





FROM THE EXECUTIVE...

Happy spring, everybody! The time of year has arrived when our club swings into high gear with a slate full of interesting activities. Everyone must know about our FLEA MARKET, a couple of weeks from now! Delighted to report that response both from our own club and from the South Pickering Club to our requests for helpers for parking and security has been overwhelming: looks like nobody is going to get stuck working all day long, since we have enough people to split up the jobs into shorter shifts.

We still need everybody (this means YOU) to help out with setting up tables on Friday night, and for cleanup on Saturday afternoon. Please don't leave these essential tasks to the next guy and we'll all get finished faster.

It's also time to start serious planning for the ANNUAL FIELD DAY. Our Vice-President, JOE, VE3IHS, has graciously agreed to take on responsibility as Field Day Co-ordinator this year. We need tent managers, loggers, people to erect/take down the antennae. Anyone and everyone who wants to participate is more than welcome!

Regretfully, an unanticipated labour dispute at the Lantic Sugar Refinery cancelled our planned tour during the school break in the month of March. However, every cloud has a silver lining: this prompted us to hold an impromptu meeting a couple of weeks later, where important planning for the above two events was accomplished.

We're pleased to report that an attractive, new logo for the club has been designed by Colin Bell, VE3CEU. It's a modern-looking design, based on sine wave motif for the "N" of the word "North" and the "S" of the word "Shore". Art work is being done on it now, and the finished product should be ready for unveiling by the April Meeting. This new logo will appear on club stationery, and on new club jackets that should put us into the bigger leagues along with some of the clubs in W-Land.

In other news, we launched the "TALKING BOOK" cassette tape newsletter for our visually impaired members this month. By all accounts, it was well-received.

The club is indebted to Harry, VE3QG, for donating a considerable amount of time to a comprehensive audit of the club's finances: for once, we actually know where the money went last year and where we really stand financially now. Results of the audit are being sent to N.S.A.R.C. members along with this issue of the newsletter. You will see that the additional revenues from the Flea Market will be much appreciated! So bring your friends: EVERYBODY has to buy a ticket this year, with no exceptions whatever. If you have a table, please be forewarned that no "helpers" will be admitted without first buying a ticket. SEE YOU ALL THERE!

# Technical Section

## What is Linking?

What is linking? What will it mean to me?

Questions, questions. Well here are some of the answers.

Linking is a natural extension of VHF Amateur radio that has really come into its own in Ontario in the past few years and, like any new technology, is spreading into our area. It is the ability of a ham in London to contact, using a very simple method, other hams in Ontario who are normally beyond the range of a VHF repeater.

### How Is It Done?

First, you need a 2 metre repeater (yes, I know that it could be 220 or 450 just as well). This repeater lets you talk around your own area (that's where TTT, MCR, MGI, LAC, STR, NOT, RGB, etc. are now). Add to this a 450 transceiver and a beam, point it at the repeater that you want to link to and have that repeater owner do the same thing. You listen to his transmit frequency and he will listen to yours. Then when he hears your 450 signal, which is really your 2 metre one being repeated on 450, he will repeat it on his 2 metre repeater. You will do the same with his signals. Now, using the example of STR and MCR, you have a link that looks like Fig. 1.

### This Is Active All The Time.

This is a simple linking system that ties two repeaters together. Using touchtone commands, a ham in either area can turn on the link and talk to a ham in the other area.

So far, so good. But this will only allow us to talk to hams in one other area. What if we want to go

wider afield. Do we need more 450 MHz transceivers and more antennas?

Yes, we could do that but could you imagine the cost, the RF problems, etc., if we tried to? So how do we do it? Well, we have to find a centrally located repeater site and the users of that site have to be agreeable to let us install a 450 MHz repeater there. This repeater will be called a 'HUB' repeater because its role is to act as the hub in a wheel of repeaters.

The hub repeater acts just like the two metre repeaters that you are

used to. What it hears, it repeats.

Using our original example (a ham on VE3STR in St. Thomas wanting to contact a ham in Goderich through VE3MCR in Lucan) our system would look like this.

VE3STR and VE3MCR would both have a 450 MHz transceiver listening to the OUTPUT of the HUB repeater and their 450 MHz transceiver would transmit on the HUB repeater's INPUT frequency. Once the St. Thomas ham had sent the correct touchtone codes to access VE3STR's 450 MHz link, he would be listening to the output of

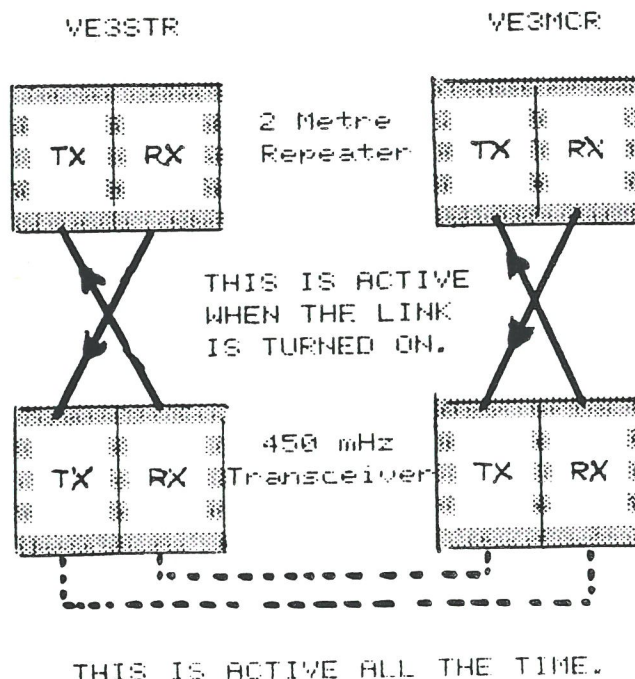


Fig. 1

the HUB repeater in London. He would then send the appropriate codes to the input of VE3MCR's two metre repeater. He then calls his ham friend in Goderich and, if he is listening to VE3MCR, they have a QSO. When they are finished, the St. Thomas ham just reverses the procedure to shut off the links.

How we can have this same setup repeated at as many repeater sites as there are groups that wish to join the system (to a practical maximum number to ensure that overloading does not take place)?

You will notice that not once in this example have we mentioned the two metre repeater known as VE3TTT. In fact, while the St. Thomas ham was QSOing with the ham in Goderich you could have been ragchewing on TTT in London and neither of you would have known that the other was on the air. The users of STR and MCR would have heard both sides of the St. Thomas/Goderich QSO and, in fact, could have joined in if they so wished.

There can be no more than one person talking at a time (same as on 2 metres now) but you can tie together as many repeaters as is necessary to send your signal from your QTH to the destination(s) you desire provided that they are part of the link system.

The possibilities are limitless and are only constrained by how many areas are connected to the HUB repeater. Well, you say that is all well and good, but then every repeater connected to the HUB must be fairly close (within 450 MHz range of London) to be on the HUB. Not necessarily so, as we will examine now.

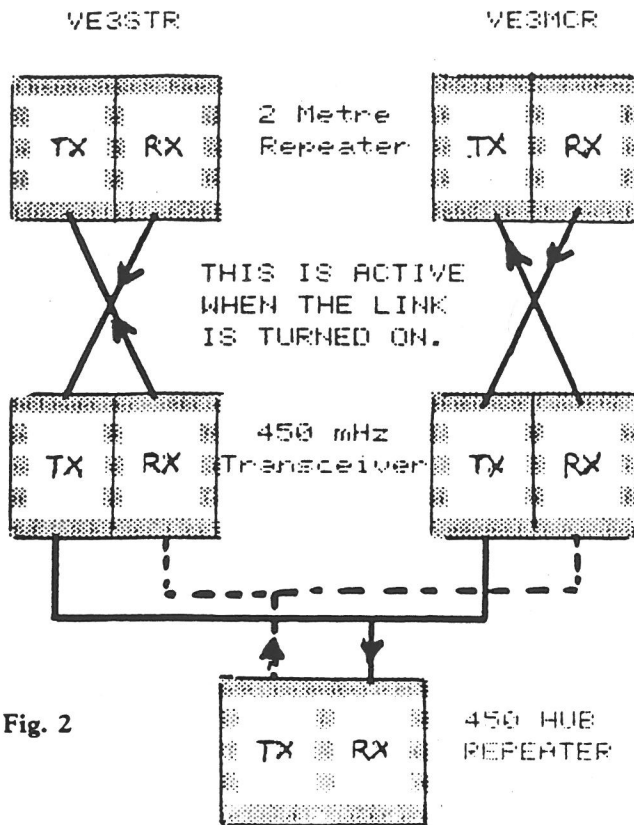


Fig. 2

If we can link repeaters through HUB repeaters, why can't we link HUB repeaters together to form a network and expand our range. Well that is what we can do. The next HUB system is in Toronto and to get there our HUB repeater must be heard in Toronto. To accomplish this we need some help, so we have installed a relay station on Baden Hill near Kitchener on the CKCO-TV tower. This is a pair of 450 MHz transceivers cross-coupled. One receiver listens to the HUB repeater's output in London and transmits it to Toronto and the other listens to Toronto's HUB repeater's output and transmits it to London. It looks like Fig. 3.

Once the London HUB repeater has been accessed, it is a simple matter to turn on the London/Toronto link which will then gain you access to those two metre repeaters linked to the Toronto HUB repeater. Table 1 is a list of codes that will control the various links.

More will be added as they are made operational.

Example of a call from St. Thomas to Whitney. St. Thomas ham dials 4171 to turn on the link from St. Thomas to the London HUB.

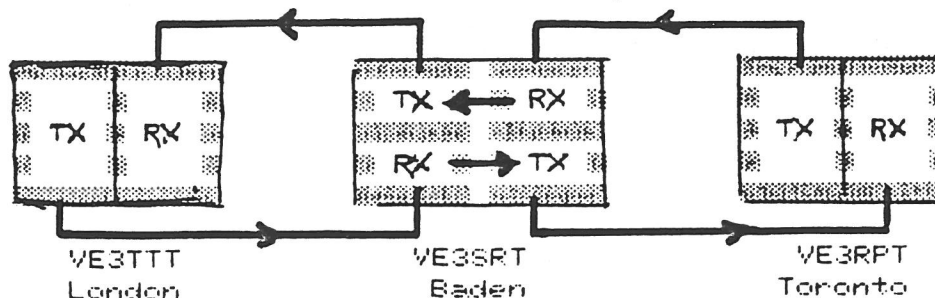


Fig. 3

Then he dials 4191 to turn on the link from London to the Toronto HUB repeater via Baden.

Then he dials 251 to turn on the link from the Toronto HUB to the Essonville HUB.

Then he dials 271 to turn on the link from Essonville to Whitney. When his QSO is completed he does the same thing in reverse, dialing this time the OFF codes, 270, 250, 4190, 4170.

It may seem complicated at first, but then so was turning the Autopatch on and off until you got used to it.

—From the Southern Ontario Repeater Team Bulletin.

(Ed. Note: The date of completion of this link system has not yet been announced.)

Table 1

LINK CODES FOR THE ONTARIO LINK SYSTEM

<u>LOCATION</u>	<u>REPEATER</u>	<u>ON</u>	<u>OFF</u>
BADEN/TORONTO	VE3SRT	4191	4190
GRAND BEND	*** VE3RGE	4161	4160
LONDON	VE3MGI	4321	4320
LONDON	VE3TTT	4121	4120
LONDON	VE3SUE	4141	4140
LUCAN	*** VE3MCR	4151	4150
ST. THOMAS	VE3STR	4171	4170
ESSONVILLE	VE3TBF	231	230
TORONTO	VE3WHO	946	945
UXBRIDGE	VE3RPT	362	372
ESSONVILLE (HUB)	VE3TBF/220	251	250
BRACEBRIDGE	*** VE3MRT	281	280
DWIGHT	VE3MUS	261	260
WHITNEY	VE3WPR	271	270

\*\*\* Under Construction

SSB (Sell, Swap and Buy).

Ham Station in good working order.

Drake 2B receiver and Apache transmitter with SB10 sideband adapter

See: Dave Green

VE3FYB

683-3395

Complete \$250.00

BULLETIN:

Have you heard that LARRY ALLAN, VE3FXQ set up a repeater at Sunnybrook Hospital for use by hams there. Call VE3SBH 145.15 and up to 600. JIM VE3BZA.

PLEASE NOTE:

Even as this edition is being put together, your editor, BILL FORTUNE, VE3NTI, lies in Oshawa Hospital, Room 7114, Phone - 433-2602. This edition is courtesy of NEIL, KSP and Mildred Fortune. Thanks to all contributors.

BILL is fine. Thank You. He had an operation on Sunday, March 31 and will probably be in the hospital all week. He would love to hear from you. Thanks to Bob LLZ, and Dave FYB. he has a hand held there.

"THE OLD TIMER'S CORNER"  
by

EDWIN H. TAYLOR, VE3FRM.



It was a cold, damp night outside the barn; 80 was filled with "sperics" and sideband splatter. I slid down in my chair, put my feet up on the operating bench and started leafing through some of the old "QST'S" lying there. clipping the pages of the March/44 edition, I happened across a monthly section entitled "In the Services". I stoped to scan for any familiar calls. By-golly, there under RCA (Royal Canadian Army) was listed "3 APW - Johns - Address Unknown".

"Doug Johns, 3 APW," I said aloud and sat straight up. "Now there's just the fellow for the OT Corner!"

Cat lifted his head with an expression like "Oh no! What now!"

After a hasty phone call to Doug, I slid out the old mill and crammed in some paper. Cat relaxed and dozed off.

Back in the early '30's, Doug's first encounter with Ham Radio started with a Popular Mechanics article featuring homebrew crystal sets. Scrounginh coil wire from the local dump and a coil former from his mother's pantry (an empty salt container), he set about to duplicate this marvel of the 20th century. The detector was a coherer made from an empty fuse cartridge and silver filings removed from coin of the Realm. (great pain was taken to ensure the coins were reusable and not damaged. After many frustrations with the Coherer, Doug ordered a Galena detector from a Montreal mail order house. (God bless 'em, every country boy needs a mail order house. Every evening he would tune in CKJW or CFCA, experimenting with this setting or that hook-up and perhaps a different antenna.

Now and then a mystery voice could be heard echoing through the aether and overpowering the musical broadcasts. Doug had no choice but to listen. The voice appeared to be talking with someone far-away. Some evenings the voice would transmit a one-way message to a young lad who was hospitalized in Brougham and Pickering and give reports of the Grey household. The young lad turned out to be Russ Grey (now 3ATT) and the mysterious voice belonged to W C Merkar, VE3TU, a local resident of Doug's hometown, Pickering.

It wasn't long before a visit was made to the Merkar wireless station and what station it was! The Radio Shack was just bulging with the kind of goodies that make a young boy's eyes light up like a christmas tree! A six foot rack stood by the operating bench with a pair of 866 rectifiers that would give off blue flashes within its bulb on voice peaks. A #210 stood majestically in the power amp with plates that glowed cherry red. Meter pointers swung rythmically in time with the Merkak voice. Dials and knobs were everywhere. Young Doug Johns sat very near to heaven in that room watching the operation and breathing in the

atmosphere. The feeders for the 160 meter half wave zepp were brought into the shack through two holes in the window pane. These holes had been skilfully drilled by packing putty against the pane and firing two bullets through the window. Voila! Two neatly drilled holes.

These visits gave Doug great inspirations. Before long, enough parts were scrounged from the dump to provide a working spark station. The HT coil was from a Model "T" Ford and a telegraph key was fashioned from copper weather flashing. Old telephone batteries were used to power the complete lash-up. Kids didn't let money stand in their way in those days! It wasn't long before Mr. Merkar shut young Douglas down with a good scolding!

The old crystal set was attacked with renewed fervor. The catswhisker was replaced with a #30 oscillating detector opening a whole new realm to our young officianado. CW signals poured in from far and near and Doug soon had his Morse speeded up to that required for his ticket.

Finally the day of reckoning came. Time was nigh for that big DOT examination!

Doug skipped school that day and later was severely reprimanded for missing an important Latin class; as small price to pay, he thought. If he could get that sacred ticket, any punishment meted out would be water off a duck's back. Well to reach the DOT offices on Front Street, Doug had to hitch a ride on the old #2 highway which at that time of day had little traffic. The hours ticked by and the sun was sinking in the West along with Doug's heart and hopes. Leaning on the front office counter, DOT Inspector buster Doubleday was eyeing the clock and thinking of home with a nice supper on the table, a QST by the coal stove and a pipe full of fine cut tobacco. Suddenly the door burst open and in tripped our young enthusiast, out of breath and out of time.

"Sorry, son, it's quitting time. Come back tomorrow," said Buster, straightening up.

"What?" cried out young hero, "Your letter sez before five and it's only five to five!" Then he went into a tirade over his long trip, missed classes, etc., etc.!!!

Well, Buster kind of leaned back, rubbed his stubbled jaw and thought for a moment. His first impression was probably to kick this impertinent young squirt right back out the door from whence he came. Then a grim came over his face, perhaps a memory of his own enthusiastic youth. The many stumbling blocks that a boy must encounter, the cracks, crevices and mountains that must be climbed. With a sigh he swung open the gate and looked down at Doug's worn and dusty shoes.

"Come along, lad, let's see what you can do."



Doug attacked the exam with great fervor. Formulas, theory and commandments swirled off the end of his pen at a fevered pace. The code, he rattled off like a pro. Buster stopped him after the first 30 seconds.

"Okay, son. You got it!"

He patted him on the back and pointed him towards the door. Doug floated out of the room on cloud nine.

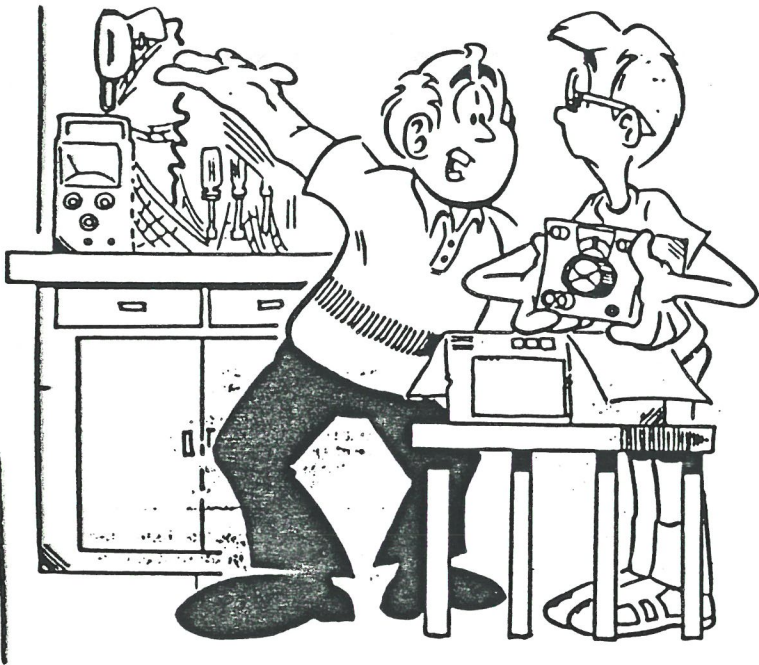
It didn't take Doug long to get on the air. His first rig was a #30 oscillator with a 1J6 amp. B plus was supplied by a 45 volt battery which allowed him less than a watt output on 160 meters. He didn't make the WAS award but many fine contacts were had. A whole new world was out there and his Ham licence was his ticket to ride the airwaves to far-away places. New friends were found and one of them was Roy AAF. Nearly every evening Doug would pedal the seven miles to Brougham to visit Roy. Together they would discuss circuits, DX and construct some of their ideas. They progressed from simple TRF receivers up to modern superhets. Their treasured comradeship was sadly interrupted by the outbreak of war in Europe.

Doug immediately signed up with the Royal Canadian Corps of Signals. December 17/39 found him in Scotland with the Advanced Group of the 1st Division, A company. His 10 day ordeal on board the Awuatania left him with a queasy stomach but soon he was right at home behind a 110 watt #9 set. Doug was pretty active in those early war years until fate dealt him a bad hand. While running dispatch, a German bomb blew him and his motor bike almost into tomorrow. In '46 he returned home and to Ham Radio. Pretty soon it will be 40 years since his good friend Roy signed him aboard N.S.A.R.C, making him proudly one of our many Old Timers. On rainy nights it were is nice to put up your feet and hark back over the years. Thanks for sharing your moments with us, Doug! 73.

From remarks I've heard, many of you enjoyed my little spoof "How Low Can You Go?" I did get a few complaints from unsatisfied customers though. It's unusual to find people without funny-bones! Perhaps it was shot off in the war or lost along life's bumpy road, I dunno! One fella couldn't believe the hydro would jump from the power line to my antenna. Another couldn't envision the current melting my iron core. All I can say is this. As a kid, my chums and I went to the movies to see Buster Keaton. He was pushed off a department store roof, fell a few stories, caught his suspenders on a protruding flag pole and shot back up to the roof much to the dismay of his attackers who tried it again and again. We rolled in the aisles with laughter! I don't remember questioning the fact that suspenders won't stretch that far or his buttons wouldn't hold the weight! We just enjoyed the image and had a good belly buster! If you can't laugh, I can't help you. If the majority had a good laugh then my efforts are repaid.

Next month we should be starring Bernie VE3ATI.

# HAM RADIO



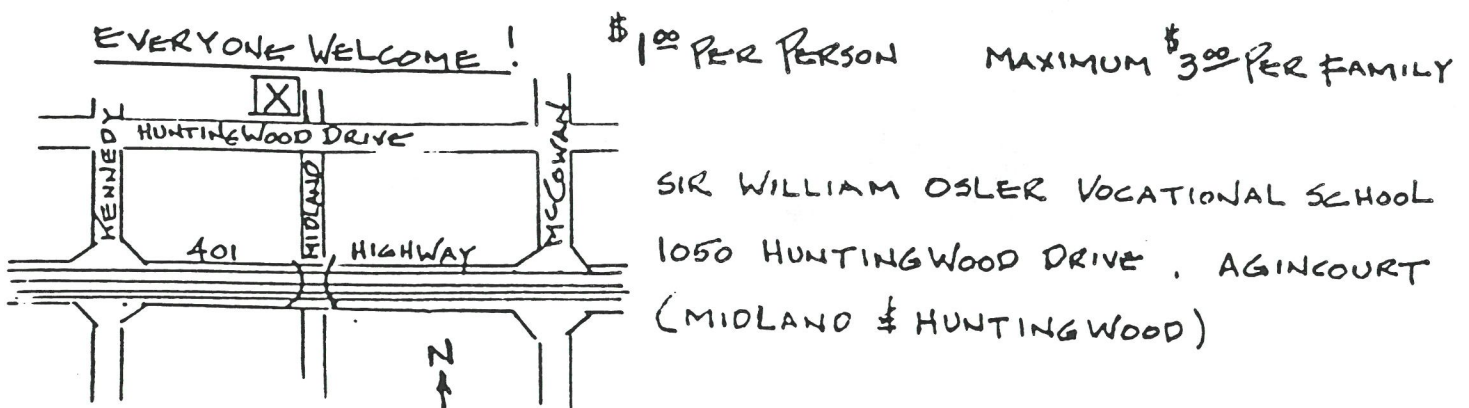
THE WAY IT USED TO BE !  
 THE WAY IT IS NOW !  
 WHAT IT MIGHT BE LIKE IN THE FUTURE !

7 - 10 P.M.

MONDAY, APRIL 15, 1985

THE SCARBOROUGH AMATEUR RADIO CLUB IS YOUR HOST FOR "NOSTALGIA NIGHT". A COMPUTER SIMULATION WILL BE COMPARED WITH THE WAY WE DO IT NOW AND THE WAY IT WAS.

PARTICIPANTS: TORONTO DX CLUB, THE ONTARIO TRILLIUMS, FRED HAMMOND, DEPARTMENT OF COMMUNICATIONS, O.D.X.A (SHORT WAVE LISTENERS CLUB), ONTARIO VINTAGE RADIO ASSN., C.N.I.B RADIO CLUB, SKYWIDE A.R.C., SOUTH PICKERING A.R.C.



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