

RTTY

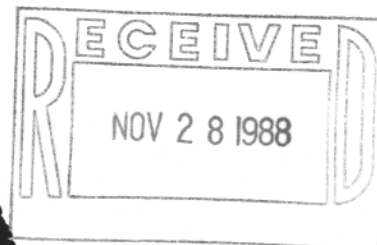
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JOURNAL

AMATEUR RADIOTELETYPE - COMPUTERS - PACKET

VOLUME 36 NUMBER 9

NOVEMBER 1988



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RTTY JOURNAL

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HITS & MISSES**THAT FREQUENCY LIST**

Back in the Jul/Aug issue I wrote about requests for frequency lists. In that issue I mentioned the Journal would publish such a list if you the readers supplied me with frequencies, shifts, etc. I'm sorry to report I have not received one listing from anyone. This November issue was to have included this list. We'll try again some time after the first of the year.

WCRDXA

The initials stand for West Coast RTTY DX Association. Being a member in good standing and a supporter of it's projects, I feel obligated to toot our horn. There is nothing special about this group except to further DX and Expeditions around the world. The most current project was to send a HAL Telereader with Victor, KD2HE who is on Bermuda operating as VP9/KD2HE. From there Victor was going to Melish Reef (VK9/M) and Willis Island (VK9/W). WCRDXA hopes these contacts will help many hams get a new one.

Also in the plans is to send the Telereader with Bob, KD7P when he next goes to Midway Island. This DXpedition has not been completely firmed up yet. There may be some logistics problems to overcome. However, nothing so serious that WCRDXA can't handle.

USSR QSL Routes

These routes are compliments of Carl, W6WZ who now resides in Kansas and via the WCRDXA Newsletter.

R12/UZ9FWR	BOX 3797, Perm, 614062
USSR	
UM0MWA/UL6T	BOX 240, Frunze, 720055
USSR	
UD/UA3PW	BOX 444, Tuls-21, 300021
USSR	
RD/RW3PW	BOX 19, Tula-19, 300000
USSR	
UW3TT/UJ1J	BOX 96, Gorki 403000 USSR
RA3AL/UA4F	BOX 615 Gen. Zebarev,
Moscow, 125130 USSR	
RJ2/UA9FF	BOX 4473, Perm 614087 USSR
UL0P/UZ9FWA	BOX N-30, Temirtau,
Kazakf SSR 472300	

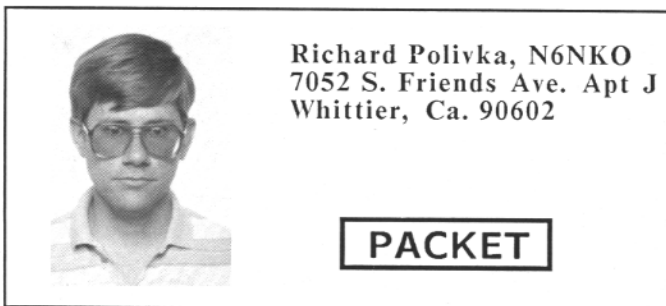
Pasquale Casale, YV5KAJ advises that QSL requests from the CQ/RTTY WW contest should go to the following address: Pasquale Casale, YV5KAJ, P.O. BOX 50240, Caracas 1058-A, Venezuela.

NEXT MONTH

Our December issue will contain the RTTY Journal AWARDS update. Also in the next issue will be our INDEX. Hopefully this year I will be able to go back a few years and include those yearly indexes for our new subscribers.

That's it for this month.

de Dale, W6IWO



BOUND UP

Who me? READ! Sure, why not. It is the wealth of this world that is held in books. We learn from them to inform others, and then read them over and over to learn something new. So with that, here are some books out on the market by two sellers of Packet equipment and here are my thoughts on both.

The first book is actually a set of three. They are "Introduction to Packet Radio" by Phil Anderson, W0XI, "Packet Command Handbook" and "Advanced Packet" both by Buck Rogers, K4ABT. The three books are all published by Kantronics. The first book mentioned has a preface that is directed to the commercial two-way user. The 41 page book goes through what Packet is without getting into the technical aspect of Packet. The general feel of the book is toward the business user as a way of moving data rapidly and error free. For someone who is not into the technical end of what Packet can do, this is a good book to start on.

The book, "Advanced Packet" deals with topics that are directly addressable by only the Kantronics line of Packet controllers. This book is aimed at the amateur operator and presents discussion on setting up multi-port LAN's (Local Area Networks) and their 2400 bps digit encoding. There is also a discussion on WEFAX and the PACFILE program. This book is geared to the user of the KPC-4 and the KAM TNC's. It would be a worthwhile addition to any Kantronics TNC owner's library. (It's hard to type when you have a baby in your arms.)

"The Packet Command Handbook" goes into detail on the TNC-2 style command set. The book also covers in detail the special commands that are inherent to the Kantronics TNC's also. This book is a good edition to any TNC user. (*Babies make funniest faces.*) The best use for this book would be to use it as a pocket reference to save fumbling through a

big manual out in the field or in the shack.

The last book that I will be covering is called "Digital Communications with Amateur Radio" and is done by Master Publishing for AEA. This book takes on a completely different course than the previous books. It starts out with what data communications is and how it works. Then it progresses to communication formats and then onto Packet. With this, one can learn how data is represented and processed into Packets. From there, it gets into the more specialized operations such as BBS's and LAN's. For one book, this is a good overview of data communication and how it applies to Packet radio.

I prefer the AEA book because it starts out better and gives the reader a background on what data transmission is and how it is applied to Packet radio in general. Obviously, all the books do end up with the particular manufacturers bent to them. They are all good reading.

TRAIN TRAVEL

The only kind of train travel that I like is when the train is on the rails and not oscillating between them. Now he has really flipped out (you're going to say) thinking that trains oscillate between the rails. Well, they do move from side to side which can be considered oscillation. Rail to rail oscillation is allowable in electronic circuits if you want it to happen but when it happens and you don't want it....

In the PK-232 of mine, there was a slight problem. I wanted to start using the mark and space outputs on the back of the unit and attach them to my scope for tuning purposes on the HF bands. Of course you all out there are thinking that there is a tuning indicator on the unit and it should work just fine. Well, it does work but you really can't tell how good the shift is from the LED indicator. So, when I hooked it up, I couldn't understand why I was getting a garbage display when there was no signal of any kind on the input. I found after some investigation, there was an oscillation occurring somewhere and it had the shape of going from rail to rail. So, time to track it down. It ended up at U28A. This op amp is wired up as a limiter. At pin 1 you could see how it was saturating. The fix was quite simple, I installed a .01 Uf mylar cap across R80 and that fixed the problem beautifully.

(cont. next page)

(PACKET cont. from pg. 3)

Now came time to adjust the HF filters on the input so that they would properly display the loops cleanly at 170 Hz shift. Side thought, 75 baud times two is equal to 150 baud and that number is less than the shift used for RTTY. Now with Packet on HF, we have 200 hz shift for baud. If we use the ratio for 75 baud and 170 hz shift and apply it to 300 baud, then the shift would end up being 681 hz (Are you listening Bill Henry?). Once I had the filters adjusted to give the proper loops, it worked great. By the way, the pots to adjust, and they do interact are R81 for the Mark and R96 for Space. Good luck should you decide to dive into this little ditty.

ENFORCED HARMONIC OPERATION

Well, as Dale eluded to in the last issue, I am now a daddy. Maybe that will be my ticket to improve the station around here. My wife said that she hopes Natalie will learn all of that stuff because it is a way to go. Now in order to teach one something, one must have the proper tools, 386 PC with 2 meg RAM, UNIX, TS-440AT, a beam, a better fist and car, etc. I am sure you get the drift. Ahum! Ahum!

MAIL

I received a letter from Chris Kringle, VE6CMN from the Southern Alberta Institute of Technology in Calgary, Alberta. Lovely town and a great Winter Olympics to boot. My hat is off to you all up there. He has a RTTY BBS on 3.632500 Mhz with more commands than his Kantronics KAM which includes the Personal Mailbox option. He is asking where he can get a program that can be driven by his PC and work into the KAM. Well, I am trying to get my hands on the latest copy of the WORLI BBS and the WA7MBL BBS programs so that I can send them to him. That way, he will be able to play with both of them and see which is more to his liking.

I also want to thanks Chris for the kind comments about the column. So, if there are any questions, I will try to answer them to the best of my abilities or at least maybe refer you to someone who can solve the problem...

PROBLEMS

I was cruising the 20 meter RTTY sub-band one day a week or two ago and found a KO, N6, and a KB5 using Packet in the RTTY subband and the funny thing was that they were using UPPER sideband. No one that I

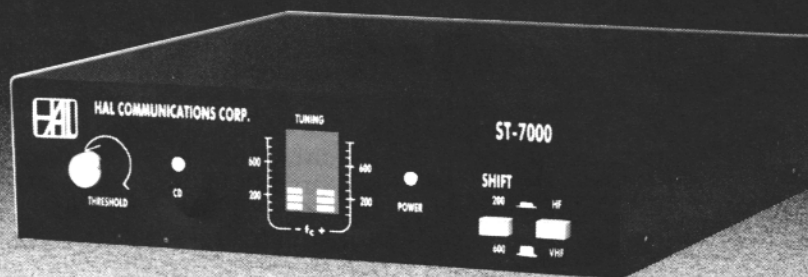
know of uses USB for RTTY or Packet. Evidently they were not paying attention. So, I hope that we can follow the "gentleman's agreement" when it comes to subbands because then everyone will be better off as a whole.

WARNING

Antenna party is scheduled for this QTH in November. Butternut on the roof and now time for me to upgrade so I can get on 20 meters and also I am planning to become a MARStian. Have a nice month and hopefully I will be able to get together with some of you on the lowbands real soon. 73 de Richard, N7NKO (never kill owls)

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Dick Uhrmacher
K0VKH
212 48th ST
Rapid City, SD.
57702

MSO'S

Hi Gang! Can it really be Winter already? Where has this Summer disappeared to in such a hurry? It seems just like yesterday that we were at the Dayton HAMVENTION, enjoying those beautiful Spring days in the Ohio Valley. For me the time went by quite quickly, as I was on the sick list for a couple of months, but for all of my friends who ask, I'm back to good health again, and doing all of the things I did prior to my heart surgery.

I'd like to start this months MSO Column out with a reminder that this column depends greatly on input from those involved in RTTY, not strictly MSO or Mailbox type activities, but anything of interest for those who enjoy our mode of operation. If you have an interesting project that would be of interest to our readers, or would like to share an interesting experience, or provide technical information relative to RTTY, please take pen in hand and drop me a line at my callbook address, or to the RTTY Journal. It doesn't have to be typewritten, in final form or qualify for a Pulitzer Award! Just write it up and I'll see that it gets published.

And speaking of letters, I have received two letters recently asking that I publish a current list of those MSO'S presently residing on the National Autostart Frequency, (14 085 625 Hz Mark), and I will include that information in this months column. If my calculations are correct, next year will be the 11th year of operation on that frequency, and the Sysop's of the various MSO's are to be congratulated for their continuing dedication and service to their fellow Amateurs.

I received a very nice letter from Jerry Trichter, W4IUF, noting his plans for his upcoming move to Bradenton, Florida. Jerry, and his XYL Annette, are now planning to leave for Florida in the November time frame, and we wish them a safe and speedy journey. Jerry speaks of having "withdrawal pains" recently, due to his absence from the RTTY

scene. But the good news is that he has secured tentative permission to put up a vertical antenna in the back of his condo, and expects to be back on RTTY soon. Additionally, Jerry and some of the other CBMS stations have decided to join forces with the National Autostart Frequency in the near future. Welcome aboard to Jerry and anyone else who would like to provide a service on the frequency!

10 METER MSO'S

Gaylord Crawley, WB81CL, has provided a list of MSO's now operating on the 10 Meter Band. With the increasingly good band conditions on the higher frequencies, here's an opportunity for our DX friends to become familiar with MSO activities. The following MSO's are on 28 130 000 Hz carrier frequency, (28 127 875 Hz Mark): WB81CL, (access code is MSOICL), Yellow Springs, Ohio; WB8JIB, (access code MSOJIB), Yellow Springs, Ohio, and W7JHX, (access code MSOJHX), Tucson, AZ. These MSO's are presently operating at 45 baud, (60 words per minute). Gaylord notes that any other Sysop's who would like to operate a MSO or CBMS (computer based mailbox system,) on that frequency are more than welcome to join in.

VIC-20 and C-64 MSO/CBMS SOFTWARE

From time to time we receive requests for information relative to MSO/CBMS software that will run on the popular Commodore VIC-20 and C-64 computers. Bob, K1UOL, is running just such a system at this time, and provides the following information. "If you presently have a Commodore VIC-20 or C-64, and would like to run a mailbox operation, here is the information on the MSO Program presently being used by the K1UOL MSO. The program is produced by VID-COMM Communication, 311131 Foothill Blvd, #H, La Crescenta, Ca. 91214, telephone (818) 957-7550. This software will run on either a Commodore VIC-20, or C-64 computer. I have it running on a C-64 and find that it is disk intensive, meaning that all files are saved to disk as you log off the MSO. The MSO can contain about 50 messages in the typical C-64. The program contains a Basic Loader, and the main MSO program is written in machine language. The program works quite well, is easy to customize to your operation, and the operational format is very similar to the very popular HAL Communications MSO systems used on 20 Meters."

(cont. next page)

AMIGA RTTY PROGRAMS

Now here's an offer that's hard to beat. Ben, N4EJI, reports that he has terminal programs, as well as other programs that deal with Amateur Radio subjects. They are for the AMIGA computer, and are available free of charge. You can find them on COMPUSERVE, (AMIGA Technical Sig), or you can catch Ben on the air, or drop him a line at his callbook address. These programs cover SSTV, FAX (direct satellite FAX on 137 MHz), RTTY and Packet Radio, and are specifically designed for the AMIGA computer. If hardware is required, then information is available on how to either build or acquire same.

CURRENT MSO STATIONS ON THE 'NATIONAL AUTOSTART FREQUENCY' 14 085 626 Hz Mark

MSOICL YELLOW SPRINGS, OH
GAYLORD (513)-767-1692

MSOJIB YELLOW SPRINGS, OH
LOUISE (513)-767-1692

MSOVKH RAPID CITY, SD
DICK (605)-343-6127

MSOKOZ BOCA RATON, FL
FRANK (305)-994-1242

MSO9CD URBANA, IL
CLARK (217)-328-4241

MSOAPI MERIDEN, CT
AL (203)-634-0430

MSOZRR SAN LUIS OBISPO, CA
ERNIE (905)-543-7641

MSO5FL DENTON, TX
BROWNIE (817)-382-0351

GUATMAIL GUATEMALA
TG9VT) JOHN (HOME) 001-502-3- 01547

MSOJRQ GLENWOOD, IA
LARRY (712)-527-4427

MSOQXK KAUFMAN, TX
DON (214)-932-3595

MSOBSM NEW YORK CITY, NY
AL (718)-969-9866

MSOJHX TUCSON, AZ
JACK (602)-885-2260

Many of these MSO's contain "help files", (such as filenames "MSO HELPER 1", "MSO HELPER 2", "MSO NEWCOMER", and "MSO GOLDEN RULES"). which are specifically written to assist the novice MSO user. So, don't be at all hesitant about getting your feet wet in MSO operations. Jump in and you'll meet some of the nicest guys and gals in Amateur Radio!

That's it for this month Gang. I hope that each of you have a fine Winter season. See you on the MSO' -73-
de Dick, KOVKH

Aries-1
Amateur Radio Integrated Entry System

A
L
L
M
O
D
E

ID(Sta): U0ABC Name: CHAR City: DENVER State: CO
Date: 09-10-88 Begin: 21:05 End QSO: 21:02:22 Freq: 20.485.0
Type (mode): USB My RST: His RST: 69 Power: QSL:
Remarks:
Data: Data Base / Status Window
Status: ET/R1 [CLS] Manual Mode [CLDI] [S/F] [Q/u/X]

U0ABC DENVER CHARLIE
HOME BREV XNTR, 3 ELEMENT TRIBANDER, LIVES NEAR UNCLE JOE

Scratch-Pad
Term Unit I/O Window

CW/RTTY/AMTOR type ahead Window

1800MHz 2 RTTY 3 CW 4 AMTOR 5 PACKET 6 InMem 7 InMem 8 Clear 9 Log 10 Optns

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W6/G0AZT
1826 Van Ness
San Pablo, Ca. 94806

AMTOR

The "Pile-ups" at VP5 & Why the Turks and Caicos Islands?

For one, I needed it, but could not figure out a "legal" way to "Work" myself. Two, I did some ground work and nearly everyone I asked about where to go for a "rare" one on RTTY, from the Caribbean/West Indies area, came up with VP5. That was good enough for me and the ball started to roll, very slowly, in the true West Indies' laid back fashion.

The Turks and Caicos Islands are one of the last, "true Blue", British Crown Colonies left over from the "Great British Empire".

The group of islands, eight in all, lie between 21 and 22 North, 71 and 72 West, and support approximately 14,000 inhabitants. The islands were discovered by J. Ponce de Leon in 1512, they became Bermudian in 1678, Spanish in 1710, British in 1766, French in 1783, and in 1784 the Georgia Loyalists settled there. English is the "official" language, (thank goodness!), French and the local dialect, which is very difficult to understand, are also used. The currency is the U.S. dollar.

Providenciales or "Provo" to the locals, is the most western island, situated about 75 miles west of the capital island, Grand Turk. "Provo" which "runs" east and west, is horse-shoe shaped, 23 miles long and between 1 and 2 miles wide. Population is about 4501, the odd 1, was me!

All fresh produce and most other everyday items have to be air freighted in from Miami, which makes everything, very expensive! The local Chinese restaurant owner, frequently "commutes" to Miami and brings back a crate of fresh lettuce as "carryon" luggage.

There are "exotic" drinks called, "Provo Mama" and "Pink bitch", the latter is probably a distant relative of "Bloody Mary"?? Being a non drinker, I never tried them, but it was nice to have real English cigarettes again! Water is either de-salinated or collected rain water,

both taste okay. Because of the very alkaline soil, it is very difficult to grow fresh vegetables and fruit. Mains power is provided by diesel generators and was stable enough not to "crash" the computer once. My voltage spike/surge protector probably saved me from going "QRT", and leaving some poor DX-stn wondering "wha happened?".

I left Oakland, Ca. at 0745Z Wednesday, 12th October, en route to Miami via Dallas. A three hour stop over at Miami and I was on my way.

Arriving at Provo reminded me of the many years I spent in Africa. One short runway, baggage removed by hand cart and dumped in the Customs hall, very hot and humid, like walking into an open furnace, and a long wait to get out of the building.

Armed with my "pre-cleared" Customs form listing all the Ham "goodies" I had brought along, like one C-64C computer, two TNC's, pre-amp, outboard audio filtering system, spare parts for the C-64 (because they always go wrong at the most inconvenient time), numerous wiring harnesses, head-phones and more power supplies, I got to the Customs and had to unpack all my bubble wrapped gear, open suitcases and try to explain the "weird" looking plastic and metal boxes that were sandwiched between my clothes.

Once I had convinced the Customs guys that all my gear was not part of an A-bomb kit, I was let through and was met by a gent called Elli, who handed me a folder with my VP5 licence enclosed and apologized for not being able to get VP5RY etc. He then whisked me away to the hotel on "roads" that wear out tires every three months.

I stayed at the Erebus Inn, situated on a cliff, about 110 feet above the Atlantic ocean. A wonderful view of the ocean, with waves breaking over the coral reefs. I occupied one of the self-contained chalets on stilts which were set into the cliff side and faced north. The antennas, Cushcraft A-3 and butternut vertical, were already up, but to my initial horror, the IC751 and rotor box were still in the truck. No coax or rotor cable in sight. Boy, what had I got myself into? I was hoping to be on the air within two hours of landing! Elli then explained that I was the "pioneer" of this package deal and also the first Ham to "reside" at the hotel, but everything would be okay! Between us we ran about 150 foot of coax and rotor wire, through the bushes and down to the end chalet.

(cont. next page)

(AMTOR cont. from pg. 8)

I began to hookup the RTTY gear, hoping that I had not forgotten any of the patch leads etc. The adrenaline was running high and we threw the switches. Low and behold, lots of little lights came on, on all the gear. Before leaving California, I had an hour's "flying" lesson on the IC751 and had read the manual from front to back. The harness I had made up before hand, keyed the transmitter but I wasn't sure if I was producing any recognizable tones? Do I try FSK or AFSK?? Oh well, I decided to look for someone's call that I recognized and give him a shout, seemed like the best thing to do?

Tuning around on 20 mtrs, I found KT1N, Roy, UT5RP, Dima, and KP4BJD, Gabriel, having a three-way and I could print them all. I "broke" to Roy seeing as he was the loudest. Deathly hush for a while. PANIC, was I getting out or just dumping a carrier on the menage-a-trois? Then KT1N came back and he had the dubious distinction of being the first contact "in the log" at 2328Z. Whew, what a relief, I was on the air, within three hours of landing, tones were good and the correct way up, what more could I ask for? I cleared with Roy who kindly let me stay on the frequency and I called QRZ. All hell broke loose.

It just goes to show, there are always some "wiggers" around and lots of guys crawled out of the woodwork, all at the same time!

The USA was wall to wall and very loud, I THEN discovered that the IC751 had NO filters at all! I tend to tune by "ear" rather than use the LEDS in the CP-100, so you can imagine what I was "hearing". I went "split" to try and sort out some of the mess, listening up 3. Those of you that tried the "DX-trick" of calling just a little up or down off my 3kcs RX freq., did me no favours, but then I suppose you were not to know that the rig was "filterless"? Hi

The first four hours of RTTY operation netted 113 contacts. That works out at one contact every 2.1 minutes and included sending my QSL info at regular intervals, to ensure that no one sent their cards to my CBA, which is no good. 38 hours without sleep was beginning to tell on me, so I closed down at 13042Z. I appeared to be the only resident at the hotel. It was probably a good thing because the sound of mark and space tones travel very well in the still of the night. Besides crickets chirping, (reminded me of ARQ!) and QRM from a mega-watt amplified reggae style band

on the Friday and Saturday night, things were pretty quiet.

After a very restless night and only 5 hours sleep, I decided to have some fun on 10 mtrs SSB. Nice pile-up, some USA stns, then lots of Euros for two hours. A short break, to buy a can of coke at \$1.50 US a throw, and then I tried 15 mtrs RTTY. After 3hrs 45mins, with a break of an hour to take in another coke, swat flies, spray the fastest moving ants I have ever seen and recover from the endless RYRYs the Europeans were raining down on me, despite reading them a very lengthy and time consuming "riot-act", which made no difference at all, I went back to the "sanity" of 10 SSB. I swapped from band to band, as conditions waned on one. I would try another, if I did not get much activity on RTTY, I went back to 10 SSB.

During the 4 days 18 hours that I was on the island, I had a total of 22 hours sleep and 15 hours of breaks to drink, eat and rest my tired finger, voice and bottom.

Total Rtty contacts: 699 (10/15/20m)

Countries worked: 48

	USA	VE	EU	SA	JA	AF	VK	AS	
20m	213	17	76	23	16	1	3	1	= 350
15m	58	6	103	3	1	1	1	-	= 173
10m	63	6	75	6	25	1	-	-	= 176

Total 10m SSB contacts, 788 with 39 countries worked.

COMMENTS ON THE OPERATION

Now that I have been on the "other" end of a pile-up, I can sympathize with the "DX" station's predicament, and why some operators just QRT after a short period of operation! The fact that I enjoy TTY contests and can recognize a lot of the TTY DX chaser's calls, really helped a great deal. One "esp" contact to YB5QZ, Anton, proved that!!

WHEN, Oh when! are TTY operators going to forget about sending RYs and just give THEIR call, in a pile-up or contest style operation???

I found the USA/VE stations to be the best behaved.

(cont. next page)

(AMTOR cont. from pg. 9)

Once they saw MY method of operation, they were truly great and very easy to work. Very few "breaks" and even fewer RYRYs. When I called for Europe only, I got Europe only!

Congratulations guys and many thanks for making my life easier and allowing me to come back to California with fewer grey hairs than I expected!

On the other hand, a lot of the Europeans just did not seem to realize that a string of RYs were no good for the log and wasted valuable time! I repeatedly asked for ONLY THEIR callsign, and wasted a lot more time reading them the "riot-act", to no avail! My comments about some of the European's operating habits are not in anger, just some frustration and constructive criticism, after all, it is to EVERYONE'S advantage to keep things short, allowing more stations to work the "new" one.

The JAs were very enthusiastic, band conditions to JA were only open for about one and a half hours on 10 mtrs, and the Woodpecker really had a field day, which did not help!

After trying "split" for a session or two, I decided that simplex was much easier for me. Without any filters, I could "hear" signals over most of the TTY sub-band and trying to find TWO clear frequencies would have taken forever. I picked out a call, sent it three times, gave his report and signed his call at least twice at the end of the contact with a couple of KNs thrown in, for good measure!

Once the pile-up realized my "modis operandi" my system worked well and I was generally pleased with the contact rate.

MEMORABLE OCCASIONS

1. Busting a big world-wide pile-up, with one call, to RJ1/UA9FM! Sorry guys, Heh heh! Tnx to the kind soul who told me about the RJ1.

2. A 4X6 stn, who I had already worked on 20 mtrs, asking me to QSY to 15 mtrs, in the middle of a huge pile-up, cos he "needed" me on that band!

3. 6W6JX, Jean-Louis, who nearly lifted the rig off the table with his "rock-crushing" signal on 20mtrs and then fooled me with a special call, 6V6AN, and an equally strong signal on 10 mtrs.

4. Me calling CQ and no takers on an open band and W2JGR (Jules), I think, popping in to say that "maybe I had worked 'em all?"

5. One or two stations giving me their rig, QTH, wx, and what they had for breakfast. Few and far between though, and it gave me time to light up a cigarette and stretch my legs. Hi

6. K2ENT on 10mtrs SSB, asking me, a confirmed key-board op., what I was doing on phone?

7. Being able to give a "new" one to a lot of very familiar and not so familiar TTY callsigns.

8. IOAOF, Joe, telling me that my IAO card was on it's way to me!

9. A "semi-rare" Asian island, callsign beginning with the last letter of the alphabet, sending me RYs!

10. Working the west coast USA with my beam to Europe, South America with the beam to JA and so on. Must have been all that salt water around, my 80 watts and "rarity" value??

11. Signing with a lot of stations with SK CL and QRZ, only to have them, come back not once, but twice, robbing others of a chance for a "new" one.

I had no time for sight-seeing, swimming in the lovely blue/green waters of the Atlantic, off-shore diving for Conch shells, surfing, billfishing, or riding a scooter or "push-bike" on the "roads", but then, I did not go to Provo to do any of that. It was a pure mini "DX-pedition" and I only wish that I could have afforded to stay there a lot longer! Maybe another time?

ACKNOWLEDGEMENTS

1. To Patti and Bob Cooper, (VP5DL), (VP5D), for the idea of setting up this package deal.

2. To Elli, whose USA call escapes me, for providing transport, helping to set-up the station, providing audio to the TV monitor, an angle poise lamp so that I could see the key-board when it got dark and telling me about the VERY friendly Dolphin called JO-JO, that prefers human females and gets very aggressive towards human males. I will let the more liberal minded readers work THAT one out!!).

(cont. pg. 22)

First ARRL RTTY Roundup Announcement

Packet—Baudot—AMTOR—ASCII

Many digital communication choices await participants in this year's *NEW RTTY Roundup*. This is the *FIRST* annual all-digital contest sponsored by the ARRL.

The object of the RTTY Roundup is to work as many digital stations as you can worldwide on any of the allowed digital modes within the allotted time period. QSO point totals are multiplied by the total number of different states + VE provinces + DXCC countries worked. So, it pays to try different bands to work into different areas. Remember, multipliers count only once (not once per band), but you can rework the same station on a different band for additional QSO points. You may operate more than one digital mode during the contest, but QSOs and multipliers may only be counted once regardless of mode.

One of the most exciting twists of this contest is packet radio. Packet stations are reminded that contacts for contest credit may not be made using digipeaters.

In addition to the competitive aspects of a digital-only contest, it is also a great chance to work new states, provinces and countries for awards.

Even if you've never operated an SSB or CW contest before, jump in—it's fun! You can read all about contesting and digital operation in *The ARRL Operating Manual* or *ARRL Handbook*, available from your local dealer or direct from ARRL HQ.

Getting Ready

Okay, you want to give the ARRL RTTY Roundup a try. What next?

1) For starters, carefully read the rules published here.

2) Get the proper paperwork. ARRL offers a package of forms to help you organize your contest entry. You wouldn't dream of doing your tax return on a sheet of notebook paper, right? Here's what you'll need:

- *Log sheets* for keeping track of your contest contacts. These special log sheets have spaces for all of the information that you need to record for each QSO.

- *Dupe sheets* to help you organize, in alphanumeric order, the call signs of stations contacted. If you fill out the dupe sheet as you operate, you can tell at a glance whether or not you've contacted a station before. You'll need one per band.

- *Summary sheet* to help you figure out your final score. The summary sheet is very important because it also helps us get your score listed correctly in *QST*.

Recommended HF Digital Operating Frequencies (kHz)

North and South America	Europe/Africa
3590 RTTY DX	3580-3620
3605-3645	
7040 RTTY DX	7035-7045
7080-7100	
14,070-14,099.5	14,080-14,100
21,070-21,100	21,080-21,120
28,070-28,150	28,050-28,150

Recommended Novice Digital Operating Frequencies (kHz)

10 meters: 28100-28150* suggested simplex packet-radio frequencies:
28,102.3
28,104.3

*Authorized power output 200-watts maximum for Novices/Techs only on the 10-meter Novice subband.

Starting/Ending Time Conversion

	UTC	EST	CST	MST	PST
Starts Saturday, January 7, 1989	1800	1 PM	12 PM	11 AM	10 AM
Ends Sunday, January 8, 1989	2400	7 PM	6 PM	5 PM	4 PM

Canadian Multipliers

Prefix	Province	Prefix	Province
VO1/VO2	NFLD/LAB	VE4	MB
VE1	NB	VE5	SK
VE1	NS	VE6	AB
VE1	PEI	VE7	BC
VE2	PQ	VE8	NWT
VE3	ON	VY1	YUKON

You can get your package by sending a no. 10 (business size) SASE (with two units of First Class postage) to ARRL RTTY Roundup Forms, 225 Main St, Newington, CT 06111. Each package includes one summary sheet, one dupe sheet and three log sheets. Each log sheet has room for 200 contacts. Feel free to make photocopies as necessary. Send for your forms package now so you'll have it in time for the contest.

Rules

1) **Object:** Contact and exchange QSO information with as many stations as possible on digital modes. **Any station may work any other station.**

2) **Contest Period:** First full weekend of January. Begins 1800 UTC Saturday, January 7, and ends 2400 UTC Sunday, January 8, 1989. Operate no more than 24 hours. Two rest periods (for a combined total of 6 hours) must be taken in two single blocks of time, clearly marked in the log.

3) **Modes:** Amateurs may use the following modes: Baudot RTTY, ASCII, AMTOR and Packet (attended operation only!)

4) **Bands:** All amateur bands 3.5 to 30 MHz (excluding 10, 18 and 24 MHz).

5) Entry categories

(A) **Single Operator, multi band**—One person performs all operating and logging functions. Use of spotting nets (operating arrangements involving assistance through DX-alerting nets, etc) is not permitted. Single-operator stations are allowed only one transmitted signal at any given time.

1. less than 150 W output

2. 150 W output or more

(B) **Multioperator, single transmitter only**—More than one person operates, checks for duplicates, keeps the log, etc. Once the station has begun operation on a given band, it must remain on that band for at least 10 minutes; listening time counts as operating time. Multioperator stations are allowed only one transmitted signal at any given time.

6) Exchange

For United States: Signal report and State.
For Canada: Signal report and Province.

For DX: Signal report and serial number, starting with 001.

Note: Both stations must receive and acknowledge the complete exchange for the contact to count.

7) Scoring

(A) **QSO Points:** Count one point for each completed QSO (anyone can work anyone). A station may be worked once per band for QSO credit (but not for additional multipliers).

(B) **Multiplier:** Count only once (not once per band), each US state (except KH6 and KL7), each VE province (plus VE8 and VY1) and each DXCC country. KH6 and KL7 count only as separate DXCC countries. The US or Canada do not count as DXCC countries.

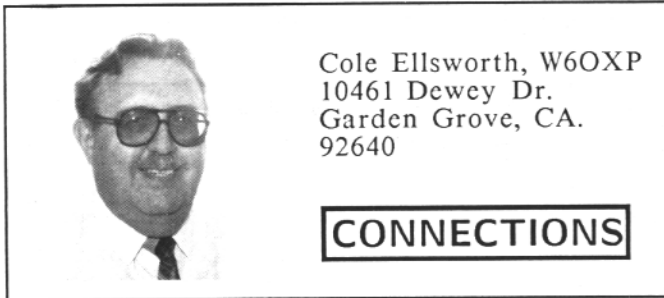
8) **Miscellaneous:** Crossband and cross-mode contacts are not permitted. Packet radio contacts made through digipeaters or gateways are not permitted.

9) **Reporting:** Contest forms (log sheets, summary sheet, dupe sheet) are available from ARRL HQ for an SASE with two units of First Class postage. Official forms are recommended. Any entry making more than 200 total QSOs must submit duplicate check sheets (an alphabetical listing of stations worked). Incomplete or late entries will be classified as check logs and are not eligible for competition or awards. Logs should indicate dates, QSO times, on and off times, call signs of stations worked, complete exchange sent and received for each contact, and band. Postmark your entry within 30 days after the contest ends (by February 8, 1989). Send entries to: ARRL Contest Branch, 225 Main St, Newington, CT 06111.

10) **Awards:** Distinctive certificates will be awarded to: Top high-power and low-power Single-operator and Multi-operator scorers in each ARRL/CRRL Section; Top high-power and low-power Single-operator and Multi-operator scorers in each DXCC country (other than W/VE); each Novice and Technician entrant; each entrant making at least 50 QSOs.

11) Conditions of Entry

(A) Each entrant agrees to be bound by the provisions as well as the intent of this announcement, the regulations of his/her licensing authority and the decisions of the ARRL Awards Committee.



with the way the microprocessor works. By the way, with the memory as shown in the first memory dump in Figure 1, if you should use the DOS transient program MODE to try to set COM1 through COM4, you will get error messages for COM3 and COM4 as shown in Figure 2.

So now we have an asynchronous serial port adapter card that can be hardware addressed to COM3 and COM4, so we look at the accompanying user's guide and, for example, find that COM3 is assigned I/O port address 338 and COM4 is assigned port address 238. We can insert these address in the space reserved for COM3 and COM4 by using Debug as shown at the end of the first memory dump in Figure 1.

At the Debug command prompt "-" type an "e" (for enter) and the address of the first I/O port blank location at location 0:404 and the least significant byte of your COM3 I/O port address which in this case is 38 (from 338) and hit the return key. Then, at the next - prompt, type the address of the next location (405) and type 03 for the most significant byte of the port address (remember, I told you the microprocessor likes the addresses backward) and hit return key again. Repeat this process for the COM4 port address (locations 406 and 407). Then we have to tell the computer that we now have four I/O serial instead of two. We do this by changing the value of the byte at location 411 which in the first screen dump in Figure 1 is 84. Now the 8 in 84 changes depending on how many printer adapters or if we have a joystick installed, so it may not be an 8 in your machine. However, the second digit is almost always either 0, 2, or 4 with 0 meaning no serial ports are installed, 2 meaning 1 serial port installed, and 4 meaning 2 serial ports are installed. We have to change this second digit to an 8 meaning all four serial ports are installed. As shown in Figure 1, we do this by typing " e 0:411 88" and hit return key once more. If we only had COM1, COM2, and COM3 installed as hardware, then we would make the second digit a 6 instead of 8.

Now, if we do a second memory dump from the same location of 400 HEX, we will see that the locations reserved for COM3 and COM4 now contain the addresses for our hardware and that the Installed Hardware byte at 411 now is 88. If you should now leave debug and use the DOS transient command MODE to set the COM1 through COM4 ports you should get the results shown in Figure 3. (cont. pg. 14)

Hello and Happy Turkey Day! No Dreadful Descriptions Delineating Demise Due Decapitation During Delightful Dinners. What's that I hear? - "Hey Turkey! Knock it off and get with the column!". OK already.

IBM-PC SERIAL PORTS - (continued from last month)

Taking up where we left off last month, the following is a step-by-step description of a tested method of adding DOS control of COM3 and COM4 serial ports to your PC or compatible. You will need a copy of the DOS transient program "DEBUG.COM" in the current disk directory of whatever disk drive you are using. The program is invoked by typing DEBUG at the command prompt. Figure 1 is a screen print of the program as it appears on your CRT screen.

After you type "debug" and return, the symbol "-" appears on the left side of the screen. This means debug is now ready to accept a command. We want to look at a specific memory location in RAM so we type " d 0:400" and return. The d is a debug command to display memory beginning at the address following the d. Because PCs and compatibles use the 8088/80286 microprocessors, memory is "segmented" into 64K blocks. The 0 to the left of the colon indicates to debug that we want to look at the first segment of memory. The 400 to the right of the colon tells debug we want to display the contents of memory beginning at location 400 (HEX). Unless told otherwise, debug dumps the contents of 128 bytes of memory beginning at location 400H. Note that in Figure 1, the first four bytes of memory are blocked out with comments. The first two bytes (400 and 401H) contain the I/O port address (3F8) for COM1 and the third and fourth bytes (402 and 403H) contain the I/O port address (2F8) for COM2. Note that the following four bytes are 00. This is the space in BIOS reserved for COM3 and COM4 port addresses. Please don't ask why the address in the screen display is backwards, it has to do

WIRELESS DATA RECORDER

AR1200

TECHNICAL EXCELLENCE IN DIGITAL COMMUNICATIONS

Mobile packet terminal



SPECIFICATIONS

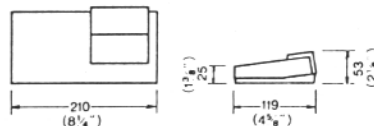
GENERAL

Protocol	AX.25 level 2
Modem	VHFF/AFSK
Processor	Z80 Software compatible
Memories	ROM 32K, RAM 32K
Communication speed	1200bps (wireless)
at RS232C terminal	1200bps (300-9600bps rate selective)
Power source	DC-12V +/- 15%
Current drain	700mA average
Operating temperature	0 - + 40 degree C
Storage temperature	- 20 - + 60 degree C

PRINTER

Printing method	Thermal head
Letter structure	7 x 5 matrix
Printing space	2 dots
Letter size	2.4 x 1.1mm Characters/Numerics/Marks
Characters per line	40 characters
Paper	Thermal sensitive only
Paper size	80mm +/- width 40mm diameter of roll

Dimensions: (mm)



Specifications subject to change without notice.



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(CONNECTIONS cont. from pg. 12)

In each case, DOS returns the command as a second line confirming the acceptance of the command instead of returning an error message for COM3 and COM4 set commands as shown in Figure 2.

There are still some problems remaining. Because we made the change in RAM and not in the BIOS ROM, we will lose the modifications we have made when we turn off or reboot the computer. There are two ways to handle this: one is to burn a new BIOS ROM with the changes we have discussed, or second, write a batch program using Debug to make the changes described. The batch program will then be run every time you turn on or reboot the computer. I hope to discuss these methods in a future issue if there is any interest. Also, there still remains the concern of running the com ports in Interrupt or Non-Interrupt mode. (No squawks now, you guys keep telling Dale you want technical articles, so now you are getting 'em)

References:

1. THE PROGRAMMER'S PC SOURCEBOOK by Thom Hogan, Microsoft Press 1988. Pages 183 and 396.
2. MICROSOFT MS-DOS version 3.3, User's Guide

COMMODORES AND CURRENT LOOPS

Seems to me there have been several requests in the past for computer-to-current-loop Baudot type printer information. Mr. J. W. Dates has sent us a circuit to provide just that for the Commodore C64 and VIC20 computers. The parts required are as follows:

- 1 ea 12/24 position edge connector socket to fit User Port
- 1 ea 14-pin IC socket
- 1 ea 7401 TTL integrated circuit
- 1 ea 150-ohm resistor
- 1 ea 1N4001 diode or equivalent
- 1 ea 5V DC REED RELAY (Radio Shack # 275-232)
- 2 ea 4-40 by 2" long machine screws
- 2 ea 4-40 nuts
- 1 ea perf board (0.1 inch grid)

Figure 4 shows the physical layout of the adapter and the orientation of the User Port edge connector on the right rear of the computer. The nuts on the 4-40 screws are drawn up tight on the edge connector socket and then several twisted wire loops are used to secure the perf board to the screws. Figure 5

shows the connections for the adapter. Note that only three connections are made to the User Port and two wires for the loop connection.

A program disk "Baudot Printer" is available from J. W. for driving the adapter/printer combination. Please indicate whether you have the C64 or the VIC20 or both. This disk is available for \$6.00 postpaid from J. W. DATES, RD#2 CATON Rd Corning, NY 14830.

Any of the old teleprinter machines (5-level Baudot) will work as a printer coupled to a C-64/VIC-20 with this interface and the Baudot Printer program. Thanks J.W., this should make more than a few C64 owners happy.

NEW PRODUCT ANNOUNCEMENT

Telebyte Technology, Inc., 270 E. Pulaski Rd, Greenlawn, NY 11740, (516) 423-3232, announces a Lightning/Surge suppressor that protects all 24 signal lines in the industry standard DB-25 connector. This connector is universally used for RS-232 and for the new EIA-530 communications interface (RS-530). The Model 27 contains 600-watt semiconductor protection circuits for each of the 24 signal lines. These circuits dump surges to a central ground stud on the bottom of the unit. The protection device will operate in less than 5 nanoseconds thereby saving the attached device from damage due to the transient. Since RS-232 and RS-530 have different voltage requirements, Telebyte offers two versions of the protector. The model 27-2 is used with RS-232 interfaces and the model 27-1 is used with RS-530 interfaces. The model 27-1 can also be used with MIL-STD-188-114 interfaces.

The Model 27 is packaged in a small plastic case and contains male and female DB25 type connectors allowing the Model 27 to be placed directly in-line. Either model is available in unit quantity for \$85 and OEM quantity for \$59. Available from stock, from Telebyte. (1-800-TELEBYT). (See picture page 21)

That does it for this month. Keep those letters and circuits coming, folks. TNX ES VY 73
de Cole, W60XP

```

C>debug
-d 0:400
0000:0400 FB 03 FB 02 00 00 00 00 78 03 78 02 00 00 00 00
0000:0410 61 84 A0 80 02 00 01 20 00 00 30 00 30 00 20 39
0000:0420 64 20 20 39 30 08 3A 27 34 05 30 08 30 08 0D 1C
0000:0430 0D 1C 64 20 65 12 62 30 75 16 67 22 0D 1C 00 10
0000:0440 85 00 FF 01 0E 91 00 A3 20 03 30 00 00 10 00 00
0000:0450 00 08 00 00 00 00 00 00 00 00 00 00 00 00 00
0000:0460 07 06 00 D4 03 29 20 4E 00 30 00 00 26 66 17 00
0000:0470 00 00 84 00 00 01 00 00 14 14 14 14 01 01 01 01
- e 0:404 38
- e 0:405 03
- e 0:406 38
- e 0:407 02
- e 0:411 88
-d 0:400
0000:0400 FB 03 FB 02 38 03 38 02 78 03 78 02 00 00 00 00
0000:0410 61 88 A0 80 02 00 01 20 00 00 22 00 22 00 30 08
0000:0420 0D 1C 34 05 31 02 31 02 20 39 38 09 38 09 0D 1C
0000:0430 20 39 64 20 20 39 30 08 3A 27 34 05 30 08 00 10
0000:0440 4C 00 FF 01 0E 91 00 A3 20 03 30 00 00 10 00 00
0000:0450 00 16 00 00 00 00 00 00 00 00 00 00 00 00 00
0000:0460 07 06 00 D4 03 29 20 4E 00 30 00 00 BF 68 17 00
0000:0470 00 00 84 00 00 01 00 00 14 14 14 14 01 01 01 01
    
```

Figure 1

```

C>mode com1: 1200,n,8
COM1: 1200,n,8,1,-
C>mode com2: 1200,n,8
COM2: 1200,n,8,1,-
C>mode com3: 1200,n,8
Invalid parameters
C>mode com4: 1200,n,8
Invalid parameter 'com4'
C>
    
```

Figure 2

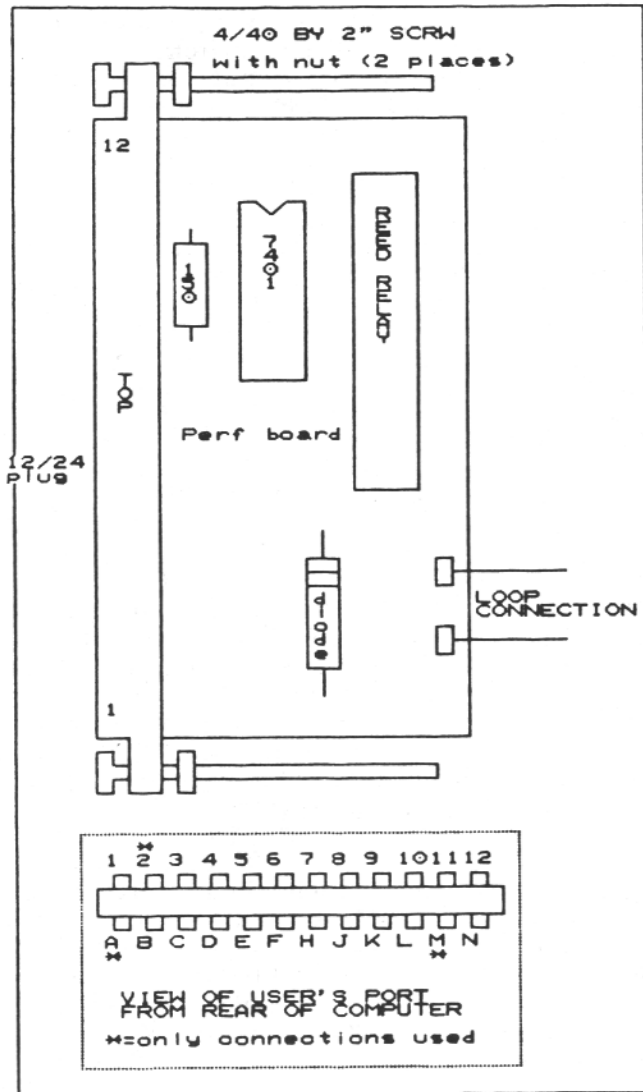


FIGURE 4. BAUDOT PRINTER LOOP ADAPTER LAYOUT VIEWS

```

C>mode com1: 1200,n,8
COM1: 1200,n,8,1,-
C>mode com2: 1200,n,8
COM2: 1200,n,8,1,-
C>mode com3: 1200,n,8
COM3: 1200,n,8,1,-
C>mode com4: 1200,n,8
COM4: 1200,n,8,1,-
C>
    
```

Figure 3

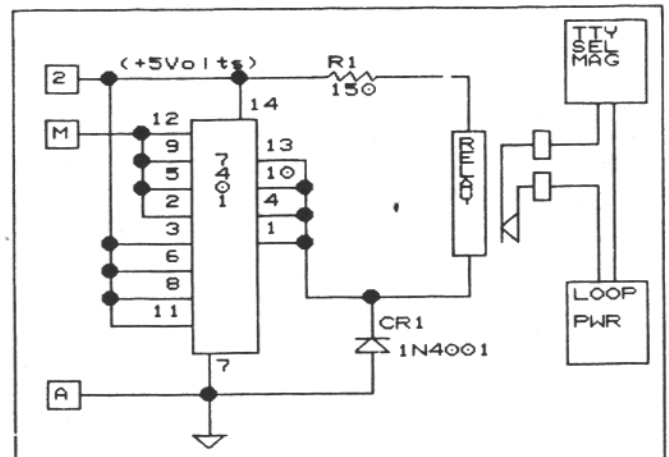


FIGURE 5. BAUDOT PRINTER LOOP SCHEMATIC

ST-7000 COMMENTS

de Clark Constant, W9CD

HAL calls their new ST-7000 an "HF MODEM" which to a RTTY operator means TU, a Tuning Unit or modulator/DEModulator. Its intended use is to interface a smart terminal to radio. The several MULTIMODE converters now available (PK64, PK232, KAM, etc) provide both a programmable mode-converter to make an ASCII terminal ham-radio-smart, and an internal modem of sorts to interface a radio. HAL suggests that such systems can be improved significantly by utilizing an external ST-7000 modem instead of the internal modem. Circuitry of the ST-7000 is optimized for HF Packet (300 baud, AFSK), which allows good performance on RTTY and AMTOR as well.

CENTER FREQUENCY

The modem circuits and tuning indicator are centered on 2210 hertz to be consistent with 2125/2295 RTTY-AMTOR, 2110/2310 PK232 AFSK tones, and FSK/RTTY modes (narrow filters and FSK keying) in the popular transceivers. Modems for both 200 and 600 hertz shift are present.

TUNING INDICATOR

Two vertical and parallel LED bars are configured so that when the received MARK and SPACE tones are aligned the signal is straddle-tuned at a center frequency of 2210 hertz, no matter what the shift, within a range of 0 to 1000 hertz shift. The actual shift is indicated by a scale in 100 hertz increments. Zero-beating within 10 hertz is quick and easy. THIS ITEM ALONE JUSTIFIES an ST-7000 to a serious HF Packet operator, especially those operating HF PBBS systems. Two HF packet stations with 20db over S9 signals struggle badly when separated 20 to 40 hertz in frequency, while S2 signals print nicely when the stations are truly zero-beat. HF Packet is a frustrating, short-term experience tuning error compounded by frequency drift. On HF packet, the old adage becomes "If you can't SEE them, you can't work them!" This applies as well to weak-signal AMTOR/ARQ operation.

EXTERNAL MODEM CONNECTIONS

A TTL input jack is present for connection to a PK232 "external modem" jack. Current production PK232's include 3 plug-in jumpers for selecting external or internal modem, while early models require some soldering (and perhaps addition of a 3pdt switch on Pk232 rear panel) for modem selection. PK232 PTT and FSK keying jacks always remain active.

A modified RS232 (DB25) input jack is present as an alternate ST-7000 input for external modem service. PTT control is selectable between pins 4 and 19 of the DB25, allowing ST-7000 to function as TU for the KF4NB or HAL-DSRTTY RTTY programs and the W9CD MSOPC program, for IBM-PC/clones.

A third external modem input accepts output from a VHF Packet TNC (xmit audio, received audio, and PTT) and allows an ST-7000 to function as a VHF/HF Packet converter. 1200/2200 hertz tones to and from the VHF Packet TNC are converted to 2110/2310 hertz xmit/receive tones for your HF transceiver, plus PTT and DCD threshold are properly controlled. HF Packet from even an old unmodified TAPR-1 TNC (set at 300 baud) is now quite workable. A VHF radio output connector on the ST-7000 is switched directly to the VHF TNC input connector when the ST-7000 is turned OFF,, eliminating cable switching for QSY to VHF.

ST-7000 MODE SELECTION

The above three ST-7000 input selections are made by means of four internal plug-in jumpers. Other jumpers allow selection between PTT controls, xmit audio levels, and threshold/autoprint. An FSK keying signal for HF radios is easily added with a soldered internal jumper, and will soon be provided by selectable plug-in jumper for TTL or RS232 FSK keying.

OTHER GOODIES

Now we come to the underlying idea motivating the HAL guru to enter the HF Packet modem market, and that is FREQUENCY SHIFT. No designer would intentionally select 300 baud, 200 hertz operation. We got there by default through enterprising hams anxious to convert their TAPR-1's to HF operation. We might as well try RTTY at 45 baud, 30 hertz shift. We need the speed, so that leaves only greater shift to improve demodulator performance.

An ST-7000 will switch to 600 hertz shift at the press of a button, which should greatly relax the need for exact tuning to the sending station's frequency. No station equipped with an ST-7000 has been encountered for such tests here as yet. Tests at 300 baud RTTY (400 wpm) have been quite successful, even though RTTY is subject to printing errors, having no copy verification.

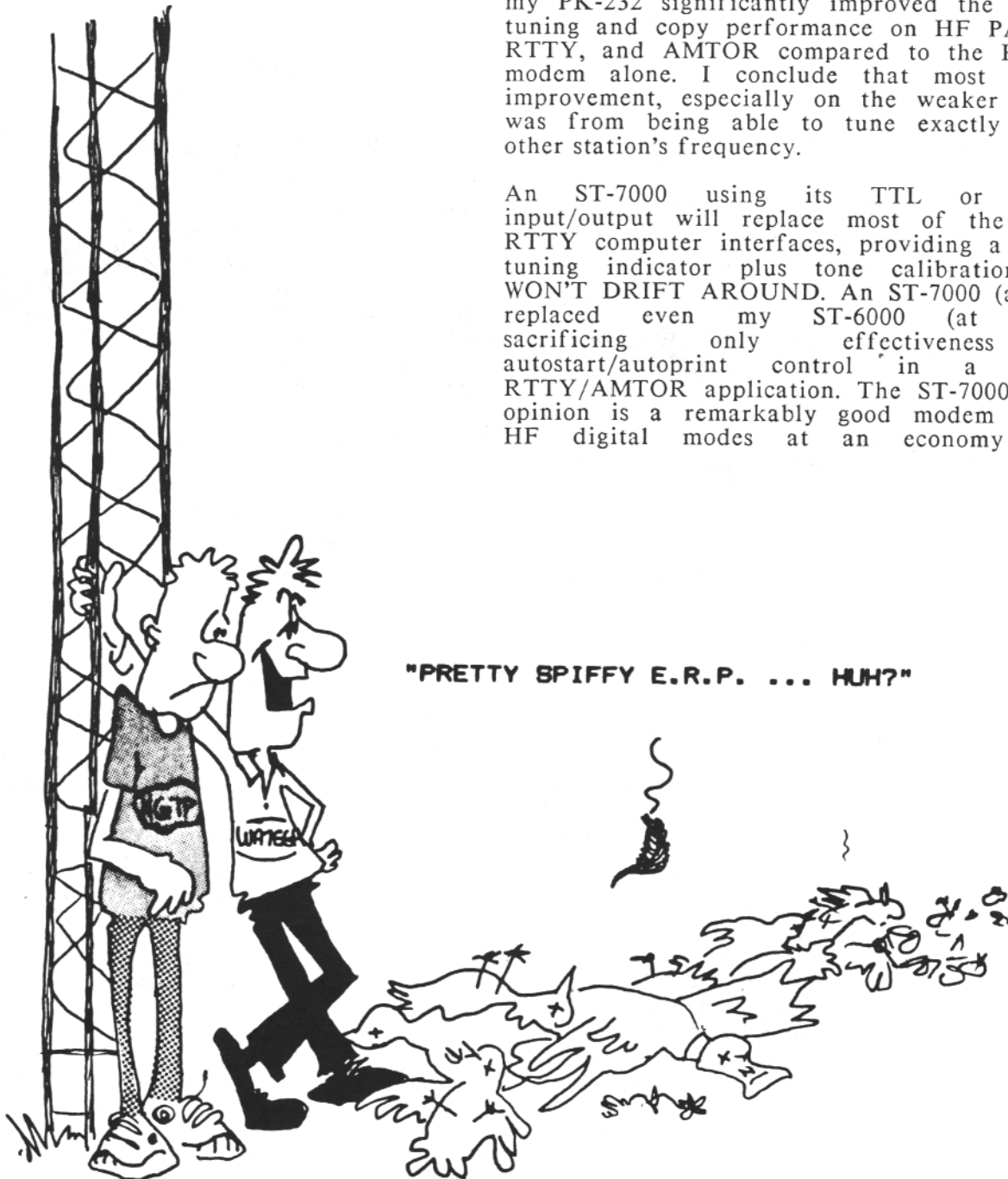
(ST-7000 cont. from pg.)

It took a RTTY station with a HAL ST-8000 (megabux) to handle the other end of the 300 baud RTTY test.

CONCLUSIONS

Connecting an ST-7000 as external modem to my PK-232 significantly improved the ease of tuning and copy performance on HF PACKET, RTTY, and AMTOR compared to the PK-232 modem alone. I conclude that most of this improvement, especially on the weaker signals, was from being able to tune exactly to the other station's frequency.

An ST-7000 using its TTL or RS-232 input/output will replace most of the earlier RTTY computer interfaces, providing a quality tuning indicator plus tone calibrations that WON'T DRIFT AROUND. An ST-7000 (at \$300) replaced even my ST-6000 (at \$900+), sacrificing only effectiveness of autostart/autoprint control in a typical RTTY/AMTOR application. The ST-7000 in my opinion is a remarkably good modem for all HF digital modes at an economy price.



ARIES-1 REVIEW

by Tom Guntzel, KE0KB - 3440 Kyle Ave N.
Crystal, Mn. 55422

Now that the much awaited for RTTY Journal/CQ WW RTTY contest is behind me I am happy to report that some 300 plus QSO's later I am not too much worse the wear thanks in a large part to a great software package for MS-DOS machines and PK-232 or KAM TU's called ARIES-1.

The ads found in current issues of CQ and 73 magazines tout the ability of the software to insert the date and time from the computer and the frequency and mode of the transceiver (if properly interfaced) into the log or the QSO. Also mentioned in the ad is the contest mode of logging, the automating dupe checking capability, the option to exit to DOS while ARIES remains resident in RAM and the support of all functions available through the terminal unit you are using.

Most importantly the software also supports a mouse for data entry and herein lies the greatest work saving and nerve soothing concept currently available on the RTTY/PC software market.

Now for the specifics. ARIES-1 supports all modes of the PK-232. The mode is changed quickly from the menus on screen or with a simple mouse click. I have not done a lot of CW or AMTOR with the software but I did verify that they worked as claimed. The same is true with the Packet mode of the package which changes from HF to VHF mode with another mouse click or function call, it certainly worked well enough to let me make my nightly checkin's on the local BBS. ARIES-1 shines brightly on RTTY and works as good as any software I have used.

The outstanding feature of ARIES-1 is the real time logging program. All usual QSO info can easily be input from the screen. Once a call is entered into the logger a search is automatically initiated and if a match is found the information is put on the screen. This is quickly accomplished as the complete log is read into RAM every time the program is booted up. New log entries are immediately written into the log on command so that the most that could ever be lost is the latest contact (especially important in the contest mode).

Operating in contest mode was the real test. As I previously mentioned the mouse is a great feature. Point the mouse to the ID field in the logging section of the screen and click after a target station's call prints on the screen and presto the call has been entered and a dupe search automatically started all with a mouse click. Go back to the station with F1 (key transmitter) F4 call exchange (call of station) click in plus de and your call) then one of the usual exchange buffers. Further data can be entered into the logger with mouse clicks in the same fashion point to RST and click the mouse after your report, point to state or name or what ever and click the mouse and its on the screen. Finish the QSO with a mouse click to enter everything into the log and search for a new contact.

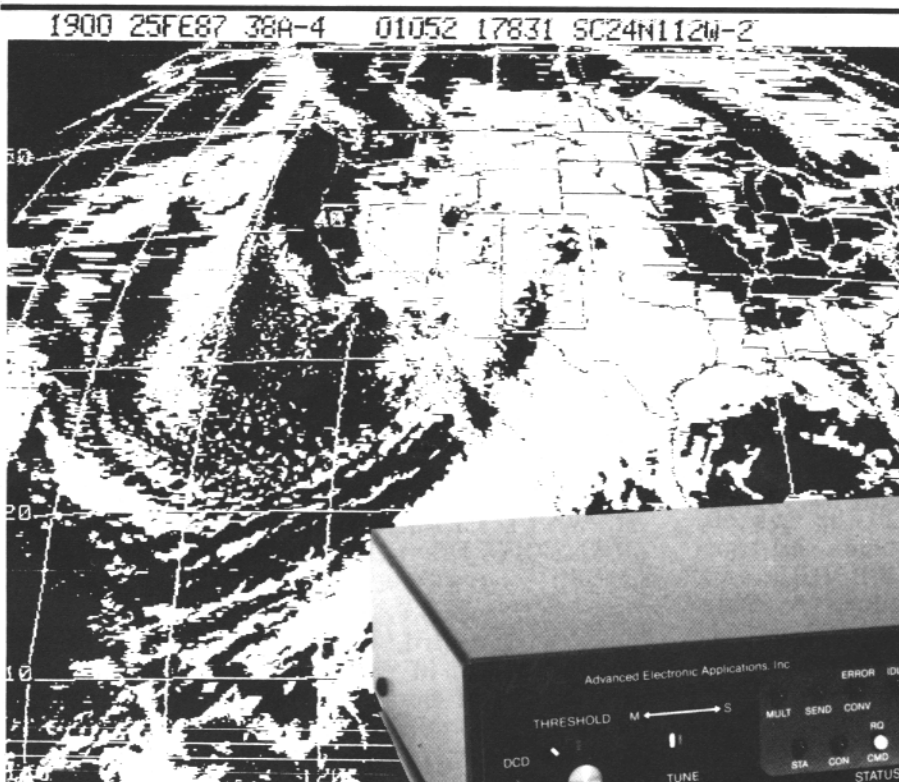
It is important to mention that the method of clicking the mouse at the right time takes a little learning. It must be done after a space and during the transmission of the word following the target word. This was simple to learn and made the entry of nine out of ten calls easy but because of the many different ways that the rest of the contest exchanges were sent it made entering other info (RST zone state etc..) difficult. After a few tries I abandoned this and kept track of that info separately choosing to write it out rather than enter it with the key board. It is not necessary to use a mouse as all functions are supported without one but it sure makes things a lot easier.

Also supported by ARIES are replaceable string parameters. This allows the embedding of special control characters into your stored buffers so that once the info is entered onto the logging screen it can automatically be retransmitted as with the F4 call ex function already mentioned. Included as a replaceable string parameter is the log entry number which would work as an automatically incrementing QSO number in a contest like the BARTG.

This is the area I had planned to list the three or four faults that I had found with the ARIES-1 package however version 1.3 arrived in the mail today and two of those items are no longer on the list. The new version supports realtime printing and has allowances for printing out a short form contest type log. Also in version 1.3 is the ability to export log data files to dBase. Remaining shortcomings are the absence of a QSO buffer (a future version will contain one) (cont pg. 22)

New PK-232 Breakthrough

Six Digital Modes - Including Weather FAX



A new software enhancement makes the AEA PK-232 the only amateur data controller to offer six transmit/receive modes in a single unit.

- * Morse Code
- * Baudot (RTTY)
- * ASCII
- * AMTOR
- * Packet
- * Weather FAX

\$319⁹⁵ AMATEUR NET
\$379.95 AEA RETAIL

Your home computer (or even a simple terminal) can be used for radio data communication in six different modes. Any RS-232 compatible computer or terminal can be connected directly to the PK-232, which interfaces with your transceiver. The only program needed is a simple terminal program, like those used with telephone modems, allowing the computer to be used as a data terminal. All signal processing, protocol, and decoding software is in ROM in the PK-232.

The PK-232 also includes a no compromise VHF/HF/CW modem with an eight pole bandpass filter, four pole discriminator, and 5 pole post detection low pass filter. Experienced HF Packeteers are reporting the PK-232 to have the best Packet modem available.

Operation of the PK-232 is a breeze, with twenty-one front panel indicators for constant

status and mode indication. The 240 page manual includes a "quick start" section for easy connection and complete documentation including schematics. Two identical back panel radio ports mean either your VHF or HF radio can be selected with a front panel switch. Other back panel connections include external modem disconnect, FSK and Scope Outputs, CW keying jacks, and RS-232 terminal interface.

The RS-232 connector is also used for attaching any Epson graphics compatible parallel printer for printing Weather Fax. Weather maps and satellite photos, like the one in this ad, can be printed in your shack.

Contact your local AEA dealer today for more information about the one unit that gives you six modes for one low price, the PK-232.

AEA Brings you the Breakthrough

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Lynnwood, WA 98036
(206) 775-7373



Hal Blegen, WA7EGA
12910 E. Broadway
Spokane, WA.
99216

CONTESTING

WINDMILLS

The ARRL is a giant. It's big business with lots of agendas the least of which doesn't include keeping a few RTTY folk happy. In August '87 when Jay, KE7PN and I set out to topple the ARRL attitude about RTTY contests, we understood that we were going to war with a windmill. But as the wheels slowly turned and we talked to some all-time contenders like K6WZ, W2JGR, WB5HBR and W5HEZ, the idea gained substance. Dale Sinner threw the weight of the JOURNAL behind it. In response to letters from their constituents, several ARRL section reps added their support as they forwarded it up the line. In May of this year, W1XX, Manager of ARRL Membership Communications, packaged it and passed it to the Advisory Committee. Last month, the board made the idea a reality:

JANUARY 7TH, 1989 IS THE FIRST, ANNUAL ARRL RTTY ROUNDUP CONTEST!!

Yet, more important than the idea, is fact that despite the giant organization that the ARRL has become, it is still OUR giant and it still listens --even to the little guys riding donkeys.

**We've got it!
Now lets make it fly!**

The original ARRL announcement in November's QST is required reading. With its usual attention to detail, the ARRL is supplying a complete package containing dupe sheets, multiplier check sheets and rules available for an SASE (2 first class stamps, it's a heavy package) to RTTY ROUNDUP CONTEST c/o ARRL Headquarters.

Lets see here... QST page 88. Heck, they didn't even use red ink! Oh well....at least I'll get the date right.

CONTEST PERIOD: 1800 UTC JAN 7, 1989 TO

2400 UTC JAN 8, 1989.

ALL STATIONS ARE REQUIRED TO TAKE 6 HOURS OFF IN TWO PERIODS WHICH MUST BE CLEARLY MARKED IN THE LOG.

I can't believe it! A contest that lets me sleep late on Saturday morning, go to bed on Saturday night and ends Sunday before I'm hardly even babbling to myself. Talk about civilized... it's even sandwiched between the playoffs and the Superbowl so I won't have to, explain the numerous design faults of television again to the brain-damaged, retired linebacker who lives next door. (During the CQWW he threatened me with homicide!). Lemme read the fine print, there's gotta be a catch.

CLASSES: SINGLE OP (WITH A SEPARATE 150 WATT CLASS!) AND MULTI-OP SINGLE TRANSMITTER (WITH A TEN MINUTE RULE!)

Now that's weird. Must be first time since the invention of the crystal set that I won't have to water cool the circuit breakers to run RTTY. With luck I hope to have made the final payment on my ANARTS power bill by then too.

Oh oh! There goes the secret weapon. A ten minute rule. That kicks the heck out of my one-signal-but-six-band-changes-per-minute technology advantage I get from electronic switching. Shucks, I guess they really MEAN single transmitter, this time. Hmmm... no limitation on single operator action.

**EXCHANGE: US/CANADA SENDS RST AND STATE
DX SENDS RST AND SERIAL NUMBER**

Good exchange... no snob factor but I can still get a yardstick on activity by looking at the serial number sent by the DX. I like it! With an exchange THAT simple there should be a bunch of new folks available on Sunday who are just messing around. There is a nice payoff here for efficiency, if you are quick enough catch them all before the novelty wears off and they QRT.

**SCORING: COUNT ONE POINT PER QSO.
MULTIPLIERS (STATES, CANADIAN
PROVINCES AND DXCC COUNTRIES)
COUNT ONLY ONCE FOR THE WHOLE
CONTEST. EVERYBODY CAN WORK
EVERYBODY. (cont. next page)**

(CONTESTING cont. from pg. 20)

There goes all my cozy deals. Secret scheds on extra bands aren't worth a thing this time. This is tribander country! I only need one good band. No real multiplier advantage... 60 local plus another 60 DX... probably be fewer than a 20 multiplier difference between the low power stations and the guys that glow in the dark. Every QSO counts. Maybe I'll move to Montana... I wonder about Packet in the 10 meter novice band? With a 6 hour rest period Saturday night, there won't be much on the lower bands. Maybe I can get some some retread activity going Sunday afternoon on 40 after everybody is burned out on 20. Worth a try.

AWARDS: CERTIFICATES TO TOP HIGH AND LOW POWER STATION IN EACH ARRL/CRRL SECTION, IN EACH DX COUNTRY, TO EVERY NOVICE / TECH ENTRY AND ANY STATION SERIOUS ENOUGH TO MAKE 50 QSOs.

Boy! Certificates aren't gonna to be too tough to come by, especially for this first contest. Hmm... no overall winner. You only compete in your own section. That's about 60 certificates in California alone. Should be a lot of activity! Good time to finish up an RTTY WAS.

REPORTING: LOGS TO ARRL CONTEST BRANCH, 225 MAIN ST., NEWINGTON, CT. 06111 BY FEB 8, 1989

Oh, oh! Only 30 days to get the log in the mail! This is a lot shorter deadline than usual and dupe sheet is required... Maybe I'll send for the packet while there's still time. Same address as the logs.

ITS ALL NEW

Since this is a new contest and the announcement comes on short notice, talk this one up on the air especially with the DX. It looks like a great contest but participation is the key.

MEANWHILE...

Through TG9VT via W9CD, VK2EG spread a rumor containing results from the June 11-12, ANARTS 1988 contest. No scores were received, just the rankings. I have to emphasize that these are not official results. A full breakdown and scoring will arrive in the

mail from the contest committee.

SINGLE OPERATOR

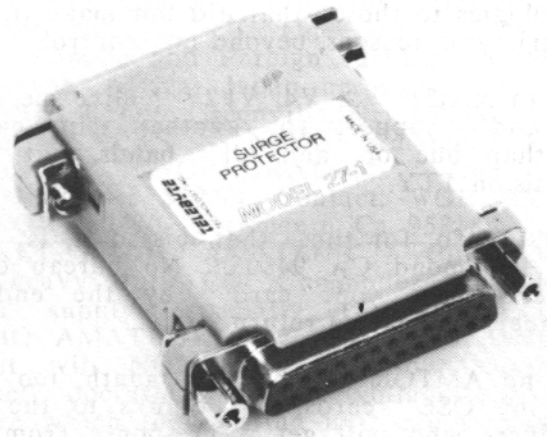
1. VK5RY	16. DJ3IW	31. VE6ZX	46. VE2LFL
2. IK5CKL	17. TG9VT	32. VK2EG	47. SM7BGE
3. VK2KM	18. AB0Y/4	33. VE7DTA	48. SM3MID
4. WB5HBR	19. GOATX	34. KI4MI	49. VK2DAY
5. RV9FQ	20. JA1BWA	35. VK3EDP	50. WA4SSB
6. VK2SG	21. VS6UP	36. ZL2BRQ	51. YV5IZE
7. DJ6JC	22. W7MI	37. VU2SJV	52. KD2XN
8. OK2FD	23. HP1AC	38. W2JRG	53. W9CD
9. N6GG	24. VK2BQS	39. GW3EHN	54. UR2FU
10. PA3DBS	25. VE3UR	40. G4MKO	55. 9M2MW
11. ZL2AKI	26. GOAZT/W6	41. JA2NNF	56. UA3TN
12. 7J6CAS	27. SP3BGD	42. SM5FUG	57. VK2AJT
13. K6WZ/0	28. W6ZH	43. Y05BLA	58. SM6APB
14. GOARF	29. WA3ZKZ	44. VE7VP	59. VU2IJ
15. CE2CQZ	30. W6MTJ	45. JE1DTV	60. ZP9AUV
			61. W7KPL

MULTI-OPERATOR

1. VU2JX	5. DL0GK
2. LZ2KIM	6. G4SKA
3. WA7EGA (grumble grumble)	7. VK2TTY
4. VI88NSW	8. SP3XR

Hope you had fun in the WAE.

After my crummy showing in the ANARTS, the wretched Jay abandoned me for the WAE and we went head to head in the single op category. Look for a new North American multi-op trophy winner this year! See ya on the band.
73's Hal, WA7EGA



SURGE PROTECTOR
See page 14

(AMTOR cont. from pg. 10)

3. To WA4WIP, well know for providing TTY gear to Caribbean/West Indies stations, for supplying me with self-contained "back-up" software and modem, at the drop of a hat.

4. To the hotel staff, who kept wondering what this crazy Englishman was doing, buying cokes, not wanting his room, cleaned and "hibernating" in a "Turkish-bath" chalet all day and night.

5. To American Airlines, true to their latest TV commercial, for getting me to destinations, within 15 minutes of their sked times.

6. To Pan Am (Miami-Provo-Miami), for leaving off a panel on the port engine and holding things together with wire! (nearly a brown trousers job there!).

7. To the airline pilot who took so long to clear the runway at Dallas, forcing it to "over shoot" and nearly causing me to miss my connection to Oakland.

8. To the automatic bank teller machine at Miami airport for being there and working when I wanted it to. Without it's service, I was destined to spend the night on a local park bench or sleep in the airport lounge.

9. To the Miami hotel that only charged two bucks seventy-five for an omelette, coffee and toast, compared to \$9 US on Provo.

10. And lastly, thanks to ALL the hams, those that got through and landed a "new" one and my apologies to those that did not make it, due to a variety of reasons, beyond my control.

Where to next??? V2, V4, VP2V ? Give me some ideas and support for another trip, maybe more than one op. and all bands, but with emphasis on TTY.

The QSL info, for those that missed it, is: Box 5194 Richmond CA 94805. No bureau cards and let's have your card by the end of November, to ensure a return.

Sorry, no AMTOR column this month, too busy answering QSL cards, but thanks to the two subscribers who will get a response from me, shortly.

In closing, I would like to stir up some muck. Hands up, those of you who wrote to the DXAC asking for the RTTY DXCC endorsement levels to be dropped to

increments of 10 and for the DXAC to consider a RTTY Honor Roll? Quit a few, I am sure. Well, you know the answer to our requests, a big NO. I don't know the reasons for their actions but I wonder what the outcome would have been, had the RTTY Journal Awards system shown a precedent and lowered their requirements first??

73 and DX

Eddie, VP5/GOAZT

(ARIES-1 cont. from pg. 18)

and the inability of the contest logger to track multipliers or keep score.

It would be unfair not to mention the fact that ARIES-1 also supports interfacing to various radios (late model Kenwood and ICOM units). Interfacing to these units would import freq and mode automatically to the log. Ashton is currently developing further upgrades to add memories and more control of the transceiver through this interface. Also included is a log management and search module and the ability to load external programs while Aries stays RAM resident.

The software is available from Ashton Itc. P.O. Box 1067 Vestal. New York 13851 for \$89.95. It is compatible with the usual list of PC clones with a PK232 or Kam interfaced to it. Additional TU's are not supported at this time. My setup is a Leading Edge model D2 (AT) and a PK-232 with an ICOM 751A that is not interfaced to the software.

Ashton's president is Thom Ashton (NY2I). I have spoken to him on the phone a few times and have given him my input on his software. He is very interested in user comments and immediately incorporated some of my suggestions and I had an updated version of ARIES-1 four days later. Updates within 90 days of purchase are forwarded free of charge and later updates are available at reduces rates.

In closing let me say that Aries lives up too its claims 100 per cent. It is well designed for contest operation and continues to receive support from its author. A pleasure to use and easy to operate it belongs in your software library.

KE0KB, TOM GUNTZEL

CLASSIFIED ADS

30 words \$5.00, additional words 5 cents each. Cash with copy.
Deadline for copy is 1st of month for that month publishing
(Example - Ad arrives by 1st of Sep 88, will be in Sep 88 issue)

COMMODORE CUSTOM CHIPS FOR C64/128
Computer/Peripherals at low prices, eg. 6510 - \$10.95, 6526 - \$11.50, 6567 - \$14.95, 6581 - \$12.85, PLA/82S100 - \$13.25, 901 ROMS - \$10.95 each, C128 ROMS - \$37.95, (set of 3), and many others...

"THE COMMODORE DIAGNOSTICIAN" - A complete diagnostic reference chart for fixing Commodore computers, etc. An absolute must for those who want to fix their own computers and save money and downtime, \$7.95 ... **COMMODORE REPAIR** - We are the largest and oldest service center in the country, (eg. C64-\$49.94 plus UPS). Fast turnaround.. Heavy Duty power supply for C64 - \$27.95 plus UPS ... **VISA/MC** .. Send for complete chips/parts catalog. Kasara Microsystems, Inc. 24 West Street, Spring Valley, NY 10977, 1-800-248-2983 (Nationwide) or 914-362-3131

ELECTRONIC KITS & ASSEMBLIES for Digital Frequency Synthesizer, Spectrum Analyzer, WEFAX, Microcontrollers, Antenna Rotor, Battery Chargers, DTMF, Keyers, C-64 Packet and More!! For info and price list, send SASE to A & A Engineering, 2521 W. La Palma, #K, Anaheim, Ca. 92801

NEW! - NEW PRODUCT - Now! IC-REMOTE, a program for remote control of ICOM radios by using IBM-PC (TM) or compatible computer. Provides menu driven remote control of all remote functions in 14 ICOM radios: IC-751, IC751A, IC-735, IC-761, IC-781, IC-275A, IC-375A, IC-475A, IC-575A, IC-271A, IC-471A, IC-1271A, IC-R71A, and IC-R7000. IC-REMOTE only \$59.95 at your ICOM Dealer or direct. Some ICOM Dealers can demonstrate program. Mail orders include \$2.50 shipping, handling for U.S., Canada, Mexico. Indicate disk size. California residents must include \$3.60 sales tax. Money orders, checks, (U.S. funds ONLY). Please include SASE when inquiring for information. Not copy protected. CAE Consulting, 10461 Dewey Dr, Garden Grove, Ca. 92640

HENRY RADIO - RTTY Headquarters for all your needs in the World of digital communications, is overstocked with used equipment. We have HAL 3100's, MPT/MSO's. Demodulators, and the latest new pieces in stock. ST-8000, DS-3200 Computers, Multiplexers, etc. We also have some used Robot RTTY and Slow Scan TV units. Complete line of Advanced Electronics Applications (AEA), used CP1, PK64, and the newest PK-232 all band, all mode, all computer system. Also UDC-232 (Use your own demodulator or TU) Call Henry Radio at (213) 820-1234 in Los Angeles, or 1-800-421-6631 outside California. Ask for George, AB6A.

\$50 PACKET (DIGICOM 64) -- A software - based PACKET radio system for the Commodore 64 by W2UP, Aug 88 issue of 73 magazine, page 22. The software is public domain and requires a simple modern interface to the C64 which is provided by our kit. The board plugs directly into the cassette port or remote mounted via a cable. A watchdog timer, reed relay PTT and PTT inversion options are included. Circuit power is derived from the computer and uses 7910 chip so no alignment is required. A switch allows HF or VHF operation. Order KIT #154 for \$49.95 OR ASSEMBLY 154 FOR \$79.95, BOTH INCLUDE free DISK. Add \$2.50 s/h. A & A Engineering, 2521 W. La Palma #K, Anaheim, Ca. 92801. (714)952-2114. MC or VISA accepted.

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Specializing in Digital Communications for over 10 years. Whether it's CW, ASCII, AMTOR, RTTY or PACKET Modes, we have it all! Authorized dealer for "HAL" and "INFO TECH" equipment, with prices no one can beat! We also stock a complete line of Kenwood and ICOM equipment, plus the "DAKOTA PC", a series of IBM compatible computers. Hard drives, floppies, EGA, high density ... we speak computerize fluently! No Sales Tax on sales outside South Dakota, which makes for even greater savings. Give Dick, K0VKH a call at (605) 343-6127 for a money saving quote, or drop us a line at 212 S. 48th Street, Rapid City, SD 57702

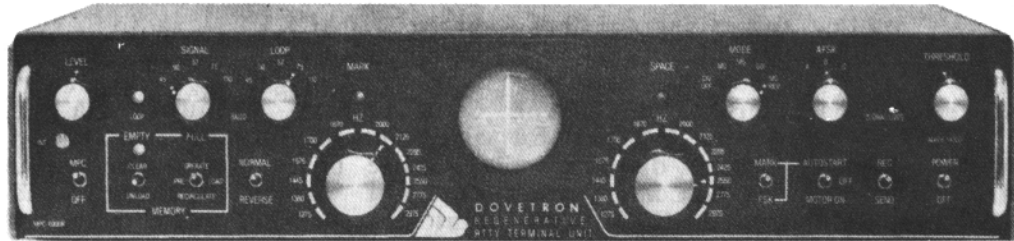
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NEWS - NEWS - NEWS Amateur Radio's Newspaper "WORLD RADIO". One year subscription is \$12.00. Contact: WORLD RADIO P.O. BOX 189490, Sacramento, Ca. 95818

PACKET RADIO AMATEUR - Announcing a new heavy duty C64 Commodore replacement power supply especially for the PACKET RADIO AMATEUR. The new higher amperage output will NOW allow 24 hour continuous "Packet" operation without voltage change or failure which the existing unit can succumb to. This heavy duty power supply also has a heavier heat sink and is an exact physical replacement for the original unit. Over 52 % of the Commodore 64 failures can be directly related to the original power supply, \$27.95 plus UPS. Kasara Microsystems, Inc. 24 West Street, Spring Valley, Ny. 10977, 1-800-248-2983 (Nationwide) or 914-362-3131

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KEYBOARD-CONTROLLED WORD CORRECTION & DIGITAL AUTOSTART



THE MPC-1000R REGENERATIVE RTTY TERMINAL UNIT

The DOVETRON MPC-1000R is a complete Transmit-Receive modem designed for optimum radio teleprinter communications on land, sea and in the air.

Standard features include a high level loop supply and keyer (neutral or polar), EIA and MIL FSK outputs, a phase-continuous AFSK Tone Keyer with three selectable Mark - Space - Shift tone pairs, Mark, FSK & Digital Autostart, Automatic Markhold, an internal RY Generator for terminal unit Self-Test and circuit adjustment, and a Signal Loss Alarm circuit.

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