

DECEMBER 1980

Vol. 7 #3

Food Back

VE3OSR

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Send Feedback correspondence to - Georgian Bay Amateur Radio Club
General Delivery, Owen Sound.

FEEDBACK IS A MONTHLY PUBLICATION OF THE GEORGIAN BAY AMATEUR RADIO CLUB. MOST OF THE MATERIAL PUBLISHED IS CONTRIBUTED BY THE READERS OF FEEDBACK AND ALL CONTRIBUTIONS ARE MOST WELCOME. AMATEURS AND SHORTWAVE LISTENERS ARE INVITED TO JOIN THE CLUB. YEARLY FEES ARE \$7.50 OR \$5.00 IF PAID BEFORE JANUARY 30TH, 1981. APPLICATIONS AND MEMBERSHIP FEES CAN BE MAILED TO OUR CLUB SECRETARY-TREASURER, MR. JACK AVIS, PO BOX 455, WIARTON, ONT. NOK 2T0, OR TO THE GEORGIAN BAY AMATEUR RADIO CLUB, GENERAL DELIVERY, OWEN SOUND, ONTARIO, N4K 5N9.

ANNOUNCEMENTS--

THERE WILL NOT BE A DECEMBER MEETING OF THE GEORGIAN BAY AMATEUR RADIO CLUB. THE NEXT MEETING WILL BE ON JANUARY 15TH, 1981.

THE MINUTES OF THE GEORGIAN BAY AMATEUR RADIO CLUB

THE MEETING ON NOVEMBER 20TH, 1980 WAS CALLED TO ORDER BY PRESIDENT HARVEY, VE3FOT. TWENTY-TWO MEMBERS WERE PRESENT PLUS ONE VISITOR WHO WAS MADE WELCOME BY THE PRESIDENT. MINUTES AS PUBLISHED IN FEEDBACK WERE ADOPTED BY A MOTION BY MAL, VE3LPG, AND SECONDED BY DON, VE3IDS. THE CHRISTMAS PARTY COMMITTEE HAD NOTHING TO REPORT BUT BOTH MOE, VE3LPT AND DON, VE3IDS, WOULD LET THE MEMBERS KNOW AS SOON AS SOMETHING WAS ARRANGED.

VE3DTS, JACK, WAS APPOINTED BY EXECUTIVE DECISION TO TAKE OVER THE VACANCY OF SECRETARY-TREASURER UNTIL THE END OF THE CLUB YEAR. A MOTION BY DICK, VE3BIS, AND SECONDED BY LAVERNE, VE3LPD, THAT FRED, VE3WF, AND ANDY, VE3LCZ MAKE ENQUIRIES RE REPRODUCTION OF A CLUB SIGN FOR AUTOMOBILES WHEN USED ON CLUB OUTINGS, CARRIED. A MOTION BY DON, VE3IDS, AND SECONDED BY VERNE, VE3BSF, THAT THE CLUB OBTAIN A POST OFFICE BOX IN OWEN SOUND, CARRIED. DISCUSSION REGARDING INCORPORATION AS SUGGESTED BY DICK, VE3BIS, CONCLUDED WITH A REQUEST FROM HARVEY, VE3FOT, THAT HE WOULD INQUIRE INTO THE ADVANTAGES AND DISADVANTAGES OF SUCH INCORPORATION.

THE PRESIDENT NOTIFIED THE CLUB OF THE PASSING OF A MEMBER, CLARE PLUMMER, VE3EZL, IN FLORIDA ON NOVEMBER 14TH, 1980. HARVEY SPOKE OF HIS CONTRIBUTIONS TO THE CLUB AND PARTICULARLY HIS EFFORTS ON FIELD DAYS WHEN HE MANNED THE CW KEY FOR LONG HOURS.

DICK INFORMED THE MEMBERS THAT HE HAD RECEIVED A LETTER OF APPRECIATION FROM THE FAMILY OF THE LATE CY WEAVER OF KANOVER. IT WAS NOTED THAT HIS CALL VE3DQA, HAS BEEN TRANSFERRED TO HIS SON JIM.

VE3HXX READ THE CARF BULLETIN. MOE, VE3LPT, WAS THE WINNER OF THE 50-50 DRAW. ON A MOTION BY HANK, VE3CXN, AND SECONDED BY IAN, VE3HXX, THAT THE MEETING BE ADJOURNED, CARRIED.

A FILM ENTITLED "THE WORLD OF AMATEUR RADIO" WAS ENJOYED BY ALL PRESENT. AFTER THE MEETING MANY OF THE MEMBERS GATHERED AT THE A & W FOR REFRESHMENTS.

JACK, VE3DTS.

FROM THE DESK OF THE EDITOR

THE EDITOR AND STAFF OF FEEDBACK EXTENDS THE SEASON'S GREETINGS TO ALL IT'S READERS. WE HOPE THAT ALL THE GBARC MEMBERS WILL BE WELL LOOKED AFTER BY SANTA CLAUS AND SINCE THE FEDERAL GOVERNMENT HAS EASED THE IMPORT DUTIES ON AMATEUR GEAR THE PURCHASE OF NEW AND EXOTIC EQUIPMENT IS MORE ATTRACTIVE.

IN THE YEAR NOW ENDING SOME OF OUR MEMBERS HAVE INDEED PROGRESSED SO THAT THERE ARE NOW SOME OF US WHO ARE COPYING WEATHER BULLETINS ON FACSIMILE; COPYING AND SENDING SLOW SCAN TELEVISION PICTURES; ENGAGING IN SATELLITE COMMUNICATIONS; AND COMMUNICATING BY RADIO TELETYPE. SOME OF OUR MEMBERS HAVE GIVEN OF THEIR TIME AND TALENTS TO INTRODUCE NEW MEMBERS TO THE AMATEUR RADIO FRATERNITY. OTHER MEMBERS HAVE HELPED WITH COMMUNITY PROJECTS SUCH AS THE SPLIT RAIL FESTIVAL, SNOWMOBILE RALLIES, CAR RALLIES, SCOUT JAMBOREE, FIELD DAY OUTINGS, ETC. ALL OF WHICH HELPS PUBLICIZE THE ROLL OF AMATEUR RADIO, WITHIN THE COMMUNITY.

ON A SOMBRE NOTE IT HAS BEEN RECORDED IN FEEDBACK THE PASSING OF TWO OF OUR MEMBERS INTO THE REALM OF SILENT KEYS: VE3DQA, CY WEAVER, WHO WAS OUR SECRETARY-TREASURER, AND VE3EZL, CLARE PLUMMER, OUR STAUNCH CW OPERATOR ON FIELD DAYS.

AT THIS TIME OF THE YEAR A FEW BOUQUETS ARE IN ORDER. I WOULD LIKE TO THANK ON BEHALF OF GBARC ONE OF OUR MEMBERS, DON ROWE, VE3LZX, FOR HIS EFFORTS IN THE FINAL PRINTING OF FEEDBACK. EVEN WHEN I AM IN A RUSH TO GET THEM IN THE MAIL PRIOR TO A MEETING, DON COMES THROUGH WITH THE GOODS. HE IS ALSO DOING A FINE JOB IN PREPARING A TELEVISION RELEASE ON AMATEUR RADIO. MAL, VE3LPG, DESERVES THANKS FOR HIS EFFORTS IN OBTAINING A MEETING PLACE FOR OUR CLUB. JIM, VE3CRV, DESERVES SPECIAL THANKS FOR MAINTAINING OUR 2-METER REPEATER, VE3OSR. OF COURSE THE EFFORTS OF THE CLUB EXECUTIVE AND THE GBARC VOLUNTEERS WHO MAKE THE CLUB A SUCCESS DO NOT GO UNNOTICED. AS EDITOR OF FEEDBACK I THANK ALL THE CONTRIBUTORS FOR THEIR FINE ARTICLES AND HOPE OTHERS WILL JOIN IN IN EXPRESSING THEIR NEWS AND VIEWS FOR OUR READERS IN 1981.

NOW I WOULD LIKE TO TELL ABOUT THE MECHANICS OF PUBLISHING FEEDBACK: SOME SUBMISSIONS ARE MADE IN A FORM SUITABLE FOR DUPLICATION WITHOUT FURTHER EFFORT ON MY PART. SOME SUBMISSIONS ARE RE-TYPED AND FOR THIS I USE A RADIO SHACK TRS-80 LEVEL 11, 16K MEMORY, COMPUTER. THE SOFTWARE (THE CASSETTE PROGRAM) USED IN CONJUNCTION WITH THE COMPUTER IS "THE ELECTRIC PENCIL" BY MICHAEL SHRAYER. THIS IS A WORD PROCESSOR PROGRAM WHICH PERMITS CORRECTION OF MISSPELLED WORDS, INSERTION OR DELETION OF LETTERS, WORDS OR ENTIRE PARAGRAPHS. IT PROGRAMS THE OUTPUT OF THE KEYBOARD TO A MONITOR TV OR TO A TELETYPE PRINTER. THE PRINTER NOW IN USE IS A MODEL 33 TELETYPEWRITER THAT ACCEPTS ASCII IN SERIAL FORMAT.

THE ELECTRIC PENCIL DOES NOT HYPHENATE WORDS AT THE END OF A LINE BUT IT WILL RIGHT JUSTIFY THE PRINT SO THAT THE LINES ARE OF EQUAL LENGTH. YOU WILL NOTICE THAT THE SPACING BETWEEN WORDS VARIES SO THAT

THE AVAILABLE WORDS JUST FILL THE LINE WITHOUT HYPHENATION. WORD PROCESSING ALLOWS THE USER TO INSTANTLY ASCERTAIN HOW MANY WORDS ARE IN THE TEXT OR IF DESIRED HOW OFTEN ANY PARTICULAR WORD OR LETTER HAS BEEN USED. IT IS ALSO POSSIBLE TO SUBSTITUTE ONE WORD FOR ANOTHER ANYWHERE IN THE TEXT. TO ILLUSTRATE THIS CAPABILITY SUPPOSE THE EDITOR HAD USED THE WORD "HAM" IN HIS TEXT. HE THEN DECIDED THAT IT DIDN'T LOOK RIGHT SO HE WANTED TO SUBSTITUTE THE WORD "AMATEUR" INSTEAD. BY THE WAY ALL THE TEXT THAT HAS BEEN TYPED ON THE COMPUTER KEYBOARD IS VISIBLE ON THE CRT SCREEN. TO PERFORM THE SUBSTITUTION I WOULD TYPE THE LETTER "V" AND THE VIDEO SCREEN WOULD CLEAR AND WOULD DISPLAY "SEARCH STRING". THEN THE OPERATOR TYPES ON THE KEYBOARD "HAM/AMATEUR/12" THIS NUMBER 12 CAN BE ANY NUMBER THAT IS EQUAL TO OR GREATER THAN THE NUMBER OF "HAMS" TO BE REPLACED. AFTER PRESSING "ENTER" THE VIDEO SCREEN COMES BACK WITH "LOCATED HAM 7 TIMES" AND INSTANTLY ALL THE "HAMS" HAVE BECOME "AMATEUR'S". TO DO THIS THE COMPUTER HAD TO SHUFFLE ALL THE TEXT TO MAKE ROOM FOR THE ADDITIONAL LETTERS. ANY LETTER, WORD OR GROUPS OF WORDS UP TO 40 CHARACTERS CAN BE ACCOMMODATED IN THIS OPERATION. I MIGHT ALSO SAY THAT WHEN TYPING INTO THE COMPUTER KEYBOARD YOU PAY NO ATTENTION TO THE LENGTH OF THE LINES. BUT YOU DO DIVIDE IT INTO PARAGRAPHS.

THE COMPUTER ALSO INSTRUCTS THE TELETYPEWRITER TO TITLE AND CONSECUTIVELY NUMBER EACH PAGE. IT TELLS THE PRINTER HOW MANY CHARACTERS TO PRINT ON A LINE; HOW WIDE TO MAKE THE LEFT MARGIN; HOW MANY LINES PER PAGE; HOW MANY SPACES TO LEAVE AT THE TOP OF THE PAGE; AND HOW MANY BAUD (SPEED OF THE PRINTER) TO PRINT AT. THE ENTIRE TEXT OF FEEDBACK CAN BE SAVED ON A CASSETTE TAPE FOR FUTURE RECALL OR FUTURE PRINTING.

THE ONE SHORTCOMING OF THE EQUIPMENT USED HERE IS THAT OF BEING LIMITED ONLY TO UPPER CASE PRINTING. OCCASIONALLY AFTER SPENDING HOURS TYPING BY THE HUNT AND PECK SYSTEM AND BEFORE A BACKUP COPY CAN BE SAVED ON A CASSETTE THE ENTIRE TEXT OF FEEDBACK IS LOST. THIS IS USUALLY ATTRIBUTED TO OPERATOR ERROR OR A GLITCH ON THE AC LINE AND SOMETIMES DUE TO UFO'S IN THE AREA. I JUST DON'T KNOW. BUT IT DOESN'T HAPPEN AS OFTEN AS IT DID EARLIER.

WISHING ALL FEEDBACK READERS BEST 73'S AND GOOD DX.

JIM, VE3BFV

P.S. IN THIS TEXT THERE ARE 1322 WORDS. RADIO USED 10 TIMES; COMPUTER USED 6 TIMES; CLUB USED 15 TIMES AND THE USED 125 TIMES. THE LETTER USAGE IS AS FOLLOWS:

A-470, B-144, C-194, D-246, E-811, F-144, G-93, H-279, I-394, J-19, K-47, L-228
M-179, N-387, O-473, P-138, Q-10, R-418, S-349, T-583, U-178, V-81, W-107,
X-22, Y-105, Z-5.

IF YOU DO NOT BELIEVE THIS LETTER DISTRIBUTION THEN COUNT THEM!!!!

THE PRESIDENT'S MESSAGE

OUR NOVEMBER MEETING WAS AN INTERESTING ONE WITH THE ARRL FILM. OUR THANKS TO MOE, VE3LPT FOR ARRANGING IT. WE HOPE THE ONES TO COME WILL BE AS GOOD. DIDN'T SOME OF THOSE OPERATING CONSOLES MAKE YOU ENVIOUS? BUT AS VERNE, VE3BSF, WOULD SAY, "IS THIS REALLY HAM RADIO?". IT SEEMS TO THIS PERSON THAT THE DAY OF HOME-BREW GEAR IS ALMOST HISTORY. HOWEVER, WE CAN STILL MODIFY THE EQUIPMENT WHICH SHOULD FULFILL THE CREATIVE URGE IN MOST OF US. THEN THERE ARE ALL KINDS OF ANCILLARY BITS AND PIECES THAT DO NOT REQUIRE CRITICAL RUNS OF LEADS AND SUPER-SOPHISTICATED LAY-OUTS. THEN, AGAIN, THE TRULY CREATIVE TECHNICIAN CAN ALWAYS TURN HIS TALENTS TO BASIC RESEARCH, COMING UP WITH A COMPLETELY NEW CONCEPT THAT CAN BE ADAPTED TO OUR CRAFT. MAYBE YOU, TOO, COULD BUILD A BETTER "MOUSE (WAVE) TRAP"; AND THE WORLD MAY BEAT A PATH TO YOUR DOOR.

CONGRATULATIONS TO OUR PARTY COMMITTEE FOR A GREAT DINNER PARTY AT THE DOWNTOWNER. AGAIN, WE WOULD HAVE LIKED TO SEE A FEW MORE PRESENT, THOSE WHO MISSED IT PASSED UP A GOOD EVENING.

AS IN PAST YEARS, THE DECEMBER MEETING IS WASHED OUT IN FAVOUR OF THE SOCIAL GATHERING, AND OUR NEXT MEETING WILL BE HELD, SUBJECT TO THE VAGARIES OF THE WEATHER, OF COURSE, ON THE USUAL THIRD THURSDAY OF JANUARY. WATCH FOR THE ANNOUNCEMENT, THERE MAY BE BIG THINGS TO REPORT. THAT'S ALL THAT CAN BE SAID FOR NOW. (VE3BIS PLEASE NOTE).

SEE YOU ALL AT THE JANUARY MEETING.

73'S

HARVEY, VE3FOT

NEWS ITEMS-

MEMBERSHIP FEES FOR 1981 ARE NOW DUE.

BILL COWAN, VE1IQS, HAS RETIRED TO PETERBOROUGH. HIS ADDRESS IS 972 SHERBROOKE STREET, PETERBOROUGH, ONTARIO. K9J 2R6.

BILL TAVES, VE3IHV, OF PORT ELGIN, WILL BE CHANGING HIS QTH TO SUDBURY EARLY IN 1981.

THE CHRISTMAS PARTY OF THE GEORGIAN BAY AMATEUR RADIO CLUB WAS HELD ON FRIDAY, NOVEMBER 28TH AT THE DOWNTOWNER MOTOR HOTEL IN OWEN SOUND. NINETEEN PEOPLE WERE PRESENT. AN EXCELLENT HOT ROAST BEEF SMORGASBORD COMPLETE WITH WINE AND BLACK FOREST CAKE FOR DESERT. AFTER THE DINNER A REFRESHMENT BAR WAS PROVIDED AND THE MEMBERS AND THEIR XYLs ENJOYED A QUIET EYEBALL. MOE, VE3LPT, AND DON, VE3IDS, ARE TO BE CONGRATULATED FOR THEIR ORGANIZATIONAL EXPERTISE.

WINTER SIGNS

IF THE SNOW DRIFTS FACE THE NORTH, SPRING WILL COME EARLY.

WHEN THE DEER REAPPEAR, SPRING IS NEAR.

WHEN THE MAPLE SYRUP FIRE'S SMOKE GOES STRAIGHT UP, THE WEATHER WILL BE MILD.

SKINNY RABBIT TRACKS IN THE SNOW MEANS A THAW IS CLOSE AT HAND. FAT TRACKS IN THE SNOW MEANS THAW IS A LONG WAY OFF.

CQ JAMBOREE

On Saturday 18th October 1980 there was a flurry of activity from the Sugar Bush at Saugeen Bluffs Conservation Area but this excitement was not associated with tapping of the maple trees.

The 1st. Port Elgin troop of 20 Boy Scouts and 4 Ventures had set up camp there for the weekend and one part of their busy schedule included participation in "JOTA", Scout Jamboree of the air.

In order to explore the mysteries of the airwaves and to give the boys a chance to talk to other Scout groups, local amateurs from Bruce Amateur Radio Club and Georgian Bay Amateur Radio Club set up stations near their camp site.

The antenna installation was done by the boys and consisted of making and erecting a loop antenna under the direction of Scouter Bill Palmer VE3 DGP, the other a trap dipole loaned to us by Bill VE3 IHV, with installation supervised by Rahn VE3 MAI. To supply some RF for their handywork two stations were set up, one in a hard top camper, equipped and operated by Fred VE3 KHQ while the other was in back of a van set up and operated by yours truly VE3 LCZ.

After going through some basic operating procedures, equipment details, log requirements, phonetic alphabet etc., the first "CQ Jamboree" went out on 20 meters. This was quickly answered by WA2 SNA, station at Camp Tamarack, Oakland N.J. Their reserve of 300 boys there kept our group of 5 going for approximately one hour and it was only due to the heavy QRM that cut this short. Once the ice was broken the groups of four or five at each station had no problem carrying on a conversation with the next 50 or so QSO's.

Propagation for that day restricted our contacts mainly to North America with one exception and that being, Italy on 10 meters.

By all indications the day was quite successful and enjoyable for all concerned.

73'
Andy Kalnins
VE3 LCZ/3 QRT

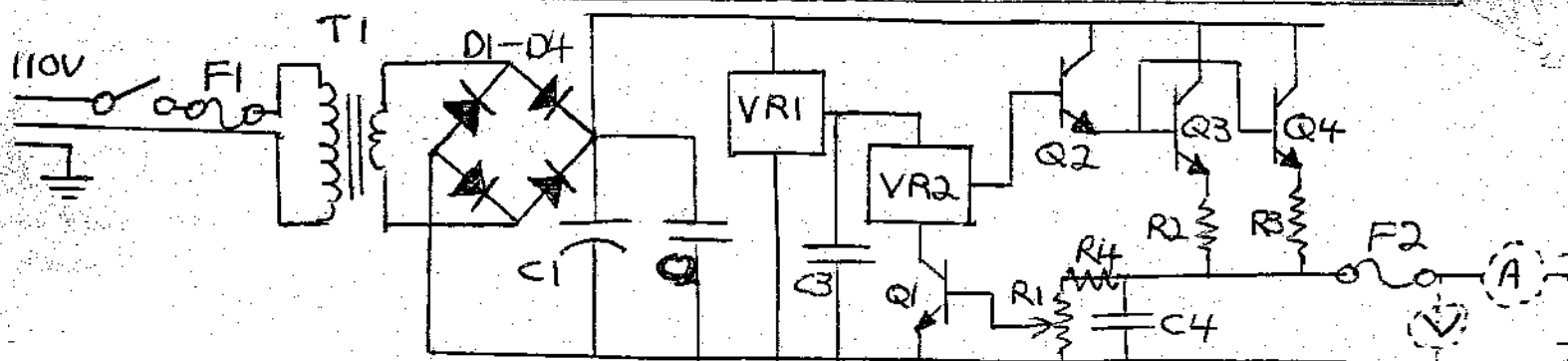
WANTED--More check-ins for the GEORGIAN BAY AMATEUR RADIO CLUB
NET on Sunday mornings at 0930 hours, on 3783 khz.

FOR SALE-- Co-axial switches, one pole 4 position, BNC connections
good quality. \$10.00 each or 3 on a panel for \$20.00. JIM, VE3BFV,

phone 371-1209

A PRACTICAL POWER SUPPLY FOR THE AMATEUR CONSTRUCTOR BY DON, VE3IDS.

HERE IS A SIMPLE POWER SUPPLY THAT IS CAPABLE OF DELIVERING 10 AMPERES AT 13.8 VOLTS WITH GOOD VOLTAGE REGULATION.



PARTS LIST:

- T1 - 110 VOLT PRIMARY, 24 VOLT SECONDARY 250 WATT OR GREATER.
- F1 - 2 AMP, 250 VOLT FUSE.
- F2 - 10 AMP, 32 VOLT FUSE.
- DI-D4 - SILICON RECTIFIER DIODES 15 AMP. (OR GREATER) OR EQUIVALENT BRIDGE RECT.
- C1 - 10,000 MFD ELECTROLYTIC CAPACITOR 50 VOLT RATING.
- C2, C3, C4 - .1 MFD. DISC CERAMIC OR PAPER FOR RF BYPASSING
- VR1 - 24 VOLT 3-TERMINAL VOLTAGE REGULATOR SUCH AS 7824.
- VR2 - 15 VOLT 3-TERMINAL VOLTAGE REGULATOR SUCH AS 7815.
- Q1 - 2N2222 OR EQUIVALENT.
- Q2 - ECG124 OR EQUIVALENT TRANSISTOR HAVING MINIMUM DISSIPATION OF 10 WATTS AND COLLECTOR CURRENT OF .5 AMPS.
- Q3, Q4 - 2N3055 (MOUNTED ON HEAT SINK)
- R1 - .25 WATT TRIMPOT 10K OR 25K (VALUE NOT CRITICAL).
- R4 - 4.7K .5 WATT RESISTOR.
- R2, R3 - .2 OHM 5 WATT POWER RESISTORS.
- A - OPTIONAL AMMETER.
- V - OPTIONAL VOLTMETER.

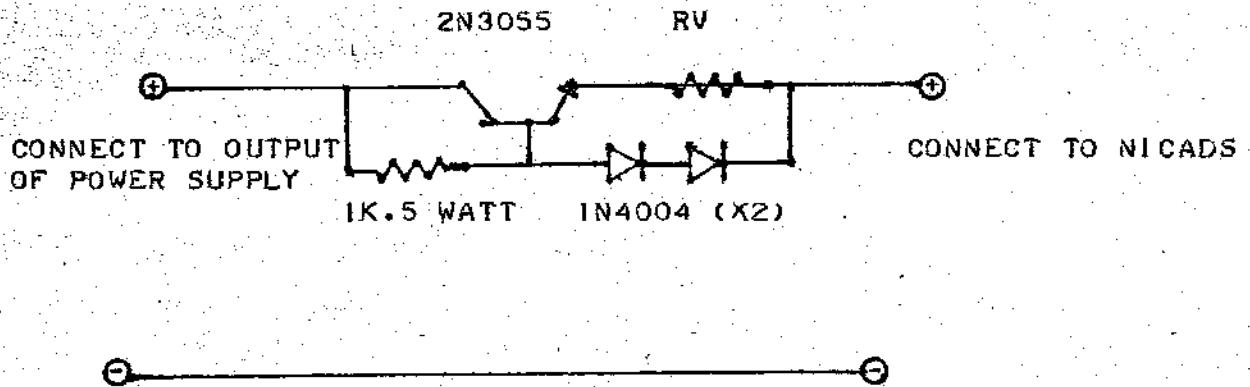
THEORY OF OPERATION

THE 110 VOLT SUPPLY VOLTAGE IS FED TO THE PRIMARY OF THE TRANSFORMER WHERE IT IS STEPPED DOWN TO 24 VOLTS AC. IT IS THEN RECTIFIED BY THE BRIDGE RECTIFIER AND FILTERED BY C1 TO GIVE A PEAK VOLTAGE OF APPROXIMATELY 33 VOLTS.

VR1 SERVES TWO PURPOSES: IT PROVIDES THE FIRST STEP IN A TWO - STAGE REGULATOR AND ALSO LOWERS THE VOLTAGE APPLIED TO THE 15 VOLT REGULATOR VR2 WHICH DOES NOT LIKE VOLTAGES MUCH ABOVE 24 VOLTS DC. AFTER THE VOLTAGE COMES FROM THE OUTPUT OF VR2 AT 15 VOLTS DC. (WELL REGULATED) IT IS APPLIED TO Q2 WHICH IS AN EMITTER FOLLOWER DRIVER FOR THE OUTPUT TRANSISTORS Q3 AND Q4. THESE TWO TRANSISTORS OPERATE IN COMMON COLLECTOR MODE, THEREFORE HAVING NO VOLTAGE GAIN BUT LARGE CURRENT GAIN. BECAUSE Q3 AND Q4 ARE IN PARALLEL, THEY HAVE TO HAVE COMPENSATION TO INSURE THEY DIVIDE THE CURRENT EQUALLY. R2 AND R3 WILL DO THIS BY

LIMITING THE CURRENT THROUGH THE TRANSISTOR WHICH TURNS ON THE MOST. THIS IS DONE BY REDUCING ITS BIAS. IN TROUBLE SHOOTING, YOU SHOULD MEASURE APPROXIMATELY 33 VOLTS DC ACROSS C1, 24 VOLTS DC ACROSS C3, 15 VOLTS DC FROM BASE OF Q2 TO NEGATIVE LINE, 14.4 VOLTS DC FROM Q3 BASE TO NEGATIVE LINE AND 13.8 FROM Q3 EMITTER TO NEGATIVE LINE.

THIS SUPPLY CAN ALSO BE USED AS A NICAD BATTERY CHARGER BY ADDING A CONSTANT CURRENT REGULATOR SHOWN BELOW.



CHARGE CURRENT	RV
50 MA.	12 OHM .5 WATT
100 MA.	6 OHM .5 WATT
200 MA.	3 OHM .5 WATT
300 MA.	2 OHM .5 WATT
500 MA.	1.2 OHM .5 WATT
1000 MA.	.6 OHM 1 WATT

MORE THAN ONE NICAD (UP TO EIGHT) CAN BE CHARGED AT ONE TIME IF THEY ARE CONNECTED IN SERIES. THE TRANSFORMER CAN BE THE MOST EXPENSIVE PART, SO SEE TED, VE3AEO, I THINK HE HAS A QUANTITY OF TRANSFORMERS THAT YOU MAY BE ABLE TO MAKE A DEAL ON.

73'S AND GOOD LUCK
DON, VE3IDS

FOR SALE --- HEATHKIT HR10 AMATEUR RECEIVER, 5-BAND TUBE TYPE IN GOOD CONDITION WITH CALIBRATOR AND MANUAL. \$80.00. VE3IDS

A SILENT KEY

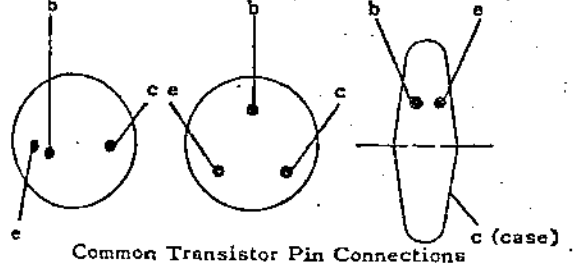
IT IS WITH DEEP REGRET THAT WE RECORD THE PASSING OF OUR FELLOW AMATEUR CLARENCE (CLARE) PLUMMER, VE3EZL. HE PASSED AWAY SUDDENLY IN FLORIDA ON NOVEMBER 14TH, 1980. HE AND HIS XYL HAD GONE SOUTH TO SPEND THE WINTER. HE WAS MOSTLY A CW OPERATOR AND EVERY YEAR WE COULD DEPEND ON CLARE TO BE ONE OF OUR PRINCIPAL OPERATORS FOR THE CW CONTACTS DURING FIELD DAY EXERCISES. HE WILL BE SADLY MISSED BY HIS MANY FRIENDS IN THE AMATEUR RADIO FRATERNITY.

HOW TO CHECK SEMI-CONDUCTORS WITH A TRIPLET OR SIMPSON METER

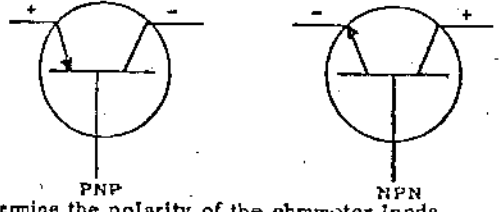
GENERAL

In each of the following tests, it will be necessary to determine the polarity of the ohmmeter leads. (Not necessarily the same as when used with voltage.) In case instruments are not available to determine the polarity of the leads, the following procedure may be used. Hold one ohmmeter lead in your hand in such a manner that a good electrical connection is made. Place the other lead on the tip of your tongue. Then reverse the leads. The lead that makes salty is the positive lead.

TRANSISTORS (Germanium Only)

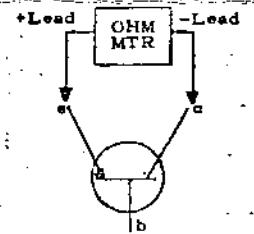


The following test is for PNP type germanium transistors. Reverse the meter leads for NPN type germanium transistors. Refer to the wiring diagram to tell if a transistor is PNP type or NPN type. They are shown schematically below.

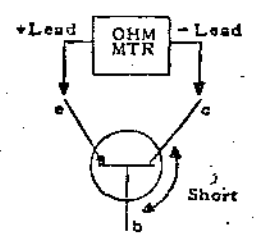


Determine the polarity of the ohmmeter leads.

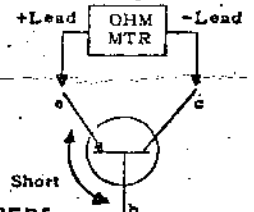
Put the ohmmeter between the Emitter (e) and the collector (c) as shown. The resistance reading should be between 100 ohms and 50K ohms. (This reading is not significant by itself.)



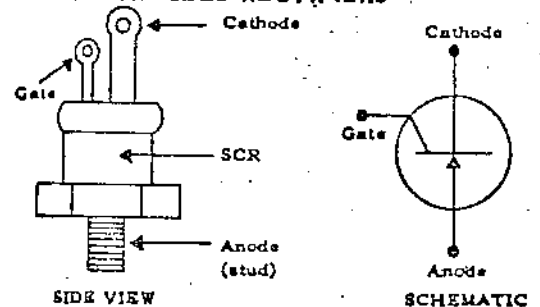
Leave the ohmmeter connected as in step 2; but short the Base (b) to the collector as shown. The value of the resistance should become less than it was in Step 2.



Again leave the meter connected as in Step 2, but this time, short the base to the emitter as shown. The resistance should become much greater than in Step 2.

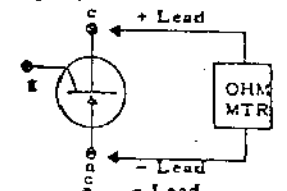


SILICON CONTROLLED RECTIFIERS

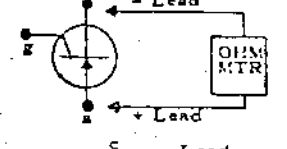


Determine the polarity of the ohmmeter leads.

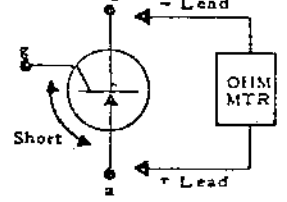
2. Connect the ohmmeter between the Anode (a) and Cathode (c) as shown. The resistance should exceed 1 megohm.



3. Reverse the ohmmeter leads as shown. The resistance should again exceed 1 megohm.



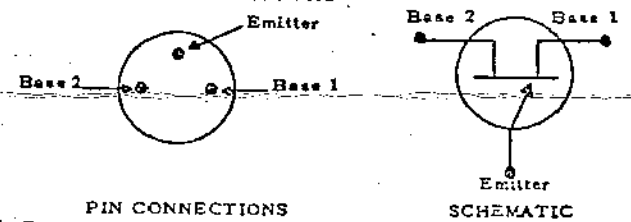
4. With the ohmmeter leads connected as in Step 3, short the gate to the anode as shown. The resistance should drop to less than 1000 ohms.



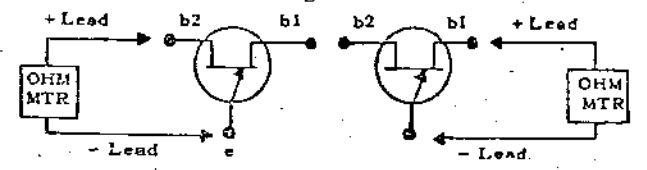
5. Remove the jumper. If the lowest range of the ohmmeter is used, the resistance will stay low after removal of the jumper. If a high resistance range is used, the resistance will return to more than 1 megohm. Since some ohmmeters will not give significant results with this step, Step 4 is sufficient.

This procedure will give a reasonably good indication of the condition of the SCR. It will not detect marginal or voltage sensitive units.

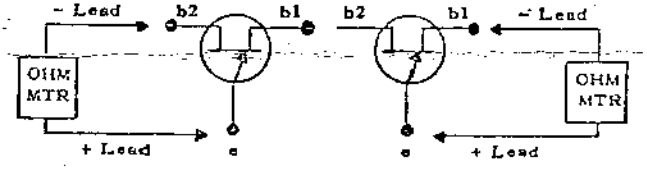
UNIUNCTION TRANSISTORS



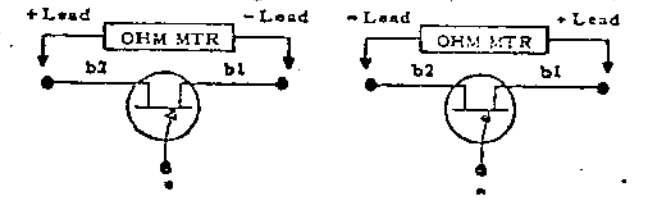
1. Determine the polarity of the ohmmeter leads.
2. With the negative lead of the ohmmeter on the Emitter (e) the resistance from Emitter to either Base 1 (b1) or Base 2 (b2) should exceed 1 megohm.



3. With the positive lead of the ohmmeter on the Emitter, the resistance to either Base 1 or Base 2 should be between 500 and 10,000 ohms.



4. The resistance between Base 1 and Base 2 should be between 4,000 and 10,000 ohms. Reversing the ohmmeter leads should not change the value.



This procedure will give a reasonably good indication of the condition of the unijunction transistor. It will not detect a marginal or voltage sensitive device.