RTTY Journal

DECEMBER 1981

VOLUME 29 NO.10

75 CENTS

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Wishing you a Merry Christmas and health and happiness throughout the NEW YEAR

GOING TO THE "CANDY STORE"

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RTTY JOURNAL

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BACK ISSUES

A DUPLICATE OF ANY BACK ISSUE MAY BE OBTAINED FROM RED WILSON, 4011 CLEARVIEW DRIVE, CEDAR FALLS, IA 50613. $1.00 PPD & SASE.REPRINTS OF ALL (2) UART ARTICLES $2.00PPD.

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AUTOCOM MA4

Neil Petlock K9WRL

The Autocom presented here is the product of four different designs of the original idea. The Autocom MA4 consists of four basic boards and requires a +5, -12, +12v power supply.A 5th XB-6 clock is also available.

The main goal of the Autocom is to provide selective calling, i.e., your call up to 8 charactes or functions, (in our case K 9 WRL was used) NNNN shut down, and a method of selecting in different functions. The function in our case is the ability to turn on and off the punch and the ability for another station to call in and turn on a precut tape to be sent back to him, to select in CWID, and to select an answer back.

UT2/PARALLEL GENERATOR/CLOCK.

Basically, this board is a rehash of Irv Hoff's UT2* with a few additional options. The UT2/UT4 systems are used so one may start with the UT series and add the Autocom when desired, giving increased flexibility and utility. One option added to this board is the NE555 clock which may be used to clock both input and output at the same speed. This is accomplished by breaking a direct foil lead from pin 40 of the UART to pin 3 of the NE555 (this lead is used for a receive only system) and connecting terminals A, C and 17 on the edge connector** together, or by connecting just A and 17 together. The NE555 May be used to supply one speed to the input clock (printer) and an XB6 Clock*** may be used to supply the input speeds to pin C.

The 2nd addition is the two 7417 chips which are used to supply and buffer the parallel buss as only one TTL load is specified for the UART outputs.

The 3rd addition is the extended use of pin 24 of the UART. The 7407 acts as an inverter/buffer. Using the low pulse from pin 24 we were able to devise a transitional autostart system with the use of one chip, the 74122. With this resetable one shot we use the first low going pulse of pin 24 to start the one shot timing. The 15K resistor and 1000MF capacitor give us a timing of about 30 to 35 seconds. As long as we get continous transitions from pin 24 of the UART, Q2 will remain on, and it will be used to drive a 12 v. relay for autostart purposes. If no transitions are sent for 30 sec. the 74122 is allowed to reset and turn off Q2. Pin 24 also supplies clock pulses for the counters and clock pulses for the 7475's.

IC6F is used to drive a signal lamp on the front panel and will follow the mark-space from the output. This will allow you to see if anyone is using the frequency.

MEMORY ELECTRONIC BOARD

This board is the heart of the Autocom system. The incoming signal is compared to the call stored in two H8256 proms. The exclusive nor gate (74L S266) looks for a match, high or low, to keep a low output on pin 8 of the 7430. This same point is tied to the reset pins of the 7493 counters. A 47UF capacitor is placed there to elimate any sliver pulses. Without these capacitors the counters would be allowed to reset each time even if sequence was followed. If sequence is followed the counter (0-7) steps the prom. Once full sequence is achieved, pin 6 of the prom goes high and allows pin 3 of IC 13A to go low, thus forcing pin 11 of 13D to go high. This point will be used to start your printer.

At the same time the 74157 mul-

continued on page 14

VHF COLUMN

JOHN CUNNINGHAM, WA9WJD
POST OFFICE BOX RY
PERRYSVILLE, IN 47974

I only received one news item this month, come on guys.
This is the season to be jolly. Breathes there a RTTYer with soul so dead that he cannot get the Christmas spirit when he copies a Christmas pix. The air is full of pix at this time of the year and there is no better place to copy all of the pix then on VHF FM RTTY. What better Christmas decoration for the shack then a fresh off the air pix, sure impresses the visitor huh?

There are also some cute stories from the gifted writers. For the column this month I would like to share what I consider to be one of the best I have seen in a long time. BULL-E-TIN:

No Christmas this year. Santa won't be able to make it Christmas Eve as he has legal problems.

One December 2, the Society for the Prevention of Cruelty to animals filed suit against Santa Claus for severely abusing a number of reindeer, charging that Santa Claus lashed them to a heavily laden sled and forced them to carry the sled for great distances.

The Society for Precention of Cruelty to Animals reported that it was particulary disturbed at evidence that Santa Claus had "grossly deformed" one reindeer by somehow giving it a bright nose.

The SPCA managed to obtain a temporary injunction against Santa using the reindeer.

On December 5th the Department of Health, Education and Welfare, Affirmarive action division, filed suit against Santa Claus, Alleging blatant "height discrimination" because no one over three feet tall was hired to work in Santa's massive workshops. It got its injunction.

On December 8th, Ralph Nader went to court, charging that Santa made unsafe toys. Nader's legal papers alleged some of Santa's toys were made out of metal, which could be used to hit another child and cause severe injury.

Other toys, Nader said, were made of plastic that could shatter and dangerously cut a child.

He recommended that Santa make all of his toys out of foam rubber, but noted that even a foam rubber toy could accidentally strangle children if they tried to eat one. The safest thing, Nader said, would be for Santa not to make any toys at all. Nader got his injunction.

Santa Claus declined to comment on any of the cases on advice of his own attorneys, But sources close to the North Pole said it "looks as though only the attorneys are going to have a Merry Christmas this year."

Part of an article written by Andy Smith, a writer for the Gannet Newspaper Chain, copied for your enjoyment by John, WA9WJG.

FROM THE MAILBAG

"On page 9 of the current issue (November 1981) there appears a note asking for information regarding adding a "diddle" feature to an ST-6.

I wish you would mention in the JOURNAL that this feature is an abdominable idea and a feature which serves no earthly purpose. To those of us who use mechanical printers (teletypewriters) it is annoying, because it makes it sound as though something is wrong with the machine while providing no benefit. If a signal with a "diddler" is being received on a reperforator, it causes not only the **above** mentioned annoyances but it wastes tape because every character sent by the "diddler" is punched into the tape. Then, if the tape is run through a TD, every last one of those useless characters the "diddler" added is re-sent, whereas, without the "diddler" the tape would produce a nice, clean, 60 WPM (or whatever the speed of the TD) message.

The "diddler" is comparable to the "uhhhhhhhhhhhhh-ahhhhhhhhhhhhhhhhhh", etc. of the lid type phone operator." Signed William H. Bauer W4NZY.....

DARC "CORONA" RTTY CONTEST 1981

1. HB9LP	11.DK8FS
2.OZ1CRL	12.KD4OM
3.DF6ZV	13.DL8CK
4.12WEG	14.SM6ASD
5.G3UUP	15.DF7FB
5.DL5GAS	16.G3HJC
7.N8ES	17.DL8QP
8.DL1VR	18.DK4IS
9.I8JRA	19.OZ1DAF
10.DKOFR/A	20.SM6CQV

SWL Winners:

1. Stig Kahr	4. H. Ballenberger
2. Kurt Wuestner	5. Dick De Puyt
3. Werner Ludwig	6. Vaclav Cesak

NORTH & SOUTH AMERICA RTTY FLASH CONTEST WINNERS 1981

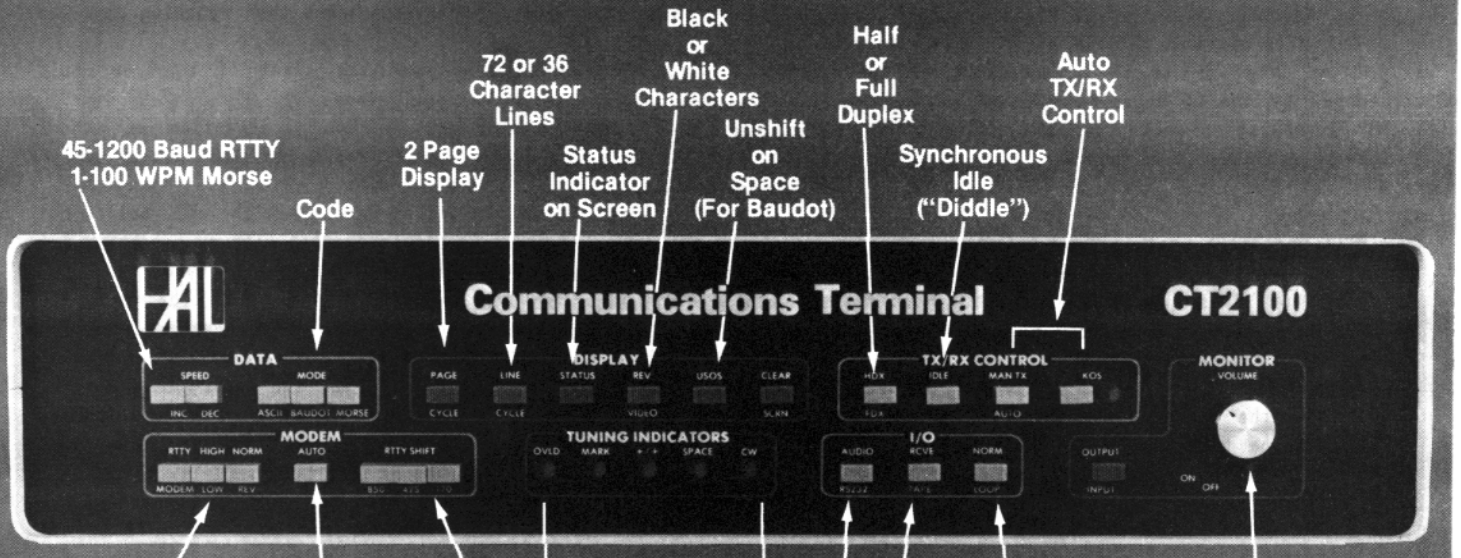
1.EA8RU	9.DF3NA
2.I2OLW	10.OK3RMW
3.I2DMI	11.G4KHX
4.EA8XS	12.OK2BJT
5.OZ1CRL	13.LU3DSU
6.I8JRA	14.LZ2KRR
7.ISORUH	15.CZ1DAF
8.K4VDM	**16.W8TCO**

SWL WINNERS

1.H.Ballenberger	4. V. Cesak
2.Stig Kahr	5. Kurt Wustner
3.J.Dedic	

CT2100

HAL Puts MORE Behind The Buttons



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- 103 Modem (1070/1270 HZ)
- 202 Modem (1200/2200 HZ)

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- Printer (300Bd Serial ASCII-MPI-88G)
- RM2100 Rack Adapter
- MSG2100 2000 Character "Brag Tape" ROM

- 24 Line Display
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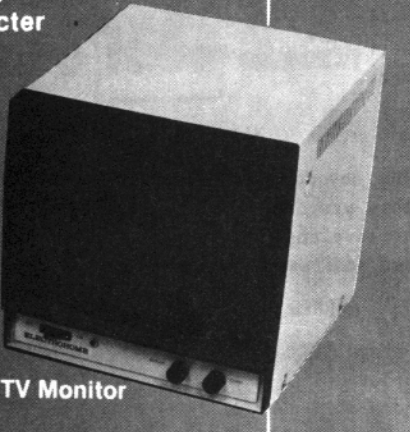
  -or-
  4 Pages of 36 Character Lines
- Split Screen (with KB2100)

CT2100



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HITS & MISSES

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14215 Pecan Park Lane Space 73
El Cajon, CA 92021

CQ MAGAZINE

The November issue of CQ Magazine is an RTTY special. I hope everyone gets a copy for it is a dandy. I stopped by the CQ Magazine booth at the Southwestern convention and got a sneak preview, it is great.

MIDWEST RTTY NET

RTTY operators wanting to get into traffic, the midwest RTTY traffic net is for you. This net meets daily at 0330 UTC on 3.630 with 7.090 as the alternate frequency. The net will accept checkins from Amateurs everywhere in the country interested in RTTY message handling. Bill Wright, 1758 West Gaulbert St., Louisville, KY 40310 is the chap to contact for more information.

ZL/A CHAMPBELL ISLAND

Warwick ZL3AFH/A is active again with heavy concentration on RTTY and CW. Look for him around 14.097 on RTTY between 0500 to 0700Z.

QSL BUREAU

In the RTTY survey I was surprised to note how few made use of the QSL Bureau. League membership is only required for outgoing cards. Non-league members may send SASE envelopes to their district bureau and receive cards.

MAIL RATE

On November 1, 1981 the US first class was increased to twenty cents. The envelopes at the QSL bureau will need additional postage.

ARMED FORCES MAIL CALL

Armed forces mail call will forward Christmas greetings from individuals and groups to U.S. Military personnel including USO's, military hospitals etc., write to the 7th Annual Christmas Mail Call, send an SASE to: Armed Forces Mail Call, Box 6210, Fort Bliss, TX 79906.

NO CODE LICENSE

The new chief of the Private Radio Bureau, James McKinney has resurrected this clinker. They never stop trying, do they? A code license above 30 MHz is an idea most Amateurs find most unacceptable. I hope this idea will be watched closely.

THANKSGIVING

This old year has really passed all too fast. I want to wish all a Happy Thanksgiving Day. The Christmas and New Years Holidays are just around the corner. The year is about to end and as I reflect back on the year.... Where did it go?? I spotted the following in SCATTER (Southern Counties Amatuer Teleprinter Society). I hope you enjoy it.

THINGS I WISH I HAD KNOWN BEFORE I WAS TWENTY-ONE

(Acknowledgement..Originally from QCC News, Chicago, Illinois.)
I WISH I HAD KNOWN:
What I was going to do for a living and what my life-work would likely be.
..that my health after 30 was largely dependent on what I put into my stomach before I was 21,
..how to take care of my money,
..that a person's habits are hard to change after 21,
..that the harvest depends so much on the seeds sown,
..you can't get something for nothing
..that the world would give me just what I deserved,
..the folly of NOT taking the advice of older, wiser people,
..that Dad wasn't such an old fogey after all,
..that everything that Mother wanted me to do was right,
..what it meant to Mother and Dad to raise me,
..more of the helpful and inspiring parts of the Bible,
..the tremendous value of the opportunities and joys of serving my fellow man,
..that there is no better exercise for the heart than reaching down and helping people up,
..that the sweat of my brow would earn my keep,
..that through education at school and at home brings the best of everything else,
..that honesty is the only policy not only in dealing with my neighbors but also in dealing with myself and God,
I wish I had known the value of truthfulness in everything, and today I wish I knew the formula for impressing you and other young people, that life is like a mirror which reflects back to you what you think into it.

On that profound note I will close my column for this month. I am off to the University of California for a course in computer fraud.

SO LONG FOR NOW..GEORGE, WA6CQW

NEW FROM HAL COMMUNICATIONS CORP.

The CWR685A Telereader portable RTTY/CW terminal. Featuring compact size and 12 VDC operation. A green phospher 5" display is built into the 12 3/4 x 11 x 5 inch main cabinet as is a RTTY modem for 3 shifts, both high and low tones. The keyboard is separate and connects with a 3 foot cord to the main unit. Programmable HERE IS messages, type-ahead transmit buffer and automatic transmit-receive control are included. The CWR685A can be slipped into a suitcase for the traveling RTTYer to take along for a real Ham-Holiday outing! In the home shack, the TELEREADER consumes litle space and can be connected to an external monitor and parallel ASCII printer for even more versatility. Available at HAL dealers by the middle of December 1981.

DIGITAL ELECTRONIC SYSTEMS, INC.

1633 WISTERIA CT. ENGLEWOOD, FLA. 33533 813-474-9518

The INFO-TECH M-77 COM-CLOCK

A microprocessor based station accessory that will, on command:

1. Send your call in Morse, Baudot, or ASCII.
2. Send date and time in Morse, Baudot, or ASCII.
3. Respond to sel-calls with pre-programmed message.
4. Give continuous readout of date and time on built-in L.E.D. display.
5. Act as a beacon controller sending call, date, time, and pre-programmed message.
6. Act as a programmable clock with several function outputs.
7. Perform a host of other functions using the built-in 16 button keyboard.

Inputs: MIL 188, TTL, EIA, isolated loop, PTT, remote operate

Outputs: MIL 188, EIA, TTL, isolated loop FSK $\overline{\text{FSK}}$ AFSK (2 shifts) grid and cathode keying, + 6 open collector programmable outputs.

Available about February 1, 1981

For more information write:

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Englewood, Fl. 33533

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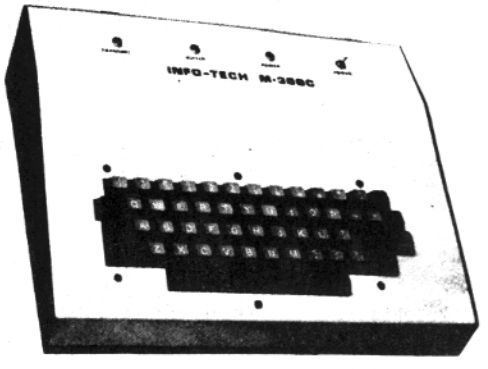

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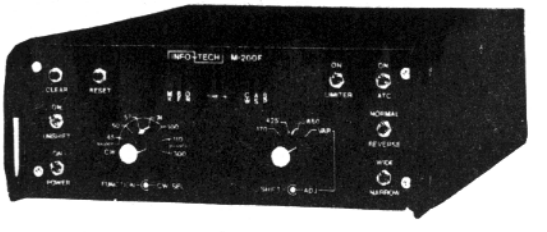

INFO-TECH M-200F
TRI-MODE CONVERTER

DX COLUMN by SKIP

SKIP PRINSEN, WB6CYA
3611 MERRIMAC
SAN DIEGO, CA 92117
(714) 276-3182

Greetings to all.....

Well, I am sure that last months issue was as much of a surprise to you as it was to me to find that I had become the VHF editor. HI! HI! Well Dee says that Murphy has been busy again but you should not have to hunt for the DX column again.

I have made a couple of changes here in the past months that will enhance my station operation here. Paul KØPJ/6 surprised me with a gift of a brand new Collins KWM-380 HF rig. Talk about a rig, this is one that beats all that I have operated before;with a stability that is super. I can put the radio on 14.0825 MHz autostart net in the morning and it will still be right on, that evening when I get home.

I have also come onto an irl FSK-1000 that I am presently using on HF and I like it very much. I got it used from a local ham here in San Diego. To give you some idea of the type of company that IRL is, I wrote to them indicating that I had gotten the TU used and that it had a bad part, they immediately sent me, at no cost, two replacement parts. They have also sent me an alignment instruction for the unit. They are definately one of the good guys to do business with.

This month starts my new tour of sea duty. I'll be with an F-14 fighter squadron based at Miramar Naval Air Station (the same base that I have stationed at) for the next three years. It looks like I am going to need to have someone take over the duties of writing the DX column, at least while I am gone out to sea. If anyone is interested in doing this please contact me, or Dee at the JOURNAL mailing address. I will be on the U.S.S. Enterprise when she goes on her next Western Pacific cruise so I hope to meet some of you out there when we are in port. I will also be more than happy to take anyone on a tour of the ship while we are in port. So look me up and ask for me as: Senior Chief Prinsen of VF-213.

The DX HONOR ROLL will be printed again in January 1982. This is a listing of the standings of the active DXERS on RTTY. All are invited to send in their scores to my home address at the heading of this article. I must have them in by the 10th of December in order to make it in time for the printers deadline.

Jeff Maass, K8ND/VP2EV writes that he and a group of contesters will be traveling to Anguilla in Feb/Mar of 1982 and have arranged to take a couple of RTTY terminals for use in between weekend contests. I will be getting an update information sheet that I'll be including in a later issue. Also look for another group to be going into the same area and getting some of the harder to get islands on the air on all modes. KOPJ/6 has plans of going with them and it will be during this time frame if all works out.

John W3KV, made note of an important item that might have slipped by some of us and that is that 1AOKM now counts for country status as of January 1,1982.

Here is a partial listing of some of the stations that have been worked or heard in the U.S.A. (Thanks to the following stations for their inputs this month: W3KV, KOPJ/6, K5WTA/6, K7BV, K1LPS, K8ND/VP2EV and W1AW.):
C31CJ via F6GZM, POB 250 Luzena Granou, EA9FJ, ZS1FP, HK3DBQ 14 Mhz 300Z Carlos Box 56026 Columbia S.A., CP6EL, DU1MEL, DU1RBN, DU7GB, EA6GV, EA6KS, EA8AAK, EA9CV, EA9KQ, EA9JL, EA9JV, FP8HL POB 1107 St.Pierre Et Miguelon, FR7AT, FG7BG, FM7BW, FWOBK via FK8DJ, FY7YM, GJ3FKW, GJ5CHV DXpedition via DL3EW, GJ4HSN, HP1XPM, HH2MC Dan Craan POB 501 Port Au Prince Haiti, HL9JV, KOSD/HR5 qsl via WBOMZB, HKOZO Maritime mobile in the Caribbean, JA5BJV, JA2VFW, JA3AUQ, JA3DK, JY9RA, KP4F, KP4EOD, KP4BBU, K72JD/KH2, N6IV/KL7, LU1HCE, LU3OBA, LU3ADT, LU4MEE, LX1SI, LX1MN, OH8AT, OH8AV, OD5AO, OE8AJK/YK1, OX3FG, PY6SL, PT2WS, SPOZHB, SP1EYG, SV1DU DXpedition to Rhodes Nov. 9 for one week, S8AAA Garth in Transkie, TI2MY, TI2DO, TG9GI, TG9SO, TG4NX, T32AF Kiribati (Xmas Isle) qsl via N7YL, UA3ACK, UA3HR, VP1MT, VU2NKR, XE1OW, XE3RT, YB2BLK, YB2AG, YB2SV, YB2BSF, YC2CGW, ZL3BM, ZS3L, ZS6DN, ZF1GC qsl via VE4XN, ZP9CW, 5N2CRN, 5N3ALE, 8P6JG, 8P6ES, 9Y4O5 Bo qsl via home SM7OS, 5T5JD, 9Q5HU Robert via Box 1002 Kinshasa Zaire.

AWARDS SECTION

DXCC # 61 dated 2 November 1981 goes to WA6WGL Robert Nolan.
DXCC #62 dated 10 November 1981 goes to GI4AHP Ted Sloan.
DXCC SWLER #1 dated 5 November 1981 goes to G8CDW Ted Double.

KONTEST KORNER

AUSTRALIA-OCEANIA & ASIA

FLASH	Jan.1982	Jan.1981
B.A.R.T.G.	Mar.1982	Dec.1980
VK/ZL/Oceania	Jun.1982	coming
S.A.R.T.G.	Aug.1982	coming
C.A.R.T.G.	Oct.1982	coming
W.A.E.D.C.	Nov.1982	coming

NOTICE....If you would like to have your contest rules published in the RTTY JOURNAL they must be received in this office at least two months prior to the date of the contest.

*CONTESTS*CONTESTS*CONTESTS*CONTESTS*

DARC DX-AWARDS

GENERAL RULES:
DARC's EUROPA DIPLOM,WAE and EU-DX-D can be obtained by licensed radio Amateurs and SWL's all over the world Specific rules are given below.

All contacts must be from the same country.Awards for club stations will be issued to the club, not to an individual operator. CONTINUED PAGE 10

A RTTY DXers' Dream

IRL T.M.

700 TAYLOR RD.
COLUMBUS, OHIO 43230
(614) 864-2464

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TERMINAL UNIT

- Unparalleled selectivity achieved with sophisticated true limiterless design
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- Selectable bandwidths (100/55hz)
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- Adjustable "mark hold"
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- Optional AFSK keyer
- Internal loop supply
- RS232 or TTL
- Full one year warranty

FSK 500
TERMINAL UNIT

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- Selectable bandwidths
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- 3 shift AFSK keyer included
- Narrow shift I.D. included
- Preselector included for QRM suppression
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- Compact size
- RS232 or TTL
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- Optional loop supply

Both the FSK-1000 and FSK-500 are easily interfaced to your APPLE, TRS and HEATH computer.
Call for further details.

CONTINUED FROM DX COLUMN--*CONTESTS*
The DARC-DX-awards are based on the "European Countries List".
All Amateur bands for which the applicant holds a valid license may be used.
A set of application forms is available for a large size SAE plus 3 IRCs at the address below. The use of the official form is obligatory.
QSL cards for all contacts claimed must be submitted with your application. All cards must be presented in their original form. Any altering or forging will result in disqualification.
The service charge of 10 IRCs or equivalent per award or 3 IRCs per endorsement covers the mailing of the award and the return of cards my registered mail. Mail to: DARC DX-Award POB 1328, D-895 Kaufbeuren, Germany (FRG).
New certificate holders will be published in "cq-DL" the club magazine of DARC.
Decisions of the DARC-DX Committee are final.
EUROPEAN COUNTRIES LIST:
C31-CT1-CT2-DL-EA-EA6-E1-F-FC-G-GD-GI-GJ-GM-GM Shetland-GU-GW-HA-HB9-HBO HV-I-IS-IT-JW Bear-JW-JX-LA-LX-LZ-M1-OE-OH-OHO-OJO-OK-ON-OY-OZ-PA-SM-SP-SV-SV Crete-SV Rhodes-SV Athos-TA1-TF-UA1346-UA2-UA Franz Josef Land-UBS UC2-UN1-UOS-UP2-UQ2-UR2-Y-YO-YU-ZA-ZB2-3A-4UI-9H1.
EUROPA DIPLOM is awarded for working Amateurs in European countries.
Applicants must prove a total score of at least 100 points by submitting QSL-cards. The score is computed as follows: The basic idea of the award is to work as many European countries as possible on different bands in different calendar years. There are no restrictions as to modes of operation or specific Amateur bands.
Confirmed contacts of the current and preceedingyear count 1 point (multiplier 1.0). Older confirmations are devaluated by a quarter point per year (multiplier 0.75, 0.5 or 0.25). QSL-cards dating back more than four years have lost their value for the certificate.
The sum of all confirmed European countries on different bands in a calendar year multiplied by the respective multiplier produces the annual score.The total score is the rounded sum of all annual scores.
HONOR ROLL
Each certificate holder with an actual score of at least 100 points will be listed in the ED Honor Roll. The ED-HR arranged according to the scores will be published in DARC's "cq-DL" twice a year. Members of the Honor Roll are awarded an additional sticker.
To improve the score suitable qsl cards may be turned in twice a year.
WAE
"Worked All Europe" certificate is awarded to Amateurs for contact with almost all European countries and islands on different bands. Also available to SWLs.
The award is issued in three classes. The classes are based on the number of European countries worked and a score of country points added up from the different bands.
WAE III must submit qsl cards proving 2-way contacts with at least 40 different countries of the "European Countries list". At the same time the cards must prove a minimum of 100 country points.
WAE II requires 50 countries with a total of at least 150 points. For WAE I 55 countries and 175 points are needed.
After receiving the basic award only the necessary additional confirmation for higher class is required.
Each European country counts one country point on each of the six HF-bands (1.8, 3.5, 14, 21 and 28 MHZ). Only four bands per country, however, are eligible for the point score.Five points per country can be achieved by working the same station on five bands. Two additional points per country can be obtained by a contact on ONE of the VHF/UHF bands. Stations outside Europe may claim 2 points for each European country on 1.8 and 3.5 MHz.
EU-DX-D
This award is issued in the following classes:Telegraphy-Telephony (AM/FM/SSB)-Mixed modes. For the mixed class at least 30% of the contacts must be made in a different mode.
The basic idea of the award is a proportional combination of European and non-European contacts worked in the course of ONE calendar year.
A minimum of 50 points is required for EU-DX-D.20 points must be from contacts with European countries and 30 points by contacts outside Europe. All these contacts have to made within ONE calendar year.
All Amateur bands (HF and VHF/UHF) may be used. Each different country counts one point (on 1.8 and 3.5MHz two points). A country can only be counted once regardless of the band (s) used. The countries are determined by the European Countries List and ARRL's DXCC Countries List.
Stickers are available for each additional block of four European plus six non-European countries within the same calendar year.The EU-DX-D may be claimed every year. Each year's score may be added to obtain the EU-DX-D 500 and 1000. The DARC issues a seal of merit for 500 points and a trophy for 1000 points.There is no limit as to the number of years.
DARC DX-AWARDS, POB 1326, D-895 Kaufbeuren, Germany (FRG).

W1AW SCHEDULE

W1AW, operated by the ARRL, operate a regular schedule of RTTY bulletins, as follows:

Day	Time			
Monday	0100,	0400,	1500*,	2200
Tuesday	0100,	0400,	1500	2200
Wednesday	0100	0400	1500*	2200
Thursday	0100	0400	1500	2200
Friday	0100	0400	1500*	2200
Saturday	0100	0400		2200
Sunday	0100	0400		2200

The following frequencies are used for the above broadcasts: 3625, 7095, 14095, 21095, 28095 and 147555 KHz.
* These transmissions are beamed to Europe on 14, 21 and 28 MHz.

DX ADDRESS LISTING

AP2MQ-Mansur Quereeshi, 7 Union Park, Samanabad, Labore, Pakistan
A22PS/P/ZE- Box 10148, Gabarone, Botswana.
A7XD-Mike Smedal POB 4747, Doha,State of Qatar, Arabian Gulf.

DX ADDRESS LISTINGS CONTINUED

CN2DKH, POB 299, Rabat, Morocco, Africa (special callsign at El Dakla).
CP6EL-Alfredo Pauker, POB 470, Santa Cruz, Bolivia, S.A.
CP6IH-Roberto, Box 163, Santa Cruz de la Sierra, Bolivia.
C3ICJ, F6GZM, POB 250, Luzena, Grandu
C3IMM, Bruno Clase, Casa Pascol, La Massana, Andorra.
C6ACA-Barry Packington, St.Andrews School, Box N7546, Nassau, Bahama IS.
C6ADW-Mike Wallen, Box 6333, Nassau, Bahama Is.
EA6BG-Mateo Amengual, M.Canals 40, Palma de Mallorca, Balearic Islands.
EA6HH- Paco, POB 852, Palma de Mallorca, Balearic Island.
EA6HY-Gabriel, La Puebla, BOP Isla de Mallorca Spain.
EA8RU-Pedro del Castillo, POB 357, DR Chil 3, Las Palmas de GC, Canary Islands.
EA9JV, Aure, Box 100, Melellia.
EL2AG, POB 3049, Monrovia, Liberia, West Africa.
FC2CJ-Marcel Poli, Box 223, Ajaccio, Corsica.
FP8DF-Pierre Cloony, Box 41, St. Pierre et Miquelon Island.
GD3FKW-Ken Ball, Oxenford Cottage, St.Lawrence,Jersey,C.I.
GD3YED-Rich Hillsboro, Selbourne Dr, Douglas,Isle of Man
GI4AHP-Ted Sloan, 3 Adelaide PK,Belfast, Ireland BT96FX
GW3EHN-Oscar Thomas, 76 Waun Road, Near Swansea, W.Glamorgan SA42QN
HH2MC-Dan, POB 501 Port au Prince, Haiti.
HK2ECH-Fernando, POB 1791, Cucuta, Columbia.
HL9JU-A Co. 304th Sig BN, APO San Francisco,CA 96358 USA
HL9WU-Gordon Anson, PSC Box 2137, APO San Francisco, CA 96366
HP1BS-POB 8577, Panama
HP1PM- Peter, Box 603035, El Dorado, Panama
H44DX- Bernie, POB 332, Guadalcanal, Solomon Islands
JA0BXU/SU, POB 150, % Penta Ocean Construction CO,Ltd.,Ismaelia,Egypt.
KV4AQ- Dr Randall James, Christianslot, St. Croix, Virgin Islands 00820
LU1AE-Greek Embassy, Buenos Aires, Argentina
LU1HCE- John Coppens, Casilla de Coreeo 103, 5152 Villa Carlo Paz, Argentina
OA4BR-Zip Zillon, Box 538, Lima, Peru
OD5JW-Wassim, POB 14-5449, Beirut, Lebannon
OX3FG- Walther, Box 177, Julianhaube, Greenland 3920
PP7AF-Juarez, POB 113, Maceio, Alagoas 57000, Brazil
PY2DRH-POB 22, San Paulo, Brazil
PZ1BF-G. Lichtveld, POX 184, Paramaribo, Surinam
S8AAA-Box 821, Umtata
SP3CMX-Mieczylaw Czarnecki, Walczaka 13/110, 66-400 Gorzow, Poland
SV1AB-Box 564, Athens, Greece
SV1LH- POB 564, Athens, Greece
SV8CS-POB 564, Athens, Greece
SV0AP- Kent Parsen, POB 711, APO NY 09291
TI1AEB-Armando, POB 8/5670, San Jose, Costa Rica
TI2DO-Jorge, Morava, Costa Rica
TI2HP-Humberto Perez, Apartado 952, San Jose, Costa Rica
TF3SB-Doddi Sigurbjorn Bjarnason, Skeejagata 17, 105 Reykjavik, Iceland
TI2MY- Jaun, Box 1845, San Jose, Costa Rica
TR8JG-POB 665, Port Genril, Garbon
TU2HH-Alain, POB 1347, Abidjan, Ivory Coast
UT5RP-Dima, Box 373, Odessa, Ukraine
VP2AR-Hickey, Box 550, Antigua, West Indies
VP2SV- John Caldwell, Palm Island, St. Vincent, West Indies
VS6CT-Via KB9N, RR4 Box 86, Kankankee Illinois 60901 USA
XE1LE-Francisco Vasquez Bello, Arroyo Num.12, Fraccionamiento Lo Fresnos, Naucalpan Estado de Mexico
XE3AU-Gerry Martin, 1840 Hibiscus Dr. North Miami, FL 31181 USA
YB8ACB-Warren, Box 2282, Jakarta, Indonesia
YB2AG- Hari, Box 088, Semarang, Indonesia
YB2BLI-Yogya, POB 98, Indonesia
YB2SV- Jos, POB 73, Salatiga, Java Island, Indonesia
YJ8TT- POB 63, Santo, Rep. Vanuata, New Hebrides
YV2ABF-Sofia, POB 310, Merida, Venezuela
YO3KWA-Box 1395, Bucharest 5, Romania
YV3AY, Roman, POB 456, Barqieismo, Venezula
ZE1CE-Taffy, POB 300, Gatooma, Zimbabwa, Rhodesia
ZF1GC- POB 1618, Grand Caymen, B.W.I.
ZF1HF-Jack, POB 1215, Grand Cayman, B.W.I.
ZP5CD- Claudio Del Conte, Box 1337, Asuncion, Paraguay
ZP9CW- Box 1777, Asuncion, Paraguay
ZS2AB-Brian Weller, POB 10317, Port Elizabeth 6001, Rep.of South Africa
ZS3B- Box 109, Luderitz, Southwest Africa
4X4QG- POB 92, Heryelia, Israel
5B4HF- John Hurley, Box 4180, Nicosia Cyprus
5H3KS- Karl, POB 250, Dar-es-Sallam, Tanzania
5K3SB-Box 584, Bogota, Columbia
5N2AMT-POB 1150, Kaduna, Nigeria
5NOAAS- Paul, POB 2873, Lagos,Nigeria
5NODOG- David Guthne, POB 12705, Lagos, Nigeria
5R8AL-Alain, POB 3833, Antananativo Rep. Dem. Madagascar
5T5JD- POB 477, Novakchott, Mauritania, Africa
5Z4PD-Wolfgang Richter, POB 14829, Nairobi, Kenya
6Y5SS- Rick, Knox College, Spauldings Clarendon, Jamaica, West Indies
7X4MD Dr. Driss Bendani, 23 Avenue Ouid Aissa, Mostaganem, Algeria
9Q5HU- Box 1002, Kinshaga, Zaire
9V1TP-Tip Ball, American Embassy, FPO San Francisco, CA 96699 USA

GB2ATG-operated by members of BARTG, operate a regular RTTY schedule of news broadcasts every Sunday, as follows:

Time(Z)	Frequency	Beam Heading
0730	14090 KHz	SW longpath VK/ZL
1100	3590 KHz	--
1100	144600 KHz	From NW England
1130	3590 KHz	--
1130	144600 KHz	From London
1230	144600 KHz	From N. Ireland
1530	14090 KHz	East (Mid East)
1800	3590 KHz	--
1900	14090 KHz	NW (Vk/ZL/Far E)

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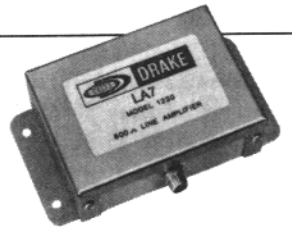

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from page 3
tiplexer IC17 is forced to look at the second 7493 counter (8-15) and disable the first counter. The prom is coded here for letters NNNN combination to shut the system down.Once this sequence is met, pin 7 of the H8256 goes high and forces the flip flop to reset thus shutting off the printer and resetting the counters to start count position. Pin 2 of IC12A is tied to a 30 second timer for auto-shutdown under the following conditions:

1. loss of carrier.
2. the letters NNNN not transmitted.
3. tape jams during the transmission.

The clear pulse is obtained from a 74122 located on the UT2 Board (also used for autostart) or from a 741 located on the interface board. The interface board is used in a full Autocom system and the 74122 wouldn't be required on the UT2/parallel generator board. IC14 and IC11 form a 2 second clear on power up. Proms were used over rams to allow the system to remain off (AC off) until started by the autostart in your TU. This is a power saving feature if you already have autostart.

The second H8256 is used to detect the figs blank code for allowing other functions to be used. The only difference here from the call up prom is the addition of IC16 which is used to allow a throw away character in the prom before anything else is reset. Thus our prom count would read 0000 figs., 0001 blank, 0002 decode-any character and 0003 which is reset counter. The 0002 position allows the characters precoded on the decode board to be looked at by the prom, i.e. figs. blank A or figs blank K. Only one will be allowed to select in on each figs blank sequence received. IC16D allows this to be selected in only after a valid call up has been selected in.

IC1 and IC2 are used as buffers to permit the use of a second memory board for selecting in something else on another call up. 7475 buffers are employed on the decode board.

DECODE BOARD

The decode board's main function is to convert the TTY character selected into a logic pulse. The 7475 IC1 and IC2 allow the selected character to be placed on the data bus for one full character time. The data bus is precoded for seven characters. Coding is acomplished by soldering a wire thru the board to the foil on both sides. A given character such as "R" will be decoded to give all highs on the 5 inputs of the 7430. By choosing between Q or $\overline{Q}$ of IC1 and IC2, a high can be strapped in for a mark or a space. Only the character "R" upper or lower case, will give the necessary 5 highs on the inputs of the 7430. The final stage of the input selection is the enable line which is supplied from IC3 pin 6 of the memory board, and is only selected in after a figs blank has been matched to that stored in the prom IC3 via IC9 and IC10. When this occurs the output of the particular 7430 selected via the precoded bus goes low. IC9 is used to trigger a one shot (74121), which is used to set the 'on air time' for the answerback. IC8 and IC7 are used to reset flip flops IC12A, B, C and D. IC6 and IC5 are used to set the flip flops IC12A, B, C and D. These flip flops are used to control the perf and the TD. IC3 and IC4 are used to give a low or high output for ID purposes.

When using a TD we depend on the normal one character sent after the command has been read to remove the data stored on the bus. Example: a figs blank # is to be used to trip the ID cycle. If sent from the keyboard, the character would remain on the data bus and the output of IC3 and IC4 would remain active, which would keep a constant CW ID cycle going. Most TD's, however, will read the command character and, as the command is performed by the machine one more character. Therefore figs, blank # ltrs would actually be read. This would set IC3 or IC4 back to an inactive state and the ID would only cycle once. The reason is that the only time a CWID would be necessary is when you are reading a tape. The answerback would handle the CWID for the answerback selection.

Working with a model 32ASR we found the answerback and CWID take about 10 seconds to run off. This added to the 5 second stabilizing time at the beginning of the selection would come to 15 sec. Giving ourselves a little leaway, we chose to set the answerback timing capacitor on IC10 to run for 20 seconds.

INTERFACE BOARD

The interface board is designed using relays to interface between the periferal and the Autocom unit. Relays are used because of the many different voltages used to trip perfs TD's and answerback in the Teletype unit.

IC1A is turned on via a force on switch S1, or from a low from IC13C pin 8 on the memory board. The switch may also be a DPDT to set the autostart in the TU to an active position in order to stop the machine from running open. When selected in IC1A turns on Q1 which activates RL1,turning on the equipment. A second set of contacts is used to turn on a CWID unit. A GE MOV transient voltage suppressor is used across the relay contacts to cut down spikes caused by motor turn on.

The input of IC1A pin 2 also is used to set flip flop IC6 C and D, which powers an LED on the front panel indicating that a message has been received by the system. S5 is used to clear this LED, and is the only way it may be cleared.

Answerback operation is accomplished by a low on pin 1 or pin 2 of IC2A forcing IC13 pin 6 to go high and turn Q2 on, activating the transmitter. This will happen immediately after the character for the answerback has been selected in. Also at this time the output of IC3B pin 4 goes low starting the 555 timer and one shot IC4. The first pulse of the timer takes 5 seconds. On the high to low transition the flip flop IC1C and D is set forcing pin 12 of IC2D to go high. The output of IC2A pin 3 also forces the output of IC7 pin 6 to go high which is applied to pin 13 of IC2D. Thus pin 11 goes high 5 seconds after the character is decoded and the answerback is allowed to go off.

Several options are available for the answerback operation. For those with AC magnet trip off A should be strapped to B and IC10 not used. This also applies to high voltage DC magnet trip off. IF IC10 is used, the 330 ohm resistor between IC11 pin 6 and IC10 pin 5 will not be used and a strap will be used and a strap will be put in its place. IC10 should be employed for digital type answerbacks where only a short high or low pulse

is required to start the answerback cycle.

Q5 and associated parts are not necessary if a digital type answerback is used. If the voltage on the digital is higher or lower than the 5 in the Autocom system C or D should be used with a 330 ohm resistor to B. This provides a transistor interface between the Autocom and digital answerback. Normally C, which is an active high, should be used as the circuit is drawn. If D is used, Q5 will turn off in an active state.

TD operation is similar to the answerback operation. IC2B pin 5 is forced low when the turn on character for the TD is selected in, turning the transmitter on. Using the same route as the answerback, IC3B pin 4 goes low turning off the Q3 and triggering IC4. This forces pin 11 of 7B to go low preventing the TD from starting for about 15 seconds. In this time the answerback is allowed to trip off 5 seconds after the character is selected in. This delay is used to give the answerback and CWID time to finish before starting the tape. About 15 seconds after selection IC4 resets and if there is tape in the TD, it is allowed to start. Putting the CWID start coding in the tape will stop the TD. This is accomplished by forcing an input of IC8A low at the same time an input of IC6A is forced low causing the output to go high which will trip off the CWID unit. A hold from the CWID unit is applied to pin 9 of IC7B forcing it low and keeping the TD off after the selected character has gone back to its normal state.

Note that when a TD reads something like a CWID start code, one character after the code is also read. It is normal to put a letters after this code. This character acts as a reset for the decode board IC3 and 4. This system is designed for CWID to follow a mechanical answerback, which would have the CWID trip code (figs blank #) and ltrs as the last characters on the drum. If only a CW answerback is required IC3, 4 and 13 on the decode board can be eliminated and IC10 on the interface board can be used to trip off the CWID unit.

Perf-on and perf-off control is accomplished by applying a low or high to IC8B via the flip flop IC12A and 12B on the decode board.

IC9 is a 30 second resetable timer used to clear out the system in case a caller forgets to send the four N shut down, or if the tape is jammed. PINS 1 and 2 are tied to the pin 24 UART output via 7404 inverters. If no transition is sensed for 30 secs on pin 24 of the UART, IC9 is allowed to reset. If the Autostart chip IC4 on the UT2/pacallel generator board is used, pin 8 may also be used in place of IC9.

Timing capacitors used on the interface board are tantalum except for the 1000 UF on IC9 which is electrolytic. The 2.2, 3.3 ans 10 UF capacitors are tantalum.

POWER SUPPLY BOARD

The power supply shown here has two options. By strapping A to B, a+5v lamp supply is obtained. By strapping A to C and D to B, a series pass supply may be employed to give a 3 amp capability. It is recommended that these transistors be mounted to the cabinet. Grounds are extremely important. Note that separate ground pins for C1, C2 and the 7805 common are used. These pins should be connected by separate wires to a common chasis screw.

RL is used to drop the voltage rather than have the regulator overheat. Provisions for on-board mounting are supplied. This resistor should be spaced off the board by a half inch.

This unit has been operating for quite awhile now with great sucess.

Many sincere thanks to Tom Steinke, K9WYG for his help in the design of the memory electronic board to John Rice, W9MMB for general advice and his design of the transitional autostart system and to Bob Ehrhardt, the unHam for his general advice and power supply layout.

* April 1975 RTTY JOURNAL

** All boards except power supply mount into a double 18 pin edge connector with numbers to the right side and letters to the left, looking at the back of the edge connector #1 and A on top.

*** I.Hoff,W6FFC, May 1974 JOURNAL.

EDGE CONNECTORS FOR SUPPLY FOIL SIDE

1. to chassis ground
2. -12 VDC
3. to chassis ground
4. internally tied to #3
5. to LED on front panel to indicate power on
6. to chassis ground
7. series pass connector (see schematic)
8. no connection
9. plus 12 volts DC
10. series pass connector (see schematic)
11. series pass connector (see schematic)
12. Plus 5 VDC
13. tied internally to #12
14. to optional current limiting resistor for off board mounting
15. to optional current limiting resistor and unreg. plus VDC
16. to negative VDC
17. AC in
18. AC in

MEMORY ELECTRONIC BOARD CONNECTIONS

A. to high when received from TU
B. to interface board "V"
C. T clear switch
D. not used
E. to interface board "E"
F. not used
H. to UT 2 board "R"
J. to UT2 board "S"
K. to UT2 board #2
L. + 5 VDC
M. to UT2 board "T"
N. to UT2 board "U"
P. to UT2 board "V"
S. not used
T. not used
U. to UT2 board #2
V. to decode board "K"
1 thru 17 not used
18. ground

NOTE: The conclusion of this article will be in next months issue. It will include all schematics and connections for the AUTOCOM MA4.

MERRY CHRISTMAS FROM THE RTTY JOURNAL STAFF, EDITORS AND ADVERTISERS. WE ALL HOPE THAT YOU HAVE HAD A GOOD YEAR AND WILL HAVE A HEALTHY, HAPPY NEW YEAR. MAY YOUR BLESSING BE MANY AND YOUR HEARTACHES FEW. PEACE TO ALL.

RTTY Journal

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