

RWDANBY

The Hamilton Amateur

MEETING MAY 17, 1995
NASH AUDITORIUM, CHEDOKE HOSPITAL
8.00 PM
SPEAKER: VIVIAN LEWIS
TOPIC: HAMILTON FREENET

EXECUTIVE 94-95

PRESIDENT	Lorraine MacPherson	VA3NZ	389-7653
PAST PRESIDENT	David Bruton	VE3DWJ	383-9808
VICE PRESIDENT	Bob Tenty	VE3TOK	692-9245
VICE PRESIDENT	Fiore Manga	VE3OQG	578-1789
SECRETARY	Jason Clarke	VE3ZYD	544-9970
TREASURER	Joe Urbanski	VE3OCD	388-8383
MEMBERSHIP	Jeff Smallwood	VE3NVY	545-6788

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HISTORICAL:	VA3GO	George Olenick	383-7338
BULLETIN EDITOR:	VE3SON	Jim Walsh	689-6839
EDUCATION:	VE3EKY	Bernie Granby	527-7175
HEALTH AND WELFARE:	SWL	Ellen Reinke	522-8909
STATION MANAGER	VE3PFT	Paul Coppin	627-5672
HOSPITALITY CO-ORD:	VE3OGQ	Mary Urbanski	388-8383
SWAP NET CONTROL:	VE3JWJ	John Johnston	578-4275
REPEATER:	VA3SP	Mike Spenuk	304-0980
EMERGENCY CO-ORD:	VE3EIK	Pat Brennan	561-5413
VE3DC Licencee:	VE3FHQ	Glen Gibson	385-2786
VE3NCF Licencee:	VE3MWH	Mark Gibson	389-4308
VE3RCB Licencee:	VE3EIK	Pat Brennan	561-5413

DELEGATED EXAMINERS:	VE3EKY	Bernie Granby	527-7175
	VA3NZ	Lorraine Macpherson	389-7653
FIELD DAY CO-ORD:	VE3PFT	Paul Coppin	627-5672
FLEAMARKET 95:	VE3WVC	Bill Court	572-3755
PROPERTY:	VE3NVY	Jeff Smallwood	545-6788
PUBLIC LIASONS:	VE3PFT	Paul Coppin	627-5672
AWARDS & CONTESTS:	VE3DWJ	David Bruton	383-9808
TECHNICAL:	VA3SP	Mike Spenuk	304-0980
HF CONTESTING:	VE3OZY	Rick Danby	544-3253

GENERAL MEETING MINUTES

APRIL 19, 1995

The H.A.R.C. met at the Nash Auditorium on April 19, 1995. The President, Lorraine (VA3NZ) called the meeting to order at 8:05 pm. She greeted everyone and then got on to the business. The minutes of the previous meeting were read. A motion to accept the minutes as written in the bulletin was made by Joe (VE3OCD) and seconded by Arie (VE3ART). Passed.

ANNOUNCEMENTS: Lorraine (VA3NZ), the President announced that the trip to Acton went well.

Paul (VE3PFT) thanks all the people who helped with the Around The Bay Road Race. All those who participated will receive a free T-shirt but there is not enough so more is being ordered. The Red Shield Appeal is coming up, we need more volunteers please. This event is happening on Monday May 1, 1995 between 7:30 til 10:00 pm. Field day is on June 24 & 25th and we still need YOUR help.

Lorraine (VA3NZ) mentioned that Homebrew night is next month. The Planetarium night is on June 6, 1995.

Fiore (VE3OQG) informs us of the Hiada trip on May 27, 1995 in the Toronto Harbour. The charge will be \$6.50 per person which includes admission.

Pat (VE3EIK) introduced our guest speaker, Tim Reid from Environment Canada to speak about CANWARN. He spoke about the different weather conditions and how they form. Tim explained how CANWARN operates and left pamphlets on the front desk.

****COFFEE BREAK 9:20 TO 9:40 PM.****

OLD BUSINESS: None.

NEW BUSINESS: Membership: Jeff (VE3NVY) noted the new member, Dave (VE3STT).

Treasurer's Report: Joe (VE3OCD) reports a final balance of \$5,845.53 for the end of March. Motion to accept the Treasurer's report was made by Fiore (VE3OQG) and was seconded by Jeff (VE3NVY). Fiore is wondering what stage we, the Club are at with the Mohawk College situation.

Motion to adjourn the meeting at 10:00 pm. was made by Paul (VE3PFT) and seconded by Arie (VE3ART).

President
Lorraine (VA3NZ)

Secretary
Jason (VE3ZYD)

FLEAMARKETS

OTTAWA VALLEY MOBILE RADIO CLUB FLEAMARKET

Saturday May 13, 1995. McNabb Arena 180 Percy Street, Ottawa.

QUINTE-BELLEVILLE FLEAMARKET

Saturday May 13, 1995. Dick Ellis Arena, Harder Drive Belleville.

ROCHESTER HAMFEST & COMPUTER SHOW

May 19-21, 1995. Monroe County Fairgrounds, Route 15A and Calkins Rd. Rochester NY.

CENTRAL ONTARIO AMATEUR RADIO FLEAMARKET

Saturday June 3, 1995. Bingeman Park, 1380 Victoria St. N. Kitchener.

MILTON HAMFEST

Saturday July 8, 1995. Milton Fairgrounds.

BRANTFORD FLEAMARKET

Saturday August 19, 1995. Burford Fairgrounds, Highway 53, 15 km west of Brantford.

HAMILTON FLEAMARKET

Saturday October 7, 1995. Marritt Hall, Ancaster, 625 Hwy 53E.

Please let VE3DWJ Awards and Contest Chairperson know if you are going to enter Home Brew Night. ASAP.

Inflation is always with us.

Postage in years gone by. In 1949 it cost 1 cent to send the Bulletin to the members. In 1964, it rose to 3 cents. Now it jumps to 43 cents plus tax. Any idea where it will go next? See all at Homebrew night.

73's VE3DWJ, David

TUESDAY NITE SWAPSHOP HELD ON CLUB REPEATER VE3NCF 146.760(-600)
NET CONTROLLER VE3JWJ JOHN (905)578-4275
ALL ITEMS ARE LISTED ON THE SWAPSHOP FOR 4 WEEKS
LIST AVAILABLE ON PAKET AND PHONE BBS 905-575-4745

SWAP LISTING FOR MAY 2

VE3LEE, NEIL(519)-621-7547

- 1- 386-25 MOTHERBOARD \$65.00
- 1- QUANTITY OF 2 IDE 40 HD RIVES \$45.00 AND \$25.00
- 1- 40FOOT DELHI TOWER WITH 10FOOT MAST \$65.00
- 1- TURNER CS1 DESK MIKE \$40.00

VE3QL, JOHN (905)561-9170

- 1- RIBIT 1200 CLONE CONVERTER, FOR SLOW SCAN TV, CAMERA, FIRMWARE SOFTWARE, CABLES CONNECTORS, MANUAL, SOFTWARE ETC \$700.00

VA3ARQ, SANDEEP(416)251-5666

- 1- ATI MOCK 64 VIDEO CARD PCI VERSION 2MEG RAM \$290.00 OR TRADE FOR LOCAL BUS VIDEO CARD

- 1- US ROBOTICS COURIER 14.400 EXTERNAL MODEM WITH PWR/SPLY, MAN \$90.00

VE3WTE, WHITEY(905)547-0515

- 1- 2-UNIDEN H.T. SCANNERS 29. TO 400. MHZ BRAND NEW, CHARGER MAN \$100.00 EA.

VA3TA, LARRY (905)549-7393

- 2- KNWD PC-1 PHONE PATCH NEW \$95.00

VE3LEW, DAVE (416)698-5556

- 2- IBM AT 286 51/4,31/2DRVS, 40MG HD, LIKE NEW \$600.00

VE3JWJ, JOHN (905)578-4275

- 1- HTX-100 10MTR HF MOBILE RIG SSB/CW \$120.00
- 1- KNWD 77A H.H. DUAL BAND, BC-11 RAPID CHARGER, 2 BATTERIES, SPKR MIC RCRAFT AND CELLULAR \$640.00 B/O or trade for UHF MOBILE

VE3NVY, JEFF (905)545-6788

- 3- CGA MONITOR AND CARD \$50.00
- 3- STANDARD GX1500V 2MTR MOBILE, 25 WATTS \$200.00

VE3BNF, DAVE (905)578-0186

- 2- 4CX5000 IMAC TUBE WITH SOCKET, CHIMNEY, AND 50 AMP FIL. TRNSFMR \$300.00

VE3WT, RAY, (905)688-0130

- 3- PROP PITCH ROTOR \$300.00

VE3POV, JOHN (905)634-9858

- 3- IBM XT COMPUTER, 20 MEG HD., DUAL 5 1/4 DRIVES, COLOR MON, HAM PRGS \$175.00

VE3ARQ, SANDEEPO, (416)251-5666

- 3- PWR OUTPUT TUBE 4CX250B WITH SOCKET \$90.00

VE3GFE, STANLEY (905)528-4002

2- HEATH SB104 HF TRNSCVR, WITH PWR-SUPPLY, DESK MIKE, CABLES
CONSOLE WITH PHONE PATCH/SWR/CLOCK/TEST/, MATCHBOX PACKAGE \$650.00

VE3TZQ, FRANK (905)278-7112

4- YAESU FRDX400 AMATEUR RECEIVER \$250.00 OR TRADE FOR UHF VHF HT.

VE3JNC, HELMUT(416)743-1940

4- ICOM-290E 2MTR ALL MODE \$450.00 or trade
4- ALINCO DJ580T DUALBAND H.T. \$400.00 or trade
4- TRUNER +2 PRE-AMP DESK MIKE \$40.00
4- MFJ 407B DELUXE ELECTRONIC KEYS \$60.00
4- GEN. ELECTRIC 6MTR FM TRNSCVR 100 WATT \$150.00
4- TRIPLITE PRECISION REGULATED PWR/SPLY 13.8VOLT - 3AMP NEW \$35.00
4- 2 TRC200 H.H. 5 WATT TRNSCVRS. 27MHZ CHARGER, MIC, ANT \$80.00 FOR BOTH

VA3RF, DAVE (905)318-6318

2- 2 MTR 1/4 WAVE TRUNK LIP MOUNT \$30.00 ea
2- SHARP LAPTOP, CARRY CASE, PWR/SUPPLY AND BATTERIES \$200.00
2- DIAMOND CP-6 HF VERTICAL ALL BAND ANTENNA CHIMNEY MOUNT \$250.00
2- 2 of 2400/9600 BAUD INTERNAL MODEMS \$50.00 each.

VE3CCF, CHRIS (905)847-0090

4- RG-213 COAX 300 FEET SPLIT 100'S BRAND NEW NEVER USED
MILSPEC 17 00.63 CENTS A FOOT
4- PACKARD BELL XT, 30 MG HD., 2400 BAUD MODEM, MONO SCREEN, KEYBOARD
DOS AND SOFTWARE \$150.00

VE3JIS JACK (905)648-6443

1- ALLIANCE ROTOR WITH CONTR. \$55.00
1- CHANNEL MASTER ROTOR WITH CONTR. \$55.00
1- SUPERIOR ROTOR WITH CONTR. \$50.00
1- CROWN ROTOR WITH CONTR. \$45.00
1- TURNER +3B MIC \$45.00
1- MICRONTA 2.5 AMP PWR/SPLY \$20.00
1- MICRONTA 4 AMP PWR/SPLY \$30.00
1- UNIDEN PRESIDENT 2510 MIC \$25.00
1- NUMARK PREAMP CONTINUOUS SURGE PO
1- SHURE 3M66 DESK MIKE \$30.00
1- D104 ASTATIC MIKE \$55.00
1- HEATHKIT HW101 HF TRNSVTR, MATCHING PWR/SPLY, EXT SPKR, 10-80 MIC
\$250.00
1- HEATH SB104 HF TRNSCVR. 10-80 MTRS. DIGITAL READOUT, SPKR/PWR/SPLY
SHURE DESK MIKE AND MANUAL..VERY CLEAN UNIT \$485.00

WANTED

VA3RF, DAVE(905)318-6318
1- IC23 MOBILE BRACKET WANTED

VA3GMJ, GERALD(905)648-6443
1- IAMBIC KEYER WANTED

VA3TA, LARRY (905)549-7393 PAKET ADDRESS VE3ITA @
VE3DTV.#SCON.ON.CAN.NAM
3- QUANTITY OF 8 -- 120 MICROFARAD 450 VOLT ELECTROLITIC CAPACITORS
WANTED

VE3MPO, MIKE (905)332-6365
3- THRUST BEARING FOR DELHI TOWER WANTED

VE3ZNR, RUDY (905)545-6931 Before 1pm please
4- 200 pf CAPACITOR 7.5 KWATT WORKING WANTED
4- 167 pf CAPACITOR 7.5 KWATT WORKING WANTED

VE3VRU, CHRIS, (416)661-3796
3- R.S. PRO 2022 MANUAL OR SCHEMATIC OR COPIES WANTED

VE3CCF, CHRIS (905)847-0090
3- YAESU FT-990 DC RIG WANTED DC ONLY..
3- 2 SECTIONS OF MATCHING TOWER WANTED

VE3JCJ, JERRY (905)544-7770
4- 142.845 / 154.830 / 150.695 CRYSTALS WANTED
4- YAESU FNB12 AND FBA17 DEAD BATTERIES WANTED



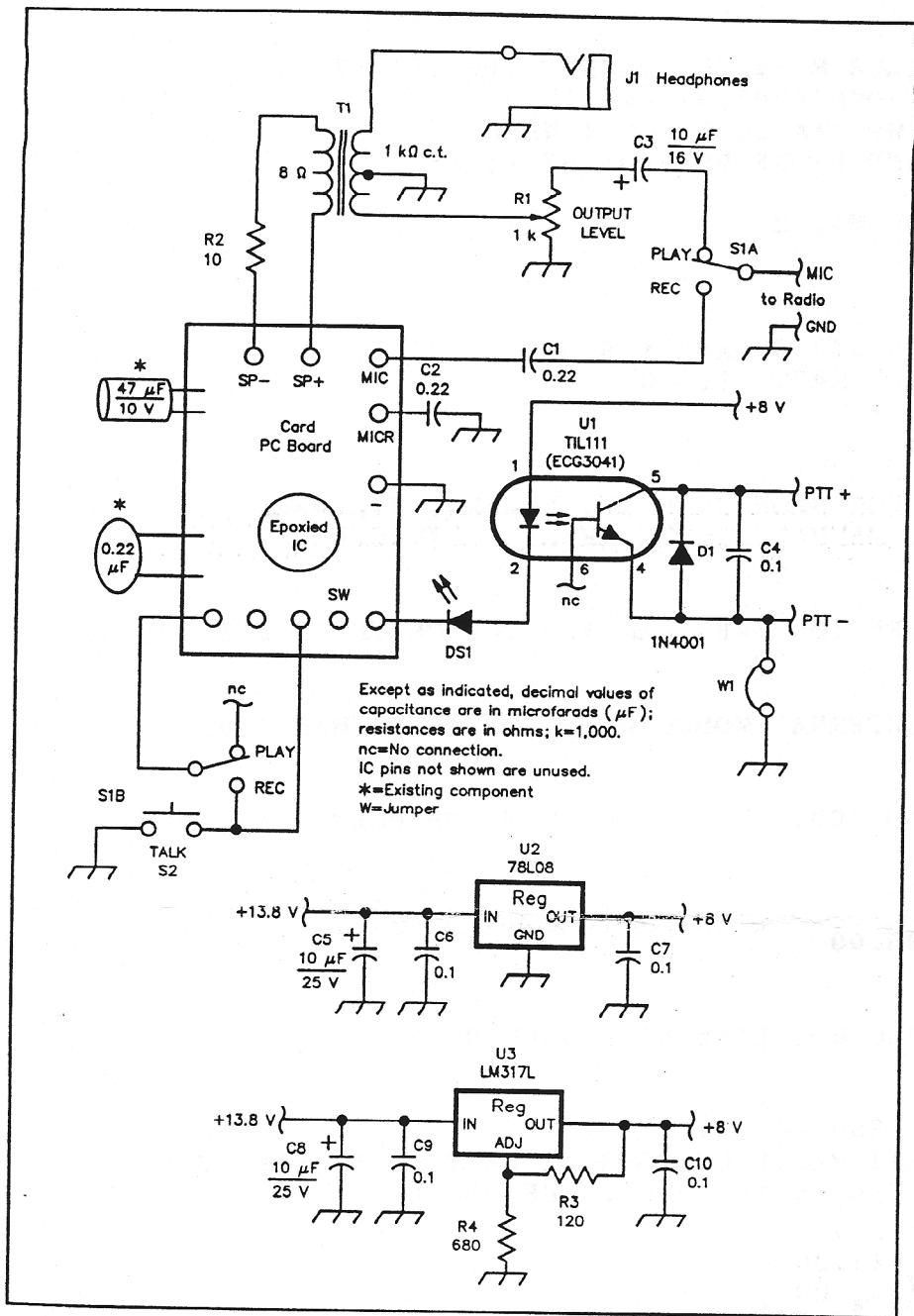


Figure 1—Pictorial schematic of the inexpensive digital voice recorder. The small PC board has a radial electrolytic capacitor and a disc ceramic capacitor that hang off one side of the board. The inset shows two ways of using low-power voltage regulators to enable the DVR to operate from a 13.8-V station power supply. Resistors are $\frac{1}{4}$ -W, 5%-tolerance carbon-composition or carbon-film units. Equivalent parts can be substituted.

- DS1—LED
- J1—Two-circuit jack
- S1—DPDT toggle or slide switch
- S2—Normally open pushbutton
- T1—Audio transformer, 1-k Ω primary, 8- Ω secondary (Radio Shack 273-1380)
- U1—TIL111 optoisolator (ECG3041)
- U2—78L08 8-V, 100-mA voltage regulator (Digi-Key AN78L08-ND); Digi-Key Corp, 701 Brooks Ave S, PO Box 677, Thief River Falls, MN 56701-0677, tel 800-344-4539, 218-681-6674, fax 218-681-3880
- U3—LM317L positive, adjustable voltage regulator (Digi-Key LM317AT-ND)
- Misc: Enclosure, hardware, mike jack and plug

Recording a Message

- Press and hold S2 while you switch S1 to **RECORD**.
- Release S2 and speak into your rig's mike.
- When done recording, press and hold S2 while you switch S1 to **PLAY**.

To play the message, simply press and release S2.

Test the board by connecting a speaker or headphone to J1 and feeding it 8 V. Press and release S2, and you should hear the last message recorded.

Try to record and play back a message. Set the output level by connecting your rig's microphone and comparing the level of the DVR's playback with the output of the mike. You can do this with a scope or an audio amp; if you don't have access to either, just set the trimmer potentiometer to mid-position, hook up the radio, and contact someone on the air. Record a short test message and play it back while adjusting R1 until the listener(s) agree the recorded output level is the same as that of your voice.

Summary

Although this DVR isn't as versatile as one of the contest cards, it also doesn't cost \$100, or need a personal computer. By adding another optoisolator and a 555 timer, you can even use it as a beacon, or in a hidden "fox" transmitter.

Michael Ardai was first licensed in 1991, and now holds an Amateur Extra Class license. Mike received his MSCE from Boston University and a BSCS from Columbia; he works as a design engineer at Teradyne in Boston. His Amateur Radio interests include home brewing, traffic handling, and public service communications. Mike is also quite active in the Boston Amateur Radio Club and maintains the w1aw-list Internet e-mail list (and 12 others).

QST

works, then unfold the card and slide out the plastic tray containing the electronics. Remove the batteries. Remove the two Phillips screws that attach the PC board to a plastic frame, straighten the two tabs on the **PLAY/RECORD** switch that pass through the plastic frame and are bent over on the other side to hold the switch in place, remove the PC board and carefully unsolder all of the wires between the board and the card's mike and speaker. Remove the speaker. Unsolder and remove the **PLAY/RECORD** switch. Attach the PC board to your perf board with a drop of glue or some double-stick tape, and wire the keying circuit according to Figure 1.

To provide some RF shielding, mount the DVR in a metal enclosure. Drill mounting holes in the box for the new **RECORD/PLAY** switch, **START** button, DS1 and speaker jack.

Also, drill holes for the cable and jack for your rig's mike, and any mounting holes you need for your perf board. Then connect the off-board components.

You can pick up a mike plug and jack at a hamfest for about \$2 each, or you can hard-wire the DVR in parallel with the existing mike's connector. Use shielded wire for this connection to avoid picking up hum; I used some two-conductor shielded wire for the mike, PTT, and ground connections, and a separate wire for +8 V, and kept everything together with a piece of mesh tubing.

Some radios (Kenwood's TS-130S, for instance) need both sides of the PTT switch to float. In that case, remove jumper W1, and be sure that you get the polarity correct (otherwise the diode will keep the radio keyed all the time).

Building a Digital Voice Recorder for Less than \$15

The PC board is tiny, assembled and readily available. A few additional components and some time at the workbench is all that's required!

By Michael L. Ardai, N1IST
1455 Commonwealth Ave No. 606
Brighton, MA 02135
n1ist@netcom.com

CQ! CQ!—This is N1 <cough!> IST.

After a long contest (especially Field Day, with the noise of the generator in the background), I am often so hoarse that it takes a few days before I get my voice back. After using a digital voice recorder (DVR) one Field Day, I decided to get (or build) one myself. As I discovered, by "recycling" a greeting card, you can build a DVR for less than \$15!

Description

A DVR (or DVK—digital voice keyer—as they're also known) lets you store speech in solid-state memory and replay it at the push of a button. Until recently, this operation required several ICs: some dynamic RAM, analog-to-digital (A/D) and digital-to-analog (D/A) converters, a single-chip microcontroller or a bunch of counters. A few years ago, however, Integrated Storage Devices began marketing a line of digital voice recording chips that store up to a minute of voice in an analog EEPROM. The memory retains the recording for up to 10 years—*without power applied*—and the IC can be reprogrammed at the touch of a button! Nowadays, you can purchase these ICs and/or a DVR module on a PC board from Radio Shack for \$18. By adding a handful of parts, you'll come up with a neat voice recorder.

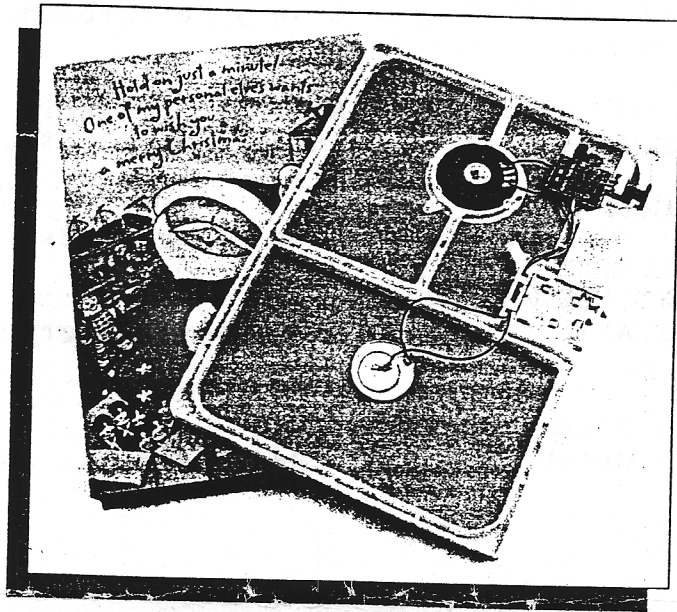
But there is a lower-cost alternative.

The Hallmark of a Ham

In a Hallmark store, I spotted a greeting card that allows you to record a 10-second message that plays back when the recipient opens the card. The greeting card covers a plastic frame attached to some cardboard stock that supports a small PC board with an ISD IC and supporting components on it, a miniature microphone, a 16- Ω , 1.5-inch loudspeaker and four series-connected 1.5-V button cells that comprise the power supply. Best of all, the card sells for only \$7.95! (*Another case where the whole is cheaper than the sum of its parts.*—Ed.) To me, it looked perfect for a voice-recorder project!

The Circuit

Refer to Figure 1. The greeting card's



DVR board uses a 6-V battery. My radios (an ICOM IC-3230 and a Kenwood TS-50) both supply 8 V dc on their mike plugs. If your radio can spare about 40 mA at 8 V dc, you can use that to power the DVR. Otherwise, you can use a 78L08 or LM317L regulator to drop the voltage from a 13.8-V supply.

To decrease the 8-V mike-plug voltage to about 6 V, I could have used resistors, but they would waste power. Then it struck me! An LED has a forward voltage drop of about 2 V. Placing an LED, DS1, in series between the 8-V source and the DVR is the answer. The LED does double duty, too. When the DVR is playing, the current drawn is sufficient to light the LED, so it flickers with the audio. When the IC isn't talking, it shuts down to save power; that turns off the LED.

Transmit/Receive Switching

Most radios today require that the PTT pin be grounded to key the rig.

Since the ISD IC's end-of-message pin is not accessible, we can't use a flip-flop set by "talk" and cleared by "end-of-message" to key the radio. However, by placing an optoisolator (U1) in series with DS1, we now have a transistor that is turned on when the chip is speaking, and turns off when the chip stops talking. This optoisolator's transistor keys the rig, and a reverse-connected diode protects U1 from damage by radios that use a negative keying

voltage. If you need to key a radio that requires a higher voltage or current, you can add a 2N3906 or VN10K transistor. The TIL111's phototransistor can handle 10 mA at 12 V, or 20 mA at 8 V. U1's diode drops the DVR chip's supply voltage by another 0.7 V, but since the ISD chips are rated between 4.5 and 6.5 V, that isn't a problem.

T1, an audio-output transformer, is used to couple the outgoing audio to the radio. T1 transforms the low-impedance outputs of the DVR to an impedance closer to what the radio's mike input expects to see, and isolates the two circuits. Since neither of the two speaker leads is grounded, the transformer lets us connect the DVR's floating output to the grounded mike input. A trimmer potentiometer, R1, controls the incoming voice level, and C3 allows us to mix the DVR's audio output with that of the mike's. A speaker jack connected across the transformer permits you to plug in a speaker or headphone to monitor your recording.

Deconstruction

Because it uses few components, you can assemble the DVR on a piece of perf board. You can even use "ugly" construction methods, gluing down a piece of unetched PC board or copper sheet and the card's electronics with some hot-melt glue. You could make a PC board, but that's really not necessary.

Test the unmodified card to make sure it

THE CRAWFORD TROPHY

The Crawford "home brew" trophy is awarded annually to the best home made device for use in the amateur radio shack.

The name "home brew" portrays the idea that the device was constructed in the home workshop, thereby requiring skill and patience in producing a product of quality. It also suggests that the device was made at home during leisure hours, rather than at the place of employment.

A. Purpose.

To encourage radio amateurs to build their own equipment. The prime purpose for making a device would be for improved amateur radio communications, and/or for testing amateur radio equipment.

B. Rules.

1. The device shall have been completed in the twelve months prior to the contest.
2. Although a limited number of operations in the fabrication of the device may be processed outside the home workshop, the majority of the work shall have been done in the contestants own workshop or that of a friend during leisure hours.
3. A contestant is to be given an opportunity to explain operation and purpose of the device, and any other details deemed helpful about the construction.

WHAT IS THE CRAWFORD TROPHY?

George Crawford VE3YR, founder of Crawford Radio at 119-121 John St. N. and his son Bill VE3JU, brought radio to the City of Hamilton.

Here is a "Thumbnail Sketch" of Bill taken from the January 1950 HARC Bulletin:

"BILL CRAWFORD, VE3JU. Puts in the time down at the Crawford Radio, at the corner of King William and Hughson in Hamilton. First interested in ham radio in 1927, started in to learn CW with Wib Clemence, Elton French and Slim Crossley. Licensed in 1931, and as most do, ambled down the line thru 80, then to 40 meters. Became educated to phone in 1933 but does take the odd jaunt down to ten. Must get his parts wholesale as he has one of the best and nicest looking rigs around the country. Married, but does get out with the boys occasionally. Lives down on the Beach Boulevard amid the high tension lines."

In the late 1920's it was big news that a new radio station KDKA Pittsburg was coming on the air. George was asked to put on a demonstration of the event at a local church and capture the grand moment of the station's debut. Tickets were sold out. George worked all afternoon testing his home-built radio, at least as best he could with no other stations to listen to. In his exuberance, he put the B+ supply to the filaments of the tubes, and blew them all. He rushed back to his store for parts then rushed back to the church. After some frantic last minute repairs, the receiver was up and running. The event was a success with the Standing Room Only crowd cheering wildly at the magic of radio.

Presidents Message.

Every effort has been made to find new and interesting things for the club to do. Some of them also involve members' families. The biggest problem is getting the members to participate.

At this time it appears that the Haida visit is on shakey grounds. If there are not enough people to fill the bus then we are going to have to try this idea another time.

June 6/95 at 7:00 p.m. the McMaster Planetarium will be giving the club a lecture regarding stars, star systems and galaxies. The building is Burke Sciences room B149. Parking near the library from the Sterling St. entrance or drive past the side of the hospital by the engineering building.

Sincere sympathy is sent to Stanley, VE3GFE regarding the loss of his mother. It should be noted that Stan was there to conduct the net on Tuesday night.

This month being home brew contest month, I am hoping that there are more entries than the table can hold. Next month is elections, so nominate your favourite person and get the info in next month's bulletin. Mark Gibson VE3MWH, has consented to be elections chairman.

Lorraine VA3NZ

HAMILTON FREENET

Hamilton FreeNet provides computer users with electronic community information and an on-ramp to the internet. It is a computer system designed to allow members of the public to have free or inexpensive access to the information highway. It will provide local information data bases, access to e-mail locally and through Internet, and to the Webb sites run by McMaster University and the Canada Centre for Inland Waters.

Many thanks to my many friends who, each in his or her own way, provided support after the recent passing of my mother. There are too many for me to thank each of you personally, so please take this note as a message of appreciation.

Stanley VE3GFE