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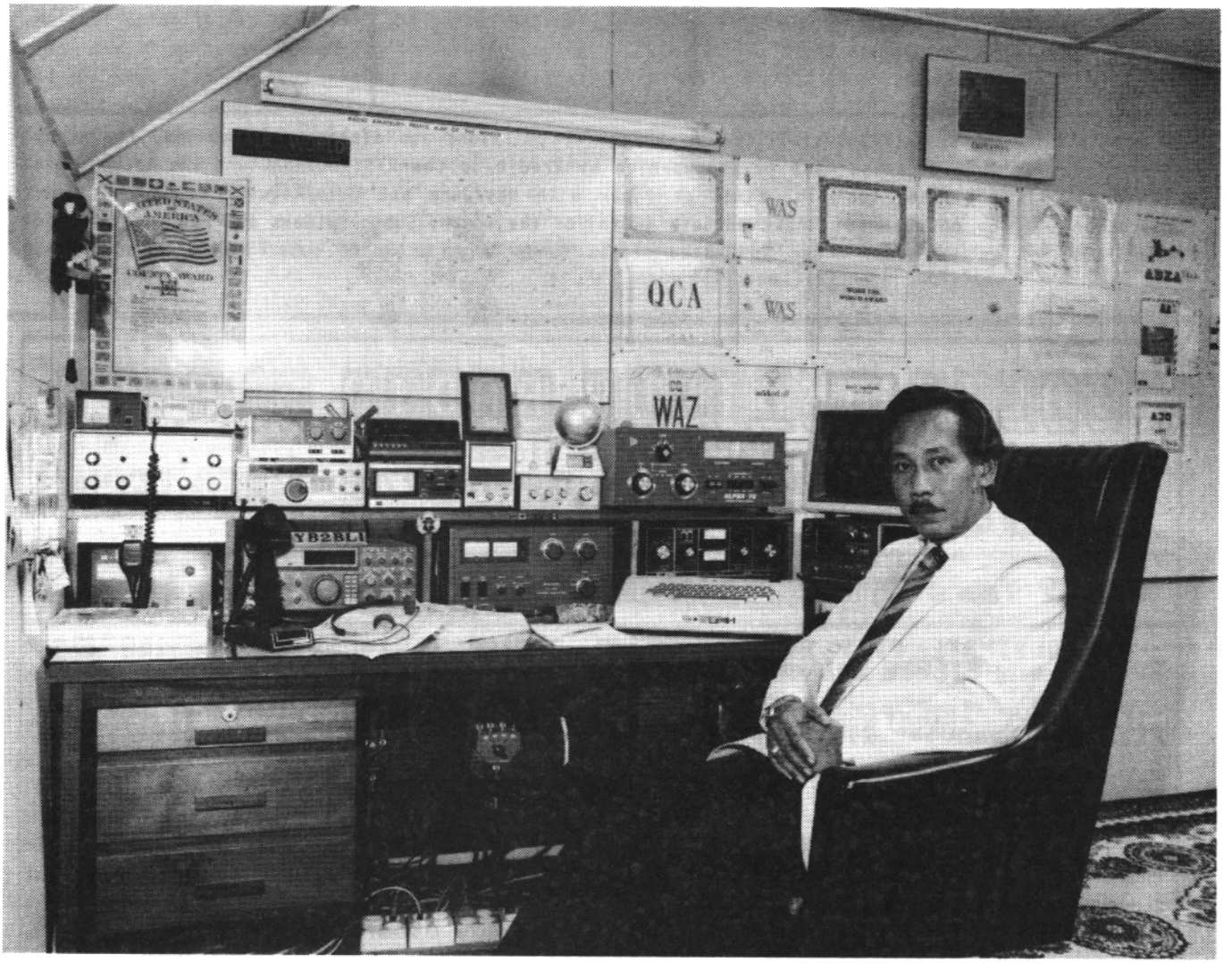

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RTTY JOURNAL

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MSO'S

by *Dick Uhrmacher,* **K0VKH**

Hi Gang! I'm writing this issue of the MSO Column just prior to departing for the Dayton Hamvention. And, I'm certainly looking forward to seeing all of our RTTY friends there. Band conditions have been something less than HORRIBLE recently, and it's a wonder that anyone has been able to access any of the MSO's. That's the beauty of the MSO system however, that "delayed QSO's" are a reality, and you can pick up your traffic during the time that band conditions are more favorable.

As reported in the last issue of the MSO column, one of our more popular and active MSO's has gone QRT for the summer months, as this particular station has been plagued with lightning problems. Unless you've experienced a direct or near miss lightning strike, there is no describing the havoc that a 100,000 ampere bolt of energy can cause! So, I've done a little research in the past month, and hope to present here a discussion of some of the techniques that can be employed in an Amateur Radio Station, to at least minimize the effects of lightning caused problems. I hasten to point out that I'm far from being an 'expert' in this area, and that the effects of a direct, or a near miss, lightning strike vary so greatly from location to location, that a rather lengthy article would be needed to cover all of the contingencies. The suggestions that follow will most certainly improve the protection at your location, and I heartily suggest that you write for further information from the references at the end of this article to better your chances of surviving a "shocking experience!"

Ionization of moisture in the atmosphere causes lightning. As the clouds travel across land and water, they become increasingly negatively charged in reference to the earth, which becomes increasingly positively charged. Once the breakdown voltage of the atmosphere is reached, there is a discharge to earth, the result being LIGHTNING! The air surrounding the stroke is expelled at supersonic speeds. The air then begins to cool, rushes back at subsonic speeds, the result:THUNDER

Not all spots within a given area have the same chance of being struck by lightning. An area that is elevated, (a hill, tree or YOUR TOWER/ANTENNA), is much more likely to be struck by lightning strokes, which would otherwise strike the surrounding earth. Consequently, the very same features (height) that makes an attractive Amateur Radio antenna location, make it an attractive point for lightning to visit! Dick's Rule #1- Get the highest spot around for your antenna, and you will get more lightning activity.

Our highest priority then should be directed toward two fronts. First and foremost is to keep lightning OUT of our equipment, and secondly, to make it EASY for it to exit, should it get in. Let's assume that your tower takes a medium lightning stroke, say 18,000 amperes!! Ninety percent is shunted directly (1800 amperes!) is aimed right at your new Kenwood transciever via your transmission line (coax). With a "rise time" of about two-millionths of a second, (2 us), it's going to be difficult to get that coax disconnected before Mr. Lightning Bolt rummages around in your new transceiver, (and anything else that is in the near proximity to it), causing it to belch smoke, fire and noxious funes!

"But wait", you say, "I have my new Kenwood GROUNDED with a # 12 wire, about 10 feet long"! This ten foot wire looks highly inductive to Mr. Lightning Bolt, (about 4.6 microhenries worth). Let's see, that's 1800 amperes, times 4.6 microhenries, divided by 2 microseconds, revealing a voltage drop of a mere 4000 volts!!! Your lovely new Kenwood rig, and anything else connected to this ground wire, is suddenly 4000 volts above its own ground reference! What do you think exposing the MOSFET's, transistors, diodes, chips, etc., in your rig to a 4000 volt potential difference is going to produce??

So what's a person to do, if grounding equipment isn't going to work? Not only must your grounds be low impedance, but they must also be low

JOE WOOD, AJØX

POB 84

LAUREL, MS 39440

DX

Hi fellow DX'ers. Good to be back after a two month lapse. I have been reflecting back to April and Dayton. A business circumstance prevented my attending this year and I have many apologies to make to an even greater number of people. The best intentions can sometimes go astray. Dayton is, without question, the most impressive gathering of our fraternity. It grows each year, providing each of us a brush with the latest in technology as well as a place for friendship reunion. I missed seeing so many of you and regret that another year will pass before an opportunity will again present itself. Sure hope to see you then.

DON WALLACE, W6AM

The month of May brought some very sad news for many of us. A dear friend, Don Wallace, W6AM, passed from our ranks on May 25th. Don, although not a RTTY DXer, was indeed Mr. DX, holding the topmost position on the DXCC Honor Roll for more than twenty-five years. His efforts in Amateur Radio will be long remembered by those that value the contributuins tnat he made to our hobby. Don shall indeed be missed.

PROPAGATION (UGH!)

Band conditions have been true to form, poor as projected. If predicitions come to pass, it will be '87 before the bottom of the cycle is reached and then the upturn which we all will welcome. If you are used to conditions as they exist today then you should not have any problems for the next 2 years, it can't get much worse.

FOØXX

Clipperton has come and gone. Wonder what the RTTY statistics for that operation look like? I received word from Gin, JA1ACB, expressing deep disappointment in missing out on that one even though copy from FOØXX was solid in Japan for much of the operation but as Gin pointed out, "what can you do when the operator appointed "EUROPE ONLY." I hope it won't be ten years before the JA's get another chance at Clipperton and that Gin continues his staunch support of this mode which provided many of us with DXCC contacts that would otherwise not have been possible.

ABOVE 14.100

I would like to take a bit of clumn space and pass along some thoughts from Mark Spencer, DA1OY/WA8SME. I am quoting three paragraphs from Mark's well thought out letter and these follow..... "I agree with the need to expand the gentlemens' RTTY band beyond the current frequencies on 20 meters. However, I would not recommend changing the current 20 CW plan for RTTY. I am sure that, that type of FCC action will be difficult to justify and get accomplished without ARRL support, which in my view would not be forthcoming. Your idea of 14.07 to 14.1, if not already a fact of life, should easily be adopted. Your concept of 14.1 to 14.12 however, can be expanded. As you have noted, RTTY is growing fast, so why go for a new band plan that will be outdated in a few years just to have to go through the discussions of band expansions again.

An alternate plan for above 14.1 would be to expand RTTY to 14.15 for both manual and semi/auto modes with the auto modes tending to favor the top end. I am sure the challenge to this plan will be the European phone use of this band. I personally feel that segment from 14.1 to 14.15 has been under used for years in the US, little if any CW activity is heard in this segment. There is some European SSB activity in this portion of the band, but since 20 meters is a daylight/twilight band weak signals from either side of the Alantic during non coincidental peak operation hours and band activity should have minimal adverse impact on segment users. In my view, SSB band segments have become more than adequate in the recent past. It is time for RTTY to burst out of the 20 KC segment that we have self imposed on the mode."

Although not directly related to the "above 14.1" dilemma, Mark adds a final comment that might be echoed by other DX operators, "I am not an avid DX'er and like to rag chew with the folks back home. Many of my contacts with the States are cut short by QRM or poor band conditions. But also when things are going my way. contacts tend to be ended early by what I call the DX'ers syndrome, i.e. signal report, QTH, name and QSL info. Not all stations overseas are interested in quickies, so please urge your readers that if they have a minute, to stick

Please turn to page 6

HAVE RTTY—WILL TRAVEL

Yes, now you can take it with you! The new **HAL CWR-6850 Telereader** is the smallest RTTY and CW terminal available, complete with CRT display screen. Stay active with your RTTY and CW friends even while traveling. Some of the outstanding features of the CWR-6850 are:

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DX COLUMN CONTINUED

it out for a few rounds of trivial information exchange. I for one like to hear about the old homestead."

Thanks Mark for your views on a most important subject. Change is inevitable and I for one appreciate your interest as well as that of others that have taken the time to send along their concerns. Have you taken the time to express your thoughts? Send them now so that they may be included in the "ABOVE 14.1" summary tentatively scheduled for September's JOURNAL.

HARD WORK!

New ARRL DXCC members. Congratulations go out to: VK5RY, WB4UBD, WA6PJR, W2FXA, W4UG and AE5H. We wish you continued success as you search for new ones.

NEED QSL INFORMATION FOR:

ZK2WL. Anyone with a valid QSL address for him? Please pass it on to Al, W6MI.

NEED A QSL MANAGER?

If you are a RTTY DX station operator and wish the services of a stateside QSL manager, get in touch with Ted, N6EQZ/7.

CONTEST RESULTS

I am extremely anxious to see the results of the RTTY World Championship contest appearing elsewhere in this issue. Dee says that it is the best yet. [It was and Joe was no slouch in it, coming in first on 20 meters. Ed. note.] For poor conditions there were a lot of operators on and some very good scores.

HEARD, WORKED AND QSL INFORMATION FOR.....

FK8BK	14.085	0800Z	CBA (Callbook address)
WH8AAJ	21.091	2130	POB 973, American Samoa, 96799.
YS1GMV	14.090	2030	POB 1557, San Salvador
JA2EJA	14.087	2200	JARL
SW2SU	14.093	1350	POB 10483, Thessaloniki, Greece.
4U1UN	14.084	2300	UN Station in New York-via W2MZV
EA9MY	14.081	0100	POB 412, Melilla
KL7BIG	14.093	2100	BURO
EA8BAI	14.078	0005	BURO
3B8FP	14.085	1800	via IK8DYD
OD5NG	14.092	1830	via WA1ZFS
9H4C	14.092	1545	CBA
KE5IZ/PJ3	14.090	2330	via WA5ZVZ
BY1PK	14.090	1500	POB 6106, Beijing, Peoples Republic/China.
4Z4NL	14.086	1150	POB 30949, Tel Aviv.
HA7PF	14.091	1500	BURO
OK2BXW	14.087	1400	BURO
9Q5GD	14.085	2100	CBA
YB3CBF	14.080	1100	POB 75, Malang, Indonesia.
HI3ADI	14.092	2100	CBA
CT2FT	14.089	2330	BURO
JA5TX	14.085	1100	JARL
A92DU	14.094	2345	Via PE1BSX
HR5SB/2	14.091	0100	via WB0MZB
TI2SPA	14.086	0000	POB 7547, San Jose, Costa Rica.
ZP5JAL	14.086	2245	Via KO2A

Again my thanks go out to each of you. Your input makes this column possible and is appreciated by all who share it. Take a moment to drop a line as did: K6WZ, W2JGR, DA1OY, W6MI, and N1API. Thanks guys.

Good luck to each of you as you spin your dials, antennas and power meters in search of the next one. 73 and SK de Joe, AJØX.....

OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO

32S-3 AC POWER SWITCH

When my Collins 32S-3 AC power switch disintegrated, I anticipated a problem in finding a replacement. However, I had a bit of luck locating similar switches in a local surplus store. As in the 32S-3, the new switch was mounted on a plate with three bend over metal tabs. Look at the rear of the FREQ CONTROL rotary switch.

The replacement has an extra set of contacts, normally closed in the OFF position. I haven't yet figured out what to do with them.

I decided to buy an extra dozen and will part with them to 32S-3 users at my cost of $1.00-stamps okay. The AC switch will be removed from the rest of the assembly and shipped in an envelope.

Carl C. Steavenson, K6WZ
13638 Sproule Avenue
Sylmar, California 91342.

Also from Carl:

I got a little sore from kicking myself for not analyzing this problem without calling AEA, but maybe I can save someone else a phone call one day.

A couple of weeks before the RTTY JOURNAL/73 Contest, my new MBA-TOR arrived. I had taken advantage of the manufacturer's offer and swapped my old MBA-TEXT. Operations were normal until the display locked up a week later with weird symbols scattered about on the screen and no control from the keyboard whatever. Turning off the C64 for 10 minutes or so would allow normal operation again but for less time, an hour or less.

Please turn to page 8

THE STANDARD OF EXCELLENCE

The world of CW, RTTY, and new DUAL AMTOR is as close as your fingertips with the new brilliantly innovative state-of-the-art microcomputer controlled* EXL-5000E.

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Characters: Alphabet, Figures, Symbols, Special Characters, Kana.
Built-in Monitor: 5" high resolution, delayed persistence green monitor – provides sharp clear image with no jiggle or jitter even under fluorescent lighting. Also has a provision for composite video signal output.
Time Clock: Displays Month, Date, Hour and Minute on the screen.
Time/Transmission/Receiving Feature: The built-in timer enables completely automatic TX/RX without operator's attendance.
Selcal (Selective Calling) System: With this feature, the unit only receives messages following a preset code. Built-in Demodulator for High Performance: Newly designed high speed RTTY demodulator has receiving capability of as fast as 300 Baud. Three-step shifts select either 170Hz, 425Hz or 850Hz shift with manual fine tune control of space channel for odd shifts. HIGH (Mark Frequency 2125Hz)/LOW (Mark Frequency 1275Hz) tone pair select. Mark only or Space only copy capability for selective fading. ARQ/FEC features incorporated.
Crystal Controlled AFSK Modulator: A transceiver without FSK function can transmit in RTTY mode by utilizing the high stability crystal-controlled modulator controlled by the computer.
Photocoupler CW, FSK Keyer built-in: Very high voltage, high current photocoupler keyer is provided for CW, FSK keying.
Convenient ASCII Key Arrangement: The keyboard layout is ASCII arrangement with function keys. Automatic insertion of LTR/FIG code makes operation a breeze.
Battery Back-up Memory: Data in the battery back-up memory, covering 72 characters x 7 channels and 24 characters x 8 channels, is retained even when the external power source is removed. Messages can be recalled from a keyboard instruction and some particular channels can be read out continuously. You can write messages into any channel while receiving.
Large Capacity Display Memory: Covers up to 1,280 characters. Screen Format contains 40 characters x 16 lines x 2 pages.
Screen Display Type-Ahead Buffer Memory: A 160-character buffer memory is displayed on the lower part of the screen. The characters move to the left erasing one by one as soon as they are transmitted. Messages can be written during the receiving state for transmission with battery back-up memory or SEND function.
Function Display System: Each function (mode, channel number, speed, etc.) is displayed on the screen.
Printer Interface: Centronics Para Compatible interface enables easy connection of a low-cost dot printer for hard copy.
Wide Range of Transmitting and Receiving: Morse Code transmitting speed can be set from the keyboard at any rate between 5-100 WPM (every word per minute). AUTOTRACK on receive. For communication in Baudot and ASCII Codes, rate is variable by a keyboard instruction between 12-300 Baud when using RTTY Modem and between 12-600 Baud when using TTL level. The variable speed feature makes the unit ideal for amateur, business and commercial use.
Pre-load Function: The buffer memory can store the messages written from the keyboard instead of sending them immediately. The stored messages can be sent with a keyboard command.
"RUB-OUT" Function: You can correct mistakes while writing messages in the buffer memory. Misspellings can also be erased while the information is still in the buffer memory.
Automatic CR/LF: While transmitting. CR/LF automatically sent every 64, 72 or 80 characters.
WORD MODE operation: Characters can be transmitted by word groupings, not every character, from the buffer memory with keyboard instruction.
LINE MODE operation: Characters can be transmitted by line groupings from the buffer memory.
WORD-WRAP-AROUND operation: In receive mode, WORD-WRAP-AROUND prevents the last word of the line from splitting in two and makes the screen easily read.
"ECHO" Function: With a keyboard instruction, received data can be read and sent out at the same time. This function enables a cassette tape recorder to be used as a back-up memory, and a system can be created just like telex which uses paper tape.
Cursor Control Function: Full cursor control (up/down, left/right) is available from the keyboard. Test Message Function: "RY" and "QBF" test messages can be repeated with this function.
MARK-AND-BREAK (SPACE-AND-BREAK) System: Either mark or space tone can be used to copy RTTY.
Variable CW weights: For CW transmission, weights (ratio of dot to dash) can be changed within the limits of 1:3-1:7.
Audio Monitor Circuit: A built-in audio monitor circuit with an automatic transmit/receive switch enables checking of the transmitting and receiving state. In receive mode, it is possible to check the output of the mark filter, the space filter and AGC amplifier prior to the filters.

CW Practice Function: The unit reads data from the hand key and displays the characters on the screen. CW keying output circuit works according to the key operation.
CW Random Generator: Output of CW random signal can be used as CW reading practice. **Bargraph LED Meter for Tuning:** Tuning of CW and RTTY is very easy with the bargraph LED meter. In addition, provision has been made for attachment of an oscilloscope to aid tuning.
Built-in AC/DC: Power supply is switchable as required; 100-120 VAC; 220-240 VAC/ 50/60Hz + 13:8VDC.
Color: Light grey with dark grey trim – matches most current transceivers. **Dimensions:** 363(W) x 121(H) x 351(D) mm: Terminal Unit.
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by GEORGE

HITS & MISSES

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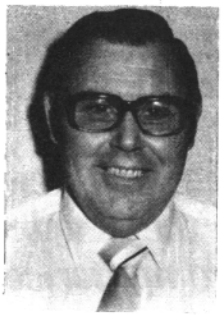

WARC BANDS

The 24 MHz or 12 meter band was opened to Amateurs on June 22,1985 at 0001 UTC. The maximum legal power is 1500 PEP. CW and RTTY will have the exclusive use of the sub band 24.890 to 24.930.

160 METER

On June 17,1985 Amateurs were authorized to use RTTY, FAX and SSTV on the 160 meter band 1800 to 2000 KHz.

SURVEY

The ARRL conducted a survey asking members their opinion on SSB subbands in the US 40 meter band. The results are as follows: 8788 (42.2%) in favor of phone expansion on the forty meter band. 10640 (53.6%) not in favor of phone expansion on the US forty meter band.
434 (2.2%) no opinion.
A total of 19862 responses.

CALL BOOKS

The ARRL is closing out their supply of 1984-85 ARRL Radio call books. The price is $10.00 US funds.

USQS

The US QSL Service Inc. has moved. The new address is: KM7Z, POB 521, Cortaro, AZ 85230.

USQS is a QSL Bureau that allows Radio Amateurs in the lower forty eight states to QSL each other. Cards can be sent anytime by anyone, no membership required. To claim your QSL's you simply provide SASE.

This service is run completely on donations. Funds are needed to defray printing flyers and mailing out unclaimed QSL cards.

OCTOBERVENTION

A fun filled Ham convention is to be held in Las Vegas on October 31 to November 3, 1985. It will feature a giant outdoor flea market, prizes galore, deluxe banquet, FCC exams, huge exhibit hall and free cocktail parties. Write to: Octobervention, Department 200 POB 19675, Las Vegas, NV 89132.

SILENT KEY

W6AM became a silent key on Saturday, May 25, 1985. Don never failed to show up at the RTTY hospitality rooms at all conventions just to say hello. Don will be sorely missed by Amateurs world wide.

RETIREMENT

I will retire from the City of San Diego on July 12th. I hope to be able to devote more time to operating and writing. My wife Jeanne and I will take our annual leave trip to Nevada, Idaho, Washington and Oregon and then back home. THe list of honey do's is pretty long so I'll cut my column short this month in order to get a running start.

So long for now, George, WA6CQW.

POWER SWITCH CONTINUED

Well, I have been through many contests using the still available machinery and Mainline TT/L, but those ten buffers provided by the software sure make a difference. I found a dealer with a bargain priced MBA-TEXT, reasoning that I would at least have that while the MBA-TOR was being returning for repair. I guessed wrong. The same kind of lock-up occured with the new MBA-TEXT. This was the day before the contest was to begin.

A very knowledgable gentleman at AEA had the answer. It seems the C64 power supply voltage can drop with heating below some critical value. Incidentally, the computer did not malfunction with no software cartridge installed. Commodore apparently has a fix,and perhaps the heat sink could be larger but, lacking anything else the AEA representative said, "...put a fan on it."

When I built the computer table some ten months ago, I mounted a muffin fan on the back wall to keep me cool. The power supply is under the table also. But during the winter months the fan wasn't needed by the operator... With the fan plugged in again, my problem disappeared, for four months. Then it came back so I bought a new C64 and it is okay, so far. Commodore will sell a new power supply for $38.00, shipping included. I note in the new manual they say to unplug the power supply when it locks up. Don't think they have a fix yet- - the PS can't be repaired because it is potted solidly with epoxy. So will try to build a power supply of more than 7 watts and also try to keep it cool.
73, Carl, K6WZ

4TH ANNUAL RTTY WORLDWIDE CHAMPIONSHIP CONTEST- RESULTS

SPONSORED BY: RTTY JOURNAL/73 MAGAZINE..23 FEBRUARY, 1985.

SINGLE OPERATOR - ALL BANDS

1.	Ed Bruns, W3EKT	184,140
2.	Roy Gould, KT1N	173,215
3.	Dima Slyusarenko, UT5RP	154,560
4.	Leo Small, K4AGC	122,800
5.	Peter Rodmell, G3ZRS	121,800
6.	J. Dudahl-Lasson, OZ1CRL	110,805
7.	Jan Palmquist, SM5FUG	91,455
8.	Bo Stjernberg, SM6ASD	90,000
9.	Jack Reed. WA7LNW	63,145
10.	Gastone Galeotti, VE3NUP	57,950
11.	Juerg Regli, HB9BIN	55,510
12.	Alle Lofgren, SM7AIA	51,015
13.	Robert Lewis, N4GXP/8	45,570
14.	Orbra Bliss, HC1BW	43,885
15.	Carl Steavenson, K6WZ	42,900
16.	K. L. Miller, VE7YB	40,975
17.	Bo Ohlsson, SM4CMG	35,245
18.	George Wesley, KB2VO	33,600
19.	Andy McLellan, VE1ASJ	32,250
20.	Douglas Heller, WD9FSD	32,130
21.	Olli Savolainen, OH2BDN	29,915
22.	R. Jacobson, K2YGM	27,795
23.	Etienne, Perozzo, ON7EP	25,625
24.	Vance Fauver, WB5HBR	24,150
25.	Leslie Harper, W8CFJ	21,780
26.	John Watson, W7MI	20,240
27.	Henrick Juul Olsen, DJØJU	19,500
28.	M. Navarro Ramos, XE2NNZ	16,720
29.	Wayne Wyatt, WB5QBV	16,060
30.	Lars Kjellgren, SM7LSU	15,345
31.	Chuck Prindle. W6JOX	14,350
32.	John North, EA7EVD	12,245
33.	Doug Nelson, K6HGF	11,655
34.	Mikio Kuwayama, JR2CFD	11,625
35.	Danny Centers, NF4F	11,160
36.	Eike Bartels, Y22UL	11,040
37.	Ludwig, Werner, DF5BX	10,920
38.	Ulrich Bettin, Y23FK/A	9,230
39.	John Graham, WD9EMW	4,900
40.	Steve Hanzlik, KA2CDJ/$	3,300
41.	Duane Snyder, K9PIG	2,565
42.	Max de Hensler, 4U1UN	2,550
43.	Mitsuo Morisawa, JA5TX	1,080

SINGLE OPERATOR 20 METERS

1.	Joe Wood, AJØX	163,095
2.	Shawn Keley, WB1AEL	52,260
3.	Sarkezi Arpad, YU7AM	37,400
4.	Jules Freundlich, W2JGR	32,400
5.	Jose Stragia, LU8ESU	27,090
6.	Ariosto De Souza, PT2BW	25,900
7.	Leslie Harper, W8CFJ	21,780
8.	Anthony Susen, W3AOH	20,295
9.	Hans Waterstraat, Y39TO	18,180
10.	James Sladek, WB4UBD	15,500
11.	Jurgen Bieber, DL9MBZ	12,470
12.	Nels Wasson, VE6CNV	9,145
13.	K. Tettelaar, VE7ATH	8,265
14.	Bill Snyder, WØLHS	7,930
15.	Dusil Miroslav, OK1AWC	7,820
16.	Scott Smith, KH6JKX	6,500
17.	Paul Clifford, WA2AXO	6,370
18.	Helio Senta, PY6ACP	6,240
19.	Gary Moles, ZL2AKI	6,120
19.	George Craiu, YO3RF	6,120
21.	Juan C. Montalvo, EA2AOV	5,925
22.	Kunihiko Fujii, JH1QDB	5,460
23.	Chris Le Tissier, GU4YMV	3,840
24.	Peter Hendrikx, PA3DBS	3,820
25.	Yasuyuki, Inoue, JR1AIB	3,780
26.	James Swan, VK2BQS	3,060
27.	Ross Merlin, WA2WDT	2,790
28.	Camilo Castillo, HP1AC	2,250
29.	Shunichi, M., JE1NWL	330
30.	Kang Tae Kyu, HL1QT	40

SINGLE OPERATOR - 15 METERS

1.	Hartmit, Bomberg, Y63ZI	4,590
2.	Manfred Behnke, Y33UD	300
3.	J. Kosch, Y63TI	40

MULTIPLE OPERATORS - ALL BANDS

1.	Elizabeth Ventresca, KA3GIK	144,500
2.	Earl Patterson, NG7P	109,740
3.	Leicester Polytechnk, G3SDC	74,200
4.	Bill Gosney, KE7C	57,000
5.	Gary Paquette, WA1VTZ	50,680
6.	University of Houston Bret Levit, WB5FND	50,160
7.	Radioklub Junior, OK3KII	47,320
8.	Zvazarmu Radioklub,OK3KGI	43,785
9.	Radioklub pri , OK3RJB	36,900
10.	Milton Coop, KD8KA	11.055
11.	Kenji Koseki, JA7YFB	1,890
12.	Tadashi Yoshimoto, JA6YDH	960

CHECK LOGS: Y26CO, W3BE, W3KV LU4EGE , EA5CVR and N6ELP.

See everyone next year hopefully with better conditions.

COMMENTS

Not vry gd condx and no body on 21 and 28 MHz. ON7EP.

Last yr I had been on RTTY only 4 weeks,hardly enough time to under stand the full scope of RTTY. This year was totally different..I not only understand the aspect but more than doubled last years sc score!! WA7LNW..

What a boom from W/VE on 14 MHz., that was an experience. Looking forward to 1986. OZ1CRL

I was shocked at the great number of of states on 80 M! I have never worked so many on that band! All in all a good contest,computers have really helped get people "on the air!" W3EKT.

Condx vry poor hr, not as good as last year, but had lots of fun. VE7ATH.

As usual I enjoyed RTTY contest.This year propagation was better,but maybe my antennas were better? Activity was very good,but I missed a good time in the morning for operating on 80M by local cause. Hope to be in next year with better antenna and without local causes. UT5RP.

Depending on where the operator was, conditions were good or poor on all or none of the bands. It was better conditions than expected and there were operations on all bands somewhere at some time. N6ELP...

inductance. Your earth grounds must be well designed, and multiple grounding rods, plus a buried "radial" system dramatically improves your chances of diverting Mr. Lightning Bolt to less damaging pursuits. Eliminating large potential voltage differences between DIFFERENT pieces of equipment is also essential, primarily by making sure that each piece of equipment is interconnected through a low impedance/inductance path with all OTHER ground systems, (i.e. the earth ground, power company ground, and phone company ground). The DIFFERENCE in potential ground (impedance) is attractive to Mr. Lightning Bolt, and you can be sure that your most valued piece of equipment will be the path that he chooses to take to find a good ground!

Now that we have a good ground system installed, there are some recent significant technological breakthroughs that we can exploit to further discourage a visit from Mr. Lightning Bolt. First, and very important, is the proper grounding of your tower, to include several well placed ground rods. The higher the resistance of the soil in your area, the more rods required. Secondly, utilization of DC grounded antennas, that are bonded to the tower mast, are much less susceptible to diverting lightning strokes directly to your feedline. Third, and probably most important, is the acquisition and use of a feedline impulse suppressor, mounted at the tower, (not in the skack or on the equipment). Finally, a 'loop' placed in your feedline just before it enters the shack will further discourage untimely lightning visits.

Above ground telephone and power distribution lines are subject to both 'direct' and 'near miss' lightning events. EITHER can be disastrous as far as Amateur Radio equipment is concerned, and consequently both must be treated with respect when designing a lightning suppression system. MOV's, (metal oxide varistors), gas-discharge protection devices, etc., are just some of the devices that can be utilized to minimize danger from a direct or near-miss lightning event, and experience has shown that several of these technologies must be employed to enhance lightning protection. Ask any Amateur Radio Operator who has been visited by Mr. Lightning Bolt, and you'll receive dramatic testimony that local power and telephone companies lightning suppression equipment is designed to protect THEIR equipment, but in truth does LITTLE to protect YOUR equipment. A few dollars invested in these new devices on your part can repay you handsomely.

Several manufacturers are producing lightning protection equipment these days, and the following only lists a few. Each provides some technical information devoted directly to lightning protection, and can be requested along with information on product specifications and pricing. Good luck, and I hope that you have a Spring/Summer/Fall season free from visits from Mr. Lightning Bolt!

LIGHTNING PROTECTION EQUIPMENT MANUFACTURERS:

PolyPhaser Corporation, 1420 Industrial Way, POB 1237, Gardnerville, NV 89410.

Decibel Products, 3184 Quebec, Dallas, TX 75274.

Lightning Elimination Associates, 12516 Lakeland Road, Santa Fe Springs, CA 90670.

Joslyn Electric Systems, POB 817, Goleta, CA 93116

MSO RAMBLINGS: If you've wondered about what has happened to the AJØX MSO, (Laurel, MS), Joe had an unwelcome visit by high winds late in March, and it decimated his beam antenna system. We miss Joe's good signal, and hope that he will be back up and running soon! As of this writing, Red and Charline (K9KUW), still haven't departed on their new adventure to Arizona. We all hope that they are able to make the trip in good health, and enjoy retirement in the Sun belt! --John, TG9VT, reports that his MSO will only be on sporatically, as it seems that Guatemala City lost two of its large power generators. Consequently "power rationing" is in effect, and they throw the "big switch" quite frequently.

That's it for this month Gang. I hope that Summer is enjoyable for all of you! Have fun, and enjoy RTTY! DE" Dick, KØVKH.

OOOO

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Rule Sheet.

1. Test Period: Saturday October 19th, 1985 - 0200 GMT to Monday October 21st, 1985 - 0200 GMT.
   * Not more than 30 hours of operating is permitted for single operator stations. Non-operating periods can be taken at any time during the contest.
   * Multi-operator stations may count the entire 48 hour contest period.
   * Summary of operating times must be submitted with each score.

2. Bands: Use all amateur bands 3.5, 7, 14, 21 and 28 Mhz.

3. Classifications: (a) Single Operator (one transmitter)
   (b) Multi-operator (one transmitter)
   (c) S.W.L. Printer

4. Messages: To consist of RST, Time GMT and Zone.

5. Exchange Points: All two-way RTTY QSO's with one's own Zone counts two (2) points. All other contacts will receive points as listed on CARTG Zone Chart.

6. Multipliers: Country status as ARRL Countries List, KL7, KH6, USA, VE/VO/VY/VX, VK Districts counted as separate countries. Stations not to be counted more than once on any one band. Additional contacts counted on different bands. One's own country counted as a multiplier.

7. Scoring: Total Exchange Points X number of countries contacted X number of Continents (maximum 6). Two Hundred (200) Bonus Points added to final score for each Canadian contact on all bands.

8. Logs:
   * Logs to contain Band, date, Times GMT, RST, Call signs, exchanges sent and received.
   * Use separate Log Sheet for each band.
   * Multi-Operator Logs must be signed by each operator.
   * Send SASE or IRC's to CARTG for Log Sheets.
   * Logs must be received before January 1st 1986 with Time Summary and claimed Score.

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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 $28.00 airmail. Ham Publishing Group. Greenville, NH 03048.

WANTED TELETYPE REPAIR PARTS, unused. Any quantity. Send SASE for list of parts, supplies, manuals. TYPETRONICS, Box 8873, Ft. Lauderdale, FL 33310. Phone 305/583-1340 after 9 PM. Fred Schmidt, N4TT.

Due to the demise of W6AM, Don, there will be a few vacancies in the DXpedition to the Caribbean (Antigua and St. Martin) scheduled for mid October. Info may be obtained from:Irv Emig, W6GC, 737-12th St., Manhattan Beach, CA 90266. SASE please.

HAL COMMUNICATIONS STRIKES AGAIN If you have an IBM-PC personal computer, 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/shifts, 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!

1986 ARRL CONVENTION PLANS

Wheels are in motion for next year's ARRL National Convention, which will be held in San Diego, California, on September 5, 6, & 7th,1986, according to the San Diego County Amateur Radio Council, "SANDARC" sponsor of the event.

Theme of the convention is "Amateur Radio in Public Service". The event will be at the Town & Country Hotel and Convention Center, site of previous area and National ARRL conventions. Walt Hicks, W6UZL, has been appointed chairman, and is the point of contact for advance planning for potential commercial and non-commercial exhibits and ARRL affiliated clubs/individuals wishing to sponsor forums, technical sessions, and in particular participate in displays and activities relating to the convention theme. Contact Walt at: 2671 Elysee St., San Diego, CA 92123....619/292-7918.

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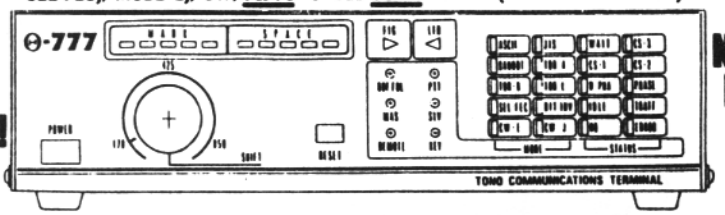

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An interface was designed to provide a simple effective unit to enable an ICOM 751 to be used in the FSK mode with a HAL DS-3100 terminal and an RTTY demodulator. This unit has been service without any problems since December, 1983.

Referring to the diagram, the LM1489 (SN75189) is a quad line receiver, of which one section is used. This IC converts the DS-3100 RS-232 ASCII/ Baudot keying output to the FSK input keying levels required by the IC-751. The IN4148 diode provides reverse polarity protection for the keyer input circuit.

The LM307 operational amplifier provides 10 db gain to the fixed level detector output of the IC-751. Desired input level to the associated RTTY demodulator is obtained by adjusting the variable resistor.

The LM309 is a voltage regulator providing 5 volts to the circuit from the IC-751 13 volt system supply. The LM309 is rated at 1 ampere out put, much more than needed - it was on hand at construction time.

The 1N4148 diode in the PTT line provides reverse polarity protection to the IC-751.

Most of the interface circuit, including the variable resistor, was constructed on a small piece of perf board using point to point wiring. The board was enclosed in a small aluminum box on which were mounted the LM309 voltage regulator, three RCA type phono jacks and one subminiature 7 line connector socket.

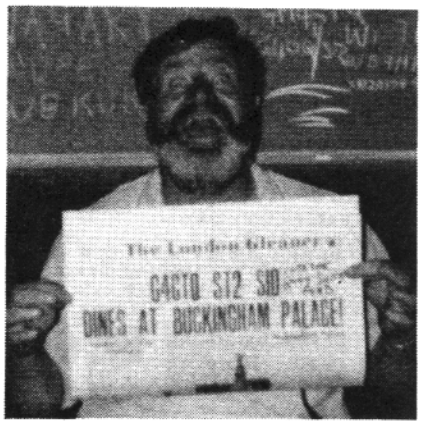
Connections between the interface and DS-3100 are via two shielded cables with phono plugs on the interface end. The interface connection to an ST-6, or other demodulator, is also via a shielded bable terminated with phono plugs on both ends.

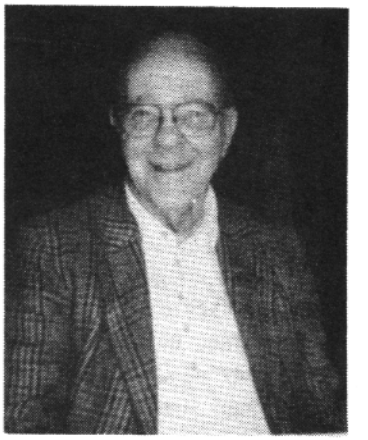
Connections between the interface and IC-751 are via a five conductor shielded cable, approximately eight inches long. The connector plug matching the line connector socket on the interface. The other end of this cable has the conductors soldered to the indicated pins of a plug fitting the accessory socket on the rear panel of the IC-751. The author's IC-751 accessory socket is occupied by a plug connecting an ICOM AT-100 automatic antenna tuner control cable. The five leads of the interface connecting cable were soldered to the existing accessory plug pins.

The interface is powered by the IC-751. As constructed, the unit can be quickly removed from the system. Use of the fixed level detector ourput to drive the RTTY demodulator isolates this function from the front panel audio gain control setting. Please see next page for schematic.....

OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO

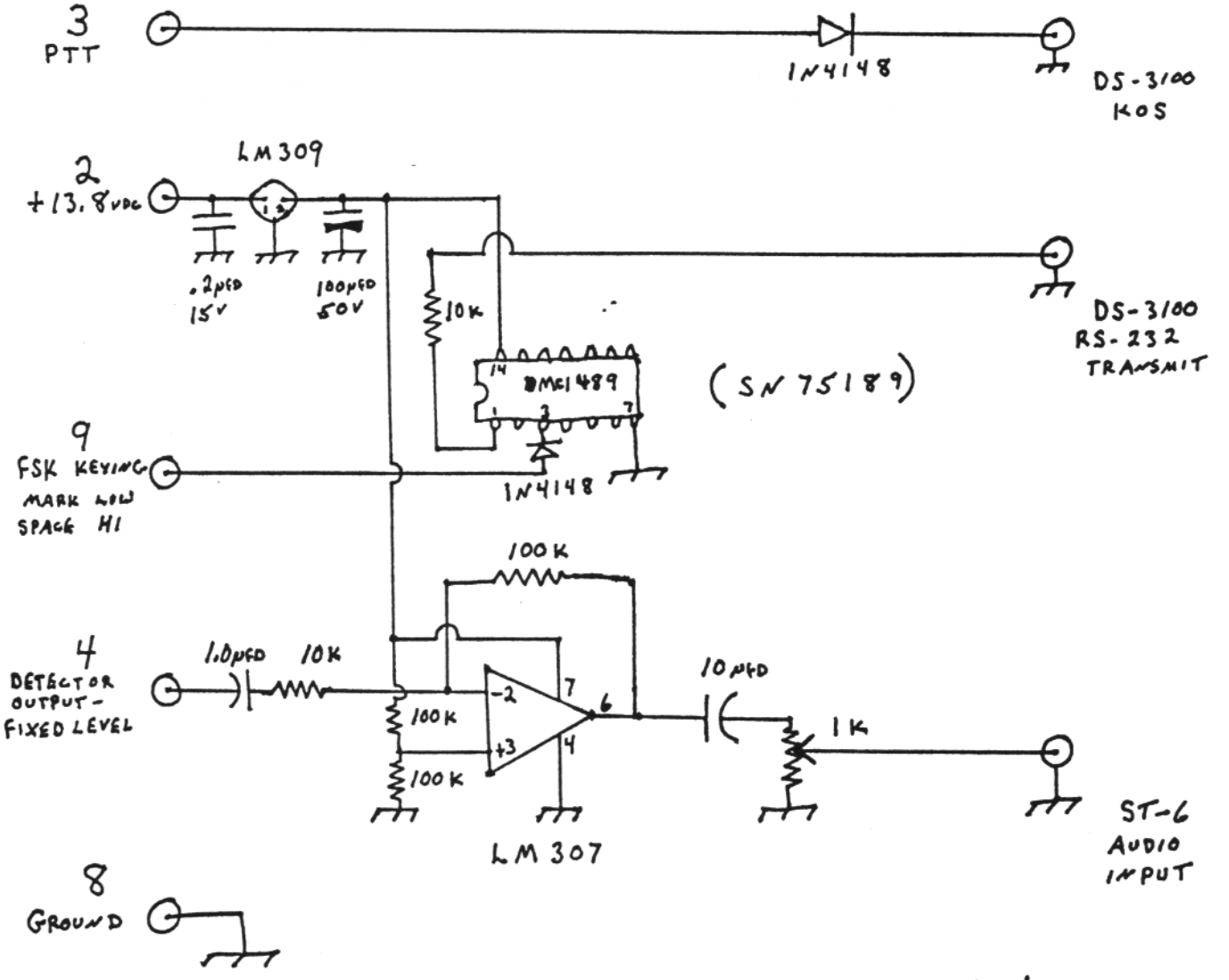
PIX BELOW: K9GWT-Bill; ?; XE1LL-Art; WA8DGT-Ralph; Fred; W6SKC-Hank at Dayton Hamvention. Below left to right G4CTQ-Sid; Ed and Terry with Bob behind and W9WKC Ed all at Dayton Hamvention.





INTERFACE

ICOM-751 / HAL DS-3100



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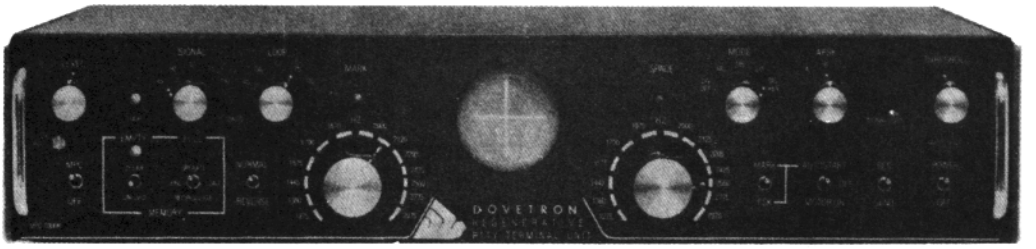

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