

NORTH SHORE AMATEUR RADIO CLUB INC.

P.O. BOX #171, OSHAWA, ONT., L1H 7L1

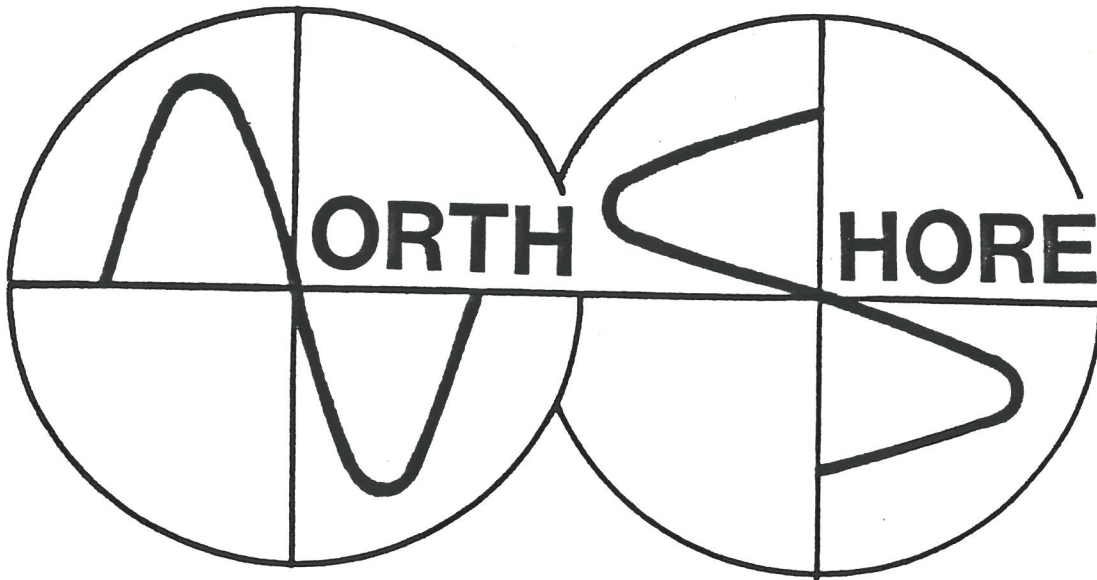
480 OSHAWA ONT L1H 7L1
E7 1987
XII



Dec 1987

First Class. Première classe.

VE3CRK	87
Ralph	Day
454 Holcan Ave	
Oshawa	Ont. L1G 5X6



**AMATEUR RADIO
CLUB**

=====
 ELECTED DIRECTORS

PRESIDENT	RICK GIBSON	VE3 ASH	416-434-2886
SECRETARY	FRANK LANE	VE3 NIP	416-434-6657
TREASURER	COLIN BELL	VE3 CEU	416-723-7842
PROGRAM DIRECTOR	KEITH MAITLAND	VE3 DZM	416-725-1041
PAST/VICE PRESIDENT	RENO TORRESAN	VE3 KQE	416-434-8760

 NON-ELECTED OFFICERS (SUBJECT TO CHANGES)

REGISTRAR	KEITH WYARD-SCOTT	VE3 GDF	416-723-5758
SPECIAL EVENTS COORD.	RALPH DAY	VE3 CRK	416-723-8738
GET-WELL CARDS	COLIN BELL	VE3 GDF	416-723-7482
2-METER NET CONTROL	ROY MILLER	VE3 AAF	416-852-5447
MMBRSHIP LIST & LABELS	PAUL DALE	VE3 LHZ	416-579-2877
INSTRUCTION COORD.	JOE WHITE	VE3 IHS	416-623-4069

 =====
 CLUB STATION.....VE3 NSR
 CLUB REPEATER.....VE3 OSH 147.720 MHZ IN 147.120 MHZ OUT.
 2-METER NET HOSTED BY ROY (AAF) OR A STAND-IN CONVENES EVERY
 THURSDAY AT 19:30 LOCAL TIME ON THE CLUBS REPEATER (OSH). AS PART
 OF THR NET. CODE PRACTICE IS PROVIDED BYBERNIE (ATI) BEGINNING AT
 20:30 LOCAL.

10-METER NET (UNOFFICIAL) IS USUALLY HOSTED BY RAY (OUB)- A GROUP
 OF LOCAL HAMSMEET SUNDAYS ON 28.200 MHZ USING CW FROM 09:
 10:00 LOCAL THEN SWITCH TO SSB PHONE UNTIL EXHAUSTED OR XYL'S
 CALL "DINNER".

 =====
 CONTRIBUTIONS TO NEWSLETTER

EDITORS-	KEITH WYARD-SCOTT	VE3 GDF	416-723-5758
	RAY ZAMBONELLI	VE3 OUB	416-723-2467
	LARRY MCKNIGHT	VE3 ASB	416-427-0893

CONTRIBUTIONS MAY BE MAILED (ATTENTION THE EDITOR) TO THE
 N.S.A.R.C., BOX #171, OSHAWA, ONT., L1H 7L1 OR, IF URGENT, CALL ONE
 OF THE EDITORS DIRECTLY.

NOTE!- OPINIONS EXPRESSED ARE THOSE OF THE WRITERS AND DO NOT, OF
 NECESSITY, REFLECT THOSE OF N.S.A.R.C. MEMBERS IN GENERAL.
 ARTICLES DEEMED TO BE DEFAMATORY WILL NOT BE ACCEPTED.

 =====
 NEXT MEETING - THURSDAY, DECEMBER 17, 1987 AT 20:00 LOCAL (8:00 P.M.)

 THE GREEN ROOM OF THE ARTS RESOURCE CENTRE (BEHIND CITY
 HALL- CENTRE STREET SOUTH- SEE ENCLOSED MAP ON PAGE 7)

PROGRAM-WE WILL BE OFFERING WINE AND CHEESE TO ALL OUR
 MEMBERS, XYL'S OR YL'S (NOT AND/OR) WITH THE INTENTION
 OF IMPRESSING ON SANTA (OR MRS. SANTA) THAT WE DO
 DESERVE THAT NEW HAM GEAR. THIS WILL BE ACCOMPANIED BY
 OUR ANNUAL RAG-CHEW AND EYE-BALL QSO'S. BE THERE!!!!!!

DEC. 1987

SEASON'S GREETINGS

WE, THE EXECUTIVE AND THE EDITORS, WOULD LIKE TO TAKE THIS OPPORTUNITY TO WISH ALL MEMBERS AND THEIR FAMILIES AND FRIENDS A MERRY CHRISTMAS AND A JOY-FILLED 1988.

WE WILL, NO DOUBT, REPEAT THESE WISHES ON DECEMBER 17TH TO THOSE WHO CAN MAKE IT TO THE DECEMBER MEETING OF THE GRAPE AND GOAT'S MILK, AND THE WISH IS NO LESS VALID FOR ALL THAT, BUT, WE ESPECIALLY WANT TO CONVEY THESE GREETINGS TO THOSE WHO, FOR ONE REASON OR ANOTHER, WILL NOT BE ABLE TO COME TO THAT AFFAIR AND WE DO HOPE THAT YOU WILL NOT HAVE TO MISS ANOTHER ONE.

SANTA CAME AND STAYED (FOR A WHILE)--BY RAY (OUB)

THE ANNUAL SANTA CLAUS PARADE ORGANIZED BY THE OSHAWA 'JAY-C'S), WAS HELD ON NOVEMBER 14TH THIS YEAR. (DATE WAS SET TO GET AWAY FROM DATES ALREADY SET FOR THE TORONTO AND BOWMANVILLE PARADES--FORGOT THE NEWMARKET FLEAMARKET--EDITOR) COMMUNICATIONS WERE AGAIN SUPPLIED BY THE (TA-DA!) NSARC AND THE GOLDWING RIDERS WHO PATROLLED THE PROCESSION. BETWEEN THE RIDERS AND THE LOCAL 'BOYS-IN-BLUE', THE WX WAS GREAT! A HEARTY THANKS TO ALL.

PARTICIPANTS FOR THE NSARC, HEADED BY RALPH (CRK), WERE RICK (ASH), LORNE (DJT), TOM (FMI), DAVE (GUD), KEITH (MJA), JOHN (POJ), RAY (OUB). SPECIAL MENTION FOR VOLUNTEER DOUG (APW) WHO COULD NOT TALK HIS DOCTOR OUT OF HIS 'STAY-AT-HOME' ORDERS.

DAVE (GUD) ALSO DOUBLED AS A RIDER AND THAT BROUGHT THE THOUGHT OF THE TREMENDOUS EXTRA VALUE OF THESE RIDERS IF THEY ALL GOT THEIR 'TICKETS', IN ARES AND OTHER PUBLIC SERVICES.

FOR THE ENLIGHTENMENT OF ALL WHO MIGHT TEND TO THINK OF THE 'GOLDWING RIDERS' AS A 'MOTORCYCLE GANG', THIS FAMILY-ORIENTED CLUB HAS DONE OUTSTANDING WORK FOR THE NEEDY AND HANDICAPPED AND THE 'CHRISTIAN BIKERS ASSOCIATION' WHOSE MOTTO IS "WE RIDE FOR CHRIST".

MY PERSONAL CONGRATULATIONS TO JOE DE SILVA (VE3---) FOR EARNING HIS FIRST TICKET AND TO STEVE (LLD), FOR EARNING HIS ADVANCED. WELL DONE!

LORAN C OR, TO SEE OR NOT TO SEE

FOR THOSE OF YOU WHO DID NOT GET TO THE LAST MEETING BECAUSE THEY DID NOT NOTICE THE CHANGE OF DATE OR IN LOCATION, I CAN ONLY SAY THAT YOU MISSED A GOOD TALK. UNFORTUNATELY, THE DEMONSTRATION WAS DIAAP-POINTING, THROUGHOUT NO FAULT OF FARNEY'S (UNLESS YOU WOULD LIKE TO DO AN INJUSTICE TO FARNEY AND BLAME HIM FOR A LAPSE OF MEMORY). IT SEEMS THAT WHOEVER INVENTED OR DEVELOPED THE SYSTEM WAS UNENLIGHTENED AND DID NOTHING ABOUT ITS DISLIKE FOR FLOURESCENT LIGHTING. SEEMS FARNEY HAD THIS PROBLEM ONCE BEFORE IN THE DISTANT PAST AND HAD FORGOTTEN ABOUT IT ONCE IT WAS SOLVED. THANKS FOR A GOOD EVENING FARNEY.

DEC. 1987

Your Foreign Correspondent

Dick Richards KA2KNZ

I had my first Hurricane alert the 12th of October and it was a busy time. Although I was Not called up I was on the radio the best part of the day, keeping up with the progress of Floyd. Our local emergency net was in operation and there were evacuation centers open and manned by several of the hams and there were several nursing homes covered also in case there was to be a general evacuation call. There were about 300 who did find it a need to do so, due to the low lying location of the homes. We had 6½ " of rain in about 6 hours and the outer Islands were evacuated due to the low elevation. The shelters were terminated in the late afternoon when the storm veered to the east south of this general area.

There were at least 2 stations on the Emergency National Net One in Austin Texas on 14325 and another that was on the 10 m. band on the east coast of Florida. Both of these are collection points for information on barometric pressures, wind velocity and tides. These were funneled to one on the West Coast Centers and the East coast sent information to the National Hurricane On the East coast to keep a constant report on the progress of the storm.

All in all it was an interesting and informative day and was a good work out for our system here. The National Emergency Call up was to be this Saturday the 17th but the Florida areas were excused from such as this operation was a real emergency and the report would be sent to National Headquarters.

The ironic thing of the whole thing is there were an English couple on the Island who came through the storm ok stopped in here to see us, and today the 16th they were to go home to England They are from the southern part and they come from Kingston on the Thames, Surrey. What a reception the STORM will have for them if they were allowed to fly from here.

Cheerio to all

Dick



If you do not wish to use this I will understand.

 NO ERROR, WE MEANT IT

DUE TO THE FACT THAT WE HAVE REFERRED TO PAGE 7 IN TWO DIFFERENT PLACES IN THIS ISSUE, AND, THE MAP WE ARE USING TO SHOW YOU HOW TO FIND US IS ALREADY LABELLED PAGE 7, AND SINCE I DO NOT WANT TO GET LOST BECAUSE YOU SENT THE MOST IMPORTANT PART OF THE MAP IN ON THE BACK OF YOUR MEMBERSHIP RENEWAL, I AM REVERSING PAGES 6 & 7 WHEN WE PRINT AND COLLATE THE NEWSLETTER.

 FOLLOW UP ON MAKING PC BOARDS

THROUGH THE MAGIC OF CUT-AND-PASTE, WE PRESENT, IN TOTAL, THE BIT ON USING TRANSPARENCIES TO WHICH WE ALLUDED IN THE LAST NEWSLETTER.

MAKING PC BOARDS

I am writing to share with your other readers a technique that I discovered for using a Xerox copier to make printed-circuit boards. I suspect that there are many hobbyists who would like to etch PC boards but, like me, have no access to a darkroom or the photoresist chemicals, but do have use of a Xerox machine. The technique that I worked out for transferring the layout image onto a copper-clad board is very simple; it is also fast, and it yields near-professional results.

The artwork is prepared as described in your series "Etch Your Own PC Board" (*Radio-Electronics*, December 1982 through February 1983) and then copied onto a Xerox transparency—the type used to make overhead projector slides; the contrast should be set for as dark as possible in order to get the heaviest possible coating of the toner. It is useful to make more than one transparency in case the first transfer does not come out.

The PC blank is prepared simply by buffing the copper with fine steel wool to remove oxidation and contaminants. The image on the transparency is transferred by heat. When a Xerox copy is made, a black powder called "toner" is deposited on the page and then heated to 300°F to fuse it in place. On paper, the fused toner is absorbed into the porous surface, but on plastic film it just builds up on top. That image can be remobilized by again heating it to

about 300°F. I do that using a household clothes iron.

The iron is secured by clamps in an inverted position, so that its hot sole can be used as a work area. The iron is then brought to temperature for a moderately high setting ("wool"). Then the copper blank is heated from the back, with the transparency secured to the foil with its toner-side against the copper. The transparency is attached along only one edge with tape, so that it can easily be peeled off when done, without damaging the delicate image. While the copper comes up to heat, roll the film against the copper to transfer the image. (I used a 1" wallpaper roller.) As the toner melts, the film adheres to the copper, and after a minute or two, the entire image should be stuck down. Then, while the copper is still hot, carefully peel the transparency off and let the board cool. A mirror image of the layout should be affixed, in complete detail, to the copper.

If the results at that point are not completely satisfactory, there are two options. If there are only a few minor imperfections, they can be touched up with a very fine felt-tip pen. Otherwise, the image can be cleaned off and the copper re-buffed for another attempt with a fresh transparency. It is so quick and easy to transfer an image that it is worth while to make a couple of practice runs in order to get a feel for the process. Once a satis-

factory mask is transferred, the board may be etched.

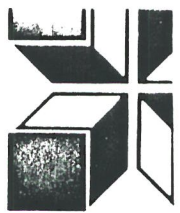
I was amazed at how good the results were: My very first attempt produced a slightly flawed but workable board. After modifying my methods, all subsequent runs have been totally successful.

I have never used the photo-transfer method, so I cannot compare it first-hand to my xerox technique. I suspect that the photographic method is capable of producing slightly sharper detail and higher-density resist. (Minor pitting occurs on some of the traces, but so far that has not interfered with any circuit.)

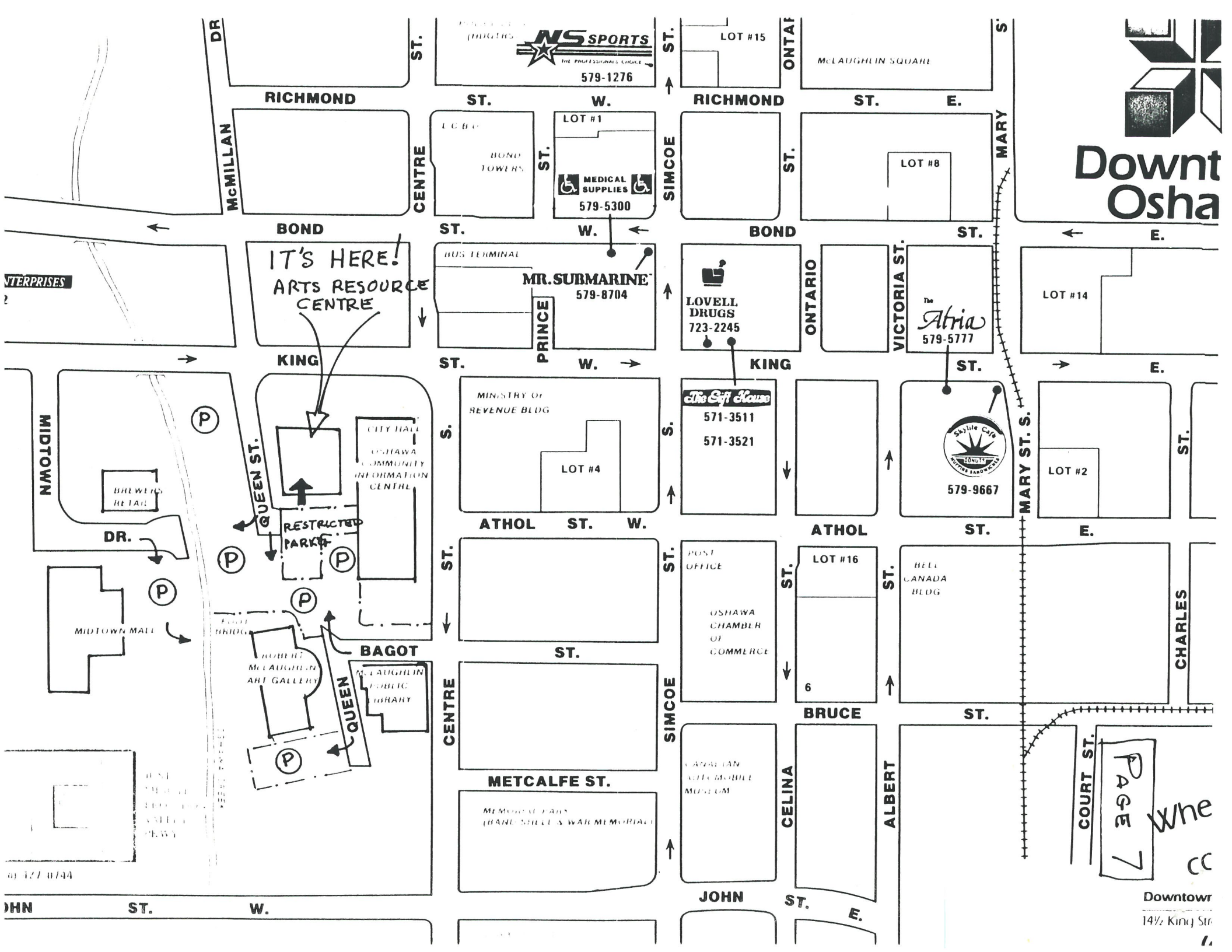
There are several definite advantages to the Xerox process: Foremost is that almost everyone has access to a Xerox copier, either at work or through commercial copying services. The resist mask is totally visible on the copper blank, so that touch-ups can be made right on the copier, if needed. The process automatically transfers a mirror image. For work with single-sided boards, that is a definite plus. (It is not as useful for double-sided boards, and adjustment must be made for those.) And, finally, it is a great saving in time and expense. An existing layout can be transferred and etched onto a board, ready for drilling, in well under an hour for the cost of only a few Xerox copies.

So far, I have made only single-sided boards; I intend to try double-sided boards in the near future. I expect to etch each side separately, protecting one side with adhesive-backed film while working on the other.

C. BRUCE SNOW *Lafayette, LA*



Downtown
Oshawa



IT'S HERE!
ARTS RESOURCE
CENTRE

RESTRICTED
PARKING

MR. SUBMARINE
579-8704

LOVELL
DRUGS
723-2245

Atria
579-5777

The Sky House
571-3511
571-3521

Skyline Cafe
579-9667

PAGE 7

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CC

YOU SAY YOU CAN'T WRITE

THERE ARE, AMONG THE MEMBERS OF THIS CLUB, A GOOD MANY VERY KNOWLEDGEABLE PERSONS WHO CANNOT BRING THEMSELVES TO SUBMIT MATERIAL FOR THIS NEWS LETTER. THEY MAY BE UNDER THE IMPRESSION THAT NOONE WOULD READ WHAT THEY WRITE, THAT THEY WOULD MAKE MISTAKES IN SPELLING, THAT NO ONE WOULD BE INTERESTED IN WHAT THEY READ, OR THAT, HEAVEN FORBID, THEY MAY MAKE GRAMMATICAL ERRORS.

IF THIS IS KEEPING YOU FROM SUBMITTING ANY THING TO THE EDITORS OF THIS NEWSLETTER, PLEASE RECONSIDER! TAKE NOTE THAT WE, YOUR EDITORS, ARE NOT (IN SOME CASES) IN FULL POSSESSION OF ALL FACTS (OR ALL OUR FACULTIES) AND WE ARE NOT EXPERT WRITERS BUT--WE WILL TRY TO CORRECT ANY ERRORS THAT WE NOTICE UNLESS WE FIND THEY ARE SO MINOR THAT THEY DO NOT WARRANT RE-TYPING.

ALSO REMEMBER THAT CUT-AND-PASTE IS AN ACCEPTABLE PROCEDURE, OR IF YOU HESITATE TO CUT THE SOURCE, A PHOTOCOPY. WE WOULD LIKE WHERE POSSIBLE TO GIVE RECOGNITION TO THE PERSON WHO ORIGINALLY WROTE THE ARTICLE, THE MAGAZINE IN WHICH IT WAS PUBLISHED, AND TO THE PERSON WHO SUBMITTED IT TO US. IF YOU READ A GOOD ARTICLE IN ONE OF THE MAGAZINES TO WHICH YOU SUBSCRIBE AND IT IS TOO LONG FOR US TO PRINT, IT WOULD BE NICE TO LET US KNOW SO THAT OTHERS MAY MAKE AN EFFORT TO GET A LOOK AT A COPY OF IT. AFTER ALL WE DON'T ALL SUBSCRIBE TO THE SAME PUBLICATIONS.

YOU MAY NOTICE, IF YOU READ THIS NEWSLETTER, THAT RAY (OUB) AND DICK (KA2KNZ) HAVE CONTRIBUTED TO THIS ISSUE OF THE NEWSLETTER AND ONE OF THE THEORY CLASS STUDENTS SUPPLIED THE CUT-AND-PASTE EFFORT ON MAKING CIRCUIT BOARDS. MARTIN (NSO) HAS ALSO SUPPLIED A COPY OF THE FBYC 'SAILPAST' WHICH HAS A WRITE-UP ON LORAN C (WHICH FARNEY COVERED PRETTY WELL AT OUR NOVEMBER MEETING) WHICH I WILL TRY TO SYNOPSISIZE FOR A FUTURE ISSUE.

SPLATTER TO THE RESCUE

IN ORDER TO FILL THIS SPACE, I WAS AGAIN FORCED TO GO TO ANOTHER NEWSLETTER (IN THIS CASE YRARC'S 'SPLATTER') AND ONE OF MY FAVOURITE ARTICLES IS ON 'RADIO'S ANCESTORS'. I DO NOT KNOW WHO RESEARCHES IT BUT MORE POWER AND MORE THANKS TO HIM. DUE TO SPACE RESTRICTIONS, IT WILL HAVE TO BE CONDENSED IN THIS NEWSLETTER BUT NOT SEVERELY SO.

JAMES CLERK MAXWELL IS CREDITTED WITH GIVING MATHEMATICA FORM TO FARADAY'S WORK WHOSE CONCEPT OF 'FIELDS' SURROUNDING CHARGED BODIES HE SHARED AND HIS MOST IMPORTANT WORK WAS A 'TREATISE ON ELECTRICITY AND MAGNETISM'.

MAXWELL WAS RAISED ON A 'COUNTRY ESTATE' IN SCOTLAND AND AT AGE 10 WENT TO EDINBURGH ACADEMY WHERE, DESPITE BEING TEASED AS A COUNTRY BOY AND CALLED 'DAFTY', HE WAS SOON WINNING MATHEMATICS PRIZES AND WAS ALLOWED BY EDINBURGH UNIVERSITY PROFESSOR FORBES TO USE SCIENTIFIC APPARATUS AND TO MEET DISTINGUISHED SCIENTISTS; THEN AT 19 HE WENT TO CAMBRIDGE.

HE WAS ATHLETIC BUT NOT FOND OF SPORTS. HE WROTE VERSE, WAS CONSERVATIVE AND RELIGIOUS AND POSSESSED A GENTLE HUMOUR. HE HAD MANY PAPERS PUBLISHED AND BECAME A PROFESSOR AT ABERDEEN THEN FOR FIVE YEARS AT KING'S COLLEGE, LONDON BEFORE RETIRING TO WRITE HIS TREATISE. THEN IT WAS BACK TO CAMBRIDGE AS THE FIRST DIRECTOR OF THE NEW CAVENDISH LABORATORY AND TESTS THAT PROVED OHM'S LAW WAS NOT AN 'APPROXIMATION' AS SUPPOSED AT THE TIME BUT ACCURATE TO ONE POINT IN TWO HUNDRED THOUSAND.

HIS EQUATIONS SUMMARIZED THE WORKS OF COULOMB, OERSTED, AMPERE, OHM'S LAW, AND FARADAY'S WORKS IN A MANNER WHICH ASTONISHED MATHEMATICIANS ACCORDING TO LENARD (A GERMAN SCIENTIST). HE ALSO WROTE PAPERS ON 'KINETIC THEORY OF GASES' AND 'THEORY OF COLOUR VISION' AND PROBABLY PRODUCED THE VERY FIRST COLOUR PHOTOGRAPHS.

ALL THIS IN ONLY FORTY-EIGHT YEARS (1831-1879).

S(ome) W(ant) A(ll) P(eruse)

THIS IS YOUR SWAP, SELL OR BUY COLUMN --TO HAVE AN ARTICLE LISTED,
JUST MAIL INFORMATION TO THE EDITOR OR PHONE IT IN (723-5758)

FOR SALE--MULTI-BAND ANTENNA--BY KEITH (DZM) 725-1041--137' LONG GARANT
GD8 WINDOM ANTENNA FOR 80 THRU 10 METER BANDS (NEW THIS YEAR)
\$35.00--NOTE AFTER DECEMBER 31, 1987 CALL COLIN (CEU) 723-7342

WANTED----BY MAC (XI) 723-8484--IS LOOKING FOR A SOLID-STATE HF RIG (HE
EXPRESSED A PARTICULAR LIKING FOR KENWOOD) AND A DRAKE MN4
ANTENNA TUNER--LET'S GET HIM BACK ON THE AIR!!

NEXT MEETING

JANUARY MEETING WILL BE GIVEN OVER TO A RAG-CHEW FOR THOSE WHO WANT
TO TELL EACH OTHER ABOUT WHAT SANTA BROUGHT AFTER WE DETERMINE WHO
WILL GUIDE US FOR THE NEXT YEAR OR SO. THAT'S RIGHT !! ELECTIONS
FIRST THEN THE FUN.

NOTE!! AFTER THE NEW YEAR CELEBRATIONS ARE OVER WE CHANGE TO MONDAY
EVENINGS INSTEAD OF TUESDAY AND AT OUR NEW LOCATION. (SEE MAP ON
PAGE 7).

PERMANENT REMINDER

IF YOU ARE READING THIS NEWSLETTER OVER THE SHOULDER OF THE HAM
WHOSE NAME APPEARS ON THE MAILING LABEL BECAUSE YOU FORGOT TO MAIL IN
YOUR RENEWAL OR BECAUSE YOU HAVE NEVER BEEN A MEMBER OF OUR CLUB, NOW'S
YOUR CHANCE! PLEASE, USE THE FORM AND INFORMATION BELOW TO JOIN US. (IF
THE OWNER WON'T PART WITH IT, USE A FACSIMILE (OR SOMETHING SIMILAR).

HELD OVER BY POPULAR REQUEST AND OUR LOVE FOR YOU!!

FULL MEMBERSHIP-- \$15.00 CDN, (10.50 U.S.)-- INCLUDES FULL VOTING
PRIVILEGES AND MONTHLY NEWS BULLETIN FOR ONE CALENDAR
YEAR (JANUARY TO DECEMBER, JULY & AUGUST EXCEPTED)
ASSOCIATE MEMBERSHIP-- \$10.00 CDN (7.00 U.S.)--INCLUDES BULLETIN ONLY
AND A HEARTY WELCOME TO ANY MEETINGS YOU CAN GET TO
EITHER IN PERSON, OVER THE LAND LINE, OR ON THE AIR.
2ND FAMILY MEMBER--\$5.00 CDN (3.50 U.S.)--FULL VOTING PRIVILEGES BUT NO
MONTHLY BULLETIN (ASSUMED LIVING IN THE SAME HOUSE)

TO JOIN US, OR TO MAKE CHANGES TO MAILING ADDRESS, SIMPLY (YOU'RE
A HAM AREN'T YOU?) FILL IN THE FOLLOWING FORM AND MAIL IT ALONG WITH
THE APPROPRIATE FEE TO THE REGISTRAR OF THE N.S.A.R.C. AT HIS HOME
ADDRESS (PREFERRABLY) 298 DOVER STREET, OSHAWA, ONTARIO, L1G 6G6 OR TO
THE CLUB BOX #171, OSHAWA, ONTARIO, L1H 7L1.

NAME- _____ CALL- _____
STREET & NO.- _____ APMT- _____
CITY _____ PROV. OR STATE- _____
POSTAL OR ZIP CODE- _____ TELEPHONE- _____
MEMBERSHIP-FULL _____ ASSOC _____ FAM _____ FEE _____
DONATIONS FOR REPEATER FUND (IF YOU DESIRE) _____ AMOUNT _____
