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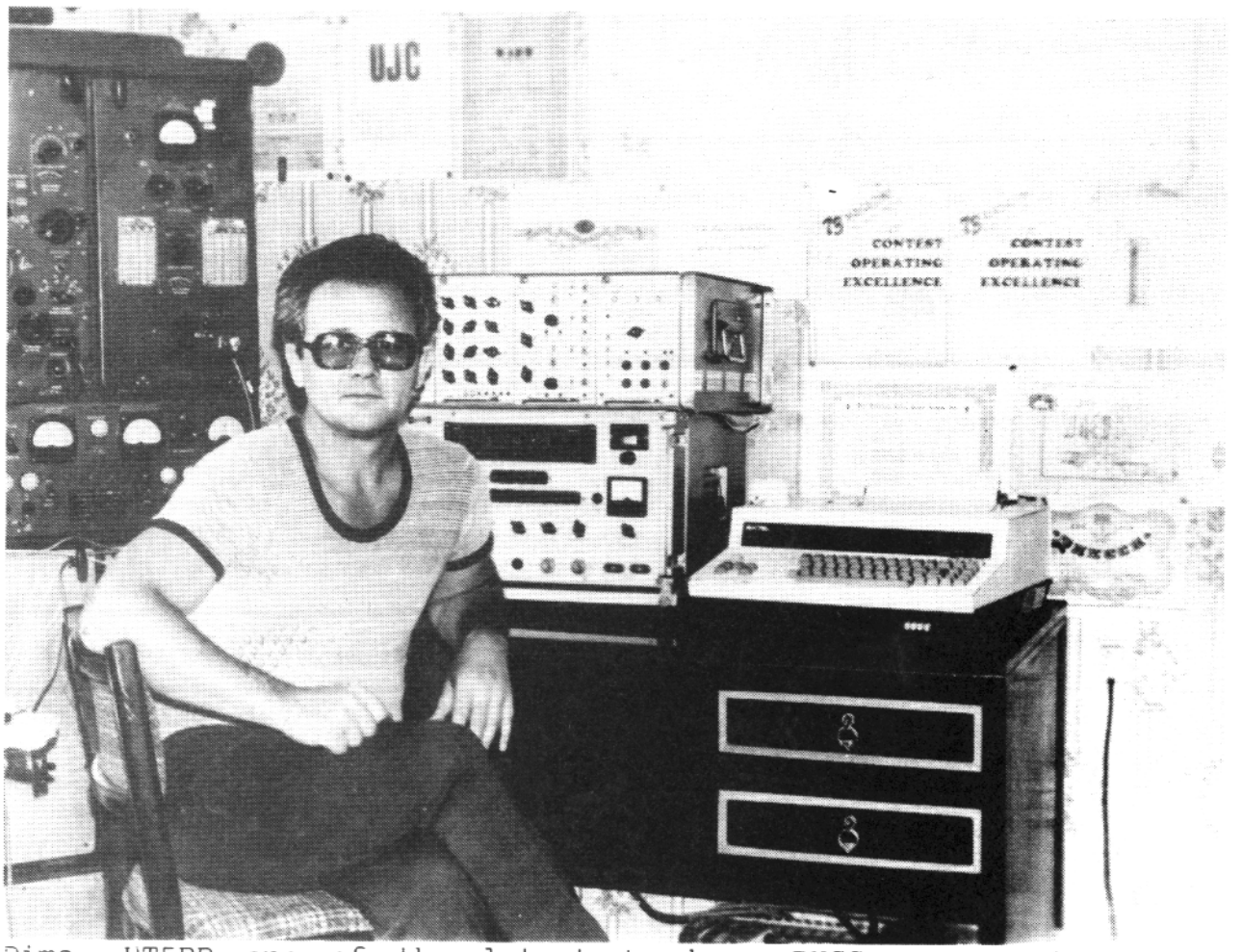

Dima, UT5RP one of the latest to have DXCC. See next months RTTY JOURNAL for up-date on all awards being sent out now.

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CoCo RTTY PART V

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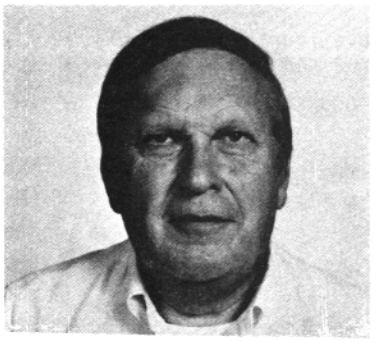

DX

JOE WOOD, AJ9X
POB 84
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A HEARTY WELCOME TO THE NEW YEAR!

My best wishes for 1986 go out to each of you. A reflection of 1985 will serve no useful purpose and will be purposely omitted. I feel that each of us know what we have to look forward to during the coming months and individually will approach those events as we see fit. However, may there be many hours of happy DXing with new countries worked and confirmed.

BANDSPACE...WHERE DO WE GO FROM HERE?

Much has been said about the RTTY segments of the Amateur bands. The increasing number of users with many different RTTY modes are presenting more of a challenge than ever before. Clean signals and expansion are a couple of ways to approach the mounting problems and the following paragraphs from two of our readers suggest paths for us to follow in making room for the DX. Read on....

ARE YOU TRANSMITTING "CLEAN SIGNALS"?

"We should all check this periodically, not only for legal reasons, but as the RTTY section becomes more populated, spurious signals are definately not desirable", writes Jim Sladek, WB4UBD. A recent observation prompted Jim to send along his comments for us to share..."A DX station early one morning was putting in a 579 signal here and the band (20 meters) was pretty quiet. So looking around I found his signal also about 1.3 KHz lower at about 559 and a shift somewhat wider than 170 Hz (had to go to variable shift to print it). I was not able to get to him as I had to leave for work, but this is something that I believe all that use the indirect FSK method (audio tones and SSB for RTTY generation) should watch out for (Bill Henry, K9WGT, and others have mentioned it in articles in other publications). In this case, European low tones of 1275 Mark and 1445 Space were clearly in use with audio levels probably driving the transmitter too hard. Many of us are fortunate in that we use high tones of 2125 Mark and 2295 Space where the second harmonic might not be passed within the audio passband of the transmitter. It is, of course, illegal for us in the States to output anything other than a shift between two frequencies where we operate. The check is real easy to do. Just transmit diddles or whatever into a dummy load and look below the transmit frequency (assuming LSB) for any spurious transmissions with another receiver)." You will remember Jim as an RTTY contester, DXer and QSL manager for the recent TI9TTY expedition to Cocos. His comments on spurious radiation are welcomed and shall serve as a reminder to each of us in our day to day use of the Amateur RTTY segments.

EXPANSION OF THE RTTY SEGMENT

"If the RTTY 'gentlemens agreement' is going to change, WE are going to have to do it. We do not need ARRL action to start operations above 14.1 MHz." This from Mark Spencer, WA8SME/DA1OY who has spent many an hour pondering conditions as they exist. Mark's letter is very enlightening and offers food for thought...here 'tis, "Since you asked the question (about operations above 14.1 MHz), I hope you don't mind if I vent some frustration on you. What happened was: Over the Thanksgiving holiday season, the band was open to the States and I'd hoped to add a little American to our holiday over here with some QSO's with my fellow Americans. Unfortunately every, and I do mean EVERY QSO was lost to QRM! (from stateside too!) To top it off, a stateside AMTOR mailbox in Florida came up right on top of a very good QSO and spoiled it. When the mailbox was finished, I accessed it without moving the dial and left the SYSOP a message about the interference his station had caused. A few days later he contacted me to say that it was not his station because his automatic log book did not list any contact but mine. Well bunk!, the only reason I could access his machine is because of the station ID it gave!

Okay, so what's the point? Well, you received and published some excellent comments on RTTY operations above 14.1 MHz but, WE have to make it happen! Numerous times I have attempted to QSY above 14.1 MHZ with stateside QSO's only to have the other station insist on maintaining RTTY band integrity (even though these AMTOR QSO's were between 14.07 and 14.08 MHz). As you and others have pointed out, we need more room and it is available above 14.1 MHz. But, we need to advertise by operating up there!!!!!

I would suggest the following plan for a start:
to page 4 please

DX COLUMN CONTINUED

1. Use 14.07 to 14.08 MHz as an AMTOR DX window. Europeans use the area above 14.1 MHz for SSB and would make DX RTTY operations there less attractive.

2. Use 14.08 to 14.1 MHz as is done now.

3. Use 14.103 to 14.125 MHz for a mix of RTTY and AMTOR local (domestic) QSO's with AMTOR taking 1 KC steps up from the low end.

4. Set aside ten mailbox frequencies spaced 1 KC apart. Mailbox machines are nice, but unattended operation causes problems with interference. Sure, Manual stations cause their share of interference, but I am willing to forgive a human error, not a computer error! Manual QSOs between two operators are a fleeting thing where frequency availability, propagation, operator presence, and chance listing on the same frequency come together to make each contact unique. Mailbox machines operating long hours, scanning numerous channels, and not listening for low level signals make more predictable contacts that can be made another time to produce the same result. Not so with manual QSO's. Mailboxes need their own space!

5. Finally, how about a RTTY JOURNAL reader's calling frequency above 14.1 MHz? [Ed note: great idea] If we all take a listen to one frequency up there periodically, more activity might move in that direction. I would suggest 14.110 MHz.

If the RTTY 'gentlemen's agreement' is going to change, WE are going to have to do it. We don't need ARRL action to start operations above 14.1 MHz. In time, frustration will force expanded frequency use. Why wait for haphazard operations above 14.1 MHz. Let's deliberately do it NOW. I hope that by the time I get my shack re-established at my next assignment (Jan. '86), that I can actively help to get RTTY above 14.1 MHz." Mark is the author of many excellent technical articles (CoCo RTTY for one), each of which point out his commitment to the RTTY mode. He says it all... and I hope each of you will too! Take a moment and send me your suggestions on how you feel about the move, the door is again open. For consideration, your input will have to reach me by March 1st. I am targeting April for the publication of a "by popular demand" Segment Band Plan, with implementation by May 1. The time to act is upon us. [ED note: A rallying cry could be 'Have more fun above fourteen dot one'].

DX CONVENTION

The 1986 International DX gathering will take place the 18th, 19th and 20th of April at the Airport Inn, Visalia, California. Special rate reservations may be had by calling 209/651-9000.

DXCC

Congratulations are extended to TG9VT on his recent admission to 'the club' with 105 countries going-in. Also to K4AGC's endorsement bringing his station to the 125 mark. Good work guys!

HEARD/WORKED

KG4TM	14087	Dec. 05	1140	Baudot
WA8DRZ/J8	14074	Nov. 27	1208	ARQ
HH2MC	14085	Nov. 27	1152	Bau
ZP5JAL	14090	Nov. 26	2315	Bau.
A92BE	14076	Nov. 25	1231	ARQ/FEC
UV3FD	14090	Nov. 24	1306	Bau.
5B4JE	14086	Nov. 24	1301	Bau.
FY7AN	14089	Nov. 24	1114	Bau.
CE3BBW	14075	Nov. 24	0309	ARQ
LU3KA	14089	Nov. 24	0250	Bau.
UZ2FWA	14094	Nov. 22	1205	Bau.
UA3TT	14098	Nov. 22	1142	Bau.
HH2HA	14085	Nov. 21	2239	Bau.
VK5CV	14076	Nov. 21	1226	ARQ
ZL4DE	14088	Nov. 21	1208	Bau.
CYØSAB	14095	Nov. 19	2334	Bau.
RA3UN	14083	Nov. 19	1148	Bau.
9K2EC	14071	Nov. 19	1146	ARQ
A4XRS/15	14091	Nov. 18	1139	Bau.
UAØLCZ	14090	Nov. 17	2239	Bau.
FY5AU	14088	Nov. 17	2140	Bau.
ZS6CAS	21090	Nov 17	1352	Bau.
SV1JO	14089	Nov. 17	1300	Bau.
LZ2OV	14086	Nov. 17	1250	Bau.
A4XKB/15	14095	Nov. 17	1220	Bau.
UA9PP	14093	Nov. 17	1204	Bau.
EA6LH	14081	Nov. 17	1128	Bau.
UZ6AWA	14085	Nov. 16	1343	Bau.
UZ6AWF	14097	Nov. 16	1240	Bau.
UA3FU	14096	Nov. 16	1222	Bau.
YB3OF	14090	Nov. 15	2345	Bau.
5N8ZHN	14090	Nov. 15	1814	Bau.
VK6AHN	14068	Nov. 15	1222	FEC
VU2VIM	14088	Nov. 15	1153	Bau.
HV2VO	14091	Nov. 14	1159	Bau.
LU1WFC	14080	Nov. 18	0130	Bau.
9Y4NW	14088	Nov. 14	0124	Bau.
CE9AA	14089	Nov. 14	0117	Bau.

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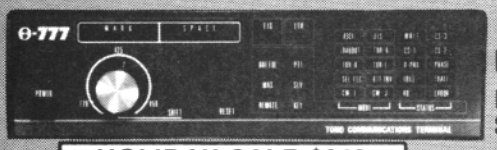

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BY:Dick Uhrmacher, KØVKH
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MSO'S

Hi Gang! A Very Happy New Year to all of you, and I hope that 1986 is a healthy, happy and prosperous New Year for each and every one of you. And, I hope that we may have the pleasure of seeing some of you again this year at the Dayton Hamvention! Isn't it amazing how fast that event seems to come around?

This year, the Dayton Hamvention will be conducted on the 25th, 26th and 27th of April, and as usual, the "RTTY DINNER" will be held on Saturday evening, April 26th, at approximately 1800 hours in the "Italian Room" of the Imperial House North Motel, located at the junction of Needmore Road, and I-75. This years sponsor is none other than Dee, N6ELP, and the RTTY JOURNAL. I'm sure that we'll have an exceedingly good time, as usual. As in the past, seating space for this event is limited to approximately 50 guests. Reservations can be made by leaving your name in one of three MSO's: KOVKH, Rapid City, SD, K4KOZ, Boca Raton, FL, (both on the National Autostart Frequency of 14 087 750 Hz carrier frequency), and WA1IUF, New Haven, CT (International Mailbox Frequency, on 14 097 500 carrier frequency). Reservations are strictly on a first come, first served basis, so get your reservations in early! Hope to see you all there.

MSO HINTS: Although band conditions have been poor over the past year, it will not be long and they will improve significantly. Better conditions not only means better general communications, but it also means additionall QRM and increased frequency usage. MSO SYSOP's (System Operators) can operate their systems in a manner which at the same time shortening the time their systems occupy a given frequency. For example:

1. MSO "sign-on" messages should be as short as practical to identify the MSO in use. If you have a special comment to convey as part of the "sign-on" message, make it short and to the point. Also, if you can suppress references to "help" and "exit" commands, do so, as most users are familiar enough with the systems to understand these features. Newcomers can usually count on finding assistance from others on the frequency, should they need it.

2. Make good use of the "hidden" file feature of the HAL MSO systems. The shorter your "directory" runs on-the-air, the better! If you receive a file directed to your system, and do not have the time to answer it immediately, "hide" it. If you create files in your MSO that you intend to transmit to another MSO system, "hide" them until you get a chance to transmit them.

3. Use "sub-directories" to list several files that are "hidden" within your system. For example, all "DX" files can be categorized under a sub-directory; all files relating to "equipment" can be listed under a sub-directory, etc.

4. "Hide" exceptionally long files, and create a much shorter file relating to the subject. Indicate that the longer file is available to remote users who specifically request it. This eliminates the curious from reading long files over and over again and subsequently tying up a frequency for long periods.

5. SYSOP's should establish some internal schedule for "deleting" older files from their system directories. My experience is that general QSO type files are usually pretty much out of date after 21 days, and are seldom picked up after that time. Within my MSO, I leave messages through three weekends, and consider them for delection after that interval. Informational, DX, technical or other files of that nature should be deleted when adequate exposure has occured.

WD4MTC MSO: Dick Schulte, WD4MTC, of North Fort Myers, FL, has been one of the mainstay MSO's on the "National Autostart Frequency" for many years. Dick has recently experienced some very unfortunate and serious health problems, including very serious surgery. As of this date, (Nov. 27, 1985) we are happy to report that Dick is improving after his surgery, although still in Intensice Care. We hope that Dick's recovery is a speedy one and that he can rejoin us here on the "National Autostart Frequency" soon! We miss that booming signal Dick! Many thanks to Chuck K8EWK, and to Tandy, K4YSN, for keeping us up to date on Dick's status.

MSO RAMBLINGS: The new HAL ST-8000 computer controlled demodulator has hit the streets, and a truly amazing device it is. Jack, W5HEZ, Baton Rouge, LA, and Ernie, W6ZRR, San Luis Obispo, CA are presently using this demodulator, and can provide operational details. Additionally, Ben, KR6E, Hollywood, CA, can also provide interface information to use this demodulator with the TAPR

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FY5AU	14088	Nov. 13	2342	Bau.
NP4AK	14090	Nov. 13	2310	Bau.
N3JL/4X	14078	Nov. 12	1122	FEC
OX3FG	14084	Nov. 08	1223	Bau.
EA9MY	14086	Nov. 08	1211	Bau.
4U1ITU	14083	Nov. 08	1129	Bau.
AH6FS	14087	Nov. 07	2258	Bau.
ZS3NH	14076	Nov. 05	1848	ARQ
9K2JF	14076	Nov. 05	1141	ARQ
A4XZF	14097	Nov. 04	1245	Bau.
SV5TS	14096	Nov. 03	1901	Bau.
UBØMA	14097	Nov. 02	1655	Bau.
UR1RXO	14091	Nov. 02	1242	Bau.

WHAT'S HAPPENING?

Look for DJ6QT from D68, Comoros, in late March or April. He has license in hand. He is working on licenses for 5U7, Niger and TY, Benin, but has not heard from either government yet. (W1DA)

UA3TT reports that there will be an operation on RTTY in May of 1986 from UF6, Georgia. (W1DA)

FY/DA1OP, Bernard and FY5AU, Les have been logged by K4AGC. Leo advises that the two Guiana stations are using the same QSL route: Box 999 , 97300 Cayene, French Guiana. Green stamp for a speedy return. Bernard will be in FY land for three years! (K4AGC)

CYØSAB, Sable Island, left quite a few smiles on happy faces in the wake of his recent operation. Andy, VE1ASJ, and company has a penchant for doing just that with his excellent operating skill. Thanks from all of us.

TI9WI, Cocos, is trying the patience of a number of the stateside group. Carl, K6WZ, has tried four times to extract a confirmation for his contact with that station. Is there anyone out there that can offer suggestions on how to achieve success? On the brighter side, Carl wites that he now has 154 confirmed for 164 worked. (K6WZ)

Next months feature...an updated QSL information listing plus your input. Send it along today so that it may be shared. Also, look elsewhere in this issue for the poop on the 1986 RTTY World Championship Contest. [Ed note: just received the certificates from 73 mag to send out, so look for them.] A great way to pick up those new countries and besides, it's one heck of a lot of fun!

I wish to thank each of you for your support of this column. 1985 was great 1986 should be better. See you next time, 'til then very 73 and best DX de Joe, AJØX.....

MSO COLUMN CONTINUED

packet radio controller. You can contact any of these individuals via the KØVKH MSO. The ol' "Mule Skinner" Don, W5QXK, reports that his MSO will be back in service again on weekends. He and Marie have moved into their new home, but due to weather and Don's work schedule, permanent towers and antennas have not been installed as of this date. welcome back Don! Seven of the 13 MSO's on the "National Autostart Frequency" are now utilizing the Kenwood TS-940S transceiver, and it continues to gain popularity as an RTTY transceiver. Brownie, K5FL of Denton, TX, has the capability to transfer files from HF MSO's to other MSO's on VHF in the Dallas, TX area. Need information on interfacing your HAL DS-3100 to packet radio? If so, contact Clark, W9CD, Urbana, IL, or Frank, K4KOZ or Bill, W4NVC, both of Boca Raton, FL.

MSO SOAPBOX: Recently, a U.S. Amateur Radio Station began repeatedly broadcasting a one-way, uncalled for message, outlining a complaint concerning a manufacturer. Not only was this stations' transmissions illegal as defined in parts 97.91 and 97.113 of the FCC Rules and Regulations, but, just as importantly, his actions reflected poorly on Amateur Radio in general. This stations poor judgement and lack of common sense spilled out over the air waves, and instead of being directed to the parties involved, present an ugly picture of misunderstandings, insecurity and extremely poor operating practices on his part. Amateur Radio signals are not confined to the Continental United States, but are, of course, received world wide. We do not need that type of publicity for Amateur Radio, and this stations activities were deplored by all who saw them. Subjects of this nature should be kept within commercial channels. between the parties involved, and most certainly not on-the-air via Amateur Radio!

That's it for this time gang! Once again, Happy New Year, and we all at the JOURNAL look forward to hearing from you during 1986. Enjoy RTTY and the MSO's!

DE: Dick, KØVKH

OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO

INFO FROM THE KØVKH TECHNICAL DATA LIBRARY

Interfacing the "HAL" DS3100 serial port, to the Epsom MX80/FT printer. NOTE: you must have a serial interface board installed in your printer.

There are four (4) serial interface boards made for the MX80 printer. They are the 8141, 8145, 8150 and 8155 models. The 8141 board is NOT useable with the DS3100, but the other three appear to function nicely. All of the boards mentioned above must have on-board buffer to copy data from the DS3100 while the printer is completing a CR/LF operation.

An interface cable should be a two-conductor cable, with a shield. Connect the shield and one of the wires to pin five (5) of the "switched outputs" plug on the back of the DS3100 (ground). Connect the remaining wire to pin six (6) of the "switched outputs" plug, (retrans data port).

Use a standard DB-25 connector for the following connections: Connect the shield to pin one (1) of the connector, (frame ground). Connect the wire coming from pin five of the 'switched outputs' plug to pin seven (7) of the connector, (signal ground). And, connect the remaining wire to pin three (3) of the connector, (received data).

The output of pin six (6) of the 'switched outputs' plug, is factory set at 300 baud, ASCII. The MX-80F/T serial interface board must be set to agree with this baud rate. Set all of the internal "dip" switch settings as follows for main frame:

Switch 1-1 ON Switch 1-2 ON
Switch 1-3 ON Switch 1-4 OFF for 8150 serial interface board
Switch 1-5 ON Switch 1-6 ON dip switch settings set:
Switch 1-7 OFF Switch 1-8 ON Switch 1 ON Switch 2 ON
Switch 2-1 ON Switch 2-2 ON Switch 3 OFF Switch 4 ON
Switch 2-3 OFF Switch 2-4 OFF Switch 5 OFF Switch 6 ON
Switch 7 ON Switch 8 ON

PG5- Setting "tabs" with the DS3100 and the Epson MX80F/T printer.

This procedure is for use with the MX80F/T serial interface and the HAL DS3100 serial output, (retrans data port).

1. The following command sequence demonstrates setting a tab at print position 20. Any number of tabs can be set by inserting the correct binary number in the command. For example, DC4 is decimal 20: Shift-Ctrl-N equals a decimal 30, and the capitol letter "F" equals decimal 70.

2. Printer power 'on' and printer 'on line'. DS3100 in ASCII mode and xmit inhibited, type the following commands:

A. Cancel - (ctrl-x)
B. Escape D - (press & release 'esc', press and release 'D')
C. Ctrl-DC4 - (decimal 20 for tab position)
D. Null - (shift-ctrl-P)
E. Cancel - (ctrl-x)
F. Newline - (cr/lf)

3. cycle the FN-XMIT keys to send the command routine to the printer from 'on' to 'off', and back 'on' again. You now have a tab set at print position 20. Failure to cycle the 'on line' switch will cause the printer to lock-up.

PG7-Modification to the HAL CRI-100/200 RTTY/Computer interface.

A recent HAL modification to the CRI-100/200 RTTY/Computer interface unit consists of shorting out (jumpering) diode D-33 (D-33). This modification significantly improves the CW decoding capability of these units.

Diode D-33 is located in the upper left corner of the circuit board, (as seen from the front panel), immediately behind the 'CW Key Input' jack.

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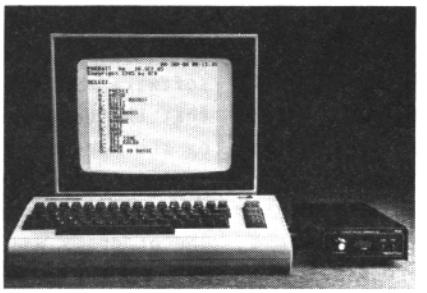
And we've included a new version of our advanced MBA-TOR™ software to make it the first packet controller with AMTOR, Baudot, ASCII and Morse. But an even more exciting part of the Pakratt controller is its great price.

Incredibly Simple To Set Up

Just plug the Pakratt controller into the C-64's game cartridge slot, add a mic connector for connecting to your particular transceiver, and you're set.
If you're anxious to try it out, our new "quickstart" manual section can get you on the air in under ½ hour.

Simply Powerful

The versatile Pakratt controller shows messages and connect status simultaneously on your Commodore with a unique split-screen display. And it lets you send letter-perfect text from the text editor software while monitoring incoming messages. The 20K byte QSO buffer stores more than 20 video screens of text! Disk commands let you save specific operating parameters for quick set-up for emergency services, clubs, and multiple frequency use. And the Pakratt controller's standard, TAPR style modem gives you 300 and 1200 baud operation with great HF/VHF performance.



PK-64 shown with HF modem option.
Computer not included.

We can't possibly list all of the important features of Pakratt here. But the absolutely best part of the Pakratt PK-64 is that it's at your dealer now. So stop reading, run down to your local dealer, and check Pakratt out. Because the real challenge will be to find one after the other hams see it.

Pakratt PK-64. Packet Power from AEA. At amateur radio dealers everywhere.

Advanced Electronic Applications, Inc.
P.O. Box C-2160
Lynnwood, WA 98036-0918
(206) 775-7373
Telex: 6972496 AEA INTL UW

CoCo RTTY PART V

BY Mark Spencer, WA8SME/DA10Y
POB 5889
APO New York, NY 09012

Last month the installment of CoCo RTTY was mislabeled as Part VI instead of IV. The content was correct just the label was wrong, sorry about that!

This is the final hardware installment of the series and covers the Asynchronous Receiver/ Transmitter (UART) and connections to the computer (figure 7). The TTL RTTY data stream from the splicer is fed to the input IC 14 (AY-5-1013). This has internal "magic" that converts serial data to parallel data with strobe. Inputs to the chip include a clock at 16 times the baud rate and other logic which determines the serial stream format. A detailed discussion of this device was previously covered in the October 1984 RTTY JOURNAL.

Here's how the UART works. On transition from mark (logic 1) to space (logic 0) during the start pulse, the UART checks for a valid start bit 8 clock pulses later (in the middle of the bit). If the start bit is valid, subsequent bits are read (at the middle of each bit) and shifted to the output register. If the start bit is not valid, the UART continues to wait for a valid start pulse. This internal processing adds some noise immunity by disregarding random noise pulses that might be interpreted as start bits. However, you can trick the UART by beginning the signal processing mid character, especially if the transmission is sent at machine speed and if the format is one stop bit as in RTTY (even if a long stop bit). Nothing is perfect!

Once a full character is received and shifted to the output register, a strobe signals the receiving device (the computer) that a character is ready for reception. This strobe is tied to the Non Masked Interupt pin of the CoCo and starts the program routine that processes the characters sent by the demodulator.

The chip IC 15 (74LS373) Octal Transparent Latch is used to isolate the Uart from the CoCo data bus when not required. Without this isolation, the UART would interfere with the 6809 CPU. During the resting state, IC 15 outputs are in the High-Z state. When called in the program, the SCS signal from the CoCo enables IC 15 to pass data from the UART to the CoCo.

The UART supporting clock and switching logic devices are shown in figure 8. IC 10 (MC4024) is a Voltage Controlled Dual Oscillator set to clock at baud rates X 160. In this circuit the clocks are set to receive 45 baud RTTY and 110 baud ASCII. IC 13 (7490) is wired to divide by 10 and provide the X 16 clock rates required by the UART. This scheme provides some additional clock rate stability.

IC 11 (7400) and IC 12 (7430) are wired to select the proper clock rate and serial data format for the desired mode, either 45 baud RTTY or 110 baud ASCII. This allows mode changes with one switch. In the RTTY mode a format of five data bits and one stop bit is selected. In the ASCII mode a format of 7 data bits and two stop bits is selected. Additionally, the ASCII logic ties the MSB fed to the computer high. The software uses this signal to distinguish between RTTY and ASCII signals and executes the appropriate portion of the program.

CONSTRUCTION NOTES

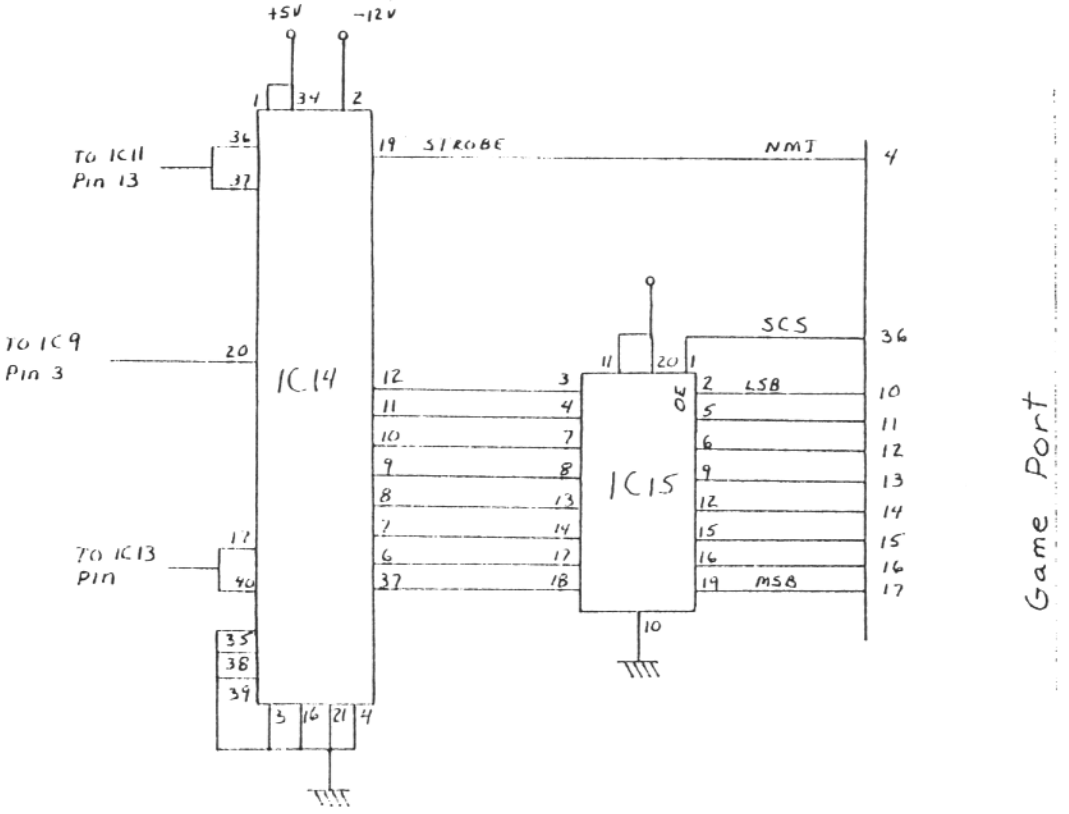
The demodulator was constructed wire wrap style. None of the components are exotic and substitutions should not be critical. I would suggest by-passing each power lead as close to individual chips as possible with .01uf capacitors. I used ribbon cable and a home made game port plug to connect the demodulator to the computer. The plug is constructed from the edge card pins of a circuit board enclosed in a cassette tape case bolted to the card edge.

Other bells and whistles can be added. For instance, I added individual LED's and drivers (7404) to visually indicate the parallel data. This became extremely useful when de-bugging the software by giving visual positive indications that the data was properly received and processed by the hardware.

The last installment will cover the software. The programs will not be published in the JOURNAL due to their length, but will be available for posting through Dee.N6ELP for $2.00 sent to the RTTY JOURNAL office address shown on the inside cover.

Expect a quick overview of the programs and integrating a burned EPROM to the CoCo. CUL..Mark..

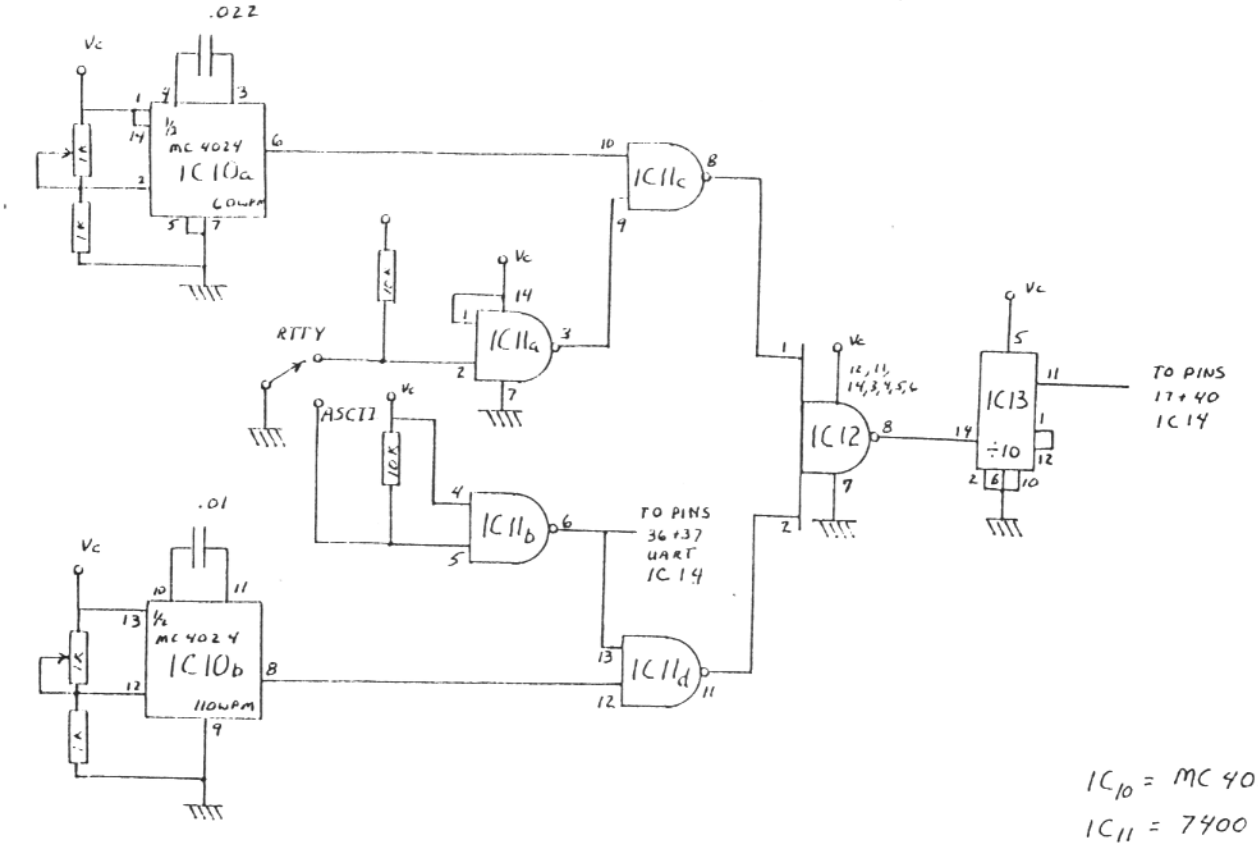
Please turn to page 11 for schematics (fig 7/8).



IC_{14} = AY-5-1013

IC_{15} = 74LS 373

UART Converter fig 7



IC_{10} = MC 4024

IC_{11} = 7400

IC_{12} = 7430

IC_{13} = 7490

Clock and Switching fig 8

CLASSIFIED ADS

30 words $3.00, additional words 5 cents each - Cash with copy. Deadline 1st of month for following month.

WANTED TELETYPE MODEL 20 typing unit and keyboard units similar to Model 15 but made for 6 unit code. Teletype codes are BP172/347 or BP176/347 typing unit and BK5PA keyboard. W. Turner, 5 McIntosh, Clarendon Hills, IL 60514. 312/323-1025

HENRY RADIO IS OVERSTOCKED with used and demo RTTY and SSTV gear: IRL 1000 TU's, new, $325! HAL ST-6000 $550, DS-3100 $1450, New CWR 6850/AMTOR IOA combo for $995, used only $750; AEA Micro-patch $115; Used HAL CT-2200 W/KBD $550; used green monitors $99; Robot SSTV 400, 450C, 800C, used, call for prices. Okidata and Panasonic printers, Mitsubishi P50-U video printer, $399; Used HAL Amtor ARQ-1000 $499. Call George, AB6A at Henry Radio, Los Angeles, 1-800/421-6631 or 213/820-1234.

ROBOT 800 TERMINAL, mint condx, recently factory serviced $200. Kenwood TR-7500 2 meter, Midland 13-509 220 rigs, best offer. A. Lakritz, KB9DD, 319 Bird Rock, La Jolla, CA 92037. 619/459-4401.

PACKET/ASCII/BAUDOT/CW for IBM-PC and equals. Split screen and buffers beaucoup. Bigger and better than ever! SASE to: Emile Alline, NE5S, 773 Rosa Ave., Metarie, LA 70005.

HAM RADIO MAGAZINE. The no nonsense state-of-the-art technical magazine. Subscribe now and see for yourself. 1 year $19.50 in USA. Canada and foreign surface $21.50. Europe, Africa & Japan Area $28 airmail. Ham Publishing Group. Greenville, NH 03048.

NEWS-NEWS-NEWS Amateur Radio's Newspaper "WORLD-RADIO". 1 year subscription is $9.00. Send to: WORLDRADIO, 2120 28th St., Sacramento, CA 95818.

HAL COMMUNICATIONS STRIKES AGAIN! If you have an IBM-PC, then you want to utilize the new HAL PCI-2000 interface and software to turn it into the ultimate in a computer based RTTY system! Morse, Baudot and ASCII, 103/202 modems, all speeds & speeds, Split screen and a host of other features. Write or call Dick, KOVKH, DIALTA Amateur Radio Supply, 212-48th St., Rapid City, SD 57702. 602/343-6127. Our prices can't be beat!

ANYONE with information on who will repair/sell the ROM-116 interface sold by now defunct Crown. Flesher Co., will not. Is there an interface that will work in its' place? Macrotronics users and Crown users need info on their products. Write the RTTY JOURNAL with any help..Thanks, Dee N6ELP

CONTESTS*CONTESTS*CONTESTS*CONTESTS*CONTESTS*

BRITISH AMATEUR RADIO TELEPRINTER GROUP

When- 0200 GMT Saturday, March 22 until 0200 GMT Monday, March 24th, 1986. The total contest period is 48 hours, but not more than 30 hours of operation is permitted. Time spent as listening periods count as operating time. The 18 hours of non-operating time can be taken at any time during the contest period, but off periods may not be less than 3 hours at a time. Times on the air must be summarised on the summary sheet.

WHO- there will be separate categories for single and multi operators and short wave listener stations.

Bands- 3.5, 7.0, 14.0, 21.0 and 28.0 MHz.

Stations- may not be contacted more than once on any one band but, additional contacts may be made with the same station if a different band is used.

Countries- the ARRL countries list will be used, and in addition, each W/K, VE/VO and VK call area will be counted as a seperate country. NOTE: W/k, VE/VO and VK count once each only for QCA purposes.

Messages- will consist of: (A) Time GMT, this must consist of a full four figure group and the use of the expression "same" or "same as yours" will not be permitted. (B) RST and message number. The number must consist of a three figure group and start with 001 for the first contact made.

Points- can be claimed as follows: (A) all two-way RTTY contacts with other stations within one's own country will score two points. (B) all two-way contacts with other stations outside one's own country will score ten points. (C) all stations can claim a bonus of 200 points for each country worked, including their own. NOTE: any country may be counted again only if worked on a different band and continents are counted only once. Proof of contact will be required in cases where the station worked does not appear in any other contest log received or the station worked does not submit a check log.

Scoring- (A) two-way contact points times the total of countries worked. (B) total country points times 200 times the number of continents worked (MAX 6). (C) Add (A) and (B) together to obtain the final score. Sample calculation: exchange points (302) X countries (10)=3020, country points (10) X 200 X continents (3)= 6000. (A) and (B) added together to give a score of 9020.

3020
6000
9020

Log and Score Sheets- use a seperate sheet for each band and indicate all times on the air. Logs to contain: date, GMT, Callsign of each station worked, RST and message number received, points claimed. Incomplete logs are not eligable for scoring and will be used for check logs. Summary sheet should show the full scoring, times on air, address for correspondence and in the case of multi-ops, the name and callsign of all operators during the contest. All logs must be received by May 31st, 1986 to qualify. Summary and logs sheets are available from the contest manager with 4 IRC's (U.K. send A4 envelope) to: Peter Adams, 464 Whippendell Road, Watford, Herts England WD1 7PT. The judge's decision will be final and no correspondence will be entered into. All logs become the property of BARTG.

Certificates- will be awarded to the leading stations in each of the three groups, the top station in each continent, and top station in each W/K, VE/VO and VK call area.

Additionally- if a contestant manages to contact 25 or more different countries on two-way RTTY during the contest, a claim may be made for the Quarter Century Award (QCA). A charge of 4 dollars US or 18 irc's is made. Existing QCA contestants should list new countries to be added to their records. Due to the high volume of work involved however, up-dates/new awards cannot be made until after the final results of the contest have been made.

If any contestant manages to contact stations within each of the six continents and BARTG receives a log from each of the stations concerned, a claim may be made for the WAC award issued by the RTTY JOURNAL.

OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO

HAM HELPS- Macrotronics folded. Crown is under Flesher Corporation. Neither has left anywhere for many RTTYers to turn with repairs and problems of software/interfaces/manuals etc. Anyone with solutions to the above please contact the RTTY JOURNAL office. KB9DO needs the Crown solution to interface/software and KB9DD/6 the Macrotronics solution. Others probably do also and I will share any info I receive here. de DEE, N6ELP

RTTY Journal & 73 magazine

"- 5TH ANNUAL -"
RTTY WORLD CHAMPIONSHIP CONTEST

Sponsored By:	The RTTY Journal and 73 Magazine.
Contest Period:	0000Z to 2400Z February 22, 1986.
Misc. Rules	The same station may be worked ONCE ON EACH BAND. Crossmode contacts do not count. Single operator stations may work 16 hours maximum, while the multi-operator stations may operate the entire 24-hour period. Off times are NO LESS than 30 minutes each and MUST be noted in your log(s).
Operator Classes:	(a) Single Operator, Single Transmitter. (b) Multi-operator, Single Transmitter.
Entry Categories:	(a) Single Band. (b) All Band, 10-80 Meters.
Exchange:	Stations within the 48 Continental US States and Canada must transmit RST, and State, Province/Territory. All others must transmit RST and consecutive contact number.
QSO Points:	5 QSO Points for contacts with W/VE stations located within the Continental US and Canada. 10 QSO Points for all other contacts.
Multiplier Points:	1 Multiplier Point will be awarded for each of the 48 Continental US States, (A District of Columbia contact may be substituted for a State of Maryland multiplier), Canadian Provinces/Territories and DX Countries worked on each band (excluding US and Canada).
Final Points:	Total QSO Points times Total Multipliers equals CLAIMED SCORE.
Contest Entries:	Entries must include a SEPERATE log for EACH BAND, a dupe sheet, a summary sheet, a multiplier check list, and a list of equipment used. Contestants are asked to send a SASE to the Contest address for Official Forms.
Entry Deadline:	All entries MUST be POSTMARKED no later than March 22, 1986.
Disqualifications:	Operating in excess of legal power, manipulating scores or times to achieve a score advantage or failure to omit duplicate contacts which would reduce the overall score more than 2% are all grounds for immediate disqualification. Decisions of the contest committee are final.
Awards:	Contest awards will be issued in each entry category and operator class in each of the US Call Districts, Canadian Provinces/Territories as well as in each DX Country represented. Other awards may be issued at the discretion of the awards committee. A minimum of 25 QSOs must be worked to be elegible for awards.
Contest Address:	Enclose an SASE to: RTTY WORLD CHAMPIONSHIP CONTEST % THE RTTY JOURNAL 1155 ARDEN DRIVE ENCINITAS, CA 92024

Contest Call _____ State/Province/Country _____

Station Owner _____ Call & License Class _____

Address _____ State/Country _____ Zip _____

Equipment _____ Amplifier _____ Power Output _____ Watts

Antenna(s) _____

Operator Class ◯ Single Operator, Single Transmitter ◯ Multi-Operator, Single Transmitter

If Multi-Op, Calls of Participants _____

Entry Category ⬠ Single Band ⬠ All Band

CONTEST SUMMARY

	10M	15M	20M	40M	80M	TOTAL
Contacts Made.....						
US States Worked (max of 48)						
Canadian Provinces/Territories worked(Max 13)						
DX Countries Worked.....						

TOTAL QSO POINTS _____ X TOTAL MULTIPLIER POINTS _____ = CLAIMED CONTEST SCORE _____

I have observed all competition rules as well as regulations governing the operations of Amateur Radio in my country. My contest entry, as submitted, is true and correct to the best of my knowledge. I agree to be bound by the decisions of the contest committee.

Date _____ Signed _____ Call _____

MULTIPLIER CHECK LIST

10 METERS

AL	MN	TX	____
AR	MO	UT	____
AZ	MS	VA	____
CA	MT	VT	____
CO	NC	WA	____
CT	ND	WI	____
DE	NE	WV	____
FL	NH	WY	____
GA	NJ	ALT	____
IA	NM	BC	____
ID	NV	LAB	____
IL	NY	MAN	____
IN	OH	NB	____
KS	OK	NF	____
KY	OR	NS	____
LA	PA	NWT	____
MA	RI	ONT	____
MDC	SC	PEI	____
ME	SD	QUE	____
MI	TN	SAS	____
__	__	YUK	____

15 METERS

AL	MN	TX	____
AR	MO	UT	____
AZ	MS	VA	____
CA	MT	VT	____
CO	NC	WA	____
CT	ND	WI	____
DE	NE	WV	____
FL	NH	WY	____
GA	NJ	ALT	____
IA	NM	BC	____
ID	NV	LAB	____
IL	NY	MAN	____
IN	OH	NB	____
KS	OK	NF	____
KY	OR	NS	____
LA	PA	NWT	____
MA	RI	ONT	____
MDC	SC	PEI	____
ME	SD	QUE	____
MI	TN	SAS	____
__	__	YUK	____

20 METERS

AL	MN	TX	____
AR	MO	UT	____
AZ	MS	VA	____
CA	MT	VT	____
CO	NC	WA	____
CT	ND	WI	____
DE	NE	WV	____
FL	NH	WY	____
GA	NJ	ALT	____
IA	NM	BC	____
ID	NV	LAB	____
IL	NY	MAN	____
IN	OH	NB	____
KS	OK	NF	____
KY	OR	NS	____
LA	PA	NWT	____
MA	RI	ONT	____
MDC	SC	PEI	____
ME	SD	QUE	____
MI	TN	SAS	____
__	__	YUK	____

40 METERS

AL	MN	TX	____
AR	MO	UT	____
AZ	MS	VA	____
CA	MT	VT	____
CO	NC	WA	____
CT	ND	WI	____
DE	NE	WV	____
FL	NH	WY	____
GA	NJ	ALT	____
IA	NM	BC	____
ID	NV	LAB	____
IL	NY	MAN	____
IN	OH	NB	____
KS	OK	NF	____
KY	OR	NS	____
LA	PA	NWT	____
MA	RI	ONT	____
MDC	SC	PEI	____
ME	SD	QUE	____
MI	TN	SAS	____
__	__	YUK	____

80 METERS

AL	MN	TX	____
AR	MO	UT	____
AZ	MS	VA	____
CA	MT	VT	____
CO	NC	WA	____
CT	ND	WI	____
DE	NE	WV	____
FL	NH	WY	____
GA	NJ	ALT	____
IA	NM	BC	____
ID	NV	LAB	____
IL	NY	MAN	____
IN	OH	NB	____
KS	OK	NF	____
KY	OR	NS	____
LA	PA	NWT	____
MA	RI	ONT	____
MDC	SC	PEI	____
ME	SD	QUE	____
MI	TN	SAS	____
__	__	YUK	____

IMPORTANT: CIRCLE STATES WORKED ON EACH BAND

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