1520		16	40	29	1
45	DL9GGA	122,295	127	1315	15	15	32	10	1
46	WB8YJF	119,730	124	1535			44	33	1
47	W3AOH	119,425	124	1405		8	50	24	3
48	SM4RGD	117,040	133	1520	17	20		40	
49	DJ2YE	113,900	110	1340	9	13	36	27	
50	IK0CNA	112,850	125	1525	1	2	44	25	2
51	YL2KF	107,295	136	1555	15	7	29	18	
52	WA1MPB	107,250	125	1430		4	35	35	
53	JH1BIH	105,120	118	1440			41	32	
54	W2KHQ	103,320	102	1260	7	11	39	25	
55	WA6VZI	99,400	121	1400		13	29	27	2
56	SM6BSK	93,100	102	1225	10	15	32	19	
57	N2QCA	92,500	117	1250	9	18	30	17	
58	K6HGF	90,720	138	1440		3	32	28	
59	HP1AC	88,920	139	1560			17	28	12
60	W6DBV	76,680	86	1065	7	13	36	16	
61	JN3TMW	73,775	87	1135			36	27	2
62	JA2NNF	71,700	88	1195			52	8	
63	SP9TCE	70,080	94	1095	15	12	20	16	1
64	HK1LAQ	68,440	78	1160		5	28	26	
65	W4IF	65,000	79	1000		8	45	12	
66	KT1N	55,825	85	1015		1	17	36	
67	A92FG	55,205	71	905	2	4	16	35	4
68	W6MTJ	54,870	82	885	10	12	33	7	
69	WA0QIT	50,460	87	870	7	7	20	22	2
70	SM4DHF	44,115	69	865			36	15	
71	KE9CU	40,560	68	780		7	24	21	
72	ON4AMP	38,480	60	740	5		30	17	
73	KD2YG	37,440	61	720	3	9	26	14	
74	5U7M	36,490	60	890		2	21	16	2
75	WN1E	33,840	68	720	2	6	22	15	2
76	N9NMC	32,390	71	790		8	31	2	
77	OH3NGB	31,950	57	710			27	18	
78	KD7H	29,000	68	725			26	14	
79	SP4MPH	24,510	53	570	13	10	13	7	
80	DK5KJ	24,395	47	595	1	4	21	15	
81	IV3DHD	23,100	45	550		1	22	16	3
82	W2JGR/0	21,275	54	575		13	13	11	
83	VE5SF	16,995	53	515		5	18	10	
84	JA2ESR	15,300	35	450			17	17	
85	WA8RXI	14,880	42	465		6	26		
86	WA3MCZ	12,600	30	420			18	12	
87	OZ1DRK	10,125	32	375			18	9	
88	JA4RTX	8,289	26	345			11	13	
89	PY4HH	8,280	27	345		9	14	1	
90	SP7FQI	8,000	26	320		9	10	6	
91	DF5BX	6,670	25	290	1		18	4	
92	K4FPF	6,270	25	285			11	11	
93	YL2EO	4,845	28	285	8		9		
94	DL5SWB	3,825	20	225		9		8	
95	OG3OU	3,360	18	210			5	11	
96	WA1O	2,320	14	145		2	7	7	
Single Opr 3.5 MHz									
01	SP3SUN	9,900	50	495	20				
02	RA0LR	1,260	10	140	9				
03	YO6ODN	700	10	100	7				
Single Opr 7 MHz									
01	W2UP	40,515	97	1095		37			
02	WF5E	23,760	103	990		24			
03	W1BYH	10,235	44	445		23			
04	SP3BGD	1,400	12	140		10			
Single Opr 14 MHz									
01	OG2BP	217,930	275	3515			62		
02	ES7FQ	195,250	225	2750			71		
03	LZ2KIM	162,300	219	2705			60		
04	OH2LU	143,715	180	2145			67		
05	JH7QXJ	134,875	146	2075			65		
06	WY2E	123,405	172	2165			57		
07	JW2IJ	119,000	176	2380			50		
08	VY2SS	111,720	205	2280			49		
09	OK2BXW	99,470	150	2030			49		
10	LA4LN	87,620	134	1685			52		
11	SM4AAY	87,210	140	1710			51		
12	I2KFW	84,660	127	1660			51		
13	VE6KRR	77,440	153	1760			44		
14	TA2FT	76,010	127	1810			42		
15	UA0KZ	57,750	90	1155			50		
16	JA3CMD	56,925	82	1035			55		
17	JA2NNF	56,680	81	1090			52		
18	W9RY/7	47,190	113	1210			39		
19	IK0CNA	46,640	92	1060			44		
20	VE7IN	36,960	101	1155			32		
21	VK3EBP	39,270	65	935			42		
22	JH1BIH	38,540	73	940			41		
23	I4IBR	27,750	61	750			37		
24	DK1VL	27,495	58	705			39		

Nr.	CALL	SCORE	QSOs	PTS	3.5	7	14	21	28
25	SM4DHF	23,400	53	650			36		
26	XE1BEF	17,810	54	685			26		
27	OK3COU	15,930	47	590			27		
28	I3BIP	15,500	43	500			31		
29	IK2AUK	13,800	39	460			30		
30	KA8OUT	11,760	34	420			28		
31	AC4HF	10,890	44	495			22		
32	OZ7XE	10,250	34	410			25		
33	RA9XF	4,845	20	285			17		
34	SM4CJY	2,730	19	210			13		
35	KP4DDB	2,340	18	195			12		
36	UA9LEO	1925	12	175			11		
37	SP2GWZ	595	8	85			7		

Single Opr 21 MHz

01	VP5JM	146,000	246	2920				50	
02	NN2G	132,660	158	1980				67	
03	IV3ZDO	128,030	157	2170				55	
04	PJ2MI	107,865	156	2295				47	
05	JE2UFF	50,500	77	1010				50	
06	CU3EM	48,450	104	1275				38	
07	EZ9L	44,160	104	1380				32	
08	LU8EKC	35,150	72	925				38	
09	SM4RGD	32,600	63	815				40	
10	IV3KCB	22,815	45	585				39	
11	N2CQ	5,795	26	305				19	
12	OH2GI	5,605	22	295				19	
13	3D2IL	4,250	17	250				15	
14	WA4MCZ	1,860	12	155				12	
15	IK5MEQ	1,125	9	125				9	

Single Opr 28 MHz

01	JN3TMW	30	1	15					2

Multi Operator

01	UZ9CWA	1,784,330	580	8185	25	37	81	72	3
02	4N7M	714,680	407	5255	17	16	55	48	
03	SK4RY	692,830	340	4385	15	23	68	45	7
04	AA5AU	616,125	363	3975	12	32	58	45	8
05	WB7AVD	487,720	325	3560	12	24	58	41	2
06	WF1B	395,605	270	3115	5	31	55	33	3
07	VK2RT	238,500	213	3180			50	25	
08	KA3DSX	24,600	62	600		7	26	7	1
09	N7IXG	18,135	53	465		6	13	20	

Operators of Multi-Op Stations

UZ9CWA: UA9CGA, UV9CAF, RW9CF, UA9?
4N7M: Radio Club "Nikola Tesla"
SK4RY: SM4CMG, SM5CZD
AA5AU: AA5AU, G0AZT
WB7AVD: WB7AVD, K7DSR
VK2RT: VK2RT, Benjamin
WF1B: WF1B, K1NG
KA3DSX: KA3DSX, KA3HNM
N7IXG: N7IXG, N7VTB

SWL Opr

01	BRS86650/DL	420,280	258	3160	16	24	46	45	2
02	ONL383	192,555	159	1945	9	18	44	28	
03	BRS272239	62,700	97	1140	5	16	57	19	
04	ONL4335	50,220	79	930		5	37	12	
05	F11ADB	40,250	71	805		12	21	17	
06	NL-8884	31,200	59	780		2	23	15	
07	DE-GMH	15,015	26	265			19	14	
08	I7-1237/BA	5,035	26	265			19		

Check Logs:

AD5O, IN3XUG, JF2MBF, JH4EZI, KE4UW, LA3EHA, OZ1FGS, OZ7FN, RA9XF,SM4CMG, SM4GVR, SM5EIT, SP3SUN, UA3DLD, UA3TAM, VE6KRR, VE7YR, WA8RXI

Annual RTTY Dinner

Radisson Hotel - Dayton, OH

Regency Room

Saturday April 24, 1993

Buffet Dinner

Assorted Salads

Fresh Vegetable tray

Au Gratin Potatoes

Mixed Vegetables

Tips of Beef in Bordelaise Sauce

Breast of Chicken Marsala

Seafood Newburg

Assorted Breads

Dessert Table

No-host bar from 6:00 to 7:00

Dinner promptly at 7:00

Tickets $23.00 person

Tickets must be ordered in advance. This is necessary to meet Hotel requirements. Please make your plans now to attend this Gala affair where you will have a great evening with your digital friends. There will be a Door Prize and a featured speaker will compliment the evening.

Order your tickets from our Dinner Host, Steve Waterman, K4CJX.

Make checks payable to:

Steve Waterman, K4CJX
5828 Beauregard
Nashville, TN 37215
Phone: (615) 665-0952
FAX (615) 320-6144

THE LINK

Jim Jennings, KE5HE
Rt 2 Box 165E
Hearne, TX 77859

WINLink

If you have been checking around on the APLink stations the past month, you have probably seen a new look. It is WINLink which is the latest version of APLink. WINLink will allow much more flexible programming and Vic, W5SMM, is using it to implement an AMTOR/CLOVER/Packet version of APLink. That is, a program that will respond to a user calling in on any one of the three modes. If you are familiar with APLink, you will see only a few changes. The initial linking is slightly different as the banner you are familiar with on APLink is no longer sent. Instead the WINLink station just sends you the WRU command as soon as the contact is made. If you respond with "DE CALL" or "QRA CALL", the login is completed and away you go. If the WINLink station does not get the AAB, it then asks if you need help and asks you to login. The commands in WINLink are a direct carry over from APLink, so most of you are familiar with them. In the initial versions of WINLink, some commands have not been implemented. Vic will add the ones the users need and ask for. We thank Vic again for the very fine programming job.

Vic has started programming the CLOVER module and I expect to have that running by the first of February. Those of you with CLOVER capability will appreciate that. I got one of the first CLOVER boards, but I am sorry to say that I have been so busy with other non ham radio activities that I have yet to take it out of the box. What I am hearing about CLOVER is great. Some say that they must be doing it with smoke and mirrors as the performance is amazing to those used to AMTOR, HF Packet, and RTTY. HAL Communications is really leading the way with this HF Digital innovation. Again ham radio is leading the development of digital technology for use on the HF bands.

SYMBOL LENGTH/BAUD RATE

Most of us are familiar with normal FSK data modulation. That is the situation with AMTOR or RTTY (and CW for that matter). With this type of modulation, a single bit is turned on or off (or the frequency is shifted back and forth between 2 discrete values). Baud rate (I know that baud means bits per second and is therefore a rate term but I will use the familiar terminology.) is the rate at which the shifting occurs. For AMTOR it is 100 baud, for HF Packet it is 300 baud. The bit length for AMTOR is 10 milliseconds and for HF Packet is 3.3 milliseconds. As we have mentioned before, these short bit lengths (symbol lengths) have real problems when the multipath distortions on HF can cause a time of arrival uncertainty of as much as 5 milliseconds. As the higher frequency HF bands fade away with the sunspot cycle and lower frequency bands get used, the problem will get even worse. As most of you know, AMTOR has to struggle under bad band conditions and Packet just quits because the bit length is less that the uncertainty in the time of arrival of the bit. When you add filtering to improve the signal to noise ratio the problem just gets worse as the filtering tends to "round off" the data pulses.

Enter CLOVER.

CLOVER was designed to combat the "multi-path" distortion problem. When you think CLOVER, you must get away from the simple on/off data modulation that you are familiar with when using RTTY and AMTOR. CLOVER uses 4 tones. On each pulse all 4 tones are transmitted for 32 milliseconds. This comprises one "symbol" in that there is no change made at all during this 32 millisecond time frame. A pulse length of 32 milliseconds is equivalent to 31.25 bits per second. Each of the tones can have one of 4 amplitudes and one of 16 phases. Here we mean that the phase of a tone from one symbol to the next can change by 22.5 degrees in the fastest mode. The "primary" mode of CLOVER is BPSM (Binary Phase Shift Modulation). With this mode, each tone is at a constant amplitude and can take on one of 2 phases (one phase 180 degrees from the other). Since we are sending 4 bits of information with each symbol (one bit on each tone), the bit data rate becomes 125 (4 times 31.25) bits per second and the symbol length is still 32 milliseconds. Compare this with AMTOR (100 bits per second, symbol length 10 milliseconds).

CLOVER supports 10 different data modes from the very robust 4-Channel Diversity BSPM (31.25 bps) to the relatively fast 16 Phase, 4-Amplitude Modulation (750 bps). The CLOVER system changes from one to the another of the modes as the band conditions allow. The mode that a station is transmitting in is controlled by the other (receiving) station. Depending on conditions, each station may be sending in a different mode. Like I said, "Smoke and Mirrors".

MORE SCAN STUFF

Here is yet another scan circuit for those of you that do not want (or care) to dig inside your radio for connections. It makes use of the mike up/down feature that is available on many rigs. Also included on the circuit is a watchdog timer which will open the PTT line after about 2 minutes of key down.

The circuit is composed of 3 NE555 timers (refer to drawings on facing page). The first, U1, is used to set the delay desired for restarting the scanning after a contact has been completed. Normally this is set to about 15 seconds or so. The RC constant of R2/C1 set the time. R2 is shown as a variable resistor if you care to be able to change the delay time. When a PTT grounding is received from the controller pin 3 of U1 goes high. This causes D1 to turn on and Q2 to conduct. While Q2 is conducting, Q4 is turned off, preventing RY1 from being actuated. So while PTT action is being received at the base of Q1, and for the delay period after cessation of PTT action, RY1 cannot be actuated. This prevents the mike up action during this time.

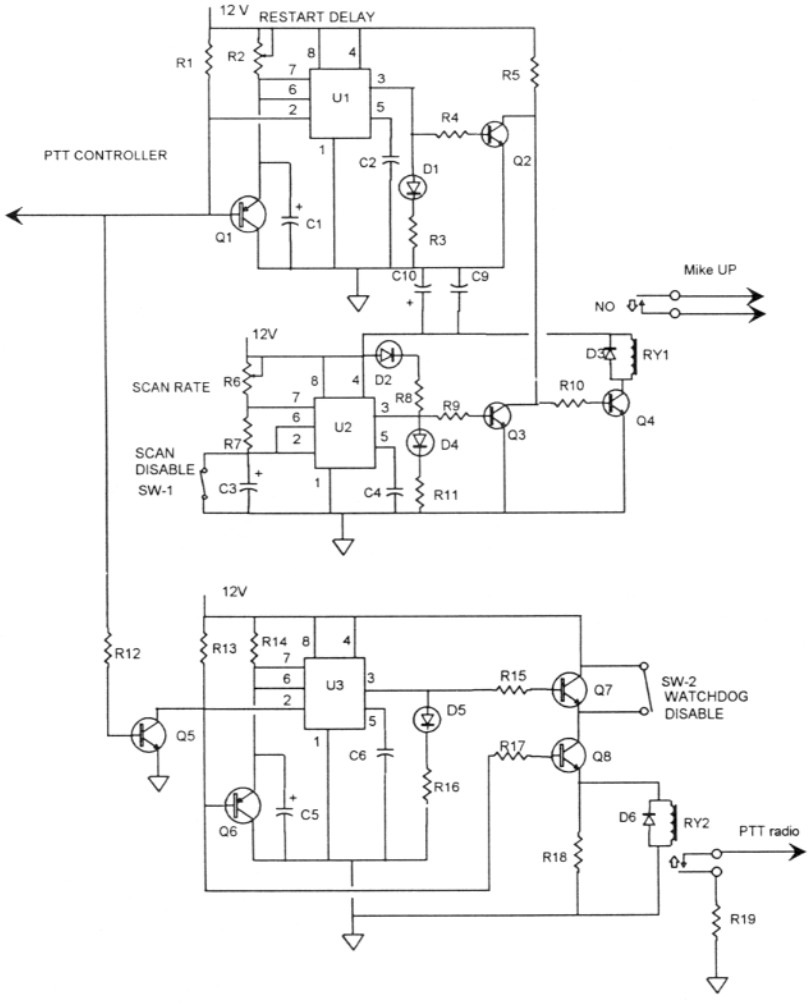
U2 and associated components are for a timer which determines the rate at which the mike up button is pulsed during the receive (scanning) period. U2 is wired as a pulse generator. R7 (with C3) determines the length of the pulse, and R6 plus R7 (again with C3) determine the pulse repetition rate. D2 and D4 flash alternately as the pulses are sent to RY1. If Q4 is not turned off by a signal from Q2, the pulses from U2 causes RY1 to pulse the mike up button of the radio. This pulsing will continue until PTT action start U1 up.

The watchdog circuit is U3 and associated components. This circuit was described in the December 92 issue of RTTY Journal so I won't repeat it here.

73 and GOD BLESS

de **Jim, KE5HE** at KE5HE.TX.USA.NA

MIKE UP SCAN CIRCUIT
KE5HE/W4NPX JAN 93



Parts List KE5HE/W4NPX Mikeup Scan Circuit Jan 93

R1, R5, R13, R18 4.7K
R2, R6 1M
R3, R8, R11, R16 1K
R4, R9, R10, R12, R15, R17 10K
R7 30K
R14 2MEG
R19 100

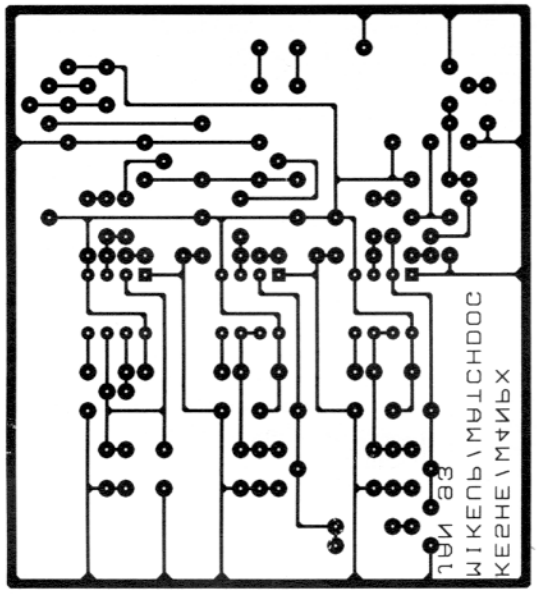
C1 10MF
C2, C4, C6, C9 0.1MF
C3 4.7 MF
C5 100MF (Tant)
C10 100MF (Elrct)

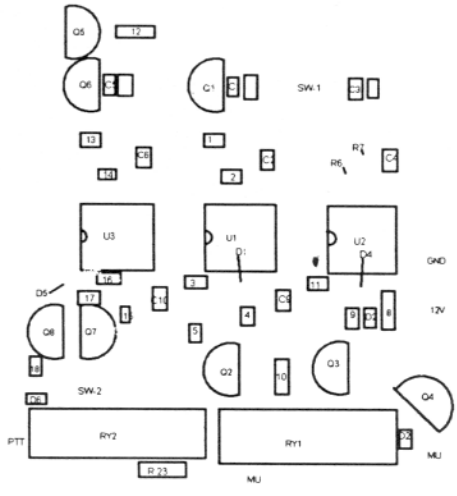
D1, D2, D4, D5 LED
D3, D6 1N914

Q1, Q6 2N3906
Q2, Q3, Q4, Q5, Q7, Q8 2N3904

U1, U2, U3 NE555

RY1, RY2 SPST REED (RS #275-233)





Parts Placement

ARUBA CALLING

Eddie Schneider, G0AZT[1]

CQWW/RJ RTTY contest from Aruba

In the 1991 CQWW/RJ RTTY Contest, AA5AU, Don and I had operated multi-single from Antigua (V2). Despite many equipment problems, we managed to get a second place WW, being beaten by the guys at UZ9CWA, who did a fantastic job on the low bands!

For 1991, I had different ideas! It does not take a degree in mathematics to realize that an attempt to achieve an outright win and mount a serious attempt at the world record, set by HD8EX, would require an "exotic" island, gain antennas, more than 100W output and that the QTH would have to be in the South American continent to take advantage of the 3 points per contact. (outside one's own continent).

Checking with some of my RTTY DX friends and using my own "on the air" experience of which country was relatively "rare", Aruba was chosen as the destination.

By a stroke of luck, I noticed that Nao, NX1L had operated from P4, so a letter to him resulted in valuable information about a complete, purpose built station available for 500 dollars a week, from A16V (alias P40V). A phone call to my good friend Don, brought forth the following comment, "Oh yes, I saw the advert in QST, shall we go?". Hmmm, great minds think alike??

Planning for the trip went into high gear. NX1L had kindly sent me a license application form, which I duly filled in, requesting the contest call of P4ORY and faxed copies to Aruba, PTT in February. A phone call to them in March, confirmed that the callsign had been approved and valid from 23rd until 30th September. I could use the contest call before and after the contest, which would save printing two different sets of QSL cards and maintaining two separate logs!

Recruitment of more operators was next on the agenda. Ron, KP2N had previously shown an interest in accompanying Don and I on our next venture. Ron was contacted and welcomed aboard, provided that he could assure us that KP2 would still be active in the contest. We did not want to lose a possible multiplier if Ron was the only active teletyper in the U.S. Virgin Islands. (hi). Harry, KG5EG (ex-HL94Y, nice call!!), was approached because of his experience in working pile-ups from Korea, his successess in previous contests from his home QTH in Colorado and he was willing to bring along his new no-tune Alpha amplifier! Sadly, Harry's military duties prevented him from accompanying us.

Barb, N4LIH, whom I had met at Dayton was also recruited and after a few "persuasive chats" with her OM Gary, agreed to accompany us, on the understanding that she would not have to do ALL the cooking and dish-washing! Unfortunately due to family illness, Barb had to eventually pull out. Frank, NOFMR whom I had also met in Dayton was asked to join the dwindling team. After less than a week of "consultation" and lots of "honey-do's" from his wife Gladys, Frank accepted and we were back to four operators. A possible fifth operator, Noel, KB5BK who also had a nice big amplifier, was next in line but he landed up in hospital for some surgery to a delicate part of his anatomy which required many hours of convalescence, sitting on a "whoopie" cushion.

The next problem to resolve was what equipment to take with us. I wanted to make sure that we had back-up gear for the back-up gear, knowing that Murphy's Law tends to strike at the most inconvenient times. I had exchanged my TS44OS for an IC-751A, anyone who had worked me from VP9 would understand why! Meanwhile, Don had also acquired an IC751A to take the place of his aging FT7576X, so having similar rigs would be an advantage when it came to operator changeovers.

Due to the variety of equipment used at each "home" QTH, it was agreed that we would use the old but reliable C-64, CP-100 and MBA-TOR software for the rate station. Logging would be done by Don's laptop and WF1B software. The spoting station would use Ron's laptop, also with WF1B and keep a separate log of new multipliers worked. Don had come up with the idea of having the main logging computer linked via his KAM, to the rate station's audio in/out. This meant that the logger could see who the rate station was working and immediately log the contact without any verbal communications. This system came in very useful in the pile- ups, sometimes the KAM picked out a callsign before the CP- 100 did and vice versa, so the logger was a great asset in spotting a possible new multiplier in the alphabet soup on our screens. Don and I had done a trial run using this set-up, in the SARTG from his QTH and it had worked very well. (3rd World-Wide and 1st USA, multi-single).

Equipment wise, things were beginning to take shape in the form of 2 IC751As with internal PSUs, a TS930S already on site, 2 C-64s, 2 laptops, CP1/CP100, 2KAMS, spare a 25A PSU, Don's trusty SB200 and an Alpha 78, completed the list. Hardware on site consisted of three towers, 4 element monobanders for 10, 15 and 20m, 2 elements on 40m, a 3 element Tribander and a dipole for 80m.

On the 23rd September the group met in San Jose, Puerto Rico and continued on to Aruba arriving in the late evening.

Aruba is approximately 19 miles long by 6 miles wide. On a clear day, the coast of Venezuela, 20 miles to the South, can easily be seen. Credit for Aruba's discovery in 1499, has been given to a Spaniard, Alonso de Ojeda. In 1634, by right of conquest, the Dutch took over and despite attempts by the French and British, Aruba has remained a Dutch possession. In January 1986, Aruba became a separate colony within the Kingdom of the Netherlands, hence it's separate DXCC country status. Tourism is now the main source of income, although there is also an oil refinery on the island, which no doubt helps the island's economy. In the past, race horses and aloe plants were the main exports. Despite periods of heavy rain, all water for the island is de-salinated and therefore very expensive, as is electricity.

Temperatures range for 20-35C and the sun shines everyday of the year. Most Arubians are multi-lingual, speaking Dutch, English, Spanish and the local language, Papiamento, which is a mixture of all the above, plus some Portuguese and West African thrown in to confuse the tourists.

I was welcomed to the island by a Customs search of my luggage after the officer noticed that my suitcases appeared to be a lot heavier than the average tourist's. After some discussion, making a list of serial numbers and giving an assurance that the gear would be taken out of the country, I was allowed to proceed. We were met by A16V's ambassador, Lance, P43LWP who soon realized that his station wagon would not be able to carry five people and after a 15 minute drive, we arrived at the house in Sabana Basora. After a quick survey of the bedrooms and other amenities, we began to assemble the two stations. To our horror we discovered that when one exciter was on 20m, the phase noise produced, made the other rig on 15m, totally unusable! Ron had brought along some in-line filters but they were not capable of handling high power. Deciding which class to enter now became and even bigger problem. We went to bed somewhat disappointed!

The next morning, a visit to the licensing people was arranged and within an hour and $45 less in our pockets, we had all the paperwork required. Back in the shack,

Ron had been busy fitting the power supply into the Alpha amp and then we hooked up both amps to the rigs for further tests. Tour delight, no QRM/TAVI/RFI at all! Something to do with low exciter drive (15w), equals minimal phase noise and clean amplifiers helped to eliminate our earlier problems, We were ready to go!

After some discussion, we decided that a maximum multi-single effort would be our best bet. With near perfect conditions to the States on the three H.F. bands we would be hard to beat, provided propagation remained stable and assuming we did not have any power cuts, as we had no standby generators.

Zero hour on the 26th arrived and I picked a quiet frequency above W1AW's usual haunt on 20m. After three lengthy CQ calls, ????? was the first in the log.A QRZ or two produced nothing! Was this a bad omen?? After a few minutes of sparse contacts, up popped the Packet QRM, dead on our frequency and par for the course! It is beyond my comprehension that these stations can just come on a frequency that is in use and get away with deliberate QRM without any action being taken against them!

A quick QSY produced some great pile-ups which seemed to go on until 20m closed. Meanwhile, the spotting station was hunting and pouncing on anything with a callsign that produced RF and proved to be a new multiplier. This procedure went on throughout the contest. The pile-ups on the higher frequencies were pretty steady and after 36 hours of operation, we had provisionally broken the world record. Our sights were now set on creating a score that would, hopefully, remain unbeatable until the peak of Solar cycle 23! We kept the exchange very short, 599-09 with the callsign of the station we wanted to work, before and after the exchange. This worked out very well for us and I doubt if we had more than five requests for a repeat of the exchange. Band conditions were exceptionally good throughout the 48 hour period with some nice "DX" calling in.

All the equipment worked well, no power failures and only one major crisis occurred when the logging computer crashed during the 40/80m late night, early morning shift. It took Ron and Don an hour or so to get everything back on line. Thankfully, Frank and I were asleep because I am sure that Don must have invented some new swear words which would not be found in any dictionary!

Our results, subject to confirmation, 2222 contacts and 536 multipliers for a score of over 3.54Meg. We know we missed a few multipliers but there is always a next time!

Finally, I would like to thank: AI6V for having such a great QTH available, NX1L for supplying the initial information, Aruba PTT for the contest call, PR3LWP Lance and his family for their assistance. WA6AHF for the QSL cards, Don, AA5AU for taking over the tasks of checking the logs for submission and becoming the QSL manager, after U.S. Immigration decided that I ought to extend my visit in Aruba and then return to wet and cold G-land for a while. Many thanks to everyone who made contact with us on as many bands as they could. Without your assistance, we would never have achieved our goal. A not least, to NOFMR Frank, who I understand, is still pinching himself, thinking that it was all a dream!

QSL cards for ALL P404Y and PR/GOAZT activity, should be sent, direct only, with return postage please, to AA5AU callbook address. Any cards already sent to Box 5194 Richmond, CA. 94805 will be forwarded to Don. Any direct only requests for VP5/C6A/V2/VP2M/ VP9/GOAZT and ZF1RY will be sent out in March/April 1993. Please do NOT send cards to my "home call" in England. 73 GL and DX

de **Eddie, GOAZT** ■

1 60 St Leonards Farm Park, Ringwood Rd, West Moors, Ferndown, Dorset, England, BH22 0AQ

MSOs

Dick Uhrmacher, K0VKH
212 48th St
Rapid City, SD 57702

Hi Gang! Well, I hope that Ol' St. Nicholas was kind to everyone, and that you all enjoyed a very happy Christmas Season. We've been fortunate to have some snow cover this year, and a white Christmas is always nice.

JOHN TROOST, TG9VT, IS A SILENT KEY

The digital community and Amateur Radio in general lost a friend and compatriot with the passing of John, TG9VT. He was one of ham radios finest, and his helpful and charming presence will be missed around the world. John was one of the original members of the National Auto-Start Frequency on 20 meters, and as with his later AMTOR/APLINK signals, his RTTY voice boomed out of Guatemala for many years. A stalwart friend, one who's interest in serving others came first, John always was willing to assist in any manner he could. I'll miss the friendly roundtable QSOs with John, as well as our conversations at Dayton. Our sincere condolences go out to his wife Chiqui, and the other members of his family. God speed John Troost!

COMPUTERS IN THE HAM SHACK

A major part of my business is the marketing of personal computers, and I have gained quite a bit of first hand knowledge in utilizing these wonderful (and some times frustrating) machines in the ham shack. Although there is no shortage of artic les describing how to do "this or that" with computers, I frequently hear from individuals who are more than just reticent about moving into "the computer age." There appears to be some trepidation on their part, primarily based upon some thoughts of highly complicated machinery, mysterious codes, and a learning curve best accomplished by a college sophomore. Consequently I thought I would take pen in hand and jot down a few things that the computer novice might want to consider, when he's conte mplating installing a computer in the ham shack. These thoughts are not all inclusive, refer mostly to "IBM compatible" computers, some are arguable depending upon the individual use of the computer, and my thoughts should be considered as "very basic" when it comes to the huge subject of personal computers.

1. COMPUTER CASES

First and foremost, ANY computer installed in the ham shack should be enclosed in a good quality, METAL case! The close association with transmitters, even those of low to moderate power, will assure difficulties unless the computer "motherboard" and its associated components, are well shielded by a metal case. Secondly, as with any electronic component utilized in the ham shack, (and most anyplace else), a good, low impedance ground attached to the case is a prerequisite. Not only will a good ground protect you from accidental electrical shocks, but it will also go a long ways in shunting RF and other electrical pulses to ground. These RFI sources are the major difficulty in utilizing a computer in the ham shack, and if they can be harmlessly shunted to ground, this battle is mostly won.

There are several styles of computer cases available these days. Mini- towers, full-sized towers, desktop cases, etc. Picking a computer case style is greatly dependent upon what utilization is intended. For example, if limited space is a problem, then a smaller mini-tower may fit your needs exactly. If you have visions of multiple floppy drives, flopticals, CD drives, tape backup drives, etc., then a larger full-sized tower with several exterior slots may be needed to accommodate these add itional devices. Tower cases generally are designed to be placed on the floor, out of the way, whereas the desktop versions are usually placed at desktop level for more immediate access. Either style will do the job, but a little advance planning will save some room in the shack.

2. COMPUTER POWER SUPPLIES

Computer power supplies are much like the engines in automobiles. They come in various sizes, shapes and capacities, from basically 250 watts, up to one-kilowatt. A Ford truck with a in-line six-cylinder engine is very economical to run. But, if you attempt to haul a couple of tons of sand utilizing that engine, you'll find out quickly that it's not designed for that purpose. So goes it with computer power supplies. If your "bare bones" computer has only a couple of floppy drives and a motherboard to support, then the low-end 250 watt power supply, (unfortunately the standard supply provided in a lot of personal computers), will most likely suffice. But, let's add a 130 megabyte hard drive and controller board, a tape backup unit, a VGA color board with a megabyte of memory, a couple of full sized RTTY/AMTOR boards, and a outboard packet TNC, and your 250 watt supply is starting to strain to keep up. The more it works, the more heat it generates, and it's usually heat that is the cause of most computer power supply failures.

Computer power supplies usually come with some kind of small fan to help in dissipating heat generated by the supply itself, and on a limited basis, the heat from other components within the computer case. Periodic observation and maintenance of these fans is only prudent. I have seen several cases where the fan stopped working, and in very dirty environments, became so covered with dust and debris as to be worthless. Take a few seconds periodically to make sure that your power supply fan is in fact working, and that the impeller isn't so dirty as to be ineffective in moving air through the supply.

3. FLOPPY DRIVES

Floppy drives are usually described as a drive which has removable media, usually a "diskette" of some nature. As with power supplies, they come in various sizes and capacities. It is at this point in deciding upon how to configure your computer, that you must make some basic decisions concerning your present and future use of this computer. For example, will you be using this "ham shack computer" for other household/business/entertainment uses, or will it be more or less restricted in its use to amateur radio activities? If you plan on using this computer for extensive word processing, graphics, multi-tasking, (running more than one application at a time), bookkeeping, etc., then a combination of both floppy and hard drive storage devices should be utilized. However, due to recent advances in floppy drive capacities, if your use of this computer will be limited to running single ham radio applications, without benefit of Windows, Desqview or other multi-tasking, then a couple of high-capacity floppy drives may suffice for your application. One should be aware that there are ham radio software applications which REQUIRE the use of a hard drive, and being limited by a "floppy only" computer may be a distinct disadvantage. Floppy drives come in 360K/1.2 MB (megabyte), 720K, 1.44 MB and 2.88 MB formats. Generally speaking, if your new computer contains a 360K/1.2MB and a 1.44 MB floppy, you will have both the flexibility and capacity to store, install and in many cases, run most all ham radio programs, (excluding large callsign data base programs, etc.). If your collection of ham radio software becomes so vast that your floppy will not accommodate all of them at one time, then "archiving" some of the lesser used programs to diskette will normally free up enough space for convenient operation. The new 2.88 MB hard drives, (be sure the BIOS of your new computer supports the 2.88 MB format), provide even more storage space flexibility.

4. INTERNAL HARD DRIVES

It is my observation that ordering a new computer without some form of internal hard drive, (be it ever so small), should be steadfastly avoided! The vast storage capacity and fast data access of these devices, as compared to a floppy device, makes the additional expense well worth it. Hard drives are not without their problems, but even the least expensive drives have a 30,000 hour MTBF (mean time between failure) rate, and their usefulness far outweigh their problems. (Many hard drives have much greater MTBF rates). If your ham shack computer is destined for just "ham radio" use, then a 40 MB hard drive will in most cases be adequate for your needs. If you want to add Windows, a callsign data base, (they can be as large as 20 MB!), do some multi-tasking, etc., then an 80 MB hard drive will most likely be adequate. And finally, if your new computer is to be used for all of these tasks, plus graphics, desk top publishing or extensive word processing, keeping the books on your business, etc., ad nauseam, then consider a 120 to 130 MB drive. From my own experience, I've found that I never have a hard drive that is large enough. I'm constantly archiving files to floppy disk to make room for some other program that I can't live without. Don't be confused by terms such as RLL, IDE, SCSI, etc. Most all of the newer personal computers contain the IDE format hard drives, which simply means that the majority of the electronics necessary to support the drive are internal to the drive , rather than being on a separate controller card. The operation, maintenance, etc., differs little between formats, and once a real hard drive failure occurs, the guy in the field (meaning you), really has little that he can repair. Although I digre ss at this point, if I were to pick one Utility Program that I wanted to support my new computer, it would be some form of "backup" software. Hard drive failures will occur, it's really only a matter of how much and long you use your hard drive. And, if you do not have your hard drive data backed up, you will lose it, guaranteed!

In next months installment of the "MSO Column", I'll spend a little time talking about computer serial and parallel I/O's, memory requirements, keyboards, monochrome and color monitors, and color cards.

MSO RAMBLINGS

I'm very happy to announce that my long-time friend and MSO Sysop Brownie, K5FL, of Denton, Texas, is steadily recovering from some major surgery. He experience a ruptured gall bladder, and even for this robust 80 year old Texan, the road back has been a bit difficult. Brownie's MSO can be found on the National Autostart Frequency (14 085 625 Hz Mark). --- Frank, K4KOZ, of Boca Raton, Florida, has returned from a wonderful trip to Australia and New Zealand, and his MSO has returned to service. Frank has been playing with a new, super fast 486 computer recently. --- And finally, yours truly is in possession of one of the new HAL Communications PCI-4000 "PC Clover" boards, and hopes to be up and running on that mode in mid-December. I'm told that several of the prominent software authors are in the process of writing BBS type programs to support Clover, and maybe high-speed networking is really just around the corner for us. Stay tuned!

I hope that 1993 is a healthy, happy and prosperous New Year for you and yours. Let me hear from you! 73

de **Dick, K0VKH** ■

CLASSIFIED AD DEPARTMENT

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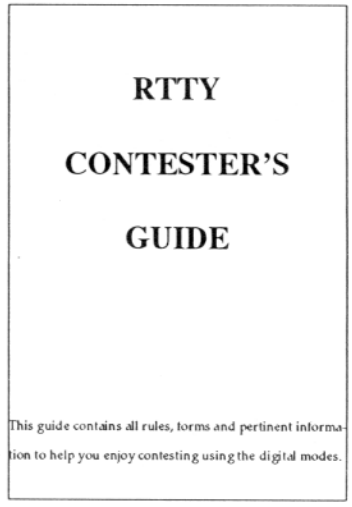

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